INSIDER TRADING REGULATIONS:
EFFECTIVE OR DEFECTIVE?

By:

Paul A. Reeder

Oberlin College

February, 1983

The author would especially like to thank David Cleeton and Mark Moran for their invaluable comments and suggestions. In addition he is indebted to Luis Fernandez, and Peter Wears. He would also like to thank the Jerome Davis Committee for financial support.
CHAPTER 1

In recent years insider trading has received considerable attention. Insiders are persons who possess information about a firm which is not available to the general public. This information is typically acquired as a by-product of activities performed by the insider for his corporate employer. The majority of insiders occupy top positions in the corporate hierarchy, though large stockholders and others may also have access to such knowledge. The costs incurred by the insider to produce or procure this information are negligible; however, once in his possession, this information is potentially valuable. This value arises from an insider's ability to profitably speculate in his corporation's stock or other securities. Based upon his special nonpublic knowledge, an insider can purchase securities prior to an impending rise in price or sell prior to an impending decline. The recent attention devoted to insider trading has been due to widespread concern regarding the consequences this practice may have on individuals, corporations, and the functioning of securities markets.

Prior to the stock market collapse of 1929, insider trading was commonly practiced and generally accepted throughout the stock market. However, with the onslaught of the Great Depression, public sentiment changed dramatically. Insider trading became widely perceived as an ethically reprehensible practice in which unscrupulous businessmen attempt to profit at the expense of their corporations' shareholders. Indeed, during the Congressional hearings of 1933-1934, insider trading was labeled a major factor contributing to the economic collapse. (1) Furthermore, since no countervailing benefits were associated with the practice, its regulation was seen as readily justifiable. Consequently, to promote the notion of fairness in the marketplace for
securities, regulations of insider trading were introduced under Section 16 of the 1934 Securities Exchange Act.

The Securities Exchange Act was designed to regulate the trading of securities on organized exchanges. Section 16(a) of the Act formally defines insiders as corporate officers, directors, or owners of ten percent or more of a corporation's stock. Furthermore, it requires that these insiders register all transactions involving their corporation's securities with the Securities and Exchange Commission (SEC). Section 16(b), known as the 'short swing' rule, outlaws any combined purchase and sale (or sale and purchase) occurring within a six month period. Liability under this law is determined mechanically; that is, whether an insider is guilty of a 16(b) violation is determined irrespective of how much evidence is adduced of unfair resort to nonpublic knowledge. Finally, Section 16(c) prohibits an insider from selling short his corporation's stock.

In 1942 the SEC created what is now considered the cornerstone of federal insider trading laws: Rule 10b-5. This statute makes it illegal for a person to make false or misleading statements or to neglect to state a material fact in connection with the purchase or sale of securities. Rule 10b-5 is sometimes referred to as the 'disclose or abstain' rule since it requires that when making a security transaction, a person must truthfully disclose all material information upon which his trade is based or abstain from trading.

Until the 1960's insider trading was widely perceived as an unfair and harmful practice for which regulation was necessary and justified. This opinion emphasizing its undesirability came to be known as the traditional view. In 1966 Henry Manne [31] published his book Insider Trading and the Stock Market which challenged the traditional way of thinking by asserting that the case against insider trading was overstated. Furthermore, he
emphasized potential benefits from insider trading, thereby questioning the justification for the regulations. Though Manne's arguments were largely discounted by traditional thinkers, his book sparked a controversy over the desirability of regulations governing insider trading.

On one side of this controversy are the traditionalists, who argue that insider trading is harmful for several reasons. First, it injures individuals because it causes a redistribution of wealth from outside investors to insiders. Second, they claim that this practice harms corporations by providing an incentive for managers to make poor decisions. And third, it is argued that insider trading leads to an allocationally and informationally less efficient securities market. For these reasons proponents of the traditional view fervently support regulations of insider trading.

Critics of the traditional view first assert that the harm to individuals from insider trading is overstated, and that, in fact, insider trading is beneficial to firms because it serves as a unique form of remuneration for innovative activity within the corporation. Second, it is argued that this practice provides incentives for the rapid dissemination of information thereby contributing to accurate pricing of securities. And finally, insider trading is said to prevent the misallocation of resources toward the socially wasteful production of information. Although this debate between the traditionalists and their critics remains unresolved, regulatory policy toward insider trading has always favored the former viewpoint.

Since 1978 the SEC has been engaged in an ongoing crackdown against insider trading which has resulted in the filing of charges in more cases than in the previous 44 years of its governance over insiders. Nevertheless, the effectiveness of these actions in thwarting illegal behavior is questionable. As one highly placed SEC official has stated, "The greed of
people in high places, as well as average people, presents an insurmountable obstacle."(4) Not only are trading violations difficult to detect, but even when suspects are apprehended, convictions are nearly impossible to obtain. In fact, since 1934, only six people have ever been convicted on criminal charges of violating insider trading proscriptions, and one conviction was later overturned.(5) Trading on inside information has been described by one Congressman as "a gamble many are willing to take, since criminal sanctions are rarely sought by the Justice Department."(6) Amid mounting criticism of its history of lenient settlements, the SEC has renewed efforts to expand its current enforcement powers against insiders.

The purpose of this study is to examine the effectiveness of current regulations of insider trading. In the past, examinations of regulatory effectiveness have been solely concerned with analyses of the excess returns earned by insiders from their trading activities in the stock market. This study, however, involves a more direct approach to the problem. It is assumed that for regulations to be effective, two conditions must be satisfied. First, they must be stated in a manner which prohibits all types of behavior which would be considered harmful. Second, the regulations must be enforced to the point where the marginal enforcement costs are no greater than the marginal loss from more insider trading. It is the thesis of this paper that current regulations of insider trading are neither accurately stated nor adequately enforced thereby enabling insiders to reap excess returns from their trading activities in the stock and options markets.

The study will be structured as follows. Chapter 2 presents the traditional view of insider trading along with several alternative theories. Chapter 3 presents an in-depth examination of the intentions of insider trading regulations as well as the methods and difficulties associated with
their enforcement. Chapter 4 describes past empirical studies and discusses their implications regarding regulatory effectiveness. In Chapter 5 the regulations of insider trading are shown to contain loopholes which allow insiders to follow trading strategies which are faithful to the language but not the intent of these proscriptions. In Chapter 6 a methodology is presented for testing regulatory effectiveness, and the results of this test are presented in Chapter 7. Finally, Chapter 8 discusses policy implications and contains concluding remarks.
FOOTNOTES TO CHAPTER 1

(1) W. Ripley, Main Street and Wall Street (Cambridge: Harvard University Press, 1926), cited by Mackay and Reid [28], p. 108.

(2) "Wall Street Doubts the SEC Will Curtail Insider Trading," [51].

(3) See Bleiberg [4]; Blustein [5]; Crock [7]; Louis [27].

(4) Louis [27], p. 72.

(5) Kosterlitz [24], p. 21.

(6) Marcial [31], p. 82.
The effects of the security transactions of corporate insiders on traders who do not have access to nonpublic information regarding the corporation, and on the functioning of securities markets in general has been the subject of a long, acrimonious and, as yet, unresolved debate. The nature of this controversy, in its simplest form, centers around the question, "Are the existing regulations of insider trading justified?" Respondents to this question have endorsed one of two opposing schools of thought. The older and more widely held theory, referred to as the traditional view, proposes that insider trading is harmful to both individual traders and the normal operation of securities markets, and should, therefore, be regulated. In opposition to the traditional view, several alternative theories have been proposed emphasizing the potential benefits from insider trading. These criticisms assert that current regulations of insider trading cannot be justified without giving consideration to the countervailing benefits from this practice. Thus far, the critics have been unable to produce any relevant empirical studies supporting their assertions, and, despite the fact that current regulatory policies and enforcement activities firmly embrace traditional ways of thinking, the controversy remains unresolved. To facilitate a detailed development of these two opposing views, it is first necessary to make several assumptions.

It is assumed that securities markets are composed of two distinct types of traders: insiders and outsiders. Insiders are distinguished by two characteristics. First, they are able to obtain information regarding the future profitability of their corporation no later than outsiders. Insiders
are privy to this information by virtue of their relationship with their corporation (e.g., officer, director, or large shareholder). Because insiders always obtain their information no later than outsiders, and because they usually have the power to determine when this information is disclosed to the public, they are relatively accurate predictors of future price movements. Specifically, insiders possess the ability to predict when, in what direction, and, to some extent, the magnitude of future price changes in their corporation's stock. This fact gives the insider a substantial trading advantage in securities markets.

The second distinguishing characteristic of insiders is that they are able to acquire information at a marginal cost of zero. In other words, their information is acquired in the course of making decisions or performing duties for their corporate employer. In contrast, this information is relatively costly for outsiders to obtain prior to its release.

The remainder of this chapter will be devoted to describing in greater detail the nature of the debate between the traditionalists and their critics. Several arguments favoring the former viewpoint shall be presented, followed by several alternative theories.

The earliest of all traditional arguments concerns the notion of fairness. The practice of insider trading has been considered 'unfair' because insiders are able to base their trading decisions on information which is not available to outsiders. The unfairness arises not only because insiders acquire their information before outsiders, but also because there exists no lawful means by which the outsider may remove the insider's informational advantage.

It was this overriding concern for fairness which provided the impetus for the regulation of insider trading and of security markets in general. Indeed, the purpose of the 1934 Securities Exchange Act, as stated in its preamble,
was "[t]o provide for the regulation of securities exchanges...to prevent inequitable and unfair practices on such exchanges...."(3)

Although the perception that insider trading is unfair involves no economic considerations, it remains a popular justification for the regulation of this practice. (4) Schotland [41] does not underestimate the importance of equity considerations when he states:

"Even if we found that unfettered insider trading would bring an economic gain, we might still forego that gain in order to secure a stock market and intracorporate relationships that satisfy such noneconomic goals as fairness, just rewards and integrity." (5)

Even though insider trading may offend our basic notions of fairness, such normative judgements carry little weight in economic circles. Arguing from an economic standpoint, traditionalists contend that insider trading is unfair because it represents the risk of direct harm to outsiders. Direct injury occurs when an outsider trades directly with an insider. For instance, if an outsider purchases shares from an insider who is selling based on negative, nonpublic information, then injury occurs when that information is disclosed and the outsider's shares decline in price. Similarly, when an outsider sells his shares to an insider, he foregos the gain associated with the eventual rise in price. Assuming that insiders' trades are always profitable, then allowing insiders to trade freely implies a direct redistribution of wealth from the uninformed outsiders to the insiders. In other words, the gains accruing to insiders equal the losses incurred by outsiders.

The traditionalists present further testimony against insider trading by extending their argument that this practice leaves outsiders at an unfair disadvantage. It is asserted that when insiders are permitted to trade freely, outsiders realize they are at a disadvantage and consequently lose confidence in the stock market. Schotland contends that the exploitation of
valuable information by insiders will tend to discourage outsiders' participation in the stock market, which in turn will tend to reduce the health of that market and have a negative impact on corporations already held publicly, on smaller corporations which may need more capital to grow and on the economy as a whole. (6)

Recall that insiders, by definition, are the managers of corporations, and that outsiders, by virtue of their stockholdings, can be considered owners of corporations. Hence, in this light, the loss of confidence by outsiders can be viewed as a consequence of the conflict of interest between the managers and owners of a firm. The rationale for this conflict can be stated in greater detail. First, managers have the incentive to speculate in their corporation's stock based on information they acquire as a by-product of their corporate functions. Furthermore, gains accruing to managers as a result of their trading activity will be at the expense of (actual or potential) shareholders. Hence, a conflict arises because the incentive exists for managers to violate their fiduciary duty to the owners of the firm. A fiduciary duty requires that managers attempt to act in the best interests of shareholders. (7)

Since it is in the firm's best interest to prevent practices which would have a negative impact on the welfare of shareholders, possible support for this theory may be manifested in attempts by firms to limit the trading activity of their corporate officers. Indeed, Avon Products and Union Carbide have both imposed trading restrictions on their managers which are more severe than the current regulations. (8)

The indirect or social harm caused by insider trading can be presented in more concrete terms by considering risks and returns. Consider two firms X and Y which are alike in all respects except that insider trading occurs in security X but not in security Y. As a consequence, outsiders who trade
security X have a positive probability of trading with an insider and thus run a greater risk of incurring a loss or forgoing a gain than those outsiders who trade security Y. Begin by assuming that the public is aware of the distinction between the two companies. This implies that each outsider will either avoid trading security X or will demand that it pay a higher return than security Y. (9) A recent incident involving possibly illegal insider trading activity in the shares of Warner Communications Inc. may serve to illustrate this point. (10)

Beginning early in the fall of 1982, Warner stock began soaring amid widespread enthusiasm over the prospects for its highly profitable Atari division. Meanwhile, however, nine Warner insiders were busy selling more than $7.7 million worth of Warner common shares. Then, in early December, the entertainment company released a lower-than-expected fourth-quarter earnings projection which triggered a massive selling spree. Within several days after the announcement, Warner stock had plunged nearly 50 percent. Several weeks later Warner publicly revealed that several insiders had sold shares prior to the announcement. It is apparent that this development has led some people to avoid trading shares of Warner stock. One analyst was quoted as saying, "I will never again trust the people who now run Warner," while another advised investors to "stay away from the stock." (11)

Once again consider the two companies X and Y; however, now suppose that outsiders are unable to distinguish any difference between the two concerns. That is, the public is not aware that insider trading occurs in security X but not in security Y. According to Brudney [6],

A rational buyer (or seller) in a market, who knows the person with whom he is dealing has material information about the value of the product being exchanged which he could not lawfully acquire, will either refrain from dealing with that transactor or demand a risk premium. If the market is thought to be systematically populated with such transactors some investors will refrain from dealing altogether, and others will incur...
costs to avoid dealing with such transactors or corruptly to overcome their unerodable informational advantages. None of these responses is socially useful. (12)

In other words, outsiders are now apprehensive about trading the shares of either security X or Y. Although it is known that less insider trading goes on in one of the companies, outsiders are not sure which company that is. Hence, it must be assumed that both securities present an equal and positive risk of wealth losses due to insider trading. (13) Investors will now command a higher return from both securities and consequently the market will become less allocationally efficient. Allocational efficiency refers to the ability of a market to allocate resources to their highest valued use. In this case, insider trading leads to reduced allocational efficiency because both Company X and Company Y must pay a higher return thereby raising the cost of equity financing to these two firms. (14) Thus, the traditionalists argue, it is necessary to regulate insider trading in order to maintain allocational efficiency in securities markets.

To provide further support for their viewpoint, traditionalists examine the effects of insider trading on informational efficiency. Informational efficiency refers to the speed with which information is incorporated in security prices. A market is less informationally efficient the longer it takes for information to be reflected in prices. It is argued that in a market in which insiders are permitted to trade freely the disclosure of information is unnecessarily delayed. (15) Insiders cannot realize the gains from their trades until their information is released causing prices to adjust. However, insiders have the incentive to delay the disclosure thereby allowing themselves to execute trades at prices which do not reflect all known information. During the period of time between the discovery of information and its eventual release, securities are mispriced; i.e., the actual returns
deviate from the returns that would be paid if all information were publicly available. Consequently, capital resources are temporarily misallocated. (16) The traditionalists reason that if insider trading were regulated, then insiders could no longer profit from their special information, and thus, they would have no incentive to delay the release of that information.

Finally, insider trading is perceived as harmful because it provides an incentive for managers to deliberately make poor decisions. (17) The ability to sell stock short, buy put options, and write call options gives security traders the opportunity to profit from declines in a stock's price. Since common stock represents shares of ownership in a corporation, changes in a stock's price represent changes in the market's assessment of the corresponding firm's profitability. Furthermore, since the decisions made by insiders directly affect their firms' future profitability, they can be said to have some degree of control over the price of their company's stock. Consequently, the incentive exists for an insider to breach his fiduciary duty by deliberately making poor decisions and profiting from the subsequent price decline in his corporation's stock. Obviously, a similar incentive exists for making good decisions; however, traditionalists argue that allowing insiders to profit from both positive and negative information will, at least, lead managers to choose riskier ventures. This is because there is a direct relationship between the variability of a project's outcome and the value of information relating to that outcome. (18) By regulating the trading activity of insiders, the conflict of interest between managers and shareholders can be eliminated.

The traditionalists make five primary arguments against insider trading. First, they claim that insider trading is simply unfair because insiders have a distinct trading advantage over outsiders due to their possession of
material, nonpublic information. Second, the assertion is made that insider trading is harmful because it directly injures those outsiders with whom the insiders trade. That is, since insiders' gains equal outsiders' losses, insider trading causes a redistribution of wealth from outsiders to insiders. Third, it is argued that, in addition to the direct harm, there exists an indirect harm from insider trading which is manifested in an allocationally less efficient stock market. Specifically, because outsiders always run the risk of direct injury from trading with insiders, they tend to lose confidence in the market. Consequently, outsiders either avoid trading altogether or demand a risk premium. This, in turn leads to allocational inefficiency by making equity funding more expensive for all firms. Fourth, it is argued that insider trading unnecessarily delays the dissemination of information to the marketplace for securities. This also leads to allocational inefficiency by causing securities to become mispriced. Fifth, the traditionalists argue that insider trading provides an incentive for managers to violate their fiduciary duty by deliberately making poor decisions.

