



The Role of Market Discipline in Ensuring the Soundness and Stability of the Banking Sector

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Abstract

This study examines market discipline in the banking sector, an issue central to the sector's soundness and stability. It investigates the role of market discipline in mitigating systemic banking risk. The analysis addresses supervisory authorities' need for market discipline, the concept and operation of market discipline in banking, and the complementarity between market discipline and official supervision in strengthening banking sector stability. The findings indicate that market discipline provides strong signals that supervisory authorities can incorporate into early-warning models, enabling timely corrective action. Market discipline also exerts direct pressure on bank managers to take corrective measures. It therefore complements official supervision and contributes to banking sector stability.

Keywords: market discipline, supervisory authorities, banking sector

JEL Classification: G21, G28

Introduction

When issuing the Basel II Accord, the Basel Committee adopted the view that strengthening market discipline was essential because supervisory resources are limited and banking activities are becoming increasingly complex. Market discipline is expected to support regulation and supervision by enabling market participants to monitor high-risk banks. Moreover, implementing the rules and regulations governing banking activities is costly. Market discipline may therefore improve the efficiency of banking supervision and reduce supervisory costs.

The rationale for market discipline is to increase creditors' role in the regulatory and supervisory processes governing banks. Banks are highly leveraged institutions, meaning that most of their funding consists of debt, with depositors providing the majority of bank funds. The basic theory of market discipline assumes that creditors, including depositors, reward or penalize



banks for their performance by demanding higher returns on deposits or withdrawing their funds when banks' risk exposure becomes excessive.

Supervisory policymakers worldwide design financial safety nets to prevent costly bank failures. However, designing such safety nets is difficult because excessive protection may increase moral hazard and destabilize the financial system that the protection is intended to safeguard. Policymakers must protect depositors without undermining market discipline. The design of financial safety nets is therefore crucial to achieving an appropriate balance between supervisory discipline and market discipline.

The central research question is as follows:

How can market discipline contribute to ensuring the soundness and stability of the banking sector?

The following subquestions guide the analysis:

- What is market discipline in the banking sector?
- What market-discipline mechanisms can enhance banking sector stability?

Research Hypotheses

The study is based on the following hypotheses:

- Supervisory and regulatory authorities cannot, on their own, exercise effective official supervision over the banking sector.
- Market discipline provides strong signals to supervisory authorities that can inform the allocation of corrective regulatory measures.
- Market discipline directly influences bank managers to undertake corrective measures, thereby complementing official regulatory discipline and enhancing banking system stability.

Research Objectives

The study seeks to achieve the following objectives:

- To examine market discipline in the banking sector in terms of its concepts, stages, operating mechanisms, and advantages.
- To review how supervisory authorities use market-generated information to enhance banking sector stability.

Significance of the Research

The significance of this study lies in its examination of market discipline in the banking sector. Effective market discipline can limit risks that threaten the soundness and stability of the banking system.

Market discipline constitutes an additional form of oversight exercised by stakeholders to limit systemic risks in the banking sector, alongside the primary oversight conducted by regulatory and supervisory authorities, particularly the central bank. Because preserving the soundness and stability of the banking system is among the central bank's principal priorities, it can use market signals to implement the necessary measures.



Research Methodology

The study adopts a descriptive-analytical approach. It collects, analyzes, and interprets information related to the research problem to evaluate the hypotheses and draw conclusions.

Section One: Supervisory Authorities' Need for Market Discipline

Financial institutions have become increasingly complex and opaque. This is particularly true of large financial institutions that hold substantial derivatives positions and engage in extensive off-balance-sheet activities. Assessing the assets and liabilities of these institutions has become challenging for accountants and supervisory authorities, making them difficult to examine and supervise prudentially. Regulators are increasingly uneasy about assuming primary responsibility for supervising large banks and financial institutions because the complexity and valuation of modern financial engineering products may exceed the expertise of many supervisors. Limited regulatory resources further intensify this problem.

Supervisory authorities advocate stronger market discipline because market participants may be better able to monitor banks' activities than understaffed supervisory authorities or may, at minimum, provide more continuous oversight. Certain market participants, such as derivatives holders, may also be better equipped to conduct the complex assessments required. Supervisory authorities seek to use market capabilities in two ways. First, they use signals provided by market participants to inform the allocation of corrective regulatory actions. Second, they rely on market participants to exert direct pressure on managers to take the required actions, thereby complementing regulatory discipline and strengthening banking system stability (Bliss, 2004, pp. 3–4).

