

THE MARGINAL INCENTIVE OF INSIDER TRADING: AN ECONOMIC REINTERPRETATION OF THE CASE LAW

KRISTOFFEL R. GRECHENIG*

Commentators on insider trading are divided into two camps, one in favor of regulation, the other in favor of deregulation. The arguments for the two positions are manifold but not irreconcilable. I show that important gains to social welfare come with insider trading on negative information (sales), whereas losses often result from the use of positive information (purchases). Thus, I look at a regulation that allows insiders to use negative but not positive non-public information. Because positive information will be disclosed much sooner than negative information, the marginal incentive (and marginal gain to social welfare, respectively) of insider trading as a disclosure mechanism is greater for sales than for purchases. Likewise, stock bubbles generally occur in terms of overvaluations, not undervaluations, emphasizing the importance of insider trading on negative information as a deterrent. The case law on insider trading has long since recognized the distinction between the two types of information, a fact that commentators have either neglected or criticized. A reinterpretation allows me to reconcile presumed contractions of the case law. My analysis also explains empirical data suggesting that insider trading involves more selling than buying, while enforcement actions focus on purchasing activity.

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* Kristoffel R. Grechenig, Mag., Dr., University of Vienna, LL.M., Columbia; Vienna University of Economics and Business Administration, Vienna, Austria; Kristoffel.Grechenig@wu-wien.ac.at. I would like to thank Merrit Fox, Martin Gelter, Jeffrey Gordon, Zohar Goshen, Kimberley MacKinnon, and Holger Spamann for their comments and discussion at various stages of my project. I would also like to thank the participants of the “Workshop Gesellschaftsrecht” at the Vienna University of Economics and Business Administration, Vienna, Austria, June 2004; the 2. Law and Economics Workshop in Saarbrücken, Germany, December 2005; and the Law and Economics Workshop in Rust, Austria, January 2006, for their comments. Mistakes are my own.

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I Introduction

Since the 1960's, insider trading has been subject to an extensive scholarly debate¹ and has led to controversial decisions by the Supreme Court.² Recent corporate scandals have called for a re-evaluation of the debate. Specifically, new insights into speculative stock bubbles may shed a different light on the issue of insider trading, deviating sharply from the two main regimes proposed and discussed so far.³ Because stock prices were long viewed as close to fundamental values, the benefits of insider trading to the accuracy of stock prices were underestimated. This underestimation, however, does not suggest a complete deregulation, permitting insider trading generally. Rather, distortions have turned out to be more likely on the upside, resulting in the emergence of overvaluations ("positive stock bubbles"). This involves a variety of issues that are currently debated in a different context, including performance-based compensation and excessive pay. Because there may, at times, exist few incentives to eliminate overvaluations, I emphasize the importance of insider trading on *negative* information, as opposed to insider trading on positive information. More generally, negative information is kept secret longer than positive information. Thus, the marginal incentive of insider trading for the distribution of information is greater with regard to negative information than with regard to positive information. Closely related, insider trading prohibitions support collusive agreements among insiders to conceal negative information. They provide the conspirators with sanctions for deviating behavior (i.e. trading on the bad

¹ E.g., HENRY G. MANNE, *INSIDER TRADING AND THE STOCK MARKET* (1966); Dennis W. Carlton & Daniel R. Fischel, *The Regulation of Insider Trading*, 35 *STAN. L. REV.* 857 (1983); Frank Easterbrook, *Insider Trading, Secret Agents, Evidentiary Privileges, and the Production of Information*, 1981 *SUP. CT. REV.* 309; Stephen Bainbridge, *The Insider Trading Prohibition: A Legal and Economic Enigma*, 38 *U. FLA. L. REV.* 35 (1986). For useful summaries of the debate, see generally Charles C. Cox & Kevin S. Fogarty, *Bases of Insider Trading Law*, 49 *OHIO ST. L. J.* 353 (1988); Boyd Kimball Dyer, *Economic Analysis, Insider Trading, and Game Markets*, 1992 *UTAH L. REV.* 1.

² *Chiarella v. United States*, 445 U.S. 222 (1980), *Dirks v. SEC*, 463 U.S. 646 (1983); *United States v. O'Hagan*, 521 U.S. 642 (1997). Recently, the European Union has again emphasized the importance of this issue; see the directive 2003/6/EC of the European Parliament and of the Council of January 28, 2003 on insider dealing and market manipulation (market abuse), replacing the directive 89/592/EEC of November 13, 1989; compare Jürgen Noll & Martin Klimscha, *Über die Sinnhaftigkeit der Bestrafung von Insidergeschäften*, 2005 *ÖSTERREICHISCHE JURISTENZEITUNG* 658.

news) of their co-conspirators, namely with the possibility to report them to the SEC, and thus allow to enforce illegal agreements.

I focus on the distinction between positive and negative information in reinterpreting the case law, arguing that it is more coherent than most commentators allege.⁴ In particular, our analysis provides a useful tool to understand *Dirks* and explains how it is reconciled with preceding (e.g. *TGS*) and subsequent (e.g. *O'Hagan*) cases.⁵ These cases suggest that insider trading on negative information has a greater social value than insider trading on positive information, which is coherent with our efficiency analysis. In fact, common law sanctions against insider trading that were based on a breach of fiduciary duties have quite naturally relied on the same distinction. With this analysis I challenge the traditional positions that focus on the two extremes,⁶ the view that insider trading shall be prohibited where informational advantages are the largest⁷ and research that emphasizes efficiencies of insider trading on positive information⁸.

The contemporary debate generally agrees on the goal of improving liquidity and efficiency of the capital market.⁹ (1) Deregulators, i.e. opponents of the current prohibition,¹⁰ suggest

³ The discussion often includes the two extremes: prohibiting insider trading on *positive and negative* information without prior disclosure of non-public information and allowing insider on *positive and negative* information without prior disclosure of non-public disclosure.

⁴ Daniel R. Fischel, *An Economic Analysis of Dirks v. Securities and Exchange Commission*, 13 HOFSTRA L. REV. 127 (1984); Jill E. Fisch, *Start Making Sense: An Analysis and Proposal for Insider Trading Regulation*, 26 GA. L. REV. 179 (1991); A.C. Pritchard, *United States v. O'Hagan: Agency Law and Justice Powell's Legacy for the Law of Insider Trading*, 78 B. U. L. REV. 13 (1998); for further literature see note 227.

⁵ S footnotes 216 and 217.

⁶ See footnotes 9-20 and accompanying text.

⁷ Victor Brudney, *Insiders, Outsiders, and Informational Advantages under the Federal Securities Laws*, 93 HARV. L. REV. 322-367 (1979-1980).

⁸ Lucian Arye Bebchuk & Chaim Fershtman, *The Effect of Insider Trading on Insiders' Reaction to Opportunities to "Waste" Corporate Value*, NBER Technical Working Papers No. 95, argue contrary to our theory that insider trading on positive information should be allowed and insider trading on negative information prohibited; compare also James P. Jalil, *Proposals for Insider Trading Regulation After the Fall of the House of Enron*, 8 FORDHAM J. CORP. & FIN. L. 689, 714 (2003) ("It would ... be interesting to see if senior managers better managed for the long term interests of the stockholders if they could not sell their securities until the earlier of their retirement or five years after they were no longer employed. It may be argued that American corporations would be managed far differently, and perhaps far more prudently.") For further literature see footnote 43.

⁹ See Zohar Goshen, *On Insider Trading, Markets, and "Negative" Property Rights in Information*, 78 VA. L. REV. 1229, 1230 (2001) in the given context.

¹⁰ MANNE, *supra* note 1; Carlton & Fischel, *supra* note 1.

that insider trading causes information to be transmitted more quickly to the market and thereby enhances efficiency of stock prices. This is a gain to social welfare because the economy's resources can be better allocated. Reduced uncertainty increases the firm's value to investors and lowers the firm's cost of capital.¹¹ Insider trading enhances the market for corporate control because investors can better evaluate management performance.¹² Incentive-based compensation through equity interests becomes a more efficient tool.¹³ Insider trading partly replaces disclosure duties at a lower cost.¹⁴ Insofar as wealth may be redistributed, insider trading opportunities will be priced in the compensation, resulting in a lower salary when insider trading is permitted.¹⁵ Moreover, it has been asserted that insider trading aligns the interests of risk averse managers with less risk averse shareholders because trading opportunities give managers more incentives to engage in riskier projects.¹⁶ These arguments were conventionally considered to hold true for insider trading on *positive and negative* information. (2) Regulators, i.e. proponents of the current regulation, believe that insiders systematically outperform the market and thus would drive outside information traders out of the market.¹⁷ Outside information traders might have incentives to invest in industry-related and general market information but would refrain from dealing with firm-specific information. With much the same concern, commentators have alleged fairness arguments to

¹¹ Carlton and Fischel, *supra* note 10866 872.

¹² Carlton and Fischel, *supra* note 10867.

¹³ Carlton and Fischel, *supra* note 10867.

¹⁴ Henry G. Manne, *Insider Trading: Hayek, Virtual Markets and the Dog that Did Not Bark* (March 22, 2005) ExpressO Preprint Series. Working Paper 545 (<http://law.bepress.com/expresso/eps/545>) reminds us that prohibiting insider trading comes with costs of sanctions (“... conclusion that the practice should be outlawed and policed (efficiently? and at what other costs?) by public authorities ...”); compare also Michael P. Dooley, *Enforcement of Insider Trading Restrictions*, 66 VA. L. REV. 1, 25-27(1980) .

¹⁵ MANNE, *supra* note 1, chs. 8-10.

¹⁶ Carlton and Fischel, *supra* note 10869.

¹⁷ E.g. Goshen, *supra* note 9, at 1238 et seq, 1241 relying on Michael J. Fishman and Kathleen M. Hagerty, *Insider trading and the efficiency of stock prices*, 23 RAND J. ECON. 106, 110 (1992) (showing that the number of outside information traders declines as a function of the relative precision of the insiders' information) and Hayne E. Leland, *Insider Trading: Should It Be Prohibited?*, 100 J. POL. ECON. 859, 883-85 (1992) (showing that the welfare of outside information traders declines when insiders are trading). See also Bagehot (Jack Treynor), *The Only Game in Town*, 27 FIN. ANAL. J. 12-13 (March/April 1971) (showing that in a world with informed traders, market makers, liquidity traders, market makers will lose to informed traders).

show that outsiders would no longer invest in the market on unfair conditions.¹⁸ Another set of arguments deals with compensation, managerial incentives, and productive efficiency. Insiders would delay the transmission of information which is crucial if the information has to go through a number of levels in the firm before it reaches the decision makers.¹⁹ These arguments were advanced against insider trading on *positive and negative* information.²⁰

In order to understand what kind of information the benefits and disadvantages of insider trading are attributed to, I create a simple hypothetical scenario, reflected in the case law²¹: Insiders may trade on negative inside information but not on positive inside information. Non-public information can be classified into positive and negative information, according to its effect, if disclosed. That is, if disclosure would increase the stock price it is positive information; if it would lead to a decline it is negative information.²² This approach allows us to connect gains and losses to either selling or purchasing activity. As we will see, alleged disadvantages of insider trading involve positive information, while important advantages refer to insider trading on negative information. The hypothetical might explain why insider selling exceeds purchasing, while at the same time, most of the enforcement actions by the SEC refer to purchasing activity. Because insider trading on negative information is less harmful (or more beneficial) to arbitrageurs than trading on positive information, informal restrictions are more likely to be imposed on profits from insider purchasing.

In the next section, I discuss the fundamentals of disclosure duties and apply them to insider trading as a mechanism of distributing information (II). Then, through the hypothetical, I trace

¹⁸ See e.g. Ian B. Lee, *Fairness and Insider Trading*, 2002 COLUM. BUS. L. REV. 119; for more literature see Dyer, *supra* note 1, at footnote 5 and below footnote 119.

¹⁹ See Bainbridge, *supra* note 1, 50. See furthermore below footnote 119.

²⁰ Paula J. Dalley, *From Horse Trading to Insider Trading: The Historical Antecedents of the Insider Trading Debate*, 39 WM AND MARY L. REV. 1289, 1343-44 (1998) (arguing the distinction between buyers and sellers has never been important in the insider trading context). For a comprehensive overview of the literature see also e.g. Bainbridge, *supra* note 1 and Stephen M. Bainbridge, *Insider trading*, in *ENCYCLOPEDIA OF LAW AND ECONOMICS, VOL III (THE REGULATION OF CONTRACTS)* 5650, at 772-812 (Boudewijn Bouckaert & Gerrit De Geest eds., 2000).

²¹ See *infra* note 215 and accompanying text.

gains and losses of insider trading to either positive or negative information (III). Having laid out the underlying framework, I look at the basic economics of stock bubbles and apply these insights to our hypothetical scenario. I discuss herding behavior, fund managers' incentives, the role of analysts, short sale restraints and the inherent difference between positive stock bubbles (overvaluations) and negative stock bubbles (undervaluations) in order to show that the firms are more likely to be overvalued (IV). From the insight gained through this analysis, I review the tenets of the insider trading debate and apply them to our hypothetical situation (V). A separate section is dedicated to examining the presumed distortion of incentives that is caused by the fact that insiders are allowed to trade on negative information (VI). I review empirical evidence (VII) and argue how the case law could be interpreted consistent with our analysis. Focusing on modern insider trading cases with an eye on early antecedents, I show that the law, as understood by the Supreme Court, is more socially optimal than previously thought (VIII). I briefly discuss the option of self-regulation (IX) and then, I conclude (IX).

II Disclosure duties and insider trading

II.a Positive and negative information in contract law

Insider trading is a mechanism for distributing information, so it is worthwhile to look at the economics of disclosure duties. In contract law, efficiency analyses traditionally distinguish between sellers and buyers as to whether or not a disclosure duty applies. (1) If sellers had negative information which they were not legally bound to disclose about a good that they wanted to sell, information asymmetry would result in an adverse selection problem. Buyers would anticipate potential negative information about the good they wanted to purchase and thus would demand a lower price. Sellers would anticipate this anticipation and not offer

²² Stephen A. Ross, *Disclosure Regulation in Financial Markets: Implications of Modern Finance Theory and Signaling Theory*,

goods with a value above this anticipated value, and so on.²³ A disclosure duty may be one possible way of circumventing this market failure.²⁴ (2) If buyers had positive information about a good they wanted to purchase and the law imposed a duty to disclose such information, they would have no incentive to produce the information in the first place.

A mining company that is searching for minerals and willing to purchase property found to contain minerals has an interest not to disclose the information before making an offer. If it had to disclose the information, it could not recoup the search costs; and thus, the company had no incentives to produce the information in the first place.²⁵ The same is true for the mere distribution of information if someone finds out information accidentally. To the extent, however, that positive information would become known anyway (foreknowledge), the production and distribution of information by the buyers has little or no social value, thus a disclosure duty would be efficient. It would deter the buyer from incurring costs to produce information that is merely redistributive. Roughly stated, economic analyses suggest that disclosure duties are efficient for sellers²⁶ but not necessarily for buyers.²⁷

in ISSUES IN FINANCIAL REGULATION 177, 180 (F. Edwards ed., 1979).

²³ Compare George A. Akerlof, *The Market for "Lemons", Quality Uncertainty and the Market Mechanism*, Q. J. ECON. 488 (1970).

²⁴ This, of course, assumes that courts are able to sanction breaches of disclosure duties. If this is not possible (or disclosure duties do not exist), sellers cannot credibly commit to telling the truth and buyers would have to invest in obtaining information that sellers already possess. This would be a loss to social welfare; e.g. Saul Levmore, *Securities and Secrets: Insider Trading and the Law of Contracts*, VA. L. REV. 117, 137 (1982).

²⁵ See also SEC v Texas Gulf Sulphur, 401 F.2d 833, 848 and Fn 12. Historically, the common law was quite clear on this fact, see Dalley, *supra* note 20 at 1290; see also Paula J. Dalley, *The Law of Deceit, 1790-1860: Continuity Amidst Change*, 39 AM. J. L. HIST. 405 (1995).

²⁶ Whether this should be (mandatory) law is primarily a question of transaction costs. A closer analysis may include other factors, like the seller's costs of producing information etc, e.g. Joseph Farrell, *Voluntary Disclosure: Robustness of the Unraveling Result*, in ANTITRUST AND REGULATION 91 (Grieson ed., 1986).

²⁷ For a more detailed analysis see e.g. Steven Shavell *Acquisition and Disclosure of Information Prior to Sale*, 25 RAND J. ECON. 20-36 (1994). For a recent summary of the discussion see also Melvin A. Eisenberg, *Disclosure in Contract Law*, 91 CALIF. L. REV. 1645 (2003); with regard to contract law and insider trading see Levmore, *supra* note 24, who uses the term "optimal dishonesty" (p. 140).

II.b Efficiencies of insider trading on negative information

At first blush, the case described in the previous section seems to resemble a situation of a manager selling shares of his own company. A buyer would anticipate that the shares are worth less than the market value due to non-public information the manager has. To eliminate this information asymmetry, the insider would need to be subject to a duty to disclose the information before *selling*. On the other hand, if the insider knows positive, non-public information, trading profits would incentivize him to purchase the shares, thus realizing both personal and social gains. This seems to run counter to my efficiency arguments, under which insiders may sell but not purchase, absent disclosure.²⁸

To get a better picture of the difference between disclosure duties in contract law and disclosure duties in corporate insider trading, we first look at the two arguments (adverse selection and incentives for the production of information), and then emphasize a third, arguably more important factor. First, in the corporate context, adverse selection translates into wider bid-ask spread. Investors discount the price for potential negative information when purchasing stock because the shares may be offered by an insider with superior information, resulting in a loss to outside traders.²⁹ This additional “cost of trading” was alleged to be a loss to social welfare because some investments would not be undertaken and the market would be provided with less liquidity. Even though intuitively plausible, a correlation between insider trading and a wider bid-ask spread has been called into question.³⁰ The fact that insiders also provide additional liquidity renders the overall effect unclear.³¹ This is supported by some of the empirical evidence that finds no significant correlation between insider trading and an increase in the bid-ask spread.³² Moreover, a wider bid-ask spread is

²⁸ For a comparison of contract law with insider trading see Levmore, *supra* note 24

²⁹ Likewise, this applies to selling because insiders may have positive information. See also below p. 31

³⁰ See Stanislav Dolgoplov, *Insider trading and the bid-ask spread: a critical evaluation of adverse selection in the market setting*, 33 *CAP. U. L. REV.* 83 (2004).

³¹ MANNE, *supra* note 1, at 7-8.