Originally, justification for the regulation of insider trading was based solely upon the traditionalists' first argument that this practice is unfair to outsiders. Because no countervailing benefits were believed to exist, regulation of insider trading was thought to be beneficial. In recent years, however, a small but vocal group of critics bringing economic reasoning to bear on the subject have challenged this traditional viewpoint. According to these critics, current justification for the regulation of insider trading is based on prima facie evidence which fails to pay consideration to the potential benefits from the practice. In response to the contrary theories, traditionalists were pressed to strengthen their case against insider trading. Thus, the remainder of the traditional arguments arose in response to the critics' assertions.
The first person to question the traditional justification for the regulation of insider trading was Henry G. Manne [31] in his book *Insider Trading and the Stock Market* published in 1966. In this pioneering work, Manne presents several arguments which he claims provide support for an alternative view that the harm from insider trading is overstated, and, furthermore, that insider trading is, in fact, beneficial to the functioning of a capitalist society. The issues raised in this book, along with the extensive comment they provoked, provided a foundation for the controversy surrounding the desirability of insider trading which, to this day, remains unresolved. The argument that the perceived harm from insider trading is overstated will be presented first.

The traditional view asserts that insider trading prevents outsiders from realizing gains they otherwise would have had. Manne contends, however, that the gains received by insiders as a result of their trading activity cannot be construed as a 'loss' to outsiders. When insiders purchase shares of their corporation's stock in advance of an impending increase in price, they are, in essence, exchanging the value of their publicly unknown information for an appreciation in the value of their shares. As insiders make their purchases, the price of all shares rises. Since the insiders do not own all outstanding shares of their corporation's stock, they cannot possibly capture the full value of their information when it is made public. Thus, outside shareholders who may have no knowledge of this information will also benefit from the rise in price. Essentially, the insiders have allowed outside shareholders to benefit from their information at no cost. This occurs because new value has been created. The insiders' gain is part of this newly created value, and this gain is not made at anyone's expense. Thus, since some outsiders have gained, all outsiders taken as a group do not necessarily lose as a result of insider trading.
Manne extends this conclusion by presenting an ex ante argument that those outsiders who do trade directly with insiders are not necessarily harmed. To facilitate his argument Manne divides all securities traders (excluding insiders) into two groups: time function traders and price function traders. Time function traders can be thought of as long term holders or 'investors;' i.e., people whose decisions to buy or sell are based upon events unrelated to short term changes in price. For example, persons who buy or sell because their long term investment needs have changed, or because they feel the investment climate has been altered due to some national or international event would be considered time function traders. Price function traders can be thought of as speculators, chartists, or persons engaging in arbitrage; i.e., persons whose trading decisions are a function of short term price fluctuations. Although differences between the two groups are not always clearcut, Manne's reasons for making the distinction will soon become clear.

Manne's argument rests upon the implicit assumption that a lag exists between the time when information is first produced and the time when that information is publicly disseminated. If insider trading does not occur, then a full and rapid price adjustment will take place on the date of disclosure. On the other hand, if insiders are permitted to trade freely on the basis of their (positive) information, then they will gradually bid up a stock's price prior to the release date. To determine the extent of the injury to outsiders due to insider trading, Manne compares the amount that outsiders gain by trading on positive information during the gradual price rise to the amount they would have had with the delayed but sharp price rise associated with no insider trading.

When insider trading is permitted and a stock's price is gradually bid up by the insiders' purchases, both time and price function traders will be
buying and selling shares in the market. Manne argues that time function traders, whether buying or selling, would have done so regardless of the gradual upswing in price and, therefore, cannot be construed as losers. That is, even if insider trading were not occurring (and the stock's price was therefore stable prior to announcement), then these investors still would have made their trades. (This is the reason for Manne's distinction between time and price function traders.) Specifically, when a time function trader purchases stock as the price is being bid up by insiders, he benefits because he shares in the appreciation in value received by insiders. On the other hand, the time function trader who sells stock during the price rise is also better off. This is because his selling price is higher than that which would have prevailed if insiders were prevented from trading. In neither case can the time function traders be said to lose since their trading decisions are made independently of the price changes caused by insiders.

Price function traders, however, are potential losers since their trades are induced by the price fluctuations attributed to insider trading. If insiders were not permitted in the market, then the price would remain stable (prior to the dissemination date), and the speculators would probably not be trading. Specifically, price function traders lose if they sell to an insider since the price they receive is lower (in the case of positive information) than if they had not based their purchasing decision on price movements; however, they gain if they happen to purchase at the same time as insiders.

Hence, when positive information is considered, allowing insiders to trade freely will have the following results. Positive gains accrue only to time function traders when they sell to insiders, while both time and price function traders will gain if they happen to buy at the same time as insiders. Negatively, any price function trader will lose if he sells when insiders are
buying. Furthermore, any price function trader who would have purchased stock if there had been a rule preventing insider trading will also miss out on the price rise.

In the case of positive information, the outsider is more likely to benefit the less frequently shares are sold. In other words, the gains from allowing insider trading tend to accrue to time function traders while price function traders tend to lose. By limiting the discussion to long term investors rather than the short term speculators, Manne asserts that there is little likelihood for injury from insider trading. Recalling that time function traders benefit by selling to insiders as prices are bid up, Manne argues that these investors will benefit to a greater extent if the information is incorporated in price more expeditiously. He states that the traditional argument that insider trading is harmful to outsiders as a group is valid only if "price changes occur more gradually with insider trading than without it."(19) If the alternative to insider trading were full and immediate disclosure of all information, then, Manne argues, prices would adjust more slowly under insider trading, thus injuring time function traders. However, because full and immediate disclosure is not, and probably cannot be enforced, Manne concludes that the purported harm to outsiders from allowing insiders to trade freely is overstated.

To lend further support to the critics' case, Manne proposes that insider trading is beneficial because it provides a necessary form of remuneration for "entrepreneurs."(20) Here, an entrepreneur is defined as being an innovator within the corporate organization. For various reasons Manne deduces that salaries, bonuses, and stock options provide inadequate incentives for the development of new methods of utilizing the factors of production. Given the limitations of these methods of payment, he then argues that allowing the
entrepreneur to trade on his inside knowledge would enable him to compensate himself with a reward which accurately reflects the worth of his innovations.

Insider trading meets all the conditions for appropriately compensating entrepreneurs. It readily allows corporate entrepreneurs to market their innovations. This is not a direct marketing of the idea but rather a "sale" of information about an innovation. Thus, although we do not allow entrepreneurs a direct proprietary interest in their ideas, we can allow recovery for their ideas by permitting them to exploit information about the existence of the ideas in a market primarily based on information.

Furthermore, it has been pointed out that insiders' ability to profit from bad news will not necessarily lead them to violate their fiduciary duty. Managers who produce negative information about their firm by deliberately making poor decisions will concurrently reduce the value of their human capital. Thus, the labor market serves to restrain management from deliberately making unsound decisions and profiting from the resulting negative information.

In his 1969 article, "Perfect Competition, Regulation, and the Stock Market," Harold Demsetz [8] proposes that insider trading contributes to greater efficiency in the stock market. Demsetz's primary concern is with achieving and maintaining efficient markets. He rejects the predisposition that imperfections are necessarily undesirable by recognizing that there is a cost associated with their removal. Demsetz states, "Complete absence of imperfections is consistent with efficiency only if the cost of accomplishing this objective is zero." Thus, if instituting regulations is the means by which imperfections are to be reduced, it is essential that some consideration be given to the likely costs and benefits involved. In particular, Demsetz examines the imperfection known as insider trading.

Demsetz delineates the problem of insider trading into two separate issues. First there is the question of whether it is desirable for firms to employ secrecy in an attempt to increase their profits. This he calls the
"corporate use of secrecy." The second issue is raised by management's ability to realize personal gain from the information they obtain as a by-product of their corporate activities.

To determine whether regulation of insider trading is justified, Demsetz first examines the desirability of the corporate use of secrecy. He asserts that corporate secrecy plays a necessary role in the incentive system, and thus its use should not be discouraged. Furthermore, since achieving a reduction in the use of secrecy through regulation is such a large scale task, the costs involved would likely preclude any significant benefits. Demsetz observes that "there is little the SEC can do to eliminate completely the profits associated with the possession of valuable market knowledge." (24) Instead, he argues, the most the SEC could hope to achieve is raising the cost to insiders of utilizing the most obvious forms of insider trading (i.e., an insider trading his corporation's securities in his name).

If the SEC does opt to regulate insider trading, Demsetz argues that valuable information will be made public with greater delay while insiders pursue less obvious, time consuming trading strategies (e.g., trading through 'agents' or in the securities of corporations marketing substitute or complementary goods). In other words, regulation of insider trading reduces insiders' incentives to release information quickly. The result is a delay in the adjustment of security prices to the level at which those prices reflect all known information. Permitting insiders to employ the most direct methods of realizing a return from their information will tend to reduce the time period required for the impounding of all information in prices. Hence, compared to a market in which insider trading is regulated, a non-regulated market will be more efficient in both an informational and allocative sense.
Several of the arguments presented thus far, favoring both the traditional and alternative viewpoints, suffer from shortcomings. First, the traditionalists fail to recognize that incentives exist for insiders to produce and promptly disseminate their information. An insider basing his security trades on nonpublic knowledge cannot realize a return from his information until it is publicly disclosed thereby causing share prices to adjust to their new equilibrium level. Consequently, when insiders are permitted to trade, the incentive exists for information to be produced. Furthermore, insiders have an incentive to disclose information promptly following its production. During the period after an insider takes his security position but prior to his release of the relevant information, the value of his portfolio is subject to adverse price effects originating from other sources. The insider can reduce this investment risk by disseminating his information and closing out his security position as soon after making his initial trade as possible. Thus, risk averse insiders have the incentive to promptly disclose information which they acquire.

A second shortcoming suffered by traditional and alternative arguments alike is their failure to adequately address the subject of informational efficiency in security markets. In particular, these arguments do not explain why informational efficiency is desirable, nor do they propose a method for measuring the costs associated with a reduction in informational efficiency. At first blush, one is tempted to argue that informational efficiency is desirable because it leads to accurate pricing of securities thus ensuring that resources will be allocated toward their highest valued use. This assertion, though technically correct, is too vague to be of any use. Specifically, it fails to recognize that a lack of complete information regarding a security implies consequences unlike those resulting from
incomplete information in other markets. These differences arise due to dissimilarities between sellers of securities and sellers of other goods. Taking the latter case first, consider a market for used cars. (25)

In a used car market, sellers typically know the quality or value of the automobiles they are attempting to sell, while buyers are not privy to this knowledge. Hence, an asymmetry in available information develops. As a consequence, those traders possessing more information, i.e., the sellers, will avoid transactions at prices which fail to meet or exceed a car's true value. That is, no used cars will be sold at prices which understate their value based on all known information.

Now consider a securities market in which those persons possessing inside information do not trade. In this case, if information regarding securities is known, but not publicly available, then it will not influence anyone's trading decisions. Thus, no asymmetry in information exists between buyers and sellers. Nevertheless, since security prices fail to reflect all known information, trades occur at prices which do not reflect true value. Furthermore, since this information could be either positive or negative, some securities are underpriced while others are overpriced by the market. That is, some securities will yield returns that are too high while others will yield returns that are too low. Unlike prices in the used car market, security prices may be biased in both directions. Thus, it is not readily apparent that an informationally inefficient securities market is absolutely undesirable—some traders win, albeit inadvertently, while others lose.

To determine whether incentives to acquire and disseminate information contribute to efficient resource allocation, it is more useful to examine the nature of the information involved rather than the mispricing that results in its absence. (26) A distinction will be made based upon whether the information
affects production. Information which is useful in making production
decisions is referred to as operational information. In general, operational
information pertains to the recognition of something that already exists but
would never be known if the information were not produced. (An example of
operational information is the development of some new technology that could
be applied to a variety of manufacturing processes.) The second type of
information is called trading information and pertains to knowledge about
events that would occur regardless of whether information were produced about
them. (An example of trading information is knowledge of a firm's accounting
figures.) The critical distinction between these types of information is that
operational information is valuable to firms since it enables them to make
operating decisions at least as good as those they could make in its absence.
Trading information, however, is valueless to firms since it relates to
decisions already made. It is now necessary to examine the costs and
benefits, both individual and social, associated with the production and
dissemination of these two types of information.

Prior knowledge of trading or operational information about a firm is
privately valuable (i.e., valuable to an individual). This private value
arises from the ability of an informed investor to trade the ownership shares
of firms about which he possesses nonpublic information; that is, he can trade
shares at prices which fail to reflect their true value. Thus, each
individual has an incentive to generate information until its marginal benefit
(to him) equals its marginal cost. Furthermore, an informed individual also
has an incentive to publicize his information, although not before he has made
a speculative commitment. The crucial question now becomes, how does society
benefit from the private production and dissemination of information?
First, consider trading information. Since this information has equal likelihood of being positive or negative, the expected change in the market value of a firm's shares associated with positive expenditures on trading information is always zero. Therefore, the expected effect of disclosing such information is nothing more than a redistribution of wealth among investors. If the production of this information uses up real resources, then a situation has arisen which is not consistent with Pareto optimality. That is, there exist obtainable distributions of wealth which would make some investors better off, while leaving none worse off. Pareto superior distributions could be reached if individuals refrained from allocating resources toward the generation of socially valueless trading information. To illustrate this point, suppose that rather than allowing for private generation of trading information, the entire community of investors could be simultaneously informed about some bit of trading information. The question is how much would they pay as a group to receive this information? Since this information will have no impact on the operation of firms, and will only serve to redistribute wealth among investors, the answer is: nothing.

Now consider the social implications of the private production of operational information. Here, the individual's incentive to disclose his information is now socially desirable since firms can utilize the information to improve their productive processes. That is, using the earlier illustration, the community would pay a positive amount to have the information disclosed simultaneously to all investors. Nevertheless, if costs are incurred in the production or dissemination of operational information, the net benefits to society are not clearcut.

To sum, both trading and operational information are privately valuable, and thus, incentives exist for their production and dissemination. Trading
information, however, has no social value since it does not contribute to production decisions. Furthermore, if resources are expended to generate this knowledge, then there is a loss to society. Operational information, on the other hand, is socially valuable; however, the gain from public disclosure must be offset by any costs associated with the acquisition or dissemination process. These arguments imply that insider trading is, at best, a socially useless practice when trading information is involved. When operational information is considered, insider trading will be socially desirable only if the production value of the information exceeds the costs associated with its generation and disclosure. This analysis suggests that the proper approach to determining whether insider trading should be regulated is to examine costs rather than benefits. That is, are the costs to society less when insiders are permitted to trade freely or when their trading practices are regulated?

Building upon the previous arguments, Moran [36] examines the social costs when insider trading is regulated versus those when insider trading is unregulated. Considering the former case, it is assumed that the regulations remove the private value of information to insiders by preventing trading practices which would yield above average returns. Consequently, insiders no longer have an incentive to trade based upon their special knowledge. Furthermore, their incentive to disclose information soon after its acquisition is also removed. (Recall that when insiders are permitted to trade freely, they have an incentive to reduce their investment risk by minimizing the time period they withhold information.) Since information now becomes public more slowly, securities are often mispriced by the market. Outsiders, realizing that publicly unknown information exists, have an incentive to produce or acquire this knowledge since it is privately valuable to them. Expenditures toward generating this information contribute nothing
to output and thus represent social waste. Hence, the regulation of insider trading leads to expenditures of real resources toward generating information which contributes nothing to output.

Alternatively, consider the consequences when insider trading is unregulated. Here, contrary to the former case, information is privately valuable to insiders as well as outsiders. Since insiders are permitted to trade based upon their special knowledge, they have an incentive to produce information, establish speculative positions, and then publicly disclose their information. In order to reduce their investment risk, insiders shorten the period they withhold information; thus, securities are mispriced less frequently than when insider trading is regulated. Since insiders are capable of obtaining information before outsiders, they are able to "capture the change in market value associated with any new information regardless of the information produced by outsiders." (27) Consequently, outsiders no longer have the incentive to expend capital on the production of information which will not enable them to capture trading profits. Although insiders still have private incentives to acquire information, this acquisition is accomplished simply through performing their corporate duties and thus, the costs involved are negligible. Consequently, since insiders can generate and disseminate information more quickly and at a lower cost than outsiders, Moran concludes that there is less social waste associated with allowing insider trading than with regulating the practice.

Critics of the traditional view offer three primary arguments emphasizing the benefits from insider trading. The first is that allowing insiders to trade freely provides a unique form of remuneration for corporate entrepreneurs thereby strengthening incentives for innovative activity within the firm. The second argument is that when insiders are permitted to base
trading decisions on their special knowledge, they have an incentive to rapidly disseminate this information. Consequently, market prices adjust more quickly when insiders trade than if they are forced to pursue more time consuming trading strategies or to abstain from trading all together. The third argument is that insider trading reduces incentives for outsiders to devote resources toward the production or acquisition of information. This is because insiders can acquire and disseminate information more quickly and at a lower cost than outsiders. As a consequence, resources are no longer allocated toward the socially suboptimal production of information.

