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Financial Innovation and Risk Management:
The Cross-Guarantee Solution

by

Bert Ely*

Working Paper No. 141

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INTRODUCTION

"Financial Innovation and Risk Management," the title of the conference session at which this paper is being presented, suggests two separate, yet interconnected issues: financial innovation and the management of financial risk. Financial risk has always been an element of financial systems regardless of the pace of financial innovation. In fact, a principal function of financial intermediaries has always been to manage and even bear financial risks such as credit risk, interest-rate risk, foreign exchange risk, legal risk, operational risk, fraud, and so forth.

Innovation, which often is sparked by new technology, creates two risks that are distinct from the risks cited above. First, financial innovation can accentuate the risks that are always present in financial systems because the technology that unleashes innovation permits financial transactions to be executed faster, less expensively, over greater distances, and in more complex forms. Recent advances in electronic technology (computers and telecommunications), for example, have merely unleashed a much more sophisticated undertaking of traditional financial risks.

Second, innovation heightens regulatory risk, which is the risk that government financial regulation will become inadequate or even counterproductive. Regulation in fact is a business that unfortunately becomes riskier when government becomes the regulator. This increased riskiness develops because government, or in effect the political marketplace, is dominated by the status quo, as evidenced by entrenched interest groups, such as insurance agents, who constantly struggle in the political marketplace to preserve as much of the status quo as they can. Innovation, of course, is the enemy of the status quo. Hence, innovation creates a tension between the way the status quo wants the world to continue to be and the way the world eventually must become; a rapid rate of innovation greatly magnifies that tension. This heightened tension in the regulatory arena creates regulatory risk; that is, the increased likelihood of regulatory error. This paper will argue that electronic technology has heightened regulatory risk within the financial system, thereby worsening regulatory moral hazard and fostering regulatory arbitrage in a manner that can quickly destabilize a financial system.

All is not lost, however, for the cross-guarantee concept for privatizing banking regulation and its attendant deposit insurance risk represents a market-driven regulatory innovation that can match the pace of the technological innovation currently sweeping the financial services world. This concept can do so because it relies upon the commercial

marketplace rather than the political marketplace to control financial risk-taking. Electronic technology is rapidly liberating financial markets from the political marketplace. In effect, the cross-guarantee concept, which is summarized below, will eliminate the regulatory moral hazard that electronic technology has greatly exacerbated in recent years. The paper concludes by outlining the many benefits cross-guarantees will bring to the financial system as well as the structural and international implications of using cross-guarantees to bring market-driven regulation to the financial services sector of the American economy.

THE IMPACT OF ELECTRONIC TECHNOLOGY ON FINANCIAL SERVICES

Electronic technology is revolutionizing the production and delivery of financial services, in large part because electronic technology permits the efficient transformation of legal contracts, the common denominator of all financial services, from paper to electronic bits and bytes. The conversion of a financial services contract, be it a check, charge slip, loan, insurance policy, stock, bond, or whatever, to electronic form dramatically alters the financial services business in two very significant ways.

First, the electronification of financial services dramatically alters the economics of producing and delivering financial services. Specifically, the financial services industry has shifted steadily in recent decades from a business characterized by relatively low fixed investment and relatively high but stable variable unit costs into a business with a substantial initial investment in hardware and software but low and declining variable unit costs. Changes in the economics of any industry force alterations in the structure of that industry -- new types of firms come into existence, existing firms either adapt and grow or shrivel and even disappear. The same types of structural changes are taking place in financial services even though these changes have been frustrated by overregulation and relatively successful efforts by the status quo to preserve the long-standing regulatory compartmentalization of the financial services industry.

Second, the transformation of legal contracts to an electronic form has permitted the unbundling and repackaging of these contracts in a manner undreamed of ten or twenty years ago. Sometimes, this unbundling and repackaging is driven by real economics; in other words, this activity actually reduces the amount of real resources (people, computers, paper, legal services, etc.) that is consumed in producing or delivering a particular financial service. Oftentimes, though, this activity becomes a regulatory arbitrage in that real economic resources are expended to evade or sidestep arbitrary regulatory costs, such as uniform capital standards that penalize low-risk lending. **Figure 1** suggests that many new financial services activities, notably asset securitization, are regulatory arbitrages and not innovations sparked by sound economics.

