

True Confessions: Should Banks Be Required to Disclose More?

BY MITCHELL BERLIN

Can market participants, such as bondholders and depositors, play a significant role in ensuring that banks limit their risk-taking? Although regulators find this idea increasingly attractive, to evaluate banks' risk-taking, investors need good information about a bank's activities and balance sheet. In light of this, would stiffer mandatory disclosure requirements for banks — as in the recent Basel II proposal — be a good thing? While there are no definitive answers to this question, Mitchell Berlin reviews some recent economic literature that can offer useful insights to policymakers.

The largest banks are now very complex organizations — complex enough that regulators place full-time examiners on-site, rather than conduct periodic regulatory examinations, as they did until the 1990s. This is just one symptom of the greater difficulty of keeping a close watch on the activities of giant financial companies engaged in a continually changing mix of activities. Even with examiners working full time at individual banks, regulators face a complex job keeping pace with new financial products and

activities with uncertain implications for bank risk.

Regulators have increasingly been attracted to the idea that market participants — bondholders, depositors, and, perhaps, stockholders — can play a significant role in disciplining banks, that is, pressuring banks to limit their risk-taking. Banking economists argue that market participants have strong incentives to evaluate the creditworthiness of banks in which they invest.¹ Some argue that market discipline can substitute for regulatory discipline to a significant extent, while others view the two as potentially complementary.

¹ Investors are not the only market participants who might impose discipline. Customers — for example, borrowers with loan commitments from the bank — will be concerned about the bank's creditworthiness.

But to evaluate a bank's creditworthiness, investors must have good information about the bank's activities and balance sheet. One part of the new Basel Accord (Basel II) proposes to improve market discipline through enhanced disclosure requirements for banks. (See *Market Discipline: The Third Pillar*.)

Putting aside the costs of producing all this information, it might seem that more required disclosures must be a good thing.² Economists have long noted that firms may produce and disclose too little information because they can't capture all the gains from producing it; others can't be excluded from using the information themselves. But both economic theory and empirical evidence suggest a more circumspect approach and raise questions about the benefits of mandatory disclosure: (1) Empirical evidence and theoretical work indicate that firms disclose information voluntarily. Under what conditions will they disclose too little? (2) Is more information necessarily better? After all, banks are specialists in producing information. Might more disclosure undermine bank profitability? (3) Bank regulators already examine banks. Would more information for investors merely be redundant?

Current economic knowledge offers no definitive answers to these questions, but the recent economic literature can offer some useful insights to policymakers.

² Of course, a complete evaluation of the net benefits of disclosure should not ignore these costs, as discussed at length in Sherrill Shaffer's article.



Mitchell Berlin is an assistant vice president and economist in the Research Department of the Philadelphia Fed.

Market Discipline: The Third Pillar of Basel II

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he Basel Accord, an agreement reached in 1988 by the banking regulators of the G-10 countries, sets common standards for capital adequacy and risk management for banks. Although the document

has no legal status, most countries have adopted the accord's guidelines.

The New Basel Accord, or Basel II, will create new guidelines for capital adequacy and risk management. Implementation of Basel II is expected to occur in 2007.

The proposed third pillar of Basel II, which covers market discipline, has three sections:*

(1) Bank holding companies (BHCs) would provide detailed information about their corporate structure, that is, a full description of the BHC's subsidiaries and ownership positions in other firms. While information about ownership positions is already reported routinely in the U.S., the reporting requirements for banks in other countries are not uniform, and bank regulators around the world don't all have equal powers to compel banks to provide such information. It is difficult to evaluate the risk of the firm embedded in a labyrinthine organizational structure. Without detailed information

about the organizational structure, it is impossible.

(2) BHCs must also provide a complete account of how they calculated their capital level, for example, providing details about the required capital for complicated or innovative financial instruments. The capital requirements are the first pillar of Basel II.

(3) Basel II will also require both qualitative and quantitative disclosures concerning the BHC's risk position, including (a) credit risk, mainly, the risk of default on the bank's loans; (b) market risk, the risk of loss on the bank's trading portfolio; (c) the risk of the BHC's equity positions in firms; and (d) operational risk, the risk of system breakdowns.