This chapter has presented two distinct views of insider trading. The traditional view asserts that insider trading is harmful to outsiders and should therefore be regulated. Contrary to this widely held belief, several alternative theories point out the potential benefits arising from this practice. Despite the critics' questioning of the current justification of insider trading regulations, policy decisions strongly embrace the traditional viewpoint. The next chapter takes a look at existing regulations focusing on their intentions as well as the methods and difficulties associated with their enforcement.
FOOTNOTES TO CHAPTER 2

(1) Brudney [6], p. 345; Ronen [40], p. 441.

(2) Brudney [6], pp. 344-346, 354; Hetherington [16], p. 721.

(3) Statutes at Large [48], p. 881.

(4) Longstreth [26], p. 5.

(5) Schotland [41], p. 1439.

(6) Ibid., p. 1441.

(7) Brudney [6], pp. 350-351; Painter [37], pp. 2-3.

(8) Louis [28], p. 74.

(9) Brudney [6], pp. 355-356; Mendelson [35], pp. 477-479.

(10) Marcial [32], p. 82.

(11) Ibid.

(12) Brudney [6], p. 356.

(13) For a related argument, see Akerlof [1].

(14) Brudney [6], pp. 335, 356; Mendelson [35], pp. 477-478.

(15) Brudney [6], p. 334; Mendelson [35], pp. 473, 476-477; Schotland [41], p. 1448.

(16) Brudney [6], p. 334.

(17) Ibid., pp. 335-336; Makiel [30], p. 264.

(18) Leftwich and Verrecchia (1981), in Moran [36], Ch. 2, p. 5.

(19) Manne [31], p. 103.

(20) Ibid., pp. 131-145.

(21) Ibid., p. 138.
(22) Kitch [23], p. 718.
(23) Demsetz [8], p. 3.
(24) Ibid., p. 13.
(25) Akerlof [1] relates quality and uncertainty through an examination of the used car market.
(26) The following discussion draws from Fama and Laffer [11] and Hirshleifer [17].
(27) Moran [36], Ch. 3, p. 9.
CHAPTER 3

The purpose of this section is to investigate the nature of federal insider trading laws. Emphasis will be placed on the intent and enforcement policies associated with the various regulations. In addition, an attempt will also be made to point out certain shortcomings or enforcement difficulties which hinder the regulators in their efforts to prevent the abuse of nonpublic information. As stated earlier, federal legislation directed toward insider trading is found in Section 16 of the 1934 Securities Exchange Act and in Rule 10b-5 promulgated in 1942.

It was stated during the Congressional Hearings of 1933-1934 that Section 16 was "aimed at the general evil of officers and directors rigging their stock up and down, and squeezing out their own stockholder's."(1) The specific type of activity to which this statement refers is the famous (or, perhaps, infamous) stock pools of the 1920's and earlier. A stock pool consisted of a number of corporate executives and directors who met and exchanged valuable nonpublic market information.(2)

One tactic employed by these pools required that insiders intentionally time their purchases with the intent of causing a rise in price. This, in turn, would make a stock appear relatively strong thereby inducing further purchasing by outsiders.(3) As the price rose, the members of the pool would sell their shares and thus realize a profit.

A second tactic employed by these pools was to release misleading statements to the market which would result in large fluctuations in a stock's price occurring during a relatively short time period. These statements were aimed primarily toward stock traders whose transactions were based upon technical factors (e.g., volume or price).(4) The misleading assertions made
by the pools were often that heavy buying was going on in a corporation's shares. This induced speculators to purchase shares with the hope of profiting from some soon-to-be-announced good news. However, since the decision to release any information was ultimately left to the discretion of the insiders, a stock's price would often decline before any news became public. Consequently, the only persons who could be expected to consistently profit from these price gyrations were the members of the stock pools.

The consensus during the 1933-1934 Congressional Hearings was that stock pools and other similar practices engaged in by corporate insiders were fraudulent and manipulatory and resulted in financial injury to shareholders. In response to this widely held perception, the Section 16 legislation was promulgated with the intent of preventing unfair trading practices on the part of insiders.

Section 16 is composed of three parts: (a), (b), and (c).(5) 16(a) formally defines an insider as any person who is directly or indirectly the beneficial owner of more than ten percent of any class of any equity security, or who is an officer or director of the issuer of such security.(6) Additionally, 16(a) imposes two requirements on insiders. First, an insider is required to file with the SEC, at the time of the registration of his corporation's security or within ten days after he becomes a beneficial owner, officer, or director, a statement of the amount of all equity securities issued by his corporation of which he is the beneficial owner. The specific form on which this information is filed is the Form 3, formally referred to as the "Initial Statement of Beneficial Ownership of Securities." The second requirement made by 16(a) is that the insider must file a transaction report within ten days after the close of each calendar month in which there has been any change in his holdings. This filing is made on Form 4, the "Statement of Changes in Beneficial Ownership of Securities."
Once received by the SEC, the information contained in the Form 3 and Form 4 Statements is made available to the public. In fact, the transactions data contained on the Form 4's (with the exception of options transactions) is published monthly by the SEC in the Official Summary of Security Transactions and Holdings. This publicity is intended to encourage voluntary maintenance of proper fiduciary standards by those in control of corporations and, at the same time, give public investors information as to purchases and sales by insiders, which might, in turn, indicate their private opinion as to the prospects of the company.(7) In addition, the listing of purchases and sales of securities in these reports is useful in determining whether a violation of other Section 16 provisions has occurred.

Section 16(b) outlaws what are loosely referred to as 'short swing' transactions. Specifically, this rule requires that profits realized by an insider from any purchase and sale, or sale and purchase, of his corporation's equity securities within a period of less than six months shall be returned to the corporation. (8) Liability under 16(b) is determined irrespective of the intentions of the insider entering into the transaction. For instance, suppose an insider purchases his corporation's stock on January 1 based on his knowledge of an impending merger announcement between his firm and another concern. If he sells his stock after July 1, he is not in violation of 16(b)—regardless of the size of his profits and the fact that his trade was based upon nonpublic information. On the other hand, if the insider sells his stock prior to July 1, then he is liable under 16(b); however, this liability merely implies that the insider must give up his profits. The fact that he traded on inside information does not impose any further liabilities on him as far as 16(b) is concerned. Although the penalty associated with a 16(b) violation may seem somewhat unexacting, a second example illustrates why a stiffer penalty may be unjustified.
Suppose an insider purchases shares of his corporation's stock on January 1 as part of an annual stock purchasing plan. Obviously, no resort is made to nonpublic information. Suppose that on April 1, this insider is in desperate need of cash and is thus forced to liquidate a substantial portion of his portfolio. This action triggers a 16(b) violation, and the insider is forced to give up any profits realized from his purchase on January 1. In this case, it would seem unfair to subject the insider to further penalties simply because he was in need of cash.

Part (b) of Section 16 was enacted primarily in response to abuses in which insiders possessing material nonpublic information bought and sold their corporation's securities, as the circumstances warranted, based upon their special knowledge. The legislation was also promulgated with the intent of removing incentives for insiders to engage in manipulatory activities (e.g., stock pools) designed to produce sudden changes in market prices in order to obtain short swing profits.

Section 16(b) violations are detected by computer. Specifically, the SEC continually feeds transactions data from the Form 4 Statements into a computer which then determines, for each insider, whether at least six months have elapsed between any purchase and sale or sale and purchase. Although 16(b) apparently applies to options trading, it is surprising to note that no transactions data for options is fed into the computer.(9) Hence, if an insider's option transactions are scrutinized for 16(b) violations then the process is performed by hand. Given the scale of the task involved, this explanation seems unlikely.

Finally, Section 16(c) prohibits insiders from engaging in short sales of their corporation's equity securities.(10) The intent of this provision is to remove the incentive for corporate managers to purposely make poor decisions in order to profit from the ensuing decline in market prices.
At first glance, Section 16 appears to be an effective deterrent to insider trading abuses; however, three fundamental problems exist. First, these proscriptions apply only to registered insiders; i.e., those persons described in 16(a). In reality, the Section 16 definition of an insider covers only a subset of all persons who regularly come in contact with inside information. Certainly there may not exist any practical solution to this shortcoming; nevertheless, its existence suggests that investors will still risk financial injury resulting from the practices which Section 16 was designed to prevent.

A second problem with this Section is that it applies solely to an insider's transactions in the securities issued by his corporation. No restrictions are placed on an insider's transactions in the securities of other corporations.

Finally, the third shortcoming associated with Section 16 is that its provisions place no restrictions on an insider's ability to profit from a market position subsequent to the passage of the six month period described in 16(b). Conceivably, an insider could base his trading decisions on nonpublic information and, in order to conform to Section 16, simply wait six months before realizing his gains. The fact that the insider has an unfair advantage over outside investors when making his initial transaction would go unpunished. In this scenario, the only effect 16(b) has is to increase the insider's investment risk by requiring him to hold his position for at least six months.

The existence of the problems just mentioned prompted the SEC to promulgate Rule 10b-5 in 1942. This proscription currently serves as the primary statutory deterrent to the abuse of nonpublic information. Recall that Rule 10b-5 states in part:
It shall be unlawful for any person, directly or indirectly, ... to make any untrue statement of a material fact or omit to state a material fact... in connection with the purchase or sale of any security. (11)

This Rule is particularly significant for two reasons. first, it explicitly prohibits persons from engaging in security transactions on the basis of material information without prior disclosure of such information. (For this reason the proscription is often referred to as the "disclose or abstain" rule.) The second feature of Rule 10b-5 which warrents attention is that it applies not only to registered insiders as defined in Section 16 but to all persons. This effectively means that any person coming in contact with what he knows to be inside information is prohibited from utilizing this special knowledge for the purpose of making trading decisions until that knowledge has been publicly disclosed.

The primary intent of Rule 10b-5 is to promote informational equality between all buyers and sellers in securities markets. It is also devoted to assuring that information disseminated to the investing public is both complete and accurate.

Given the ambitious nature of the prohibition, one is immediately led to question the extent to which it can be effectively enforced. Specifically, one may ask, how do the regulators intend to detect violations of Rule 10b-5? And further, once a possible violation has been detected, is there a reasonable chance of obtaining a conviction?

In response to the first question, the SEC as well as the self-regulated stock exchanges are committed to detecting security transactions based upon material, nonpublic information. The Stock Watch Department of the New York Stock Exchange has an elaborate computer system designed to detect unusual trading activity. The smaller exchanges and the SEC also monitor markets with the aid of computers; however, their systems are much less sophisticated than the NYSE system.
Specifically, the Stock Watch system continually monitors the price and volume movements of all NYSE traded stocks. These computers are programmed with an elaborate set of predetermined statistical boundaries which are violated when a stock's price moves up or down at an unusually rapid pace or when a stock trades at an unusually high volume. The detection of trading patterns which penetrate these boundaries is not an unusual occurrence; there are literally thousands of false alarms. (12) Nevertheless, the Stock Watch Department attempts to investigate all such transactions by following a procedure designed to eliminate trades which are not based on inside information. When an unusual price or volume movement is detected in the stock of some corporation, an immediate check is made to determine whether any news was released regarding that firm. If this is not the case, then the company is contacted directly and asked to provide a possible explanation for the unusual trading activity in its stock. Finally, if the company is unable to provide any answers, brokers are contacted and an effort is made to learn the identities of the persons or institutions that have traded in the stock. Furthermore, an attempt is made to determine whether these traders are linked in any way to company insiders. When it becomes evident that the market flurries were a consequence of trading based on inside information, the Stock Watch Department notifies the SEC which then joins in the investigation. This occurs because the SEC has the power to bring charges against anyone violating federal insider trading laws, whereas the self-regulated exchanges have jurisdiction only over their member firms. (13)

The role played by the SEC in detecting trading on inside information is relatively limited. In addition to a small computer system which is capable of tracking a couple hundred stocks, the SEC examines the transaction reports (Form 4's) submitted by registered insiders. The specific procedure followed
involves an *ex post* examination of Form 4 Statements in relation to a specific news event which causes a revaluation of the market price of one or more stocks. For instance, suppose a proposed merger between the two corporations ABC and XYZ is announced during the month of May. As a result of this announcement there is a significant appreciation in the price of both firms' equity securities. The SEC responds to this event by examining all Form 4 Statements submitted by insiders of ABC and XYZ during the months leading up to the announcement. (The actual number of months examined may vary depending upon the importance of the news event in question.) If any large purchases were made by insiders of either firm during the months just prior to the announcement, then the SEC may charge the insider(s) involved with a 10b-5 violation. Whether or not these charges are filed depends upon whether the SEC feels its case would hold up in court. This, in turn, depends upon the volume of the transactions as well as their timing in relation to the announcement date.

There are several impediments to these detection procedures followed by the exchanges and the SEC. As one might expect, the SEC detects relatively few 10b-5 violations. This is due to the limited capability of its computer system and to the fact that few insiders are foolish enough to commit an obvious 10b-5 violation and then register the trade with the SEC.

The Stock Watch Department which is credited with the majority of detections also faces a number of problems. For instance, a person trading on inside information can easily avoid detection by keeping the volume of his trade in line with normal volume patterns. This tactic takes advantage of the fact that the exchange computers are programmed to detect only relatively large volume trades or those transactions having a marked effect on a security's price.
Another strategy which has consistently befuddled investigators involves executing trades through a Swiss Bank account in order to conceal one's identity. Since neither the SEC nor the Justice Department has jurisdiction over foreign institutions, they are prevented from determining the identities of customers on whose part these institutions are acting. (14) This is true even if the customers are U.S. citizens. Thus, according to one source, "Someone with a Swiss bank account and access to inside information can usually run roughshod through the financial markets, with little likelihood of being caught." (15)

Finally, the strategy which many perceive to be the most widely used and potentially least risky from a legal standpoint is for insiders to trade through third parties. For instance, an insider of XYZ Corporation possessing inside knowledge of an impending merger between XYZ and ABC can contact his brother-in-law and instruct him to purchase several hundred shares of XYZ stock on the day preceding the announcement, and to sell those shares immediately following the adjustment in price. This strategy is extremely effective for two reasons. First, it is unlikely that the trade will be detected since the volume consists of only several hundred shares. (16) And second, even if the transaction is discovered, there is little likelihood of establishing proof that the trader possessed inside information and based his trading decision upon such knowledge.

Now that the procedures and problems associated with detecting 10b-5 violations have been examined, it is necessary to consider what transpires after a possible violation is detected. Recall the question posed earlier: "Once a possible violation has been detected, is there a reasonable chance of obtaining a conviction?" Based upon the SEC's record to date, the answer to this question is most certainly no. Although the maximum penalty for a
criminal conviction under Rule 10b-5 is five years in jail and a $10,000 fine, the Justice Department has secured only five convictions since 1942. (17) The reasons underlying this paucity of convictions shall now be discussed.

To successfully convict a person on criminal charges of violating Rule 10b-5 through trading on inside information, it must be proven beyond reasonable doubt that the person knowingly failed to disclose material facts prior to making his trade. (18) Proving this usually requires drawing a link between the accused and an insider of the company whose securities that person traded. But even in cases where there exists an apparent link between trader and insider there remain problems of proof. States one SEC surveillance official,

We look into two or three unusual run-ups a week, and more than half the time we can trace the activity to people who might have been in a position to have inside information. But proving they had the information, and acted because of it, is usually impossible. These people always have a plausible story, and we can't disprove it without getting into their heads.

Due to the overwhelming difficulties associated with criminal prosecution, the SEC has been inclined to settle all but the most egregious violations through civil suits. The maximum penalty the SEC can win through such suits is 'disgorgement' (the repayment of trading profits), and an injunction against further violations. (20) In signing this injunction, which is known as a 'consent decree,' the accused neither admits nor denies guilt but agrees never to commit a violation in the future. Once the defendant agrees to this type of settlement, the agency is usually willing to drop the case to avoid a costly trial.

It is fairly obvious that the civil penalties for trading on inside information are lenient relative to the corresponding criminal penalties. Furthermore, the fact that civil suits are standard procedure for all but the
most egregious violations has led many to question the deterrent effect of the SEC's enforcement efforts. (21) Aware of this criticism, the SEC has begun urging Congress to raise the civil penalties for trading on inside information. Under the proposed legislation, insiders would be liable for their profits, plus a civil penalty of as much as three times that amount. (22)

This chapter has presented an examination of the current federal insider trading regulations—specifically, those comprising Section 16 of the 1934 Securities Exchange Act and Rule 10b-5. Although the Section 16 proscriptions appear relatively straightforward, several shortcomings are evident. In particular, Section 16 applies only to trades by registered insiders in the securities of their corporation; further, it fails to explicitly prohibit trading on inside information. These oversights provided partial impetus for the promulgation of Rule 10b-5 in 1942, which requires all persons to truthfully disclose all material information in connection with a securities transaction or to abstain from engaging in that transaction. The purpose of this regulation is to promote fairness in securities markets through removing the informational advantages possessed by insiders. Unfortunately, the ambitious nature of this regulation has led to recurring difficulties in detecting and successfully prosecuting offenders. Furthermore, the effective penalty for violating this rule (i.e., the civil penalty) has been described as little more than a "slap on the wrist." (23) Consequently, the effectiveness of the SEC's enforcement efforts in both identifying and detering violations of insider trading laws has been drawn into question.
FOOTNOTES TO CHAPTER 3


(2) For a discussion of stock pools, see Manne [31] pp. 66, 152, 153.

