

SHOULD THE GOVERNMENT REGULATE INSIDER TRADING?

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1 INTRODUCTION

THIS PAPER INVESTIGATES whether the government regulation of insider trading or insider trading laws *can* be effective.¹ Following Henry Manne (1969)'s publication of *Insider Trading and the Stock Market* (1969), the debate surrounding the question of insider trading and whether or not it should be regulated has received a lot of attention from lawyers, economists, and financiers and a prolific literature has ensued. One particular aspect of the debate was centered on the question of whether the government is successful in regulating insider trading. Indeed, with the evolution of insider trading laws, students of insider trading laws have attempted to see whether these laws are effective in discouraging insiders from

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¹ We define insider trading as the use of nonpublic and material corporate information in stock trading.

trading on non-public information. Whether they focus on insider trading in general or insider trading around particular corporate events, by and large, the consensus was almost unanimous: insider trading laws *are* ineffective, they are unsuccessful in deterring insiders from trading on non-public information.²

Although these empirical studies provide interesting and illustrative evidence regarding the ineffectiveness of government regulation, these studies are not useful if one wants to make a case against the government-enforced regulation of insider trading based on its effectiveness simply because none of these studies investigate the causes of such ineffectiveness. Actually, the only conclusion that one can derive from this empirical literature is that government regulation of insider trading *is* ineffective. However, the fact that the empirical literature shows that government regulation of insider trading has been so far ineffective cannot be interpreted as showing that government regulation *cannot* be effective and, therefore, should be repealed.

Another problem is that, even outside the empirical literature, almost no systematic research on this issue has been conducted.³ Therefore, the contribution of this paper is to fill that gap. In this paper, I investigate whether government regulation *can* be effective in deterring insiders from trading on inside information.⁴ This paper shows that the government faces three problems when attempting to deter insider trading that it cannot avoid: the nature of the commodity it is trying to control, the incentives created by the mechanisms it uses to detect insider trading, and an information problem. We find that this latter problem is the most significant one.

Answering this question is important for one reason. A significant portion of the insider-trading literature is devoted to investigate whether insider trading should be prohibited. There is

² See, for example, Lorie and Niederhoffer (1968), Jaffe (1974), Finnerty (1976), Seyhun (1986, 1992), Meulbroek (1992), and Bettis, Duncan, and Harmon (1998).

³ An exception is Spiegel and Subrahmanyam (1995). However, their argument is incomplete.

⁴ Another justification for investigating whether government-enforced regulation of insider trading can be effective is that most of its advocates seem to assume that it cannot fail. See Shin (1996) and Bris (2000).

almost a consensus among law, economics, and finance scholars that insider trading ought to be prohibited because it hampers capital markets development by discouraging investment in markets where insider trading is present. Consequently, according to the literature, it follows that the government should be prohibiting insider trading as its existence is evidence of a market failure, that is to say, it violates the property of equal access to resources (corporate information being here the main resources when it comes to investment) that characterizes the perfect competition model because some individuals have access and use information that other market participants do not have. This literature, by arguing that the government should be regulating insider trading, implicitly ignores the possibility of government failure. This paper attempts to correct this omission by analyzing whether government failure is a possibility. Under no circumstances, this paper argues that insider trading should not be regulated. Rather this paper investigates whether insider trading should be government regulated or such regulation should be left to others such as stock exchanges or corporations.

First, I present the arguments in favor of a government-enforced prohibition of insider trading. Second, I show why government regulation of insider trading cannot achieve its main objective: deter insider trading. Third, based on the results of the previous analysis, I expose a most fundamental problem that the government faces in regulating insider trading and offers some alternatives. Finally, we will offer some concluding remarks.

2 WHY SHOULD INSIDER TRADING BE GOVERNMENT-REGULATED? THE ARGUMENTS

Since Manne (1969) published *Insider Trading and the Stock Market*, a significant portion of the insider-trading literature has been investigating the costs and benefits of insider trading. For example, Easterbrook (1985) argues that allowing insider trading would aggravate significantly moral hazard problems within the corporation.⁵ Managers would have incentives to make short-term decisions to profit from price swings. Easterbrook argues that, because insider-trading profits regardless of stock prices appreciate or depreciate, insiders would not necessarily make

⁵ See also Posner (1977, p. 308).

decisions in the shareholders or the company's long-term best interests.

