

## **The Regulation of Insider Trading as an Agency Problem**

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### **Abstract**

It has been argued that insider trading can be a source of agency problems and, hence, should be prohibited. This paper attempts to assess whether, by prohibiting insider trading, regulation can reduce agency problems. First, it will be shown that regulation has been unable to prevent insider trading. Second, we will explain why the regulation of insider trading cannot be effective. Finally, we will demonstrate that, regarding the reduction of agency problems, it cannot but produce the opposite effect.

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## 1 Introduction

In a previous article (Padilla, 2002), we have attempted to show that the central argument in favor of insider-trading regulation, namely, insider trading as inherently giving rise to agency problems, does not hold. We argue that while agency problems generated by insider trading are not totally eliminated under the unregulated market, there are various mechanisms that limit the ability of insiders to adopt agency-problem-type behaviors. On the other hand, such problems become worse as soon as the government interferes with the voluntary mechanisms of the market economy. We have discussed various examples of such interventions and explain how these government interventions limit the effectiveness of the voluntary mechanisms in exercising their "controlling" function.

Now, while our analysis might have demonstrated that insider-trading regulation cannot be justified on the basis of the insider-trading-as-agency-problem argument, it does not change the fact that today, in practice, insider trading is largely prohibited and such a prohibition is enforced in a large majority of developed countries.<sup>1</sup> Therefore, this very fact leads us to ask an important question, which is: by prohibiting insider trading, does the regulation prevent the agency problems to which insider trading may give rise to?

We answer this question and show that the regulation of insider trading cannot but produce the opposite of the intended effect. We show that the regulation of insider trading neither can reduce the problem of adverse selection that insider trading may create nor does it eliminate the perverse incentives that insider trading can create; actually, we argue that the regulation of insider trading can seriously impair the system of corporate governance and, as a consequence, can potentially give rise to serious agency problems.

This work should be considered as a continuation of our previous work on the relevance of regulating insider trading because it is a source of agency problems. However, it should be noted that, even if this work relies on some empirical works, it is mainly a theoretical investigation of insider-trading regulation; this theoretical investigation should lead to new empirical research that will assess the desirability of insider-trading regulation.

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<sup>1</sup> See Bhattacharya and Daouk (2002) who report that among 23 developed countries, 23 have insider-trading laws and 18 enforce these laws.

Section 2 presents the agency-problem-based arguments in favor of the regulation of insider trading. In section 3, we review the empirical literature on the effectiveness of the regulation in preventing illegal insider trading as evidence that the regulation of insider trading cannot prevent the problem of adverse selection associated with insider trading. In section 4, we explain why the regulation of insider trading cannot but be ineffective regarding this objective. Section 5 analyzes the impact of the regulation of insider trading on the system of corporate governance and its consequences in terms of agency problems.

## **2 Insider Trading as Agency Problem: Recalling the Argument**

Following Henry Manne's defense insider trading (Manne 1966), several authors have developed several counter-arguments to justify a public regulation of insider trading. With the development of information economics and the analysis of markets with asymmetries of information, several authors have argued, based on this literature, that the decision to allow insider trading should not be left in the hands of corporate shareholders.

Focusing on the work and conclusions of the principal-agent literature, these authors argued that insider trading gives rise to agency problems impossible to solve through self-regulation. These authors argue that self-regulation cannot be implemented principally because shareholders lack "*adequate enforcement devices*" (Easterbrook 1981, pp. 333-34; emphasis added) that can cope with the problems generated by the existence of information asymmetries and the fact that insider trading is *virtually* undetectable. As a consequence, agency problems will emerge.

Corporate shareholders will face a problem of adverse selection in the sense that they are unable to know whether or not their applicants are truthful when they agree to respect the contractual agreement not to trade on the basis of inside information. Therefore, the argument goes, they are to be the prey of dishonest agents. To avoid overcompensating the dishonest agents, shareholders will reduce salaries across the board. As a result, the honest agents will leave because they are underpaid: the bad agents will drive out the good and a breakdown in the market for managers will result (Easterbrook 1985, p. 94).

Another consequence of this lack of adequate enforcement mechanisms would be that shareholders particularly in corporation allowing their insiders to trade on inside information face a moral hazard problem associated with insider trading. Allowing insider trading will provide shareholders' agents with perverse incentives that may lower long-term firm value and, consequently, harm the shareholders. Because they can profit from bad and good news without

having to bear the costs of their decisions, shareholders' agents are indifferent to working to increase or to lower firm value. As a consequence, they have incentives to adopt non-value-maximizing behaviors (Levmore 1982, p. 149; Mendelson 1969, pp. 489-90; Posner 1978, p. 308; Schotland 1967, p. 1451). For example, they may increase the volatility of the firm's stock prices by engaging in activities involving investment and production decisions to destabilize firm performance to take advantage of stock price swings (Easterbrook 1981, p. 312; Brudney 1979, p. 156; and Masson and Madhavan 1991, p. 335).

In order to increase the volatility of the corporation's stock prices and capture the gains from stock price swings, insiders can also manipulate information about performance (Masson and Madhavan 1991, p. 334, fn. 6; Posner 1978, p. 308). They may delay transmitting material information to their superior to trade on it and make a profit (Haft 1982, p. 1051).

Because of these problems that insider trading poses and the impossibility of implementing efficient self-regulation because of a lack of adequate enforcement devices, these authors argue that insider trading should be publicly regulated with no possibility of opting out. We should now discuss these arguments and analyze whether a public regulation can prevent these agency problems and, more particularly, those associated with insider trading.

### **3 Does the Regulation of Insider Trading Deter Insiders from Trading on the Basis of Inside Information? The Empirical Evidence**

As we have explained above, a publicly/government enforced regulation is considered as necessary to eliminate the problem of adverse selection that insider trading poses. One way to analyze whether the public regulation of insider trading is able to eliminate the adverse-selection problem posed by insider trading is to investigate its efficacy in deterring insiders from trading on the basis of nonpublic material information. In other words, do insiders comply with the law? If they do, we shall conclude that the regulation of insider trading has been successful in resolving the problem of adverse selection that insider trading poses.

A review of literature shows us that the efficacy of the regulation in deterring insiders from trading on the basis of nonpublic material information has always been of a great attention on the part of economists. We can distinguish two kinds of studies. The first type of studies focuses on the impact of the insider-trading regulation on illegal insider dealing in the aggregate. The second kind of studies focuses on insider trading around major corporate events such as takeover announcements or dividend announcements and analyzes the impact of regulatory changes on

insiders' trading activity around these major corporate events. As we shall see the literature does not confirm the hypothesis that the regulation of insider trading can prevent insiders from trading on the basis of inside information and, hence, eliminate the adverse selection problem associated with insider trading.

### 3.1 Regulation of Insider Trading in the Aggregate

Actually, there are few studies which examine the impact of the regulation on insider trading. They test the impact of regulatory changes on the trading of insiders. These studies start with the observation that insiders are able to earn abnormal profits by trading the securities in their own firms (see Lorie and Niederhoffer, 1968; Jaffe, 1974a; Finnerty, 1976; and Seyhun, 1986). This observation is in itself in contradiction with the strong version of the efficient market hypothesis (see Fama, 1970 and 1991) which states that "security prices fully reflect all available information" and, accordingly, any systematic profit opportunities are precluded. This violation of the strong version of the efficient market hypothesis implies that not *all* available information is reflected in security prices, because, if it were, insiders would not be able to earn abnormal returns.<sup>2</sup> This ability of insiders to better predict price movements and earn abnormal returns can be explained by the fact that insiders have access to publicly *unavailable* information not already reflected in security prices on the basis of which they trade.

When examining the impact of the regulation on insider trading, these studies traditionally test two variables. First, if the regulatory changes, particularly, the ones regarding sanctions, have any impact, we should expect a reduction in insider trading explained by a reduction of its profitability. Second, if the regulatory changes have any impact on insider trading, we should also observe a reduction of the volume of insider transactions; that is to say, the volume of shares traded.

Jeffrey Jaffe (1974b) was the first to examine whether regulatory changes have an impact on insider behaviors. His study does not focus on regulatory changes in the level of sanctions against insider trading but rather on case law decisions. He examines the impact of three case law

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<sup>2</sup> Standard theory of finance distinguishes between three forms of informational efficiency: the weak form, the semi-strong form, and the strong form. The weak form refers to past information while the semi-strong form refers only to all publicly available information. Generally, empirical evidence supports the weak and semi-strong forms of efficiency suggesting that publicly available information is reflected in the current market price.

decision on the profitability and volume of insider trading: the *Cady, Roberts* decision in 1961, the Texas Gulf Sulphur indictment in 1965, and the *Texas Gulf Sulphur* decision in 1966.

Regarding the individual effects of the three regulatory changes on the profitability of insider trading, Jaffe concludes that it cannot be concluded that regulation changes had an effect on the profitability of insider trading. While we do observe that there was a drop in the average profitability of insider trades following the Cady, Roberts and the Texas Gulf Sulphur decisions, it appears that there was an increase in profitability following the Texas Gulf Sulphur indictment. Moreover, he observes that there was no significant difference in the average profitability of insider trading before and after each one of the three regulatory events.