REGULATORY MORAL HAZARD IN BANKING

Moral hazard in banking is usually associated with deposit insurance. Supposedly, moral hazard exists when insured depositors exercise insufficient vigilance in monitoring the financial condition of their bank or thrift or, alternatively, the managers of an insured institution operate it in a reckless manner because it can easily obtain insured deposits from the public. However, in any banking system in which individual banks are highly regulated by a government agency, the moral hazard lies with the government regulator, whether or not individual institutions have deposit insurance.

Government banking regulators, even in the absence of deposit insurance, are charged with ensuring the safe-and-sound operation of individual banks and thrifts. To that end, government establishes by statute and regulation what it believes constitutes safe-and-sound bank operating practices, such as minimum capital requirements, limits on loans to one borrower, and so forth. Government examiners are then given the right to examine individual institutions at any time to ensure that these institutions are conforming with the appropriate statutes and regulations. To ensure this conformity, examiners have access to extensive non-public data about banks and thrifts, data that are denied to these institutions' stockholders, depositors, other creditors, and rating agencies. In other words, government bank examiners are uniquely positioned to know more about a bank's financial condition than any other outside party. Government banking supervisors, acting on the basis of information government bank examiners uncover, are uniquely empowered to take enforcement actions against banks and thrifts that have violated banking regulations. If an institution has become insolvent, or is approaching insolvency under current Prompt Corrective Action rules, then the government banking supervisors are empowered to take the institution over and to place it in a government-administered receivership. Hence, bank and thrift failures are regulatory failures that occur because regulators do not act quickly or aggressively enough to close a failing institution before it becomes insolvent.

Regulatory moral hazard became painfully evident when Congress and the public began to look increasingly to uninsured depositors and other creditors of insured banks and thrifts to signal, by running from a troubled institution, that the regulators had failed to catch its problems in a timely manner. In fact, the entire notion of depositor discipline for highly regulated banks and thrifts is premised on the belief that private sector parties equipped only with sketchy and untimely information should sound the alarm when government regulators have fallen asleep on the job. Not surprisingly, this reliance on uninsured depositors and other creditors as a back-up source of banking discipline fosters regulatory moral hazard because this reliance effectively tolerates regulatory ineptitude. If government regulation worked properly, there would be no need for depositor discipline.

Instead of looking to uninsured depositors to blow the whistle on inattentive or incompetent regulators, the political process should be much more demanding of those who have been given unique access to extensive non-public information about the condition of individual banks and thrifts. In particular, those who have been given this regulatory opportunity, and have assumed the corresponding regulatory responsibility, should pay for their own regulatory failings rather than attempting to pass insolvency losses to healthier banks, in the form of excessively high deposit insurance premiums, and to uninsured depositors and other creditors, in the form of outright losses. In effect, if government wants to be in the bank regulatory business, it should provide a warranty, in the form of complete loss protection, to those whom banking regulation supposedly protects.

ELECTRONIC TECHNOLOGY IS DESTROYING THE OLD REGULATORY ORDER

The regulatory scheme described in the preceding section constitutes the old regulatory order. Essentially, governments try to prevent the failure of individual banks and thrifts through regulatory micromanagement. Governments have also relied upon comparable regulatory micromanagement schemes to prevent the failure of insurance companies, broker/dealers of securities, trust companies, and other fiduciaries. The electronic technology described above, however, is destroying the old regulatory order because this technology is making it easier and cheaper for financial entrepreneurs to sidestep the regulatory micromanagement that has been imposed on the older types of financial services firms, specifically banks and insurance companies. As **Figure 2** shows, depository institutions in particular (band 1 in **Figure 2**) have lost substantial market share in recent decades, in terms of assets held on-balance-sheet, to newer and less regulated forms of financial intermediation, such as money market mutual funds, the commercial paper market, asset securitization, pension funds, and mutual funds. Much of this shift in market share is the result of regulatory arbitrage. In effect, the financial markets are taking away business from government regulators.

Many contend that the emergence of new forms of financial intermediation has made the financial markets more efficient. However, as **Figure 3** suggests, the relative productivity of the financial services sector of the economy has declined since the end of World War II. Today, it takes almost twice the percentage of the work force to finance and insure the economy's output and assets as it did in 1947. Consequently, the percentage of the GDP originating in banking, finance, and insurance has more than doubled since the end of the war. In effect, the financial overhead of running the American economy has increased relative to its total output. That is hardly a sign of greater efficiency.