³² See Dolgoplov, *supra* note 30, with an extensive discussion of empirical evidence.

not necessarily socially suboptimal because it deters speculative trading. This idea has been articulated by Keynes³³ and led others to propose a securities transaction tax.³⁴

Secondly, in the corporate context, positive information is likely to be produced and published even if insider trading is prohibited. In fact, in order to set incentives for the production of positive information, people investing in the production must have a right to the benefits. This idea is captured by the business opportunity doctrine.³⁵ Thus, to prohibit insider trading may in some cases enhance the production of positive information, consistent with the economics of contract law.³⁶

The third and arguably more important factor in capital markets is the distribution of information and its effects on the informational efficiency. Positive information is likely to be disclosed even without insider trading whereas negative information may be kept secret for a relatively long period. Managers (and agents, in general) can, at least to some extent, control what and when information will become public. Since their interests are not entirely aligned with the interests of the shareholders, managers will not necessarily opt for a disclosure system that benefits the firm. Rather, they maximize their own benefits.³⁷ Due to performance-based compensation and the threat of being ousted in the course of a hostile takeover, managers generally favor overvaluation to undervaluation. Hence, they prefer disclosing positive information, while concealing negative information.³⁸

³³ JOHN MAYNARD KEYNES, *THE GENERAL THEORY OF EMPLOYMENT, INTEREST, AND MONEY* 155-160 (1936).

³⁴ See Dolgoplov, *supra* note 30, at 101-02 and Fn 103 for a discussion and further literature on securities transfer taxes.

³⁵ Investors place a higher value on business opportunities than managers because investors are diversified; see DeLarme R. Landes, *Economic Efficiency of the Corporate Opportunity Doctrine: In Defense of a Contextual Disclosure Rule*, 74 *TEMP. L. REV.* 837, 853-54 (2001); for a more general discussion of the issue see Edmund W. Kitch, *The Law and Economics of Rights in Valuable Information*, 9 *J. LEGAL STUD.* 683 (1980).

³⁶ See below with regard to the corporate opportunity doctrine (see below footnotes 188, 223, 254 and accompanying text). Of course, this argument by itself does not require a *mandatory* prohibition.

³⁷ Even if the interests were fully aligned, i.e. the managers would opt for a disclosure system that is in the best interests of the shareholders, it would not be socially optimal; Merritt B. Fox, *Retaining mandatory securities disclosure: Why Issuer Choice is not Investor Empowerment*, 85 *VA. L. REV.* 1335 (1999). See also below p. 45

³⁸ Ross, *supra* note 22 at 184 -18. Generally Roberta Romano, *The Need for Competition in International Securities Regulation: A Response to Critics*, 2 *THEORETICAL INQUIRIES L.* 387 (2001), 358-359; Merritt B. Fox, *The Issuer Choice Debate*, 2 *THEORETICAL INQUIRIES L.* 563 (2001), 595; Marcel Kahan, *Securities Laws and the Social Costs of "Inaccurate" Stock Prices*, *DUKE L. J.* 977, 1028 29(1992) . In greater detail Fox, *supra* note 37 Of course, disclosure of negative information can

Generally speaking, bad news has a negative impact on a manager's reputation, which lowers his value on the labor market and has additional negative social consequences.³⁹ Social recognition –to a certain degree- depends on economic success, which is measured by one's performance and compensation at work.⁴⁰ One's sense of self-esteem will naturally be higher if one reaches his goals. Consequently, monetary as well as non-monetary considerations support conventional wisdom that managers are more likely to disclose good news than bad news.⁴¹

Since positive information is made public fairly quickly anyway and negative information is kept secret for a relatively long time, there are good arguments for prohibiting insider trading on positive information only. The marginal incentive, and thus the marginal utility, of insider trading on positive information for the distribution of such information would be relatively low, whereas the marginal incentive and utility of insider trading on negative information would be relatively high, given equal incentives from disclosure duties.⁴² Thus, contrary to earlier work,⁴³ our analysis suggests that insider trading should be allowed where the

have benefits to the firm, since non-disclosure might be valued as bad news (Ross, supra note 22, 186-187). However, in the case of non-disclosure there is always a probability that no information has been produced at all, so that the probability of existing bad news will be somewhat lower (for non-disclosure) than if bad news were actually disclosed.

³⁹ Compare e.g. Merritt B. Fox, *Required Disclosure and Corporate Governance*, 1999 LAW & CONTEMP. PROBS. 113, footnote 3, who refers to "public reputation" and "sense of self-worth".

⁴⁰ See Ernst Fehr & Armin Falk, *Psychological Foundations of Incentives*, 46 EUR. ECON. REV. 687 (2002) for a general discussion of non-pecuniary incentives.

⁴¹ Compare Ross, supra note 22, 185-187; Kenneth Scott, *Insider Trading: 10b-5, Disclosure and Corporate Privacy*, 9 J. LEGAL STUD. 801, 810-11 (1980) .

⁴² A similar point is made by Harrison Hong, Terence Lim & Jeremy Stein, *Bad News Travels Slowly: Size, Analyst Coverage, and the Profitability of Momentum Strategies*, 55 J. FIN. 265, 268 (2000) who conduct an empirical analysis. However, Hong et al focus on a different issue: because bad news travels more slowly, the "marginal contribution of *outside analysts* in getting the news out is likely to be greater when the news is bad". [emphasis added]

⁴³ Brudney, supra note 7, at 322, 353 et seq, 354, 357, 359, 360 argues that the law should bar transactions where an insider "possess an informational advantage that the public investor may not lawfully overcome, regardless of their diligence or resources". It shall be noted that Brudney uses a slightly different definition of "informational advantage"; Marcel Kahan, *Securities Laws and the Social Costs of "Inaccurate" Stock Prices*, DUKE L. J. 977, 1023 24 (1992) . Bebchuk and Fershtman, supra note 8, argue that only insider trading on negative information should be prohibited (this result is driven by the fact that the authors focus on the incentive effect on investment decisions); see also Ronald J. Gilson and Reinier Kraakman, *The Mechanisms of Market Efficiency*, 70 VA. L. REV. 549 (1984) Fn 221, and Levmore, supra note 24, at 149 who imply that insider trading on positive information is better than insider trading on negative information. However, this statement is made only with regard to incentives for investment decisions. The same argument is made by WOLFGANG KRAUEL, *INSIDERHANDEL* 40 (2000) and implicitly made by MARTIN OPPITZ, *INSIDERRECHT AUS ÖKONOMISCHER PERSPEKTIVE* 64 (2003)

outsiders' "informational disadvantage" of the outsiders is the largest, not the other way round.

Of course, the questions, as to *when* exactly the information with and without insider trading becomes known, and what the precise social value of an earlier disclosure due to insider trading is, remains open. Accordingly, the primary objective of this paper is to show that insider trading on negative information has a higher social value than trading on positive information. This allows us to advance arguments as to why a regulation that permits insider trading on negative information (only) may be more efficient. One way to think of it is, that – assuming our arguments are correct- the expected social welfare is greater in our hypothetical than the average of the expected social welfare of (1) a system that allows insider trading on both positive and negative information and (2) a system that prohibits it for both positive and negative information. That is, if we assume, with a probability of 50%,⁴⁴ that the current prohibition is better than to allow insider trading entirely and vice versa, we are better off with a rule that only prohibits insider trading on negative information.⁴⁵

III Our hypothetical and potential objections

In some cases, managers are incentivized by disclosure duties to publish bad news, in other cases they may not. An important issue is whether disclosure duties are a more costly mechanism for distributing information than insider trading.⁴⁶ An analysis of the costs of

⁴⁴ Of course, there is no way of knowing that the probability is 0.5. It shall simply reflect the fact that the current discourse is divided, with arguments in favor and contra insider trading appearing equally appealing. The assumption is not essential to the analysis.

⁴⁵ This is true, everything else equal (e.g. policing costs). Of course, one has to take into account, as will be discussed below, that the negative incentive effect of allowing insider trading on negative information (managers may take harmful investment decisions for trading opportunities) may cause the costs of insider trading on negative information to exceed the costs of insider trading on positive information. As we will see, the negative effect is likely to be weak.

⁴⁶ Compare Gilson & Kraakman, *supra* note 43 at 630; Carlton & Fischel, *supra* note 1, at 868 mention that some information may not credibly be disclosed. Marleen A. O'Connor, *Toward a More Efficient Deterrence of Insider Trading: the Repeal of Section 16(b)*, 58 *FORDHAM L. REV.* 309, 354 (1989) mentions the idea that soft information will not be disclosed because of fear of liability.

disclosure duties and a comparison of those costs with the costs of insider trading goes beyond the scope of this paper. For the present purposes it suffices to emphasize two comparative disadvantages of disclosure duties: First, disclosure duties as a negative incentive require costly enforcement actions, whereas positive incentives through insider trading are self-enforcing. Second, negative incentives face the issue of wealth restraints, especially when detection is difficult. Efficient deterrence requires the sanction to equal the expected benefits. If the probability of detection is very low, as seems to be the case in the current context, the sanction will exceed the wealth restraints of the violator and deterrence will be lower than socially optimal.⁴⁷ Thus, one has to set positive incentives in order for information to be disclosed. The observation that negative news is not always made public, as demonstrated in cases like Enron,⁴⁸ is consistent with the problems mentioned.

The central question is then: *when* would the information become public without insider trading? The sooner information would become public without insider trading, the lower the marginal utility of allowing insider trading. On the other hand, the later information would be made public, the greater the marginal utility of insider trading is as an additional disclosure mechanism.

Our hypothetical allows insiders to trade on negative inside information and bars them from trading on positive inside information; that is, insiders may profit from the use of non-public information that would lead to a decline (but not an increase) in the stock price. Because insiders typically have incentives to disclose positive news and conceal negative news, insider trading on negative news adds more to the disclosure of information. In other words, it makes

⁴⁷ George J. Stigler, *The Optimal Enforcement of Laws*, 78 J. POL. ECON. 526 (1970); Maria Gutierrez, *An Economic Analysis of Corporate Directors' Fiduciary Duties*, 34 RAND J. ECON. 516 (2003); STEPHEN SHAVELL, FOUNDATIONS OF ECONOMIC ANALYSIS OF LAW 518-19 (2004). See also below p. 63

⁴⁸ E.g. Jeffrey N. Gordon, *What Enron Means for the Management and Control of the Modern Business Corporation: Some Initial Reflections*, 69 U. CHI. L. REV. 1233 (2002). Compare also Henry G. Manne, *Insider Trading: Hayek, Virtual Markets, and the Dog that Did Not Bark*, J. CORP. L. (forthcoming 2006).

sense to pay someone for the distribution of information that would otherwise be kept secret but not for the distribution of information that would be disclosed fairly quickly in any case.

Most of the effects of insider trading on negative information differ from the alleged effects of a regulation allowing or prohibiting insider trading on both types of information. The following sections discuss potential objections to this idea: Proponents of the current prohibition may fear the emergence of negative stock bubbles. Insider trading on negative information furthers an undervaluation of the stock and leads to undesired negative stock bubbles. This concern dates back to the discussion about short sale restraints after the market crash in 1929.⁴⁹ Outside information traders might decline in number or even exit the market because of the enhanced presence of insiders. This is undesirable because fewer information traders would lead to both less efficiency and less liquidity.⁵⁰ Closely related to this is the concern that the market for corporate control might be undermined because managers would, in principle, monitor themselves with discretion whether or not to trade and/or disclose information. Managers might have incentives to invest in negative net present value projects in order to create insider trading opportunities. Notwithstanding making investment decisions with a positive net present value, managers choose highly risky projects. Insider trading on negative information might be an inefficient compensation scheme. Insiders might be incentivized to delay the transmission of information.

⁴⁹ Representative Adolph Sabath of Illinois called short selling the “greatest evil” and suggested to ban it. H.R. 4639 Before the House Comm’n on the Judiciary, 72d Cong., 1st Sess., pt. 1, at 7 (1932); see also hearings on H.R. 4, H.R. 4604, H.R. 4638. After the market break of 1937, the SEC adopted the tick test in Rule 10a-1. See Exchange Act Release No. 1,548, 3 Fed. Reg. 213 (Jan. 26, 1938); Exchange Act Release No. 13,091, 41 Fed. Reg. 56,530 (Dec. 28, 1976) (describing the purposes of Rule 10a-1). For a historical overview see Jonathan R. Macey, Mark Mitchell & Jeffrey Netter, *Restrictions on Short Sales: An Analysis of the Uptick Rule and its Role in view of the October 1987 Stock Market Crash*, 74 CORNELL L. REV. 799 (1989).

⁵⁰ E.g. Goshen, *supra* note 9.

IV Elements of contemporary stock bubbles

IV.a Stock bubbles and herding behavior

In this section we will look at the effect of our hypothetical on “stock bubbles”, an expression often used to describe lasting inaccuracy in stock prices, absent the production of new information.⁵¹ Roughly stated, if insider trading were permitted, more information would be incorporated in the price and the price would reflect the fundamental value more accurately. The economy’s resources would be better allocated which is a gain to social welfare.⁵² This takes into consideration that people would invest their money in the wrong companies, investors would consume more (less) in everyday life than they otherwise would have, managers would be awarded high salaries even though they worked inefficiently etc.⁵³ Small, short-term inaccuracy leads to a small loss to social welfare, while long-lasting stock bubbles denote a massive misallocation of the economy’s resources.⁵⁴

In our hypothetical, insiders are allowed to trade on negative inside information only. The hypothesis is that (1) positive stock bubbles (overvaluations) are less likely to arise because insiders can trade against them and (2) negative stock bubbles (undervaluations) are not likely to arise, with or without insider trading. If it is true that, absent insider trading, there is a greater probability of positive bubbles to arise, insider trading on negative information is more

⁵¹ This does not mean that the production of new information is irrelevant for the initiation of bubbles. In fact, it seems that the production of new information, e.g. the new technology, and changes in general, are important for the emergence of a bubble [compare ROBERT J. SHILLER, *IRRATIONAL EXUBERANCE* 31-55 (2nd ed 2005)]. However, once a bubble has been initiated other factors seem to drive the further development. Consistent with the literature, the term “stock bubble” is used in this context to describe a phenomenon where at least some investors buy/sell overpriced/underpriced stock even though they know that the stock is overpriced/underpriced. This means that stock bubbles theories usually go beyond mere short-term mispricing that is due to the fact that new information has been produced, and has yet to be incorporated in the price; compare DeLong et al, *supra* note 60.

⁵² Kahan, *supra* note 43 at 1008 et seq; Clark, *Corporate Law* (1986) 151.

⁵³ Many other cases can be found. For a broad analysis see Kahan, *supra* note 38; see also Levmore, *supra* note 24 at 145 et seq.

⁵⁴ Michael C. Jensen, *Agency Costs of Overvalued Equity* (March 2005). Harvard NOM Working Paper No. 04-26; ECGI - Finance Working Paper No. 39/2004, <http://ssrn.com/abstract=480421>; compare also Sara B. Moeller, Frederik P. Schlingemann & René M. Stulz, *Wealth Destruction on a Massive Scale? A Study of Acquiring-Firm Returns in the Recent Merger Wave*, J. FIN. (forthcoming) <http://ssrn.com/abstract=571064>; Jap Efendi, Anup Srivastava & Edward P. Swanson, *WHY DO CORPORATE MANAGERS MISSTATE FINANCIAL STATEMENTS?* (April 28, 2005). <http://ssrn.com/abstract=547922> (with an empirical analysis of equity-based compensation in the late 1990’s stock bubble).

beneficial to social welfare than insider trading on positive information. Before we distinguish between the two cases, we will look at conventional approaches to stock bubbles.

Stock prices are believed to be a useful proxy for the future cash flows of a firm. Because arbitrageurs buy undervalued stock and sell overvalued stock, the price reflects the fundamental value. However, arbitrage trading is limited in several ways.⁵⁵ Information traders are limited in their willingness to trade because they bear the fundamental risk, in other words they are not sure about the company's fortunes. They can offset the fundamental risk by hedging their positions but substitutes might not always be available. Fundamental risk is a concern to both arbitrageurs with finite and infinite time horizons. Arbitrageurs with finite time horizons will place considerable value on *when* stock prices revert to the intrinsic value. If arbitrageurs believe that prices will remain inaccurate for a period exceeding their own time horizon, they will abstain from trading on the mispriced stock.⁵⁶

The common assumption of stock bubble theories is that investors, who know that a certain stock is overvalued, will not necessarily trade on this arbitrage opportunity by selling the stock (short) because the price may further increase. They would have to cover the short sale at a high price if the bubble lasts beyond their own time horizons. In fact, depending on an arbitrageur's expectations and preferences, he may choose to buy the overvalued stock, so as to profit from additional price increases and sell the stock shortly before the bubble bursts. The expectation of a further price increase is thus also driven by informed traders who expect the bubble to last. However, the main factor seems to be "noise traders" who are not well informed about the expected return on the stock. They buy or sell the stock even though no new fundamental information has been produced; and thus, they contribute to price

⁵⁵ Gilson and Kraakman, *supra* note 64, at 17 use four categories: fundamental risk, noise trader risk, institutional limits, and cognitive biases by professional traders.

⁵⁶ DeLong et al, *supra* note 60 at 705, 710, 713; Andrei Shleifer & Robert W. Vishny, *The Limits of Arbitrage*, 52 J. FIN. 35 (1997); Gilson & Kraakman, *supra* note 64, 18-19.

distortion.⁵⁷ As long as noise trader biases are uncorrelated they average out. However, biases are often correlated thereby creating “noise trader risk” to arbitrageurs. Everything else equal, the probability of a bubble emerging and enduring longer increases where the biases are more correlated. As traders have incentives to ride the bubble instead of trading against it, trading against the bubble becomes less profitable. This feedback mechanism may cause almost all investors to ride the bubble until shortly before they think it will burst. Since there is no well-defined last period, no one knows when to best sell the stock. Of course, even informed traders may lose in the end because they have stayed too long in the market. Stanley Druckenmüller, who managed George Soros’ 8.2 billion Quantum Fund until April 2000 when he resigned due to mounting losses, continued investing in technology stock even though he knew it was overvalued. When he was asked why he did not sell, he replied: “We thought it was the eighth inning, and it was the ninth.”⁵⁸

The sentiment that investor beliefs are “biased”, is perhaps best explained by what is termed “herding behavior”. Herding behavior theories date back to Keynes⁵⁹ and make up an integral element of stock bubble theories.⁶⁰ They can explain why noise trader biases are correlated and why, at times, informed traders follow herding patterns. The basic notion can be illustrated by a simple story. Suppose that there are two neighboring and equally appealing restaurants, A and B. The first customer to arrive arbitrarily chooses restaurant A. The second customer arrives to find the first customer in restaurant A. Relying on the information provided by the first customer, the second customer is more likely to choose A than was the

⁵⁷ E.g. ANDREI SHLEIFER, *INEFFICIENT MARKETS* 12 et seq, 33 et seq (2000).