Consider the disclosures concerning credit risk.

The qualitative disclosures would include: (a) a detailed discussion of the BHC's risk management policies; (b) an account of the relationship between external ratings systems and the bank's internal method for assigning loans to risk classes; (c) definitions of past due and impaired loans. The quantitative disclosures would require information about the BHC's credit exposures broken down by industry concentration, geographic concentration, and counterparty concentration. (A counterparty is any customer whose default would affect the bank's profits.)

* See Jose Lopez's article for a more detailed summary of the third pillar.

MANDATORY REQUIREMENTS MAY BE UNNECESSARY

Firms May Disclose Voluntarily to Signal Quality. While most business observers would probably agree that firms are often reluctant to disclose bad news voluntarily, several classic articles explain that firms may have powerful incentives to disclose all information, both good and bad, voluntarily.³

Sanford Grossman, Oliver Hart, and Paul Milgrom consider mar-

kets in which: (1) firms can disclose information at very low cost; (2) no firm can be forced to disclose information involuntarily; and (3) a firm suffers heavy penalties for disclosing false information; thus, it can remain silent, but it can't lie. In the literature, information is called *verifiable* when the firm can't lie. The third assumption is not as unrealistic as it may at first seem. Even when the law doesn't impose penalties for lying, firms may opt to increase their penalties for misrepresentation by offering warranties. (Later, I'll discuss how Grossman, Hart, and Milgrom's conclusions

change when these assumptions are relaxed.)

To take a concrete example, consider the market for washing machines. Washers are familiar consumer goods that vary widely in quality. Think about durability as the main issue for buyers of washing machines. Why would a firm whose machine breaks down frequently disclose this information to customers?

The idea is simple. As long as customers remain skeptical and interpret a firm's silence as an admission of very low quality, the following will happen. Firms with the most

³ The articles are those by Sanford Grossman, by Grossman and Oliver Hart, and by Paul Milgrom.

durable machines will certainly disclose this information to distinguish themselves from all others. In turn, firms with slightly less durable machines will disclose this to distinguish themselves from all others with even lower quality. (Since all claims are verifiable, these firms can't falsely claim that their machines are more durable than they actually are. At best, a firm can remain silent.) Continuing this logic of *unraveling*, all firms will truthfully and voluntarily disclose information about the durability of their washing machines except perhaps the lowest quality producer.

Voluntary Disclosure Reduces the Wasteful Production of Information. Douglas Diamond's paper provides a second explanation for why firms might disclose information voluntarily. By disclosing information, the firm dissuades its investors from wasting the time and effort of collecting information, and it also increases the accuracy of the information that investors use to price the firm's securities.

One part of Diamond's conclusion is obvious. If producing information is costly — and anyone who has prepared her own tax forms knows that collecting, organizing, and reporting information takes time, effort, and money — having a single firm produce information can save expenses for lots of investors who can then avoid duplicative research. Investors are willing to pay more for a firm's stock when they don't have to perform as much costly research.

The second part of Diamond's argument is more subtle. The price of a firm's stock is the result of trading decisions by lots of investors who sell the stock when they think its current price is too high and buy more stock when they think its current price is too low. That is, the stock price incorporates the judgments of many investors. Suppose each investor makes his or her

judgment based on research into the firm, for example, by reading a report from an investment research firm. Of course, any two people looking at the same report will interpret it slightly differently, and part of this difference will simply be *noise* — in this case, differences in individual judgments that are essentially random and unrelated to the firm's true profitability. Noise is just another source of uncertainty that reduces the firm's stock price because investors don't like risk.

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Compared with a situation in which individual investors must produce the information on their own, the amount of noise can be reduced substantially if the firm releases information on its own. Thus, the information about the firm's profitability is more accurate, and the firm's stock price will be higher. So it will pay for the firm to release information, which raises the value of its own stock by preventing its investors from engaging in duplicative, noisy research. Note, as long as investors are capable of uncovering bad news about the firm's profitability, this argument holds for disclosures of both bad news and good news.⁴

More Information Is Not Necessarily Better. Our folk wisdom

⁴ The recent corporate governance scandals show that crooked accountants can make it very hard for investors to collect accurate information about a firm. Later, I will discuss models in which firms may lie as well as refuse to disclose information.

is filled with homilies celebrating the virtues of ignorance: Curiosity killed the cat. What you don't know can't hurt you. Jack Hirshleifer was probably the first to articulate and explore the idea that beneficial insurance arrangements may be impossible when individuals have too much knowledge.

