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THE NEED FOR MANDATORY DISCLOSURE IN NOISY MARKETS

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Abstract

Economically-oriented legal scholars debating the desirability of mandatory disclosure agree that firms going public would voluntarily adopt disclosure arrangements that maximize their value, and that such arrangements would provide shareholders with a considerable amount of information. They disagree, however, over whether the *interfirm* externalities created by a firm's disclosure would lead firms to provide too little information from a social perspective, justifying government intervention. This paper shows that, because stock prices are not perfectly efficient, disclosure can also create *intrafirm* externalities: it can provide benefits to a firm's future public shareholders that insiders taking the firm public cannot fully capture. Indeed, disclosure that increases firm value can actually reduce its stock price when the firm goes public, benefiting public buyers directly at insiders' expense. Insiders may therefore choose disclosure arrangements that fail to maximize firm value. Intrafirm externalities can explain a variety of otherwise puzzling disclosure practices, including the failure of many firms exempt from mandatory disclosure to provide any information to shareholders. The paper's analysis suggests that, even absent *interfirm* externalities, *intrafirm* externalities make some form of mandatory disclosure desirable. The analysis also has implications for other important debates in securities and corporate law.

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INTRODUCTION

Most publicly traded firms in the U.S. are subject to the mandatory disclosure requirements imposed by the securities laws.[1] Firms selling their shares to the public generally must register with the SEC and provide detailed information about their business, including financial accounting information as well as more qualitative disclosures about their operations and management. After going public, a registered firm must make periodic disclosure of some types of information on an annual basis[2] and other types of information on a quarterly basis.[3] The firm must also notify markets whenever there has been a material change in its financial condition or operations.[4] The U.S. approach to mandatory disclosure has been widely followed by other countries.[5]

Although mandatory disclosure is well established in the U.S. and elsewhere, there is a longstanding debate among economists and economically-oriented legal scholars about its desirability. Participants on both sides of the debate agree that periodic corporate disclosure increases intrinsic firm value by among, other things, reducing managerial agency costs. In addition, disclosure helps avoid a lemons problem when investors later sell their shares; potential buyers might interpret the lack of any news as bad news.

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1 These requirements are found in the Securities Act of 1933, the Exchange Act of 1934, and the Securities and Exchange Commission's (SEC) regulations implementing these statutes.

2 Publicly traded firms must disclose in their annual report detailed information on the firm's financial results, its assets and financial condition, legal proceedings against the firm, information on the firm's officers and directors. See Item 303, Regulation S-K, Securities Exchange Act of 134, 17 C.F.R. section 249.308a (2002).

3 See Form 10-Q; Securities Exchange Act of 1934, 17 C.F.R. section 249.308a (2002).

4 See Form 8-K.

5 See Hansmann and Kraakman, End of History for Corporate Law (2004); Robert Prentice, Regulatory Competition in Securities Law: A Dream (That Should be) Deferred, 66 Ohio St. L. J. 1155 (2005). See generally Reinier Kraakman et al., The Anatomy of Corporate Law: A Comparative and Functional Approach (2004); Convergence and Persistence in Corporate Governance (Jeffrey N. Gordon & Mark J. Roe eds., 2004). For evidence that mandatory disclosure improves stock market performance, see Laporta, de Silanes, Shleifer (1999); LaPorta, de Silanes, Shleifer, Vishny (1997).

Participants in the debate also generally agree that investors benefiting from a firm's disclosure arrangement will pay a commensurately higher price for that firm's stock. Thus, in a world without mandatory disclosure, firms selling stock to the public would have an incentive to adopt arrangements providing a considerable amount of disclosure to shareholders.

Supporters and critics of mandatory disclosure disagree, however, over whether the level of periodic disclosure privately chosen by such firms would be socially optimal. Supporters of mandatory disclosure argue that disclosure benefits not only a firm's own shareholders but also third parties, such as other firms. Because firms don't capture these third-party benefits, their privately chosen disclosure arrangements will tend to be socially suboptimal. Mandatory disclosure, they insist, is necessary solve this interfirm externality problem. Critics of mandatory disclosure question the magnitude of interfirm externalities. They also claim that the government's mandatory disclosure rules are likely to impose excessive administrative costs on firms. Accordingly, they believe that firms should be free to fashion their own disclosure arrangements, or at least permitted to choose among different securities law regimes.

The debate among economically oriented legal scholars over the desirability of mandatory disclosure began in the early 1980s. At that time, the efficient market hypothesis – that stock prices reflect all public information bearing on shares' intrinsic value - was almost universally accepted among economists. Naturally, then, the debate over mandatory disclosure began with the assumption that stock markets are efficient. However, over the last several decades there has been mounting evidence that the trading activity of irrational or ill-informed investors can cause stock prices to deviate from fundamental value, and that arbitrage activity by sophisticated investors cannot always correct such deviations, which can persist for considerable periods of time. As a result, an increasing number of economists have come around to the view that markets are, at best, imperfectly efficient. Nevertheless, economically-oriented legal scholars debating the desirability of mandatory disclosure have continued to cling to the assumption of stock market efficiency.

The purpose of this paper is to consider the desirability of mandatory disclosure when, as is often (if not always) the case, markets are not perfectly efficient but rather noisy. It shows that, in a noisy market, the insiders taking a firm public may not be able to fully capture the benefits disclosure provides the firm's public shareholders. In other words, disclosure can create an *intrafirm* externality.[6] As a result, in a noisy market, firms selling shares to the public may not have an incentive to adopt disclosure arrangements that maximize firm value – the amount of cash flowing to managers and current and future shareholders over time.

The paper shows that, in a noisy market, intrafirm externalities can arise for two reasons. First, the adoption of a value-increasing disclosure arrangement may not increase the price that insiders taking a firm public can get for its stock by as much the arrangement increases shareholder value – the amount of cash flowing to current and future shareholders over time. To the extent that the noisy market "underprices" the arrangement, insiders cannot fully capture the benefit it provides public shareholders and may lack adequate incentive to adopt it. To be sure, in a noisy market it is theoretically possible for the market to "overprice" a disclosure arrangement of a firm going public, leading a firm to provide too much disclosure. However, the important point is that in at least some cases there is likely to be underpricing and therefore underprovision of value-increasing disclosure arrangements.

Second, unlike in an efficient market, where disclosure generally increases the stock price by mitigating the lemons problem, in a noisy market disclosure may actually reduce the stock price. Among other things, better disclosure makes it more difficult for managers to hide bad news and easier for arbitrageurs to identify and sell short overpriced stock, forcing down the stock price. A lower stock price, in turn, allows public investors to buy shares at a lower price, directly or indirectly transferring value from selling insiders to buying public investors. To the extent that a value-increasing disclosure arrangement can be expected to decrease the stock price, insiders will generally have no incentive to offer it.

The paper's analysis can help explain the scope of disclosure chosen by publicly traded firms that are (or were) not subject to

[6] In this paper, I use the term "intrafirm externality" to refer to the uncompensated benefits disclosure confers on future shareholders at the expense of current shareholders. Disclosure may also confer uncompensated benefits on other parties within the firm, such as employees bargaining with the firm's management. However, for purposes of this paper, I assume that the only parties affected by disclosure are managers and the current and future shareholders of the firm.

mandatory disclosure under the securities laws. In an efficient market, one would expect firms to provide a substantial amount of disclosure notwithstanding interfirm externalities. Firms would be expected to disclose what I call "conflict information" – information about self-dealing transactions and managerial compensation. Conflict information is essential for controlling managerial agency costs but confers little benefit on other firms. Firms would also be expected to provide at least some information about a firm's financial condition, even though such information may benefit other firms. Otherwise, investors could not monitor management's performance and replace them if necessary. In addition, in the absence of financial information those selling shares to public investors would face a lemons problem: potential buyers would assume the worst and refuse to purchase shares except at a very low price.

In a noisy market, however, public investors may not be willing to pay enough for disclosure arrangements that reduce agency costs, leading those taking firms public not to offer them. In addition, the provision of financial information could actually reduce the stock price. Thus, in a noisy market we would expect many firms to underprovide both conflict and financial information. In fact, many (but certainly not all) public firms free to fashion their disclosure arrangements fail to provide conflict information or adequate financial information.

The paper's analysis can also explain firms' failure to constrain managers' ability to terminate disclosure. After a firm has sold shares to the public managers might opportunistically terminate disclosure to reap greater private benefits and enjoy more slack, or to depress the stock price before purchasing a large amount of shares. Regardless of the motive, such a move would hurt public shareholders. In an efficient market, public investors anticipating this possibility would pay more for the shares of firms that did not allow managers to unilaterally terminate disclosure. Insiders taking firms public, in turn, would credibly commit to make ongoing disclosure by incorporating disclosure requirements into its corporate charters, or by incorporating in a jurisdiction that required ongoing disclosure.

In a noisy market, however, we would not necessarily expect firms to making binding commitments to continue disclosure. In a noisy market, terminating disclosure could actually increase the stock price. Initial public investors might therefore actually pay less for an arrangement that makes it more difficult for managers to cease disclosure. Even if terminating disclosure were expected to reduce the stock price, public investors might not pay the insiders taking a firm public enough for a provision limiting managers' ability to terminate disclosure. In fact, public firms that are (or were) not subject to mandatory disclosure (as well as those can easily exit the mandatory disclosure regime) generally give managers complete discretion over terminating disclosure, and many managers use this discretion to terminate disclosure and leave their shareholders in the dark.

The paper's analysis has implications for several important debates in securities and corporate laws. First, it provides a different economic justification for mandatory disclosure rules. Economically-oriented scholars justifying mandatory disclosure have argued that firms would adopt a disclosure arrangement that was optimal for that firm, but suboptimal socially because of the existence of interfirm externalities. But when (as is often if not always the case) markets are not perfectly efficient, I show that intrafirm externalities are likely to lead firms to adopt disclosure arrangements that are not even optimal for that firm. Thus, imposing mandatory disclosure on a particular firm can directly increase the amount of value flowing to managers and current and future shareholders over time.

Second, the paper's analysis has implications for the desirability of recent proposals to allow firms to choose their own securities regime. The analysis suggests that allowing firms to choose their own securities regime is likely to lead to an under-provision of disclosure when, as is often if not always the case, markets are not perfectly efficient. Thus, permitting firms to choose their own securities regime is likely to lead to sub-optimal disclosure arrangements.

Finally, the analysis has implications for the debate in corporate law over whether competition among states for corporate charters is likely to yield optimal legal rules. Proponents of state competition claim that firms seek, and states compete to offer, value-increasing corporate law rules. It is widely agreed that it us is value maximizing for publicly traded firms to offer disclosure to dispersed shareholders. However, in the almost 150 years since US corporations began selling stock to the public no US state has adopted (even as a default rule) a provision requiring widely held firms to disseminate financial and conflict information to shareholders. The analysis I offer suggests why: when markets are not efficient, companies selling their shares to the public will not have an incentive to seek optimal disclosure arrangements because they create externalities on public shareholders. States, in turn, will not have an incentive to provide them. The failure of state charter competition to deliver desirable disclosure rules suggests a problem with charter competition generally: that when markets are not efficient, firms will not necessarily seek – and states will not necessarily provide --- corporate law arrangements that are efficient. If states fail to offer efficient disclosure rules, there is no reason to believe that competition is likely to lead to optimal rules in other areas of corporate governance.

The remainder of the paper proceeds as follows. Part I considers the disclosure arrangements that are likely to be chosen in a hypothetical efficient market. It explains it will be privately optimal for the firm to periodically disclose at least some information to shareholders, and to limit – through corporate law arrangements – managers' ability to unilaterally terminate disclosure. It also explains why the presence of interfirm externalities may make the firm's privately optimal scope of disclosure socially suboptimal.

Part II explains that stock markets are in fact often noisy. It describes some of the evidence that stock prices often deviate considerably from fundamental values, even in the modern U.S market, which has extensive disclosure regulations and the world's most sophisticated investors. It then explains why stock market noise is likely to arise and persist: stock prices are determined by the trading of investors who may not "rationally" price the stock; and informed arbitrage cannot always correct deviations from true value.