Worse, the shift of financial intermediation away from the highly regulated to the less regulated, due to regulatory arbitrage, has increased the potential instability of the American financial system. Recent congressional efforts to squeeze risk out of federally insured banks and thrifts, notably through the FDIC Improvement Act of 1991, have merely shifted that risk elsewhere in the financial system. Contrary to the hopes of many, financial intermediation risks squeezed out of banks and thrifts do not simply disappear into the ether, for as every child learns, when you squeeze an inflated balloon, it merely bulges elsewhere; where it bulges is where it will burst. Not surprisingly, then, numerous financial disturbances over the last fourteen months have occurred outside the American banking system.

As the right side of **Figure 4** illustrates, the Federal Reserve is the lender of last resort to the entire financial system. In a serious financial disturbance, when substantial declines in asset values occur, the Fed, in an effort to maintain financial stability and to preserve asset values, may not recover all of the money that it lends to illiquid and possibly insolvent financial intermediaries. However, Congress has not established a mechanism for charging successful non-banking firms, in a manner comparable to federal deposit insurance (left side of **Figure 4**), for any losses the Fed might incur in lending to an insolvent non-banking firm, such as a money market mutual fund. Instead, as the right side of **Figure 4** illustrates, taxpayers will suffer that loss. In effect, regulatory arbitrage's shift of financial risk away from federally insured banks and thrifts has actually increased the taxpayer risk posed by the American financial system.

If Congress attempts to reduce the potential for systemic risk outside of the banking system through new forms of regulatory micromanagement, such as the regulation of derivatives, financial entrepreneurs will use the ever increasing power of electronic technology to devise new forms of regulatory arbitrage. Most likely, an extension of regulatory micromanagement to the currently less regulated types of financial intermediaries will trigger a shift of more and more financial risk-taking to locales outside the United States. These locales lie beyond Congressional reach, yet offshore systemic disturbances could easily ricochet back into the United States. The Barings collapse in February almost provided a real live example where problems in one financial center can have worldwide repercussions.

CROSS-GUARANTEES: A NEW REGULATORY TECHNOLOGY

The time has come to recognize that the banking system needs a new form of banking regulation that can readily cope with the changes wrought by electronic technology. This new regulatory technology must meet several criteria:

- It must be able to respond quickly to the changes in the economics and structure of financial services that are being driven by electronic technology.
- It must eliminate regulatory moral hazard.
- It must minimize regulatory arbitrage.
- It must eliminate taxpayer risk caused by banking failures and systemic instability.
- It must produce a more efficient banking system.

The cross-guarantee concept for privatizing banking regulation and its attendant deposit insurance risk easily meets all of these criteria. This concept has been transformed into a 213-page bill, H.R. 5227, that would enact cross-guarantees into law. Rep. Tom Petri (R-WI), who introduced this bill in October 1994, will introduce a nearly identical version of it in mid-1995.

Briefly, the Petri bill will create a cross-guarantee marketplace where banks and thrifts individually will seek a "cross-guarantee" contract that will protect all of the institution's deposits, non-deposit funding, counterparty risks, and balances owed to clearing houses and payments systems. A bank or thrift will enter into this contract with a voluntary syndicate of direct guarantors (largely other banks and thrifts) who will be assembled, much like a stock or bond underwriting syndicate, to assume the risks imposed by the contract. In effect, the cross-guarantee contract will unbundle the liability side of a bank or thrift's balance sheet. This unbundling will shift to the institution's direct guarantors the "residual insolvency risk" that is now borne by the creditors who will become guaranteed under the institution's cross-guarantee contract. Residual insolvency risk is the risk that losses in the bank or thrift, should it fail, will exceed its stockholders' equity, thus causing losses to its creditors. Hence, the guaranteed institution's on-balance-sheet equity capital will serve as an insurance deductible for cross-guarantee purposes. The right side of **Figure 5** illustrates how this risk-shifting will occur.

In a sense, then, the cross-guarantee concept is comparable to asset securitization, except that cross-guarantees represent liability securitization; that is, the cross-guarantee contract will fully secure or protect against loss all of the guaranteed institution's funding and most of its other liabilities.

Since the risk of loss to direct guarantors will be fairly low under most economic conditions, they will not have to separately capitalize their cross-guarantee risk exposures. Instead, they will treat their cross-guarantee risk exposures as a contingent

liability, or in effect as a contingent claim on their own equity capital. In fact, one of the many strengths of the cross-guarantee system is that it does not require that the cross-guarantee risk be borne by separately capitalized entities comparable to the FDIC's Bank Insurance Fund (BIF) or Savings Association Insurance Fund (SAIF). As Congress learned to its sorrow in the S&L crisis, separately capitalized insurance funds inevitably lack the financial resources to deal with a crisis. **Figure 6** contrasts the enormous loss-absorbing capacity of the cross-guarantee system with the limited ability of a separately capitalized insurer to absorb a catastrophic loss. Also, the absence of a separate fund means that direct guarantors will be writing checks to pay for their losses as guarantors as those losses are being incurred, which will keep direct guarantors focused on the risks they have assumed as guarantors.