⁵⁸ New York Times, April 29, 2000, Another technology victim; Top Soros Fund Managers Says He ‘Overplayed’ Hands”.

⁵⁹ KEYNES, *supra* note 33, at 157-158 expresses skepticism about “long-term” investors to ensure accurate prices (“... and if in the short run he is unsuccessful, ..., he will not receive much mercy. Worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally.”).

⁶⁰ E.g. J. Bradford DeLong, Andrei Shleifer, Lawrence H. Summers, and Robert J. Waldmann, *Noise Trader Risk in Financial Markets*, 98 J. POL. ECON. 703-738 (1990); Franklin Allen, Stephen Morris, and Andrew Postlewaite, *Finite Bubbles With Short Sale Constraints and Asymmetric Information*, 61 JOURNAL OF ECONOMIC THEORY, 206-229 (1993); From a labor market point of view see David S. Scharfstein and Jeremy C. Stein, *Herd Behavior and Investment*, 80 AM. ECON. REV. 465 (1990).

first one. In the end all customers may end up in restaurant A even though B might turn out to offer better food.⁶¹ In a more complex setting, Scharfstein and Stein analyze herding behavior from a labor market point of view. Their basic assumption is that there are ‘smart’ managers who receive substantial information, and ‘dumb’ managers who receive noisy signals. Since smart managers observe the same truth, their decisions are correlated, whereas decisions by dumb managers are uncorrelated as a result of non-substantial noise.⁶² Ceteris paribus, managers who mimic the decisions by other managers are perceived more likely to be smart, hence more likely to be employed. Managers who do not follow the crowd are more likely to be perceived ‘dumb’.⁶³ Those basic approaches to stock bubbles are supported by a number of factors, including incentive structures for investors’ agents (e.g. fund managers), sell side analysts and short sale restraints. The first factor is used for a better understanding of stock bubbles, subsequent issues tell us something about the distinction between over- and undervaluations.

IV.b The fund managers’ incentives

Many economic studies try to apply herding behavior theories to the capital market context.⁶⁴

They often focus on the specific organization of investors (e.g. funds) and legal constraints

⁶¹ The example is borrowed from SHILLER, supra note 51 at 160. The fact, that the second customer chooses A relies on the assumptions that the two restaurants seem equally appealing to each other but no customer knows that this is true for all other customers. Otherwise, he would not rely on the first customer having chosen restaurant A.

⁶² In a stock market setting, correlation among noise traders is a disputed issue; see Gilson and Kraakman, supra note 64 at 11-17, for a short summary of market anomalies (and claims by behavior finance literature). Correlation among noise traders, however, is an important assumption for stock bubble theories; see e.g. DeLong et al, supra note 60 at 707.

⁶³ Scharfstein and Stein recognize that their model does not fit perfectly in a stock market setting but claim that the basic insights are relevant; id, at 477.

⁶⁴ Allen, Morris, and Postlewaite, supra note 60; Shleifer & Vishny, supra note 56; Eitan Goldman & Steve L. Slezak, *Delegated Portfolio Management and Rational Prolonged Mispricing*, 58 J. FIN. 283 (2003); John C. Coffee, Jr., *What caused Enron? A Capsule Social and Economic History of the 1990s*, 89 CORNELL L. REV. 269-309 (2004); Paul M. Healy & Krishna G. Palepu, *The Fall of Enron*, 17 J. ECON. PERSP. 3 (2003); Ronald J. Gilson & Reinier H. Kraakman, *The Mechanisms of Market Efficiency Twenty Years Later: The Hindsight Bias* (October 2003), Columbia Law and Economics Working Paper No. 240; Stanford Law and Economics Olin Working Paper No. 270; Harvard Law and Economics Disc. Paper No. 446. <http://ssrn.com/abstract=462786>; Michael R. Powers, David M. Schizer & Martin Shubik, *Market Bubbles and Wasteful Avoidance: Tax and Regulatory Constraints on Short Sales* (March 2003). Yale SOM Working Paper No. ES-22; Columbia

(e.g. short-sales). At times, a fund manager may have an incentive to follow the “herd” instead of trading against it, even though, had she invested her own money, trading against the herd would be her optimal strategy. This is roughly accounted for by the difference of time horizons that a manager has with regard to his own money and with regard to someone else’s money, respectively.

To maximize on profits, she may invest her personal funds even though she expects the bubble to last for relatively long. In turn, if she is someone else’s agent, e.g. a fund manager in our case, she will not maximize the return on the (principals’) investments. Rather, she will maximize her own benefits which may cause her not to trade against an overvaluation if she expects it to last for a period longer than her time horizon as an agent, defined by the principals. The investors who entrust their money to the fund manager must carry out periodic evaluations of her performance, in order to determine whether to withdraw their money or to contribute more capital to the fund. Effectively, this shortens the agent’s time horizon from what it would otherwise be.⁶⁵ The fact that the fund manager himself is an agent of the ultimate investor is a fundamental problem related to the inherent information asymmetry in any principal-agent relationship.⁶⁶ Since investors cannot directly observe the fund manager’s performance, they will look to proxies for performance like the return on their investment.⁶⁷ This indicator primarily incorporates the short-term effects of the manager’s work. If stock prices accurately reflected future cash flows, then current prices would be a reasonable indicator for both short-term and long-term effects. However, where stock bubbles emerge, prices are, by definition, distorted and fund managers incentives diverge from the incentives of the ultimate investors and similarly from socially optimal incentives.

Law and Economics Working Paper No. 217; Cowles Foundation Discussion Paper No. 1413.
<http://ssrn.com/abstract=391020>, at footnote 9 and p. 21 et seq; SHILLER, supra note 61

⁶⁵ Compare, Shleifer, supra note 57, at 90-102.

⁶⁶ See below note 38 (for literature) and accompanying text.

Practically speaking, if a fund manager decides to sell an overvalued stock but the stock price continues to rise, he will underperform the benchmark and the capital will flow to other funds.⁶⁸ Even if the stock price eventually falls and the trading strategy was ex ante profitable, the fund may have been already dissolved.⁶⁹ For example, Julian Roberts who managed the Tiger Hedge Fund refused to invest in technology stock during the Internet bubble since he believed that it was overvalued. The Fund dissolved in 1999 because it could not meet its benchmarks.⁷⁰ Even if funds are not liquidated and capital does not flow to other funds, managers would still face limits on long term arbitrage. Because management fees are based on indices and comparable funds with relatively short time horizons, the manager is incentivized to outperform rival funds.⁷¹ If the manager sells an overpriced stock but the price continues to rise, he will underperform the benchmark and receive a lower salary. Benchmark underperformance plays an important role for the prospects of a fund manager. Empirical evidence suggests that, underperformance also plays an important role for ousting a fund manager, even though it is not likely to be the sole purpose for dismissal.⁷² Where the manager has no incentives to trade on long-term expectations, mispricing may persist.⁷³ Broadly stated, the fact that many investors hire an agent in order to invest in the stock market adds one more agency relationship that limits arbitrage and supports stock bubbles.⁷⁴

⁶⁷ Rudolf von Jhering, *Der Zweck im Recht*, Vol I, 221 et seq (2. ed., 1887), already discussed these issues. Often cited literature include ADOLF A. BERLE & GARDINER C. MEANS, *THE MODERN CORPORATION AND PRIVATE PROPERTY* (1932), Sanford Grossmann & Oliver Hart, *An Analysis of the Principal Agent Problem*, 51 *ECONOMETRICA* 7 (1983).

⁶⁸ Healy & Palepu, supra note 64; Coffee, supra note 64. Both try to explain the recent stock bubble.

⁶⁹ Healy & Palepu, supra note 64 at 19; Coffee, supra note 64, at 299; see also Shleifer, supra note 57, at 89 et seq.

⁷⁰ Compare New York Times, April 29, 2000, Another technology victim; Top Soros Fund Managers Says He 'Overplayed' Hands".

⁷¹ Coffee, supra note 64, at 299. For a comprehensive analysis see Heber Farnsworth, *On the Compensation of Portfolio Managers* (<http://www.olin.wustl.edu/cres/research.cfm>).

⁷² Heber Farnsworth, supra note 71 at 15 -16.

⁷³ Goldman & Sleazak, supra note 64; Shleifer & Vishny, supra note 64.

⁷⁴ Shleifer, supra note 57, at 89 et seq who develops an arbitrage model where investors are themselves agents of ultimate investors.

IV.c Positive and negative stock bubbles compared

IV.c.i Short sale restraints

So far, our arguments explain why stock bubbles emerge but they do not distinguish between over- and undervaluations. To understand why positive stock bubbles are more predominant than negative bubbles, we first look at short sale restraints. Historically, regulators have feared speculative trading on undervaluations and the emergence of negative stock bubbles. These concerns in particular were articulated in the regulation on short sales (uptick rule⁷⁵, tax disadvantages⁷⁶ etc). A short sale is a market transaction in which an investor sells borrowed securities and is required to return an equal amount of those shares at some point in the future. The transaction is beneficial to the investor if the stock price declines. The uptick rule and other restrictions on short sales⁷⁷ find their roots in the 1929 market crash and are often justified on emotional grounds.⁷⁸ Short sales allow for “pessimistic” opinions to enter the market. Short sale restraints reflect the common notion that pessimism is undesirable. By selling a stock short, investors are able to spread bad reputation of a firm over the market and hence causing the firm irreparable damage. Raiders would first sell short and then generate rumors to profit from falling stock prices.⁷⁹ Although regulators were primarily worried about temporary distortions of single stock, they saw an opportunity for short sellers to cause persistent market declines.⁸⁰

⁷⁵ The uptick rule states that "No person shall ... effect a short sale ... (A) below the price at which the last sale ... was reported; or (B) at such price unless such price is above the next proceeding different price at which a sale of such security ... was reported ..."; Rule 10a-1 a) 1 i) of the Securities Exchange Act of 1934.

⁷⁶ Michael R. Powers, David M. Schizer & Martin Shubik, *Market Bubbles and Wasteful Avoidance: Tax and Regulatory Constraints on Short Sales*, 57 TAX L. REV. 233 (1994) 249 et seq.

⁷⁷ E.g. 16(c) of the Securities Exchange Act 1934. See also Macey et al, supra note 49 at 812 and Powers, Schizer, and Shubik, supra note 64, at footnote 9 and p. 21 et seq.

⁷⁸ Joseph Grundfest, then Commissioner of the SEC said: "When you sell short, you are in a sense betting against the team. At a minimum, it is an emotional issue." Vise, Are Short Sales on the Up & UP? NYSE Suspects Violators, But Can't Find Them, Washington Post, May 8, 1988, at H1, col. 5. (cited by Macey et al, supra note 49 at 800); see also Powers, Schizer, Shubik, supra note 64, at 20.

⁷⁹ Id, at 800 (summarizing some of the emotional arguments).

⁸⁰ Id, at 803.

As it were, virtually all the big one-day stock movements were declines, which suggests that large overvaluations are more likely than large undervaluations.⁸¹ Specifically, nine of the ten largest one-day stock price movements in the S&P 500 were declines since 1947 and even the one increase of 9.1 % on October 21, 1987 followed a 20.5% decline two days before, suggesting that the market had probably just corrected an overreaction.⁸² This data can be explained by factors that encourage overvaluations and deter undervaluations, the first of which is short selling.

Since investors profit from short selling if the stock price declines, they profit if they sell short during an overvaluation, thereby trading against the positive bubble. Economic analysis often suggests that it is efficient to allow this trading strategy because short sales eliminate inaccurate prices. Likewise, restrictions on short sales –like other restrictions on arbitrage opportunities– decrease market efficiency and liquidity.⁸³ Intuitively sound, some commentators have suggested that restrictions on short sales –to the extent to which they are effective⁸⁴ – lead to an upward bias in stock prices.⁸⁵ In a world where short sales are entirely forbidden, negative evaluations of investors who are not holding the relevant stock are not (or

⁸¹ Scholars have tried to explain this phenomenon on the basis of a variety of different approaches. See Joseph Chen, Harrison Hong and Jeremy C. Stein, *Forecasting Crashes: trading volume, past returns, and conditional skewness in stock prices*, 61 J. FIN. ECON. 345, 346-47 (2001) for a short summary of approaches. It seems that bubble theories have prevailed e.g. SHILLER, supra note 61; Shleifer, supra note 57; see supra note 64 for further literature. Alternative theories include leverage effects and volatility feedback mechanisms. Theories based on leverage effects argue that a drop in prices increases operating and financial leverage and thereby results in a greater volatility of subsequent returns. Enhanced risk further reduces the stock price. Similarly, volatility feedback theories are based on the idea that when good news arrives, the direct positive effect is offset by an increase in the risk premium that is due to the arrival of new information. In turn, bad information and enhanced risk both lower returns, i.e. a higher risk premium boosts the effect of negative information rather than to counterbalance it [see e.g. Robert S. Pindyck, *Risk, Inflation, and the Stock Market*, 74 AM. ECON. REV. 334-351 (1984); Kenneth R. French, G. William Schwert & Robert Stambaugh, *Expected stock returns and volatility*, 19 J. FIN. ECON. 3-29 (1987)]. Moreover, when bad news becomes public, the decrease of stock prices is boosted by shareholder suits (see Richard Booth, *Who should recover what from Securities Fraud?*, University of Maryland School of Law, Legal Studies Research Paper No. 2005 – 32).

⁸² Chen, Hong, and Stein, supra note 81 at 346.

⁸³ Id., at 811; Powers, Schizer, and Shubik, supra note 64 at 5 -9.

⁸⁴ It is not clear how effective short-sale restrictions really are. There are both theoretical arguments as well as empirical evidence against the full effectiveness; e.g. short-selling is allowed to the extent that the investor holds long positions, counting forward contract to purchase stock with a specified stock price as a long position, see Powers, Schizer, Shubik, supra note 64 at 16 and 40-41. See furthermore Raab Schwager, *Spanning with Short-Selling Restrictions*, 48 J. FIN. 791 (1993) (arguing that short sale restrictions do not matter if traders can short an index future).

⁸⁵ E.g. Edward Miller, *Risk, Uncertainty, and Divergence of Opinion*, 32 J. FIN. 1151 1168 (1977); Allen, Morris, & Postlewaite, supra note 60. For more literature on this issue see Powers, Michael R., Schizer, David M. and Shubik, Martin, supra note 64.

are less) reflected in the market price than positive opinions.⁸⁶ To be sure, the fact that all optimistic investors influence the market price but only a fraction of pessimistic investors have an impact on the price does not automatically lead to overpriced stock because investors can learn about this presumed upward bias and discount the prices accordingly. However, short sale restraints still make it more likely for a positive bubble to evolve because it restricts a trading strategy that eliminates overvaluations. The concept of stock bubbles is plainly obvious in this context. As overvaluation is expected to increase, short selling becomes less profitable, and vice versa; short selling decreases in profitability as stock bubbles increase in duration. That is so because the short seller can only profit if the bubble bursts before she has to cover the stock. If she is not able to short the stock for a longer period than the duration of the bubble, she will lose. In the most extreme sense, where everyone wants to buy the stock, a short seller has no one to buy from in order to cover the short sale.⁸⁷ Not surprisingly, short sale restraints play an important role in many stock bubble theories. They offer one solution to the question of why positive stock bubbles are more likely to occur than negative stock bubbles.

IV.c.ii Sell side analysts

With regard to overvaluations, sell-side analysts' recommendations play or perhaps played an important role in overvaluations.⁸⁸ Sell-side analysts are employed by brokerage firms and make recommendations which are passed on to the brokerage firm's customers. Those recommendations are intended to help clients make decisions to buy or sell certain stocks. Empirical studies have suggested that recommendations of sell-side analysts are not very

⁸⁶ Edward Miller, *supra* note 85, 1160-1162.

⁸⁷ Miller, *supra* note 85.

⁸⁸ E.g. John L. Orcutt, *Investor Skepticism v. Investor Confidence: Why the New Research Analyst Reforms Will Harm Investors*, 81 DENV. U. L. REV. 1 (2003); SHILLER, *supra* note 51 at 44-47.

accurate forecasts of stock prices. A study by Barber, Lehavy, McNichols and Trueman has shown that, for the years of 2000 and 2001, the stocks least favored by sell-side analysts outperformed the market, and the stocks most highly favored underperformed the market.⁸⁹ The analysts have especially been described as overly optimistic for their disproportionate ratio of “buy” and “sell” recommendations. Between 1996 and 2001, 67.1 % of the sell-side analysts’ recommendations were strong buy/buy, 29.9% hold, and only 3.0% were sell/strong sell.⁹⁰ Also, analysts were overly optimistic in their earnings forecasts. Analysts’ expectations of earnings per share growth exceeded actual growth in nineteen out of twenty-one years between 1979 and 1999.⁹¹

This inaccuracy of analysts’ opinions was ascribed to an inherent conflict of interest resulting from brokerage activities, investment banking fees, analysts’ compensation, equity stakes, and pressure from covered firms.⁹² Generally, information will flow to analysts that are not hostile to the respective company, i.e. they prefer issuing ‘buy’ over ‘sell’ recommendations.⁹³ Regulatory actions seem to dissolve this conflict only to a very limited extent.⁹⁴ The company under review always has the option to refuse to talk with an analyst who is expected to submit negative forecasts; excluding them from information sessions and denying access to key executives.⁹⁵ Thus, analysts are not expected to suddenly issue highly accurate forecasts. Of course, investors can learn about these conflicts and individually downgrade the analysts’ recommendations (e.g. strong buy to buy and buy to hold). However, the fact that sell-side

⁸⁹ Brad Barber, Reuven Lehavy, Maureen McNichols & Brett Trueman, *Reassessing the Returns to Analysts’ Stock Recommendations*, FIN. ANALYSTS J., Mar./Apr. 2003, 88-96. The results go in the opposite direction for the years of 1996-1999.

⁹⁰ Barber et al, supra note 89 at 90.

⁹¹ SHILLER, supra note 51 at 45-46 with reference to Steven A. Sharpe, *Re-examining Stock Valuation and Inflation: The Implications of Analysts’ Earnings Forecasts*, 84 REV. ECON. STAT. 632-648 (2002).

⁹² Orcutt, supra note 88, at 13 et seq; Harrison Hong & Jeffrey D. Kubik, *Analyzing the Analysts: Career Concerns and Biased Earnings Forecasts*, 58 J. FIN. 313 (2003) (showing that securities analysts are more likely to be promoted if they offer optimistic assessments, particularly of stocks underwritten by their employers).