(3) Schotland [41] pp. 1449, 1450.


(5) U.S., Statutes at Large [48] pp. 896, 897. There exists a fourth part to this section, 16(d), which describes the types of transactions to which the Section 16 provisions are not applicable. Since this information is unimportant as far as this study is concerned, its discussion is not included.

(6) Ibid., p. 896.


(9) Telephone conversation. February 22, 1983. Securities and Exchange Commission, Washington, D.C. Though it was confirmed that no options transactions data was examined by the computer, the SEC was unaware as to whether options transactions were examined for potential 16(b) violations.


(11) Originally Rule X-10b-5, 17 C.F.R. §240.10b-5 (1964). The word "material," as it is used here, refers to "information which would be important to a reasonable investor considering a transaction in the security concerned and which, if disclosed, would reasonably be expected to affect the market price for such security." --Ronen [40] p. 440.


(13) Ibid.

(14) Ibid., p. 78.

(15) Ibid.

(16) Obviously, market depth will play an important role here; however, it should be noted that the SEC generally does not investigate low volume trades simply because there are so many of them. It is presumed that the SEC perceives the marginal loss from allowing these trades to continue to be no greater than the marginal costs of enforcing Rule 10b-5 in these situations. (These costs would be composed of both investigative and legal fees.)
(17) Kösterlitz [25] p. 21. There have actually been six such convictions; however, the most recent was later overturned.


(19) Klein [24].


(21) See Bleiberg [4]; Blustein [5]; Crock [7]; Hudson [18]; Klein [24]; "SEC Settling..." [44].

(22) Longstreth [26] p. 12.

(23) "SEC Settling..." [44].
Although a great deal of literature has been published regarding the subject of insider trading, the range of these studies has been rather narrow. The vast majority of articles have either involved deductive arguments concerning the desirability of the practice or empirical examinations of the excess returns which accrue to insiders as a result of their trading activities. These studies have seldom dealt specifically with the subject of insider trading regulations; however, the findings of most empirical works do have implications regarding regulatory effectiveness.

The bulk of past empirical studies has been concerned, in one way or another, with determining whether and/or in relation to what events do excess returns accrue to insiders from their trading in the stock market. Given that trading based on inside information is illegal, these studies have indirect implications regarding the effectiveness of the SEC's policing of insider activity. The findings of several studies which are representative of the type of work that has been done in this area during the past fifteen years will be examined in this chapter.

In 1968 Lorie and Niederhoffer [27] published a paper in which they determined, contrary to the conclusion of almost all previous studies, that "proper and prompt analysis of data on insider trading can be profitable."(1) Their study involved three separate analyses of insider trading data.

The first question they asked was whether insiders generally bought shares of stock prior to good news. To answer this they examined, in three ways, insider transactions before large changes in a stock's price. First, by examining the last insider transaction occurring before the large price change
they observed that the odds favoring a large positive change were 2.5:1 after a purchase and 1.1:1 after a sale. Second, their analysis of the net purchases (total purchases minus total sales) during the six months prior to the large price change yielded odds of 2.2:1 favoring an increase in prices when the net number of purchases was positive. Third, by examining net shares purchased (total shares purchased minus total shares sold) in the six months leading up to the large price movement they still found evidence (though less significant than in the previous two cases) that insiders demonstrated skill in forecasting large price changes.

The second test performed by L&N was concerned with determining the significance of the relationship between intensive insider trading and subsequent price movements in stock prices. To gain further information regarding the possibility for outsiders to profitably utilize insider trading data, percentage changes in price were computed over a six month period beginning with the date on which the insiders' transactions were made public. The results indicated a strong relationship between insider trading and subsequent price movements. During months when the number of inside buyers exceeded the number of inside sellers by at least two, the probability was about .60 that the stock would outperform the DJIA during the six months following the disclosure date. Conversely, when the number of sellers exceeded the number of buyers by at least two, the probability was about .64 that the stock would perform worse than the DJIA during the six month period subsequent to disclosure.

As their third test, L&N attempted, unsuccessfully, to determine whether there existed companies in which the insiders were consistently more successful in predicting price movements than were insiders in general. Based on the results of their study, L&N proposed that the "SEC and the stock
exchange should be encouraged to provide faster and more complete dissemination of insider trading data to promote greater informational efficiency in the stock market. (2)

A 1974 study by Jeffery Jaffe [19] attempted to improve upon the methodological techniques used in previous studies and to resolve the conflicting opinions regarding the profitability of insider trading. His results took into account transactions costs, the relative risk (volatility) of different securities, and general market conditions. In response to Lorie and Niederhoffer's conclusions regarding the profitability of basing one's trading decisions on insider trading data, Jaffe also examined the information content of the Official Summary of Security Transactions and Holdings. His results were based upon the computed abnormal returns on securities subsequent to specific types of insider trading activity. The findings indicated that insiders did possess valuable information; furthermore, much of the information contained in these trades remained undiscounted by the date of their publication in the Official Summary. When transactions costs were considered, however, the majority of the holding period returns computed earlier could no longer be considered statistically large. In his concluding remarks, Jaffe professed that "the results indicating that trading on inside information is widespread suggest that insiders actually do violate security regulations." (3)

In 1976 Joseph E. Finnerty [13] published his study "Insiders and Market Efficiency" in which he tested the strong-form of the efficient market hypothesis. The strong-form assumes that all currently known information is fully reflected in prices; in other words, no individual can have above average expected returns because of monopolistic access to information. (4) He noted that the results of previous studies had served as sufficient tests of the
semi-strong form (i.e., all publicly available information being reflected in prices) but were unacceptable for testing the strong-form. The reason being that the samples used in the earlier works were selected on the basis of a great preponderance of insider trades in a single direction, thus the computed returns were larger than those expected for the "average" insider. To remove this bias, Finnerty tested the performance of the entire population of insiders who register their trades with the SEC. Not surprisingly, his results indicated that insiders were able to outperform the market by identifying both positive and negative situations within their corporation. This finding was incongruous with the assumptions made by the strong-form of the efficient market hypothesis.

Further research investigating the profitability of insider trading was presented in a 1979 study by Baesel and Stein [3]. Their work paralleled that of Jaffe and Finnerty with three modifications. First, the analysis in this work was performed using data from stocks on the Toronto Stock Exchange (TSE). Second, B&S compared the returns associated with the trading activity of two subgroups of insiders: bank directors and ordinary insiders. Finally, a randomly drawn control sample was included for purpose of comparison with the performance of insiders. The analysis yielded three important results.

First, both bank directors and ordinary insiders earned excess returns relative to an uninformed trading strategy (the control sample). This result was not in keeping with the strong-form of the efficient market hypothesis. Second, the premiums earned by the group of bank directors was significantly larger than those earned by ordinary insiders. Finally, the results were inconsistent with the semi-strong form of the efficient market hypothesis since the premiums did not accrue to the insiders until several months after the simulated trade—subsequent to the normal period before insider transactions data was released to the public.
The final three pieces reviewed are directed more toward examining the SEC's effectiveness in policing the market for insider trading abuses. The first is a 1974 article by Jeffery Jaffe [20] entitled "The Effect of Regulation Changes on Insider Trading." Given the results of previous studies which determined that insiders do possess valuable market information, Jaffe set out to compare the extent of their use of that information during time periods immediately before and after important regulatory events. The three events chosen were (1) the Cady, Roberts decision (1961), (2) the Texas Gulf Sulfur indictment (1965), and (3) the Texas Gulf Sulfur decision (1966). (See Appendices 2 and 3 for descriptions of these events.) In particular, the study examined profitability and volume changes in insider trading immediately following these events.

The findings indicated that the changes in the average profitability of insider trades after the case law events were not significantly different from the average profitability before the events. Furthermore, Jaffe's use of monthly as well as daily market volume figures did not indicate that the regulatory events had any effect on the magnitude of insider trading. Finally, there was no evidence suggesting that the three events had any cumulative effect on the profitability of insider trading. Jaffe concluded that his results "do not suggest that the recent regulation of insiders is effective, casting doubt on the value of this regulation to society."(5)

Keown and Pinkerton [22], in their 1981 study, approached the question of regulatory effectiveness from a different angle. Their concern was with the possible leakage of unannounced takeover plans, due to insider trading, on daily stock price movements in advance of the planned takeover announcements. Unlike most previous studies of insider trading, this one drew its data from Standard and Poor's Daily Stock Price Record. It was pointed out that since
nearly all earlier studies obtained their data from the SEC's Official Summary, the observations and conclusions of these studies applied only to registered insiders. K&P held the opinion that a thorough analysis of regulatory effectiveness must not ignore undisclosed trades based on inside information (i.e., illegal insider trading). Therefore, their test involved an examination of daily holding period returns for the stocks of 194 successfully acquired firms on 157 trading days surrounding the announcement date.

The findings indicated significant increases in volume occurring as early as three weeks prior to announcement. It was noted, however, that these rises in volume were not a result of trading by registered insiders. According to K&P, the dramatic increases in volume in conjunction with the absence of trading by registered insiders suggested that insiders may have frequently traded through third parties to avoid detection.

Concerning abnormal price movements, the results suggested the existence of substantial trading based on the unreleased takeover plans beginning approximately one month prior to the announcement date. During the final five to eleven days immediately preceding the announcement, there was "uncontrolled abuse of Rule 10b-5."(6) K&P observed that approximately half of the total price movement attributed to the merger information occurred prior to the announcement date. The remaining market reaction occurred on the day of disclosure with a much smaller price movement occurring the following day. This apparent lag in adjustment was attributed to the fact that some announcements were made subsequent to the market's close; hence, K&P's findings supported the semi-strong form of the efficient market hypothesis. The conclusion was made that "impending merger announcements are poorly held secrets, and trading on this nonpublic information abounds."(7)
The most recent paper dealing with insider trading is Penman's [38] "Insider Trading and the Dissemination of Firms Forecast Information." The purpose of this work was to establish whether a link exists between insider trading and information dissemination. Given that Rule 10b-5 prohibits insider trading on the basis of nonpublic information, this study could also be seen as a test of the current effectiveness of the SEC's enforcement policies. Unlike the previous study by Keown and Pinkerton, Penman's transactions data included only registered trades (i.e., those contained in the Official Summary). The analysis was performed in two stages. First, there was an examination of the association between the timing of insiders' trades and subsequent earnings forecasts. Second, measures were made of the abnormal returns to insiders as a result of their trading activity prior to these disclosures.

To determine whether insiders timed their trades relative to earnings forecast announcements, Penman first computed average daily abnormal security returns for a sample of 550 individual firms during periods of time before and after announcements of corporate earnings forecasts. These abnormal returns represented estimates of the returns one would capture from basing trading decisions on the forecast information. Next, he pooled this data and computed the 'on average' abnormal return one would receive from trading on any given day surrounding a typical earnings forecast announcement. Also, for individual firms the magnitude of the daily abnormal returns was examined for the three day period leading up to and including the announcement date. Penman then ranked these firms based on the size of their returns: firms at the top had the highest abnormal returns while firms at the bottom had the lowest. This list of firms was then grouped into twenty nonoverlapping portfolios. If insiders timed their trades relative to the forecast announcements, one would
expect to see an abundance of insider purchases (positive net purchases) prior to announcement in the high ranking portfolios and an abundance of sales (negative net purchases) prior to announcement in the low ranking portfolios.

Within each portfolio, insider trading activity was examined during a nine month period surrounding each earnings forecast announcement. This period consisted of the month in which the announcement was made (month 0) and the four months preceding (-1 to -4) and following (1 to 4) this month. For each of these months, the net number of insider purchases (purchases minus sales) was computed for each firm; this number was then averaged over all firms contained in each portfolio to obtain the mean net purchases per month. For each portfolio, Penman compared the mean net purchases during a given period prior to the announcement with the mean net purchases in the corresponding period subsequent to the announcement. For instance, associated with a forecast announcement resulting in an upward revaluation of a firm's stock, one might expect to see a larger number of net purchases in month -1 than in month 1.

Penman found that in 15 of the 20 portfolios, mean net purchases in month 0 before the forecast date relative to those in month 0 after the forecast date were in the direction predicted by the sign of the mean abnormal return. Furthermore, of the five exceptions, only one fell in the top six or bottom six portfolios where one would expect the pattern to be the strongest. After repeating this analysis for the other four months, Penman noted that "while purchases and sales with respect to good news forecasts appear to take place close to the forecast date, trading with respect to bad news is only evident two months out from the forecast month." (8)

Penman's findings indicated that corporate insiders do time their trades in relation to upcoming earnings forecasts in order to capture the value of the
information contained in those announcements; and that there exist significant abnormal returns associated with trading information.

Insiders apparently respond to the incentive to take market positions on the basis of information they publicly announce. The disincentives of a potential SEC investigation are not sufficient to eliminate this incentive....(9)

The implications of the studies just reviewed can be summarized as follows. Corporate insiders can and do execute profitable trades based upon the valuable information which they possess. Some of these trades are made directly and disclosed to the SEC while others are made indirectly through third parties or through other methods; all, however, are in violation of Rule 10b-5.

The apparent ineffectiveness of current enforcement policies can be attributed to a number of factors. Figuring prominently among these are the high costs of enforcement and the difficulties in proving that given behavior constitutes a violation. The existence of such limitations has dictated a selection policy which gives priority to cases in which there exists significant evidence of wrongdoing. In other words, only the most egregious violations ever risk detection or investigation. This reasoning is supported by the findings of the studies just examined.

First, recall that the results of Keown and Pinkerton's analysis suggest that the SEC is successful in reducing the incentives for insiders to trade on nonpublic information of major significance, particularly merger or takeover announcements.

...76 percent of the firms studied experienced no open market purchases or sales by registered insiders during the month prior to the announcement date. Further, only 12 percent of the sample firms had positive net open market purchases during the month prior to the announcement date.(10)

Penman's findings, on the other hand, indicate that where events of non-major significance are concerned—in this case, announcements of annual
earnings forecasts—the incentive for insiders to trade based on this information is not significantly diminished by the possibility of an SEC investigation.

The empirical evidence suggests that the SEC has developed a set of priorities regarding the current direction of its enforcement activities. Indeed, the head of the SEC's disclosure policy office has stated, "The abuse the agency is trying to curb is very flagrant." (11) These priorities have arisen due to enforcement difficulties associated with insider trading regulations. Thus,

The investigators are forced to concentrate on cases in which the offence seems particularly gross, or in which the offenders are immediately obvious, or in which there are plenty of good clues, or in which they have been tipped off. (12)

This policy allows for most trades by registered insiders to go unchecked, thus providing incentives for violating Rule 10b-5. In particular, one might expect to find a preponderance of 10b-5 violations associated with events which result in relatively small revaluations in security prices—for instance earnings or earnings forecast announcements as opposed to merger or takeover announcements. For reasons which will be pointed out in Chapter 6, this study will examine insider transactions associated with earnings announcements. First, however, given what has been learned about the nature and enforcement of insider trading regulations thus far, it is necessary to assess the possibilities for an insider to profitably trade based upon his special information with little risk from both a legal and financial standpoint.
FOOTNOTES TO CHAPTER 4

(1) Lorie and Neiderhoffer [27], p. 35.
(2) Ibid., p. 53.
(3) Jaffe [19], p. 428.
(4) Fama [10].
(5) Jaffe [20], p. 115.
(6) Keown and Pinkerton [22], p. 863.
(7) Ibid., p. 866.
(8) Penman [38], p. 492.
(9) Ibid., p. 502.
(10) Keown and Pinkerton [22], p. 863.
(11) Blustein [5].
(12) Louis [28], p. 78.
The *prima facie* case for regulation of insider trading is based upon the perceived harm, both individual and social, arising from this practice. Assuming the perceived harm exists, then successful elimination of the basic informational inequalities between corporate insiders and public investors requires that two conditions be satisfied. First, regulations must be accurate in the sense that they must prevent all types of insider trading activity which would be considered harmful. Second, the restrictions must be enforced to the point where the marginal enforcement costs are no greater than the marginal loss from more insider trading.

It is the thesis of this paper that the current regulations of insider trading are neither accurately stated nor adequately enforced, thus enabling insiders to earn excess returns as a result of their informational advantage while subjecting themselves to negligible amounts of legal and downside risk. Legal risk shall be defined as the probability that a violation is detected by the regulators and criminal charges filed, and downside risk as the probability that the actual return on a market position will be negative. Insiders can obtain excess returns through utilizing trading strategies which involve a violation of the full disclosure requirement of Rule 10b-5 and the circumvention of various provisions of Section 16 of the 1934 Securities Exchange Act.