Part III considers how stock price noisiness is likely to affect the disclosure arrangements insiders offer public shareholders when they are free to fashion the firm's disclosure arrangements. It shows that, in a noisy market, intrafirm externalities may prevent insiders taking a firm public from capturing even the benefits disclosure provides the firm's own shareholders. It concludes by offering two testable predictions: in a noisy market, (1) many firms will provide little if any information to shareholders, including information that does not give rise to interfirm externalities; and (2) many firms will allow managers to unilaterally terminate disclosure.

Part IV examines firms' actual choice of disclosure arrangements. It shows that, consistent with the predictions offered in Part III, many firms free to fashion their own disclosure arrangements provide less information to shareholders than would be expected in an efficient market. In addition, firms providing disclosure allow managers to unilaterally terminate it, and they often do so, leaving shareholders in the dark.

Part V considers the implications of the Article's analysis for several important issues in corporate and securities laws, including the desirability of mandatory disclosure, the wisdom of recent proposals to allow current shareholders to choose their own securities regime, and the market for corporate law. A conclusion [to be added] follows.

I. CORPORATE DISCLOSURE IN AN EFFICIENT MARKET

This Part describes the disclosure arrangements firms going public can be expected to adopt when markets are efficient and firms are free to fashion their own disclosure arrangements. Section A explains why, in an efficient market, insiders taking a firm public would have an incentive to offer ongoing disclosure. Section B examines the scope of disclosure that insiders would choose in an efficient market. Section C explains why insiders are likely to offer arrangements that limit their own ability to terminate disclosure after the firm goes public.

A. Insiders' Incentive to Offer Ongoing Disclosure

Insiders selling shares of their firm to public investors in an efficient market have an incentive to offer a periodic disclosure arrangement – one that provides disclosure on an ongoing basis. First, periodic disclosure can reduce managerial agency costs, increasing expected firm value and the price initial public investors will pay for the stock. Second, it can help initial public investors sell their shares at a higher price to future investors by reassuring future investors in the secondary market that there is no hidden bad news. This, in turn, increases the price that initial public investors will pay insiders for the shares.

1. Reduction in Managerial Agency Costs

Consider insiders who sell shares of their firm to public investors and continue serving as the firm's managers unless they are replaced. For simplicity, assume that they sell 100% of the firm's shares to public shareholders. Finally, assume that the firm's value – the expected value of the future cash flows received by the firm -- will therefore be divided between the insider-managers and public shareholders.

In an efficient market, the price buyers would pay for a firm's shares is the expected value of the future cash flows to shareholders, based on public information. The expected value of these cash flows to shareholders is total firm value less the amount of value captured by the insider-managers. As a result, the insiders capture all of the firm's value, either directly (as insider-managers, after the firm goes public) or indirectly (through the sale of the company's stock). They accordingly have an incentive to adopt governance arrangements that increase firm value.

Periodic disclosure is likely to increase firm value by reducing managerial agency costs after the firm goes public.[7] First, disclosure of conflict-of-interest transactions and executive compensation (hereinafter, "conflict information") can reveal whether managers are engaged in objectionable self-dealing that could subject them to liability for breach of their corporate law fiduciary duties, or at the very least shareholder outrage that might lead to their replacement. Disclosure of such information is thus likely to deter some forms of inefficient self-dealing that managers would otherwise engage in.

Second, disclosure about the firm's financial condition and business operations (hereinafter, "financial information") can reduce the agency costs of managerial shirking and entrenchment. Such information helps outsiders assess whether a takeover or proxy challenge would be worthwhile, increasing the likelihood of a hostile takeover or proxy challenge.[8] The increased threat of a takeover or proxy contest, in turn, is likely to cause managers to exert greater effort to increase shareholder value.

Disclosure of information that allows shareholders to better police managers will, of course, impose a cost on insider-managers ex post, after the firm goes public. However, to the extent that the benefit to public shareholders exceeds the cost to insiders, disclosure creates a surplus that can be captured by the insiders through a higher stock price ex ante. Thus, insiders will have an incentive to offer such disclosure if it is value-increasing.

To be sure, initial investors who sell their shares in the short-term rather than hold their stock for the long-term do not directly capture the full value of these agency-related benefits, most of which will accrue after they sell their stock. However, to the extent the market is efficient, and the price future buyers pay for the stock reflect the expected value of the firm's disclosure arrangements, the initial investors will indirectly capture the value of these benefits of disclosure when they sell their stock. Thus, in an efficient market, they will pay more for the shares of a company that have disclosure arrangements capable of reducing managerial agency costs even if they intend to hold the stock for only a short period. Insiders, in

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7 Mahoney, 1995.

8 See Easterbrook & Fischel, 1982; Fox, 1999

turn, will have an incentive to offer arrangements that increase firm value.

2. Signaling: Avoiding a Lemons Problem

Insiders taking a firm public have a second reason to offer periodic disclosure that is independent of its effect on agency costs and (intrinsic) firm value. Absent periodic disclosure of financial information, future buyers may have difficulty determining the firm's value. Insiders may be reluctant to disclose information, especially bad news. Unless there is a regime that forces disclosure of all news, potential future buyers may assume the worst and pay very little (if anything) for the stock.[9] In other words, initial investors could face a lemons problem when they sold their shares. Anticipating this possibility, initial investors buying shares of the newly public company would pay more for those shares if the firm has in place periodic disclosure arrangement. Insiders, in turn would have an incentive to provide such an arrangement – even if it does not increase the expected cash flows of the firm.

B. Scope of Disclosure

Having seen that insiders have two incentives to offer periodic disclosure arrangement when they take a firm public, we now turn to consider the likely scope of disclosure. As we will see, disclosure imposes several types of costs on the firm. Insiders will provide a particular type of information if and only if the benefit to insiders and initial public investors exceeds the cost to these parties. However, in an efficient market firms can be expected to disclose a considerable amount of information to shareholders. I then explain why a firm's privately optimal scope of disclosure may be less than what is socially optimal, perhaps justifying mandatory disclosure even in an efficient market.

1. Private Costs of Disclosure

[9] As Roberta Romano has written, "Firms with less favorable information must also disclose such information about their projects because an adverse signal will be drawn by investors concerning firms that do not disclose any information – no news is bad news." Romano, AEI, 2002, p.15. See also Ross (1979); Easterbrook and Fischel (1984).

Disclosure imposes both direct and indirect costs on the firm. The direct costs of disclosure are the transaction costs associated with gathering and reporting the information disclosed. A firm would presumably collect and analyze information about its financial performance even without a disclosure requirement. Thus the direct cost of gathering such information is likely to be low. However, to the extent the firm is required to gather information it would not otherwise have, it will incur a cost. The firm will also incur costs in reporting the information in the proper format. The more extensive the disclosure, the costlier it will be to assemble and report the information.

The indirect costs of disclosure are the costs to the firm that arise as a result of the information disclosed becoming available to third parties that, in turn, can use the information to reduce the firm's value. For example, information that helps reduce managerial agency costs or avoid a lemons problem may also benefit a firm's competitors at the firm's expense. The indirect costs of disclosure may far outweigh the direct costs.

2. Privately Optimal Scope of Disclosure

In determining the privately optimal scope of their firm's disclosure, insiders would compare the benefits of disclosing a particular item of information (in reducing managerial agency costs and avoiding the lemons problem) to the direct and indirect costs described above. The firm would commit to disclose the item only if the benefits to insiders and initial public shareholders exceeded the costs.

However, notwithstanding the costs of disclosure, firms would be expected to provide a considerable amount of information to shareholders. To begin, consider the "conflict information" necessary to reduce inefficient self-dealing, such as information about self-dealing transactions and executive compensation. Such information is easily available to the firm. More importantly, it is unlikely to indirectly reduce shareholder returns by benefiting competitors. The direct and indirect costs of providing such information are thus likely to be low. At the same time, there are likely to be substantial agency-related benefits to providing such information to shareholders. Thus, we would expect firms to provide such information.

Next, consider the "financial information" that would increase the chance of takeovers or proxy fights, thereby reducing managerial slack, as well as reassure potential buyers that there is no hidden bad news. Such information is also easily available to the firm. Unlike conflict information, however, financial information could benefit competitors. Thus, the indirect and total costs of disclosing such information are likely to be much higher than the costs of disclosing conflict information.

However, we would still expect the firm to disclose a considerable amount of financial information. Absent financial information, shareholders could not monitor the effectiveness of their managers and replace them if necessary. Agency costs of shirking might therefore be quite high. In addition, the lemons problem might be so severe that initial investors would have difficulty selling their shares at a reasonable price. Thus, the benefits of disclosing considerable amount of financial information are likely to be higher than costs. Insiders would therefore be expected to adopt periodic disclosure arrangements that provided such financial information.

3. Would Mandatory Disclosure be Needed?

Although a firm in an efficient market could be expected to offer a considerable amount of disclosure, it may offer less than what is socially optimal. The socially optimal level of disclosure is that which maximizes total social value – social benefits less social costs. In contrast, the scope of disclosure chosen by insiders will maximize firm value – the private benefits to the firm less the private costs.

The social value of disclosing a particular item of information may often exceed the value to the firm because of the interfirm externalities of disclosure. Disclosure by one firm is likely to benefit other firms. For example, disclosure can provide information to a firm's competitors about the profitability of certain markets and the firm's ability to control its costs. Not only does the disclosing firm fail to capture these interfirm benefits, its own value is reduced as a result. Disclosure may also benefit non-competitor firms by providing information that they can use to benchmark their own performance. To the extent that the disclosure creates such benefits that are not internalized by the disclosing firm's shareholders, a firm may under-provide disclosure relative to what is socially optimal.

Economically-oriented legal scholars who support mandatory disclosure argue that the gap between private and social optimality is large enough that mandatory disclosure is needed to achieve a socially efficient level of disclosure. Critics of mandatory disclosure question the magnitude of interfirm externalities. They also claim that the government's mandatory disclosure rules are likely to impose excessive administrative costs on firms. Accordingly, they believe that firms should be free to fashion their own disclosure arrangements.

For purposes of this paper, I abstract from interfirm externalities and focus only on whether as, commentators on both sides of the debate have claimed, firms are likely to adopt disclosure arrangements that maximize their own value. As we will see, when markets are often not perfectly efficient, the presence of intrafirm externalities may lead firms to adopt disclosure arrangements that fail to maximize their own value. This problem, in turn, is sufficient to justify some form of mandatory disclosure, even in the absent of interfirm externalities.

C. Terminability of Disclosure

After a firm has gone public with a value-increasing periodic disclosure arrangement, insiders may have an incentive to opportunistically terminate the arrangement. In an efficient market, firms selling shares to the public could therefore be expected to not only offer periodic disclosure but also prevent insiders from unilaterally terminating disclosure without shareholder consent.

1.Managers' Incentives to Terminate Disclosure

Managers have two possible incentives to unilaterally terminate disclosure even when it is in the best interests of the firm (managers and shareholders jointly) to continue disclosure.

First, discontinuing disclosure may allow managers to extract more private benefits. We saw earlier that periodic disclosure reduces expected managerial agency costs by discouraging inefficient self-dealing and facilitating the market for corporate control. Although the reduction in these costs may increase firm value and enable insiders to sell their shares for a higher price ex ante, it could make insiders worse off ex post. In particular, under periodic disclosure insiders can expect to extract fewer private benefits and to enjoy less slack. Terminating disclosure can therefore increase insiders' private benefits.

To be sure, discontinuing disclosure may create a lemons problem, reducing the stock price. To the extent insiders' own stock that they wish to sell, discontinuing disclosure may reduce the price at which they can dispose of their shares (at least in the short-run, until they resume disclosure or sell the company to a private acquirer). Insiders considering discontinuing disclosure will need to weigh this cost against the increase in private benefits terminating disclosure would yield. In some cases, the cost may exceed the benefit. However, in other cases, those in which insiders' shareholdings are small or the private benefits from discontinuing disclosure are large, insiders may still benefit from discontinuing disclosure.