In addition, Jaffe assesses the impact of the same regulatory changes on insider-trading volume by examining monthly and daily transactions volume before and after each regulation change. As it appeared for the profitability of insider trading, Jaffe observes that "the data do not suggest that the regulation changes in the 1960s influenced the volume of insider trading." Actually, it appears that the volume increased after each of the three events even though these increases are not statistically large.

While we cannot deny the importance of Jaffe's study, we should nevertheless point out that this study analyzes a period where insider trading was not SEC's main concern and therefore, even if these regulatory events marked the beginning of a change in SEC's attitude toward insider trading, the level of enforcement was not high enough in itself to deter insiders from trading on the basis of inside information. Even after the *Texas Gulf Sulphur* decision, the SEC brought only few cases. Dooley (1980) reports that, between 1966 and 1980, the SEC brought only thirty-seven insider-trading cases among which twenty-five were settle out of court. Moreover, the SEC sought or obtained a disgorgement of profits in only twelve cases. On the other hand, the 1980s are much more interesting to study from an empirical point of view. They are characterized by significant increases in the level of enforcement of insider-trading regulations and sanctions against insider trading and, hence, are more likely to have an impact on the trading behavior of insiders. As Haddock and Macey (1987, pp. 333) reports "from January 22, 1982, through August, 29, 1986, the SEC initiated seventy-nine 10b-5 cases, an average of 17.2 per year, which represents a more than sixfold increase in the rate of enforcement." Moreover, the percentage of cases brought against the corporate insiders alone went from 49 percent to 80 percent. As opposed to the period analyzed by Jaffe, the 1980s are therefore much more interesting to analyze

with regard to the impact of these sharp regulatory changes on the trading behavior of insiders. Seyhun (1992) developed such analysis.

Seyhun performed a broad study over a period extending from 1975 to 1989. In this study, He (p. 149) analyzes "the effects of increases in the level and enforcement of insider-trading regulation on corporate insiders." He examines open-market sales and purchases of registered insiders in NYSE, AMEX, and OTC firms and the fifteen-year sample is subdivided in three regulatory periods: the pre-Chiarella period (January 1975 – March 1980) during which the then-doctrine was the parity-of-information doctrine; pre-Insider Trading Sanctions Act of 1984 (ITSA)<sup>3</sup> period (April 1980 – August 1984) during which the then-doctrine was the fiduciary-duty doctrine; and the post-ITSA period (September 1984 – December 1989) which is characterized by both an increased enforcement and increased sanctions. Seyhun performs two sets of tests. First, he tests the effectiveness of insider-trading sanctions in the aggregate. Second, he tests the effects of case law on insider trading prior to earnings announcements and on insider trading prior to takeover announcements.<sup>4</sup>

For the aggregate sample, Seyhun reports that the profitability of insider-trading activity has increased of 3.5 percent over the three periods. Contrary to what would be expected, it appears it is during the period with higher enforcement and higher sanctions that insider trading is the most profitable. For example, between 1984 and 1989, insiders' estimated average abnormal profit, after twelve months, was 7 percent while, between 1975 and 1980, their estimated average abnormal profit was 3.5 percent after twelve months (Seyhun 1992, pp. 158-159 and Table 2). Nevertheless, as Seyhun (p. 162) comments when he separates insiders' transactions by purchases and sales over the three periods:

Overall, [the] evidence indicates that in the 1980s insiders have increasingly shifted to a strategy of bailing out before bad news rather than buying on goods news.

However, this evidence does not change Seyhun's overall conclusion regarding insider-trading profitability. As his year-to-year analysis (p. 162 and Table 4) further illustrates "there are no measurable declines in either frequency or profitability of insider-trading activity immediately following increases in the level of enforcement of insider-trading sanctions."

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<sup>3</sup> Insider Trading Enforcement Act of 1984, August 10, 1984, P.L. 98-376, 98th Congress, H.R. 559.

<sup>4</sup> See after for a discussion of the second set of tests.

Moreover, Seyhun tests the assumption that increases in enforcement and sanctions reduce the volume of insider trading. Overall, Seyhun (p. 169 and Table 7) reaches the same conclusion as the one regarding insider-trading profitability; that is to say, "insiders have increased their trading activity in the 1980s in spite of increased sanctions. The greater insider-trading activity appears to mirror the growth in the market's overall trading volume. There is no evidence to suggest that increased regulations deterred insiders from trading."

Finally, Seyhun attempts to determine whether regulatory changes had a temporary deterrent effect. He therefore examines potential changes in insider-trading activity around (i) March 1980, when the *Chiarella* decision was announced; (ii) August 1984, when ITSA was signed into law; and (iii) November 1988, when the Insider Trading and Securities Fraud Enforcement Act (ITSFEA)<sup>5</sup> was signed into law. The results show (pp. 170-171 and Table 8), that "none of the three events were associated with declines in insider-trading activity. Instead, data suggest that insiders appeared not to be concerned with changes in statutes even on a temporary basis."

### 3.2 Insider Trading around Major Corporate Events

Several empirical studies have analyzed insider trading around major corporate events. First there are studies that investigate insider trading around major corporate events but do not examine the impact of regulations or regulatory changes on insiders' behavior. Nevertheless, it is still possible to draw some conclusions about the effectiveness of insider-trading prohibitions. Second, several empirical studies analyze insider trading around major corporate events and the impact of regulatory changes on insider-trading activity around these major value-relevant news event.

Bettis, Ducan, and Harmon (1998) provide a survey of empirical studies analyzing insider trading around major corporate events.<sup>6</sup> These studies do not investigate the impact of the regulations or regulatory changes on insider trading but focus on whether or not insiders trade on inside information around major corporate events. As explained by Bettis et al.:

If restrictions were completely effective, insiders would not be trading at normal levels when they are in possession of material, nonpublic information. Instead, their activities ... cease.

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<sup>5</sup> Insider Trading and Securities Fraud Enforcement Act of 1988, November 19, 1988, P.L. 100-704, 100th Congress, H.R. 5133.

<sup>6</sup> See Appendix 1.



The empirical evidence reviewed by Bettis et al. shows that despite insider-trading regulations, insiders continue to extract significant gains from nonpublic information. Insiders not only continue to purchase shares before "good news" and sell shares before "bad news" but, actually, their trading volume has increased over time. The magnitude of abnormal returns realized or losses avoided also show that insiders trade on the basis of inside information.

The preponderance of empirical evidence leads Bettis et al. (p. 65) to conclude that "the legal and regulatory prohibitions have not been completely effective in preventing insiders from trading using their inside information."

There are other studies that expressly analyzed the impact of regulations, and in particular, the increases of level and enforcement of prohibitions on insider trading around major corporate events. We should now turn our attention to the most pertinent ones.

Performing a second set of tests, Seyhun (1992) analyzes the impact of case law on insiders' trading prior earnings and takeover announcements. Looking at the impact of case law, first, he (p. 171) analyzes "to which extent insiders exploit the upcoming earnings information during the three subperiods." He examines insider-trading activity during the thirty days preceding the earnings announcement day and whether the net number of transactions was in the same direction as the earnings surprise. He observes a decrease in insiders' exploitation of the upcoming earnings information through time. Prior to 1980, there was timely insider-trading activity in 12 percent of earning announcements months while, in the third period, timely insider-trading activity was in 9.3 percent of earning announcements months. Moreover, it also appears that the timely net number of transactions has also declined from an average of 0.29 transactions per month in the first subperiod to 0.22 transactions per month in the third subperiod. Following these observations, Seyhun (p. 173) concludes that "in spite of the significant increases in insider-trading activity over time, insiders in fact became more reluctant to engage in timely trading before earnings announcements during the third subperiod. This evidence suggests that case law provided a measurable constraint on insider-trading activity immediately before earnings announcements."

He also investigates the impact of case law on insider trading prior to takeover announcements (pp. 173-175). His results are similar to those regarding insider-trading activity prior to earnings announcements. He finds that insider purchase activity during thirty days preceding the takeover announcement date falls from 14.5% to 7.1% over the three regulatory

periods. Interpreting these results, he concludes that, with the increasing involvement of the courts, "insiders have become more and more reluctant to trade *immediately before* takeover announcements" (Seyhun 1992, p. 175; emphasis added).

An enlightening study by Arshadi and Eysseil's study (1993) investigates the impact of regulatory changes on insider trading activity in target firms prior tender offers.<sup>7</sup> They observe that the increase of stringent penalties and enforcement activities by the SEC and the Department of Justice marked by the passage of ITSA in 1984, the prosecutions of Levine et al. in 1986, and ITSFEA in 1988 have significantly affected the patterns of reported trading by registered insiders prior to tender offer announcements. Considering transactions of registered insiders, they (pp. 104-106) observe that the volume of insider trading prior to tender offer announcement has significantly dropped over time and, particularly, after the passage of ITSA in 1984. In post-ITSA periods, registered insiders are, on average, net sellers in the period immediately preceding tender offer announcements while in pre-ITSA periods, they were, on average, net purchasers.