Official supervision without market discipline tends to be inadequate for several reasons (Calomiris, 2004, pp. 411–412):

- **First**, market participants may have access to better information or may be more skilled than supervisory authorities at interpreting its implications. For example, Argentine regulators sought to strengthen market discipline during the 1990s partly because they believed that participants in derivatives markets possessed better and more timely information about banks' risk exposures than supervisors did.
- **Second**, market participants have incentives that differ from those of supervisors. Supervisors may have strong incentives to exercise forbearance toward troubled banks, whereas market participants place their own funds at risk. In addition, supervisors may be poorly compensated and, in some countries, vulnerable to bribery. They may also face adverse professional consequences for performing their duties correctly because banks can appeal to political authorities to pressure supervisors who refuse to tolerate persistent problems.
- **Finally**, heavy reliance on capital requirements calculated at book value as the primary instrument of prudential supervision gives supervisors a means of avoiding market discipline by delaying recognition of a bank's problems and exercising forbearance. Research



comparing market discipline with prudential regulation as a means of promoting banking stability has found market discipline effective in limiting bank risk relative to other forms of banking regulation and supervision.

Section Two: General Concepts of Market Discipline in the Banking Sector

1. Definition of Market Discipline

The concept of market discipline is not precisely defined. This may be because market discipline is not a single theory but a collection of ideas concerning how regulatory and supervisory authorities can use markets to support the supervision of financial institutions and limit the risk of financial failure (Bliss, 2015, p. 2).

Market discipline constitutes the third pillar of the Basel II framework and complements Pillar 1, which concerns minimum capital requirements, and Pillar 2, which concerns supervisory review. Market discipline seeks to strengthen the soundness and efficiency of the financial and banking sectors by emphasizing the provision of necessary and appropriate information to market participants. The Basel Committee requires banks to disclose a minimum set of financial and general information in accordance with the approach established under Basel II (Arab Committee on Banking Supervision, 2006, p. 2).

Market discipline may be defined as a situation in which market agents or participants constrain the risks that institutions in general, and banks in particular, may assume (Pop, 2005, p. 38).

Market discipline aims to create strong incentives for banks to conduct their activities in a sound, prudent, and efficient manner. For market discipline to be effective, market participants must have access to reliable and meaningful information that allows them to assess risk appropriately, including the adequacy of the capital held as a buffer against bank risk (van Greuning & Brajovic Bratanovic, 2004, p. 121).

The principal-agent problem underlies market discipline. Depositors, for example, seek to ensure that the bank, acting as their agent, protects their funds. They respond to increased risk through price or quantity adjustments by demanding higher interest rates or withdrawing deposits. In this way, managers are penalized for excessive risk-taking (Coşkun, 2016).

2. Stages of Market Discipline

Effective market discipline proceeds through two distinct stages (see Hamalainen, 2006, pp. 105–108; Fendri, 2012, pp. 54–55):

Recognition Stage

At this stage, market participants identify changes in a bank's risk profile. Rational investors recognize that their funds are exposed to risk, assess the bank's condition, and promptly incorporate their assessments into market prices. This stage comprises two substages:

- Investors' perception of their exposure.
- The actual observation of bank risk.



The recognition stage concerns accuracy and timeliness, specifically the extent to which market prices respond to changes in banks' conditions. Market participants' assessments are expected to provide accurate and timely information that complements supervisory authorities' evaluations of bank quality. At the end of this stage, the market automatically generates signals that may convey useful information to supervisory authorities.

Influence Stage

This stage is also known as the control stage. Banks respond to signals generated by changes in securities prices by modifying their behavior. The influence stage concerns effectiveness, specifically the extent to which market participants affect banks' actions.

For market participants to exercise market discipline effectively, they must be able to assess a bank's risk profile accurately. Adequate and regular disclosure is essential to effective bank assessment. The Basel Committee emphasizes this condition because it reduces uncertainty and information asymmetry between banks and investors. Market participants must also have incentives to monitor banks. If creditors believe that an extensive safety net protects their interests and funds, their incentives to monitor banks may be eliminated (Pop, 2004, pp. 4–5).