Second, when managers wish to buy stock – rather than sell it – discontinuing disclosure will – by depressing the stock price – directly benefit managers by allowing them to purchase the stock more cheaply. To be sure, managers wishing to buy relatively few shares may not find it worthwhile to temporarily terminate disclosure in order to buy the stock more cheaply.[10] However, managers wishing to buy a large fraction of the firm's shares pursuant to a plan to take the firm private or sell it to a third party may well find it in their interest to terminate disclosure.

2. Firms' Ability to Commit to Disclosure

Anticipating that insiders may later terminate periodic disclosure, initial public investors in an efficient market would be expected to pay more for the shares of firms with a binding disclosure arrangement – one that cannot be terminated unilaterally by insiders. [11] Insiders in turn can be expected to offer binding disclosure arrangements.

There are two ways that insiders could credibly commit to maintain a certain level of disclosure and use such a commitment to sell shares to the public at a higher price. First, insiders could

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[10] Even if disclosure is reinstated, a temporary termination is likely to permanently reduce the stock price in an efficient market because of the signal it sends about management and the likelihood of a future termination.

[11] Future investors would also be willing to pay more for the stock if the firm makes a binding commitment to continue to provide disclosure. Otherwise, they would be afraid that, when they wish to sell the stock, the firm will not disclose information and future buyers – also assuming the worst --- will refuse to buy the stock they are now acquiring.

incorporate the firm in a jurisdiction requiring periodic disclosure for all widely-held firms. Obviously, firms' ability to incorporate in a jurisdiction requiring such disclosure would depend on such a jurisdiction existing. But it is widely agreed that states have an incentive to provide corporate law rules that make the state attractive to those making incorporation decisions.[12] Thus, if those incorporating firms sought such a disclosure requirement, at least some states would be expected to offer it.[13]

To be sure, a firm incorporating in a jurisdiction requiring disclosure could terminate its disclosure requirement by reincorporating in another jurisdiction not requiring disclosure. But reincorporation would generally require a merger of the firm into another entity. And such a merger would require approval by a majority of the shareholders. Thus, managers could not unilaterally terminate disclosure by arranging such a reincorporation.[14]

Second, a firm could obligate itself to provide ongoing disclosure by putting such a requirement in the firm's corporate charter. From the parties' perspective, the advantage of using the corporate charter to provide binding disclosure arrangement is that the firm could tailor its disclosure arrangements to what it is

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[12] Indeed, there is some evidence that, both historically and today, states "compete" for incorporations *See Ehud Kamar, Beyond Competition for Incorporations, __ Geo. L. J. ___ (2006).* Some commentators have argued that the competition among states is not that vigorous. *See* Marcel Kahan & Ehud Kamar, *The Myth of State Competition in Corporate Law, 55 Stan. L. Rev. 679 (2002)(*arguing that only Delaware actively pursues incorporations*);* Lucian Bebchuk and Assaf Hamdani: *Vigorous Race or Leisurely Walk: Reconsidering the Debate on State Competition over Corporate Charters, 112 Yale L. J. 533 (2002)(*same*).* Others have pointed out that the threat of federal intervention may constrain this competition. *See Eisenberg (1989);* Mark J. Roe, *Delaware's Competition.* However, all agree that, at least some states seek to attract incorporations by providing rules favorable to those making incorporation decisions.

[13] As we will see in Part IV, no state ever imposed periodic disclosure requirements on widely held firms (or offered it as a default or opt-in rule). We can infer from their failure to provide such disclosure arrangements that, contrary to what would be expected in an efficient market, those taking firms public did not seek them. This conclusion is reinforced by the failure of firms to adopt disclosure requirements through corporate charter provisions.

[14] To the extent insiders (including a controlling shareholder, if any) controlled a majority of the outstanding shares, corporate law could provide that any such transaction be approved by a majority of the minority shareholders.

privately optimal for the firm. It could thus make the scope of disclosure wider or narrower than the default rule (if there is one).

A corporate charter provision would make ongoing disclosure arrangement as binding as if it were a mandatory corporate law rule. The firm could eliminate this disclosure requirement only by amending its corporate charter. And, like the reincorporation necessary to escape disclosure requirement under corporate law, such an amendment would require the approval of a majority of the firm's shareholders. Thus, managers could not unilaterally terminate the disclosure arrangement.

II. THE REALITY OF NOISY MARKETS

Having considered what arrangements firms could be expected to adopt in an efficient market, we will now consider the arrangements firms could be expected to adopt in a noisy market. This Part explains that, contrary to the assumptions of much of the literature on mandatory disclosure, stock markets are often noisy. Section A briefly describes some of the evidence that stock prices often deviate considerably from fundamental values, even in the modern U.S market, which is characterized by extensive disclosure regulations and the world's most sophisticated investors. Section B explains why stock market noise is likely to arise and persist: stock prices are determined by the trading of investors who may not "rationally" price the stock; and informed arbitrage cannot always correct deviations from true value.

Before proceeding, it is worth specifying my objective in this Part. My purpose is not to comprehensively review all the data suggesting, and explanations for, market noisiness.[15] Rather, my more modest goal is to convince the reader that there is enough evidence that stock prices are noisy to make it worth considering how stock market noisiness is likely to affect firms' choice of disclosure arrangements, the subject I take up in Part III.

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[15] For contributions to, and reviews of the burgeoning literature on market inefficiency, see Nicholas Barberis and Richard Thaler, A Survey of Behavioral Finance, in Handbooks of the Economics of Finance (ed G.M Constantinides, M. Harris, and R. Stulz, Northa Holland 2003); Andrei Shleifer, Inefficient Markets: An Introduction to Behavioral Finance (2000); David Hirshleifer, Investor Psychology and Asset Pricing, 56 J. Fin. 1533-1597 (2001); Kent Daniel, David Hirshleifer, and Siew Hong, Investor Psychology in Capital Markets: Evidence and Policy Implications, 49 J. Mon. Econ. 139 (2002) (surveying the literature on investor psychology).

A. Evidence of Noisy Stock Prices

Most non-academics who work, invest in, or simply observe the stock market understand that even the U.S. stock market, which has extensive disclosure regulations and sophisticated investors, is far from efficient. Stock prices are much more volatile than they would be in a world where stock prices move only in response to the arrival of new information about firms' expected cash flow. For example, the U.S stock market dropped 30% in October 1987 and then quickly rebounded without any identifiable cause, and markets or sectors periodically bubble and crash in the U.S. and elsewhere for no easily discernible reason.

However, many economists and economically trained legal scholars writing on securities regulation, having been trained in efficient market theory and relied on it in their work, resist the idea that stock prices tend to be noisy. They might argue that bubbles and crashes, while seemingly unrelated to the arrival of news, may in fact be driven by subtle changes in the information environment not captured by researchers. These academics refuse to accept the idea that stock markets are inefficient without clear proof that markets price stock irrationally.

Finding direct, incontrovertible, evidence that stock prices are often inefficient has not been simple. To show that a stock's price equals – or deviates from -- the expected value of its discounted future cash flows, one needs to properly estimate the value of these cash flows. Unfortunately, however, there is no "correct" model for valuing discounted future cash flows.

Despite this obstacle, economists have over the last several decades identified widespread instances of undeniable mispricing, in which the market clearly fails to impound all available public information about the value of the stock. Parent and subsidiaries have traded for several days or weeks at mathematically irreconcilable prices. [16] Stock prices increase (decrease) following exogenous changes in the demand for or supply of a stock that do not reflect changes in the firm's future cash flow. The market takes months or years to reflect some kinds of information contained in earnings, stock repurchase, and other important corporate announcements, while overadjusting to other types of

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[16] See, e.g., Owen Lamont and Richard Thaler, Can the Market Add and Subtract? Mispricing in Tech Stock Carveouts, 111 J. Pol. Econ. 227-268 (2003)

information.[17] And the market is frequently fooled by changes in accounting treatment and accounting results that do not correspond to actual or future cash flow.[18]

One of the most frequently cited examples of market mispricing is Siamese twin stocks – stocks with identical cash flows – that trade at inconsistent prices. Consider Royal Dutch and Shell Transport. These two firms had cash flow rights on the same underlying assets -- but traded on different exchanges. [19] Royal Dutch had 60% of the assets cash flow rights, Shell 40%. If prices equal fundamental value, the market value of Royal Dutch equity should always have been worth 1.5 times the market value of Shell equity. Yet it was not. There were persistent and significant deviations around parity. Not just for weeks, months or even years, but decades.[20] Royal Dutch has sometimes been 35 percent underpriced relative to parity, and sometimes 15 percent overpriced.[21] Moreover, these deviations persisted notwithstanding attempts by sophisticated arbitrageurs with billions of dollars of capital to profit from the mispricing. [22]

The irrational pricing of Siamese twin stocks over decades, despite intervention by arbitrageurs, provides compelling evidence

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[17] See, e.g., Huberman and Regev (2001)

[18] The decades-long attempt by venture capitalists and managers to prevent the expensing employee options (even after the amounts were reported in footnotes to the income statement) provides indirect evidence that accounting rules are expected to affect stock price.

[19] In 1907, Royal Dutch and Shell Transport, at the time completely independent public companies, agreed to contribute all of their assets to a newly created entity, in which Royal Dutch would own 60% of the equity and Shell Transport 40%. Shares of Royal Dutch, which are primarily traded in the United States and in the Netherlands, represent a claim to 60 percent of the total cash flow of the two companies, while Shell, which trades primarily in the United Kingdom, is a claim to the remaining 40 percent.

[20] Other examples of mispriced Siamese Twins include Unilever and Smith/Kline Beecham.

[21] Froot, K. and Dabora, E., 1999. How are stock prices affected by the location of trade? *Journal of Financial Economics* 53, pp. 189–216

[22] In particular, ill-fated Long Term Capital Management (LTCM) attempted to exploit the differential by buying the "cheap" stock and shorting the "expensive" stock As I will explain shortly, LTCM lost hundreds of millions of dollars on this seemingly riskless arbitrage play.

that stock prices can deviate from fundamental value for considerable periods of time. To be sure, other cases of clear mispricing last "only" several years, several months, or several weeks. [23] But collectively this evidence indicates that markets are not efficient enough to immediately correct even obvious mispricing, and in many cases markets are not efficient enough to correct it all.

Importantly, most of the evidence of stock price noise comes from the last several decades a - period in which most public companies were subject to mandatory disclosure requirements and there were many sophisticated investors available to exploit mispricing. It stands to reason that markets without widespread mandatory disclosure and with fewer sophisticated investors are likely to be even noisier.

One might argue that these instances of mispricings are merely "anomalies," and that the bulk of the evidence suggests that stock prices are fundamentally efficient. But because economists lack a model for calculating expected future cash flows, there is little evidence that, in fact, stock are correctly priced.

To be sure, stock price levels and movements are often consistent with efficient pricing. For example, a firm that announces unexpectedly high earnings is likely to see its stock price increase immediately; and the greater the surprise, the larger the price increase is likely to be. However, in the absence of any measure of what the actual price should be either before or after the announcement, it is impossible to know whether the stock price's reaction was "accurate" – that is neither too high nor too low. The fact that, in many such cases, stock price continues to drift for months or year after the announcement suggests that even if the stock market processes the information correctly, it takes a long time to do so.

B. Explaining Noisy Stock Prices

Why do individual firms, sectors, and entire stock markets experience bubbles and crashes even when there is mandatory

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[23] See, e.g., Owen Lamont and Richard Thaler, Can the Market Add and Subtract? Mispricing in Tech Stock Carveouts, 111 J. Pol. Econ. 227-268 (2003) (providing examples of parent companies whose partially owned subsidiaries traded for weeks at prices that implied the parent companies other assets had a high negative value)

disclosure and many sophisticated investors? Why do two stocks with identical cash flow trade at different prices for decades? Why does the market not immediately impound all publicly available relevant information? In short, why are markets so noisy? The answer, as we will see, is as follows: (1) many investors form imperfect (and often irrational) estimates of a stock's value, and their trading causes the stock price to deviate from fundamental value and, (2) for various reasons these deviations cannot be corrected by "rational" sophisticated investor arbitrage.