⁹³ See e.g. Elizabeth A. Nowicki, *A Response to Professor John Coffee: Analyst Liability Under Section 10(b) of the Securities and Exchange Act of 1934*, 72 U. CIN. L. REV. 1305 (2004).

⁹⁴ Orcutt, supra note 88

⁹⁵ SHILLER, supra note 51 at 45.

analysts cover only a very limited number of companies⁹⁶ and typically tend to drop firms before rating them a ‘sell’,⁹⁷ makes it difficult for investors to adjust their presumed bias. Moreover, analysts can make corrections to account for adjustments of investors. Due to an inherent informational advantage and irrational behavior on side of non-institutional investors, analysts are likely to prevail and noise trader beliefs are likely to remain upward biased, thus supporting positive stock bubbles.⁹⁸

IV.c.iii Arguments against negative stock bubbles

Virtually all big one-day stock movements were declines, which suggests that large overvaluations are more likely than large undervaluations. Legal restrictions on short selling, benchmark compensation for fund managers and the role of sell-side analysts may have had an impact on those asymmetries. Even without these restrictions, an overvaluation is more likely to arise and persist than an undervaluation.⁹⁹ As explained above, information traders might have few incentives to trade against positive stock bubbles. As will be discussed in the following paragraphs, increasing undervaluation is subject to mechanisms which eliminate inaccurate prices not available for overvaluations, making long-lasting negative stock bubbles unlikely. As stated earlier, this is important for our hypothetical because insider trading on positive information adds less to efficiency, and thus to social welfare, where undervaluation

⁹⁶ Maureen McNichols & Patricia C. O'Brien, *Self-selection and Analyst Coverage*, 35 J. ACCT. RES. 167-199 (Supp. 1997).

⁹⁷ Frank Fernandez, *The Roles and Responsibilities of Securities Analysts*, RESEARCH REPORTS VOL II, No. 7, 3-10, at 7 (2001) available at <http://www.sia.com/research/pdf/RsrchRprtVol2-7.PDF> (last visited Oct. 25, 2005). There are still few “sell” recommendations; SHILLER, s supra note 61.

⁹⁸ Due to regulatory actions that try to restore investor confidence in analysts (compare Orcutt, supra note 88) and an enhanced emphasis on liability (Jill I. Gross, *Securities Analysts' Undisclosed Conflicts of Interest: Unfair Dealing or Securities Fraud*, COLUM. BUS. L. REV. 631 (2002)), non-institutional investors will probably continue to rely on analysts.

⁹⁹ To be sure, many economic model suggest that positive stock bubbles are equivalent to negative stock bubbles, i.e. the fear of arbitrageurs that the stock will remain overvalued is equivalent to the fear that the stock will remain undervalued; e.g. DeLong et al, supra note 60 at 705. (“an arbitrageur buying this [underpriced] asset must recognize that in the near future noise traders might become even more pessimistic and drive the price down even further.”); see also p. 706 (“our model shows how assets subject to noise trader risk can be underpriced”). See also SHILLER, supra note 51 at 71

is less probable even without insider trading. The marginal benefit is low in this case. Insider trading is more beneficial to deter overvaluations as they are more likely to happen.

The more the stock is underpriced, the more profitable it becomes to acquire the stock for future cash flows. An investor only profits from selling overpriced stock short¹⁰⁰ if the stock price eventually drops but he can profit from buying underpriced stocks simply because of future cash flows.¹⁰¹ That is, for undervalued stock, a “buy and hold” strategy involves much less “herding risk” than does short selling for overvalued stock. An investor who wants to trade against a positive stock bubble, can only sell to the extent that he holds shares. Once, he wants to sell overpriced stock short, he is not only subject to fundamental risk but also to the fact that the bubble may endure (“herding risk”, “noise trader risk”). He profits only if the stock price falls before he has to buy the shares on the market in order to cover the short sale.¹⁰² If his expected time horizon is shorter than the expected duration of the bubble, his expected return will be negative. In this case, he will prefer buying to selling overvalued stock, riding the bubble and creating an expectation that will lead other investors to support the bubble as well.

As to undervaluations, the buy-and-hold strategy is less risky because one can extract future cash flows when holding the stock independent of price changes. This reflects the fact that the fundamental value of the stock represents the future cash flows, most importantly expected dividend payments and takeover premia. If the stock price is below the expected future cash flows discounted to present values, an investor who bought the stock will profit even if the negative stock bubble persists, simply by deriving the dividend payments. Of course, if dividends are not paid according to the firm’s value and the investor’s time horizon is relatively

¹⁰⁰ To be sure, the equivalent of buying would be selling. However, selling is limited to the amount of shares one has, so that the general mechanism for trading on overvalued stock becomes short selling.

¹⁰¹ Olivier J. Blanchard, and Mark W. Watson, *Bubbles, Rational Expectations and Financial Markets* (July 1982). NBER Working Paper No. W0945. <http://ssrn.com/abstract=226909>. (published in Wachtel, ed., *Crises in the economic and financial structure* (Lexington, MA: Lexington, 1982). 295-315). For Blanchard and Watson, this is enough to conclude that negative bubbles cannot exist.

¹⁰² See p. 21 et seq. To some extent he will be able to expand the initial time horizon.

short, the difference between undervaluations and overvaluations may not be large. That is, if an investor wants to liquidate the assets before the bubble bursts, e.g. because he has to repay the loan that he took out to finance the investment, he will lose. To the extent that the bubble is expected to outlast his own expected time horizon he will not trade against the negative bubble but rather short the stock. Still, because investors derive some cash flows, trading against undervaluations requires a time horizon that is somewhat shorter than the time horizon required to trade against overvaluations. Moreover, with undervaluations, the firm can eventually be taken over, the management removed, and hoarded assets extracted. The expected return from a takeover increases as the bubble persists because the price must always decrease in order for investors to be able to profit from the bubble.¹⁰³ This increasing difference between fundamental value and price enhances the expected return for a potential buyer of the stock. At some point, the concern for risk diversification will be offset by a disproportionately large difference between price and fundamental value.¹⁰⁴ In expectation of a potential takeover,¹⁰⁵ and given the fact that a greater part of investors have incentives to trade against undervaluations than against overvaluations, investors are less likely to support the bubble by shorting undervalued stock, thereby creating a feedback mechanism that affects other investors' expectations and so on. This is supported by the fact that managers have strong incentives as well as the means to disclose positive information¹⁰⁶, while keeping negative information secret.¹⁰⁷ In anticipation of these mechanisms investors will choose to ride positive rather than negative bubbles.

¹⁰³ This will be explained in the following paragraphs.

¹⁰⁴ Undervaluation is more likely in countries where firms typically have a majority shareholder and where there is no legal actions demanding the payment of dividends.

¹⁰⁵ For evidence that the takeover market has remained active despite the use of poison pills see John C. Coates IV, *Takeover Defenses in the Shadow of the Pill: A Critique of the Scientific Evidence*, 79 TEX. L. REV. 271 (2000).

¹⁰⁶ One way for the management to convince the market of the firm's undervaluation is simply to buy the stock; Ross, *supra* note 22, at 185-186.

¹⁰⁷ See above p. 10

The low probability of long-lasting undervaluations is supported by the fact that negative stock bubbles have a natural limit, which is reached when the stock price hits zero.¹⁰⁸ Conversely, overpricing is unlimited. That is important because positive and negative stock bubbles require a reasonable expectation of an increase in mispricing without a well-defined last period.¹⁰⁹ The fact that there are infinite time periods on the upside (there is no maximum price) leaves everyone uncertain as to if and when the bubble will collapse. With undervaluations, the minimum price stands for a last time period. Generally, for an investor who wants to trade with the bubble, the “arbitrage profit” must be high enough to offset the difference between price and intrinsic value. For positive bubbles: the more a stock is overvalued, the lower are future cash flows from that stock (relative to the purchase price); hence, the higher the arbitrage profit must be. In contrast, for negative bubbles: the more the stock is undervalued, the greater the loss if the stock price bounces back to its intrinsic value because the short seller will have to buy the expensive stock that he had sold at a low price in the first place. Thus, an investor will, on average, only continue to sell short (buy) if he expects the price to fall (rise) by a greater amount than before. With negative bubbles, the expected return $E(R)_t$ is the return from an increase in mispricing, i.e. a further decline in the stock price $p_t - p_{t+1}$ (where $p_t - p_{t+1} > 0$) times the expected probability π_t for this to happen, that is the probability that the bubble will not collapse and the price will not bounce back up to the stock’s fundamental value at $t+1$, minus the (negative) return, i.e. the difference between the stock price p_t and the fundamental value v times the probability $1-\pi_t$ that the bubble will collapse.¹¹⁰ The total expected return is the sum of all expected returns for $t = 1, 2, 3, \dots n$. At $t+1$ the difference between the price and the

¹⁰⁸ The stock price cannot drop below 0 because shareholders enjoy limited liability. See also Blanchard and Watson, *supra* note 101, at 7-8; Behzad T. Diba and Herschel I. Grossman, *The theory of Rational Bubbles in Stock Prices*, *ECON. J.* 98 (1988) 746-754.

¹⁰⁹ Blanchard and Watson, *supra* note 101, at 4.

¹¹⁰ For simplicity, we use a binomial distribution: (1) the price further falls by $p_t - p_{t+1}$ or (2) that the bubble collapses. This is also the simplification of Blanchard and Watson, *supra* note 101, at 4. For a more detailed model see Albert S. Kyle, *Continuous Auctions and Insider Trading*, 53 *ECONOMETRICA* 1315-1336 (1985).

fundamental value¹¹¹ v has increased $v - p_{t+1} > v - p_t$. At the same time, the probability that the bubble will collapse has increased $1 - \pi_{t+1} > 1 - \pi_t$ because fewer time periods remain before the price hits zero. In order for $E(R)_{t+1}$ to be at least equal to $E(R)_t$, the mispricing must at some point increase by more than it did in the previous period.¹¹² This is even more so if we take risk-aversion into account because the volatility in expected returns increases as t increases. The bubble does not converge towards a certain price but would have to exceed every limit. However, since a negative bubble cannot fall below zero it has a well defined limit, which means that investors will exit the bubble one period before this limit is met. But then the bubble will burst in the second-to-last period, so everyone will exit in the third-to-last period and so on. Thus, negative bubbles are less likely to evolve than positive bubbles,¹¹³ which holds true if we introduced elements of irrationality (e.g. “noise traders”).¹¹⁴

As this simple model shows, the concern for negative stock bubbles seems much less compelling than conventionally thought. Insider trading on negative information does not change this fact because investors would trade against them, for the reasons explained. As for positive stock bubbles, insider trading (on negative information) would make a change compared to the current regime because it would deter overvaluations. This includes not only the elimination of firm specific risk but also a decrease in market risk.¹¹⁵ Insiders can trade against positive stock bubbles and –other than outside information traders who find it more difficult to confirm that the

¹¹¹ The fundamental value is held constant for simplicity.

¹¹² Compare the slightly different model by Blanchard and Watson, supra note 101.

¹¹³ See Blanchard and Watson, supra note 101, at 5 and Diba and Grossman, supra note 108, at 747, 750 under rational expectations. If a (large enough) proportion of investors know how bubbles evolve, they will be able to locate the last period (price=0) and –through the mechanism of backward induction- deter the bubble at an early stage. For an explanation of backward induction see DOUGLAS BAIRD, ROBERT H. GERTNER & RANDAL C. PICKER, *GAME THEORY AND THE LAW* 159-165 (1994) and ROBERT GIBBONS, *GAME THEORY FOR APPLIED ECONOMISTS* 57 (1992).

¹¹⁴ Compare for example Shleifer, supra note 57, at 33 et seq and 90 et seq who offers two models (one with direct investments and one with an additional principal-agent-relationship) that include noise traders and finite time horizons. To be sure, we do not argue that negative bubbles are impossible but simply that they are much less likely to develop.

¹¹⁵ Because insider trading is allowed in all companies it will eliminate some of the market-wide (systematic) risk, namely the risks brought about by stock bubbles. Earlier studies seem to focus on the elimination of unsystematic risk; e.g. Kahan, supra note 43, at 1027-28 explicitly states that insider trading would only eliminate unsystematic risk.

stock is overvalued—signal credibly that the stock is overvalued.¹¹⁶ They can do that by first selling (or shorting¹¹⁷) the stock of his own company and then, if necessary, officially disclosing the negative information.¹¹⁸ This will be anticipated by other traders and thus decrease the expected return from trading profits on upward stock bubbles. In the end, upward stock bubbles are less likely to arise, thereby limiting insider trading opportunities from the outset. This effect can also be considered to be a protective measure for small, uninformed investors because typically they are the ones who -due to an inherent informational disadvantage- lose the most during stock bubbles.¹¹⁹

V Insider trading debate applied to our hypothetical

V.a Competition in the markets for negative information

An important issue in our hypothetical is that insider trading on negative information will decrease the likelihood of overvaluations; consequently, decreasing the probability that investors will buy an overpriced stock.¹²⁰ Insider trading on negative information lowers the cost of capital to the firm and serves to detect crises that might otherwise be kept secret. It was argued that under a rule that allowed insider trading on both positive and negative information, outside information traders would not invest in obtaining (firm-specific)

¹¹⁶ Carlton & Fischel, supra note 1, at 868; Kahan, supra note 38 at 1033 -34. For a more general approach to signaling effects see A. Michael Spence, *Job Market Signaling*, 87 Q. J. ECON. 355 (1973) and Stephen A. Ross, *The Determination of Financial Structure*, 8 BELL. J. ECON. 23 (1977) in the context of capital markets. Ross also discusses the problem of false signals, with a brief reference to insider trading; id, at 30-31. This will be discussed below (p. 47).

¹¹⁷ Of course, this only works to the extent that short selling is allowed; see above p. 21

¹¹⁸ Otherwise, compensation etc would incentivize managers to encourage overvaluations, not to deter them; Kahan, supra note 38, at 1030. Eli Ofek & Matthew Richardson, *DotCom Mania: The Rise and Fall of Internet Stock Prices*, 58 J. FIN. 1113 (2003) argue that insider selling caused the Internet Stock Bubble of the late 1990's to burst, which is evidence that insiders are able to trade against overvaluations, even if trading is prohibited.

¹¹⁹ Often "fairness" arguments are made against insider trading; e.g. Lee, supra note 18 168 -175 arguing that "Advantages in wealth, education or knowledge" are "inherently inegalitarian" and that there is no equal access to inside information. Assuming that this is true, uninformed traders may lose much more through stock bubbles. For further literature on the morality of insider trading see Kim Lane Scheppele, *"It's Just Not Right": The Ethics of Insider Trading*, 56 LAW & CONT. PROBL. 123 (1993); and Alan Strudler & Eric W. Orts, *Moral Principle in the Law of Insider Trading*, 78 TEX. L. REV. 375 (1999).

¹²⁰ Compare also Fischel, supra note 4, at 139 with regard to *Dirks v. SEC*.

information because expected information costs would exceed the expected trading benefits. Outside traders would decrease in number¹²¹ or even exit the market entirely¹²². The informational disadvantage will not only affect information traders but also liquidity traders who suffer from a higher bid-ask spread.¹²³ The bid-ask spread has been described as an “insider trading tax” that market makers pass on.¹²⁴ Where outsiders partly exit the market, liquidity decreases. It has been argued that insiders might have a monopoly on intra-firm information and are likely to collude.¹²⁵ This would lead to less accurate pricing; accordingly, markets for information cannot develop.¹²⁶

For our hypothetical, these arguments are questionable. To the extent that insiders cannot predict stock values very accurately, outsiders would not exit the market or re-enter because by assumption they can profit by investing.¹²⁷ Due to their inherent risk aversion, insiders can reap only a portion of the total trading profits. Empirical data suggests that most of the profits go to information traders.¹²⁸ Sunk-costs for re-entry of outsiders seem not particularly high.¹²⁹ In anticipation of potential entrants, insiders themselves are more likely to trade than has been suggested under a full prohibition of insider trading. This is supported by the fact that outside information traders who want to profit from arbitrage opportunities based on good news will not fully disregard potential negative news. They know that a stock increase due to positive

¹²¹ Leland, supra note 15

¹²² Goshen, supra note 9.

¹²³ Leland, supra note 15

¹²⁴ E.g. Manne, supra note 14. There is also literature that questions the relationship between insider trading and the bid-ask spread. Compare Bradford Cornell & Erik R. Sirri, *The Reaction of Investors and Stock Prices to Insider Trading*, 47 J. FIN. 1031 (1992) and Omesh Kini & Shehzad Mian, *Bid-Ask Spread and Ownership Structure*, 18 J. FIN. RES. 401 (1995).

¹²⁵ See Goshen, supra note 9, 1241-1242, 1256 (suggesting that intra-firm competition among insiders might not occur if insider trading were allowed and outside information traders have exited the market).

¹²⁶ E.g. Goshen, supra note 9, 1240-1242.

¹²⁷ Of course, complete informational efficiency cannot be reached, since prices must be sufficiently inaccurate in order for traders to have incentives to trade; Sanford J. Grossman & Joseph E. Stiglitz, *On the Impossibility of Informationally Efficient Markets*, 70 AM. ECON. REV. 393 (1980); Gilson & Kraakman, supra note 43, at 577.

¹²⁸ Lisa K. Meulbroek, *An Empirical Analysis of Illegal Insider Trading*, 47 J. FIN. 1661-1692 (1992) (showing that, on insider trading days, only a small fraction of the total trading volume of a firm is due to insider trading). Of course, these studies are conducted under a prohibition of insider trading.

¹²⁹ In our hypothetical, outside information traders are already investing in the market for positive information; thus, they can re-enter the market of negative information at a lower cost than has been argued under a regulation where insiders are generally allowed to trade (compare Goshen, supra note 9).

news might be offset by equally negative news. Hence, they will invest in obtaining negative information to ensure that the expected return from trading on the positive information detected is not offset by negative information. The idea that outsiders exit the market for firm-specific information (e.g. financial statements) but continue to invest in general market information, reflects the fact that insiders produce firm-specific information at a lower cost. Firm-specific information is a by-product of managing or working for the firm as an employee. Generally, this does not decrease but increases the accuracy of stock prices.