There is, of course, no free lunch, particularly when it comes to markets, such as the cross-guarantee market that the Petri bill will create. Direct guarantors will be enticed to be guarantors by the opportunity to earn, in expectation of a profit, a risk-sensitive premium that effectively will be negotiated between the guaranteed institution and its syndicate of direct guarantors. Negotiated premiums for cross-guarantee contracts will introduce market-driven pricing into the deposit insurance business, something that will never be possible as long as deposit insurance is a government monopoly. The low level of guarantor losses will hold premium rates to just a few basis points per dollar of protected liabilities, even for the smallest banks.

In addition, the contract will specify the safe-and-sound operating practices to which the guaranteed institution will agree to adhere to during the term of its contract, which the Petri bill limits to a maximum length of five years. Hence, banks and thrifts will be able to negotiate safe operating practices that will reflect the business strategy they have elected. The ability of banks and thrifts to negotiate these standards will effectively eliminate regulatory arbitrage while permitting these institutions to adapt much more quickly than is possible today to the ongoing impact of electronic technology on the economics and therefore the structure of financial services. The operational improvements that can be achieved through negotiated safety-and-soundness standards incorporated in cross-guarantee contracts will greatly enhance the efficiency of banks and thrifts. Also, the superb credit enhancement that cross-guarantees will provide to guaranteed banks and thrifts will enable these institutions to profitably fund even the lowest risk credits available in the marketplace, which in turn will enable banks and thrifts to recapture much of the asset market share they have lost to the financial system's regulatory arbitragers.

Because safety and soundness concerns will become the sole province of cross-guarantee contracts, the Petri bill exempts guaranteed banks and thrifts from all federal safety-and-soundness statutes and regulations, including the Basel risk-based capital requirements. While "one-size-must-fit-all" government regulation creates the

herd effect so often seen in banking, negotiated cross-guarantee contracts will largely, if not completely, eliminate this herd effect because guaranteed banks and thrifts will seek to differentiate themselves from their competitors, not mimic them, which is what government regulatory micromanagement promotes.

So that direct guarantors can monitor the compliance of a guaranteed institution with its cross-guarantee contract, the Petri bill authorizes private-sector firms, called syndicate agents, to perform this monitoring task or in effect to act as a delegated monitor on behalf of the institution's direct guarantors. Syndicate agent firms, which do not exist today, will combine elements of investment banking, public accounting, and insurance brokerage. Each cross-guarantee contract will designate one firm to serve as the syndicate agent under that contract. This firm, in turn, will have ongoing, direct access to non-public information about the guaranteed institution. Syndicate agents will completely replace all government bank and thrift examination and supervision activities. In effect, the cross-guarantee concept completely rejects the notion of depositor discipline as a backstop to government regulation and instead imposes the entire disciplining burden on direct guarantors and their syndicate agents. **Figure 7** illustrates the parties to a cross-guarantee contract.

Replacing government regulators with syndicate agents will eliminate the regulatory moral hazard discussed above since a syndicate agent will quickly go out of business if its poor performance causes losses for the direct guarantors under the contracts for which that firm had served as the syndicate agent. Unfortunately, government regulators are not faced with job or financial losses or a loss of professional reputation if they fail to prevent bank and thrift failures. In fact, FIRREA, the S&L cleanup legislation Congress enacted in 1989, effectively gave bank and thrift regulators huge raises in the aftermath of an enormous regulatory failure.

The Petri cross-guarantee bill may appear to represent a massive deregulation of America's banks and thrifts, but it is not. Instead, the bill shifts the regulation of individual banks and thrifts from the political marketplace to the much stronger, more efficient, and more responsible commercial marketplace. The Petri bill actually bars the federal government from attempting to prevent the failure of individual banks and thrifts since that will be the job of the cross-guarantee marketplace. However, the Petri bill does contain numerous interconnected risk-dispersion rules and other safeguards designed solely to ensure, far more effectively than government regulatory micromanagement ever can, that depositors and taxpayers will not suffer any losses from failed banks and thrifts, even in conditions worse than the Great Depression. Bank and thrift insolvency losses will be totally absorbed within the cross-guarantee system. In fact, the private-sector "solvency safety net" the cross-guarantee legislation will construct under the entire banking system will be far stronger financially than our increasingly indebted federal government. The system's safeguards will be enforced by a small new agency called the

Cross-Guarantee Regulation Corporation (CGRC). However, the CGRC will have no regulatory authority over guaranteed banks and thrifts beyond that which it will need to enforce the Petri bill's systemic safeguards. Likewise, the CGRC will not be able to examine guaranteed institutions. That responsibility will lie entirely with the agent for those directly at risk if a guaranteed institution fails, the institution's guarantors.