In addition, Easterbrook (1981, p. 334) argues that leaving to corporations the right to contractually allow or forbid insider trading should not be permitted because shareholders lack "*adequate enforcement devices*" that can cope with the problems generated by the existence of information asymmetries and the fact that insider trading is *virtually* undetectable.⁶ As a result, corporations and shareholders face an adverse selection problem resulting from the fact that, even if corporations contractually prohibit their employees to trade on undisclosed corporation information, there is no guarantee that their employees will not lie when they agree to the terms of their contracts at the time of the signature.⁷ Consequently, according to Easterbrook, not only should insider trading be uniformly prohibited but also the enforcement of the prohibition should be left to the hands of the government because the government has some enforcement mechanisms that private corporations do not have such as criminalizing insider trading.⁸

Another important argument in favor of government regulation of insider trading is that insider trading raises the costs of capital by reducing market liquidity and rising ownership concentration. The reasoning behind that argument is that if

⁶ One could ask that, if insider trading is virtually undetectable by corporations, how can the government enforcement mechanisms that corporations and shareholders are lacking could be more effective if the government cannot itself detect insider trading because insider trading is virtually undetectable. How can the government detect insider trading better than corporations or markets?

⁷ Again, one must wonder how the government is able to resolve or even mitigate this adverse selection problem better than corporation or markets. If there is no guarantee that employees will not respect a corporation-enforced insider trading ban, as argued by Easterbrook, why should we believe the same employees will do so when it is the government that prohibits insider-trading?

⁸ An additional remark should be made here. The effectiveness of such enforcement mechanisms depends of the effectiveness of the detection mechanism. As the following sections will show, it is unlikely that the main problem faced by the government is how effective are its detection mechanism.

individuals fear that they will trade with an insider, they will demand a premium to compensate them for taking the risks to trade with an insider or they will not invest. The overall result is that less people will be willing to invest in the capital markets. Markets will become less liquid and ownership concentration will rise. Investors will ask premiums to be compensated for the risks associated with investing in a market where insiders are present but also for the fact that their equity is less liquid and risks of incurring a loss are higher. Consequently, to reduce such costs, government regulation of insider trading is required. Empirical evidence seems to show that countries where insider-trading laws are in place and enforced, equity cost is lower compared to countries where such laws are not in place or not enforced and capital markets are broader, that is, more liquid.⁹

There is in these arguments an implied assumption that only the government can be effective in fixing this market failure that insider trading is. However, one cannot ignore that, even if arguments in favor of prohibiting insider trading are valid, it does not follow that the government should be the main force behind such prohibition or the government cannot fail in its mission.

3 CAN GOVERNMENT REGULATION OF INSIDER TRADING BE EFFECTIVE?¹⁰

3.1 Information, Subjectivism, and Information Markets

The main objective of the regulator when attempting to deter insider trading is to prevent nonpublic information from circulating in the stock markets. In attempting to do so, the regulator faces problems that are related to the nature of the commodity that he or she attempts to control: information.

The regulatory authority first must face the fact that information is an intangible commodity and as such it cannot be prevented from circulating in the same fashion one can prevent goods, services, or human beings from circulating. On the other hand, a piece of paper or a memorandum on which the information is recorded can be

⁹ See Bhattacharya and Daouk. (2002) and Beny (2005, 2007a, 2007b, and 2008).

¹⁰ Some of the arguments presented in this section are also in Padilla, Alexandre (2005, 2007).

prevented from circulating. However, the information itself, in its intangible form, cannot. To be sure, one could argue that as soon as the information is being recorded on a tangible piece of property, the insider might refrain from trading because she would be under greater scrutiny.