Consider the health-insurance market. Suppose some fraction of the population has a strong genetic predisposition to contract a disease for which no cure exists. In this situation, the

availability of insurance makes everyone better off. Everyone pays a premium, although only those who actually contract the disease receive insurance payments. Those who contract the disease can use the insurance payments to cover their spouse's home payments and their children's college expenses, while those who never contract the disease have more peace of mind because they know their families are protected if they do. (Note: When we think about the value of insurance, it makes sense to take the perspective of someone *before* he or she contracts the disease.)

Now, if scientists discover a low-cost way to uncover a genetic marker that routinely predicts the disease — but without offering a cure — everyone will be worse off because insurance markets thrive on uncertainty. Individuals who learn they won't contract the disease will refuse to pay premiums, and the insurance market will break down for lack of funding. Since there is no

cure, the information has no value to those who will contract the disease. In this example, more information clearly makes everyone worse off.

Although few real world examples are quite as straightforward as this, many financial institutions and contracts have a risk-sharing function. One function of banks is to provide individuals or firms with protection against liquidity shocks, that is, a sudden need for funds. Thus, a bank is (partly) a web of insurance contracts. Individuals are willing to deposit their funds and firms are willing to pay upfront commitment fees for credit lines so that they can borrow — at attractive terms — should they suddenly need funds.

Such risk-sharing contracts may not be feasible if depositors are fully informed about the loans in the bank's portfolio and if the interest the bank must pay depositors is highly sensitive to available information.⁵ Depositors would demand a high interest rate whenever the bank was providing funds to many firms with sudden liquidity needs, and the bank could no longer profitably provide insurance against liquidity shocks. Of course, nobody would ever propose that banks disclose detailed information about each loan in their portfolios. But this example shows there are limits to the gains from disclosure in light of financial intermediaries' insurance functions.⁶

⁵See my article with Loretta Mester for empirical evidence that U.S. banks offer firms intertemporal insurance against liquidity shocks and that the insurance offered declines when banks have fewer core deposits, that is, when banks' funding costs are more sensitive to changing market conditions.

⁶Charles Jacklin first made the argument that too much information might undermine banks' risk-sharing functions. However, we should be careful not to take this argument too far. Too little information about bank risks can undermine depositors' willingness to place their funds in banks.

In a related vein, Oved Yosha, among others, has argued that banks are specialists in maintaining proprietary information about their loan customers. In his article, Yosha argues that some firms avoid public securities markets and borrow from banks to avoid revealing proprietary information to their competitors. This places limits on the information that banks can reveal about their customers while remaining profitable. For example, there

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are limits to the disclosures that banks, when acting as swap dealers, can make about their customers without revealing and undermining their customers' hedging strategies.⁷

FIRMS MAY NOT DISCLOSE VOLUNTARILY

Like many other classic results in economics, the Grossman, Hart, and Milgrom unraveling result — that all firms will be forced to reveal the truth voluntarily — can be enlightening even for those who disagree with its conclusion. A disciplined way to think about the issue is to ask: How do the Grossman, Hart, and Milgrom results change when each of their strong assumptions is relaxed? When we approach the question this way, we can gain insight into

⁷A simple interest rate swap may involve two firms that exchange interest payments on their debt. For example, a firm whose interest rate fluctuates may agree to swap with a firm whose interest rate is fixed.

the conditions under which voluntary disclosure may not occur and when mandatory disclosure may help.⁸

Disclosures Are Biased When Misrepresentation Is Possible.