Secondly, inside information is usually known by more than one insider.¹³⁰ If insiders want to conceal negative information (e.g. an investment has failed), they have to agree not to distribute it either, that is to agree neither to disclose it directly nor indirectly through trading on it. Since this is a collusive agreement the law will not sanction a deviating behavior, i.e. it will not enforce the contract; thus, the conspirators cannot commit to abiding by the contract. Either one of the insiders will have an incentive to trade on the negative information for trading profits thereby disclosing it. However, insider trading prohibitions allow the conspirators to sanction anyone who “cheats”, i.e. trades on negative information, by reporting him to the SEC or suing him directly. Insider trading prohibitions provide for sanctions that allow enforcement of illegal agreements and thus support collusive fraud. It lowers the costs of bribing someone to conform to the agreement.¹³¹ Permitting insider trading on negative information deprives insiders of sanctions for deviating behavior and thus deters the illegal concealment of negative information.¹³²

This hypothesis is supported by the fact that insiders have different compensation schemes with different incentives to trade. Employees with less (or no) equity-based compensation

¹³⁰ E.g. Ross, supra note 22, 180.

¹³¹ Compare Gordon, supra note 48 at 1241 -42, arguing with regard to Enron that “independence of virtually every board member, including Audit Committee members, was undermined by side payments of one kind or another”.

might be involved.¹³³ These insiders have more incentives to trade because they will not profit from a higher stock price due to non-disclosure of negative information. One way to look at it is that -to the extent that employees know negative inside information- they would monitor disclosure duties.¹³⁴ Besides, employees who disagree with a CEO's decision are less likely to confront the CEO directly than by simply trading on this information. To be sure, this mechanism may require a mandatory permission for all to trade on non-public bad news because managers would try to impose restrictions on their subordinates in order to maximize their own returns.¹³⁵

Third, important "outsiders" get to know substantial parts of inside information. Among those are gatekeepers like accountants and lawyers. Under the current regime, those gatekeepers do not profit from discovering and disclosing negative information because the people that they are supposed to monitor are the same as those who hire and fire them.¹³⁶ We have seen that sanctions are not sufficient to incentivize proper monitoring in all cases because of inherent conflicts of interest.¹³⁷ If those gatekeepers are allowed to trade on negative information, they will have much stronger incentives to act in the interests of investors.¹³⁸ The likelihood that gatekeepers will trade on bad news increases as information becomes more negative because (1) civil and criminal liability increases, (2) the expected return from future fees decreases (due to potential bankruptcy), and (3) trading profits increase (due to a greater difference between price and fundamental value). Hence, a gatekeeper will be substantially more likely

¹³² The same argument cannot be made with regard to positive information because with positive information there is generally no incentive to keep it secret. As far as positive information is kept secret, e.g. a company finds oil and wants to purchase the land at a low price, keeping the information secret is in the interest of shareholders and social welfare; see above Section II.

¹³³ Compare *SEC v Texas Gulf Sulphur Co.*, 401 F 2d 833.

¹³⁴ This does not seem undesirable because one would expect employees to be good gatekeepers in this regard. They have both the ability to obtain the relevant information and the incentives (if allowed to trade).

¹³⁵ Goshen, *supra* note 9, at 1255.

¹³⁶ E.g. Coffee, *supra* note 64 290 -291; Max H. Bazerman et al., *The Impossibility of Auditor Independence*, 38 SLOAN MGMT. REV. 89, 90 (1997); Richard W. Painter, *Lawyers' Rules, Auditors' Rules and the Psychology of Concealment*, 84 MINN. L. REV. 1399, 1436 (2000) (arguing that compensation-related incentives undermine auditor independence).

¹³⁷ E.g. Enron, see Healy & Palepu, *supra* note 64 Coffee, *supra* note 64. See also the comparison of positive and negative incentives (see note 47 and accompanying text).

to trade on negative information and not approve financial statements than under the current situation. With much the same argument, non-employees without specific gatekeeping functions have incentives to trade on negative news.¹³⁹ Unlike managers, they cannot profit from non-disclosure.

V.b Does insider trading actually affect stock prices?

An important assumption for enhanced efficiency from insider trading is that insiders will actually cause the stock price to move towards its fundamental value. The key element is that outside information traders become aware of insider trading so that the price moves towards the intrinsic value of the stock. However, scholars have argued that the price effect of insider trading is minimal because risk diversification will cause insiders to invest only a fraction in the company's shares and outside traders cannot tell whether price changes were caused by insiders or noise traders.¹⁴⁰ Consequently, insider trading will not cause the price to reflect the intrinsic value of the corporation.¹⁴¹ This is a concern for trading on both positive and negative information.¹⁴² Four arguments can be advanced to refute this concern. First, even though insiders might not entirely eliminate mispricing, they will cause the price to be a better estimate of the intrinsic value than before. Secondly, insiders can sell inside information instead of trading themselves.¹⁴³ Then, risk diversification becomes less of a problem. Third, empirical evidence suggest that outside traders do become aware of insider trading.¹⁴⁴

¹³⁸ This, again, requires that the right to trade on negative information be mandatory because otherwise firms will require audit firms to agree not to trade on such information.

¹³⁹ E.g. *Dirks v SEC*, 463 U.S. 646. As Raymond L. Dirks later stated: "there is no money" in uncovering "scams"; *Wall Street Journal*, November 18, 1987, at 1, col. 6.

¹⁴⁰ E.g. Goshen, *supra* note 9, 1240.

¹⁴¹ Easterbrook, *supra* note 1, 335-337.

¹⁴² To be sure, as long as insiders can sell their stock as a mechanism to eliminate overpricing, risk diversification is less of a problem. As soon as insiders start to sell short, risk diversification becomes just as much a problem as for arbitrage profits on positive information.

¹⁴³ Bainbridge, *supra* note 1, 43-45.

¹⁴⁴ See Meulbroek, *supra* note 128 (finding that outsiders detect insider trading and impound the information into the stock price). Compare also SHILLER, *supra* note 51, at 162 for anecdotal evidence of the distribution of inside information.

Meulbroeck analyzed the trading volume on days where insider trading was detected, using a data set that included discovered insider trading cases, supplied by the SEC. After subtracting shares that have been traded by insiders, the trading volume on insider trading days was still significantly higher than on other days. This suggests that outsiders are able to detect insider trading. Several strategies are available to outsiders in order for them to find out about insider trades using data on trading volume, frequency, direction etc.¹⁴⁵

In our hypothetical the question is less controversial. The fact that outsiders may not always learn of insider trading is mostly due to the fact that insiders, avoiding legal sanctions, hide their trading activity. If trading were allowed, insiders would be more inclined to disclose their trading activity. If most or all of the profits can be made legally, the utility of hiding insider trading is very low. Consequently, one would expect that outside traders become aware of insider trading at a very low cost. This is even more likely to be the case under the current regulation, which imposes a duty on insiders to report their trades within two business days.¹⁴⁶ The result is that the market price will move relatively quickly towards its intrinsic value.¹⁴⁷ Through these results, we look at the pricing process in our hypothetical situation.

V.c The pricing process in our hypothetical

Conventional wisdom dictates information traders will buy a certain stock if they think that it is underpriced and sell a stock if they think it is overpriced. Practically speaking, if an information trader estimates the value of a stock at 110 but the market price is 100, he will buy. If he thinks the intrinsic value is 90, he will sell. This arbitrage opportunity might be created by noise traders who wrongly believe that the intrinsic value is 110 or 90 instead of

¹⁴⁵ E.g. Meulbroeck, supra not 128, at 1691 et seq.

¹⁴⁶ “before the end of the second business day following the day on which the subject transaction has been executed” Sec 16(a) of the Securities Exchange Act 1934.

¹⁴⁷ Gilson & Kraakman, supra note 43, at 572-579.

100 or simply as a result of new information – in more general terms, a difference of estimates. Noise trading and herding behavior may effectuate positive stock bubbles.

In our hypothetical, assume that the market price of a stock is 100 in period t , which is also the estimate of the information trader.¹⁴⁸ First, suppose the stock price rises to 110 at $t+1$. Since insiders are not allowed to trade on positive non-public information, the difference between the price (110) and the intrinsic value (100) as observed by the information trader cannot be due to positive non-public information of +10. (It is at least not more likely to be so than under the current situation where insider trading is not effectively sanctioned.) The information trader will sell the stock at $t+1$ because she thinks that the difference must be based on non-substantial public information, thereby eliminating inaccurate prices. The price will drop to 100 at $t+2$. Different from the current regulation where herding behavior may cause an upward stock bubble, the outside information trader will not count on the possibility that the stock will further rise, leading to an even larger overvaluation. That is so because stock bubbles generally require some negative inside information, in the sense that full availability of all information would lead to a lower estimate of the expected return than does the market price. Under the current regulation, insiders are not allowed to use that information and thus cannot trade against the bubble. More precisely, insiders weigh the expected benefits from trading against the expected losses, including the legal sanctions; they will wait longer before they trade against overvaluations than if insider trading were allowed. In our hypothetical, insiders may trade immediately on this inaccuracy by selling the stock and eventually selling it short. Unlike outside traders, they have the ability to disclose the relevant inside information, e.g. by stating correctly the earnings or revealing information through other means. In other words, insiders have better means of credibly signaling that the stock is worth less than the market price predicted. This point is of particular importance because

typically outside investors do not have the credibility to effectively signal inside information to the public; so trading profits from selling are much riskier for them due to a higher probability of persistent overvaluations. Insiders generally succeed in convincing the market that the prospects are worse than thought as long as they have incentives to do so. This will deter the bubble and hence reduce the market price to its intrinsic value because neither noise traders nor information traders, anticipating this mechanism, can expect the bubble to increase.

Secondly, assume that the market price of 100 in period t declines to 90 at $t+1$. The information trader believes that the intrinsic value is 100 since she has not observed any substantial negative information. Where trading on negative information is allowed, insiders will disclose their trading activity and information traders will know the cause of the decline. If the decline was not due to insider trading, information traders will buy the stock until it reaches its initial value of 100. This result is plausible if insiders always disclose their trading activity. As noted above, when insider trading is permitted, insiders are inclined to disclose their trading activity. However, in some cases, insiders will not disclose the information, e.g. an employee who expects intra-firm sanctions. The information trader would not know if the decline was the result of insider trading or noise trading. Still, the pricing process works in much the same way. If the decline was due to noise trading, then insiders will buy the stock at $t+1$, because they know that the decline had not been caused by insider trading and they know that no substantial information became public. Remember, in our hypothetical, insiders are still allowed to buy as long as they are not trading on substantial *non-public* information. Insiders will buy and consequently eliminate this inaccuracy; the price will return to its intrinsic value of 100.¹⁴⁹ Outside information traders will contribute to the accuracy as far as

¹⁴⁸ The following paragraphs try to explain the pricing process verbally and in a strongly simplified way.

¹⁴⁹ The management could also make a repurchase tender offer to signal that the stock is underpriced; e.g.

insiders cannot entirely eliminate the price distortion.¹⁵⁰ In turn, if the decline (-10) was due to negative non-public information on which insiders traded, the price will persist at 90. Insiders have no reason to buy the stock. Outside information traders will observe that the stock price remains at 90, and accordingly, will adjust their estimate to 90.¹⁵¹ To be sure, insiders as well as outsiders could start to ride on what they observe to be a negative bubble. However, negative bubbles are not likely to last very long, undercutting the profitability of such a trading strategy.¹⁵²

VI Potential distortion of incentives

VI.a Do managers have incentives to make bad investment decisions?

Managers have been delegated the right to take a large portion of decisions in our economy. If the choices made are the ones that maximize shareholder wealth, they are traditionally presumed to promote social welfare.¹⁵³ Of course, corporate managers are not exempt from the natural inclination to maximize one's personal benefits. The right incentive structure can limit this fundamental principal-agent problem.¹⁵⁴

A prominent way of aligning the interests of managers and shareholders is performance-based compensation. If the company does well, the manager will be awarded a higher remuneration than if the company does poorly. It has been argued that insider trading would unbundle

Francis H. Buckley, *When the Medium Is the Message: Corporate Buybacks as Signals*, 65 IND. L. J. 493 (1990). The signaling effect of this mechanism is, however, ambiguous; See Jesse M. Fried, *Insider Signaling and Insider Trading With Repurchase Tender Offers*, 67 U. CHI. L. REV. 421 (2000).

¹⁵⁰ Compare Bainbridge, *supra* note 1, 45; Gilson and Kraakman, *supra* note 64, 572-579.

¹⁵¹ See *fn* 149; see also Ross, *supra* note 22, 181. Ross, however, points out that the signaling effect is ambiguous because insiders might be selling stock for a variety of reasons (e.g. to pay a children's education).

¹⁵² See above p. 25

¹⁵³ MILTON FRIEDMAN, *CAPITALISM AND FREEDOM* 133 (1962); PAUL A. SAMUELSON & WILLIAM D. NORDHAUS, *ECONOMICS* 678 (12th ed. 1985).

¹⁵⁴ Armen A. Alchian & Harold Demsetz, *Production, Information Costs, and Economic Organization*, 62 AM. ECON. REV. 777 (1972); Steven A. Ross, *The Economic Theory of Agency: The Principal's Problem*, 63 AM. ECON. REV. (Papers & Proc.) 134 (1973); Steven Shavell, *Risk Sharing and Incentives in the Principal and Agent Relationship*, 10 BELL J. ECON. 55 (1979);

performance-based incentives because managers could profit from stock price declines.¹⁵⁵ To be sure, insiders benefit on the upside from trading profits *and* compensation, etc, while profits on the downside are partly offset by a lower compensation. Whether the managers decide to create trading opportunities on the upside or on the downside depends on the costs associated with the creation of trading opportunities. Since it is harder to create positive than negative news, insider trading could discourage managerial effort.¹⁵⁶ This issue results from the double incentive effects on both disclosure and investment decisions with an emphasis on the latter.

In our hypothetical, the issue of unbundling compensation schemes seems to be a serious concern, at first sight, because managers can make additional profits from stock declines only. The fact that insiders are allowed to trade on negative information might create incentives for the management to take bad rather than good investment decisions. Bad decisions will lead to productive inefficiency, which will cause a decline in stock prices and so create trading opportunities. However, these trading opportunities stand against important potential losses.

First, performance-based compensation will decrease, the more trading opportunities are being created. This negative correlation between performance-based compensation and insider trading profits reduces the incentives to make bad investment decisions. Trading profits (on the downside) –as opposed to performance-based compensation (on the upside)– will have to be shared with other insiders if more than one person knows the information. This effect further reduces the profits, at constant losses from a lower compensation. That is, an insider

Michael C. Jensen and William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*, 3 J. FIN. ECON. 305 (1976).

¹⁵⁵ James D. Cox, *Insider Trading and Contracting: A Critical Response to the "Chicago School"*, DUKE L. J. 628 (1986); Jesse M. Fried, *Reducing the Profitability of Corporate Insider Trading Through Predating Disclosure*, 71 S. CAL. L. REV. 303 (1998) 306-307, 314 -315. Compare also Carlton and Fischel, *supra* note 1, 873; Levmore, *supra* note 24, at 149.

¹⁵⁶ See e.g. Levmore, *supra* note 24, at 149 ("temptation of profit might actually encourage an insider to act against the corporation's interest"); Fried, *supra* note 155, 306-307 ("discourage managerial effort"); see also Gilson and Kraakman, *supra* note 64, at 632 n. 221 (suggesting that an increase in risk might not be matched with a commensurate increase in return).

who gives up stock options for trading profits transforms an exclusive remuneration to a non-exclusive form, contrary to the insider's interests.

Secondly and closely related, the manager's ability to pursue bad opportunities is constrained because other managers and employees will attempt to maximize the firm value.¹⁵⁷ Of course, all insiders could collusively agree not to maximize the firm value but collusion is complicated where a larger number of people are involved. As noted above, collusion is less likely if insider trading is permitted because deviating behavior (i.e. one of the insiders breaks the agreement and sells) can be sanctioned by reporting the person to the SEC if trading is prohibited.

Third, bad management decisions will increase the probability of hostile takeovers, and subsequently, the probability for the insider of being ousted. Insofar as product markets are efficient, bad management decisions will bring about bankruptcy. Because other firms can produce their goods at a lower cost and thus offer them at a lower price to the consumers, they will drive inefficiently operating firms out of the market. In a fully competitive market, firms that allow such trading profits from arbitrarily created negative information will not stay in the market long.¹⁵⁸ Even in less than fully efficient markets negative investments will, at some point, make it impossible for firms to offer their goods at a price that equals their costs.

Fourth, the fact that a manager has made a bad investment decision will damage his reputation,¹⁵⁹ decrease his value on the job market and lead to various social sanctions.¹⁶⁰ As socio-economic analyses show, people prefer receiving social approval, such as being admired by others, and dislike social disapproval, such as others' disgust and contempt.¹⁶¹

¹⁵⁷ Carlton and Fischel, *supra* note 1, 874, distinguishing between "good" and "poor" opportunities.

¹⁵⁸ Oliver D. Hart, *The Market Mechanism as an Incentive Scheme*, 14 BELL J. ECON. 366 (1983); Frank H. Easterbrook, *Managers' Discretion and Investors' Welfare: Theories and Evidence*, 9 DEL. J. CORP. L. 540, 557 (1985).

¹⁵⁹ Carlton and Fischel, *supra* note 1, 874-875.

¹⁶⁰ MANNE, *supra* note 1, at 155 arguing that managers who perform poorly in order to create trading opportunities will soon be unemployed.

¹⁶¹ Fehr & Falk, *supra* note 40 at 704 et seq.

Thus, consistent with our intuition, a manager may not only face monetary but also non-monetary sanctions.

Fifth, the fact that insider trading is permitted does not mean that the law allows managers to take investment decisions with a negative expected return. A manager who makes a bad investment breaches his fiduciary duties. The business judgment rule will not protect the manager if he is in a conflict of interest due to insider trading.¹⁶² Even though the insider might claim that the bad investment decision was taken independently of subsequent trading activity in order to be protected by the business judgment rule, his strategy seems quiet hazardous.¹⁶³ He would be voluntarily rendering himself subject to a legal action for fraudulent behavior, having profited from an investment decision that turned into a loss and potentially not being protected by the business judgment rule. Even though courts may not be well suited to “second guess” business decisions,¹⁶⁴ they are generally able to identify and punish self-interested transactions.¹⁶⁵ Due to endogenous and exogenous factors, an investment decision would have to be clearly harmful in order to reduce the risk associated with the trading. For low-risk trading profits, the insider’s investment decision requires a negative expected return with a high number of the significantly negative expected outcomes.

¹⁶² Clark, *supra* note 52123 et seq. It shall be noted that the business judgment rule was never fully accepted; Leo Herzel & Leo Katz, *Smith v. Van Gorkom: The Business of Judging Business Judgment*, 41 BUS. LAW. 1187, 1190 (1986); Franklin A. Gevurtz, *The Business Judgment Rule: Meaningless Verbiage or Misguided Notion?*, 67 S. CAL. L. REV. 287, 289 (1994); Bayless Manning, *The Business Judgment Rule and the Director's Duty of Attention: Time for Reality*, 39 BUS. LAW. 1477, 1478 (1984); Fred S. McChesney, *A Bird in the Hand and Liability in the Bush*, 96 NW. U. L. REV. 631, 631 (2002); Daniel Fischel, *The Business Judgment Rule and the Trans Union Case*, 40 BUS. LAW. 1437, 1455 (1985); Stuart R. Cohn, *Demise of the Director's Duty of Care: Judicial Avoidance of Standards and Sanctions through the Business Judgment Rule*, 62 TEX. L. REV. 591 (1983).