However, even if the insider refrains from trading on inside information, nothing prevents her from communicating it to a third party. To circulate, there is no need for the information to be recorded on a tangible format. As soon as the insider accesses the information, it is impossible to know whether she communicated the information to a third party as long as there is no record of such communication. In other words, the regulator is confronted with the difficulty that somebody always accesses first the information. As a consequence, even if this person is under great scrutiny, the regulator faces another problem. He cannot prevent this individual from communicating such information to a third party. To prevent an individual from communicating such information would imply prohibiting this person from accessing the information. However, such prohibition would mean, in most cases, prohibiting the individual from her job.

This difficulty is exacerbated when more than one person gets access to the information. In the corporation, more than a few people access inside information. There is a myriad of individuals who come across confidential information on a regular basis in the course of their professional duties. Moreover, some of these individuals are not directly employed by the corporation; they work on a temporary basis for the corporation and have access to inside information.¹¹ As the number of people accessing confidential information increases, the number of third parties with access to information increases as well.

Moreover, the regulator's difficulties to control information leakage do not stop at the level of third parties. Third parties can also communicate, sometimes unknowingly, the information indirectly acquired to other parties who themselves can communicate

¹¹ See, for example, *Chiarella v. United States*, 445 U.S. 222 (1980), *United States v. O'Hagan*, 521 U.S. 642 (1997), and *United States v. Willis*, 737 F. Supp. 269 (S.D.N.Y. 1990) cases, where the persons charged in violation of Section 10(b) of the Securities Exchange Act of 1934 and the Securities Exchange Commission 10b-5 were not directly employed by the corporation where the confidential information had been produced.

this information to other parties.¹² The complexity of the network through which the information circulates increases with the number of people accessing inside information. As a result, the greater the complexity of the network, the greater the difficulty for the regulator to prevent the information from circulating is. In addition, the greater the network complexity, the more problems the regulator will have tracking back the information to its source. The effectiveness of a regulation relies upon its effectiveness to prevent individuals first accessing the information from communicating it to third parties. In other words, to be effective the regulation of insider trading must attack the problem at its source, that is, the first individuals who have access to inside information.

Finally, the more complex the network through which the information flows, the more distorted the information is going to be. 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. The further 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 was able to detect a potential illegal transaction based on inside information, he still has to identify what inside information the potential malefactor used.

The problem just discussed is not new. This analysis is reminiscent of the analysis that can be found in the economics of prohibition and the consequences that prohibition entails. As a result of prohibition or regulation, illegal parallel, or black, markets emerge as a mechanism to circumvent the regulation.¹³

¹² See, for example, *SEC v. Switzer*, 590 F. Supp. 756 (W.D. Okla. 1984): George Platt, Phoenix's CEO and, therefore, an insider in regard to Phoenix, discussing with his wife about a recent business trip to New York at a track meet, inadvertently communicated inside information to Coach Switzer who laid down a on a row of bleachers behind them; inside information that he later used to buy a substantial number of Phoenix shares and tipped off a number of his friends.

¹³ The most recent insider trading case launched by the SEC against Rajaratnam, CEO and Director of hedge fund Galleon, accused of being the leader of an "insider trading ring" and involving two executives, a director, and two partners at other large corporations illustrates perfectly this development of information network that was already described by

3.2 Statistical Anomalies, Liquidity, and Strategic Behaviors

The regulator faces additional problems that are linked to the intangible nature of information and the resulting emergence markets for inside information. One of the main problems associated with the intangible nature of information is that, often, the regulatory authorities (such as the SEC) do not have tangible evidences such as notes, memoranda, telephone conversations, or emails to prove that an investor traded on the basis of inside information or communicated the information to individuals to act on her behalf. As a result, the SEC uses alternative strategies. One strategy that they started to implement more systematically starting in the 1980s was to rely on informants.¹⁴ Another strategy used more often by the SEC is to rely on circumstantial, or statistical, evidence to detect and prosecute insiders.¹⁵ Using circumstantial evidence, that is, of "unusual price movements on insider trading

Manne (1966). See *United States v. Rajaratnam*, 2011, U.S. Dist. LEXIS 91365 (S.D.N.Y. Aug 11, 2011). See also Strasburg and Bray (2009) for a recent discussion of the case.