The strength of the cross-guarantee system, coupled with its unconditional guarantee of almost all bank and thrift liabilities, will effectively eliminate runs on banks and thrifts, and the systemic instability that runs can cause. Consequently, the Federal Reserve will no longer have to serve as a lender of last resort to the banking system. **Figure 8** contrasts the philosophy of the present government regulatory scheme (left side of the figure) with the cross-guarantee concept (right side of the figure).

THE MANY BENEFITS CROSS-GUARANTEES WILL DELIVER

Cross-guarantees will deliver many benefits to the financial system and to the American economy. These benefits include the following:

- The banking system will operate much more efficiently and safely, and with essentially no risk to taxpayers.
- By protecting all deposits, the cross-guarantee system will end the too-big-to-fail discrimination against banks "too-small-to-save" that exists under the present system of federal deposit insurance.
- The forward-looking, risk-sensitive pricing of cross-guarantee contracts will foster much more accurate interest pricing for loans and securities, which in turn will curtail the growth of speculative bubbles whose subsequent bursting causes much economic pain and accounts for most bank insolvency losses.
- The improved loan and securities interest pricing that will occur in a world of cross-guarantees will lessen the perceived need for monetary policy, which more often than not hurts rather than enhances the performance of the American economy.
- Due to the strength of the cross-guarantee system's solvency safety net, Congress will feel much more comfortable than it is today to grant additional powers to banks, thrifts, and their subsidiaries. Banks and thrifts in turn will gain the structural flexibility they increasingly need to adapt to changing technology and marketplace conditions.

- Guaranteed banks and thrifts, utilizing the much greater operational freedom they will enjoy, will be able to much more effectively and efficiently serve low and moderate-income communities than can be achieved under the compulsion of the Community Reinvestment Act.
- With just minor changes in the Petri bill, the cross-guarantee system can be extended to apply to any type of financial intermediary, thus enhancing the efficiency and safety of the entire financial system. This extension of cross-guarantees will further reduce regulatory arbitrage within the financial system.
- Because the cross-guarantee concept will work in any market economy in which there is sufficiently reliable contract enforcement, competitive pressures will force other industrialized nations to enact comparable cross-guarantee legislation once the Petri bill is enacted. The spread of cross-guarantees throughout the industrialized world will improve the economic performance of these nations and indirectly help the economies of the lesser developed nations that currently lack the legal systems that a cross-guarantee system needs in order to flourish.