On the other hand, they (pp. 97-104) observe that the cumulative average abnormal returns (CARs) for the sample firms in each of the regulatory periods are not consistent with the fact that registered insiders' preannouncement trading has dramatically declined through time. They report that, by the announcement date, higher CARs (28.96% and 32.35%) are observed in periods of broader and more severe anti-insider trading regulation (post-Levine et al. prosecutions and post-ITSFEA periods) in comparison with periods of less regulation (respectively, 27.55% and 17.2% for the periods pre-ITSA). Computing CARs over four intervals of even days before announcement day ((-10, -1), (-5, -1), (-2, -1), and (0)) and across regulatory periods, they found that CARs in periods of intensive regulation and enforcement (periods post-Levine et al. prosecutions), without exception, are higher than in the other periods. In the same way, comparisons of interperiod differences in cumulative abnormal returns suggest that abnormal returns in later periods exceed those in earlier ones. However, few differences exist in interperiod comparisons between periods of stringent regulations and periods where insider trading is less regulated. Investigating the magnitude of the excess volume preceding the announcement in each regulatory period, they (pp. 101-104) find that excess preannouncement volume in the target firms' shares persist despite of increasing severe legislations and active enforcement by the

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<sup>7</sup> See also Arshadi and Eysseil (1991) for the examination of the impact of the ITSA of 1984 on registered insider trading in target firms' shares. See table 1 for more details.

regulatory authorities. Interperiod volume comparisons show that the net daily share volume rises across time with an exception of the last regulatory period where it slightly drops. In general, the evidence suggests that preannouncement runups in target firm share prices are associated with runups in the total volume of shares traded, which is, as previously seen, a contradiction with the fact that registered insider trading volume prior to tender offer announcements has declined with the increase of stringent penalties and enforcement by regulatory authorities.

In the last part of their study (pp. 106-115), the authors find the explanation of this above-mentioned inconsistency in outside-insiders' transactions; that is to say, the unregistered insiders. These unregistered insiders are also in possession of material nonpublic information that they have acquired directly in the course of their work (investment bankers, risk arbitragers, lawyers, accountants, financial printers) or indirectly by the intermediary of registered insiders (tippees). These outside-insiders may or not be employees of the firm, may or not owe a fiduciary duty. Because insider-trading by outside-insiders are almost impossible to observe because they do not register their transactions, Arshadi and Eysell use a series of tests to draw some inferences about the behavior of these unregistered insiders. These series of tests allow them to rule out some explanations of the existence of persistent patterns of preannouncement abnormal returns and increasing share volume despite regulatory changes.

Given the screening of their sample, first, they rule out the idea that preannouncement price and volume increases may be the result of the workings of a perfectly legal market for information as suggested in Jarrell, Brickley, and Netter (1988).

Second, they investigate a second possible explanation according to which preannouncement price and volume increases may be the result of successful prediction by market professionals acting on publicly available economic and financial information that a given firm will become a takeover target. In order to test the robustness of takeover prediction explanation, they replicate Palepu's takeover prediction model (1986) and apply it to a portion of their own sample.

They find that the takeover prediction model could correctly identify only 42.9 percent of the actual targets as such and misclassified 31.7% of the nontarget firms as targets. They conclude, as did Palepu (1986, p. 32), that the explanatory power of the estimated model is quite small.

Pursuing their analysis of the hypothesis that takeover prediction may explain these increases of preannouncement price and volume, CARs for each group for 250-day period ending on the last of the prediction day are calculated in four portfolios: 1) all firms predicted as targets by the

model, 2) actual target firms correctly identified by the model, 3) all firms not predicted as targets by the model, and 4) actual targets not predicted as such by the model. They observe that large CARs in actual target firms (38.75% for targets classified correctly and 40.84% for targets classified incorrectly) that could only have been predicted in possession of an accurate takeover prediction model; which is not the case according to their previous robustness test of Palepu's model. As they explain, if one would use Palepu's model to classify firms, only two portfolios would be used: 1) one group of predicted targets and 2) one group of predicted nontarget firms. When they calculate excess returns in each portfolio (each portfolio includes both actual and misidentified targets), CARs are -4.44% and -6.14% respectively for each portfolio. These results confirm their previous conclusion (and Palepu's ones) that "the model does not provide economically useful predictions" and that the observed persistent patterns of preannouncement excess returns through time cannot be explained by the use of a takeover prediction model.

Finally, to strengthen their theory that the use of inside information by outside-insiders explains the existence of persistent patterns of preannouncement abnormal returns and increasing share volume despite increasing regulation, they investigate inside-insider volume as a proportion of total daily share volume for each regulatory period. As expected, the results show that net inside-insider purchases as a proportion of total share volume fall over time (1.54% in the first regulatory period to -0.412% in the last regulatory period). The results show that, after the passage of ITSA (regulatory period 3), registered insiders participate less prior to tender offer announcements. These results are consistent with the hypothesis that increasing regulations have deterrent effects on registered insider-trading activity. These latter results strongly enhance Arshadi and Eysell's theory that outside-insider trading explains the existence of persistent patterns of abnormal returns and increasing share volume despite regulatory changes.

Their conclusions are consistent with Seyhun's conclusions. Increasing stringent regulations and a vigorous regulatory attitude by the SEC and Justice Department have significantly altered registered insiders' behavior, particularly, around corporate events which are subject to greater scrutiny by the regulatory authorities. However, this does not mean that insider trading *per se* has been eliminated as the existence through time of persistent patterns of abnormal returns and increasing share volume shows. Actually, it seems to have shifted to unregistered insiders (outside-insiders). As Seyhun did, they conclude that aggregate insider-trading regulation is ineffective in preventing trading on the basis of inside information.

Seyhun and Bradley (1997) investigate insider trading preceding corporate bankruptcy announcements. Contrary to previous empirical studies (Loderer and Sheehan 1989; Gosnell, Keown, and Pinkerton 1992)<sup>8</sup>, they find that insiders do "bail out" on their stockholders prior to filing a bankruptcy petition. Actually, it appears that insiders begin to sell five years before the filing date and insiders' selling volume increases up to the announcement month. Moreover, in contrast to their predecessors, Seyhun and Bradley look at the impact of regulatory changes on this type of insider trading.<sup>9</sup>

They first observe that the securities of firms that file bankruptcy petitions suffer significant losses in the years preceding the filing date. For example, in the second year before filing, the price of their shares dropped an average of 17%. In the year before, investors lost another 48% and in the month of filing, they lost another 28%. Over the 2-year period before filing, the average cumulative loss amounts to 70%. Regarding the average abnormal loss for each year during the four years before filing, they are respectively of 14%, 18%, 39%, and 66%. In the month of filing, the average abnormal loss amounts to 30%. Over the five year period before the filing date, the average abnormal loss reaches 206%.

When looking at registered insider trading prior to bankruptcy petition filing, the authors find that "insiders are significant net sellers of their firm's shares in the months and years preceding a bankruptcy filing." They observe that, in the fifth year before filing a bankruptcy petition, insider selling represents a total disinvestment of \$716,000 per firm. When compared with the fact that the returns to the stockholders of these firms are significantly negative in the fourth year before filing, the data suggest that "insiders possess privileged information the future price of their firms' securities." Moreover, they observe that the trading pattern by top executives and officers shows that they have more information regarding their firms' future situation than other insiders. Top executives are net sellers in every period and officers are net sellers in four of the five periods.

Investigating the relationship between the timing of insider trading and security returns, Seyhun and Bradley find that insiders avoid the significant capital losses incurred by stockholders bankrupt firms in the years before filing the petition by selling before the stock price declines and buying stock after prices have fallen.

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<sup>8</sup> See appendix 1.

<sup>9</sup> As explained by Seyhun and Bradley, this may partially explain why these previous empirical studies did not find that corporate managers do sell their insider holdings prior to filing a bankruptcy petition.

After having investigated insider-trading timing and volume in bankrupt firms, the authors analyze the impact of regulatory changes in the laws governing corporate bankruptcies and insider trading on these variables. Their observations are consistent with Seyhun's observations in his previous studies on the impact of regulatory changes on insider trading around major corporate events, which attract the scrutiny of the regulatory authorities. While we observe that insider selling volume before the filing increased despite an increasingly stringent legal environment, after the passage of the ITSA in 1984, insiders became more reluctant to sell their holdings in the 30 days preceding a filing. Actually, since the passage of the ITSA, they find that "top executives have reported literally no transactions in their firms' shares in the 30 days preceding a filing." In other words, the increases in the level and enforcement of insider-trading regulations did have an impact on insider-trading patterns, which manifest particularly by the fact that insiders avoid trading around events being the object of great scrutiny by the regulatory authorities. However, this does not mean that insider trading has disappeared as the data show; actually, insiders continue to trade in their own company securities.