1. Downward Sloping Demand Curves and Investor Irrationality

When analyzing securities pricing, efficient market theorists assume that all investors are risk neutral and place the same (correct) value on a stock. [24] Under this assumption, investors' demand curve for the stock is essentially horizontal: there is infinite demand for the stock at or below the stock's fundamental value, and one could buy all the firm's traded shares for slightly more than the market price. [25] The stock always trades at the market's best possible estimate of its fundamental value.

However, over the last 20 years, empirical studies have made it increasingly clear what has long been obvious to lay observers and market participants -- that investors place different values on the same stock. [26] Even shareholders with the same information about a stock may form heterogeneous expectations about its future

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[24] See, e.g., Frank H. Easterbrook & Daniel R. Fischel, The Proper Role of a Target's Management in Responding to a Tender Offer, 94 Harv. L. Rev. 1161, 1165-68 (1981).

[25] See sources cited in [Fried, Insider Signaling and Insider Trading (2000), at 434.]

[26] For contributions to the empirical finance literature on the elasticity of supply and demand for publicly traded shares, see generally Laurie Simon Bagwell, *Shareholder Heterogeneity: Evidence and Implications*, 81 AM. ECON. REV. 218 (1991); David T. Brown & Michael D. Ryngaert, *The Determinants of Tendering Rates in Interfirm and Self-Tender Offers*, 65 J. BUS. 529, 530 (1992); Lawrence Harris & Eitan Gurel, *Price and Volume Effects Associated with Changes in the S&P 500 List: New Evidence for he Existence of Price Pressures*, 41 J. FIN. 815 (1986); Andrei Shleifer, *Do Demand Curves for Stocks Slope Down?*, 41 J. FIN. 579 (1986).

performance.[27] Indeed, the high levels of costly trading activity in the stock market make no sense unless people have sharply different views about the stocks they trade.[28]

In the presence of heterogeneous beliefs, the demand curve for stock slopes downward. The highest-valuing investor is willing to hold the stock even if it were to trade at a price much higher than the current market price. At lower prices, more and more investors are willing to own the shares. The stock will trade at a price reflecting the subjective valuation of the firm's lowest-valuing (or "marginal") shareholder. [29]

Given that the marginal shareholder's subjective estimate of the value of the stock determines its trading price, it is important to understand how this estimate is formed. If the marginal shareholder is always "rational" – uses all publicly available information to form the best possible estimate of the stock – then stock prices will be efficient – they will reflect all public information bearing on the value of the stock. If, on the other hand, the marginal shareholder is not fully "rational", the price could deviate from the fundamental value of the stock.

In fact, there is considerable evidence that the marginal shareholder is unlikely to be fully rational. Investors are subject to various types of cognitive biases and limitations that impair financial decision-making.[30] They fail to update their beliefs based on new information ("anchoring"). They over-rely on information – such as accounting results -- that is salient (or "available"). As a result, investors tend to trade irrationally.[31] Given the prevalence of

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[27] Shareholder may not process the information rationally, or the available information is equally consistent with more than one valuation. See Stout (1988); Booth (1993)

[28] Shareholders may also have different transaction costs or varying tax situations. See Gerald D. Gay, Jayant R.Kale, and Thomas H. Noe, *Share Repurchase Mechanisms: A Comparative Analysis of Efficacy, Shareholder Wealth, and Corporate Control Effects,* Fin. Mgmt. 44, 63-66 (1991).

[29] See sources cited in Fried, *Insider Signaling*, *supra* note , at 434-35.

[30] David Hirshleifer, Investor Psychology and Asset Pricing, 56 J. Fin. 1533-1597 (2001).[see sources cited in Ribstein]; Kent Daniel, David Hirshleifer, and Siew Hong, Investor Psychology in Capital Markets: Evidence and Policy Implications, 49 J. Mon. Econ. 139, (2002) (surveying the literature on investor psychology)

[31] See e.g., Terrance Odean, Are Investors Reluctant to Realize Their Losses, 58 J. Fin. 1775-98 (1998) (reporting that investors hold losing stocks too long and sell winners too early); Shlomo Benartzi and Richard Thaler, Naïve Diversification

these and other biases and limitations, and the fact that many investor trade irrationally, one cannot presume that the marginal investor in a firm's stock is always is one of the few (if any) investors who can rationally process all publicly available information about a stock's value.

2. Limits of Arbitrage

The fact that many investors are irrational is not, by itself, sufficient to cause stock prices to deviate substantially from their actual value. As long as there are other investors who are rational, these rational investors could exploit the mispricing that results from the trading of irrational (or "noise") investors. The trading by rational investors could, in turn, move the price back to fundamental value. If this price-correcting mechanism worked perfectly, the stock price would deviate at most briefly from fundamental value.

Unfortunately, rational investors cannot be expected to always enter the market and correct deviations from fundamental value. First, arbitrage is a risky activity; traders will therefore not engage in arbitrage unless the expected gains are sufficiently large. To begin, arbitrageurs face *fundamental risk* because very few securities have a perfect substitute (another security that provides identical cash flow rights). In the absence of a perfect substitute, there is always the possibility that an ex ante "rational" arbitrage opportunity will turn out to lose money – even if stock prices can be counted on to revert to their true value. [32] In addition,

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Strategies in Defined Contribution Savings Plans, 91 Am. Econ. Rev. 79-98 (2001) (finding that workers use simple "irrational" heuristics in making investment decisions).

Some economists, such as Milton Friedman, have argued that irrational traders will consistently lose money and won't survive, and therefore cannot influence asset prices. But even irrational traders who don't survive can affect stock prices. See Leonid Kogan, Stephen Ross, Jiang Wang, and Mark Westerfield, The Price Impact and Survival of Irrational Traders (working paper, 2004).

Irrational investors may continue to trade, either because cannot adequately assess their own performance, or because trading (like buying a lottery ticket or playing poker in Las Vegas) provides psychic benefits that exceed the expected financial loss. See Stout, Stock Markets as Casinos (1997).

[32] For example, arbitrageurs may correctly believe that company A is undervalued and that company B, in the same industry, is overvalued. They may thus consider buying A and shorting B. Such a strategy would, it appears

arbitrageurs face *noise trader risk:* trading by irrational investors may cause the stock prices to move for reasons other than changes in the fundamental stock of the stock. Noise makes it risky even to arbitrage between two securities that are perfect substitutes and trade at different prices. Noise may cause such mispricing to persist for a long time, or even indefinitely, during which time the arbitrageur may be forced to unwind the position at a loss. Whatever irrationality is causing one share to be undervalued relative to the other could also cause that share to become *even more* undervalued in the short term. [33] Both types of risk raise the cost of arbitrage, and suggest that arbitrageurs will not try to "correct" the deviation from fundamental value until the deviation becomes sufficiently large so that the expected return from the arbitrage justifies the risk.

Second, arbitrageurs often face constraints on short-selling. If a stock is overvalued, an arbitrageur can attempt to profit by selling the stock short, which should in turn, push the price closer to "true value." But to short a stock, one must borrow the stock through a broker. In many cases, brokers do not have stock to lend to short sellers,[34] or charge a very high price.[35] The lack of shortable shares

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insulate the arbitrageur from the risk of sector-wide or market-wide price shocks. However, there is a possibility that, even though, on an ex ante basis this strategy appears profitable, the B's price will rise or A's price will fall because of a relatively low-likelihood event. The arbitrageur will thus not buy A and short B unless the expected return is high enough to compensate for this fundamental risk.

[33] Indeed, as I noted earlier, there have been so-called "riskless arbitrage" opportunities – such as Siamese Twin Stocks -- where the mispricing has persisted for years and even decades. John T. Scruggs, Noise Trader Risk: Evidence from the Siamese Twins (working paper, 2004) (finding that noise trader risk to arbitrageurs is substantial)

Long-Term Capital Management (the hedge fund founded by several Nobel-prize winning economists and famous Wall Street Investment bankers), learned the hard way about noise trader risk. It tried to profit from the Royal Dutch/Shell "anomaly" by buying the relatively undervalued share and shorting the other. Since one share is a perfect substitute for the other, they faced no fundamental risk. However, at the time the hedge fund failed, the mispricing gap had increased, and LTCM was forced to unwind the position at a loss of several hundred million dollars.

[34] See Lamont and Thaler (2003). An alternative to selling short is buying a put. But it is not possible to buy put options on the stock of many public companies. And, in those cases where put options are available but stock for shorting is not, put options will command a high premium, making their use expensive.

can thus make shorting very expensive, or in some cases impossible.

Even if the broker has stock to lend at a reasonable price, these shares are not on indefinite loan. The lender has the right to demand return of the shares at any time. Thus, even if a short-seller's prediction that the stock price will decline turns out to be correct in the long run, the short-seller can be forced to close his position in the short run at a price higher than the short sale, inflicting a substantial loss. [36]Thus, even if shares are available for shorting, the risk that the shares must be returned introduces a third risk factor, in addition to fundamental risk and noise risk.

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[35] See Gene D'Avolio, The Market for Borrowing Stock, 66 J.Fin. Econ. 271-306 (2002) (finding that the fees for borrowing certain stocks for shorting can reach almost 90% per ___) .

[36] See Andrei Shleifer and Robert Vishny, The Limits of Arbitrage, 52 J. Fin. 35-55 (1997).

III. Corporate Disclosure in a Noisy Market

Part I showed that, in an efficient market, insiders taking a firm public can capture the benefits disclosure provides to their investors. They will thus have an incentive to adopt disclosure arrangements that maximize firm value – the value available to insiders and public shareholders. In such a market, insiders can be expected to offer a credible commitment to periodically disclose information to shareholders. Although the scope of disclosure may be less than is socially optimal because of *interfirm* externalities, insiders can be expected to provide a considerable amount of information, especially information that benefits only their own shareholders.

As Part II explained, however, stock prices are often noisy, deviating from intrinsic value. This Part considers how stock price noisiness is likely to affect the disclosure arrangements insiders offer public shareholders when they are free to fashion the firm's disclosure arrangements. It shows that, in a noisy market, a firm's insiders may not be able to capture even the benefits disclosure provides the firm's own shareholders. In other words, disclosure may create an *intrafirm* externality. As a result, insiders may offer much less disclosure than is optimal for the firm.

This intrafirm externality arises for two reasons. First, as Section A explains, in a noisy market the adoption of a value-increasing disclosure arrangement may not increase the price that insiders can get for the stock for by as much it increases intrinsic firm value. To the extent that the noisy market "underprices" the arrangement, insiders cannot fully capture the benefit it provides to public shareholders and may lack adequate incentive to provide it.

Second, as Section B explains, unlike in an efficient market, where disclosure generally increases the stock price by, among other things, mitigating the lemons problem, in a noisy market such disclosure may actually reduce the stock price. Lowering the stock price allows public investors to buy shares directly or indirectly from insiders at a lower price, directly transferring value from insiders to public investors. To the extent that a value-increasing disclosure arrangement decreases the stock price, insiders will have a strong incentive not to offer it.

Section C uses the analysis in Sections A and B to generate two testable predictions: in a noisy market, (1) many firms will provide less information than they would in an efficient market, perhaps even no information at all; and (2) firms may not adopt a binding periodic disclosure arrangement – one that requires shareholder approval to modify – which they would be expected to do in a perfectly efficient market. As we will see in Part IV, the evidence is consistent with these predictions: many (but not all) firms free to fashion their own disclosure arrangements offer little or no disclosure; and firms that do provide disclosure generally do not make a credible commitment to continue doing so, allowing insiders to sometimes unilaterally terminate disclosure.

A. Mispricing Benefits of Disclosure

We saw in Part I that disclosure can increase firm value by reducing managerial agency costs. A periodic disclosure requirement can force managers to make public "conflict information" -- details of self-dealing transaction and executive compensation. Such disclosure in turn increases the likelihood of legal challenge or shareholder outrage for transactions that are likely not to serve shareholders' interests. A periodic disclosure requirement can also force manager to provide financial information that can reduce shirking by making it easier for a potential hostile acquirer or proxy challenger to assess the profitability of replacing management.