Based upon the findings of the previous two chapters, this portion of the paper will present several trading guidelines which enable insiders to significantly reduce the amount of legal risk associated with a violation of Rule 10b-5. Additionally, three trading strategies will be described which
allow for major reductions in downside risk through circumventing Section 16(b): the short swing rule. Use of one of these trading strategies in conjunction with the aforementioned guidelines represents a powerful device for skirting the federal insider trading laws. It should be noted that the trading techniques described in this study apply only to registered insiders trading aboveboard, i.e., those who disclose their transactions to the SEC.

A set of guidelines for reducing the legal risk associated with insider transactions must be based upon the enforcement tactics currently employed by the regulators. Recall from Chapter 3 that the SEC examines the timing and volume of trades by registered insiders prior to public disclosure of pertinent information. The greater the consequence of the information in terms of price revaluation, the closer the SEC scrutinizes the pre-disclosure trades. As a further deterrent, the Stock Watch Department of the New York Stock Exchange follows, throughout the trading day, the price and volume movements of all 'big board' stocks. The amount of legal risk associated with a given insider transaction can thus be defined as a function of (1) the depth of the market for the insider's corporation's securities; (2) the volume of the insider's trade relative to normal volume patterns; (3) the timing of the trade relative to the date on which information is publicly disclosed; and (4) the importance of the information upon which the trade is based.

Market depth is defined as the existence of a large number of buyers and sellers. Ceteris paribus, the market depth for a given security is inversely related to the price elasticity of demand for that security. On the other hand, the volume of a transaction in a certain stock is directly related to the effect of that transaction on the stock's price. Thus, an insider runs a greater risk of having his trades spotted by the Stock Watch computers if he is trading in a shallow market or in large quantity.
The timing of trades merits consideration since the shorter the period of time between the insider's trade and the subsequent date of disclosure, the greater the likelihood of an SEC investigation. Finally, an insider is more likely to come under investigation if his trades are based on information of major significance than if his trades are based on less significant events. Consequently, an insider wishing to trade based on his knowledge of nonpublic information may reduce his legal risk by loosely adhering to a set of guidelines based upon current regulatory enforcement tactics. These guidelines can be stated as follows (in descending order of importance).

1. Trade on information of lesser significance.
2. Trade well in advance of the date on which relevant information is made public.
3. Keep trading volume relatively low or trade in relatively deep markets.

Due to their interdependent nature, it is possible for an insider to ignore one or more of these guidelines and still maintain a low level of legal risk.

The conditions just presented enable the inside trader to reduce the legal risk associated with a violation of Rule 10b-5. However, the desirability of a given amount of legal risk can only be assessed through consideration of the relative amount of downside risk. The existence of this tradeoff necessitates an examination of downside risk from the perspective of corporate insiders.

To better understand downside risk, imagine a securities market in which insiders are permitted to trade freely. In this scenario no legal risk exists, and therefore, insiders attempt to minimize downside risk. This can be accomplished, in part, through trading on information of major significance and trading in large quantity. Assuming the insider has correctly predicted the market's reaction to his information, there seems to be little chance that
his trade could be unprofitable. However, all transactions involve some amount of investment risk; i.e., there is always some probability that the actual return on a market position will diverge from the expected return. As long as there exists some amount of investment risk, the possibility of a negative return remains. Nevertheless, investment risk can be reduced, ceteris paribus, by decreasing the length of the holding period. Thus, in the unregulated market, the insider can minimize his downside risk by holding his market position for a length of time no longer than the period required for the information to be fully incorporated in price. For instance, if the insider possesses positive, nonpublic information he will disclose the information immediately after he has purchased shares of his corporation's stock and proceed to sell those shares as soon as the information released has been impounded in the stock's price. This scheme will minimize the insider's vulnerability to price fluctuations not related to the information that was released. Therefore, when insiders are permitted to trade freely, two tactics can be employed to minimize downside risk: (1) trade on information of major consequence; and (2) minimize the holding period.

With the regulation that exists in today's securities markets, adherence to these two guidelines will result in egregious violations of federal insider trading proscriptions. Both tactics serve to increase the amount of legal risk associated with 10b-5 violations; furthermore, the second tactic is also a violation of Section 16(b) which prohibits short swing transactions. It has previously been shown that Rule 10b-5 is not effectively enforced, but that violations of Section 16(b) are easily detected. Therefore, unless an insider can find a loophole in 16(b), he will be unable to reduce his downside risk without similarly increasing his legal risk. A closer examination of this rule is in order.
Section 16(b) of the 1934 SEA reads, in part, as follows:

For the purpose of preventing the unfair use of information which may have been obtained by [an officer, director or principal stockholder] by reason of his relationship to the issuer, any profit realized by him from any purchase and sale, or and sale and purchase, of any equity security of such issuer...within any period of less than six months...shall inure to and be recoverable by the issuer....(1)

Recall that for a regulation to successfully achieve its desired purpose, it must be both effectively enforced and accurately stated. As was seen in Chapter 3, 16(b) violations by registered insiders are detected by computer; thus an attempt at violating this provision would likely be unsuccessful. Though this rule appears to be effectively enforced, it is deficient in the sense that it fails to prohibit the use of trading strategies which would be considered violations of its original intent. That is, the opportunity exists for insiders to follow trading schemes which remain faithful to the language but not the purpose of Section 16(b).

Recall that for the downside risk of a position to be eliminated, it is at least necessary to remove all investment risk; and the most obvious way to remove investment risk is to close out that position, i.e., sell and realize the current gain (or loss). Theoretically, one could also remove all investment risk by 'locking in' (deferring) a current gain until sometime in the future. In reality, no such investment instrument exists which would enable an investor to do this. Nevertheless, through utilizing an option writing strategy, an investor can defer a current gain to a future date with an almost total reduction in investment risk and a proportional decrease in downside risk. (2) Suprisingly, Section 16 contains no proscriptions regarding this type of trading behavior, and thus, it appears that the short swing rule can be circumvented.

Three trading schemes for use by registered insiders will now be
presented. Each makes use of stock option strategies to skirt Section 16(b) and thereby reduce the insider's amount of downside risk. Since there is no explicit violation of 16(b), use of these strategies will not increase legal risk. The first two schemes are designed to take advantage of positive inside information, while the third enables the insider to circumvent Section 16(c) by profiting from negative information.

The first strategy allows the insider to lock in an unrealized stock gain by writing an in-the-money call option on that stock. (The term 'lock in' will be used even though there remains some amount of investment risk.) This strategy is not a violation of Section 16(b) since both positions (the stock and the call) are held for at least six months. The initial position (the purchase of stock) takes place sometime after the insider acquires knowledge of the positive, nonpublic information. The insider can reduce his downside risk by making this purchase closer to the announcement date; however, the resulting rise in legal risk must be mitigated through one of the other three factors (significance of information, trading volume, or market depth). On the date of public disclosure, the stock's price will immediately rise to reflect this new information. Ideally the insider would sell at this time in order to minimize his downside risk; however, to avoid a 16(b) violation he writes an in-the-money call option on the shares of stock he purchased prior to the announcement. Typically, there will be several in-the-money calls from which to choose. A call which is more deeply in-the-money will lead to a greater reduction in investment risk by more effectively locking in the unrealized gain. This implies diminished downside risk as well as upside potential. On the other hand, writing a call which is not so deeply in-the-money will allow for further upside gains though the downside risk is also increased.
Once the strike price has been chosen, the expiration date must be decided upon. To avoid a 16(b) violation, the option must expire no sooner than six months after it is written. Depending upon what date the insider wishes to write the call, he may have a choice between the intermediate and long term contracts or be forced to write the long term option. It is highly unlikely that the date signifying the end of the six month period will coincide with the expiration date. Thus after the six month period has elapsed, the insider may close out both positions by selling the stock and repurchasing the call. Alternatively, both positions can be held until the option expires. If the latter plan is chosen and the call is in-the-money on the date of expiration, then the call will automatically be exercised, i.e., the insider will be required to sell his shares. On the other hand, if the option is out-of-the-money (i.e., the strike price exceeds the stock price) on the expiration date, then the call will expire worthless and the insider may choose between keeping or selling his shares.

One question which may arise regarding this strategy is whether an insider would be held in violation of 16(b) in the unlikely event that the call option is exercised prior to the passage of the six month period, forcing him to sell his shares. The answer is no. According to Rule 16b-3, insiders are exempted from Section 16(b) in the case that they make delivery of shares of stock as payment for the exercise of an option. This is a result of the SEC's long held "view that transactions such as these do not readily lend themselves to the abuse of inside information and should not automatically be subject to the recovery provisions of Section 16(b)." (3) Ironically, the insider would actually benefit from exercise prior to the expiration date. A second explanation of Strategy 1 can be illustrated by the following example.
A is on the board of directors of XYZ Corporation. On April 5, 1980 A learns that the first quarter profits for XYZ rose to record levels, far exceeding analysts' predictions. Realizing that XYZ is currently undervalued by the market, A decides to make a stock purchase in advance of the impending increase in its price. On April 6 A purchases 500 shares of XYZ common at $50 per share; his initial investment is $25,000. XYZ releases its quarterly earnings report on April 14, and the price of XYZ stock jumps to $55 per share. A decides that the earnings news has been completely incorporated into the stock's price and wishes to lock in his unrealized profit of $5 per share. On April 15 A writes the XYZ October 45 calls currently selling for $14 ($10 of intrinsic value plus $4 of time value premium). For this he receives $7000. On October 21, 1980 (over six months later) A's call option expires. If on that day XYZ stock is selling for more than $45 per share, the option will automatically be exercised and A's 500 shares of XYZ stock will be called away at $45 per share. Alternatively, if XYZ is selling for $45 per share or less, then the calls will expire worthless and A will sell the stock at the prevailing market price. (It is assumed for the purpose of this illustration that A has no desire to hold the stock once the expiration date has passed.) Table 1 shows the profitability of this strategy given various prices for XYZ stock on the date of expiration. The corresponding profit graph is depicted in Figure 1.

The table reveals that A's position will remain profitable if XYZ stock sells for above $36 per share on the expiration date. The maximum profit of $9 per share (a total gain of $4,500) will be realized if XYZ stock is selling at or above $45. In a cash account, this trading technique would require an investment of $18,000 ($25,000 - $7,000). The write has a maximum profit potential of $4500. The potential return from this position can be
Table 1

Profit Table for Insider Trading Strategy 1

<table>
<thead>
<tr>
<th>XYZ STOCK</th>
<th>XYZ OCT 45 CALL</th>
<th>STOCK SOLD (CALLED) AT</th>
<th>STOCK PROFIT PER SHARE</th>
<th>CALL PROFIT PER SHARE</th>
<th>TOTAL PROFIT PER SHARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>0</td>
<td>30</td>
<td>-20</td>
<td>14</td>
<td>-6</td>
</tr>
<tr>
<td>35</td>
<td>0</td>
<td>35</td>
<td>-15</td>
<td>14</td>
<td>-1</td>
</tr>
<tr>
<td>36</td>
<td>0</td>
<td>36</td>
<td>-14</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>40</td>
<td>0</td>
<td>40</td>
<td>-10</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>45</td>
<td>0</td>
<td>45</td>
<td>-5</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>50</td>
<td>5</td>
<td>(45)</td>
<td>-5</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>55</td>
<td>10</td>
<td>(45)</td>
<td>-5</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>60</td>
<td>15</td>
<td>(45)</td>
<td>-5</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>65</td>
<td>20</td>
<td>(45)</td>
<td>-5</td>
<td>14</td>
<td>9</td>
</tr>
</tbody>
</table>
FIGURE 1
Profit Graph for Insider Trading Strategy 1

Profit or Loss ($1,000)

Price of Stock on Expiration Date
approximated as $4,500/$18,000, a 25 percent gain for the period during which the position was held (about 6 1/2 months). If the write were done in a margin account, the return would be considerably higher. Note that dividends paid by the underlying stock and commission charge have been ignored.

The second strategy involves writing an in-the-money put prior to the release of important information and subsequently writing an in-the-money covered call. This strategy implicitly assumes that the insider already owns enough shares in his corporation's stock to cover the call. This call must be covered in order to avoid a possible violation of Section 16(c) which prohibits all forms of short sales.

The only application of the short-selling provision to options was in the 1961 case of Silverman v. Landa. Here the court held that a registered insider who writes a call on shares which he already owns is not in violation of Section 16(c). This decision raises the question of whether writing a naked call would be considered a violation of the prohibition against short-selling. Though such facts were not before the court in the Silverman case, it was suggested by the SEC at that time that a violation would be present under such facts. Based on the Silverman decision, it would seem imprudent for an insider to write a call option unless he owns shares sufficient to cover the option. The previous example can be used to illustrate Strategy 2.

On April 6, 1980 with XYZ stock selling for $50 per share, A writes the XYZ October 55 put on 500 shares. the put is currently selling for $8 ($5 of IV plus $3 of TVP) and A thus receives $4,000. On April 15, after the price of XYZ stock has risen to $55 per share, A writes an XYZ October 50 call against 500 shares of stock which he already owns. The call is currently selling for $8 ($5 of IV plus $3 of TVP), hence A receives an additional
$4,000. On October 21, the date of expiration, if XYZ stock is selling for more than $55, the put will expire worthless, but the call will be in-the-money and A will be obligated to sell 500 shares of XYZ common at $50 per share. If XYZ sells for $40 per share or less, then the call will expire worthless, but the put will be in-the-money. A will thus be obligated to purchase 500 shares of XYZ at $55 per share (which it will be assumed he then sells; alternatively, it can be assumed A repurchases the put just prior to assignment). If on the expiration date, XYZ stock is selling for more than $50 but less than $55 per share then both the put and the call will be in-the-money. In this case A will be obligated to purchase 500 shares at $55 and sell 500 shares at $50. The profitability of this trading strategy is tabulated in Table 2, and the corresponding profit graph is depicted in Figure 2.

Using Strategy 2, A will realize a profit upon expiration of the options as long as the underlying stock is priced between $39 and $66 per share. Furthermore, A will receive the maximum profit of $5,500 if XYZ happens to be selling for between $50 and $55 per share. This strategy can only be implemented through a margin account and since very little cash will be tied up, the potential returns are very large.

The third strategy enables the insider to profit from negative inside information through simulating a short sale. This strategy thus circumvents the Section 16(c) provision outlawing short sales. Strategy 3 requires that the insider write an in-the-money call (on shares which he already owns) prior to public disclosure of negative information regarding his corporation. When this information is disseminated, the price of his corporation's stock will fall resulting in a similar decline in the call premium. If the insider could buy back the call at this time he could realize a gain on that position. To avoid violation of 16(b), he instead writes an in-the-money put.
Table 2
Profit Table for Insider Trading Strategy 2

<table>
<thead>
<tr>
<th>XYZ STOCK</th>
<th>XYZ OCT 55 PUT</th>
<th>XYZ OCT 50 CALL</th>
<th>PUT PROFIT</th>
<th>CALL PROFIT</th>
<th>TOTAL PROFIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>20</td>
<td>0</td>
<td>-12</td>
<td>8</td>
<td>-4</td>
</tr>
<tr>
<td>39</td>
<td>16</td>
<td>0</td>
<td>-8</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>40</td>
<td>15</td>
<td>0</td>
<td>-7</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>45</td>
<td>10</td>
<td>0</td>
<td>-2</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>50</td>
<td>5</td>
<td>0</td>
<td>3</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>55</td>
<td>0</td>
<td>5</td>
<td>8</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>60</td>
<td>0</td>
<td>10</td>
<td>8</td>
<td>-2</td>
<td>6</td>
</tr>
<tr>
<td>65</td>
<td>0</td>
<td>15</td>
<td>8</td>
<td>-7</td>
<td>1</td>
</tr>
<tr>
<td>66</td>
<td>0</td>
<td>16</td>
<td>8</td>
<td>-8</td>
<td>0</td>
</tr>
<tr>
<td>70</td>
<td>0</td>
<td>20</td>
<td>8</td>
<td>-12</td>
<td>-4</td>
</tr>
</tbody>
</table>
FIGURE 2

Profit Graph for Insider Trading Strategy 2

Profit or Loss ($1,000)

Price of Stock on Expiration Date
There are several potential problems with this strategy. First, if the underlying shares which the insider already owns have been held for at least six months, he would be justified in simply selling those shares when he obtains the negative information. This tactic would enable him to avoid the commission costs involved in using Strategy 3. On the other hand, he is now prohibited by 16(b) from repurchasing those shares during the subsequent six month period; furthermore, he must forego any dividend payments made during that period.

An alternative to simply selling the stock when the bad news is received, would be to write a call on that stock in order to diminish the downside risk. The insider would be justified in doing this if he has not owned the stock for at least six months (and is thus prohibited from selling), or if he simply does not wish to forego any dividend payments. Both these two tactics allow the insider to avoid a loss, however, neither enables him to profit from his foreknowledge of a price decline.

Strategy 3 is the most profitable trading technique to employ if (1) the insider is prohibited from selling his stock; (2) the insider does not wish to forego any dividend payments; and/or (3) the insider feels the price decline will be relatively shortlived. For instance, if the insider locks in his profits on the call and the price of the underlying stock subsequently rises back to its original level, he will have profited from the option strategy while losing nothing on the underlying stock. Consider the following example.