This review of the empirical literature allows us to make two general observations regarding the effectiveness of insider-trading regulations in deterring insiders from trading on the basis of inside information. First, they show that overall, despite the increases in the level and enforcement of insider-trading prohibitions, insiders continue to trade on the basis of inside information; actually, the level of insider trading seems to have dramatically increased. However, it appears that the increase of stringent penalties and enforcement activities by the SEC and the Department of Justice particularly against insiders trading on the basis of nonpublic information related to major corporate events has had an impact on insider-trading patterns. Insiders do trade less around major corporate events. The second observation is that, while we do observe that these regulations had an impact on insider-trading patterns, insider trading *per se* has not at all disappeared. Actually, these regulations did nothing more than changed the nature of insider trading but has certainly not eliminated or even reduced insider trading. As Seyhun showed, the nature of insider trading has changed in the sense that (registered) insiders now trade more on inside information not related to major corporate events or at times other than those subject to strict scrutiny by regulators. Furthermore, as Arshadi and Eysell showed, the nature of insider trading has changed in the sense that the vast majority of insider trading is not derived so much

from registered insiders whose transactions are under great scrutiny by the regulatory authorities but rather from unregistered insiders (outside-insiders).

As we have explained above, an important argument in favor of publicly regulating insider trading was that the lack of adequate enforcement devices makes it difficult for shareholders to prevent insiders from breaking their contractual prohibition to trade on inside information. As it appears in our survey, the public regulation of insider trading has been largely counterproductive with regard to this objective. Not only, could it not prevent insiders from trading on the basis of confidential information but it seems that it generated the opposite effect. Therefore, based on the empirical literature, our first preliminary conclusion is that the regulation has been unable to eliminate or even minimize the problem of adverse selection associated with insider trading. Actually, if we suppose that there is a general desire among shareholders to prohibit insider trading, we can say that the adverse-selection problem inherent in the insider trading has largely worsened.<sup>10</sup>

#### **4 Why the Regulation of Insider Trading Cannot Be Effective**

As we have seen the empirical literature provides forceful evidence that the regulation of insider trading cannot eliminate or even reduce the problem of adverse selection that insider trading can pose. However, the empirical literature, even if it can help us to develop some preliminary conclusions by providing interesting and illustrative evidence, it cannot in itself make a definite case against the public regulation of insider trading and explain why the regulation of insider trading cannot be effective in eliminating insider trading. There are several reasons why a public regulation of insider trading cannot be effective.

##### **4.1 Intangibility, First Accessing Person, and Information Network**

The regulation of insider trading can be redefined as an attempt by the legislator to prevent the circulation of nonpublic confidential information on the stock markets. In attempting to do so, the legislator is confronted by various problems that are related to the nature of the good which he attempts to control: information.

The first problem the regulatory authority must face is that information is an intangible good. Therefore, at the difference of a physical good, a physical barrier cannot prevent its flow and

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<sup>10</sup> We will return to this issue of the problem of adverse selection in our last section when we will analyze the impact of the regulation of insider trading on corporate governance.

circulation. It could be argued that information can be prevented from circulating or even being used as soon as it has been embodied in a physical envelope (a piece of paper) such as a note or a memorandum. Therefore, the argument goes, the insider who has access to the materialized information and could trade on it is going to refrain from doing so because he would be under great scrutiny.

Such an argument overlooks an important aspect even if the insider refrains from trading on it, nothing prevents him from communicating it to a third party. As soon as the insider had access to the information, there is no way to know whether she has communicated what she knows to a third party insofar as she did not transmit the information in its materialized aspect. In other words, the regulator faces a "*first accessing person*" problem; that is to say, there will always be a first person who will have access to the information. As a consequence, even if this person is under great scrutiny, the regulator is confronted with two other problems. First, he cannot prevent this person from *communicating* this information to a third party except by prohibiting this person from accessing the information, which is impossible because that would mean prohibiting her from performing her task. Second, neither can the regulator know whether this person has communicated this information to a third party.

This problem of a first accessing person becomes greater when there is no longer one person who has access to the information but several people. In the corporation, more than a few people have access to inside information; there is a myriad of individuals who come across material confidential information on a daily basis in the course of their duties. Moreover, some of these individuals are not directly employed by the corporation; they work on a temporary basis for the corporation yet have access to inside information as well. As the number of people having access to confidential information increases, the number of third parties with access to information increases as well.

Moreover, the regulator's problem does not stop at the level of third parties, third parties can also communicate the indirectly acquired information to other parties which themselves can communicate this information to other parties. As we can see, the network by which the information circulates can become very complex and the higher the degree of complexity of the network, the greater is the difficulty for the regulator to prevent the information from circulating and also trace back the information to its source, to know who the first carrier was. This latter condition is necessary if the regulatory authority wants to eliminate illegal insider trading and



deter individuals from trading on the basis of inside information. The effectiveness of a regulation relies upon its effectiveness to prevent first accessing individuals from communicating inside information to third parties. In other words, to be effective the regulation of insider trading must attack the problem at its source; that is to say, the first individuals who had access to inside information.

Finally, an additional difficulty for the regulator comes on the top of the previous ones. The more complex the network through which the information flows, the more distorted the information is going to be. In other words, because individuals have different interpretation and different ways of communicating the information, the information progressing through the network is going to be subject to transformations and the farther the information goes into the network, the more likely the information is going to be different from its original form. As a consequence, even if the regulator has been able to detect a potential illegal transaction based on inside information, he still has to identify what the inside information was on which the potential malefactor has based her transaction. This will not be an easy task particularly if the form of the information has been greatly altered.

The problem we have just discussed is not new. Our analysis is reminiscent of the analysis that we find in the economics of prohibition and the consequences that prohibition entails; that is to say, the emergence of illegal parallel, or black, markets as a mechanism to circumvent the regulation. Manne (1966, pp. 59-75) already described this phenomenon of illegal markets for inside information.

We now turn to another problem to which the regulator must face, the inefficacy of the mechanism of detection for illegal insider trading. As we shall see, the problem again arises from the intangible nature of the inside information.

#### 4.2 Circumstantial Evidence, Strategic Behaviors, and Subjectivism

Meulbroek (1992) explains that the regulatory authorities (such as the SEC) use a multipronged strategy to detect and prosecute illegal insider trading. The first source comes from individuals informing on other people. The other source relies upon tangible evidence ("a smoking gun") such as notes, memorandums, or telephone conversations which indicate that an investor traded on the basis of inside information. The last strategy relies on circumstantial, or statistical, evidence to detect and prosecute insiders.

However, the SEC most often lacks hard evidence due to the intangible nature of inside information. As a consequence, the SEC relies often *only* on circumstantial evidence to detect and prosecute illegal insider trading.<sup>11</sup> The use of circumstantial evidence, that is to say, of "unusual price movements on insider trading days" (Meulbroek, 1992, p. 1689), poses several problems that undermine the effectiveness of the regulation of insider trading. Spiegel and Subrahmanyam (1995) have developed an interesting model to explain "why the SEC cannot effectively use statistical information to identify and deter corporate insiders who may trade on material, non-public information."

Before discussing the details of their analysis on why the regulation of insider trading cannot be effective, it is necessary to briefly explain how a mechanism to detect and prosecute insiders relying upon circumstantial evidence works. They describe the functioning of the mechanism as follows:

First, the RA [regulatory authority] establishes a *rule*, which stipulates that if a certain random variable (e.g., the price move during a trading day) exceeds a certain exogenous threshold, and the trader in question has traded during the day, he will be prosecuted for illegal insider trading. Second, investors obtain information and trade. Third, the RA observes the size of each investor's trade and the transaction price. The RA also observes any subsequent price changes. ... Based upon these observations, and the rule established in the first stage, the RA determines whether or not to prosecute particular individuals (Spiegel and Subrahmanyam 1995, pp. 9-10).

In other words, if the trading volume of a trader is "abnormal" in comparison to his usual trading volume, if the timing of his transaction is "suspect" regarding the disclosure of a material information or if the transaction took place prior to a significant subsequent price movement;

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<sup>11</sup> See Meulbroek (1992, p. 1680). Meulbroek also documents that 41% of all insider trading investigations are triggered on the basis of information provided by informants. In the Insider Trading and Securities Fraud Enforcement Act of 1988 (See Insider Trading and Securities Enforcement Act of 1988, November 19, 1988, P.L. 100-704, Sec 21A (e), H.R. 5133.), the Congress gives authority to the SEC to award bounties to informants who provides information leading to the recovery of a civil penalty from an insider, from a person who tipped information to an insider, or from a person who controlled directly or indirectly an insider. Moreover, this bounty program allows the SEC to give up to 10% of the civil penalty recovered by the SEC or the Attorney General. While the SEC does rely also on such a mechanism to prosecute insider trading, there is no empirical available evidence that such a program has led to an increase in the number of successful indictments or a decrease in insider trading. It is also difficult to appreciate to what extent such a program can be effective in deterring insider trading insofar as one principal consequence of such a program is that most of the informants will use such a mechanism in order to pursue a different goal mainly related to revenge or envy in the same way that tax evasion investigations are triggered on information provided by angry wives or jealous neighbors. It is therefore difficult to assess the effectiveness of such a mechanism.

therefore, the regulatory authority will consider that such a transaction has been realized on the basis of inside information.