¹⁶³ The courts can lower the alleged negative incentive effect by punishing insider trading more severely that was conducted by insiders responsible for the disadvantageous investment decision. In this case, negative information will primarily be distributed by other insiders that learn of the facts without being responsible for the decision.

¹⁶⁴ E.g. Lynn A. Stout, *In Praise of Procedure: An Economics and Behavioral Defense of Smith v. van Gorkom and the Business Judgment Rule*, 96 NW. U.L. REV. 675 (2002). It shall be noted that the business judgment rule was not only attacked on policy grounds but, in fact lost influence in various circumstances: e.g. in the context of takeovers see Mark J. Loewenstein, *Toward an Auction Market for Corporate Control and the Demise of the Business Judgment Rule*, 63 S. CAL. L. REV. 65 (1989); moreover, the waste doctrine -even though its practical use is contested [compare William T. Allen, Jack B. Jacobs, and Leo E. Strine, Jr., *Function Over Form: A Reassessment of Standards of Review in Delaware Corporation Law*, 26 DEL. J. CORP. L. 859 (2001)]-, is a substantive standard of review that applies even if the requirements of the business judgment rule have been met [e.g. Victor Brudney, *Revisiting the Import of Shareholder Consent for Corporate Fiduciary Loyalty Obligations*, 25 J. CORP. L. 209,225 (2000)].

This is even more so for typical insiders like managers and employees because they are more risk averse than diversified shareholders.¹⁶⁶ In this case, it is more likely that the insider will be held liable. In contrast, if the expected outcomes are broadly distributed with many outcomes far from the mean (both above and below), liability is less likely but the risk increases. The tradeoff between risk and potential liability will either cause the insider trading opportunities to be highly risky or increase the insiders' probability of liability. Both are undesired from the point of view of an insider. All together, insiders have few incentives to make bad investment decisions for the purpose of creating trading opportunities.¹⁶⁷

VI.b Do managers have incentives to invest in high-risk projects?

It has been argued that insider trading will increase the level of risk of the firm. Instead of making investment decisions with negative expected returns, managers will simply decide to invest in high risky projects. This way they create trading opportunities which they can exploit.¹⁶⁸ However, it is uncertain whether this has a harmful effect. Management's intrinsic risk aversion indicates that they are generally more risk averse than shareholders would prefer.¹⁶⁹ In fact, insider trading may counterbalance the management's incentives to invest in low risk projects; an effect that is in the best interest of shareholders.¹⁷⁰ Of course, we neither know to what degree insider trading incentivizes risk-taking behavior nor do we know the extent of the difference in risk-aversion between managers and shareholders.¹⁷¹ However, we can compare the alleged effects of a complete deregulation with the potential effects in our

¹⁶⁵ See Clark, *supra* note 52126 -128 arguing that courts often hold directors liable without requiring the plaintiffs to prove all elements of self-dealing.

¹⁶⁶ See below Section VI.b.

¹⁶⁷ Moreover, it shall be noted that this whole critique of insider trading applies only to those that make investment decisions in the company (e.g. executive managers) and not to other insiders.

¹⁶⁸ Easterbrook, 332; Bainbridge, *supra* note 1, 51-53.

¹⁶⁹ Carlton and Fischel, *supra* note 1, 875. Carlton and Fischel suggest that the need for incentives to increase volatility may be one explanation for the existence of stock options.

¹⁷⁰ Carlton and Fischel, *supra* note 1, 875-876.

¹⁷¹ See also Bainbridge, *supra* note 1, 63.

hypothetical. Where insider trading on positive and negative information is allowed, trading benefits increase as volatility increases. In our hypothetical, the managers' incentives to invest in high risk projects are lower than under a general permission of insider trading, since managers can gain no additional payoff on the upside. Every trading benefit is offset by a decrease in other future benefits (e.g. performance based compensation). To align the levels of risk between shareholders and managers, profits from negative information seem more important than profits from positive information. That is, insider trading on the downside acts as an insurance of the managers allowing them to hedge the risks associated with risky investments.

VI.c Insider trading and excessive pay?

Insider trading profits are part of managerial compensation.¹⁷² Accordingly, managers who are allowed to trade on inside information would receive less other pay. Overall, the manager's remuneration, whether partially through insider trading or not would be roughly equivalent. Critics have contested this view by arguing that insider trading is an inefficient compensation scheme. Managers are typically risk-averse and thus prefer a less volatile compensation package than one that involves profits from insider trading.¹⁷³ This is generally true with respect to risky pay. Because managers are risk averse, they discount equity-based compensation in comparison with fixed pay.¹⁷⁴ Of course, this cost has to be weighed against the benefits of a more efficient incentive structure. Even though it is hard to measure these factors, there seems to be a consensus that well designed incentives provided for in the

¹⁷² MANNE, *supra* note 1, chs. 8-10; Carlton and Fischel, *supra* note 1.

¹⁷³ Easterbrook, *supra* note 1, 332.

¹⁷⁴ Brian J. Hall, *Six Challenges in designing Equity-based pay*, 15 J. APPL. CORP. FIN. (2003). Since managers can not diversify risk as well as investors, they value restricted stock at 80%-90% of its cash value and option grants at 50%-75%; see also Brian J. Hall and Kevin J. Murphy, *Optimal Exercise Price for Executive Stock Options*, 90 AM. ECON. REV. 209-214 (2002).

compensation scheme are overall beneficial.¹⁷⁵ Moreover, as noted, insider trading on negative information would undo some of the risk associated with performance-based compensation. Because insiders can profit on the downside only, risk may be lower than under both alternative regimes, given that equity-based compensation is used

Still, incentives through compensation are considered to have performed substantially worse than expected. The fundamental problem of performance evaluation is that performance cannot be directly observed; rather it has to be inferred from other factors. This is important not only for setting compensation incentives but also for other decisions, like hiring or removing a manager, buying or selling the stock etc. Traditionally, the stock price is considered to be the best estimate of performance because it incorporates a great number of investors' opinions. This approach is believed to mitigate the divergence of long-term and short-term performance. Because investors consider future cash flows, a manager cannot transfer future wealth to current wealth. However, long-term prospects are widely uncertain, especially to investors, so that short-term payoffs dominate the price. Because investors have to make their decisions now without knowing the long-term effects, managerial performance is evaluated for a relatively short time horizon.

It has been argued, with regard to stock options, that managers can influence their own compensation arrangement in a way they were not able to do with regular remuneration. Because managers are in control of the board and mutually decide about each others compensation, they are likely to grant a larger compensation than would be efficient. This is especially so if the specific pay is camouflaged through stock options and other performance-based compensation.¹⁷⁶ Once a deal has been made they can "renegotiate" it through boosting

¹⁷⁵ E.g. Lucian Arye Bebchuk, Jesse M. Fried & David I. Walker, *Managerial Power and Rent Extraction in the Design of Executive Compensation*, 69 U. CHI. L. REV. 751, 797 (2002), who criticize the compensation plans used in the past, acknowledge that the share price provides a useful tool for evaluating executive performance if the pay plans are well designed.

¹⁷⁶ Bebchuk, Fried & Walker, *supra* note 175, at 789.

the stock price above fundamentals and beyond that which was anticipated.¹⁷⁷ Consequently, compensation itself may be part of the agency problem.¹⁷⁸ The quasi-paradox to equity-based compensation is: if managers are given incentives to maximize the firm's value, measured by the stock price, managers have incentives to distort the stock price; however, with inaccurate stock prices equity-based compensation does not set efficient incentives. Incentives through equity-based compensation may themselves distort incentives. Of course, once equity-based compensation is abandoned, the mentioned incentives serving to distort the price disappear. Simultaneously, incentives for increasing the firm's value are lost. This story suggests that managers can increase their compensation against the will of the (current) shareholders.

This approach has been contested by showing that compensation based on the stock price does not run counter to the shareholders' interests. More precisely, stock options are not incompatible with the interests of those shareholders that held stock at the time the manager was hired, or granted performance based compensation, respectively. I will call them "first period" shareholders. Suppose that shareholders buy the stock at a price that equals the fundamental value at $t=0$. At $t=1$, they hire a manager and agree to pay compensation contingent on the stock price; in other words, the manager receives more compensation if the price increases. If the manager is able to boost the stock price above the fundamental value, that is initiate a stock bubble, both first-period shareholders and the manager are better off at $t=2$ than they would be otherwise.¹⁷⁹ These gains are derived from "second-period" shareholders who bought at an inflated price. From this perspective, compensation based on

¹⁷⁷ This seems especially plausible in the context of information asymmetries with less than fully rational investors. See Efendi, Srivastava & Swanson, supra note 54 for an empirical analysis of compensation through options and accounting restatements (as an indicator for financial misstatements). They find that managers are more likely to misstate the financial situation of the firm when they hold a lot of in-the-money options.

¹⁷⁸ Lucian Bebchuk & Jesse M. Fried, *Executive Compensation as an Agency Problem*, 17 J. ECON. PERS. 71 (2003). Compare also Gordon, supra note 48 at 1247 ("managers with a rich load of options have incentives to get the stock price high by any means necessary, fraud included") and Manne, supra note 48

¹⁷⁹ Compare Patrick Bolton, Jose A. Scheinkman & Wei Xiong, *Pay for Short-Term Performance: Executive Compensation in Speculative Markets*, ECGI Finance Working Paper N° 79/2005 (arguing that incentivizing managers to boost the stock price and paying what has been labeled "excessive compensation" is not irrational in the context of stock bubbles).

the stock price seems totally rational,¹⁸⁰ even though managers make large profits and misallocations resulted in a loss to social welfare. In short, wealth was redistributed to first period shareholders without productive gains.

Insider trading on negative information can mitigate the alleged inefficiencies. Because trading on negative information will deter overvaluations, managers are less likely to either retroactively increase their pay to the detriment of shareholders or benefit from overvaluations to the detriment of “second-period” shareholders. More generally, insider trading on negative information enhances the predictability of executive pay due to more accurate stock prices; consequently, making performance based compensation a better tool for setting efficient incentives. If stock prices are less distorted, prices capture performance to a larger extent, filtering out other factors that are not performance-related. Regardless of whether it was in the interests of some shareholders or not, (socially) excessive pay, as was experienced in recent years, would be precluded.¹⁸¹ This is a gain to social welfare because incentives from performance-based compensation would be closer to socially optimal incentives.¹⁸²

Because social gains from insider trading must always be weighed against alternative methods of aligning private and social incentives, it is important to note that there are few ways to otherwise mitigate the problem. Generally, managers will always have incentives to overstate the value of the firm, if he is compensated on the basis of his performance. This includes stock option plans that try to reduce windfall gains by indexing.¹⁸³ If compensation is contingent on benchmarks, like a sector index, only exogenous factors are filtered out. That is, if every firm did better without hard work, a manager would receive no additional pay. Still he

¹⁸⁰ That is rational for first-period shareholders, given that some other market participants act irrationally or that for some other reason stock bubbles may emerge.

¹⁸¹ Manne, *supra* note 48. See also Bolton, Scheinkman & Xiong, *supra* note 179, who do not discuss the issue of insider trading, however. It shall also be noted that, in their model, pay was not excessive in that it was irrationally granted. However, they suggest that the compensation exceeded socially optimal compensation.

¹⁸² Carlton and Fischel, *supra* note 10867.

¹⁸³ See Bebchuk, Fried & Walker, *supra* note 175, at 796, for a short summary of possible option structures.

would not be barred from overstating his own performance. In fact, indexing might even increase incentives for managers to distort prices for additional benefits.¹⁸⁴

One may argue that this in fact mitigates the problem associated with performance-based compensation but that insider trading itself creates new opportunities for camouflaging their compensation. As noted above,¹⁸⁵ insiders are constrained, by both law and economic forces, from creating negative information arbitrarily or riding a negative stock bubble. Thus, they are unable to unilaterally undo their compensation arrangement. If at all, this concern may apply to insider trading on positive information. But trading on positive information is not allowed in our hypothetical.

VI.d Do managers have incentives to interfere with corporate plans?

It has been argued that insiders might interfere with corporate plans, for example, with a potential takeover. Because insiders know about the takeover bid first, they will buy shares and cause the price to rise. This will make the takeover more expensive and lower the gains to the shareholders.¹⁸⁶ Potential takeover firms will be reluctant to discover undervalued firms because they cannot exploit such opportunities. This will harm the target corporation because it deters potential takeover firms from buying the stock and ousting an inefficient management. It might also deter potential takeover firms from achieving productive efficiencies through the integration of the two firms. The rationale is questionable because even if insiders are allowed to trade, they are not allowed to harm the corporation.¹⁸⁷ That is,

¹⁸⁴ Compare Kevin J. Murphy, *Management and Control of the Modern Business Corporation: Executive Compensation & Takeovers*, 69 U. CHI. L. REV. 847, 863-64 (2002) (showing that with indexing induces additional risk on managers). Because managers are less likely to earn from good performance, simply because others may work hard as well, the managers may have even stronger incentives to boost the prices above fundamentals.

¹⁸⁵ See above VI.a.

¹⁸⁶ Carlton and Fischel, *supra* note 1, 884; see also Bainbridge, *supra* note 1, 51; Easterbrook, *supra* note 1, 331.

¹⁸⁷ Carlton and Fischel, *supra* note 1, 884.

they are still prohibited from misappropriating the corporation's business opportunities.¹⁸⁸ In any case, this concern is limited to positive information.¹⁸⁹ In our hypothetical, there are no negative consequences because insiders are not allowed to trade on positive information; consequently they cannot legally exploit such opportunities.

Insiders might distort the business operations only temporarily to cause trading opportunities.¹⁹⁰ For example, a manager announces a potential business opportunity, e.g. negotiations with another company, which the market believes to be beneficial, and thus causes the price to rise. She then sells the stock short and reports that the negotiations have failed. This is certainly a loss to social welfare because at best redistribution came at a certain cost but without any gains. Whether or not the corporation is harmed, liability will deter the manager from such conduct. She will most likely not be protected by the business judgment rule because the trading profits imply self-interest. As noted above, low risk trading opportunities require large distortions, thus enhance expected liability and vice versa.¹⁹¹ Moreover, section 16(b) already deters such a behavior by explicitly prohibiting short swing profits.¹⁹² Other mechanisms also deter such conduct. For example, a manager, who devotes his time to creating distortions, will earn less on performance-based compensation.¹⁹³

¹⁸⁸ This is economically efficient; see Landes, *supra* note 35 and below p. 55. See also Bainbridge, *supra* note 1, 51.

¹⁸⁹ Compare Easterbrook, 331: "the rationale for restrictions on insider trading ... applies only when secrecy is necessary to preserve the value of the information to the firm that created the knowledge." As to takeovers and other corporate opportunities, the knowledge created is positive information, which insiders are not allowed to trade on in our hypothetical.

¹⁹⁰ E.g. Goshen, *supra* note 9, 1258-1259.

¹⁹¹ I refer to note 162 and accompanying text where I have discussed the deterrence effects of liability.

¹⁹² Whether and how section 16(b) of the Securities and Exchange Act of 1934 should be modified according to our analysis goes beyond the scope of this paper. For the current purpose, it suffices to mention that short-term distortions, as discussed in the text, can be effectively deterred.

¹⁹³ See above Section VI.a for other deterrents, some of which (e.g. social recognition) apply to the present context.

VI.e Delay in transmission of negative inside information?

Some have argued that allowing insider trading may cause insiders to delay the transmission of information in order to have sufficient time to trade.¹⁹⁴ This was seen to be crucial when the information has to pass through many levels before reaching the decision maker. A small delay on each level, it has been asserted, will amount to a substantial total delay.¹⁹⁵ The argument seems stronger with regard to positive information because the choice is generally between immediate disclosure and delayed disclosure. It might well be that insider trading causes a delay in the disclosure of positive information. This is not a problem in our hypothetical since trading on positive information is not allowed.

As to negative information, *non*-disclosure is an important third option.¹⁹⁶ As discussed above, there are strong incentives for not disclosing negative information at all.¹⁹⁷ Likewise, there are strong incentives for deferring the disclosure of information as much as possible. Because information is delayed in any case, insider trading on negative information adds nothing or very little to the delay. In other words, the marginal incentive of insider trading for the delay of negative information is close to zero. Likewise, the marginal loss to efficiency is close to zero. More importantly, insiders cause information to be distributed that would, absent insider trading, remain secret. Where insiders are allowed to trade, they may slightly -if at all- delay the distribution of information but will not withhold the information. Thus, the “delay in disclosure” argument is much less compelling for inside trading on negative information than it seems to be for insider trading on positive information.

¹⁹⁴ Robert J. Haft, *The Effect of Insider Trading Rules on the Internal Efficiency of the Large Corporation*, MICH. L. REV. 1051, 1053-60 (1982); Bainbridge, *supra* note 1, 50.

¹⁹⁵ *Id.*

¹⁹⁶ This intuition is also reflected in *Dirks v SEC*, 463 U.S. 646, footnote 18; see below p. 57 Compare also Kenneth Scott, *Insider Trading: 10b-5, Disclosure and Corporate Privacy*, 9 J. LEGAL STUD. 801, 810-11 (1980) .

¹⁹⁷ See above Section II.b.

VII Insider selling in excess of insider purchasing

Empirical studies show that insiders trade on non-public information before the information gets released.¹⁹⁸ Such studies are often carried out for the purpose of examining the various forms of market efficiency. Generally, they show that insiders consistently outperform the market, suggesting that the market does not incorporate inside information (semi-strong form of market efficiency). For our purpose, those studies are important because they indicate differences between selling and buying activity by insiders. Our hypothesis suggests, and this is supported by empirical evidence, that insiders are more likely to trade on negative non-public information than they are on positive information. A study by Seyhun shows that insider trading includes almost twice as many sales as purchases in large corporations.¹⁹⁹ These two largest quintiles represent 70% of all transactions and 85% of the dollar value of all transactions in the data set.²⁰⁰ The overall ratio of purchases to sales is 0.7.²⁰¹ Similarly, a study by Rozeff and Zaman shows that -in the largest quintile- sales outnumber purchases by almost four times.²⁰² Lakonishok and Lee report roughly twice as many sales as purchases overall for the period between 1975 and 1995.²⁰³ It has been argued that these findings support the claim that insider trading creates incentives for bad management decisions.²⁰⁴

¹⁹⁸ H. Nejat Seyhun, *Insiders' Profits, Costs of Trading, and Market Efficiency*, 16 J. FIN. ECON. 189 (1986) and Michael S. Rozeff and Mir A. Zaman, *Market Efficiency and Insider Trading: New Evidence*, 61 J. BUS. 25 (1988). See also Fried, *supra* note 155, at 317-324.