In an efficient market, insiders selling shares to public investors will fully capture the benefits to initial and future public shareholders of such an arrangement. As a result, insiders will have an incentive to offer such an arrangement as long as the benefit to public shareholders exceeds the cost to themselves. In short, insiders will have an incentive to offer such an arrangement if it increases total firm value -- the value available to insiders and public shareholders.

In a noisy market, however, insiders may not expect initial public investors to properly price the effect of a particular disclosure arrangement on firm value. In particular, public investors may not pay attention to or understand the value of a disclosure arrangement, underpricing it. In such a case, insiders may have an incentive not to offer the arrangement, even if it increases firm value.

Suppose, for example, that arrangement X increases public shareholder value by $2 and reduces insiders' private benefits by $1.50. Such an arrangement would be efficient: it increases total value by $0.50. If public shareholders would pay $2 for arrangement X, insiders would capture the $0.50 and have an incentive to offer it. However, if public investors would be willing to pay only $1 more for the stock if the company offers arrangement X, insiders will not have an incentive to offer it. They would gain $1 through a higher stock price but lose $1.50 in private benefits, making themselves $0.50 worse off. Put differently, adoption of arrangement X, in such a noisy market, would confer a $1 positive externality on public shareholders (who would be paying $1 for an arrangement worth $2).

To be sure, it is theoretically possible that initial investors will focus excessively on disclosure arrangements (rather than, say, other governance arrangements or the business prospects of the firm) and *overprice* the benefit of such an arrangement. In such a case, insiders would have an incentive to offer such an arrangement, even if it is inefficient. In other words, there could, in some firms in a noisy market, be too much disclosure.[37] However, the important point is that even if some firms provide too much disclosure in a noisy market the failure to properly price disclosure arrangements may lead other firms to provide too little.

B. Disclosure's Potential Price-Reducing Effects

Part I explained that in an efficient market firms would offer a reasonable amount of disclosure even in the absence of agency costs in order to address the lemons problem. That is, firms would need to provide enough disclosure to reassure potential buyers that there was no hidden bad news. In an efficient market, better disclosure can thus generally be expected to boost the stock price.

In contrast, as this Section explains, in a noisy market disclosure may actually reduce the price public investors will pay for a firm's stock – both at the time it goes public and thereafter.[38] This Section identifies four possible price-reducing effects of disclosure in a noisy market. First, disclosure forces firms to supply bad news that firms would otherwise successfully suppress. Second, disclosure

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[37] The adoption of such an arrangement would create a negative externality on public shareholders. They would pay more for the arrangement than the value it is expected to provide them.

[38] Until now I have generally been assuming, for ease of exposition, that insiders sell all of their shares to public investors when they take the firm public. In fact, insiders may not sell all of their shares at the IPO, but rather over time. In addition, insiders working as managers may receive additional shares as part of their compensation. Insiders will thus have an interest in the stock price both at the IPO and thereafter.

increases the amount of information available to the market, reducing uncertainty, the dispersion of investors' estimates and, potentially, the valuation of the marginal shareholder who sets the firm's stock price. Third, disclosure may make it more difficult for firms to create positive spin to boost the stock price. Fourth, disclosure reduces the risk associated with arbitrage, increasing the likelihood that arbitrageurs will sell inflated stock short and exert downward pressure on the price. I also provide evidence suggesting that increased disclosure can reduce stock prices.

Importantly, I am not claiming that these four effects will always lead a disclosure arrangement to reduce the stock price in a noisy market. These price-reducing effects may not be present in every case. Moreover, even a noisy market is partially efficient: thus when these price-reducing effects are present they compete with the various price-increasing effects of disclosure described in Part I. And in some cases the price-increasing effects of disclosure may outweigh the price-decreasing effects, enabling disclosure to increase the stock price.[39]

However, these price-reducing effects will, when present, negatively affect disclosure's impact on stock prices. To the extent the net effect of disclosure is expected to be positive, it may be less positive than it would be otherwise. And in some cases the expected net effect of increased disclosure may well be negative, as the evidence I describe suggests.

1. Forcing Disclosure of Bad News

Managers generally have an interest in increasing the stock price. A higher stock price enables them to more profitably unload their own shares. It also reduces the likelihood of a hostile takeover or proxy challenge. Absent a requirement to disclose all news, managers seeking to increase the price of their stock may therefore consider releasing only good news and hiding bad news.[40]

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[39] The relative strengths of these competing effects will depend on many factors, including the stock price, the "true value" of the company, the difficulty of valuing the business, and the sophistication of those investors buying and selling its stock.

[40] Managers might also use the absence of disclosure to withhold good news (while, for example, buying stock for their own accounts). Indeed, there is evidence that, even in firms subject to mandatory disclosure, managers routinely manipulate the flow of news to their advantage, lowering the stock price when it is in their interest and increasing it when it is in their interest. See S.P. Kothari,

In an efficient market, managers' ability to boost the stock price by not adopting a disclosure requirement and withholding bad news would be somewhat limited. In the absence of a disclosure requirement, investors would sharply discount the price they would be willing to pay for the stock. They would not interpret the absence of disclosed bad news to mean that there was in fact no bad news. Rather, they might assume that there may well be bad news that the managers are hiding. In short, insiders and current shareholders seeking to sell their shares would face a lemons problem. Thus, managers could not easily boost the stock price by declining to adopt disclosure requirement and then withholding bad news.

But in a noisy market, the stock price may be driven by overly optimistic investors. These investors may not take into account the possibility that a firm not subject to a disclosure requirement is hiding bad news. As a result, they may place a significantly higher value on the stock than they would if the firm had a disclosure requirement and bad news were released. Thus, it will generally be easier in a noisy market than in an efficient market for managers to boost the stock price by exploiting an insufficient disclosure requirement to suppress bad news.

Accordingly, increasing disclosure can reduce a firm's stock price by forcing the firm to reveal bad news that managers would otherwise suppress. To the extent investors assimilate the information, the bad news will reduce investors' subjective estimate of the value of the company. This, in turn will lead to a lower stock price. To be sure, investors who are not perfectly rational may ignore or excessively discount the bad news revealed by disclosure requirement. The disclosure of the bad news may thus not have the same effect that it would in an efficient market. But to the extent the forced dissemination of bad news has any effect on the price of the stock in a noisy market, it is likely to be a negative one.[41]

Susan Shu, and Peter Wysocki, Do Managers Withhold Bad News (working paper, 2005). However, the important point is that at least sometimes they will use the absence of disclosure to withhold bad news.

[41] Of course, this price-reducing effect will only arise when there is bad news that the firm can suppress. To the extent that there is no hidden bad news, or such bad news will emerge quickly in any event, the lack of a disclosure requirement will not increase the stock price through this mechanism, or at least not for long. However, there may be many firms that have, or will have, hidden bad news. In

2. Reducing Dispersion of Investor Estimates

In a noisy market, the stock price is set by the marginal shareholder's subjective estimate of the stock's value. The greater the dispersion of potential investors' estimates around a given mean, the higher the marginal shareholders' estimate is likely to be. The dispersion of shareholders' estimates increases with uncertainty.[42] Uncertainty, in turn, increases as the amount of information available declines.

Thus, in a noisy market, firms may offer a low level of disclosure to reduce the amount of information available to shareholders. Less information increases uncertainty and the dispersion of investors' estimates. This, in turn, would increase the stock price. [43] Conversely, more disclosure can reduce the stock price by providing more information, reducing uncertainty, and diminishing the dispersion of investor's estimates.

In an efficient market, firms could not use insufficient disclosure to increase the stock price in this manner. The demand curve for stock would be horizontal, with the stock price equaling the expected value of the cash flow to those owning the company's stock, discounted for risk. In such a market, reducing the amount of relevant information provided to shareholders could only reduce the price investors are willing to pay for a firm's stock. Even if investors do not believe the company is hiding bad news, the withholding of relevant information increases uncertainty and risk associated with the investment, reducing the stock's value to buyers.

3. Diminishing Managers' Ability to Spin

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a noisy market, these firms' stock prices may be higher, or higher for a longer period of time, than they would be under a disclosure requirement.

[42] Indeed, one of the explanations for the recent tech bubble is that, when there is more uncertainty because of the emergence of a new technology, stock prices tend to soar because investors' estimates become more dispersed.

[43] See Andrew Hertzberg, "A Theory of Disclosure in Speculative Markets" (working paper 2006) (presenting a model in which under-disclosure amplifies overpricing caused by heterogenous beliefs).

A third mechanism through which disclosure can reduce the stock price is by making it more difficult for managers to "spin:" boost the stock price by providing information that, while not necessarily false, misleads irrational investors into thinking that the stock is worth more than it actually is. [44]

Managers routinely engage in spin. For example, during the dotcom boom a number of companies added ".com" to their names without changing their underlying business strategies, leading investors to at least temporarily bid up the price of the stock on the mistaken belief that the business had a substantial connection to the internet.

In an efficient market, managers' attempt to increase the stock price through spin would fall flat. Investors and arbitrageurs would see through the informational manipulation and not let it affect their valuations of the stock. But in an inefficient market, where the stock price is affected by the valuation of the marginal shareholder who may not be perfectly rational, spin can affect this valuation and boost the stock price.

While managers can and do spin even under the current regime of mandatory disclosure, it is likely to be easier to spin when there is less disclosure. Managers' spinning cannot be obviously inconsistent with the facts that have already been disclosed to shareholders. Thus, the less accurate information available to shareholders, the more freedom the managers have to spin. Conversely, the more accurate information is provided to shareholders, the more limited will be managers' ability to spin. By providing such information, a disclosure arrangement can thus reduce managers' ability to manipulate the subjective estimate of the marginal shareholder.

4. Facilitating Short-Selling

The fourth mechanism by which disclosure can reduce the stock price is by making it easer for arbitrageurs to engage in short selling when the stock price is higher than fundamental value. Recall that arbitrageurs seek to exploit difference between the trading price of the stock and its actual value. When the stock is overpriced, they may seek to profit by selling the stock short. These

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[44] Managers could of course also engage in negative spin if that suited their interests. I am not claiming that spin is always positive, but rather that it is sometimes positive.

short sales, in turn, exert downward pressure on the stock, reducing its price.

Disclosure increases the likelihood that arbitrageurs will engage in short-selling in two ways. First, disclosure makes it easier for arbitrageurs to identify overpriced stock and assess the fundamental risk associated with selling the stock short. Second, disclosure reduces noise risk -- the risk that noise traders will push the stock further away from fundamental value, imposing a loss on the short-selling arbitrageur. Disclosure reduces noise risk through each of the three mechanisms described above: by forcing the firm to disclose bad news, by reducing uncertainty and the dispersion of shareholder estimates, and by making it more difficult for managers to spin. Disclosure can thus be expected to reduce the price of certain stocks – those that are overpriced – by facilitating short selling.

5. Evidence

There is evidence suggesting that increasing disclosure can lower stock prices. For example, one study shows that the introduction of mandatory disclosure in the US in the 1930s led to a reduction in the overpricing of IPOs on regional exchanges that previously had imposed relatively lax disclosure requirements on their listed firms.[45]

As I will discuss in more detail in Part IV, before adoption of mandatory disclosure under the securities laws, all the exchanges imposed some disclosure requirements on listed firms. However, the NYSE's rules were much more extensive than those of other exchanges, including the regional exchanges. The federal mandatory disclosure rules essentially copied the disclosure rules already imposed by NYSE on listed firms, and applied them to all listed firms. Thus, the introduction of mandatory disclosure may not have substantially increased disclosure by NYSE-listed firms, but did substantially increase disclosure by firms listed on other exchanges.

The study examines the impact of imposing mandatory disclosure on the long-run abnormal returns of initial and secondary offerings on the NYSE and regional exchanges. It finds that NYSE issues were fairly priced both before and after the

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[45] See Carol J. Simon, The Effect of the 1933 Securities Act on Investor Information and the Performance of New Issues, __ Am. Econ. Rev. 295 (1989).

introduction of mandatory disclosure: there was no evidence of abnormal returns following these offerings in either period. However, regional exchange offerings were overpriced before the imposition of mandatory disclosure and fairly priced afterward. Before mandatory disclosure, issues on the regional exchanges experienced negative abnormal returns of 15% within the first year and 24% within two years. Afterwards, there were no negative abnormal returns. The study suggests that increasing disclosure requirements can in some cases reduce the price at which companies can sell their shares to the public.