A is on the board of directors of XYZ Corporation. On January 10, 1981 A learns that XYZ's fourth quarter earnings figures have dropped far below analysts predictions. The decline is due to unexpectedly high start-up costs for XYZ's newest production facility. A feels that the problems, though presently very serious, will be solved within several months. A owns 500
shares of XYZ common stock currently selling for $50 per share. Based on his knowledge of an impending decline in the price of XYZ stock A has three immediate choices available: (1) do nothing, (2) sell his 500 shares, and (3) write an in-the-money call on his shares. A rejects the do-nothing strategy as too risky. Though A has owned his shares for several years and is thus under no legal obligation to hold them, he rejects the sell strategy because he does not wish to forego the 2 1/2 percent quarterly dividend which XYZ pays on each share of stock. Consequently, A chooses to write an in-the-money call on his shares of stock. On January 11, A writes 500 October 45 calls currently selling at a premium of $10. For this he receives $5,000. (He sells the October calls, rather than the July calls, since he knows the earnings figures won't be released until after January 22 which is less than six months prior to the July expiration date.) The XYZ earnings figures are released on January 29, and XYZ stock closes that day at $45 per share. On January 30 A writes 500 XYZ October 50 puts each currently selling for $9. For this A receives an additional $4,500. On the expiration date, October 19, if XYZ is selling for more than $50 per share, the put will expire worthless, but the call will be in-the-money and A will be obligated to sell 500 shares at $45 per share. If XYZ is selling for $45 per share or less, then the call will expire worthless but the put will then be in-the-money. A will thus be obligated to purchase 500 shares of XYZ stock at $50 per share (which we will assume he then sells). Finally, if XYZ stock is selling for more than $45 but less than $50 per share, then both the put and the call will be in-the-money. In this event, A will be obligated to purchase 500 shares at $50 and sell 500 shares at $45. A's profits from this strategy are found in Table 3 and Figure 3.
Table 3
Profit Table for Insider Trading Strategy 3

<table>
<thead>
<tr>
<th>XYZ STOCK</th>
<th>XYZ OCT 45 CALL</th>
<th>XYZ OCT 50 PUT</th>
<th>CALL PROFIT</th>
<th>PUT PROFIT</th>
<th>TOTAL PROFIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>0</td>
<td>25</td>
<td>10</td>
<td>-16</td>
<td>-6</td>
</tr>
<tr>
<td>30</td>
<td>0</td>
<td>20</td>
<td>10</td>
<td>-11</td>
<td>-1</td>
</tr>
<tr>
<td>31</td>
<td>0</td>
<td>19</td>
<td>10</td>
<td>-10</td>
<td>0</td>
</tr>
<tr>
<td>35</td>
<td>0</td>
<td>15</td>
<td>10</td>
<td>-6</td>
<td>4</td>
</tr>
<tr>
<td>40</td>
<td>0</td>
<td>10</td>
<td>10</td>
<td>-1</td>
<td>9</td>
</tr>
<tr>
<td>45</td>
<td>0</td>
<td>5</td>
<td>10</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>50</td>
<td>5</td>
<td>0</td>
<td>5</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>55</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>60</td>
<td>15</td>
<td>0</td>
<td>-5</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>64</td>
<td>19</td>
<td>0</td>
<td>-9</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>65</td>
<td>20</td>
<td>0</td>
<td>-10</td>
<td>9</td>
<td>-1</td>
</tr>
<tr>
<td>70</td>
<td>25</td>
<td>0</td>
<td>-15</td>
<td>9</td>
<td>-6</td>
</tr>
</tbody>
</table>
FIGURE 3

Profit Graph for Insider Trading Strategy 3

Profit or Loss ($1,000)

Price of Stock on Expiration Date
Using this third strategy, A will realize a profit on the expiration date as long as XYZ stock is priced between $31 and $64 per share. Furthermore, A will receive a maximum profit of $7,000 if XYZ happens to be selling for $45 to $50 per share.

This chapter has presented three trading strategies which, if used in conjunction with the guidelines for reducing legal risk, appear capable of skirting existing insider trading regulations. The question which now arises is whether registered insiders are actually practicing one or more of these trading techniques. Designing a methodology which will provide an answer to this question is the problem which will now be addressed.
FOOTNOTES TO CHAPTER 5

(1) Goldberg [15], p. 106.

(2) For a discussion of options and option strategies, see Gastineau [14] or McMillian [34].

(3) SEC Docket [47], p. 890.

(4) Goldberg [15], p. 127.
The profitable use of trading strategies 1, 2, and 3 by registered insiders may involve a violation of Rule 10b-5 in addition to the circumvention of various provisions of Section 16. Consequently, evidence that these trading methods are being successfully employed provides sufficient proof that the existing federal regulations of insider trading are not accurately stated. Under some conditions this evidence may also imply that the regulations are not adequately enforced. Designing a methodology which will provide the greatest probability of locating this evidence (if it exists) given the relevant time and budget constraints is the problem addressed in this chapter.

Throughout this paper, it has been implicitly assumed that insiders are risk averse. This implies that registered insiders are most likely to use one of the three trading strategies under conditions where their legal risk is relatively small. Recall that legal risk is reduced by (1) trading on less significant information, (2) trading well in advance of public disclosure, (3) trading on low volume and (4) trading in deep markets. The first and fourth factors provide a basis for determining where and relative to what events the anticipated types of trading behavior are most likely to be observed. The second factor is problematic since it enlarges the time period which must be searched.

The issue of depth is an important one because all three of the proposed trading strategies involve option transactions. Markets for put and call options are characteristically less deep than the corresponding markets for stock. Furthermore, during the period for which data on registered insider
transactions is available, options trading was less popular than it is today. Therefore, attention must be focused specifically on insider trading activity in corporations having relatively deep markets for their put and call options during this period.

There are innumerable possible events which could occur to positively or negatively influence a corporation's future prospects, and the informed insider could choose to trade on any of these. Furthermore, he could execute his initial transaction at any time subsequent to his obtaining the relevant information and prior to the time when that information is made public. Thus, two methodological problems must be confronted: (1) determining, in a non-arbitrary fashion, the types of news events which will be examined, and (2) minimizing the time period which must be scrutinized prior to each news event.

Examining unexpected earnings announcements provides an adequate solution to both methodological problems. First, earnings information, though potentially very valuable, will never carry the significance of merger or takeover information. For an insider trading aboveboard, use of this latter information will almost certainly involve a greater degree of legal risk than use of the former. thus it is more likely that one of the three trading strategies will be observed in relation to earnings announcements than in relation to more significant news events.

There is a second reason for choosing to focus on unexpected earnings information. Because earnings information pertains to a specific period of time, this information cannot be positively known by anyone prior to the end of the period in question. This is especially true when unexpected earnings information is considered. Hence, the insider who bases his trading decisions on unexpected quarterly earnings information will, in all likelihood, execute
his initial transaction at some point following the close of the quarter but before this information is made public. Since the date on which any past earnings announcement has been made is a known fact, the time period between the end of the quarter and the subsequent announcement of that quarter's earnings can be precisely identified. In other words, for any past quarterly earnings figures for any corporation it is possible to determine the exact time period during which an insider would have had to make his initial transaction if he were trading on that information. This fact significantly reduces the amount of transactions data that must be searched to locate the anticipated behavior. Furthermore, since the length of these time periods is relatively short (generally less than six weeks) and since all three proposed trading strategies have distinct characteristics, then the occurrence of trading behavior identical to that anticipated can be attributed to the insider's desire to profit from his knowledge of unreleased earnings information.

At this point, the specific procedure for selecting the corporations to examine will be presented. Since this study will focus on the period from January 1977 through December 1980, the decision should be based upon the state of the market during these four years. Specifically, whether or not a corporation is deemed acceptable for this study should pivot on whether or not there exists a relatively deep market for options to purchase or sell that corporation's stock during the period under study. One solution to this problem would be to choose corporations having the highest average daily option trading volume during the period under consideration. However, in reviewing the nature of the three strategies presented, it is apparent that this method would not necessarily provide a list of corporations whose insiders are most likely to use these strategies. Note that the trading
strategies involve writing in-the-money call and/or put options; furthermore, the deeper these options are in-the-money, the lower the downside risk (since the profits will be more securely locked in). Obviously, there is an advantage to having several in-the-money options from which to choose. Furthermore, no matter how deep the options market is for a particular stock, none of the three insider trading strategies can be used if no in-the-money options are offered. The fact that the converse of this statement is not necessarily true, suggests that an acceptable procedure for choosing the corporations to be examined in this study involves selecting those which typically have the largest number of strike prices offered on their option contracts during the 1977-80 period. Specifically, the original list of corporations was obtained by eliminating all companies which did not have at least three strike prices offered on their call options in three of the four years from 1977-80. This original list included 91 corporations.

Next, it is necessary to devise a method for compiling a list of unexpected earnings announcements occurring during the 1977-80 period for each of the previously selected corporations. The difficulty lies in defining 'unexpected.' It is important to keep in mind that the goal of this study is not to compose a list of unexpected earnings reports; rather, this list will only serve as a means for eliminating periods of time during which the trading strategies are less likely to be used. Thus devoting a considerable amount of time toward this one methodological point is unnecessary.

When a corporation's earnings figures are released, the information content of those figures will be incorporated in the price of that firm's stock. If the earnings figures are in line with analysts' predictions, then there will be very little information contained in the announcement which is not already reflected in the security's price. However, if the earnings
figures exceed or fail to meet analysts' estimated, then the price of the stock will rise or fall until the information contained in those figures has been fully incorporated in the price.

For the purpose of this study, a firm's quarterly earnings announcement will be defined as unexpected if there is a concurrent change in the price of a share of that corporation's stock of at least five percent. Due to the way earnings figures are announced, it is often impossible to determine the exact day on which the figures are released. For instance, if an earnings report is printed in Wednesday's Wall Street Journal, it cannot be determined whether the announcement was made before or after Tuesday's market closed. For this reason it is necessary that two day's trading activity be examined in connection with each earnings announcement: the day prior to publication and the day of publication. Specifically, a company's earnings figures will be considered unexpected if (1) there is a price change of at least five percent on the day preceding publication; (2) there is a price change of at least five percent on the day of publication; or (3) the net price change over the two day period is at least five percent.

For each of the 91 corporations on the previous list, all earnings announcements during the four-year period were examined. All corporations for which no unexpected earnings announcements were found were eliminated from the list. After this step was completed, 56 corporations remained with a total of 144 unexpected earnings announcements. Since the size of this list greatly exceeded the size which could be adequately studied, the decision was made to eliminate corporations until a minimum of twenty corporations and fifty unexpected earnings announcements remained. It was desirable to choose a method of elimination which would retain those announcements which offered the greatest potential for using one of the three strategies. This was
accomplished by computing the total number of call option strike prices offered by each corporation over the four year period. Firms offering the fewest number of strike prices were eliminated until further eliminations would result in violation of the desired minimums. The final list contains 23 corporations and 61 unexpected earnings announcements.

For each unexpected earnings announcement on this final list, it is necessary to determine a set of time periods in which trades would have occurred if one of the proposed strategies were being utilized by the insider. Furthermore, it is possible to determine the types of trades which are expected to occur in each of the time periods. It is now necessary to describe in detail what these time periods and the corresponding expected trades will look like for each trading strategy.

Trading Strategy 1 involves the purchase of common stock before the earnings announcement, the writing of an in-the-money call following the announcement, and the subsequent disposition of stock through exercise of the call on the expiration date (which is at least six months after the call was written). It has been implicitly assumed that the call is in-the-money upon expiration; this need not be the case. If the call expires out-of-the-money, then the insider may or may not choose to sell the underlying stock once the expiration date has passed. At first blush this observation seems to introduce some complications into the methodology. For instance, if a sale of the stock is not observed on or shortly after the expiration date of the call, is it possible that trading strategy 1 was not in fact being used? The answer to this question is no. In fact, it is not necessary that disposition of the stock be observed: if the call expires in-the-money, then the stock will undoubtedly be sold due to exercise; it is not necessary to observe this to know it has happened. On the other hand, if the call expires worthless, then
the insider's decision regarding whether or not to sell the stock will depend upon (among other things) his expectations of the firm's prospects at that time. If the insider chooses not to sell the stock, this does not imply that he has not used or not benefitted from trading strategy 1.

The significance of all this from a methodological perspective is that in order to identify a particular insiders' trading behavior as strategy 1, it is not necessary to observe the disposition of the two positions (i.e., exercise of call or worthless expiration of call and sale of stock).

Now, if it is unnecessary to observe any transaction on or after the expiration date of the call in order to conclude that strategy 1 has been used, then what of the period between the writing of the call and that call's expiration date? It can be argued that it is also unnecessary to observe any of the insider's transactions during this period. It has already been pointed out that the call's expiration date is at least six months after the date on which it is written. (If this is not the case, then the insider will have violated Section 16(b) upon expiration of the call.) During the six month period immediately following the call transaction, the insider must not purchase a call or sell stock in his corporation. If he does then he will have violated Section 16(b) and will have any profits disgorged. Furthermore, any other (legal) transactions which the insider makes in his corporation's securities during these six months (e.g., purchasing more stock, writing additional calls, etc.) can be considered independent of his strategy 1 position and thus unimportant.

It is now necessary to examine the period of time after the first six months have passed but prior to the call's expiration date. During this period the insider is free to make any trades he wishes without violating the short swing rule. If he decides to sell his stock and buy back the call prior
to expiration, then he will still realize a profit from strategy 1 (though this will involve commission costs on two transactions rather than one).

Insofar as the methodology is concerned, this all boils down to the fact that any transactions the insider makes subsequent to writing the call can be considered independent of his strategy 1 position and hence they need not be observed. In other words, it is only necessary to observe two things in order to determine that an attempt is being made on the part of the insider to circumvent the short swing rule through strategy 1:

1. The insider must have purchased shares of stock prior to the quarterly earnings announcement but subsequent to the close of the quarter in question.

2. The insider must have written an in-the-money call within five trading days following the earnings announcement. The expiration date of this call must be at least six months subsequent to the date of purchase.

Notice that in searching for the date on which the call was written (requirement 2), only the five trading days immediately following the earnings announcement are scrutinized. Though the information contained in the earnings figures should be incorporated in the stock's price on the date of announcement (assuming the semi-strong form of the efficient market hypothesis holds), the insider might not write the call for several days subsequent to the announcement.

Similar arguments to those made regarding the necessary observations required to identify an insider's use of trading strategy 1 can be applied to trading strategy 2. Thus the type of trading behavior which is expected if an insider is using strategy 2 can be summarized as follows:

1. The insider must have written an in-the-money put prior to the quarterly earnings announcement but subsequent to the close of the quarter in question. The expiration date of this put must be at least six months subsequent to the date of purchase. (It is expected that this option will have the same expiration date as the option written following the earnings announcement.)
2. The insider must have written an in-the-money call within five trading days following the earnings announcement. The expiration date of this call must be at least six months subsequent to the date of purchase.

Finally, the observed behavior for trading strategy 3 is presented below:

1. The insider must have written an in-the-money call prior to the quarterly earnings announcement but subsequent to the close of the quarter in question. The expiration date of this call must be at least six months subsequent to the date of purchase. (It is expected that this option will have the same expiration date as the option written following the earnings announcement.)

2. The insider must have written an in-the-money put within five trading days following the earnings announcement. The expiration date of this put must be at least six months subsequent to the date of purchase.

Insiders are required to disclose their trades on the SEC's Form 4, entitled "Statement of Changes in Beneficial Ownership of Securities." The insider must file this form within ten days after the month in which any change in beneficial ownership of securities has occurred. These forms provide the source for all data used in this study. Any stock purchased or sold by the insider will be recorded in Table I, while any options transactions will be reported in Table II.

Appendix 1 contains 3 photocopied Form 4's (two pages each). The first two pages represent how trading strategy 1 might appear on a Form 4 filing with the SEC. Note that the information recorded on this form corresponds to the example presented earlier involving insider A of the XYZ Corporation. The second Form 4 represents A's use of strategy 2, and the third Form 4 illustrates A's use of strategy 3. Though in each case both trades appear on the same filing, this need not occur in actual practice.

To determine whether Section 16(b) is being circumvented along with violations of Rule 10b-5, Form 4's will be examined during the period from 1977 through 1980. The specific Forms examined will be those which correspond to periods of time surrounding unexpected earnings announcements.
In particular, relative to each unexpected earnings announcement, there exists a corresponding time period during which one might expect to observe the use, by insiders, of one or more of the three strategies. (The list of unexpected earnings announcements is given in Appendix 4, while Appendix 5 contains a list of the Form 4's corresponding to these announcements.) The statistic which will be collected is the fraction of all insiders trading during all relevant time periods who made use of one of the three strategies. Conclusions and policy implications will be drawn based upon the magnitude of this statistic.
Examining the Form 4 Statements as detailed in the previous chapter yielded no evidence of insiders' use of the proposed trading strategies. Furthermore, there were no instances of insiders writing options (either puts or calls) during the relevant time periods. There are four possible explanations for this absence of significant findings.

The most obvious explanation is that the proposed trading strategies are not as profitable as pure stock transactions. That is to suggest that an insider who follows strategy 1 would, in the long run, be worse off than an insider who simply purchased stock, held it for six months, and then sold. The latter strategy will henceforth be referred to as a 'buy-and-hold' strategy. The plausibility of this explanation will now be tested.