¹⁹⁹ Seyhun, *supra* note 198, 193-194 (the ratio of purchases to sales is 0.57 for firms with an equity between 250 million USD and 1 billion USD, and 0.59 for firms with an equity of above 1 billion USD).

²⁰⁰ Seyhun, *supra* note 198, at 193. The total sample was grouped by the average size of equity of the firms: less than \$25 million, between \$25 and \$50 million, between \$50 and \$250 million, between \$250 million and \$1 billion, more than \$1 billion.

²⁰¹ *Id.*

²⁰² Rozeff and Zaman, *supra* note 198, 41-42. (21.5% purchases and 78.5% sales). The excess selling activity is not the result of grants of restricted stock, etc because Rozeff and Zaman isolated trades that are likely to be due to non-public information (they have filtered out liquidity sales, etc, by introducing an "intensive trading" criterion and by requiring a certain minimum number of insider trades); *id.*, at 28.

²⁰³ Josef Lakonishok & Inmoo Lee, *Are insider trades informative?*, 14 REV. FIN. STUD. 79, 85-86 (2001). They report a higher ratio for large companies, consistent with other studies. Compare also Jana P. Fidrmuc, Marc Goergen & Luc D. R. Renneboog, *Insider Trading, News Releases and Ownership Concentration*, J. Fin. (forthcoming) <http://ssrn.com/abstract=796033>.

²⁰⁴ Fried, *supra* note 155, at 314. Fried cites a study by Robert T. Masson & Ananth Madhavan [*Insider Trading and the Value of the Firm*, 39 J. INDUS. ECON. 333 (1991)] which, however, yields ambiguous results with regard to the effects on firm value. As the authors themselves acknowledge that "Imposing a uniform standard may induce inefficiency, and it may be argued that the policing of insider trading is best left to the firm in question." Moreover, empirical results are strongest for executives near retirement (p. 348, Table I).

Because insiders can more easily create negative information than positive information, they are more likely to profit by selling. As indicated above, there are strong arguments supporting the view that insiders would not make bad decisions intentionally.²⁰⁵ The evidence might be better explained by the efficiencies of insider selling compared to insider buying, as suggested by our hypothetical. Outside information traders are more likely to tolerate trading on negative information than trading on positive information because bad news would otherwise remain secret for a relatively long period of time.²⁰⁶ This inaccuracy is a loss not only to social welfare but also to private utility of outside traders because traders discount the price due to a potential overvaluation. The fact that outsiders have higher costs for discovering inside information than insiders applies to positive and negative information. However, as explained above, outsiders have to pay less for the distribution of positive information because disclosure is sufficiently incentivized.

Generally, corporations do not impose formal restrictions on insiders.²⁰⁷ However, the threat of investors to sell their stock could encourage insiders to comply with a more efficient extra-legal regulation,²⁰⁸ in our case a regulation that allows insider trading on negative information but not on positive information. This is consistent with studies on insider trading sanctions. Market professionals seem to alert the SEC more to insider buying than selling. Even though there is no direct evidence, empirical studies show that (1) the SEC brings most of the cases for purchasing activity²⁰⁹ and (2) referrals from market professionals are the predominant

²⁰⁵ See above p. 38

²⁰⁶ This is consistent with the finding that in smaller firms there is more purchasing activity (Seyhun, supra note 198, 193) because in smaller firms outside investors are more likely to “share insider trading profits” than to force the management into the most efficient system.

²⁰⁷ E.g. Bainbridge, supra note 1, 62; Dooley, supra note 14 at 45–46; Carlton and Fischel, supra note 1, at 858.

²⁰⁸ Compare, however, the doubts by Bainbridge, supra note 1, 209 and Haft, supra note 194, 1058.

²⁰⁹ See Meulbroek, supra note 128, 1670. The sample consists of individuals charged with insider trading by the SEC in civil or administrative cases during 1980-1989. The data regarding excess insider selling refers to 1975-1981 (Seyhun, p. 192) and 1973-1982 (Rozeff and Zaman, p. 27) and is not constructed upon SEC charges.

source of SEC investigations²¹⁰. In a sample taken from the period between 1980 and 1989, 87% of the charges were brought for trading on positive news, whereas only 13% of the charges applied to trading on negative information.²¹¹ This is interesting because, with more insider sales than purchases, one would expect enforcement actions to represent a similar ratio. In fact, the correlation is highly inverted.

Efficiencies, as explained in our hypothetical, can explain this divergence. Outside information traders may have understood that insider trading on negative news is more beneficial than trading on positive news. Thus, outsiders alert the SEC more often to trading events with regard to positive information. Because negative news is hard to uncover, outsiders may, depending on the circumstances, prefer that insiders trade on that information, thereby disclosing it as opposed to not knowing the information at all. Private benefits seem to converge with social benefits.²¹² Only in times of potential overvaluations, informed outside traders will have incentives to restrict insider selling beyond socially optimal restrictions, in order to extract wealth from other typically, less informed investors.²¹³ This can also explain, why enforcement actions regard not only positive information but also negative information. Another explanation might be that there are sets of facts where both insider buying and selling are inefficient and sets of facts where only insider buying is inefficient, depending on the

²¹⁰ See e.g. Stephen M. Bainbridge, *Incorporating State Law Fiduciary Duties into the Federal Insider Trading Prohibition*, 52 WASH. & LEE L. REV. 1189 (1995), 1263-1264 (stating that informants played a key role in most of the big cases in the 1980's. See also the Insider Trading and Securities Fraud Act of 1988 (ITSFEA) which authorized the SEC to pay to the whistleblowers of up to 10 percent of any penalty collected by the SEC. See Meulbroek, supra note 128, at 1682 who indicates that only 9 % of the investigations are conducted without external complaints and referrals. Also Laderman, *The Epidemic of Insider Trading*, Bus. Wk., April 29, 1985, at 80 [cited in David D. Haddock & Jonathan R. Macey, *Regulation on Demand: A Private Interest Model, with an Application to Insider Trading Regulation*, 30 J. LAW & ECON, 311, 333 (1987)] note that market professionals are the major source of SEC investigations.

²¹¹ Meulbroek, supra note 128, 1165-1670. Cases settled before trial as well as a number of other case were excluded. However, those cases are likely to be uncorrelated with purchasing or selling activity.

²¹² Ex post, outsiders may choose to sue even though, ex ante, they were better off committing not to sue. In anticipation of this threat, insiders could choose not to trade, thereby keeping negative information secret. Socially optimal incentives would diverge from private incentives. A thorough analysis (including free rider problems) would go beyond the scope of this paper and is not essential to our main point. However, it shall be noted, that not suing can be optimal because one builds a reputation for the future not to sue; compare the theory of repeated games e.g. Gibbons, supra note 113, at 82 et seq.

²¹³ Compare above p. 45 with regard to the argument made by Bolton et al, supra note 179 (present/first period shareholders want to extract wealth from future/second period shareholders by setting managers incentives through equity-based compensation to boost the price). For this to work, they have to prohibit insider trading on negative news.

delay of disclosure, absent insider trading. The market might have adopted our hypothetical already by punishing insider selling less frequently and severely than purchasing. Both readings are consistent with our theory. Overall, it seems plausible that the lower purchasing activity²¹⁴ and the higher enforcement actions with regard to insider selling can be explained by the alleged differences of positive and negative information.

VIII The “Dirks-O’Hagan path”

VIII.a Efficiency Analysis applied

Our hypothetical suggests a reinterpretation of the case law by distinguishing between positive information (purchasing) and negative information (selling). Generally, the cases tend to hold that insider trading on positive information is no different from insider trading on negative information.²¹⁵ This is mirrored in the literal reading of 10b-5 which refers to activities “in connection with the purchase or sale” of securities. However, prominent cases involving purchasing activity end in convictions (*TGS, Newman, O’Hagan*),²¹⁶ whereas a major case dealing with selling activity ended in an acquittal (*Dirks*)²¹⁷.

Even though neglected by the commentators, insider trading on negative information may be more widely tolerated than trading on positive information. Our hypothetical does not deny other distinctions recognized by the courts and made in the scholarly literature. Rather it emphasizes an additional element which explains why the case law is more coherent than

²¹⁴ This is consistent with the finding that in small companies there is no excess selling (Rozeff and Zaman, supra note 198, at 41) because small firms are less often covered by analysts; Bhushan, *Firm characteristics and analyst following*, 11 J. ACC. & ECON. 255 (1989). Thus there is less “outside pressure” for an efficient insider trading regime. Moreover, if analysts evaluations are an important cause of overvaluations, as suggested by the literature (see above IV.c.ii), then small firms are less likely to be overvalued and insiders have fewer trading opportunities by selling.

²¹⁵ *In re Cady, Robert & Co.*, 40 S.E.C. 907, 910 et seq (1961); *Carpenter et al v. U.S.*, 484 U.S. 19, 22 et seq (1987); *SEC v Texas Gulf Sulphur Co.*, supra note 25 at 848 et seq; *U.S. v Newman* 664 F.2d 12, 16 et seq (1981); *U.S. v. O’Hagan*, supra note 2, at 651 et seq.

²¹⁶ *SEC v Texas Gulf Sulphur Co.*, supra note 25; *U.S.v Newman*, supra note 215; *U.S.v. O’Hagan*, supra note 2. See also Chief Justice Burger (dissenting) *Chiarella v. U.S.*, supra note 2, at 239-45

²¹⁷ *Dirks v. SEC*, 463 U.S. 646 (1983).

previously thought: positive and negative information. I will call this the “*Dirks-O’Hagan path*”.

VIII.b Purchasing cases

In the “purchasing cases”, the information would have become public fairly quickly without insider trading. Therefore, the marginal incentive of insider trading for disclosing information was low. Trading profits would have resulted in a mere redistribution for which the parties incurred expenses. In part, disclosure would have distorted incentives to produce information and thus would have resulted in an even bigger loss to social welfare. In *SEC v. Texas Gulf Sulphur*, TGS explored an area in eastern Canada for raw materials. Four employees discovered a sizeable mineral deposit, which they reported to their superiors. TGS did not disclose the discovery but endeavored to first buy the land surrounding where minerals were found. The four employees and the president of TGS bought stock and call options. Some of them accepted equity based compensation, without having reported the discovery. When the information of the discovery was disclosed the stock price rose. Clearly, TGS had to keep the discovery secret in order to buy the land at a low price, thereby recouping the information costs that it had incurred finding the minerals. However, it had no incentive to keep the information secret beyond that point. Therefore, the marginal incentive of insider trading for disclosure was virtually non-existent.²¹⁸ Trading was largely redistributive, involving costs that were associated with the use of non-public information by insiders. Thus, profiting from short-time foreknowledge was likely to have negative effects on social welfare. Incentives to *produce* positive information were set through compensation.²¹⁹ Similarly, in *United States v.*

²¹⁸ SEC v TGS, supra note 25, at 851-852. Rightly, the Court never doubted that the positive news would have been disclosed without insider trading.

²¹⁹ SEC v TGS, supra note 25 at 851 (In the court’s opinion it is not true that “the elimination of insider trading benefits will deplete the ranks of capable corporate managers by taking away an incentive to accept such employment ... adequate

Newman,²²⁰ and *United States v. O'Hagan*,²²¹ insiders profited from short-term foreknowledge that was produced at a cost but with little or no effects on informational efficiency. As in *TGS*, it was clear that the positive information would have been disclosed without James O'Hagan's purchasing activity; thus, insider trading as a disclosure mechanism had an extremely low incentive effect on the distribution of information.²²² Moreover, the insiders in *O'Hagan* and *Newman*, similarly to those in *TGS*, misappropriated corporate opportunities. If insiders were allowed to do so, companies would have no incentives to search for them.²²³ In all the above cases, insider trading on positive information would have done little to affect the accuracy of stock prices, while setting negative incentives for the production of positive information.

VIII.c Selling cases

*Dirks v. SEC*²²⁴ was a "selling case" and ruled in favor of the alleged insider. Raymond L. Dirks was an analyst who specialized in providing investment analysis of insurance company securities to institutional investors. He received information from Secrist, a former officer of Equity Funding of America, who alleged that the corporation's assets were vastly overstated as a result of corporate fraud. Secrist urged Dirks to verify the fraud and disclose it publicly. Dirks' initial investigation involving interviewing officers and employees was fruitful, in

incentives for corporate officers may be provided by properly administered stock options and employee purchase plans of which there are many in existence.")

²²⁰ U.S. v Newman, supra note 215. Newman passed along information about potential takeovers and mergers to his confederates, so that they could purchase stock of the target companies. When the mergers or takeovers were announced, the price rose, resulting in substantial gains to the insiders.

²²¹ U.S. v. O'Hagan, supra note 2. James O'Hagan, partner at a law firm which represented a company in a potential takeover, came to know of the projected deal. He started purchasing stock and call options. When the tender offer was announced the price rose and O'Hagan sold the stock (and options) at a gain.

²²² O'Hagan started buying stock in August 18th, 1988; the public announcement of the tender offer was made on October 4th 1988; U.S. v. O'Hagan, supra note 2, at 647.

²²³ U.S. v Newman, supra note 215, at 17-18 ("In a tender-offer situation, the effect of increased activity in purchases of the target company's shares is, similarly, to drive up the price of the target company's shares; but this effect is damaging to the offering company because the tender offer will appear commensurately less attractive and the activity may cause it to abhor."). For an efficiency analysis see Landes, supra note 35

²²⁴ 463 U.S. 646.

particular, with lower ranking employees who confirmed the allegations. Dirks then tried to publish the story in the Wall Street Journal but was rejected. He started discussing the information he had obtained with a number of clients and investors, some of whom sold their holdings in the company. Eventually, the stock price collapsed, trading was halted and the fraud was exposed. The Court held that Dirks did not violate the insider trading law because he did not receive a benefit from the disclosure, neither an immediate pecuniary gain nor a reputational one that would have turned into future cash flows. Where there was no personal benefit there was no direct and no derivative liability.²²⁵ The Supreme Court acquitted Dirks, even though he clearly provided his clients with inside information.²²⁶ *Dirks v. SEC* was widely criticized for being inconsistent and irreconcilable with existing case law.²²⁷ It was noted, and I agree, that Dirks did not provide his clients with information for mere altruistic reasons, as assumed by the Court, and that the Court's "benefit test" was hard to apply in any case.²²⁸

More significant was the fact that Dirks traded on *negative* information that, otherwise, may have remained secret for a relatively long period. Since Dirks brought Equity Funding's fraud to light, the SEC only censored him as opposed to laying more serious charges.²²⁹ The final decision by the Supreme Court, holding that there was no violation of 10b-5, reflected this sentiment. The Court found that "the central role that [Dirks] played in uncovering the fraud

²²⁵ "... the test is whether the insider personally will benefit, directly or indirectly, from his disclosure. Absent some personal gain, there has been no breach of duty to stockholders. And absent a breach by the insider, there is no derivative breach." 463 U.S. 646, 662.

²²⁶ Fischel, *supra* note 4.

²²⁷ E.g. Blackmun, J., Dissent in *Dirks*, 103 S. Ct. at 3273 (stating that Dirks' laudable motives to expose fraud did not justify his means: "... even assuming that Dirks played a substantial role in exposing the fraud, he and his clients should not profit from the information ... A person cannot condition his transmission of information of a crime on a financial award." [citations and footnotes omitted]); Fischel, *supra* note 4; Mark K. Harder, *Getting the federal securities fraud laws moving again after Chiarella and Dirks: A proposal for reform*, 10 J. CORP. L. 711 (1985); Cox, *supra* note 155; Richard W. Painter, Kimberly D. Krawiec & Cynthia A. Williams, *Don't ask, just tell: insider trading after United States v. O'Hagan*, 84 VA. L. REV. 153 (1998).

²²⁸ 463 U.S. 646, fn 13 (Blackmun, J., dissenting); Carlton & Fischel, *supra* note 1, at Fn 93 ("Application of the "benefit" test will also be difficult. It would appear to allow an employee to give tips to individuals in anger or spite as long as he doesn't "profit" (Presumably he gains something-why else would he decide to release the information?) Tips to strangers are legal but tips to relatives are not.") Harder, *supra* note 227, at 730.

at Equity Funding ... is an important one. Dirks' careful investigations brought to light a massive fraud ... But for Dirks' efforts, the fraud might well have gone undetected."²³⁰ Later, the O'Hagan court emphasized the importance of the fact that Dirks investigated fraud, when distinguishing its case from Dirks.²³¹ It thereby implicitly acknowledged that trading on positive and negative information was not identical,²³² consistent with our analysis. However, commentators criticized the Court in *Dirks* for introducing such a distinction. Fischel argued that the court had misunderstood the tension between positive and negative information: "to turn the Court's analysis on its head ... disclosures that increase the value of the firm to the benefit of investors are illegal, while disclosures that cause the firm to go bankrupt are perfectly lawful."²³³ But this seems to blur the distinction between incentives to *produce* and incentives to *disclose* information. Production, not disclosure, of positive information increases the value of the firm and social welfare. Once it has been produced, gains to social welfare come from the accuracy of prices; for the rest, disclosure is merely redistributive. Likewise, once negative information is produced, as was the case in *Dirks*, it should be disclosed in order for the economy's resources to be efficiently allocated.²³⁴ True, disclosure of bad news typically results in a loss to the current shareholders of a firms. But gains to the

²²⁹ "Recognizing, however, that Dirks "played an important role in bringing [Equity Funding's] massive fraud to light," 21 S.E.C. Docket, at 1412, the SEC only censured him." *Dirks v SEC*, supra note 2, [quotation marks and parenthesis in original text].

²³⁰ 463 U.S. 646, footnote 18. See also Wright, J., 220 U. S. App. D. C., 314, 681 F.2d, 829 ("Largely thanks to Dirks one of the most infamous frauds in recent memory was uncovered and exposed, while the record shows that the SEC repeatedly missed opportunities to investigate Equity Funding").

²³¹ Even though the court also uses other means of distinguishing, exposure of fraud seemed to have been an important element: "The information indicated that the corporation had engaged in a massive fraud. The analyst investigated the fraud, obtaining corroborating information from employees of the corporation. During his investigation, the analyst discussed his findings with clients and investors, some of whom sold their holdings in the company the analyst suspected of gross wrongdoing." 521 U.S. 642, 662.