Inspired by Lucas' (1976) previous work on rational expectations and his criticism of econometric models that neglect the effect of agents' rational reaction to anticipate future macroeconomic policy decisions, Spiegel and Subrahmanyam (1995, p. 27) argue that "insiders with the most accurate information will be the most difficult to prosecute by the use of circumstantial evidence. This is because these agents are the ones best able to adapt their strategy in financial markets to avoid being investigated by the regulatory authorities in the first place." In other words, since the regulator's criterion to trigger an investigation is when the price move during a trading day exceeds a certain threshold, insiders with inside information being the most able to make more accurate predictions regarding the future stock prices are also going to be the most able to predict when the regulator is going to suspect that non-public information has been circulated and insider trading has been taken place. Insiders with more accurate (inside) information are, consequently, going to rationally modify their trading strategy in order to avoid the stock prices reaching the threshold above which the regulator will start investigating insiders' transactions. Therefore, the argument goes, it is the individuals with poor (less accurate) information, the ones who are less able to predict the magnitude of the stock price changes resulting from their transactions, who are going to most likely trigger the investigations and are going to be prosecuted on the basis of circumstantial evidence. In other words, when the regulation of insider trading relies on statistical evidence to detect and prosecute insider trading, as it is mostly the case today; the population of individuals who are going to be prosecuted will consist essentially of people who have traded on the basis of immaterial information; that is to say, of *innocent* people. As a conclusion, the regulation of insider trading cannot be effective because it does not discourage insiders in possession of inside material (accurate) information from trading, since the quality of the information they possess makes it unlikely they will ever be detected and prosecuted (Spiegel and Subrahmanyam 1995, p. 21).

There is no doubt that the model developed by Spiegel and Subrahmanyam is quite powerful in its demonstration of why the regulation of insider trading cannot be effective. However, there are at least two important additional considerations that we should take into account to explain why a regulation of insider trading, particularly when relying upon circumstantial evidence, cannot be effective.

First, although the literature tends to focus on the *active* aspect of insider trading; that is to say, trading on the basis of inside information, we should not forget that, from a technical point of view, insider trading can also be *passive*. Insider trading does not automatically imply that there is to be a securities transaction; there could be insider trading without any securities transaction taking place. An insider trading takes place when an individual has use of information not available to the public to make a decision related to a securities transaction. In other words, if an individual in possession of inside information decides to cancel a securities transaction; that is to say, not to buy or sell stocks, he is technically liable for illegal insider (non)-trading as well since his decision not to trade has been made on the basis of inside information. The individual either has avoided a loss or has realized a profit by not realizing a securities transaction but, if he did avoid this loss or realize this profit, it is because he has acted (made his decision based) upon a confidential information not available to the public and, therefore, he has committed an insider trading.

Because there is no trading involved even though there is an action based on inside information, this type of insider trading is impossible to detect. Since the regulator relies mostly on statistical evidence (observation of stock price changes) to detect and infer whether insider trading has been taking place, the regulatory authorities are unable to detect this form of insider trading for the reason that such activity does not involve in itself stock price changes.

The second consideration we should now address is again related to the nature of information. One aspect of information often overlooked in the discussion is that information as well as inside information has no objective predictive power (objective value) in the sense that holding a particular information does not give an individual the ability to predict what is going to be the direction of the next stock price change. Information is always subject to individuals' subjective interpretations, which vary with individuals' experiences and knowledge. Therefore, an individual making a decision (whether this decision involves trading or not) on the basis of inside information in order to realize a profit or avoid a loss may expect that the stock prices will vary in a particular direction but the accuracy of his prediction (expectation) depends actually on whether or not, once the information has been disclosed to the market, the market participants will interpret the information as he did. In other words, while the individual has technically an informational advantage by holding information not yet available to the public, when he is making his decision, the outcome of his decision ultimately depends on the other market

participants' interpretations regarding the information and resulting decisions once the information has been disclosed to them. Therefore, an insider may make a decision on the basis of inside information expecting that market participants are going to react in a particular way once the information has been disclosed but it is possible that market participants are not going to react in the expected way. As a result, instead of realizing a profit or avoiding a loss as expected, the insider may perfectly realize a loss or avoid a profit.

The fact that information is a subjective concept and the outcome of insider's decision depends of other market participants' interpretation and resulting decisions is also an obstacle to the effectiveness of the regulation of insider trading. The resulting implication the regulation of insider trading in terms of effectiveness is that, while the insider has broken the law, the regulator will not receive any signal that could help him to infer that insider trading has occurred because insider's expectations regarding the reaction of market participants to the disclosure of the information were inexact. In other words, the subjective nature of the information and market participants' expectations also explain why the regulation of insider trading is ineffective.

#### 4.3 Strategic Behavior and Liquidity

In 1984, former SEC chairman, John Shad argued that the securities laws and, more particularly, anti-insider trading laws were at the origin of the success of U.S. securities markets:

Fifty years ago, in the depths of the depression, the nation's securities markets were demoralized. Today, they are by far the best capital markets the world has ever known – the broadest [the most liquid], the most active and efficient, and the fairest. The Securities and Exchange Commission has played an important role in the restoration of public confidence ... [and] has discharged with distinction its mandate to protect investors and maintain fair and orderly markets. (John Shad 1984, p. 1 quoted in Bhide 1993, p. 31)

A few years later, in his speech to the "SEC speaks" Conference, then-SEC chairman, Arthur Levitt reargued that the SEC through the regulation of insider trading played a key role in the current success of American securities markets. As he said:

Our markets are a success precisely because they enjoy the world's highest level of confidence. Investors put their capital to work – and put their fortunes at risk – because they trust that the marketplace is honest. They know that our securities laws require free, fair, and open transactions. (Arthur Levitt 1998, p. 2)

It is therefore a quite accepted argument that the securities laws and, more particularly, the regulation of insider trading have largely contributed to the success of the securities markets by restoring the investor confidence by guaranteeing that they are not going to be "cheated by insiders" (Levitt 1998, p. 7). The theoretical literature tends also to argue that prohibiting insider trading would increase liquidity and decrease cost of equity (Glosten and Milgrom 1985; Bhattacharya and Spiegel 1991). Bhattacharya and Daouk (2002) also provide empirical evidence showing that countries enforcing insider trading laws enjoy greater level of liquidity and lower costs of equity than countries not enforcing insider trading laws or not having insider trading laws.<sup>12</sup>

This latter fact offers another explanation why the regulation of insider trading cannot be effective. The regulation of insider trading itself has created the conditions for its ineffectiveness. It has generated consequences that have modified the environment to which the regulation originally applied. In particular, by increasing the market liquidity, the regulation has given the ability to strategic insiders to better hide their informed trades. With more liquid markets, insiders' trades become noisier and do not show up as fast as in illiquid markets where volumes are small and unusual trades show up very fast (Bris 2000, p. 9). In other words, the regulation of insider trading creates the "illusion" that there is no insider trading, investors are going to participate more believing that insiders are not going to take advantage of them. Therefore, with the liquidity of the stocks increasing, the impact of insiders' informed trades are going to be diluted among investors' transactions and will not show up as clearly as they would if the stocks were illiquid. As a consequence, the regulatory authority will not be able to distinguish informed trades among the large volume of transactions realized on the markets neither will they be able to observe abnormal volume or price changes. The more liquid the markets are, the more ineffective the use of statistical, or circumstantial, evidence to detect illegal insider trading is going to be.

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<sup>12</sup> However, it is important to emphasize that the authors (p. 104) are reluctant to attribute causality between enforcement of insider trading laws and liquidity and cost of equity because the first enforcement insider trading action is also related to an increase in country credit ratings. They therefore consider that, while their findings are instructive, there should be also another unobservable causal variable, namely, the attractiveness of the stock market to outside investors. There are also two factors not emphasized by the authors that may explain why investors participate more. First, insider trading laws create the illusion that there is no insider on the stock market to "cheat" the investors. Second, the rules about publications of corporate information or, more recently, prohibitions about selected disclosure, create the illusion that they are "equally informed." It is necessary to recall here that the original purpose of insider trading laws has been to place investors on a "level playing field," that is, to place investors on an equal footing for the access of information and for profit-making on the stock market. See, for example, Council Directive 89/592/ECC of 13 November 1989, coordinating regulations on insider trading in Europe. See also Levitt (1998, p. 2).

The empirical evidence as well as theory seems to contradict the argument according to which a public regulation of insider trading is the only alternative to resolve the problem of adverse selection posed by insider trading. It appears that the regulation of insider trading is largely ineffective in preventing insiders from trading on the basis of inside information due essentially to the nature of information. Actually, empirical evidence tends to show that insider trading has become more a problem in the sense that its profitability and volume are more important over time despite the increases in enforcement and level of insider trading prohibitions.