When penalties for misrepresentation are moderate and if firms can sometimes lie without getting caught, the Grossman, Hart, and Milgrom results must be qualified (although not overturned). In their working paper, Evelyn Korn and Ulf Schiller find that

instead of each firm revealing its true quality, firms divide into two groups when the penalty for lying is relatively low. High-quality firms voluntarily disclose, but they all make the same report. Thus, reports are biased upward for all but the highest quality firms. In contrast, low-quality firms don't disclose at all, so they are indistinguishable from each other.⁹

Two points about Korn and Schiller's findings should be kept in mind. Although firms don't disclose

⁸Note, mandatory disclosure doesn't automatically help when voluntary disclosure is inadequate. For example, assume that a firm can be forced to disclose what it knows but that the firm must undertake costly investigations or testing to learn the quality of its own product. In this case, Steven Matthews and Andrew Postlewaite argue that mandatory disclosure rules may *reduce* actual disclosure by leading a firm to choose to remain ignorant about its product's quality.

⁹Korn and Schiller find that when penalties are higher, a range of middle-quality firms that disclose truthfully can arise, thus moving even closer to Grossman, Hart, and Milgrom's results.

all information, as in Grossman, Hart, and Milgrom's model, the basic logic of the unraveling argument still remains: High-quality firms distinguish themselves from low-quality firms by making an informative (albeit biased) disclosure. Also, Korn and Schiller's results don't provide any clear rationale for mandatory disclosure requirements.

Firms May Not Disclose If Too Few Customers Are Sophisticated. An implicit assumption of the Grossman, Hart, and Milgrom model is that all customers are sophisticated enough to understand the disclosure. While this is certainly plausible in many cases — markets for familiar consumer goods — it is less convincing for other cases. For example, the implications of a firm's quarterly report for its future profitability (and therefore for its stock price) may be hard for many investors to interpret.

Michael Fishman and Kathleen Hagerty's 2003 article shows that voluntary disclosure depends on sophisticated customers who act as policemen for the market. The authors relax only one of Grossman, Hart, and Milgrom's assumptions: Firms still can't misrepresent their quality, but only a fraction of customers can evaluate the firm's disclosure. Fishman and Hagerty examine the case of a monopolist, say, a producer of a revolutionary new washing machine.¹⁰ The performance of the washing machines is partly a matter of chance; managerial troubles at the plant might lead to a run of low-quality products.

What happens if the monopolist makes no disclosure? Since all customers are equally ignorant about the quality of the firm's washing

machines, the firm will charge a single price to all customers and both sophisticated and unsophisticated customers will buy both high- and low-quality washers.¹¹ Customers know there is some likelihood of buying a high-quality machine and some likelihood that their washer will be a pile of nuts and bolts in a matter of months; therefore, the price is the average value customers place on a washing machine of unknown quality.

Does the Grossman, Hart, and Milgrom unraveling logic hold here? That depends on the reasoning of a firm with high-quality goods, which, in turn, depends on the number of sophisticated customers. The firm will reason: "If I disclose my quality and raise my price, I will attract customers sophisticated enough to evaluate my claims, but I will lose all of my unsophisticated customers because of the higher price." If the fraction of sophisticated customers is low, the high-quality firm would prefer not to disclose; there is no unraveling and no voluntary disclosure. However, if the fraction of sophisticated customers is high, the unraveling logic leads to full disclosure.

Interestingly, Fishman and Hagerty show that mandatory disclosure may be valuable when the shortage of sophisticated customers leads to too little disclosure. With mandatory disclosure, sophisticated customers are better off because they avoid purchasing the low-quality washers. Unsophisticated customers are no worse off, as long as they pay a price no higher than they would in the case without disclosure. Of course, the firm

opposes mandatory disclosure because it sells fewer (low-quality) goods and its profits are reduced.¹²

Standardization Can Make Disclosure More Informative. While most of the literature treats disclosure as a simple, verifiable, one-dimensional statement — for example, "My washing machine will last three years without needing repairs" — real-world disclosures are often complicated mixtures of verifiable and unverifiable information: think of a corporation's quarterly profit report as an example. In their 1990 article, Fishman and Hagerty show that this complication may actually provide a rationale for mandatory disclosure rules. In particular, they demonstrate that disclosures can be made more informative if firms are given less discretion over what they may disclose.