3. Channels of Market Discipline

Evaluating the effectiveness of market discipline requires examining how market participants influence bank risk and identifying the actions investors may take to influence bank management. These actions can be classified as follows (see Hamalainen, 2006, pp. 105–108):

Direct Market Discipline

Direct market discipline involves investors in the primary securities market. These investors respond to and influence a bank's risk during financing negotiations with the bank. Their response is reflected in issuance costs that are sensitive to the bank's risk profile. Appropriate pricing of bank debt may therefore discourage banks from adopting high-risk strategies (Pop, 2005, p. 50). In the primary market, signaling and influence occur simultaneously and are carried out by the same market participant.

Quasi-Direct Market Discipline

Quasi-direct market discipline refers to the influence exercised by holders of financial claims, including shareholders, bondholders, and depositors. These investors seek to monitor and constrain bank risk by signaling through changes in securities prices or by selling part of their investments. Their capacity to influence bank management differs from that of primary-market investors and may be more effective when they can activate control mechanisms directly. The same market participant carries out both signaling and implementation.

Indirect Market Discipline

Indirect market discipline occurs when supervisory authorities use signals generated by direct or quasi-direct investors to undertake necessary disciplinary actions. Supervisory authorities may use this alternative source of information to initiate corrective measures and



determine deposit insurance premiums that are sensitive to bank risk. Indirect discipline is not limited to regulatory authorities and may also involve other holders of bank debt.

4. Mechanisms of Market Discipline

Market discipline requires investors to face costs that increase with banks' risk and to act in response to those costs. Investor responses may operate through the following mechanisms (Flannery & Nikolova, 2004, pp. 1–2):

Price Mechanism

Investors monitor a bank's condition and demand higher returns from riskier banks. When supervisory authorities observe unusually high interest rates, they can infer that investors have detected a change in the bank's probability of failure. These rates therefore provide information that supervisory authorities can use.

Quantity Mechanism

If a bank refuses to pay higher interest rates, some investors may withdraw uninsured funds. The bank must then obtain new financing elsewhere or restrict its activities. A refusal to pay higher rates does not generate a price signal. However, a shift from uninsured to insured funding may convey information to supervisors about the market's assessment. In addition, the withdrawal of uninsured funds may force the bank to contract its operations, directly affecting its condition.

Supervisory authorities may observe neither a change in interest rates nor a withdrawal of uninsured funds. In such cases, a bank may restore its capital ratio by reducing assets or issuing new shares. Each of these responses constitutes a form of market discipline.

5. Preconditions for Effective Market Discipline

Several requirements must be satisfied for market discipline to function effectively. Although these requirements are not always clearly defined, the following conditions can be identified (see Llewellyn, 2005, pp. 43–44; Llewellyn & Mayes, 2003, pp. 12–13):

- Information available to stakeholders for monitoring banks must be relevant, accurate, reliable, and disclosed in a timely manner. This condition requires a sound accounting infrastructure, which some countries lack.
- A sufficient number of stakeholders must be capable of analyzing publicly available information.
- Stakeholders must have strong incentives to monitor bank behavior and bear the associated costs. These incentives may include the possibility of losing funds if a bank fails. Market discipline requires investors to perceive themselves as exposed to bank risk, particularly solvency risk, and to believe that the potential benefits of monitoring exceed its costs. Because intervention arrangements within the broader supervisory system may protect some market participants from losses, a system that provides extensive guarantees cannot expect strong market discipline. As safety nets expand, monitoring incentives weaken.