¹⁴ Meulbroek (1992, p. 1681) also documents that 41% of all insider trading investigations are triggered on the basis of public complaints from informants such as ex-wives or former employees of the insider. 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.

¹⁵ On various occasions, SEC chairman John Chad stated that many insider-trading prosecutions rely on statistical evidence and, therefore, raising the burden of proof beyond circumstantial evidence will make more difficult to successfully prosecute insiders. See for example, Insider Trading Sanctions and SEC Enforcement Legislation. Hearing before the Subcommittee on Telecommunications, Consumer Protection, and Finance. 98th Congress. First Session on H.R. 559. April 13, 1983. Serial Number 98-33: p. 61. See also SEC Memorandum from Office of the General Counsel to Chairman John Shad (1983).

days," undermines the regulation effectiveness itself for several reasons (Meulbroek 1992, p. 1689). Spiegel and Subrahmanyam (1995, p. 2) offer a model describing "why the SEC cannot effectively use statistical information to identify and deter corporate insiders who may trade on material, non-public information."

The *modus operandi* to detect insider trading using statistical analysis can be summarized as follows. If the SEC observes that the trading volume of a trader is "abnormal" in comparison to his usual trading volume, the transaction timing is "suspect" regarding the disclosure of a material information, or the transaction took place prior to a significant subsequent price movement, the regulatory authority will consider that such a transaction was realized on the basis of inside information, which will trigger a SEC investigation and eventual prosecution (Spiegel and Subrahmanyam 1995, pp. 9–10).

However, when trying to detect and prosecute insiders using circumstantial evidence, the regulatory authority is faced with a significant difficulty. Once insiders know the rule used by the regulator to detect and prosecute them, the insiders possessing the most accurate information are going to modify strategically their behavior to avoid investigations (Spiegel and Subrahmanyam 1995, p. 27). In other words, knowing that the regulator's rule to trigger an investigation relies on price variation during a trading day exceeding a certain threshold, traders being the most able to estimate future stock prices because they have an inside information will be the most able to predict when the regulator will suspect that non-public information was circulating and insider trading occurred. As a result, insiders holding more accurate confidential information will adapt their trading strategy to avoid stock prices reaching the threshold above which the regulator will trigger an insider-trading investigation. The argument goes, the individuals with less accurate information not being able to predict as accurately the magnitude of the stock price changes resulting from their transactions will be more likely to trigger the investigations and be prosecuted on the basis of circumstantial evidence. In other words, when regulation of insider trading relies on statistical evidence to detect and prosecute insider trading, the individuals most likely to be prosecuted will be the people who

A search on LexisNexis Academic showed that over 168 Federal and State Cases were prosecuted on the basis of circumstantial evidence in the last twelve years.

used non-material information in their stock trading. Spiegel and Subrahmanyam conclude that the insider-trading regulation cannot discourage insiders in possession of non-public material information from trading since the quality of information they possess makes it unlikely they will be detected and prosecuted (Spiegel and Subrahmanyam 1995, p. 21).

While Spiegel and Subrahmanyam's model is compelling, two additional factors should be considered when explaining the ineffectiveness of a regulation relying upon circumstantial evidence to detect and prosecute insider trading.

First, the literature on insider trading ignores that the information in itself does not have any objective predictive power or objective value. Possessing some information regarding a corporate event does not increase an individual's ability to predict with certainty the direction or magnitude of future stock price changes. Individual's predictions are always guided by the subjective interpretation of the information that he possesses. Such interpretations vary with individuals' experiences and knowledge.¹⁶ Therefore, when individuals use information (public or not) in profit-seeking decisions, the success of their decisions does depend of the direction and magnitude of price changes. However, the latter depends on whether or not market participants interpret the same information as they do. In other words, while insiders have an informational advantage by holding information not yet available to the public when they are making their decision, the success of their expectations is conditional upon the other market participants' interpretations regarding the information and resulting expectations once the non-public information has been disclosed to them. Therefore, an insider may make a transaction on the basis of inside information expecting that market participants are going to react in a particular way once the information is disclosed but it is possible that market participants are not going to react in the expected way.¹⁷ As a result, instead of realizing a

¹⁶ See, for example, Lachmann (1977 [1959], 1976, and 1986).