CONCLUSION

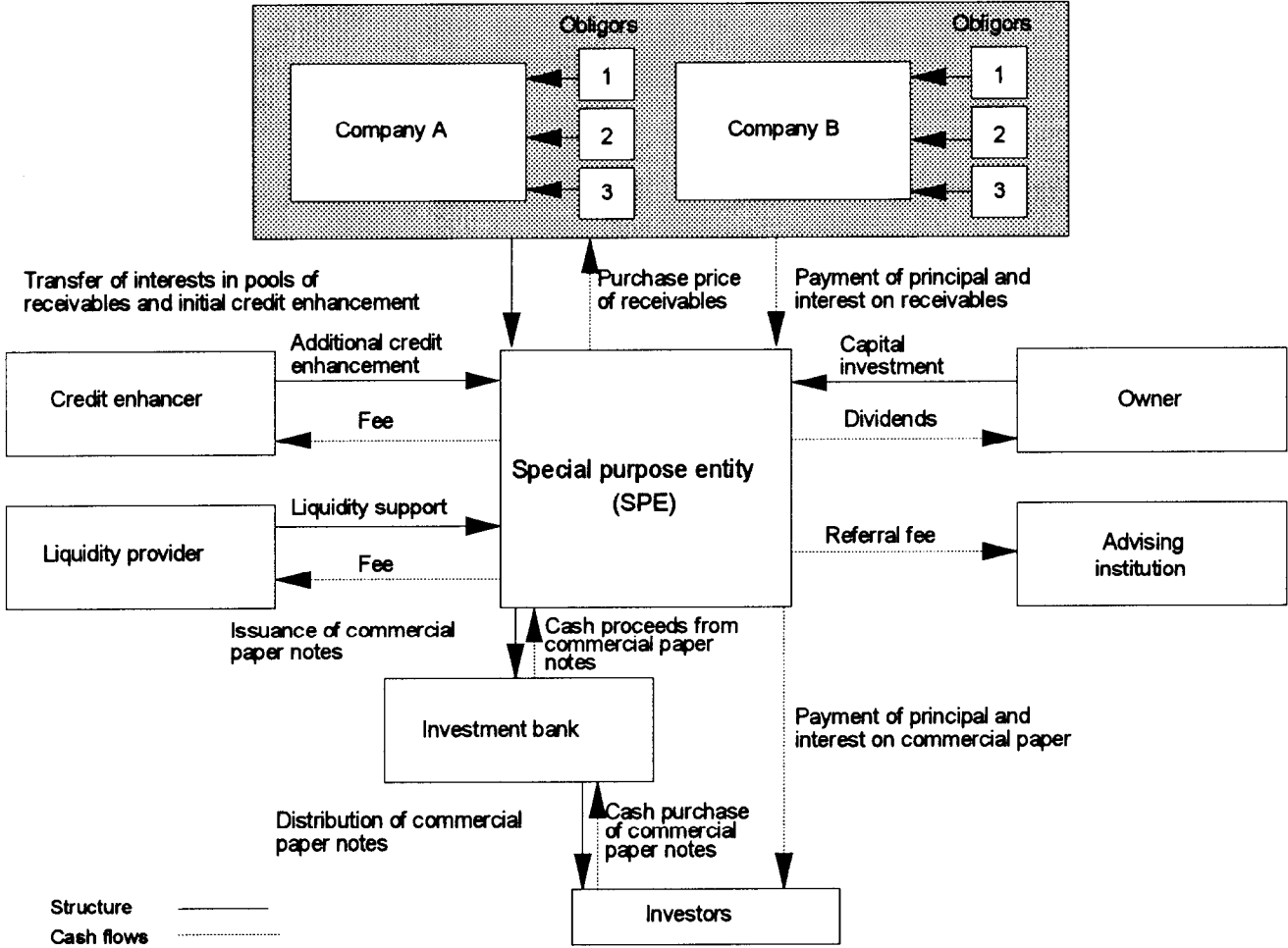
Banking regulation ultimately is about power, specifically power over the money flowing through the banking system. In a slowly changing and highly compartmentalized financial world, the political marketplace was able to capture and maintain substantial power over the financial marketplace, which until recently was dominated by depository institutions, specifically banks and thrifts. However, electronic technology is rapidly destroying the ability of the political marketplace to maintain its control over the financial marketplace. Power over finance is irreversibly shifting to the much more efficient and democratic commercial marketplace. However, this shift is increasing regulatory risk within the financial system, specifically the regulatory moral hazard that has always accompanied government regulatory micromanagement of individual depository institutions.

The cross-guarantee concept not only provides a sound escape from the imbroglio of government banking regulation, but it will deliver benefits far beyond the banking system. Cross-guarantees will bring pain to some, specifically to those who profit from the inefficiency and instability fostered by government banking regulation. But the American electorate should willingly treat that pain as a small price to pay for transforming American banking into a system properly geared for the next millennium.

Which Represents More Efficient Funds Intermediation?

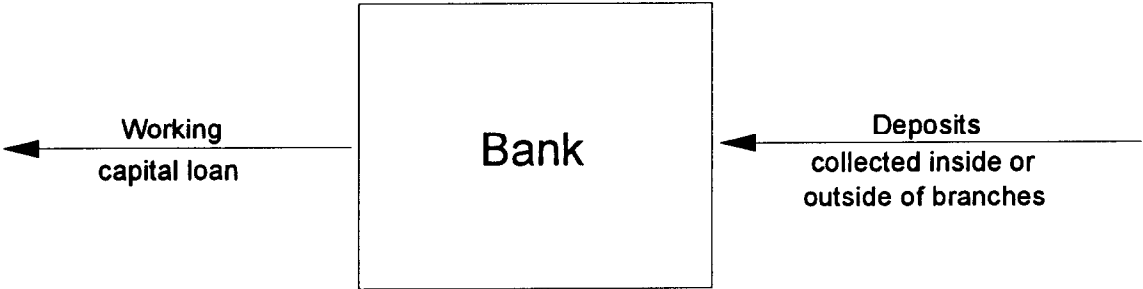
This?