In their model, firms can make verifiable disclosures, but only for a subset of the types of information they might choose to disclose. The problem with full discretion is that with enough flexibility, firms can always find something positive to report, so skeptical customers discount all positive information. By limiting the types of information the firm may disclose, a mandatory disclosure rule can increase firms' credibility by increasing the difficulty of reporting positive information. For example, a rule might require firms to report a single standardized quarterly profits figure and not allow them to report self-serving, pro forma information about profits.

When Firms Have Correlated Returns, They May Disclose Too Little. Consider a market with multiple banks with significant risk exposures to the telecom sector. If any

¹⁰ For Fishman and Hagerty's results, it is not essential that the firm be a monopolist, only that the market structure permit firms to make positive profits in equilibrium; that is, they have some market power.

¹¹ In fact, Fishman and Hagerty show that different outcomes are also possible for the same underlying conditions, and they discuss the various reasons for choosing one outcome as the most reasonable. I simplify things by leaving these complications aside.

¹² Fishman and Hagerty present conditions in which the gains to customers outweigh the firm's losses.

one bank discloses information about the performance of its telecom loans, rational investors will also re-evaluate the prospects for other banks, even if the other banks don't disclose any information about their own portfolios. In cases where firms have correlated returns and disclosure is costly — think of the time and effort of producing and communicating the information to investors — Anat Admati and Paul Pfleiderer's article shows that each firm may have inadequate incentives to disclose voluntarily because it doesn't take into account the benefits of its disclosure for other firms and their customers.¹³

Actually, Admati and Pfleiderer make a somewhat stronger point. In their model, a firm can raise the value of its stock by committing to disclose information that increases the accuracy of the information available to investors. But in many financial situations, small increases in accuracy will have no value for the firm; the firm will find it unprofitable to bear any costs unless there is a relatively large increase in accuracy.¹⁴ While this would not keep an isolated firm from increasing its expenditures to increase the accuracy of its investors' information, firms with correlated returns may get stuck in a situation in which no firm discloses at all. Each firm, as well as each firm's investors, would be

¹³ This is an application of the argument that information may be under-produced since it is a public good.

¹⁴ Think, for example, of a firm considering selling stock to uninformed investors. If stockholders suspect that insiders have adverse information about the firm's prospects, they may be unwilling to buy the stock at any price. To increase the price investors are willing to pay for the stock, the firm can make disclosures that increase the accuracy of outside investors' information about the firm. But it may take a large increase in accuracy before the stock price rises high enough to make the sale worthwhile for the firm.

better off if the firms could agree to produce more information.

While Admati and Pfleiderer's analysis suggests that mandatory disclosure rules may be beneficial, their main conclusion is that while firms may have inadequate incentives to disclose, it is very difficult to draw practical conclusions about when mandatory disclosure rules would actually improve matters.¹⁵

The weight of the evidence indicates that neither regulators nor market participants are superfluous.

DISCLOSURE AND BANK REGULATION

One factor that differentiates banks from many other firms is that banks are heavily regulated. Most relevant, regulators routinely examine banks and put pressure on those banks found to be excessively risky. This raises an obvious question: With regulators already on the job, would more disclosure by banks to the public be redundant? Do we need to worry about providing more information to bank investors — bondholders, stockholders, and depositors — as long as regulators are watching over banks for them?

Of course, a similar question might be posed from the opposite direction. Financial economists have traditionally viewed financial markets as places where investors, driven by the profit motive, have very strong incen-

¹⁵ Admati and Pfleiderer also discuss the possibility of subsidizing information production as an alternative to mandatory disclosure rules.

tives to produce and process information about firms. Some economists have wondered whether market discipline — aided by extensive disclosures — would be an effective *substitute* for regulatory discipline of banks.¹⁶

It is important to note here that when we discuss banks and disclosure, there is a shift in emphasis from much of the literature on disclosure. Historically, bank regulators have been particularly concerned about the *safety and soundness* of banks, that is, the likelihood that banks will experience financial problems or failure. Furthermore, regulators are concerned that individual bank failures might have wider economic repercussions. Thus, bank regulators would not view market discipline as a successful substitute for regulatory discipline if a bank with insured depositors could choose a high-risk investment strategy, make full disclosure of the risks to all market participants, and sell its securities to investors with an appetite for high-risk, high-return investments.¹⁷

Do Market Participants Have Useful Information That Regulators Do Not (and Vice Versa)?