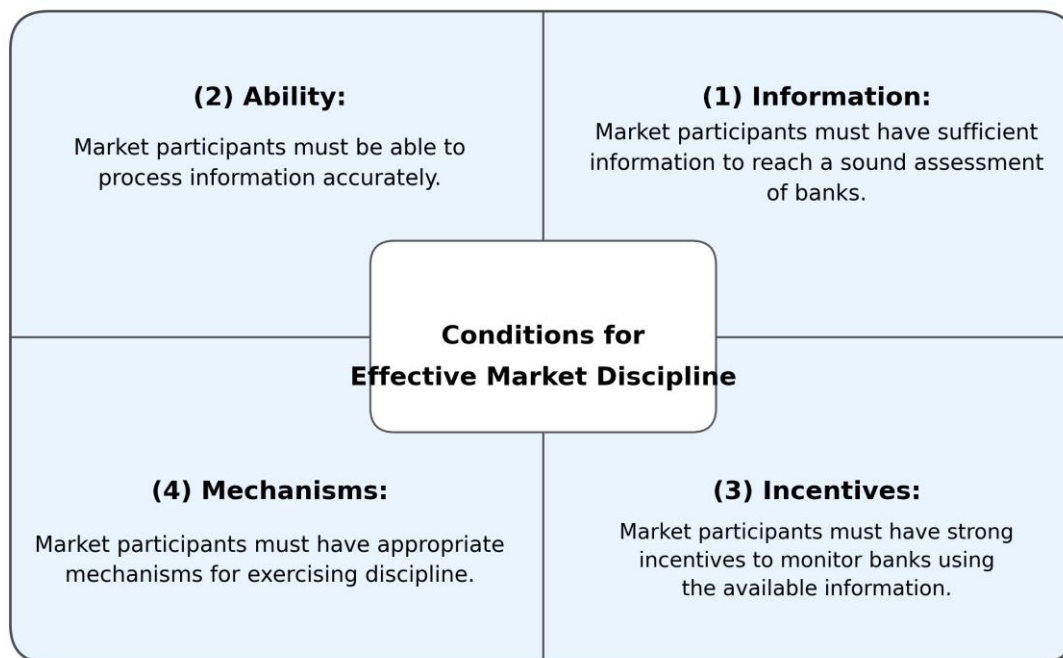


- Stakeholders must adjust their behavior in response to available information about a bank's financial condition.
- Markets must exist through which market discipline can operate using price and quantity mechanisms. The operation of market discipline may vary across markets, including deposit and subordinated debt markets.
- The existence of markets is necessary but insufficient. Markets must also be efficient so that market adjustments produce prices that reflect banks' risks and incorporate risk-related information effectively. Poor regulation creates distortions in banking, and inefficient pricing creates similar distortions. This condition raises the broader issue of how effectively markets process information.
- Stakeholders must respond rationally to relevant bank information so that monitored banks are not misjudged. This condition also depends on how effectively market participants process available information.
- Rational responses should result in changes in market quantities, prices, or both, including the supply and pricing of debt available to banks.
- Bank managers must have both the incentives and the capacity to respond to market changes. They must understand the potential threats posed by such changes because these changes can affect a bank's competitiveness. Management policies toward depositors, borrowers, and shareholders may influence competitiveness. Managers must respond in particular to actual or potential increases in the cost of deposits, debt, and capital. Banks may react to negative market signals by shifting toward funding sources that impose weaker discipline.
 - Several principal-agent issues must also be considered, particularly the role of the board of directors. In this context, the Basel Committee emphasizes the importance of sound and effective corporate governance arrangements for effective market discipline.
- The banking sector must be competitive. A competitive environment enables depositors and investors to move their funds among banks according to their assessments of risk and return (Fiennes, 2016, p. 2).

The principal conditions for effective market discipline are summarized in Figure 1.

Figure 1

Conditions for Effective Market Discipline



Note. Adapted from “*Transparency and Market Discipline: Basel Pillar 3,*” by D. Abdullah and D. Vicary, 2007, in S. Archer and R. A. A. Karim (Eds.), *Islamic Finance: The Regulatory Challenge* (p. 372), John Wiley & Sons.

6. Advantages of Market Discipline

Market discipline has several advantages that contribute to strengthening the financial and banking system (Fendri, 2012, pp. 52–53):