An asset-backed commercial paper program: structure and cash flows



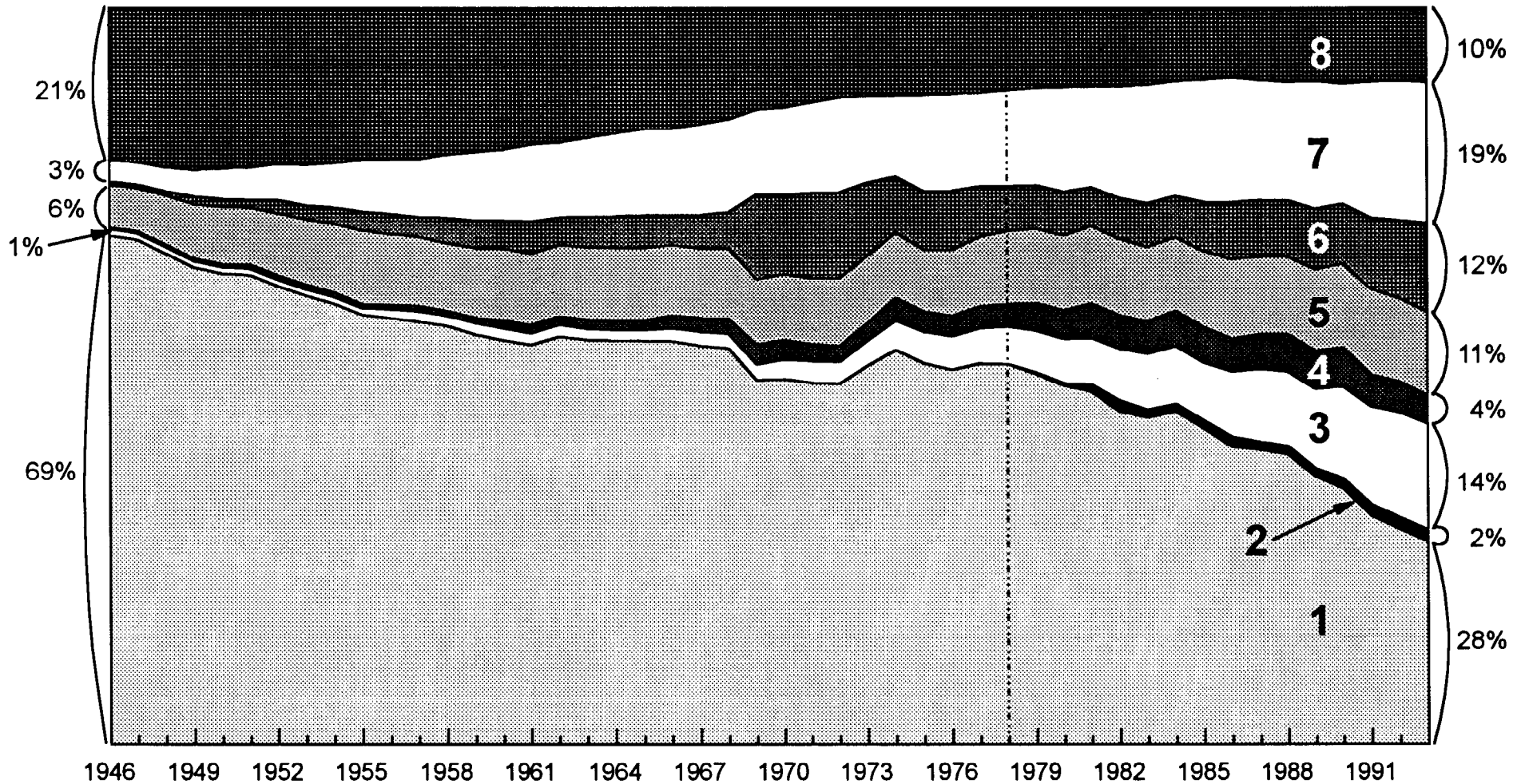
Source: Federal Reserve Bulletin, February 1992, page 111.

Or This?



Financial Intermediation in the U.S.