¹⁷ The referee implicitly argued that, while in theory our argument is true, everybody in practice as the same interpretation of the information. A typical example is that everybody interprets a bad earnings report the same way. Actually, this is not totally accurate in the sense that we mean by interpretation of the information the reaction that the information is going to induce on the person who has access to it. The fact that the

profit or avoiding a loss as expected, the insider may perfectly get a different outcome.

The fact that information is subjective and the outcome of insider's decision depends on other market participants' interpretation and decisions will affect the regulation effectiveness. The implication is that, while the insider has broken the law, the regulator will not receive any signal that could help inferring that insider trading has taken place because insider's expectations regarding the reaction of market participants to the disclosure of the information were inaccurate.

Second, another factor explaining the ineffectiveness of insider trading laws and the use of statistical circumstantial evidence to prosecute and deter insider trading is due to the consequences associated with the increased stock-market liquidity resulting from insider trading laws and the resulting unintended effects on insiders' incentives to engage in strategic behaviors.

An argument often advanced in favor of regulating insider trading is its effects on the liquidity of markets. SEC chairman John Shad (SEC 1984, p. 1) argued that the securities laws and, more particularly, anti-insider trading laws were at the origin of the success of the U.S. securities markets in terms of liquidity, efficiency, and fairness.¹⁸ Similarly, Arthur Levitt (1998) restated the same argument that the regulation of insider trading contributed to the restoration of the public confidence in the honesty of the marketplace. The theoretical and empirical literature supports the idea that, by restoring public confidence in the fairness of the securities markets, insider-trading regulation indirectly contributes to increase market liquidity and to decrease the cost of equity.¹⁹

However, as the market liquidity increases as a product of the restored public confidence in the fairness of the market place, insider-trading laws become increasingly ineffective because they modified the environment to which they were originally designed

firm has experimented bad earnings in the past year does not mean that everybody is going to sell his shares. The reaction to a bad earnings report depends of how shareholders interpret this bad earning report and their predictions with regard to the firm future performance. See Lachmann (1978, pp. 3–4).

¹⁸ Quoted in Bhide (1993, p. 31).

¹⁹ See Glosten (1989) and Bhattacharya and Spiegel (1991).

for. In particular, with the increase of the market liquidity, the ability of the strategic insiders to conceal their informed trades increases. In more liquid markets, insiders' transactions become noisier in the middle of the large volume of transactions taking place everyday as opposed to more illiquid markets where the volume of transactions and number of market participants are smaller (Bris 2000, 9). In other words, believing that insider-trading laws are effective in deterring insider trading, more investors are going to enter the market thus increasing market liquidity. With the liquidity increasing, the impact of insiders' informed trades is being diluted among other investors' transactions. As a consequence, the regulatory authority is unable to distinguish informed trades from uninformed trades among the large volume of transactions taking place on the markets and neither is it able to identify abnormal volume or price changes. The more liquid the markets are, the more ineffective the use of circumstantial evidence to detect illegal insider trading is.

4 INSIDER TRADING REGULATION AND THE KNOWLEDGE PROBLEM

4.1 The Ineffectiveness of Government Regulation of Insider Trading: A Knowledge Problem

Ultimately the problem of regulating insider trading goes beyond the intangible nature of corporate information. The problem of regulation insider trading is a knowledge problem in the Hayekian sense. Hayek (1945, p. 521) makes a clear distinction between two types of knowledge: scientific knowledge and what he calls "knowledge of particular circumstances of place and time" or *experiential* knowledge.