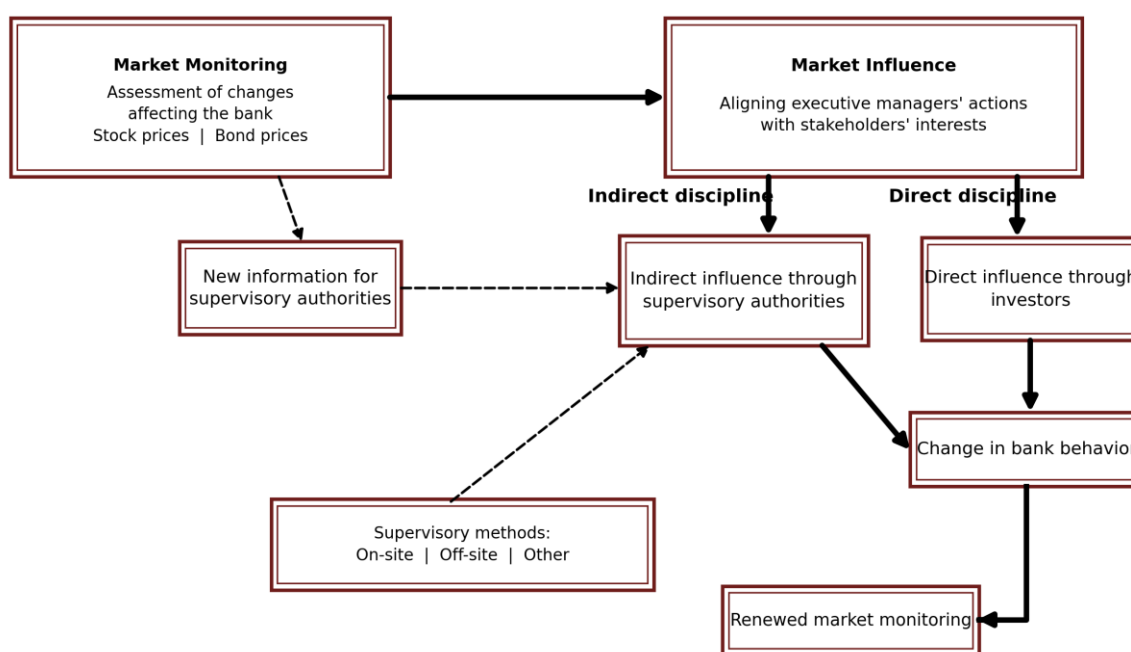
- **Reducing moral hazard.** Moral hazard refers generally to arrangements that encourage financial institutions, including banks, to take risks on the assumption that they will receive the rewards while being protected from potential losses. Bank owners may be inclined to build highly risky loan portfolios, particularly when most deposits are insured. If a bank fails and cannot meet its obligations, its owners may exit the market while the deposit insurer bears the remaining losses. Market discipline can significantly limit such behavior by allowing informed investors to penalize riskier banks through higher required returns or reduced future funding.
- **Improving bank efficiency.** Market discipline is also an effective instrument for improving bank efficiency. Market signals, including subordinated debt yields and prices, certificate-of-deposit yields, and stock prices, can provide daily information about a bank's condition and risk profile. Such information is not necessarily available in annual,

semiannual, or quarterly financial reports. Funding providers can use these signals to exert continuous pressure on relatively weak banks, forcing them either to improve efficiency or eventually exit the banking sector.

- **Reducing the social costs of bank supervision.** If supervisory authorities allow market forces to exercise substantial oversight over banks, market discipline may reduce the social costs associated with bank supervision. Market participants are expected to distinguish between sound and weak banks and act accordingly.

Figure 2

How Market Discipline Operates in the Banking Sector



Note. Adapted from “The Faces of Market Discipline,” by M. J. Flannery, 2001, *Journal of Financial Services Research*, 20(2–3), p. 109.

Section Three: The Complementarity Between Market Discipline and Official Supervision in Enhancing Banking Sector Stability

1. Mechanisms of Indirect Market Discipline

Supervisory authorities may exercise indirect market discipline by using market-generated information. This information allows them to assess banks' conditions and allocate supervisory resources more effectively. Market discipline may also reduce regulatory forbearance. In some cases, supervisory authorities observe a deterioration in a bank's financial condition but deliberately refrain from intervening or penalizing the bank, allowing it an opportunity to recover. This practice may encourage the bank to undertake increasingly risky investments. If those investments succeed, the bank may avoid failure. If they fail, the deposit insurance fund bears the resulting losses, potentially incurring substantial costs. Under effective



market discipline, supervisory authorities cannot disregard a deterioration in a bank's condition. Market signals can trigger prompt corrective action and compel supervisory intervention (Distinguin, 2008, pp. 22–23).

2. Supervisory Uses of Market Information

Supervisory authorities may incorporate market information into early-warning models and use it as a trigger for prompt corrective action (Distinguin, 2008, pp. 27–30).

2.1. Using Market Information in Early-Warning Models

Prudential supervision enables the early detection of banking problems to prevent failure or, at minimum, reduce its cost. Supervisors use various methods based on accounting information, including off-site financial reporting and on-site visits and examinations. These methods provide a detailed picture of a bank's financial condition and risk profile and allow supervisors to verify the accuracy of information reported by the bank. They also provide access to information unavailable to the public, such as loan repayment histories and classifications, thereby enabling prompt corrective measures that address the bank's specific problems.