C. Testable Implications

The analysis in Sections A and B suggests two testable predictions : (1) that, for many companies, the scope of disclosure will be less than what one would expect in an efficient market, and in some cases could be zero; (2) that many companies selling shares to the public will permit managers to unilaterally terminate disclosure without shareholder approval. As we will see in Part IV, these predictions are consistent with the empirical evidence.

1. Scope of Disclosure

In an efficient market we would expect firms to disclose a considerable amount of conflict and financial information to reduce managerial agency costs and prevent a lemons problem. The analysis in Section A and B suggests that in a noisy market, however, many firms may offer less disclosure than would be expected in an efficient, and perhaps little or no disclosure.

First, insiders selling stock to public investors might expect these investors to underestimate the benefits of disclosure, in which case the insiders would have little incentive to offer the scope of disclosure one would expect in an efficient market. To be sure, it is theoretically possible that insiders will expect public investors to overestimate the value of disclosure arrangements. Thus in some cases firms might supply more disclosure than they would in an efficient market. The important point however, is that in at least some cases mispricing of disclosure provisions when the firm goes public could lead insiders to provide less disclosure than they would in an efficient market, and possibly no disclosure at all.

Second, while in an efficient market disclosure tends to boost the stock price by reassuring investors that there is no hidden bad news, in a noisy market disclosure can actually reduce the stock price. In particular, disclosure can force the firm to reveal bad news the possibility of which investors would otherwise excessively discount, reduce the dispersion of shareholders' valuations, make it more difficult for managers to spin, and make it easier for arbitrageurs to engage in short-selling, pushing down the stock price. Indeed, we saw evidence that increased disclosure can reduce stock prices. To be sure, these price-reducing effects may not be present in every case. But when present they will tend to further reduce the scope of the disclosure arrangement offered by insiders.

2. Terminability of Disclosure

Part I explained that, in an efficient market, investors would pay more for a firm that does not allow managers to unilaterally terminate disclosure. To the extent that investors would pay for the full benefit of such a commitment, insiders would have an incentive to offer a binding disclosure arrangement. In a noisy market, however, we would expect many firms not to offer such an arrangement.

First, even if terminating disclosure would, as in an efficient market, reduce the stock price, in a noisy market public investors might not properly price the value of a provision restricting terminability. To the extent insiders do not expect investors to pay the full value of such a provision, which of course reduce insiders' expected ex post profits, insiders may have insufficient incentive to offer them ex ante. To be sure, it is theoretically possible that investors would overvalue a provision limiting managers' ability to unilaterally terminate disclosure, in which case insiders would offer such a provision. The important point, however, is that in many cases investors may undervalue such provision, leading insiders not to offer it.

Second, terminating disclosure in a noisy market might sometimes be expected to lead to a higher stock price than continuing disclosure. Supposed, for example, the company has bad news that it wishes to hide. Terminating disclosure and hiding the bad news may lead to a stock price that is higher than the one that would prevail if disclosure were maintained and the bad news revealed. A provision making it more difficult for insiders to terminate disclosure would not only reduce insiders' expected private benefits as managers, but also reduce their expected profits from selling the stock. Moreover, a provision limiting the terminability of disclosure could also reduce the amount that initial public shareholders can expect to get selling their stock. Thus, even if initial public investors could appropriately value a provision restricting the termination of disclosure they might actually pay insiders less for a firm's stock if the firm has such a provision. Insiders would thus have very strong incentive not to adopt a provision preventing managers from unilaterally terminating disclosure.

IV. Evidence from Voluntary Disclosure Arrangements

This Part surveys the available data on the disclosure arrangements chosen by firms that are (or were) not subject to, or could easily cease being subject to, mandatory disclosure.

Section A examines the scope of voluntary disclosure arrangements of the thousands of US firms that are, or were not, subject to mandatory disclosure under the securities laws. It finds, consistent with the predictions offered above, that many of these firms provide very if little any information to shareholders. These firms' practices, it shows, are thus more consistent with noisy markets and intrafirm externalities than with efficient markets and interfirm externalities.

Section B considers the degree to which firms allow managers to unilaterally cease disclosure without shareholder consent. It examines both firms that are (or were) not subject to mandatory disclosure, as well as firms that are subject to mandatory disclosure but could easily exit that regime. It finds, again consistent with the predictions offered in Part III, that both types of firms rarely, if ever, make a binding commitment to maintain a specific level of disclosure, and that managers of many firms have exploited the lack of a binding commitment to unilaterally terminate disclosure, leaving shareholders completely in the dark.

A. Scope of Disclosure

From the beginning of the public markets in the U.S. until today, thousands of publicly traded firms have not been subject to mandatory disclosure under the securities laws. Examining these firms' voluntary disclosure practices will allow us to see whether, as the analysis in Part III suggests, many firms will, if left to their own devices, fail to adopt disclosure arrangements that maximize firm value.

As we will see, many of these firms fail to provide conflict information – information concerning self-dealing transactions and executive compensation -- that can be used to reduce managerial agency costs but that does not give rise to interfirm externalities. And many firms fail to provide any financial information. Even though this information gives rise to interfirm externalities, in an efficient market one would expect the firm to provide at least some financial information in order to reduce managerial slack and mitigate the lemons problem. The failure of many firms to provide either conflict information or basic financial information suggests that firms often do not adopt arrangements that maximize their own value. These disclosure patterns can thus be more easily explained by the existence of noisy markets and intrafirm externalities than by efficient markets and interfirm externalities.

Before examining firms' voluntary disclosure practices, I briefly consider disclosure requirements under corporate law. One way for a firm to voluntarily adopt periodic disclosure is to incorporate in a jurisdiction requiring such disclosure. Indeed, in an efficient market one would expect those taking firms public to seek, and states to offer such arrangements. However, in over 150 years of public markets not one of the US states developed disclosure rules suitable for widely held companies. Thus firms not subject to mandatory disclosure under the securities law had to develop their own disclosure arrangements.

1. Corporate Law

US companies began selling shares to the public in the mid 19th century, around seventy years before the enactment of the federal securities and decades before stock exchanges imposed any meaningful disclosure requirements. During much of this time states competed for corporate charters by offering laws that were favorable to those taking firms public. One would have expected insiders to seek disclosure rules suitable for public companies, and states to offer such rules, at least as default provisions. In an efficient market, insiders would offer periodic disclosure. States thus would be expected to provide rules that provide some form of periodic disclosure to public shareholders. In a noisy market, however, insiders may not seek disclosure rules that would be binding on their firms.

In fact, not one state provided mandatory disclosure rules – even as a default provision -- suitable for a public company.[46]

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[46] See Robert B. Thompson & Hillary A. Sale, Securities Fraud as Corporate Governance: Reflections upon Federalism, 56 Vand. L. Rev. 859, 867 (2003) (noting that "[m]ost state corporation statutes impose few mandatory disclosure obligations"). See also Mark J. Roe, Delaware's Competition, 117 Harv. L. Rev. 588, 611 (2003) ("[T]he states generally required no information to be disseminated, seeing the annual election as sufficient to induce incumbents to give out information sua sponte-although in practice, little information was sent out."). States that have adopted a version of the Model Business Corporations

Delaware, for example, does not require any information be delivered to shareholders except under traditional shareholder inspection statutes, and does not provide what information corporations should preserve for inspection.[47] Under these inspection statutes, an individual shareholder can seek to examine the books and records of the firm. However, such examinations, which are likely to require litigation and whose expense is born by the individual shareholders, are hardly a substitute for required periodic disclosure. While these requirements might be adequate for a small, closely-held company, they are unlikely to be adequate for a company with a constantly changing pool of thousands of shareholders. Thus, US companies not subject to mandatory disclosure under the securities laws could not, even if they wished, adopt a disclosure regime by incorporating in a particular state.

2. Pre-1930s

The securities laws imposing mandatory disclosure were enacted in the mid 1930s, seven decades after firms began selling shares to the public. Between the mid 19th century and the enactment of the securities laws in the 1930s, hundreds of firms went public.[48]

From the mid 19th century through the beginning of the 20th century, few public firms voluntarily provided either conflict or financial information to shareholders. The leading stock exchange, the NYSE, began requiring companies listed on the exchange to provide some kind of annual report in 1866. However, it was thirty years before even one listed company fully complied with the requirement. The NYSE did not delist noncompliant companies. Instead, it either allowed them to continue to trade as listed companies or put them in an unlisted securities department, which it established in 1885.[49]

Act may require corporations to mail annual financial statements to shareholders each year. See Model Bus. Corp. Act 16.20-21 (1984). But the content of these statements was not clearly specified and did not contain conflict information. Moreover, this information was made available only once a year, leaving shareholders in the dark the rest of the year.

[47] Id.

[48] [get cite]

[49] The information in this paragraph is taken from, Mitchell, "The New Era" (Chapter 4 of "Squeezing Truth from Power"). It is not clear that compliance

Around 1910, the national stock exchanges, under pressure from the federal government, began adopting somewhat tougher disclosure requirements.[50] Under these requirements, firms had to report certain items such as their annual balance sheets and income statements to the exchange.[51] The NYSE was always the most rigorous in its requirements (even though they were not always enforced). In 1926, for example, the NYSE was the first exchange to require firms to provide audited financial statements. [52] In fact, the NYSE's disclosure rules were sufficiently comprehensive by the early 1930s that Congress made them the basis for mandatory disclosure rules imposed by the securities laws on all stock exchanges.

Critics of mandatory disclosure argue that the NYSE's experience shows that sufficient disclosure can arise from private ordering. They also note, correctly, that some firms traded on the NYSE voluntarily provided information in excess of that required by the exchange. For example, many firms provided audited financial statements before the NYSE imposed that requirement on all its listed firms in 1926.

However, it is questionable whether the NYSE's disclosure requirements were adequate and properly enforced. There is evidence that the NYSE's disclosure requirements may have provided little in the way of reliable and usable information on most companies.[53] Moreover, the NYSE did not make much effort

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would have made much of a difference. The information contained in these reports (and other documents later sought by the NYSE) was apparently of little value and in any event was given to the exchange and not easily available to shareholders. See Prentice, The Inevitability of a Strong SEC, 91 Cornell L. Rev. 775, 808 (2006).

[50] See Allen Ferrell, The Case for Mandatory Disclosure in Securities Regulation Around the World 28-29 (Harvard John M. Olin Ctr. for Law, Econ., & Bus., Discussion Paper No. 492, 2004), available at http:// ssrn.com/abstract=631221 (noting that the NYSE resisted imposing any disclosure requirements, but finally commenced in a modest way in 1910 under "intense governmental pressure").

[51] See George J. Benston, Required Disclosure and the Stock Market: An Evaluation of the Securities Exchange Act of 1934, 63 Am. Econ. Rev. 132, 133 (1973).

[52] See George J. Benston (1969), 519-520; Seligman, Transformation of Wall Street, 48 n. 32, 633.

[53] See Prentice, 2006, at 808.

to enforce even its standards and disclosure requirements.[54] It feared that firms going public would list elsewhere, and already-listed firms would delist from the NYSE and trade on the unregulated OTC market or at a competitor exchange, such as the New York Curb Exchange (now the American Stock Exchange), or any of the 17 other exchanges that imposed much lower disclosure requirements.[55]

Moreover, even if the NYSE's requirements were optimal, hundreds of firms chose to avoid (or delist from) the NYSE because of its disclosure requirements and list elsewhere or trade on completely unregulated OTC markets, allowing them to provide little if any conflict or financial information to shareholders. Thus while some firms – those that listed or remained listed on the NYSE during the 1920s -- chose a relatively high level of disclosure, many more firms chose no or a very low level of disclosure.