Scientific knowledge, understood as "knowledge of general rules," can be articulated and thus communicated and acquired through education. On the other hand, "knowledge of particular circumstances of place and time" is the product of individuals' experiences with their environments and, therefore, proper to each individual. As a result, experiential knowledge cannot be articulated and communicated to others.²⁰ Hayek's original intent

²⁰ Even if experiential knowledge could actually be articulated (which is extremely difficult), individuals being communicated one individual's experiential knowledge would not be able to identically benefit and use it

was to describe the insoluble difficulties that central planners face in attempting to allocate efficiently allocate scarce resources. According to Hayek, acquiring scientific knowledge, while useful and necessary, is not a sufficient condition to effectively allocate scarce resources to their most valued uses. Knowledge of particularly circumstances of place and time are required to be able to efficiently allocate resources to their most valued uses, that is, to be able to produce what people value the most. However, as Hayek explains, because such knowledge cannot be articulated, it cannot be collected and used by central planners to make their production decisions. On the other hand, in the decentralized price system, individuals indirectly communicate to the other market participants their experiential knowledge, which is crystallized in the market prices. These market prices in which experiential knowledge has been *crystallized* communicate to the other producers what goods and services that market participants value the most and, therefore, should be produced. For these reasons, the decentralized price system, which is based on private ownership of the means of production, is "superior" to the central planning system because it can achieve what central planners cannot.

Hayek's emphasis of the crucial importance of experiential knowledge and the price system to efficiently allocate resources has implications that go beyond his criticism of socialism and central planning. His analysis applies to government regulation in general. Empirical research have shown that government regulation is by and large ineffective and, often, produces significant counterproductive results that can make the outcome worse than prior to regulation. Similarly, for insider trading, the current analysis and empirical research show that insider-trading regulation is no exception. Not only is insider-trading regulation ineffective but it also cannot be effective. One reason previously discussed to explain the government regulation ineffectiveness is the intangible nature of information.

However, a more important reason to explain this ineffectiveness is the regulators lacking the experiential knowledge required to know where and when the information produced by the corporation would potentially be used for insider-trading purposes. When it comes to controlling the dissemination and

without having gone through the same exact experiences the individual went through that allowed him to process the information he did.

use of corporate information, the knowledge of particular circumstances of place and time described by Hayek comes in play. Without experiential knowledge, the regulator will have problems identifying when corporation information will be material enough to motivate insider trading and to what extent. This is illustrated in some empirical studies that show that insider trading takes place sometimes years ahead of a bankruptcy announcement.²¹ It is also because insiders have experiential knowledge that the regulator does not have that they are able to time when to start trading on inside information and when to stop trading. As empirical studies show, insiders trade on inside information months and sometimes years ahead of a takeover or a bankruptcy announcement but as the announcement day nears insiders reduce their transaction volume and, then, stop trading. The reason why enforcers of insider-trading regulation are ineffective in discouraging insiders from trading on inside information is because they lack the experiential knowledge they need to be able to more effectively discourage insiders from trading on nonpublic corporation information.

4.2 Regulation Insider Trading Without the Government

While government regulation of insider trading cannot be effective due to the intangible nature of information and the information problem face by the government when it attempts to control insider trading, it does not follow that insider trading should not be regulated. The arguments in favor of regulating insider trading are compelling. However, it does not mean that insider trading should be regulated. Obviously, one should take into account the costs of implementing and enforcing such regulation and compare them to its benefits. While those in favor of allowing insider trading tend to overlook the possible costs of insider trading, those in favor of regulating of insider trading because of the benefits accrued to such regulation often ignore the costs of such regulation as well. Nevertheless, let's assume for the sake of the current analysis that insider trading should be regulated.

Therefore, who should regulate insider trading if the government cannot do so effectively? There are three possible answers to this question: corporations, stock exchanges, or corporations and stock exchanges. As mentioned above, Easterbrook's main argument against self-regulation was that shareholders lack enforcement

²¹ See, for example, Seyhun and Bradley (1997).

mechanisms. However, one can ask outside the ability to impose criminal sanctions on insiders what enforcement mechanisms do stock exchanges and corporations lack?

The Securities Exchange Commission and the Department of Justice use the court system. Similarly, corporations and stock exchanges could use the court system to prosecute and convict inside traders. As the SEC requires every director, corporate officer, and owners of more than 10% of the corporation's equity, corporations could contractually require their employees and, possibly, their family members, to report their stock portfolio as well as the transactions. Stock exchanges could require the same thing or cooperate with corporations to obtain this type of information from employees (direct and indirect) of corporations listed on their exchanges.