## **5 The Regulation of Insider Trading as an Agency Problem**

We now analyze the impact of the regulation of insider trading on agency problems and, more particularly, to see whether it can succeed to eliminate the agency problems that insider trading may pose. As we shall show, the regulation of insider trading is likely to enhance the agency problems by discouraging active shareholding and, hence, impairing the system of corporate governance.

### **5.1 Insider-Trading Regulation and Active Shareholding**

Active shareholding is usually considered an important monitoring device in the system of corporate governance. Providing internal monitoring, active shareholders reduce agency costs and play an important role in enhancing the value of the firm (Shleifer and Vishny 1986). Because they own larger blocks of stocks, large shareholders are more likely to sit on the board of directors and, hence, exercise influence over the management team (Demsetz 1986, p. 313). Moreover, because of their position, they can have access to inside information and assess more accurately managers' performance. This ability to supervise managers' activity is important for large shareholders because they bear more risk and cost than minority shareholders, particularly in firms exhibiting high firm-specific risk.<sup>13</sup>

The regulation of insider trading has unintended effects on the system of corporate governance and, particularly, active shareholding because they burden large shareholders with

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<sup>13</sup> Firm-specific risk manifests in environments where there are frequent changes in relative prices, technology, and market shares. Such risk involves higher monitoring costs than in firms operating in environments characterized by stable prices, stable technology, and stable market shares because it is more difficult to disentangle the effects of managers' decisions on firm performance from these exogenous often unpredictable factors that also affect the firm performance (Demsetz and Lehn 1985, p. 1159). Because of this latter problem, having an access to inside information becomes a crucial factor to help large shareholders to disentangle the endogenous from the exogenous effects that affect the firm performance.

additional costs. For instance, in pursuance of (under) Section 16 of the Securities Exchange Act of 1934, owners of more than 10% of equity are considered as insiders along with every officer and director of the corporation. Accordingly, Section 16(a) requires them to report all their trades in equity securities on a monthly basis. Moreover, in Section 16(b), also entitled *insider's short-swing profit rule*, these insiders are prohibited from trading when the purpose is to realize short-term profits; that is to say, profits resulting from the purchase and sale of securities in a six-month period, except in very limited circumstances.<sup>14</sup> Finally, Section 16(c) prohibits short sales of stock. As a result, this insider status and the restrictions that accompany it automatically burden the large shareholders with additional costs such as having to report their transactions, having to justify their actions, and facing potential legal costs. Alone, the short-swing profit rule imposes significant restrictions on large shareholders' trading, particularly, for the institutional investors such as corporate and pension funds, which need to protect the liquidity of their holdings. Also the short-sale prohibition can be detrimental in the sense that it does not allow large shareholders to liquidate their holdings when they received negative information.

These additional liabilities and restrictions increase the higher risk and cost that large shareholders already incur in comparison to minority shareholders. They increase the risk for large shareholders to suffer larger losses particularly when unpredictable exogenous factors dramatically affect the firm performance. As we have previously argued, by sitting on the board of directors, active shareholders, benefiting from access to inside information, can timely proceed to sweeping changes when necessary. However, sometimes, things can get out of hand and short selling can be the only solution for large shareholders to minimize their losses. By prohibiting short selling, large shareholders see themselves deprived of an important alternative. In addition, the benefits of having access to private information and exercising their active role in firm governance decrease in comparison to those of the passive (minority) shareholders who do not have to support either the initial costs of investing in monitoring the management team or the additional costs generated by insider-trading laws but still benefit from the active role exercised by large shareholders in firm governance.

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<sup>14</sup> An important note regarding Section 16(b) is that it presumes that any succession of two transactions in the opposite direction (purchase/sale or sale/purchase) realized in a period less than six months, is necessarily and indisputably based on the use of inside information. As a consequence of this automatic causality established between transactions in the opposite direction and use of inside information, Section 16(b) does not require that a proof is established that there was use of inside information (George 1976, p. 40).



As a result investors are reluctant to hold larger blocks of stocks and prefer to keep their ownership below the 10% level that would trigger the insider status (Roe 1990, pp. 17-18; Seyhun 1998, p. 31). Bhide (1993, p. 37) observes:

My interviews with corporate and pension fund managers suggest that investors are often reluctant to receive any private information from managers (let alone take on board positions) which they believe would compromise their fiduciary responsibility to protect the liquidity of their holdings. Institutions also stay below the 10% ownership limit that triggers the Section 16(b) restrictions on short-term trading. Insider trading and disclosure rules ... thus have serious consequences for governance because they limit liquidity for active stockholders: many large investors who own sizeable blocks and could play an active role are instead resolutely passive.

The definition of inside information has also a negative impact on active shareholding.<sup>15</sup> The U.S. legislation as well as the European legislation defines an inside information as price sensitive information. The consequences are the same as with the Section 16 of the Securities Exchange Act of 1934.

To play an active role in the governance of the corporation, large shareholders or institutional investors need to have access to confidential price-sensitive information. However, playing an active role also means to become an insider and compromise the liquidity of his holdings, which is very problematic for the institutional investors and other intermediaries that have a fiduciary responsibility with regard to their own stockholders. As a consequence, large investors will refuse to receive any price-sensitive information and bar themselves from performing any active role in the corporation's governance (ISC 1991). Beny (1999) provides empirical evidence that are consistent with our argument that insider trading laws discourage large shareholders and, hence, inside monitoring. She shows that countries having insider trading laws exhibit lower

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<sup>15</sup> The literature and legal scholars tend to establish a difference between both definitions arguing that the European legislation by adopting a narrow definition of inside information creates a "grey zone," allowing insiders to trade on some inside information (Maug 1999, p. 3, 21). A careful look at both definitions shows that they are actually not different. Following the Supreme Court, the U.S. insider trading laws define inside information as "material" and "non-public." On the other hand, the European legislation defines inside information as "information which has not been made public of a precise nature relating to one or several issuers of transferable securities or to one or several transferable securities, which, if it were made public, would be likely to have a significant effect on the price of the transferable security or securities in question" (Council Directive 89/592/EEC of 13 November 1989, Article 1 § 1). The difference between both definitions would lie in the fact that the EU directive on insider trading requires inside information to be "precise." However, this distinction only appears to be a simple difference of jargon in the sense that the U.S. Supreme Court defines "material" information as information of which disclosure to the public would be likely to have an impact on the price of the security in question (George 1979, 119-126). This definition is therefore not different than the European legislation's one.

ownership concentration than in other countries. She also shows that tougher the insider trading laws are the lower is the ownership concentration among large shareholders.

By deterring large shareholders from playing an active role in corporate governance, insider-trading laws deprive the shareholders of the important governance mechanism that inside monitoring is. Accordingly, the system of corporate governance will result impaired; the effective controls on the self-serving behavior of the managers being weakened, corporate managers will have more latitude to make self-interested and not-necessarily-value-maximizing decisions at the expense of the shareholders. Therefore, the ineffectiveness of the regulation of insider trading combined with the impairment of the system of corporate governance enhance managers' ability to engage in agency-problems-type behaviors. Not only will the managers be able to engage in insider-trading transactions despite legal prohibitions and, since they can profit both from bad news and from good news, they will be indifferent to working to make the firm prosper or working to bankrupt it.

The argument according to which a public regulation of insider trading is the only alternative to resolve the agency problems that insider trading entails does not seem to hold when we make a careful analysis of effects of the insider trading regulation. However, there may be several objections that we need to address.

## 5.2 Collusion, Bribery, and Information Disclosure

Ernst Maug (1999) argues that if we allow insider trading and, more particularly, allow large shareholders to trade on inside information, their incentives to monitor underperforming companies will disappear. The argument is the following. In an environment where insider trading is not regulated, dominant shareholders will collude with minority shareholders at the expense of minority shareholders; whereas in a regulated environment the interests of large shareholders are aligned with those of minority shareholders. Therefore, the argument goes, if insider trading is not regulated, the managers will have incentives to communicate in advance inside information about negative developments to the large shareholders, thus allowing them to sell their stocks at inflated market prices instead of intervening in the company. In other words, in an unregulated environment, managers are going to bribe large shareholders with information to refrain from monitoring in order to protect their rents. This collusion between large shareholders and managers will be at the expense of minority shareholders.

Moreover, Maug (1999, p. 2; emphasis added) adds:

If insider trading is prohibited, then dominant shareholders have a stronger incentive to become informed and monitor the company. Trading profits from inside information are an opportunity cost of monitoring, and prohibition of trading eliminates this opportunity cost. More precise information allows dominant shareholders to target companies accurately and to reduce the likelihood of costly interventions to that are not profitable. In the optimal environment the company has to disclose *all material* information to the market in a timely manner. Then outside monitors make optimal decisions, and the likelihood of monitoring and the value of the firm are maximized, whereas managers' benefits from control are minimized. Hence, mandatory disclosure aligns the incentives of dominant shareholders with those of small shareholders at the expense of managements' benefits from control.