One could argue that the practices of firms in the mid 19th and first part of the twentieth century may shed light on whether mandatory disclosure would have been desirable then but shed little light on whether mandatory disclosure is desirable now. Markets are radically different. They are populated by savvy institutional investors, investment banks, and hedge funds that did not exist a century ago. Even individual investors are likely to be more sophisticated. However, as we will see, the pattern of inadequate disclosure continues. Throughout the 20th century and even today, many firms not subject to mandatory disclosure fail to provide conflict information or in some cases any information to shareholders.

b. Post 1930s

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54 Jonathan R. Macey, Administrative Agency Obsolescence and Interest Group Formation: A Case Study of the SEC at Sixty, 15 Cardozo L. Rev. 909, 923 (1994). John C. Coffee, Jr., The Rise of Dispersed Ownership: The Role of Law in the Separation of Ownership and Control, 111 Yale L.J. 1, 68 n.254 (2001) (noting that before the SEC came into existence, "the NYSE seldom, if ever, enforced its own disciplinary rules").

55 See Seligman, J. Corp. L. at 54. A Senate Report found that the source of the NYSE's difficulty was "the unwillingness of issuers to furnish adequate information, supported by the threat of withdrawal of their listings, and by the potential competition of exchanges having more lenient standards." Id. (citing S. Rep. No. 792, 73rd Cong., 2d Sess. 5 (1934). See Jonathan R. Macey & Geoffrey P. Miller, Origins of the Blue Sky Laws, 70 Tex. L. Rev. 347, 352 (1991); Ferrell (2004), at 29.

In the mid 1930s, mandatory disclosure was imposed on all firms traded on the national exchanges (such as the NYSE and American Stock Exchange) and on certain OTC firms: those that had issued securities of sufficient market value after 1936. Mandatory disclosure was not extended to other firms until 1964. Thus, hundreds if not thousands of firms traded on the OTC – including some relatively large firms – remained exempt from mandatory disclosure for at least several more decades.

During this period the SEC occasionally surveyed the reporting practices of companies not subject to mandatory disclosure. A 1946 study of the annual reports of 70 companies that had at least $3 million in assets and at least 300 shareholders found that none provided conflict information – information about self-dealing transactions or compensation; over half had material deficiencies in financial reporting; 13% did not provide any income statement.[56] A 1957 report of publicly traded insurance companies not subject to mandatory disclosure, some as large as $3 billion, found that almost 50% did not provide an income statement and that size did not appear to correlate with the quality of financial reporting. In 1962, the SEC randomly sampled 20% of the OTC firms in which trades had been made during the last quarter of 1961. The overwhelming majority did not provide any conflict information to shareholders. More than 25% of firms did not provide any information on the firm's financial position or results.

Thus, as before the enactment of the securities laws, many firms not subject to mandatory disclosure continued to provide inadequate information to shareholders – that is, they failed to provide the amount of information that would be expected to maximize firm value. It is worth emphasizing that even the firms that provided some information on conflict transactions and income statements may have given shareholders less than the value-maximizing amount of information. Unfortunately, it is difficult to know, what the value-maximizing scope of disclosure would be. However, it should be clear that the practice of not providing conflict information and such basic financial information as income statements is highly unlikely to maximize firm value.

Between 1964 and 1999, mandatory disclosure was extended to hundreds of additional firms on the OTC. By 1999, thousands of companies not already subject to mandatory disclosure and trading

[56] See Seligman, 1983, at 36.

on the most important OTC market -- OTCBB -- were required to register with the SEC and become Exchange Act reporting companies subject to mandatory disclosure, or face delisting. Most of these companies chose delisting, and moved to the so-called "Pink Sheets" OTC market, where they now trade.[57]

There are currently several thousand U.S. companies trading on the Pink Sheets market. [58] The Pink Sheets," unlike certain other OTC markets, does not require its companies to be reporting companies under the securities laws, and many of these firms are not subject to mandatory disclosure under any other provision of the securities laws. [59] While these companies tend to be rather

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[57] See Michael Molitor, Will More Sunlight Fade the Pinksheets? Increasing Public Information about Non-Reporting Issuers with Quoted Securities, 39 Ind. L. J. 309, 311 (2006).

[58] See Michael Molitor, 329. 4000 stocks trade exclusively on the Pink Sheets. Another 3000 stocks trade concurrently on the Pink Sheets and OTCBB.

[59] Molitor, p. 329. Under current rules, a firm must register with the SEC and become a "reporting company" subject to the mandatory disclosure requirements of the securities laws if either of the following two conditions is met: (1) the firm's securities are listed on a national stock exchange, or traded on certain OTC markets such as NASDAQ or OTCBB; or (2) the firm has 500 shareholders of record.

However, for purposes of applying mandatory disclosure, shares are "recorded" as held by brokerage houses through which the ultimate beneficial owners have purchase shares of the firm. Each brokerage house appearing as a single shareholder of record, in turn, may hold shares on behalf of hundreds or even thousands of individual shareholders. Thus, a Pink Sheet firm with several dozen (or hundred) shareholders of record may actually have thousands of individual shareholders and still escape mandatory disclosure requirements under the securities laws.

Pink Sheet firms are subject to some other disclosure requirements. First, SEC Rule 15c2-11 requires the first "market maker" publishing unsolicited quotations for the stock of certain Pink Sheet firms to collect specified information on that issuer. But this information, when it is collected by the market maker, is generally not easily available to shareholders. Among other things, shareholders may have difficulty identifying the first market maker in the stock.

Second, in 2004, the Pink Sheets introduced a Disclosure Policy that requires some of the firms not covered by Rule 15c2-11 to provide information to the market in certain limited circumstances, such as when the firm's shares are initially quoted. However, the Disclosure Policy does not require covered firms to provide information to shareholders except under these circumstances. Moreover, many Pink Sheet firms, such as those that were delisted from the stock exchanges or previously quoted on OTCBB, are subject neither to Rule 15c2-11 nor to the Disclosure Policy.

small, the Pink Sheets see a considerable amount of trading activity – about $50 billion annually.[60]

Although there has not been a formal study of the disclosure practices of non-reporting Pink Sheet firms, it appears that, like the firms that were subject to the SEC studies before 1964, these firms often fail to provide any conflict or financial information about themselves to shareholders and prospective investors other than the little required by corporate law.[61] Thus, most investors buying, holding, and selling stock know little about their companies.

The common practice of omitting conflict information and key financial information (such as an income statement) cannot be accounted for by efficient markets and interfirm externalities. Conflict information would help shareholders control agency costs without indirectly undercutting the firm by helping competitors. Its absence can only be explained by the fact that markets do not adequately price the benefits of this form of disclosure when firms sell their shares to the public.

Even if financial information gives rise to interfirm externalities, in an efficient market firms would reveal at least some financial information to control agency costs of shirking and avoid a lemons problem. The refusal of many firms to provide financial information is, however, with consistent with noisy markets. In such markets, insiders taking firm public may not expect to be compensated for the agency-cost benefits of providing such information. Moreover, the provision of such information could actually lower the stock price by, for example, reducing the dispersion of investors' estimates or facilitating short-selling.

To be sure, the existence of noisy markets and intrafirm externalities does not mean that insiders of every firm are best off with as little disclosure as possible. In some cases, the market for a firm's stock may be sufficiently efficient that insiders find it worthwhile to offer adequate disclosure. Indeed, there may well be firms that could avoid registering with the SEC and becoming reporting companies that voluntarily choose to subject themselves to mandatory disclosure. There could also be publicly traded firms that are currently reporting companies that can easily exit mandatory disclosure by moving to the Pink Sheets and reduce

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[60] See Molitor, at 330. Some of this trading may involve reporting companies.

[61] Molitor,

their shareholders of record to fewer than 300,[62] thereby exiting the mandatory disclosure regime, but choose not to do so. My claim is simply that, in a noisy market, the insiders of many firms can be expected to offer less disclosure than is optimal for their firms – and that this prediction is borne out by the practices of the many of the firms that were not or are not subject to mandatory disclosure.

B. Terminability of Disclosure

In an efficient market we would expect insiders taking firms public to adopt arrangements limit their ability to unilaterally terminate disclosure after selling shares to public investors. In a noisy market, we would expect many firms not to make binding disclosure commitments.

In fact, firms free to choose their own disclosure arrangements generally do not commit to provide a certain level of disclosure, allowing managers to change the scope of disclosure at any time. Firms that are registered with the SEC and subject to the mandatory disclosure requirements do not commit to remain registered with the SEC. Moreover, many firms exploit the lack of a binding commitment to undertake transactions that allow them to escape mandatory disclosure and leave their shareholders in the dark.

1. Terminability of *Voluntary* Disclosure

Since the beginnings of the public market in the 1860s, there is little evidence of firms not subject to mandatory disclosure under the securities laws adopting any form of credible disclosure commitment. States competing for incorporations have never incorporated mandatory disclosure into their corporate law statutes (even as a default rule). And there is no evidence that firms going public put in their corporate charters provisions that would have mandated disclosure of various items. Managers have thus been free, under their corporate law arrangements, to terminate everything but the minimal disclosure requirements imposed by corporate law.

One might argue that listing on a particular stock exchange that requires ongoing disclosure is a form of binding commitment to

[62] To exiting mandatory disclosure a firm must have fewer than 300 shareholders of record, or fewer than 500 shareholders of record and less than $10 million in assets.

disclose. However, to the extent managers can choose to delist from such an exchange without shareholder approval, or take steps that trigger an involuntary delisting, listing on a stock exchange that requires disclosure does not ensure that disclosure will be terminated only with shareholder consent. Managers may find it in their interest to discontinue disclosure by delisting from the exchange, and they can do so without shareholder approval.

2. Terminability of *Mandatory* Disclosure

As the applicability of mandatory disclosure has widened to include most public companies, it has become increasingly difficult for firms to terminate mandatory disclosure. As indicated earlier, a firm must be a reporting company subject to mandatory disclosure if it is traded on an exchange or on certain OTC markets, or has more than 500 shareholders of record. Thus, one might question whether insiders taking a firm public today would be expected – in an efficient market – to make a credible commitment to continue disclosure.

However, a firm can cease being a reporting a company and exit the mandatory regime. A reporting company can terminate disclosure requirements by delisting from an exchange or those OTC markets that require firms to be reporting companies (if the firm is not traded on the Pink Sheets), and reducing its number of shareholders of record to below 300 (or less than 500 if it has $10 million or less in assets).

In fact, hundreds of firms have exited mandatory disclosure over the last several years, with 200 exiting in 2003 alone.[63] These companies are said to "go dark" because, after exiting the securities law disclosure regime, these firms provide little information to shareholders. The market reaction to news that a company is going dark is generally negative, with stock prices falling a market-adjusted 10% on average.[64]

Thus, in an efficient market, we would still expect even firms that are currently reporting companies and subject to mandatory disclosure to make commitments through their corporate law

[63] See Leuz, Triantis, and Wang, Why Do Firms Go Dark? Causes and Consequences of Voluntary SEC Deregistrations 2 (working paper, 2004) (reporting that 200 companies deregistered in 2003 for reasons other than a merger, acquisition, liquidation, registration withdrawal, or going private transaction)

[64] Leuz et al, p. 22.

arrangement to maintain disclosure. A firm could do this either by committing to remain a reporting company under the securities laws or by committing to offering an alternative disclosure regime should it exit the mandatory disclosure regime. However, there is no evidence that firms ever make such a commitment. Obviously, the hundreds of firms that went dark in the last several years made no such commitment.

Assuming that at least some level of disclosure beyond that required by corporate law is optimal for the firm, allowing insiders to unilaterally terminate more extensive disclosure arrangements is unlikely to be value-maximizing for the firm. The fact that firms subject to mandatory disclosure as well as those not subject to mandatory disclosure allow insiders to unilaterally terminate disclosure is thus not consistent with an efficient market. It is, however, consistent with a noisy market and intrafirm externalities. In a noisy market, public investors may not pay insiders the full value to investors of a provision limiting managers' ability to terminate disclosure. Moreover, terminating disclosure may in some cases, allows insiders and other to dispose of their shares for a higher price,[65] further limiting insiders' incentive to adopt a provision limiting terminability.