As mentioned above, the government relies heavily on statistical evidence to detect and prosecute insider trading. However, the statistical evidence that the government uses is provided by stock exchanges, which monitor exchanges on a daily basis. There is no reason why stock exchanges could not rely on such information as the government does despite all the shortcomings associated with the use of such mechanism.

Corporations benefit from advantages over the government and the SEC when it comes to prevent insider trading. They are more capable to better restrict access to the information if they know that such information might be misused to profit from insider trading. Contrary to the government, corporations and stock exchanges, to a lesser extent, are less likely to suffer from the information problem. Corporations and their shareholders (particularly, large shareholders)²² have the knowledge of particular circumstances of place and time to allow them to know which information might be subject to insider trading and might be more able to control who can

²² However, the government prohibits insider trading from large shareholders. It is unlikely that if corporations were to police insider trading, large shareholders would be prohibited from trading on inside information as insider trading could be considered as a mechanism to compensate these shareholders for the risks associated with holding large blocks of stocks. The question remains why large shareholders should be subject to insider-trading laws if current courts' interpretations of insider trading laws is that insider trading should be prohibited because it amounts to misappropriation of corporate information belonging to corporation and its shareholders.

access the information if, based on their experiential knowledge, they *judge* that a piece of corporate information is sensitive enough that it might entice some corporation's employees to breach the fiduciary duty that they owe to shareholders.

If insider trading ought to be regulated because such regulation attracts capital, lowers the cost of capital, and increase market liquidity, stock exchanges will also have incentives to regulate insider trading on their own or in cooperation with corporations. Stock exchanges have two advantages over corporations.

First, they benefit from economies of scale in terms of using mechanisms to detect and enforce insider-trading policies. They already have the necessary technological capabilities to allow them to monitor *in real time* transactions as they take place in the market and can look at abnormal price swing and trade volume to detect insider trading.²³

Second, they have enforced mechanisms that the government and corporations do not possess. Stock exchanges can require corporations, which compete to attract capital and investors and want to access this capital through the primary market, to develop and enforce anti-insider-trading policies. Similarly, if stock exchanges want to attract and incite individuals to invest their savings on these markets, they have incentives to compel and assist corporations in their efforts to enforce these policies through monitoring and detection of irregular market transactions.

5 CONCLUSION

This study shows that the government cannot achieve its goal of preventing insiders from using nonpublic information. The main reason why insider-trading regulation is ineffective is to be found in the intangible and subjective nature of information and the difficulty for the government to use tangible evidence to prosecute and deter insider trading. In addition, the government faces an information problem in the sense that the regulator, often, faces a lack of knowledge of particular circumstances of place and time or experiential knowledge that is necessary to control inside information leakages.

²³ To be sure, such mechanisms are imperfect as seen above. However, they can be complementary with other policies these exchanges and corporations can develop.

The fact that the government is ineffective in deterring insider trading, however, does not mean that insider trading should not be policed or any attempt to prevent insider trading should be avoided. There are compelling arguments to justify policing insider trading. Rather, this analysis attempts to show that insider-trading regulation should not come from the top (the government) but rather from the bottom (the corporations and stock exchanges). In other words, the main implication of this analysis is that the insider-trading regulation should be decentralized rather centralized because corporations and stock exchanges benefit from mechanisms that the government does not have. More importantly, decentralized policing of insider trading would allow for solving the knowledge problem that government suffers.

A second implication, at a more general level, raises questions about the main problem that government faces when it tries to develop and enforce a regulation: a knowledge problem. Not only does a significant portion of the economic literature show that government regulations often distort incentives and have significant counterproductive outcomes but it also shows that these government regulations are ineffective as well because the regulator lacks the experiential knowledge and flexibility required to adapt to the particular circumstances of place and time in which he or she is operating.

On the other hand, the relative success and effectiveness of self-policing rules or self-regulation that have emerged across time and geographic spaces among various groups or industries to mitigate trust problems associated with asymmetric information and network effects can be explained by the flexibility of these self-policing rules as the particular circumstances of place and time are being taken into account in their emergence and evolution process.

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