In other words, according to Maug, a regulation of insider trading combined with a "maximal" mandatory disclosure policy will lead to an efficient governance system maximizing the firm value. However, Maug's reasoning does not take into account several problems that undermine his argument.

First, Maug tells us that large shareholders will prefer to sell their stocks at inflated market prices than to intervene in the company because the cost of monitoring and its benefits are lower. This might be true *ceteris paribus*, in a world where everything else is held constant but in the real world everything is not held constant, we must take into account other variables. In other words, Maug might be true if we further assume that there is no tax on capital gains. However, in the real world, this is not the case; large shareholders face significant capital gains taxes upon sale (Bhide 1993, p. 37). When we take into account this fact, the outcome of the cost/benefit analysis is not so obvious. As Shleifer and Vishny (1986, p. 478) emphasize large shareholders engage in monitoring because they prefer dividends while small shareholders favor capital gains because of tax considerations.

Another problem with Maug's argument is that he assumes that, by prohibiting insider trading, large shareholders will have an incentive to become informed and monitor managers' activities. As we have pointed out, many large shareholders are institutional investors who need to protect the liquidity of their holdings in order to comply with the fiduciary duty that they owe to their own shareholders. Having access to confidential information is a necessity for active shareholders to monitor effectively the company performance. However, as we have said, it happens sometimes that nothing can be done to rectify the problem or it would be too costly to do so. The only solution is to sell in order to avoid suffering great losses. If large shareholders see their ability to minimize their losses in some extreme circumstances precluded, they are not going

to sacrifice the liquidity of their holdings and therefore will reduce their size of their ownership and abstain from engaging in inside monitoring.

As we have seen, empirical evidence shows that insider-trading laws increase the dispersion of ownership. As a consequence serious problems of collective action appear. As Bhidé (1993, p. 45) explains:

If the proportion of the firm's equity held by diffuse investors is subsequently increased ... liquidity increases because of the large number of stockholders. However, incentives for the blockholders to provide inside monitoring decline because the blockholders do not receive the full returns from their investment in monitoring. When stockholding is fully diffused, the firm's stock is likely to be the most liquid, but inside monitoring by stockholders is out of question.

Finally, Maug argues if the firm is compelled to disclose *all material information* to the market in a timely manner, outside monitors would be able to make optimal decisions in order to maximize the value of the firm. The problem with this assumption is that, again, in the real world, not all *material* information can be released to the market because some material information needs to be kept confidential and cannot be revealed to public because, for example, of the presence of competitors on the market.

### 5.3 The Regulation of Insider Trading and Other Market Mechanisms

Another objection to the problems raised by the regulation of insider trading in terms of agency problems is that active shareholding is not the only mechanism to control managers' activities. There are other mechanisms that can compensate for the lack of active shareholding. Managerial competition, market for corporate control, competition, proxy fights are some of them. As we have argued in a previous article (Padilla 2002, pp. 14-22), these mechanisms are vital to minimize managers' control and reduce their abilities to engage in self-serving behaviors. For example, Rappaport (1990, p. 5) states:

It is impossible to overstate how deeply the market for corporate control has changed the attitudes and practices of U.S. managers. ... It represents the most effective check on management autonomy ever devised.

However, even if the takeover mechanism can be a powerful mechanism to discipline the managers, it cannot substitute for active shareholding. As Bhidé (1993, p. 44) comments:

Acquirers who make unsolicited tender offers operate under significant informational constraints: they have to raise money deal by deal, making their case from publicly available data. Even at the peak in 1985-1987, these acquirers posed a threat to only a small number of diversified firms whose break-up values could be reliably determined from public data to be significantly higher than their market values.

Moreover, the regulation of insider trading also has unintended effects on takeover mechanism that may impair its effectiveness. Beny (1999) shows that, by reducing ownership concentration, insider trading laws increase indirectly the cost of acquiring a majority of shares in a given company. In the context of takeovers, less ownership concentration increases the benefits from free riding and makes acquisitions more expensive (Bris 2000, p. 18; Scharfstein 1988, pp. 194-195).

The regulation of insider trading, by reducing ownership concentration and discouraging active monitoring, has also a serious impact on the proxy fight mechanism, which is used to remove an "inefficient" board of directors. Active monitoring and proxy fight are closely interconnected mechanism in the sense that there are some costs to figure out that the company is underperforming but also to assess the causes of this underperformance. These costs are usually lower for active shareholders because they sit on the board of directors and have regularly access to the kind of information necessary to perform this kind of tasks, namely, confidential information. On the other hand, these costs become higher for passive shareholders who do not have access to such information because they are not members of the board of directors.

Furthermore, the more dispersed is the ownership, the more costly it is to locate the names and addresses of the shareholders, to mail out the ballots, and to persuade each shareholder of the merits of the dissident slate. On the other hand, the benefits of an improved management will accrue to all the shareholders. As a consequence, if the dissident, after performing his cost/benefit analysis, believes that his costs are higher than the expected benefits of launching a proxy fight, he will not launch the proxy fight and, instead will liquidate his assets. Moreover, since the benefits of an improved management are shared by all shareholders, free riding problems are also likely to arise, and the proxy fight is more likely to fail if small shareholders rationally refuse to undertake the proxy fight (Hart 1995, pp. 682-83). As a result, the management feeling immune to such a mechanism is going to take advantage of his entrenched position and make self-serving discretionary decisions.

Passive shareholders, outside stockholders, analysts, or takeover specialists suffer from a disadvantage in comparison to active shareholders. They do not have the same access (or costs to access) to the inside information required to properly disentangle the endogenous effects (those resulting from managerial decisions) from the exogenous effects (those due to unpredictable random factors) that affect the firm performance (Bhide 1994, p. 136). Access to inside information is however a crucial factor to perform effective monitoring and effectively implement the necessary measures in a timely manner. Therefore, the higher the costs of having access to such information and engage in corrective measures to discipline the management are, the lower the likelihood is that these individuals are going to make costly decisions to displace entrenched managers pursuing their own interests at the expense of stockholders; particularly if these individuals have to share the benefits of their actions with other free-riding shareholders. The general result does not vary; entrenched managers will benefit from this situation and continue to make self-serving decisions at the expense of shareholders.

Nevertheless, even without these informational and costs problems, another kind of problem arises. These mechanisms are themselves often subject to other regulations that may limit their effectiveness in controlling managers' activities (Padilla 2002, pp. 24-29).

For example, the mechanism of takeover can be subject to many regulations that limit their effectiveness. Federal and state antitakeover restrictions reduce the effectiveness of takeovers in disciplining the activities of managers by giving them the ability to implement antitakeover mechanisms to protect themselves against the takeover. These state antitakeover restrictions are particularly harmful when their adoption does not require shareholder approval (Jarrell et al. 1988, pp. 62-65). The 1968 Williams Act Amendment to the Securities Exchange Act of 1934 enables managers to easily counter a takeover.<sup>16</sup> By mandating that the acquirers disclose their acquisitions to the SEC along with any other information necessary to the public interest after they purchase more than 5 percent of the outstanding shares on the open-market, the Williams Act gives the opportunity for target managers to develop defense mechanisms to thwart the takeover (Scharfstein 1988, p. 196). The regulation of insider trading through the Rule 14e(3), which prevents anyone in possession of inside information from trading in the securities of the

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<sup>16</sup> See 15 U.S.C. §§ 78m(d)-(e) and 15 U.S.C. 78n(d)-(f). See also amended sections 13(d)-(e) and 14(d)-(f) of the Securities Exchange Act of 1934 that includes now the 1968 Williams Act.

firm involved, limits the ability of acquirers to have recourse to arbitrageurs to assemble blocks easily.

It is therefore true that inside monitoring is not the only mechanism to discipline the management team and limit their ability to make self-serving decisions. Nevertheless, it is not enough to assume that there are other mechanisms that can compensate for the lack of active shareholding. It is also necessary to investigate the effectiveness of these mechanisms and see whether these mechanisms are not themselves subject to other regulations.

## **6 Conclusion**

Relying on the work and conclusions of the agency theory literature, some authors have argued that insider trading gives rise to agency problems impossible to solve through self-regulation. They argue that self-regulation cannot be efficiently implemented because corporate shareholders lack adequate enforcement devices. Therefore, a public regulation of insider trading, without possibility to opt out, should be implemented.

The purpose of this paper was to analyze whether a public regulation can resolve the agency problems potentially posed by insider trading. Our conclusions are that a public regulation of insider trading cannot but produce the opposite of the intended effect.

First, we investigated the adverse selection problem that insider trading can pose. We asked whether the regulation can be effective in resolving this problem by deterring insiders from trading on the basis of inside information. After having reviewed the empirical literature that showed that the regulation has been largely ineffective in its mission, we discuss the reasons why the regulation cannot deter insiders from trading on the basis of inside information and, consequently, resolve the adverse selection problem posed by insider trading.