²³² Of course, like many other courts, it cited 10(b)-5, which refers to the "purchase or sale", not distinguishing between the two. *U.S. v. O'Hagan*, supra note 2, at 651 et seq. Other courts have relied on *Dirks* when acquitting alleged insiders for trading on negative information, e.g. 34 Fed. Appx. 301; 2002 U.S. App. LEXIS 8963 (memorandum).

²³³ Fischel, supra note 4, at 139 (".It is possible, in other words, to turn the Court's analysis on its head. There is little question that if *Dirks* had involved an insider's tip to analysts that the firm was about to announce record earnings, which resulted in purchase of shares by clients in advance of the announcement, the Court would have held that the insider breached his fiduciary duty and the analyst was a "participant after the fact." [footnote omitted] Disclosure of a fraud, however, is perfectly legal. Thus disclosures that increase the value of the firm to the benefit of investors are illegal, while disclosures that cause the firm to go bankrupt are perfectly lawful. Because the Court equated the social benefit from exposing frauds with fiduciary duties, it failed to appreciate this tension.")

firm's shareholders from non-disclosure are redistributive and come at the cost of other, future shareholders that decide to buy from the current shareholders. The court's analysis is economically sound and consistent with our analysis. It emphasized the utility of insider trading on negative information. Because negative information would otherwise have remained secret Dirks was paid for discovering and disclosing it.

VIII.d Potential objections

I have suggested that “insider buying cases” lead to a conviction whereas “insider selling cases” result in an acquittal. However, some selling cases ended in a conviction (*In re Cady, Roberts, Diamond, Smith*)²³⁵ and an influential buying case ended in an acquittal (*Chiarella*)²³⁶. On the face of it, this counters the proposed reinterpretation reinterpretation with regard to positive and negative information. Concerning selling cases, the presumed contradiction dissolves as one looks at the expected time of disclosure had there been no insider trading. The courts generally assumed that the information would have been disclosed fairly quickly without insider trading. If this assumption was correct, insider selling on non-public information was not necessary for the distribution of negative information. In *Diamond v. Oreamuno*, insiders sold stock in September 1996 after having realized at the end of August that the net earnings had declined by 75%. The information was finally disclosed in October.²³⁷ *In the Matter of Cady, Roberts & Co.*, the stock was sold only a day ahead of the dividend announcement that communicated a reduction in the rate per share from 0.625 to

²³⁴ See supra note 153 and accompanying text for a discussion of insider trading as an incentive to make bad investment decisions.

²³⁵ *In re Cady, Robert & Co.*, 40 S.E.C. 907 (1961), *Diamond v. Oreamuno*, 24 N.Y.2d 494 (1969), *United States v. Smith*, 155 F.3d 1051 (1998).

²³⁶ *Chiarella v. United States* (1980) 445 U.S. 222.

²³⁷ 24 N.Y.2d 494, 497; 29 A.D.2d 285, 302. *Oreamuno*, chairman of the board of director of Management Assistance, Inc. (MAI), and Gonzalez, its president, sold 56,500 shares at 28 dollars per share. After the information concerning the drop in earnings was made available to the public, the price fell to 11 dollar per share.

0.375 dollars.²³⁸ In *United States v. Smith*, the insider started selling approximately two months ahead of the disclosure of the relevant information. As in the other cases, the court assumed that the negative information would have been disclosed even without insider trading.²³⁹ If the court was right in assuming that the information would have been published fairly quickly with or without insider trading, there is a strong argument in favor of the courts' holdings. Of course, generally we do not know whether the information would have been published without insider trading. Had insiders not been able to trade, they might have tried to suppress the negative information. Thus, if the courts doubt whether information is disclosed, they might do better by taking the “*Dirks-O’Hagan path*”.²⁴⁰

In *Chiarella*, the insider was acquitted even though he had clearly traded on non-public positive information. Thus, the majority opinion in *Chiarella* clearly does not fit within the distinction here offered. We have not put much emphasis on this inconsistency for two reasons. First, the court based its decision on the instructions given to the jury and left the scope of the insider trading provisions open.²⁴¹ Second, the adoption of Rule 14e-3, which was a response to *Chiarella*, contributed to the diminishing importance of *Chiarella* in later cases.²⁴² It turned out to be Chief Justice Burger’s dissenting opinion that discussed the scope of 10(b)-5 which later courts relied upon. The fact that the misappropriation theory, as articulated by Chief Justice Burger, originated in a purchasing case is again quite consistent

²³⁸ Gintel, broker and partner of Cady, Roberts & Co., started selling shares on November 24, 1959. He continued selling after the board authorized the disclosure of the dividend reduction at 11:00 a.m. the following day. The reduced dividend rate was published at 11:48 a.m. by the Wall Street Journal on the Dow Jones ticker tape; 40 S.E.C. 907, 908-09.

²³⁹ *U.S. v. Smith*, 155 F.3d 1051. The court cites Richard Smith who left a voice message to one of the employees stating: “Anyway, finally I sold all my stock off on Friday and I’m going to short the stock because I know its going to go down a couple of points here in the next week as soon as Lou releases the information about next year’s earnings.”

²⁴⁰ The notion that emphasizes the time lap between trading and publication is supported by *Elkind v. Liggett & Myers, Inc.*, 635 F.2d 1980) which held that sales eight days before the preliminary earnings forecasts were permitted, whereas sales one day ahead was not. The court distinguished the two cases by the TSC standard of materiality which was used by many other courts (*TSC Industries, Inc. v. Northway, Inc.*, 426 U.S. 438). This reading of the substantial likelihood test is quite coherent with our hypothetical. It generally assumes that non-public information used far in advance of the publication, fails the materiality standard, whereas trading shortly ahead meets the standard.

²⁴¹ “Because we cannot affirm a criminal conviction on the basis of a theory not presented to the jury, ... we will not speculate upon whether such a duty exists, whether it has been breached, or whether such a breach constitutes a violation; 445 U.S. 222, 236-37

with the general notion of our theory. Burger clearly had positive information in mind, when he discussed insider trading, even though not explicitly distinguishing between the two types. When making his arguments, he referred to buyers, never to sellers.²⁴³ In this context, he states that an “investor who *purchases* securities on the basis of misappropriated nonpublic information ... quite clearly *serves no useful function* except his own enrichment at the expense of others.”²⁴⁴ Would he have made the same argument with regard to negative information if it had served to uncover fraud? As we know, Chief Justice Burger held in favor of *Dirks*, a few years later, where insiders used negative information; thereby implicitly distinguishing between positive and negative information. Consistent with our theory, the misappropriation theory as laid down in Burger’s dissent was adopted in purchasing cases. The Second Circuit adopted it in *Newman*, the Supreme Court in *O’Hagan*.²⁴⁵

VIII.e The early common law distinction

On the face, both 10b-5 and most insider trading case law equated sales with purchases; however, taking a closer look, the judgments effectively distinguished between the two cases. The failure to distinguish was caused by early cases of modern insider trading law which referred to the “purchase or sale” of securities without further discussion, thereby blurring a distinction that was initially accepted in the law of trusts.

*Cady, Roberts & Co.*²⁴⁶ was part of this transformation. Here, the court acknowledged that distinctions between purchases and sales were made in common law but refused to apply this categorization to securities transactions. Interpreting the common law the court stated that managers were allowed to sell (i.e. trade on negative information) but not to purchase. This

²⁴² Harry Heller, *Chiarella, SEC Rule 14e-3 and Dirks: “Fairness” versus Economic Theory*, 37 BUS. LAW. 517 (1981-82).

²⁴³ 445 U.S. 222, 239-45, mentioning buyers at 240, 241, 242, and 245.

²⁴⁴ 445 U.S. 222, 241 [emphasis added]. When summarizing his opinion, Burger again refers to “purchasing”; id, at

²⁴⁵ U.S. v Newman, supra note 215, at 18; US v. O’Hagan, supra note 2.

was justified on the reasoning that they stood in a fiduciary relationship²⁴⁷ with the current shareholders but not with potential future shareholders.²⁴⁸ The court relied on Judge Learned Hand who explained that when corporate officers purchase shares, they clearly fall within the prohibitions of the law of trusts, whereas for sales, there existed no relationship with the beneficiary.²⁴⁹ This is consistent with much earlier cases, such as *Strong v. Repide*, that marked an important step in extending fiduciary duties of directors to the shareholders, when - at that time- fiduciary duties were believed to run only to the corporation. The court ruled that the director who bought stock from a shareholder when good news was forthcoming was liable. The director effectively misappropriated a business opportunity.²⁵⁰ Because the holding was based on fiduciary duties it was not surprising that this case, like others,²⁵¹ referred to the purchase, not the sale of securities. At that time virtually no cases were brought for trading on negative information, i.e. directors were allowed to sell but not to purchase, because it was assumed that the directors did not owe a fiduciary duty to future shareholders.²⁵² Not surprisingly, later courts dealing with insider trading referred to “corporate opportunity”

²⁴⁶ 40 S.E.C. 907.

²⁴⁷ Sometimes, later cases (e.g. Chiarella and Dirks) applied a fiduciary duty analysis but used this approach in a different context; O’Connor, supra note 46, at 330-333.

²⁴⁸ 40 S.E.C. 907, 913-14: “Whatever distinctions may have existed at common law based on the view that an officer or director may stand in a fiduciary relationship to existing stockholders from whom he purchases but not to members of the public to whom he sells, it is clearly not appropriate to introduce these into the broader anti-fraud concepts embodied in the securities acts.”

²⁴⁹ However, Judge Learned Hand refused to distinguish between the two cases in the given context. *Gratz v. Claughton*, 187 F. 2d 46, 49 (C.A. 2, 1951), cert. den., 341 U.S. 920 (1951): “When they bought shares they came literally within the conventional prohibitions of the law of trusts; yet the decisions were strangely slack in so deciding. When they sold shares, it could indeed be argued that they were not dealing with a beneficiary, but with one whom his purchase made a beneficiary.” However, he went on in refusing to adopt this distinction in the respective setting: “That should not, however, have obscured the fact that the director or officer assumed a fiduciary relation to the buyer by the very sale; for it would be a sorry distinction to allow him to use the advantage of his position to induce the buyer into the position of a beneficiary although he was forbidden to do so once the buyer had become one.” See also *Freeman v. Decio*, 584 F.2d 186, 191 (7th Cir. 1978): “there has been a movement towards the imposition of a common law duty to disclose in a number of jurisdictions, at least where the insider is dealing with an existing stockholder ... some even impose a strict fiduciary duty on the insider Vis-a-vis the selling shareholder.”

²⁵⁰ *Strong v. Repide*, 213 U.S. 419 (1909). For a historical analysis see Dalley, supra note 20 at 1298-1307.

²⁵¹ *Fisher v. Budlong*, 10 R.I. 525; *Oliver v. Oliver*, 118 Ga. 362 (1903, 45 S.E. 232); *Brophy v. City Service*, 31 Del. Ch. 241 (1949). *Fisher*, *Oliver* and *Strong* extended the fiduciary duties, so that directors were liable towards the shareholders not just towards the corporation; see Dalley, supra note 20 at 1302-05.

²⁵² Clark, supra note 52 at 311.

cases.²⁵³ Today, even proponents of insider trading acknowledge that insider may not trade if they would entail misappropriating a corporate opportunity.²⁵⁴

The evolution of the insider trading prohibition supports the view that clear cases, namely those that involved the misappropriation of corporate opportunities and, as such, concerned the use of positive information, were misread and extended to negative information without thorough analyses. This notion is consistent with the legislative history of SEC Rule 10(b)-5, that responded to purchasing, not selling activity.²⁵⁵ Maybe, the initial inclusion of sales in 10(b) of the SEC Act 1934 is best explained by what now appears to be an unwarranted concern for speculative undervaluations, thus depriving the regulation of its main justification.²⁵⁶ Even though the distinction between positive and negative information was blurred and recent decisions have not explicitly emphasized this notion, it is clear that the common law, regulatory actions and modern case law prohibiting insider trading primarily had trading on positive information in mind.

²⁵³ E.g. *Brophy v. City Service*, 31 Del. Ch. 241, 246 (1949) cites *Guth v. Loft, Inc.* 23 Del. Ch. 255, 5 A.2d 503 (Del. Supr.1939) linking the insider purchases to the misappropriation of corporate opportunities.

²⁵⁴ Fischel, *supra* note 4, at 135-36. Of course, Fischel argues that a mandatory prohibition is not necessary because the parties can prohibit such trades by contract.

²⁵⁵ When the SEC adopted Rule 10b-5 based on the SEC Act of 1934, it referred to positive information: “[the rule prohibits] fraud by any person in connection with the *purchase* of securities ... The new rule closes a loophole ... by prohibiting individuals or companies from *buying* securities if they engage in fraud in their purchase; Securities Exchange Act Release No. 3230 (May 21, 1942) [emphasis added]. See also *Ernst & Ernst v. Hochfelder*, 425 U.S. 185, Fn 32: “Apparently the Rule was a hastily drafted response to a situation clearly involving intentional misconduct. The Commission's Regional Administrator in Boston had reported to the Director of the Trading and Exchange Division that the president of a corporation was telling the other shareholders that the corporation was doing poorly and *purchasing* their shares at the resultant depressed prices, when in fact the business was doing exceptionally well.” [citations omitted, emphasis added]

²⁵⁶ One reason why *sales* were initially included in the SEC Act of 1934 was the fear for speculative negative bubbles; see above note 49 with regard to short sale constraints. Compare also Representative Sabbath who stated that the “[n]ation-wide crash” was, in part, due to the “shameful manipulation of stocks” and that “the professional manipulators who were responsible for this criminal inflation would at the first chance take the other side and start a forced selling campaign by those who had purchased on their advice on margin.” Conference Report submitted in House and agreed to June 1, 1934, 78 Cong. Rec. 10248, 10267-68 (June 1, 1934). Stock bubble models have showed that undervaluations are not likely to occur (see *supra* Section IV.c.iii).

IX Self-Regulation

One might argue that deregulation could lead to the same result as our regulatory hypothetical.²⁵⁷ Because of market pressure, firms may adopt an efficient provision. However, there are arguments why a deregulated regime, allowing for an adoption of insider provisions including sanctions through private enforcement, would not lead to the same result.²⁵⁸ Efficient deterrence requires imposing sanctions equal to the expected benefits. If the illegal conduct is difficult to discover, which is the case for insider trading,²⁵⁹ deterrence requires higher sanctions. As sanctions exceed the personal wealth restraints, they lose their deterrence effect.²⁶⁰ Because people have limited assets, there may be no possible sanction that efficiently deters the respective conduct.²⁶¹ Thus, criminal sanctions, such as imprisonment and other restrictions on freedom may be necessary.²⁶²

Consequently, the ability of the market to adopt our hypothetical might depend on the fact that insider trading on positive information is currently prohibited. As far as the SEC and the courts sanction insider trading on negative information, outsiders seem to have chosen to allow it in many settings, while sanctioning the use of positive non-public information. If insider trading were allowed for positive and negative information, the market might be less likely to adapt a regulation that reflects our hypothetical due to a lack of efficient sanctions.²⁶³

²⁵⁷ Carlton & Fischel, *supra* note 1; David D. Haddock & Jonathan R. Macey, *A Coasian Model of Insider Trading*, 80 NW. U. L. REV. 1449 (1986). Alternatively, one may allow firms to opt out of an insider trading prohibition, as Carlton & Fischel argue and Haddock & Macey refer to.

²⁵⁸ E.g. Easterbrook, *supra* note 1, 333-335; Cox, *supra* note 155, at 656; see also Stephen M. Bainbridge, *Incorporating State Law Fiduciary Duties into the Federal Insider Trading Prohibition*, 52 WASH. & LEE L. REV. 1189 (1995), at 1263.

²⁵⁹ Fried, *supra* note 155, at 331-333.

²⁶⁰ This is possible in spite of the marginal utility of money and the fact that future income can be taken away as well.

²⁶¹ Steven Shavell, *Criminal Law and the Optimal Use of Nonmonetary Sanctions as a Deterrent*, 85 COLUM. L. REV. 1232 (1985); Shavell, *supra* note 47 at 544 et seq.

²⁶² Easterbrook, *supra* note 1, at 334. Furthermore also Dooley, *supra* note 14, at 25-27.

²⁶³ Easterbrook, *supra* note 1, at 334. Furthermore argues that more resources than socially optimal would be spent for detecting insider trading, if the prohibition were solely based on private enforcement.

X Conclusion

I have endeavored to show that insider trading on negative information is more beneficial than insider trading on positive information. Because negative information is often kept secret for a longer time, the marginal utility of insider trading as a disclosure mechanism is greater for negative than for positive information. Because insiders have few incentives to disclose negative information, insider trading adds more than it does with regard to positive information. If insiders want to conceal negative information, e.g. managers want to conceal the failure of an investment, they have to agree not to trade on that information. Insider trading prohibitions allow the conspirators to credibly commit not to trade (if one deviates, he will be reported to the SEC or directly sued) and thus supports collusive fraud to conceal negative information.

I have applied the comparison of insider trading on positive and negative information to stock bubbles, as a form of massive mispricing that leads to an inefficient allocation of the economy's resources. For several reasons, including empirical evidence, overvaluations are more likely to occur than undervaluations. Thus, the argument made in favor of insider trading, namely that it leads to more accurate (or informationally efficient) prices, primarily applies to insider trading on negative information. Because persistent overvaluations denote a massive loss to social welfare, insider trading on negative information could play an important role for welfare maximization. This includes the fact that performance-based compensation becomes a more efficient mechanism for aligning the interests of shareholders and managers.

Mainly, arguments brought forth against insider trading referred to profits from positive information. This includes the notion that insiders should not be allowed to trade on non-public good news because they in effect misappropriate a business opportunity that belongs to the corporation. If insiders could reap the benefits of newly created positive information investors would have no incentives to provide the manager (corporation) with their funds.

This inefficiency was often discussed in terms of “corporate opportunities” and was picked up in the context of insider trading long before the modern insider trading law. Historically, courts have focused on positive information, consistent with fiduciary duties. Because insiders owed a duty only to present, not future shareholders, they were generally allowed to sell but not to buy.

Modern insider trading law (TGS, Dirks, O’Hagan) has applied the basic notion of our efficiency analysis by sanctioning purchasing but not selling activity. Different from other cases that may have incorporated our analysis implicitly, Dirks makes an explicit reference to the utility of trading on negative information. Because fraud would have remained secret, Dirks was exercising a useful function by distributing negative non-public information. The “Dirks-O’Hagan path” showed that the same arguments were not applied where insiders traded on positive information.