[65] The fact that firms terminating disclosure suffer average abnormal price declines of 10% is not inconsistent with disclosure sometimes lowering the stock price. The price drop may be caused by the termination signaling the existence of bad news, not by the termination itself. After termination, the stock price may still be higher than it would have been had been under disclosure.

V. IMPLICATIONS FOR CORPORATE REGULATION

This Part sketches out some implications of the paper's analysis for various issues in the regulation of corporations and corporate disclosure: the need for mandatory disclosure (Section A); the wisdom of recent proposals to allow firms to choose their own securities regimes (Section B); and whether regulatory competition among states yields desirable corporate law (Section C).

A. The Need for Mandatory Disclosure

The debate among economically-oriented scholars over mandatory disclosure has largely assumed that markets are efficient and that stock prices reflect the value of a firm's governance arrangements, including its disclosure arrangements. In an efficient market, participants in the debate agree, firms will adopt disclosure arrangements that maximize firm value – the amount of value flowing to those taking a company public and its future shareholders. [66]

The debate among these scholars is over the significance of interfirm externalities that might lead firms' chosen disclosure arrangements to be socially sub-optimal. Supporters of mandatory disclosure argue that these externalities are large enough to justify mandatory disclosure. [67] Critics of mandatory disclosure argue that interfirm externalities are relatively unimportant: an efficient market gives corporations incentives to disclose enough information. [68]

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66 See Frank H. Easterbrook & Daniel R. Fischel, Mandatory Disclosure and the Protection of Investors, 70 Va. L. Rev. 669 (1984). [add cites to Fox]

67 See Merritt Fox, Retaining Mandatory Disclosure: Why Issuer Choice is not Investor Empowerment, 85 Va. L.Rev. 1335, 1345-46 (1999) (arguing that certain firm disclosures will have effects on third parties, such as supplier and customers, that will not be internalized by the firm); Merritt Fox, Securities Disclosure in a Globalizing Market: Who Should Regulate Whom, 95 Mich. L. Rev. 2498, 2562-69 (1997).

68 For scholars critical of mandatory disclosure, see Roberta Romano, Empowering Investors: A Market Approach to Securities Regulation, 107 Yale L. J. 2359 (1998); George Benston, Required Disclosure and the Stock Market: An Evaluation of the Securities Exchange Act of 1934, 63 American Economic Review 132 (1973); George Stigler, Public Regulation of the Securities Markets, 37 Journal of Business 117 (1964); Stephen J. Choi and Andrew Guzman, Portable

However, as we have seen, there is substantial evidence that stock prices are frequently (if not generally) noisy – departing considerably from fundamental value. Prices are often influenced by traders who are not fully rational. And arbitrageurs cannot always be expected to correct deviations from "true" value. As a result, these deviations may last for considerable periods of time.

In such a market, firms cannot always be expected to adopt disclosure arrangements that maximize firm value. Investors may not be able to properly price the value of disclosure arrangements, leading those taking firms public to underprovide disclosure. In addition, when noisy markets allow insiders to sell a firm's shares at an inflated price, increased disclosure may, through various mechanisms, depress the stock price. Indeed, there is evidence that the introduction of mandatory disclosure reduced insiders' ability to sell overpriced shares to public investors. These two effects – mispricing of disclosure provisions and the price-reducing effect of disclosure on inflated stocks – give rise to an intrafirm externality. They cause disclosure arrangements to transfer value to future shareholders from the insiders taking the firm public. As a result, insiders will tend to offer less disclosure than is value-maximizing for the firm.

The actual disclosure practices of firms provides evidence that noisy markets and the resulting intrafirm externalities lead many firms not subject to mandatory disclosure to adopt disclosure arrangements that clearly fail to maximize firm value. For example, many firms disclose no financial information at all. These practices cannot be explained in an efficient market, even if there interfirm externalities. In such a market, commentators agree, the failure to commit to disclose basic financial information would create a lemons problem and hurt insiders trying to sell their shares. Insiders taking a firm would public would thus commit to disclose at least some information. Others fail to disclose conflict information about self-dealing transactions and executive compensation, information that may help the firm's shareholders control managerial agency costs and is unlikely to confer any positive externalities on other firms.

The analysis and evidence suggests that firms free to fashion their own disclosure arrangements often will not adopt disclosure arrangements that maximize firm value. Thus, even in the absence

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Reciprocity: Rethinking the International Reach of Securities Regulation, 71 S. Cal. L.Rev. 903 (1998).

of interfirm externalities, mandatory disclosure can increase firm value and improve social welfare.[69]

Importantly, I am not claiming that the SEC's current mandatory disclosure regime is desirable. It may well be the case, as some commentators have argued, that the SEC requires more disclosure than is socially optimal, and that the regime imposes unnecessary costs on firms. Rather, my claim is that intrafirm externalities caused by noisy stock price make some form of mandatory disclosure desirable even in the absence of interfirm externalities.

B. The Desirability of Issuer Choice over Securities Law

A number of commentators, including some of the same commentators who argue against mandatory disclosure, have in the last decade proposed that, if firms must be subject to the securities laws, they should at least be allowed to choose their own securities regime. These commentators, like those opposed to mandatory disclosure, start with the assumption that stock markets are efficient and can accurately price a firm's governance arrangements. Given the market's ability to price governance protections, they argue, competition among jurisdictions providing securities disclosure rules will lead to optimal securities law.

The same economically-oriented commentators who support mandatory disclosure, not surprisingly, believe that giving issuers a choice of securities laws will yield suboptimal disclosure rules because of the problems of interfirm externalities. Firms will choose rules that are optimal for themselves. But the arrangement that maximizes value for a particular firm will not necessarily maximize social value because disclosure confers uncompensated benefits on third parties – namely other firms. Thus, jurisdictions seeking to "sell" securities laws will provide rules that are tailored to maximize individual firm value rather than the value of the market as a whole.

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[69] A separate and important question for the securities laws that is raised by market inefficiency is how the securities laws should tailor the disclosure requirements and anti-fraud provisions to take into account irrational investor behavior. This question is beyond the scope of this paper. For discussions of this issue, see Donald C. Langevoort, Taming the Animal Spirits of the Stock Markets: A Behavioral Approach to Securities Regulation, 97 Nw. U. L. Rev. ___ (2002); Choi and Pritchard, _____ Stanford L. Rev. ____ ; Cunningham

Like the debate over mandatory disclosure, the debate over issuer choice among economically-oriented scholars is based on the premise that market price accurately reflects all public information bearing on the value of the firm. Therefore, firms can be counted on to adopt arrangements that maximize firm value. The only point of disagreement is whether the interfirm externalities are large enough to cause firms to seek arrangements that do not maximize social value.

However, we have seen that there is considerable evidence that markets are noisy. In such noisy markets, the problem of *intrafirm* externalities is likely to loom large: insiders taking a firm public may not have an incentive to adopt disclosure arrangements that maximize the intrinsic value of the firm because such arrangements are likely to transfer value from themselves to public shareholders. The analysis suggests that, even absent interfirm externalities, competition for securities laws is likely to lead to suboptimal results.

There is in fact evidence that the "market" for securities law does not work well, at least in terms of disclosure. Between the 1860s and the 1930s, firms could choose their own disclosure regimes. States and stock exchanges were free to adopt some version of mandatory disclosure. After fifty or so years, one stock exchange, the NYSE, eventually developed reasonably comprehensive disclosure requirements (although it is far from clear they were adequately enforced, and the information provided by firms may not always have been clear). However, other exchanges, the non-exchange OTC trading system, and the states failed to develop similar rules, and many firms provided little if any disclosure.

C. Regulatory Competition in Corporate Law

This paper focuses on the disclosure arrangements firms adopt in noisy markets, an issue usually associated with securities law. However, the analysis and evidence also has implications for one of the oldest and most important debates in corporate law: the desirability of permitting firms to choose their state of incorporation and the corporate law governing the internal affairs of the corporation.

A number of commentators have argued that competition among states for corporate charters is a "race-to-the-top" that can be expected to lead to optimal corporate law rules. [70] Firms will seek, and states will rush to provide, corporate law rules that maximize firm and social value. Others have disputed this view, suggesting that such competition leads to a "race-to-the-bottom," at least with respect to those issues where insiders' and public shareholders' interests sharply diverge. [71]

As in the debates over mandatory disclosure and issuer choice, both sets of commentators generally assume that markets are efficient and will properly price a firm's governance arrangements. The disagreement among participants in the debate whether certain contracting problems in the bargaining between the firm and initial public investors, such as information asymmetry[72] or inter-firm externalities[73] – nevertheless lead to arrangements that inefficiently favor insiders at the expense of public shareholders. [74] "Race-to-

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[70] See, e.g., Frank H. Easterbrook & Daniel R. Fischel, The Economic Structure of Corporate Law 4-8 (1991) (describing managers' incentives to create beneficial legal structures); Roberta Romano, The State-Competition Debate in Corporate Law, 8 Cardozo L. Rev. 709, 710-17, 720-25 (1987) (summarizing classic positions on state competition and explaining why Delaware is destination state of choice); Ralph K. Winter, Jr., State Law, Shareholder Protection and the Theory of the Corporation, 6 J. Legal Stud. 251, 254-58 (1977); Roberta Romano, The Genius of American Corporate Law 14-17 (1993); Daniel R. Fischel, The "Race to the Bottom" Revisited: Reflections on Recent Developments in Delaware's Corporation Law, 76 Nw. U. L. Rev. 913, 921-23 (1982); Stephen J. Choi & Andrew T. Guzman, Choice and Federal Intervention in Corporate Law, 87 Va. L. Rev. 961, 982-83 (2001) (arguing that if a rule is value maximizing it will be adopted by the firm at the time of the initial public offering).

71 Lucian A. Bebchuk, Federalism and the Corporation: The Desirable Limits on State Competition in Corporate Law, 105 Harv. L. Rev. 1435, 1441 (1992); Lucian A. Bebchuk & Allen Ferrell, Federalism and Corporate Law: The Race to Protect Managers from Takeovers, 99 Colum. L. Rev. 1168, 1172, 1190-91 (1999) See also William L. Cary, Federalism and Corporate Law: Reflections upon Delaware, 83 Yale L.J. 663, 663-70 (1974).

[72] See Bebchuk, Asymmetric Information and Corporate Governance Arrangements, 2002.

[73] See Kahan and Klausner (arguing that network externalities may allow states to profit by offering sub-optimal corporate law).

[74] See id. Some commentators have argued that corporate governance arrangements chosen by a firm may impose negative externalities on parties other than managers and shareholders, such as creditors and employees. See Kornhauser, 1989. I assume, as does much of this literature, that shareholders and managers internalize all of the costs and benefits of corporate law. This assumption does not materially affect the analysis.

the-bottom" commentators argue that these market failures are large enough to make constraints on competition desirable; "race-to-the-top" commentators dispute this view.

This paper has argued that, contrary to the assumption of these commentators, markets are often noisy. It has also shown that, in a noisy market, governance arrangements may create intrafirm externalities. In particular, in a noisy market arrangements that increases firm value may nevertheless make insiders taking the firm public worse off. As a result, they will not have an incentive to seek corporate law rules offering these arrangements, and states will not have an incentive to offer them.

The voluntary disclosure arrangements of firms provide strong evidence that firms often fail to seek, and states fail to offer, rules that maximize firm value. Most commentators would agree that it is value-increasing for a firm to adopt a disclosure arrangement that provides widely dispersed shareholders enough information to monitor managers and control agency costs. However, as we have seen, many firms not subject to mandatory disclosure have failed to adopt such arrangements. Firms provide little conflict information and often little financial information. The failure of firms to seek and states to provide value-maximizing disclosure arrangements suggests that the market for corporate charters cannot generally be counted on to yield optimal corporate law rules.[75]

To be sure, my analysis does not rule out the possibility that regulatory competition may provide some benefits in other areas of corporate law. But it does suggest that, when the provision of such rules depends on the stock market being relatively efficient, competition among states providing corporate law is unlikely to yield desirable outcomes.

[Conclusion to be added]

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75 My analysis focuses on intrafirm externalities that arise in publicly-traded companies as a result of stock price noisiness. My analysis has no implications for the desirability of regulatory competition for the charters of private firms.