Finally, we show that the regulation of insider trading has detrimental effects on the system of corporate governance and, as a consequence, may give rise to serious agency problems that can be harmful to the shareholders. We argue that, by impairing the system of corporate governance, the regulation of insider trading is likely to worsen the agency problems that insider trading may create instead of minimizing them.

As a result, the combined effects resulting from the ineffectiveness of the regulation in preventing insiders from trading on inside information and its negative impact on the system of corporate governance resulting essentially from discouraging active shareholding lead us to

believe that the regulation of insider trading not only is unable to eliminate or even minimize the agency problems that insider trading may pose but actually is likely to aggravate them.

Our results draw some implications for further empirical research on this issue such as measuring under which system (unregulated or regulated) the costs generated by insider trading are minimized. Another important issue that we have not investigated, because beyond the object of this paper, is the liquidity and cost of capital issue. Liquidity and cost capital are important factors for capital formation. Therefore, further research might also be done on what mechanisms could arise or be developed to maintain the current liquidity and low costs of capital of the U.S. markets in the absence of insider trading regulation.



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**APPENDIX 1**

**Survey of the Empirical Literature Pertaining to Corporate Insider Trading and Analysis of Strength of Relationship between Insider Trading and Other Factors and the Magnitude of Abnormal Returns Pertaining to Related Insider Activity**

| <b>Panel A</b>  |               |  |  |  |   |
|---|---------------|--|--|--|---|
| <b>Insider Trading Activity in Target Firms Around Takeover Announcements</b> |               |  |  |  |   |
| Authors   | Sample Period | Issue Investigated   | Evidence Measurement   | Strength of Evidence   | Magnitude of Abnormal Returns   |
| Keown and Pinkerton (1981)  | 1975-1978     | Evaluation of insider activity in the month before the first announcement of a takeover.   | No evidence of rampant/frantic trading by corporate insiders of targets firms in the month before takeover announcements.  | 76% of the firms studied experienced no open market purchases or sales in the month prior to the announcement date, and only 12% had net positive market purchases.  | Average CARs of 25.27% for the 60 day period prior to the announcement period.  |
| Arshadi and Eysell (1991)*  | 1975-1987     | Test null hypothesis that the passage of ITSA had no effect on the actions of registered insiders.<br>Preannouncement trading by registered insiders is at least as prevalent subsequent to the passage of the Act as it was before its passage. | Examine the volume and profitability of registered insider trading in target firms' shares before and after the passage of the ITSA of 1984.   | Rejection of the null hypothesis that the number of net purchases in the event period is the same as that in the estimation for the firm sample.<br>ACNT pre-ITSA = 1.81<br>ACTN post-ITSA = - 1.67<br>Computed Z-value = 3.24 | CWAPE reaches 9.89% by the week of the tender offer announcement in the pre-ITSA sample. Strong reversal of this pattern of observed for the post-ITSA sample. CWAPE reaches - 10.78% by the announcement date. |
| Sanders and Zdanowicz (1992)  | 1978-1986     | Study examines average abnormal returns, trading volume and reported transactions of target firm insiders in periods preceding takeover announcements.   | Test whether insiders change their trading activity in the period before the first public announcement of a takeover bid (but after they have private knowledge of the upcoming announcement). | They conclude that there is no increase in purchasing during the time when insiders are informed about upcoming takeover announcement.   | Average CARs of 32.41% for the 60 day period prior to the announcement (signification at the 0.01 level).   |
| Seyhun (1992)   | 1975-1989     |  | Evaluates (non-statistically) whether large trading profits made by insiders were because of trading before takeover announcements (and/or earnings surprises).                                | Found that the proportion of takeover announcements months (i.e. the 30 days preceding takeover announcements) with insider purchases ranges from 14.1% to 7.4% over the over three sub-periods.                               | N/A   |

| <b>Panel B</b><br><b>Insider Trading Activity Before Bankruptcy Announcements</b>                                  |           |  |   |   |  |
|--|-----------|--|---|---|--|
| Loderer and Sheehan (1989)   | 1971-1985 | Investigates whether insiders of bankrupt firms hold less stock or reduce their holdings compared to what we observed for insiders of similar firms that do not go bankrupt.   | No much evidence to support the idea that these insiders do reduce their holdings.  |   | N/A  |
| Eyssell (1991)   | 1975-1987 | Investigates what insiders do before bankruptcy's and before voluntary liquidations.   | Uses a standardized measure of the net number of purchases (purchases – sales) and also does Chi-Square test to look at differences between insider activity in the case of bankruptcy versus voluntary liquidation using purchases and sales separately. | Net number of purchases analysis shows significant differences between the two periods (at the 0.01 level for voluntary liquidation sample and 0.01 level for the bankruptcy sample).   | The per firm average CAR of 16.07% for the 36 months leading up to the announced voluntary conversion. CAR of -39.04% for the same period before a bankruptcy. |
| Gosnell, Keown, and Pinkerton (1992)   | 1985-1987 | Measure insider trading during the 31 month period surrounding the first public announcement of a bankruptcy filing of OTC firms.  | Test using a control sample of firms and the sample of bankrupt firms. The relative frequencies of buy and sell transactions by insiders are compared between the two groups.   | Find that insiders in firms that go bankrupt do significantly (at the 0.01 level) more selling the 18-13 months and 6-1 months prior to the bankruptcy announcement.  | Mean losses avoided by insider sellers of 27.55%.  |
| <b>Panel C</b><br><b>Insider Trading Activity Around Other Corporate News Events (e.g. Dividend Announcements)</b> |           |  |   |   |  |
| Finnerty (1976a)   | 1967-1972 | Identification of relationship between insider buying/selling and (1) a large range of fundamental variables (e.g. future earnings and future dividends) and (2) firm characteristics (e.g. firm size).                                    | Weighted factor coefficients from a linear discriminant function were used to evaluate the difference among the means of the factors.   | Very strong evidence of the relationship between insider trading activity and the size (significant at 0.0000), earnings (significant at 0.0252) and dividends (significant at 0.0001).                                       | N/A  |
| Penman (1982)  | 1967-1974 | Evaluates relationship between insider trading and the disclosure of management earnings forecasts, and measures performance of the insiders who bought/sold before and sold/bought after positive/negative management earnings forecasts. | The relationship between the direction of the insider activity measures and the magnitude of abnormal returns was measured. Also, the magnitude of profits to the insiders for their trading was measured.  | The direction of insider trading and magnitude of abnormal return in the 3 days around forecast date was significant at the 0.05 level. Abnormal return associated with trading activity was significant at the 0.0005 level. | Mean 3-day abnormal returns ranged from 1.49% to 14.43% for positive insider trading firms and from 1.3% to -9.00% for selling firms.                          |



|                             |           |  |   |  |   |
|-----------------------------|-----------|--|---|--|---|
| Moss and Kohers (1990)      | 1982-1983 | Investigates whether insiders buy their stock prior to favorable earnings and dividend announcements and hence abnormal profits.   | Used the period from 2 to 60 days before announcements of higher (at least 10% different) than expected earnings/dividends and measured the return to the insiders.         | P-values for the abnormal return to insiders for these cases were significant at levels ranging from 0.036 (where earnings were less than expected) to 0.000 (were less than expected).  | ARs ranged from 34.71% when dividends were greater than expected to -350.89% when dividends were less.  |
| Allen and Ramanan (1990)    | 1977-1981 | Paper examines the joint effects, both additive and interactive of the surprise in annual earnings announcements and prior levels of insider trading surrounding earnings announcements. | Used the trading activity in the 75 day period(s) before earnings announcements. Used ANCOVA to test the main effect between trading activity and earnings surprise.        | Three day abnormal returns associated with each marginal trading classification were signed in accordance with the expected implications of the signals (e.g. positive trading would have positive abnormal returns).                        | Insider purchase activity yielded 3 day CARs of 1.38% on average. CARs during +2 to +20 day period were 1.25%.  |
| John and Lang (1991)        | 1975-1985 | Look at net measures of insider trading activity as signaling that is relevant for future dividend announcements.  | Test using various regressions between abnormal (excess) returns on/around dividend announcement dates and various insider trading measures.                                | Insider trading prior to the announcement has significant explanatory power for the returns that are present on the dividend announcement date.  | 1-day AR for the insider selling group is about 2.2% less than group with dividend announcements.   |
| Park, Jang, and Loeb (1995) | 1986-1987 | Investigate the trading behavior of insiders surrounding the release of earnings information.  | Looked at changes in insider activity in the period preceding EPS announcements. Also investigated the actual profit (loss) earned by insiders after their purchases/sales. | Found significant decreases in purchasing activity before earnings announcements, but there are significant increases in selling before bad news announcements. Differences between purchases and sales are highly significant in all cases. | Mean abnormal profits to insiders who bought from -50 to -26 days before earnings announcement of 5.8%. Abnormal profits exceed 8% for good news firms. |

\*Study that does not appear in the original survey by Bettis, Duncan, and Harmon (1998).

Source: Bettis et al. (1998, pp. 58-61)