Because supervisory resources are limited, supervisory authorities cannot closely monitor every bank. Under Park's model, supervisors examine capital ratios and asset portfolios at the beginning of each period and classify banks as safe or risky. They then monitor high-risk banks during that period. A bank may be classified as risky when the share of high-risk assets increases and its capital adequacy ratio declines. Even before risk-based capital requirements were introduced, bank supervision was multidimensional, and banks were classified using several indicators, including CAMEL ratings. A bank's risk classification is therefore a function of both capital adequacy and its portfolio of risky assets. These variables may partly substitute for one another because a risky asset portfolio may be offset by a high capital ratio (Park, 1997, pp. 497–498).

One unobservable component of risk is the variability of returns on a risky asset portfolio. Supervisors may observe the portfolio of risky assets but may be unable to observe the variability of its returns. A bank with highly variable returns on risky assets may increase the share of those assets in its portfolio while increasing capital only slightly. The bank may therefore appear sound even though its risk has increased. If supervisors use only the capital ratio as a classification criterion, some banks may increase risk while continuing to appear financially healthy. Market-generated information can provide complementary signals that help identify such banks and support measures to limit their risk. Incorporating market information into indirect market discipline can therefore improve early-warning systems, identify additional high-risk banks, and confirm the classification of banks already detected as risky.

2.2. Using Market Signals to Implement Prompt Corrective Action

Many countries have established prompt corrective action systems. In 1991, the United States introduced prompt corrective action under the Federal Deposit Insurance Corporation Improvement Act. Corrective measures are implemented when a selected indicator, such as the



capital adequacy ratio, reaches a predetermined critical threshold. Banks are classified into five capital categories: well capitalized, adequately capitalized, undercapitalized, significantly undercapitalized, and critically undercapitalized. Banks that fail to meet capital requirements are subject to measures such as restrictions on expansion, suspension of dividend payments, and mandatory capital restoration. The principal advantage of prompt corrective action is that it compels supervisors to intervene early and limits regulatory forbearance by establishing intervention thresholds (Distinguin, 2008, p. 38).

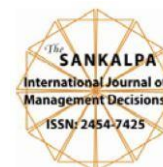
A potential weakness of prompt corrective action is its reliance on capital adequacy ratios calculated at book value using historical cost. A decline in the market value of capital is not reflected in the capital ratio unless the bank recognizes its losses. Market information can therefore serve as an alternative trigger. Stock and debt prices may provide an advantage because market participants have incentives to identify a bank's actual condition and price its securities according to expected future cash flows. Market information may consequently be more effective than capital adequacy ratios in limiting supervisory forbearance. Subordinated debt yield spreads are among the market-risk indicators that have received the greatest attention. Supervisory authorities can use market-generated information to assess banks' actual conditions and risk exposures and then implement prompt corrective measures (Evanoff & Wall, 2001, pp. 3–4).

Conclusion

Rapid changes in financial and banking markets and practices challenge supervisory authorities worldwide to adapt regulatory standards and supervisory practices intended to preserve the soundness and stability of the banking system. Other participants in the banking market must therefore contribute to supervisory oversight. However, market discipline is insufficient on its own and cannot be considered separately from other components of the regulatory system. It should form part of a comprehensive approach that pursues two principal objectives: reducing the probability of bank failure and minimizing the cost of failure when it occurs.

In advanced systems, official authorities are not the only entities that monitor banks. Markets also have incentives to monitor bank behavior, and market-imposed constraints may be as powerful as sanctions imposed by official authorities. Market discipline should therefore complement the official discipline exercised by supervisory authorities. The study yields the following conclusions:

- Market discipline reduces incentives that may generate moral hazard, particularly incentives created by government guarantees that encourage banks to engage in risky activities.
- Market discipline can improve bank efficiency by pressuring relatively inefficient banks to become more efficient or exit the banking sector.



- Market discipline can reduce the social cost of bank supervision by enabling supervisory authorities to use market signals that distinguish sound banks from weak banks, support timely intervention, and guide corrective measures.
- Market discipline complements supervisory authorities in preserving banking system soundness and stability and limiting systemic risks that could destabilize the financial and banking system.

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