To sort out these issues, we must first determine whether bank regulators and market participants actually know different things and if they learn them at different times. The weight of the evidence indicates that neither regula-

¹⁶ The recent literature on the potential role for market discipline of banks has addressed a number of questions that I don't consider in this article. See Flannery and Nikolova's review and the introduction to Krainer and Lopez's working paper for more complete reviews of the literature.

¹⁷ I won't discuss whether bank regulators' perspective is the correct one. The main argument for this perspective is that instability at one bank can generate instability for other banks and for the rest of the economy. An individual bank's investors and customers won't take these external effects into account.

tors nor market participants are superfluous. For example, Allen Berger, Sally Davies, and Mark Flannery find evidence that the information generated by bank regulators and by market participants is complementary; that is, each has information about banks' performance that the other doesn't.

They show that a change in a bank's credit rating from Moody's — a measure of the information available to bond market participants — and a change in the bank's regulatory rating *both* help predict changes in the bank's financial condition. Neither regulatory rating changes nor rating agency changes are superfluous. Interestingly, the bank's regulatory rating has predictive power only if the rating is of recent vintage, that is, only if the bank was examined on-site no earlier than the previous quarter.¹⁸

How Does Increased Disclosure Affect Market Discipline? It is important to keep in mind that most information is not like manna from heaven; it must be produced, and to be useful, it must be interpreted. We can't assess the effects of more mandatory disclosure without asking how it would affect market participants' willingness to produce information and to pay for the services of specialists in interpreting information, such as industry analysts.

Industry analysts are a major channel through which information disclosed by firms is interpreted and disseminated in a useful form to investors. It is certainly possible that more disclosure, especially more standardized disclosure, might make banks' performance easier to decipher, thus reducing the profitability of interpret-

¹⁸ This finding is consistent with much of the recent literature, which finds that regulatory ratings get stale within half-a-year. See the references in Flannery's 1998 article.

ing banking industry data and leading analysts to concentrate their attention on other industries. Thus, mandatory disclosure could, in principle, *reduce* investors' ability to interpret the information by reducing analyst coverage of the banking industry.

However, evidence from the empirical accounting literature indicates that more disclosure *increases* information production.¹⁹ In particular, firms that disclose more (according to a number of different measures of the quality of disclosure) are covered by more analysts. To be sure, we should interpret these empirical results with some care. The precise measures of the quality of disclosure are controversial, and the studies don't completely rule out the possibility that analyst coverage and disclosure are related through some factor that has nothing to do with the quality of the information disclosed.²⁰

These caveats aside, the positive relationship between disclosure and analyst coverage suggests that the information available to market participants won't reduce their incentive to produce information. Instead, disclosure and information production may be complements.

Can Market Discipline Substitute for Regulatory Discipline?

The production of information about a firm and the ability to affect the firm's behavior are not the same thing. There is now ample empirical evidence that bank bondholders and depositors respond to information about

¹⁹ See Paul Healy and Krishna Palepu's review of the empirical literature on disclosure for the relevant references.

²⁰ For example, high-tech firms might have strong incentives to make disclosures and may independently have a relatively high following by analysts. We might conclude (incorrectly) that better disclosure leads to high analyst coverage.

banks' creditworthiness in a timely and sensible way.²¹ When a bank's riskiness rises — for example, if a bank announces that expected losses on its loan portfolio have increased — its bond prices fall, the rates it pays for uninsured deposits rise, and many uninsured depositors find another bank. However, the need to pay bondholders and depositors a higher rate may not have much of an effect on the behavior of banks' managers.

The article by Matthew Billet, Jon Garfinkel, and Edward O'Neal provides evidence that it may be unusually difficult for a bank's investors to effectively discipline the bank's managers because of the availability of insured deposits. In their article, they showed that when rating agencies downgrade a bank's bonds, the bank typically substitutes toward insured deposits; that is, the bank increases the total quantity of insured deposits, as well as the share of insured deposits among various funding sources.