For each of the 44 positive unexpected earnings announcements listed in Appendix 4, a comparison can be made between the returns from using strategy 1 and the returns from using a buy-and-hold strategy. To allow for comparability, several simplifying assumptions are needed.

**Strategy 1 Assumptions**

1. On the first trading day following the end of the quarter, an insider purchases 500 shares of stock at that day's closing price.

2. Following the five percent price rise associated with the earnings announcement, the insider writes call options on 500 shares of stock. He chooses the call which is nearest to but not less than ten points in-the-money. If no calls are offered which are at least ten points in-the-money, then he writes the call which is most deeply in-the-money. The expiration date chosen is the one which is nearest to but not less than six months in the future.

3. The insider holds both positions until the call's expiration date, at which time the stock is sold. If, upon expiration, the call is in-the-money, then the stock is sold at the strike price, otherwise the stock is sold at its closing price on the expiration date.
Buy-and-Hold Assumptions

(1) This insider purchases 500 shares of stock on the same day and at the same price as the insider using strategy 1.

(2) This insider sells his 500 shares on the same day as the strategy 1 insider; however, his selling price is always the closing price.

The internal rate of return on the buy-and-hold strategy can be computed by manipulating the present value formula:

\[ S_0 + C_{S0} = \frac{(S_2 - C_{S2})}{(1 + r_{BH})^{t_1}}. \]

Here, the present value of the buy-and-hold strategy, \( S_0 + C_{S0} \), Equals the future cash flow, \( S_2 - C_{S2} \), discounted at the rate of return \( r_{BH} \). Solving for \( r_{BH} \) yields,

\[ r_{BH} = \sqrt[\frac{t_1}{2}]{\frac{(S_2 - C_{S2})}{(S_0 + C_{S0})}} - 1, \]

where:

- \( r_{BH} \) = the internal rate of return compounded daily on the buy-and-hold strategy.
- \( t_1 \) = the number of days from the purchase date to sale date.
- \( S_0 \) = the purchasing price of 500 shares of stock.
- \( C_{S0} \) = commission charges on \( S_0 \). (The commission schedule is listed in Appendix 6.)
- \( S_2 \) = the sale price of 500 shares of stock.
- \( C_{S2} \) = commission charges on \( S_2 \).

To compute the internal rate of return for strategy 1, the following formula would have to be solved for \( r_{S1} \).
\[ S_0 + CS_0 = \frac{W_1 - CW_1}{(1 + r_{sh})^t} + \frac{\bar{S}_2 - CS_2}{(1 + r_{sh})^t} \]  

(*)

where:

\( r_{sh} = \) the internal rate of return on strategy 1.

\( t_1 = \) the number of days from the purchase date to the date on which the calls are written.

\( \bar{S}_2 = \) sale price of 500 shares of stock,
\( = S_2 \) if calls are out-of-the-money upon expiration.
\( = \) the strike price of the calls if they are in-the-money upon expiration.

\( CS_2 = \) commission charges on \( S_2 \).

\( W_1 = \) amount received for writing calls on 500 shares of stock.

\( CW_1 = \) commission charges on \( W_1 \).

Unfortunately, this equation cannot be solved explicitly for \( r_{sh} \). There is, however, an alternative to direct comparison of the returns associated with the two strategies. If \( r_{sh} \) is substituted for \( r_{sh} \) in equation (*), then it is possible to solve the right side for the present value of strategy 1 discounted at the internal rate of return on the buy-and-hold strategy. This figure can then be compared to the left side of the equation, \( S_0 + CS_0 \), which represents the present value of the buy-and-hold strategy. This approach is illustrated by the following relationship:

\[ S_0 + CS_0 \leq \frac{W_1 - CW_1}{(1 + r_{sh})^t} + \frac{\bar{S}_2 - CS_2}{(1 + r_{sh})^t} \]

If the right side of the above equation exceeds the left side, then this implies that for a given unexpected earnings announcement, the insider would have been better off using strategy 1 than using the buy-and-hold strategy.

These calculations were performed for 38 of the positive unexpected
earnings announcements. The results indicated that in 25 of the cases (approximately 66 percent), the return on strategy 1 would have exceeded the return on a buy-and-hold strategy. Although it appears that the buy-and-hold strategy is inferior to strategy 1, nothing has yet been said regarding the profitability of the buy-and-hold strategy relative to strategies 2 or 3.

Strategies 2 and 3 are essentially the same, thus, what applies to strategy 2 must also apply to strategy 3. Strategy 2 involves writing a put and subsequently writing a call. Both these transactions result in the writer receiving cash, thus making it difficult to compute a meaningful return. Nevertheless, it is fairly obvious that if strategy 2 were used in place of strategy 1, it would yield a higher return. This is because it yields cash flows which are similar in magnitude to those received for strategy 1, yet requires a much smaller cash commitment. Consequently, strategy 2 (as well as strategy 3) can be considered superior to a buy-and-hold strategy. Based on these results, the explanation that strategies 1, 2, and 3 are not as profitable as a buy-and-hold strategy seems implausible.

A second explanation for why the strategies were not observed is that perhaps insiders perceive the value of the punishment for using strategies 1, 2, or 3 multiplied by the legal risk as exceeding the expected utility from using a particular strategy. This implies one of two possibilities. First, it may be that these strategies were not observed in the periods examined because their use would have involved a 10b-5 violation, and that the legal risk associated with this violation exceeded that which the insiders were willing to bear. This is unlikely for two reasons. First, previous studies (see Chapter 4) have produced results which strongly suggest that the legal risk associated with 10b-5 violations is not sufficient to deter many insiders from trading based on inside information. Second, as pointed out in Chapter
5, the SEC has developed a set of priorities which give relatively little weight to enforcing Rule 10b-5 as it pertains to events such as earnings announcements. Penman's [38] findings also support this conclusion. Hence, for these two reasons, it appears unlikely that the legal risk associated with a 10b-5 violation is, by itself, sufficient to deter all insiders from using strategies 1, 2, or 3.

The second possibility suggested by this explanation is that when the perceived legal risk associated with writing the options is combined with the legal risk associated with the 10b-5 violation (occurring after the initial transaction), the resulting probability of detection exceeds that which the insiders are willing to bear. In other words, insiders perceive there to be some legal risk associated with writing an option after an earnings announcement is made. Certainly there is no 10b-5 violation, since this transaction occurs after the earnings information is made public. Furthermore, there is no 16(b) violation as was pointed out in Chapter 5. However, despite the fact that the legal risk associated with a 16(b) violation is zero when these strategies are used, insiders may perceive this risk to be nonzero. Thus, one plausible explanation is that insiders do not realize that strategies 1, 2, and 3 do not involve violations of Section 16(b).

A third explanation for why use of the trading strategies was not observed is that they are either too involved or too difficult to understand. A test to determine whether this explanation is reasonable would be to examine the transactions of insiders in the securities of other corporations. If the test produced no evidence of insiders using strategies 1, 2, or 3 when they traded the securities of other firms, then this explanation could not be rejected.
A fourth explanation is that insiders who are knowledgable enough about insider trading regulations and stock options to come up with strategies 1, 2, or 3, are probably knowledgable enough to circumvent the entire disclosure process. That is, a shrewd insider could easily trade through a third party the day before an announcement, and trade again the day after, failing to disclose either transaction to the SEC. The only clue left behind by this strategy is an increase in trading volume, and this trace can easily be covered by making small trades at discrete intervals. Even when the SEC notices an increase in trading, major problems remain. According to Dooley [9], once this happens,

the commission must be prepared to scrutinize carefully trading records to learn the identities of purchasers, to devise criteria to winnow the suspicious trades, to search that list to see whether any patterns or other indications of relationships emerge that demonstrate possible access to inside information, and to interview the purchasers and others to determine whether such access in fact existed and whether the restricted information probably was conveyed and acted upon. The Commission must go through this tedious process before it can decide whether an enforcement action would be worthwhile. (2)

This chapter has presented three plausible explanations for why insider usage of trading strategies 1, 2, or 3 was not observed. The first is that insiders wrongly perceive these strategies to involve violations of Section 16(b). This perceived legal risk, when added to the legal risk associated with a 10b-5 violation exceeds the level of legal risk insiders are willing to bear in order to obtain the profits connected with the use of these strategies. The second explanation is that use of these trading strategies is too complex to understand or too time consuming to warrant their use. Finally, it was proposed that perhaps insiders who are perceptive enough to consider using these strategies would opt for a strategy of nondisclosure. That is, they would find it more profitable and less tedious to simply trade through a third party or Swiss bank account and reap even greater returns.
FOOTNOTES TO CHAPTER 7

(1) Six of the 44 positive announcements were excluded. Three announcements required price data from February, 1980. This data was unavailable. Three other announcements exhibited a fall in price between the stock purchase date and the date on which the call was to be written. Returns were not computed for these since it was assumed that insiders would have no desire to lock in a loss using one of the trading strategies.

(2) Dooley 9, p. 19-20.
This study has sought to determine the effectiveness of current federal insider trading regulations—specifically, Section 16 of the 1934 SEA and Rule 10b-5 promulgated in 1942. It was assumed that the effectiveness of such proscriptions is conditional upon the extent to which they are enforced and the manner in which they are stated.

Due to the ambitious nature of Rule 10b-5, the SEC's enforcement efforts have been hampered by two fundamental weaknesses. First, the detection of 10b-5 violations has become an increasingly frustrating task despite the aid of sophisticated computer systems employed by the SEC and the self-regulated security exchanges. It is apparent that various tactics exploited by persons possessing inside information have enabled a large proportion of violations to go undetected. Second, even when possible 10b-5 violations are uncovered, additional obstacles have been encountered when attempting to obtain convictions. Although criminal convictions carry stiff penalties, successful prosecutions have been extremely rare. As a consequence, the relatively unexacting civil penalties have become the effective sanction for violating Rule 10b-5. The existence of these problems has forced the SEC to make compromises regarding the types of violations it pursues most vigorously. Specifically, it now appears that the SEC's enforcement efforts are directed almost exclusively toward detecting egregious violations which can be settled at relatively low cost through civil injunctions. Consequently, registered insiders wishing to control their level of legal risk can do so by altering the type of information upon which their trades are based and by adjusting the volume and timing of their transactions.
In addition to the difficulties associated with the enforcement of Rule 10b-5, major shortcomings are also apparent in the construction of Section 16. Specifically, this section does not explicitly prohibit the use of various trading strategies which would be considered harmful by proponents of the traditional viewpoint. This study presented three such trading strategies which employ the use of exchange traded stock options to lock in an 'on paper' profit thereby enabling registered insiders to legally circumvent Section 16(b). When used in conjunction with the guidelines for controlling legal risk, these tactics represent a powerful device for skirting federal insider trading laws.

A methodology was developed to determine whether these strategies were being employed by registered insiders in order to defer short swing profits accruing as a result of firm specific events. In this study the events chosen were unexpected earnings announcements.

An examination of the trading activity of registered insiders surrounding the dates of unexpected earnings announcements during the period from January, 1977 through December, 1980 yielded no evidence that the proposed trading strategies were being used. The most plausible explanation for this result is that the opportunity cost of utilizing these strategies is too great to justify their use. This excessive cost may be due to their relatively high degree of complexity and/or to the existence of alternative strategies capable of providing greater returns without exorbitant levels of financial or legal risk (e.g., trading through third parties or Swiss bank accounts).

The findings of this study are twofold. First, despite the fact that the use of the proposed trading strategies was not observed, they remain a practicable means for legally circumventing Section 16(b). Hence, it can be concluded that due to their failure to fully recognize the existence of a
commercial market for stock options, current regulations of insider trading are not accurately constructed. Second, although existing evidence strongly suggests that the SEC's enforcement policies allow a significant proportion of 10b-5 violations by registered insiders to go undetected, the findings of this study do not support this conclusion.

Based upon these results it becomes necessary to determine whether the existing regulations should be modified to explicitly prohibit the use of trading strategies such as those presented in this paper. One possible modification would be to simply invoke a flat prohibition on all trading in commercial stock options by registered insiders. Another less extreme measure would be to amend Section 16(b) making it illegal for registered insiders to execute more than one option transaction (regardless of the type of option and the type of transaction) during a six month period.

The principal costs of modifying the federal insider trading regulations would be incurred as a result of the additional enforcement measures taken to insure compliance with the new provisions. From a traditional standpoint, the benefits associated with such modifications would be those accruing as a result of eliminating the risk of wealth losses to insiders as a consequence of their use of the proposed trading strategies. However, the fact that this study uncovered no evidence that the strategies are being used by registered insiders suggests that the losses incurred by outsiders due to these tactics is negligible. If this is true, then it is likely that modifying the existing regulations would involve marginal enforcement costs which exceed the marginal loss from allowing the existing loopholes to remain. A further argument against modifying the existing regulations can be based upon the explanation that use of the proposed trading strategies was not observed because of the existence of more lucrative trading schemes. If this is indeed the case, then
resources should not be devoted to modifying the existing regulations until the SEC is able to capably enforce the regulations as they now stand.
APPENDIX 1

Insider Trading Strategies 1, 2, and 3
As They Would Appear on the SEC's Form 4:
Statement of Changes in Beneficial Ownership of Securities
U.S. SECURITIES & EXCHANGE COMMISSION  
Washington, D.C.  20549  

Statement of Changes in Beneficial Ownership of Securities  

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the  
Public Utility Holding Company Act of 1935 or Section 30(f) of the Investment Company Act of 1940  

1. NAME AND BUSINESS ADDRESS OF REPORTING PERSON

2. STATE OF INCORPORATION

3. IF AN AMENDMENT GIVE DATE OF STATEMENT AMENDED

4. NAME OF COMPANY

5. IRS OR SSN IDENTIFYING NUMBER OF REPORTING PERSON

6. STATEMENT FOR CALENDAR MONTH OF

7. DATE OF LAST PREVIOUS STATEMENT

8. RELATIONSHIPS OF REPORTING PERSON TO COMPANY

TABLE I. Securities Bought, Sold or Otherwise Acquired or Disposed of

Furnish the information required by the following table as to securities of the company bought or sold or otherwise acquired or disposed of by the reporting person during the month for which this statement is filed (See Instruction 5) and as to securities of the company beneficially owned, directly or indirectly, at the end of the month. However, transactions involving the acquisition or disposition of puts, calls, options or other rights or obligations to buy or sell securities of the company shall be reported in Table II.

<table>
<thead>
<tr>
<th>TITLE OF SECURITIES</th>
<th>DATE OF TRANSACTION</th>
<th>AMOUNT OF SECURITIES ACQUIRED</th>
<th>AMOUNT OF SECURITIES DISPOSED OF</th>
<th>CHARACTER OF TRANSACTION REPORTED</th>
<th>PURCHASE OR SALE PRICE PER SHARE OR OTHER UNIT</th>
<th>AMOUNT OWNED AT END OF MONTH</th>
<th>NATURE OF OWNERSHIP OF SECURITIES OWNED AT END OF MONTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYZ Common</td>
<td>4/16/80</td>
<td>500</td>
<td></td>
<td>Open Market Purchase</td>
<td>$50.00</td>
<td>3,750</td>
<td>Direct</td>
</tr>
</tbody>
</table>

REMINDER: THREE COPIES ARE REQUIRED. ONE SHOULD BE MANUALLY SIGNED AND SUITABLE FOR REPRODUCTION
TABLE II. Puts, Calls, Options and Other Rights or Obligations

If during the month for which this statement is filed the reporting person acquired or disposed of any put, call option or other right or obligation (all hereinafter referred to as "options") to buy or sell, or be required to buy or sell securities of the company, furnish the information required by the following table. (See Instruction 5) However, the acquisition or disposition of transferrable warrants issued by the company are to be reported in Table I. Options exempted by Rule 16a-6 need not be reported.

<table>
<thead>
<tr>
<th>Title of Securities Subject to Option</th>
<th>Date of Transaction (Instruction 9)</th>
<th>Nature of Option (Instruction 15)</th>
<th>Amount of Securities Subject to Option (Instruction 10)</th>
<th>Character of Transaction, if any, Reported (Instruction 12)</th>
<th>Purchase or Sale Price of Securities Subject to Option (Instruction 13)</th>
<th>Date of Expiration of Option (Instruction 14)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYZ Common Stock</td>
<td>4/15/80</td>
<td>Call, Obligation to Sell</td>
<td>500 shares</td>
<td>Sale of call</td>
<td>$45.00</td>
<td>Oct. 21, 1980</td>
</tr>
</tbody>
</table>

Explanation of items in tables:

NOTE: If the space provided in either table is insufficient, use a continuation sheet which identifies the table and columns to which it relates.