The authors' argue that this shift toward insured deposits indicates that banks view regulatory discipline as *less burdensome* than market discipline. In response to the rating agency's downgrade, the bank must

²¹ The literature prior to the 1990s suggested that bank creditors were not responsive to changes in bank risk. (But see Daniel Covitz, Diana Hancock, and Myron Kwast's recent article for evidence that bondholders were more sensitive than previously believed.) It is widely believed that investors have become more responsive because they no longer believe that the government will bail out failing banks' investors (except for insured depositors). However, there is a line of thought suggesting that one ground for the special treatment of banks (the safety net and extensive regulatory monitoring) is that they are unusually *opaque* — difficult for investors to analyze — compared with other types of firms. This issue clearly relates to the potential gains from mandatory disclosure. To date, this literature is inconclusive. For opposing views, see the articles by Donald Morgan and by Mark Flannery, Simon Kwan, and M. Nimalendran.

pay a higher rate to retain uninsured deposits. This higher rate is the primary way in which market participants discipline the bank for an increase in risk. Regulatory discipline could take a number of forms. Although the bank doesn't suffer an explicit regulatory penalty for heavier reliance on insured deposits, an increase in bank risk could lead regulators to more closely monitor the bank's activities. The bank's substitution of insured deposits for uninsured deposits is evidence that the higher cost of retaining insured deposits is *lower* than the cost of closer monitoring by regulators.²²

Can Market Discipline Supplement Regulatory Discipline?
If market participants have information about banks that regulators don't — especially if the information is more current — but if we have doubts about bank investors' ability to discipline bank management, we might nonetheless hope that regulators could make increased use of market information. In this middle view, banks would be required to make more detailed information available to market participants, and bank regulators would pay closer attention to market information, for example, stock and bond prices, to help identify potential problem banks.

John Krainer and Jose Lopez's article provides evidence that by paying attention to market signals, regulators might enhance their ability to detect developing problems in a timely way. They show that a bank's excess stock returns — the part of the bank's

²² Robert Bliss and Mark Flannery's article also provides evidence that market discipline may not be very effective.

stock return that doesn't result from the general movements in all stocks — predict the likelihood of a regulatory downgrade up to one year ahead. That is, the bank's stock price will fall up to a year ahead of a regulatory downgrade. This finding is especially interesting because some banking scholars have argued that stock prices may not be helpful to regulators in light of stockholders' and regulators' potentially opposing views about risk.

If we have doubts about bank investors' ability to discipline bank management, we might nonetheless hope that regulators could make increased use of market information.

Higher stock returns could mean that investors believe that a bank's risky lending strategy is likely to be highly profitable, even though it increases the probability of default.

On the other hand, stocks trade much more widely and frequently than do bonds, so we expect stock prices to respond to new information more rapidly than do bond prices.²³ Lopez and Krainer's evidence suggests that, in practice, despite the potentially opposing interests of stockholders and regulators, stock prices may have useful information for regulators.²⁴

²³ Diana Hancock and Myron Kwast's article discusses some of the difficulties of using subordinated bond price spreads as indicators of bank risk.

²⁴ Krainer and Lopez find somewhat weaker evidence that excess returns predict regulatory downgrades over and above bank balance-sheet information that is already available to regulators.


CONCLUSION

The literature on information disclosure provides some useful perspectives on the potential benefits of enhanced disclosure requirements for banks as proposed in Basel II.

While firms may have incentives to disclose both good and bad information voluntarily, there are plausible instances in which mandatory disclosure rules would increase the information disclosed by firms

and make the firm's customers and investors better off. If most investors find it difficult to interpret the firm's disclosures, mandatory disclosure will increase disclosure and make customers better off. When firms are disclosing large amounts of (partially) unverifiable information, standardized disclosure may help.

From the accounting literature, the empirical evidence suggests that disclosure can lead to a virtuous circle, in which more disclosure by firms can increase information production by market participants.

Finally, the banking literature provides reasons to believe that providing better information to market participants may provide useful information to regulators; thus, market discipline and regulatory discipline may be complements. 

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