Date of Statement: May 4, 1980

Signature of Reporting Person: [Signature]
U.S. SECURITIES & EXCHANGE COMMISSION
Washington, D.C.  20549

Statement of Changes in Beneficial Ownership of Securities

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(f) of the Investment Company Act of 1940

<table>
<thead>
<tr>
<th>1. NAME AND BUSINESS ADDRESS OF REPORTING PERSON</th>
<th>2. STATE OF INCORPORATION</th>
<th>3. IF AN AMENDMENT GIVE DATE OF STATEMENT AMENDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAST FIRST MIDDLE</td>
<td></td>
<td>MO. DAY YR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. NAME OF COMPANY</th>
<th>5. IRS OR SS IDENTIFYING NUMBER OF REPORTING PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYZ Corporation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. STATEMENT FOR CALENDAR MONTH OF</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 1980</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. DATE OF LAST PREVIOUS STATEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MO. DAY YR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8. RELATIONSHIPS OF REPORTING PERSON TO COMPANY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director</td>
</tr>
</tbody>
</table>

**TABLE I. Securities Bought, Sold or Otherwise Acquired or Disposed of**

Furnish the information required by the following table as to securities of the company bought or sold or otherwise acquired or disposed of by the reporting person during the month for which this statement is filed (See Instruction 5) and as to securities of the company beneficially owned, directly or indirectly, at the end of the month. However, transaction involving the acquisition or disposition of puts, calls, options or other rights or obligations to buy or sell securities of the company shall be reported in Table II.

<table>
<thead>
<tr>
<th>1. TITLE OF SECURITIES</th>
<th>2. DATE OF TRANSACTION</th>
<th>3. AMOUNT OF SECURITIES ACQUIRED</th>
<th>4. AMOUNT OF SECURITIES DISPOSED OF</th>
<th>5. CHARACTER OF TRANSACTION REPORTED</th>
<th>6. PURCHASE OR SALE PRICE PER SHARE OR OTHER UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Instruction 8)</td>
<td>(Instruction 9)</td>
<td>(Instruction 10)</td>
<td>(Instruction 10)</td>
<td>(Instruction 12)</td>
<td>(Instruction 13)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

REMINDER: THREE COPIES ARE REQUIRED. ONE SHOULD BE MANUALLY SIGNED AND SUITABLE FOR REPRODUCTION

(OVER)
TABLE II. Puts, Calls, Options and Other Rights or Obligations

If during the month for which this statement is filed the reporting person acquired or disposed of any put, call option or other right or obligation (all hereinafter referred to as "options") to buy or sell, or be required to buy or sell securities of the company, furnish the information required by the following table. (See Instruction 5) However, the acquisition or disposition of transferable warrants issued by the company are to be reported in Table I. Options exempted by Rule 16a-6 need not be reported.

<table>
<thead>
<tr>
<th>1. TITLE OF SECURITIES SUBJECT TO OPTION (FOR SEC USE ONLY)</th>
<th>2. DATE OF TRANSACTION (Instruction 9)</th>
<th>3. NATURE OF OPTION (Instruction 15)</th>
<th>4. AMOUNT OF SECURITIES SUBJECT TO OPTION (Instruction 10)</th>
<th>5. CHARACTER OF TRANSACTION, IF ANY, REPORTED (Instruction 12)</th>
<th>6. PURCHASE OR SALE PRICE OF SECURITIES SUBJECT TO OPTION (Instruction 13)</th>
<th>7. DATE OF EXPIRATION OF OPTION (Instruction 14)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYZ Common Stock</td>
<td>4/16/80</td>
<td>Put, Obligation to Buy</td>
<td>500 shares</td>
<td>sale of put</td>
<td>$1.55.00</td>
<td>10/21/80</td>
</tr>
<tr>
<td>XYZ Common Stock</td>
<td>4/15/80</td>
<td>Call, Obligation to Sell</td>
<td>500 shares</td>
<td>sale of call</td>
<td>$1.50.00</td>
<td>10/21/80</td>
</tr>
</tbody>
</table>

Explanation of items in tables:

NOTE: If the space provided in either table is insufficient, use a continuation sheet which identifies the table and columns to which it relates.
U.S. SECURITIES & EXCHANGE COMMISSION
Washington, D.C. 20549

Statement of Changes in Beneficial Ownership of Securities

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the
Public Utility Holding Company Act of 1935 or Section 30(f) of the Investment Company Act of 1940

<table>
<thead>
<tr>
<th>1. NAME AND BUSINESS ADDRESS OF REPORTING PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAST</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. STATE OF INCORPORATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. IF AN AMENDMENT GIVE DATE OF STATEMENT AMENDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>MO.</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. NAME OF COMPANY</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYZ Corporation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. IRS OR SS IDENTIFYING NUMBER OF REPORTING PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. STATEMENT FOR CALENDAR MONTH OF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. DATE OF LAST PREVIOUS STATEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8. RELATIONSHIPS OF REPORTING PERSON TO COMPANY</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Instruction 4)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. AMOUNT OWNED AT END OF MONTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Instruction 10)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10. NATURE OF OWNERSHIP OF SECURITIES OWNED AT END OF MONTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Instruction 11)</td>
</tr>
</tbody>
</table>

TABLE I. Securities Bought, Sold or Otherwise Acquired or Disposed of

Punish the information required by the following table as to securities of the company bought or sold or otherwise acquired or disposed of by the reporting person during the month for which this statement is filed (See Instruction 5) and as to securities of the company beneficially owned, directly or indirectly, at the end of the month. However, transaction involving the acquisition or disposition of puts, calls, options or other rights or obligations to buy or sell securities of the company shall be reported in Table II.

<table>
<thead>
<tr>
<th>1. TITLE OF SECURITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Instruction 8)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. DATE OF TRANSACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Instruction 9)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. AMOUNT OF SECURITIES ACQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Instruction 10)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. AMOUNT OF SECURITIES DISPOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Instruction 10)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. CHARACTER OF TRANSACTION REPORTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Instruction 12)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. PURCHASE OR SALE PRICE PER SHARE OR OTHER UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Instruction 13)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. AMOUNT OWNED AT END OF MONTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Instruction 10)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8. NATURE OF OWNERSHIP OF SECURITIES OWNED AT END OF MONTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Instruction 11)</td>
</tr>
</tbody>
</table>

REMINDER: THREE COPIES ARE REQUIRED. ONE SHOULD BE MANUALLY SIGNED AND SUITABLE FOR REPRODUCTION

(OVER)
TABLE II. Puts, Calls, Options and Other Rights or Obligations

If during the month for which this statement is filed the reporting person acquired or disposed of any put, call option or other right or obligation (all hereinafter referred to as “options”) to buy or sell, or be required to buy or sell securities of the company, furnish the information required by the following table. (See Instruction 5) However, the acquisition or disposition of transferrable warrants issued by the company are to be reported in Table I. Options exempted by Rule 16a-6 need not be reported.

<table>
<thead>
<tr>
<th>TITLE OF SECURITIES</th>
<th>DATE OF TRANSACTION</th>
<th>NATURE OF OPTION</th>
<th>AMOUNT OF SECURITIES SUBJECT TO OPTION</th>
<th>CHARACTER OF TRANSACTION, IF ANY REPORTED</th>
<th>PURCHASE OR SALE PRICE OF SECURITIES SUBJECT TO OPTION</th>
<th>DATE OF EXPIRATION OF OPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYZ Common Stock</td>
<td>1/11/81</td>
<td>Call, Obligation to Sell</td>
<td>500 shares</td>
<td>sale of call</td>
<td>$45.00</td>
<td>10/19/81</td>
</tr>
<tr>
<td>XYZ Common Stock</td>
<td>1/30/81</td>
<td>Put, Obligation to Buy</td>
<td>500 shares</td>
<td>sale of put</td>
<td>$50.00</td>
<td>10/19/81</td>
</tr>
</tbody>
</table>

Explanation of items in tables:

NOTE: If the space provided in either table is insufficient, use a continuation sheet which identifies the table and columns to which it relates.
APPENDIX 2

The Cady, Roberts Decision*

In early November, 1959, Robert M. Gintel, a securities broker of Cady, Roberts and Co., was notified by Curtiss-Wright Corp. that a public presentation of their new engine would take place on November 23. Since only 2,000 such invitations were sent out prior to the presentation date, the information they contained was not considered public until that date. During the period from November 6 to the day of the presentation, Mr. Gintel purchased 11,000 shares of Curtiss-Wright stock for his clients. On November 24, the day following the presentation, the stock rose from 32 to 35 1/4. By 11:00 a.m. on the 25th, Mr. Gintel had sold 6,500 Curtiss-Wright shares.

Also on the morning of the 25th, directors of Curtiss-Wright met and approved a reduced Dividend for the following quarter. A representative of Cady, Roberts and Co. who had attended the board meeting, notified Mr. Gintel of the news shortly after 11:00 a.m. By 11:18 Mr. Gintel had sold an additional 7,000 shares (including short sales) of Curtiss-Wright stock. Because of an unexplained delay, news of the dividend cut did not reach the NYSE until nearly 12:30 p.m. Curtiss-Wright closed trading that day down 4 1/2 points.

Mr. Gintel and Cady, Roberts and Co. were found guilty of violations of Section 10(b), Section 17(a), and Rule 10b-5. Gintel was fined $3,000 and received a twenty day suspension from the New York Stock Exchange.

The Cady, Roberts Decision was important for two reasons. First, it extended liability to persons other than corporate officers, directors, and large shareholders. Second, it clarified the antifraud provisions of the Securities Exchange Act.

*Jaffe [20], pp. 117-118.
APPENDIX 3

The Texas Gulf Sulfur Case*

In 1959 the Texas Gulf Sulfur Co. began conducting exploratory activities in Canada's Ontario Province. Core samples collected on November 12, 1963 indicated evidence of unusually large mineral deposits in the area of Timmins, Ontario. At this time, TGS stock was selling on the NYSE at about $18 per share. TGS wanted the information kept secret to allow them time to acquire rights to surrounding lands and conduct further exploration. This objective was accomplished by employing numerous ruses including the issuance of a misleading press release on April 12, 1964.

During the period from November 1963 to March 1964, TGS insiders executed purchases of 9,100 shares of stock. Furthermore, they leaked this information concerning huge mineral deposits to others (referred to as tippees). These tippees purchased an additional 12,100 shares of stock and acquired options to buy another 14,100 shares. By the end of April, TGS stock had risen to 30 and subsequently continued to rise to a high of 71 within a year.

On April 19, 1965, the SEC filed suit against TGS and several high ranking employees. The employees were alleged to have based their purchasing decisions on the secret information concerning the large mineral finds. The action sought to compel defendants to offer restitution to those individuals who sold stock or calls to corporate insiders or tippees.

On August 19, 1966 a decision was handed down declaring that all trading prior to April 9, 1964 was not unlawful because the information concerning the discovery was not considered to be material at the time. Trades occurring after April 9, however, were declared to be in violation of Rule 10b-5.

*Goldberg [15], pp.83-100; Jaffe [20], pp.118-119.
## Appendix 4

### Dates of Unexpected Earnings Announcements

<table>
<thead>
<tr>
<th>Corporation Name</th>
<th>Positive (+)/Negative (-)</th>
<th>Announcement Date</th>
<th>Quarter Ending</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OCT 30, 1978</td>
<td>MAY 31, 1979</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JUL 23, 1979</td>
<td>JUN 30, 1980</td>
</tr>
<tr>
<td></td>
<td>+</td>
<td>NOV 1, 1978</td>
<td>OCT 30, 1980</td>
</tr>
<tr>
<td></td>
<td>+</td>
<td>JAN 22, 1980</td>
<td>JUN 30, 1980</td>
</tr>
<tr>
<td></td>
<td>+</td>
<td>JUL 22, 1980</td>
<td>SEP 30, 1980</td>
</tr>
<tr>
<td></td>
<td>+</td>
<td>AUG 8, 1979</td>
<td>JUN 29, 1979</td>
</tr>
<tr>
<td>7. Du Pont Co.</td>
<td>+</td>
<td>JUL 19, 1977</td>
<td>JUN 30, 1977</td>
</tr>
<tr>
<td></td>
<td>+</td>
<td>JAN 16, 1979</td>
<td>DEC 31, 1979</td>
</tr>
<tr>
<td></td>
<td>+</td>
<td>APR 22, 1980</td>
<td>MAR 30, 1980</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>OCT 21, 1980</td>
<td>SEP 30, 1980</td>
</tr>
<tr>
<td></td>
<td>+</td>
<td>SEP 3, 1980</td>
<td>JUL 31, 1980</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>DEC 9, 1980</td>
<td>OCT 31, 1980</td>
</tr>
</tbody>
</table>
   + JUL 30, 1980 JUN 30, 1980

10. General Dynamics Corp.
    + AUG 2, 1979 JUN 29, 1979
    - MAY 2, 1980 MAR 29, 1980
    + NOV 12, 1980 SEP 30, 1980

11. Halliburton Co.
    + FEB 8, 1980 DEC 31, 1979
    + NOV 3, 1980 SEP 30, 1980

    + MAY 21, 1979 APR 30, 1979
    + AUG 20, 1979 JUL 31, 1979
    - FEB 22, 1980 JAN 31, 1980

13. Hilton Hotels Corp.
    + JUL 16, 1980 JUN 30, 1980
    - OCT 10, 1980 SEP 30, 1980

14. Honeywell Inc.
    + APR 20, 1977 MAR 31, 1977
    + JUL 20, 1978 JUN 30, 1978
    - OCT 17, 1978 SEP 29, 1978
    - APR 17, 1980 MAR 29, 1980

15. IBM Corp.
    + JUL 15, 1977 JUN 30, 1977
    + JUL 14, 1980 JUN 30, 1980

16. Litton Industries Inc.
    + JUN 2, 1978 APR 28, 1978
    + MAY 23, 1979 APR 30, 1979

17. McDonnell Douglas Corp.
    + APR 25, 1978 MAR 31, 1978
    + JAN 28, 1980 DEC 31, 1979
    - APR 22, 1980 MAR 29, 1980
    - JUL 28, 1980 JUN 30, 1980

18. Mesa Petroleum Co.
    - OCT 26, 1978 SEP 29, 1978
<table>
<thead>
<tr>
<th></th>
<th>Company Name</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MAR 17, 1980</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JUN 25, 1980</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MAY 29, 1980</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AUG 14, 1979</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AUG 14, 1980</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JAN 17, 1978</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JUL 14, 1978</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JAN 12, 1979</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JAN 9, 1980</td>
</tr>
<tr>
<td></td>
<td></td>
<td>APR 9, 1980</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JAN 31, 1980</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JUL 28, 1980</td>
</tr>
</tbody>
</table>
APPENDIX 5

Form 4's Examined

1. Amerada Hess Corp.
   1978: MAR, APR, MAY, SEP, OCT, NOV
   1979: JUN, JUL
2. Bally Mfg. Corp.
   1978: APR, MAY, OCT, NOV
3. Burlington Northern Inc.
   1977: APR
   1980: JAN, JUL, OCT
4. Control Data Corp.
   1978: APR
5. Corning Glass Works
   1978: APR
6. Digital Equipment Corp.
   1978: APR, MAY
   1979: JUL, AUG
7. du Pont Co.
   1977: JUL
   1979: JAN
   1980: APR, OCT
8. Fluor Corp.
   1980: MAY, JUN, AUG, SEP, NOV, DEC
   1980: JUL, AUG
10. General Dynamics Corp.
    1979: JUL, AUG
    1980: APR, MAY, OCT, NOV
11. Halliburton Co.
    1980: JAN, FEB, OCT, NOV
    1979: MAY, AUG
    1980: FEB
13. Hilton Hotels Corp.
    1980: JUL, OCT
14. Honeywell Inc.
   1977: APR
   1978: JUL, OCT
   1980: APR

15. IBM Corp.
   1977: JUL
   1980: JUL

16. Litton Industries Inc.
   1978: MAY, JUN
   1979: MAY

17. McDonnell Douglas Corp.
   1978: APR, MAY
   1980: JAN, FEB, APR, JUL, AUG

18. Mesa Petroleum Co.
   1978: OCT, NOV

   1978: MAR
   1980: MAR, JUN, JUL

20. Syntex Corp.
   1978: NOV, DEC
   1980: MAY, JUN

21. Tandy Corp.
   1978: JUL, AUG
   1979: JUL, AUG
   1980: JUL, AUG

22. Teledyne Inc.
   1977: OCT
   1978: JAN, JUL
   1979: JAN
   1980: JAN, APR

23. Texas Instruments Inc.
   1978: JAN, FEB
   1980: JAN, FEB, JUL, AUG
## Stock and Option Commission Schedule

### STOCK

<table>
<thead>
<tr>
<th>Amount of Purchase</th>
<th>Commission on Purchase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $5,000</td>
<td>$28 + .008 ($Amount)</td>
</tr>
<tr>
<td>$5,000 - $15,000</td>
<td>$28 + .006 ($Amount)</td>
</tr>
<tr>
<td>Over $15,000</td>
<td>$28 + .004 ($Amount)</td>
</tr>
</tbody>
</table>

### OPTIONS

<table>
<thead>
<tr>
<th>Amount of Purchase</th>
<th>Commission on Purchase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $3,000</td>
<td>$28 + .013 ($Amount)</td>
</tr>
<tr>
<td>$3,000 - $10,000</td>
<td>$28 + .010 ($Amount)</td>
</tr>
<tr>
<td>Over $10,000</td>
<td>$28 + .007 ($Amount)</td>
</tr>
</tbody>
</table>
BIBLIOGRAPHY