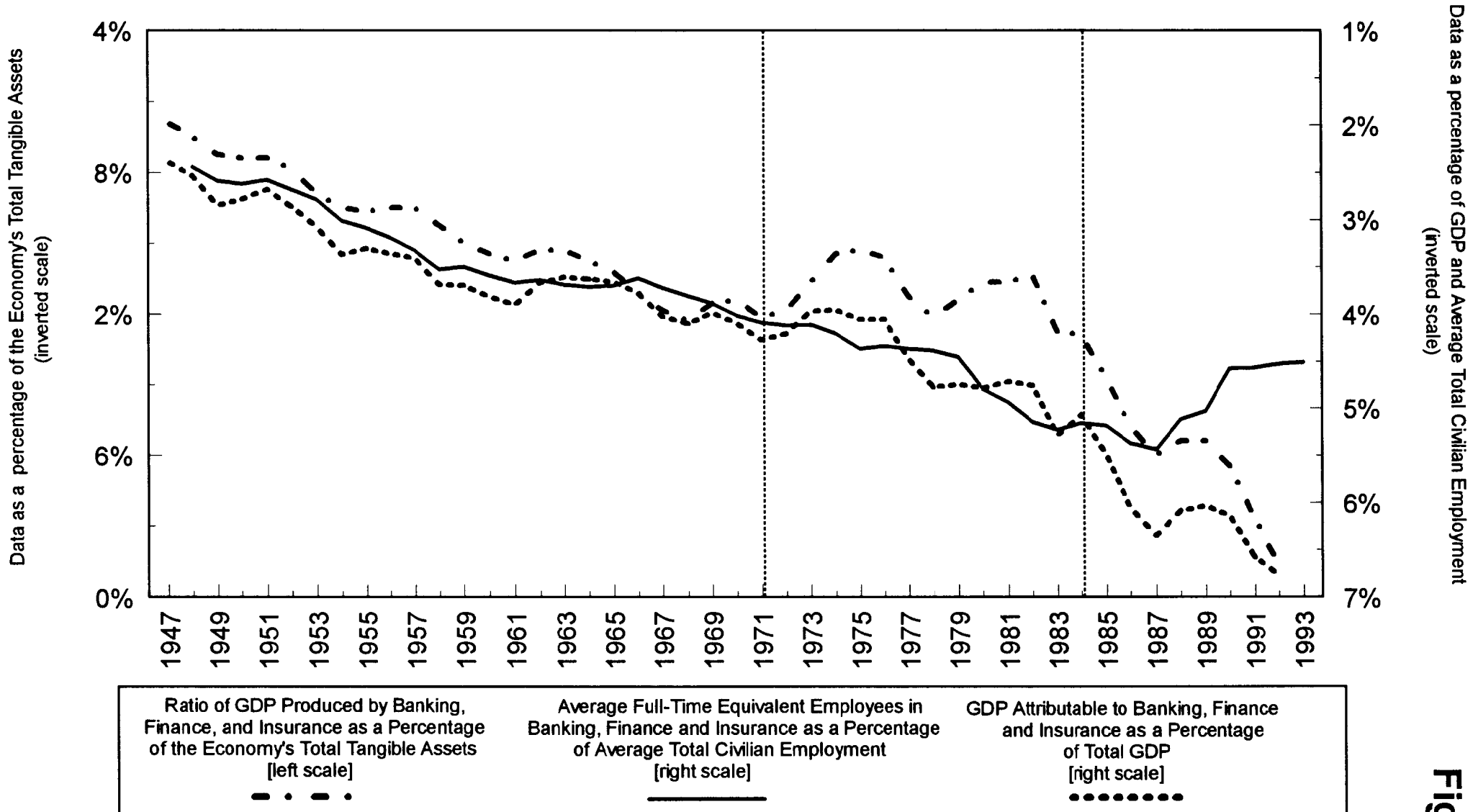
Market Share of Financial Assets, Net of Reintermediation (Year-End 1946-1993)



- 1. Depository Inst.
- 2. Money Market Funds
- 3. GSEs, Mortgage Pools & Asset-Backed Securities
- 4. Open Market Paper (primarily Commercial Paper)
- 5. Broker/Dlrs, Fin. Cos, Other Ins. & Mortgage Cos.
- 6. Mutual Funds, Closed-End Funds, REITs & Bank Personal Trusts (data since 1969)
- 7. Retirement & Pension Funds
- 8. Life Insurance Companies

Sources: Post-1951 data obtained from the Federal Reserve's Flow of Funds Accounts (unadjusted levels) dated 6/14/94. Data for prior years obtained from earlier Flow of Funds Reports.

The Relative Productivity of Financial Intermediation Has Declined by More Than Half Since World War II

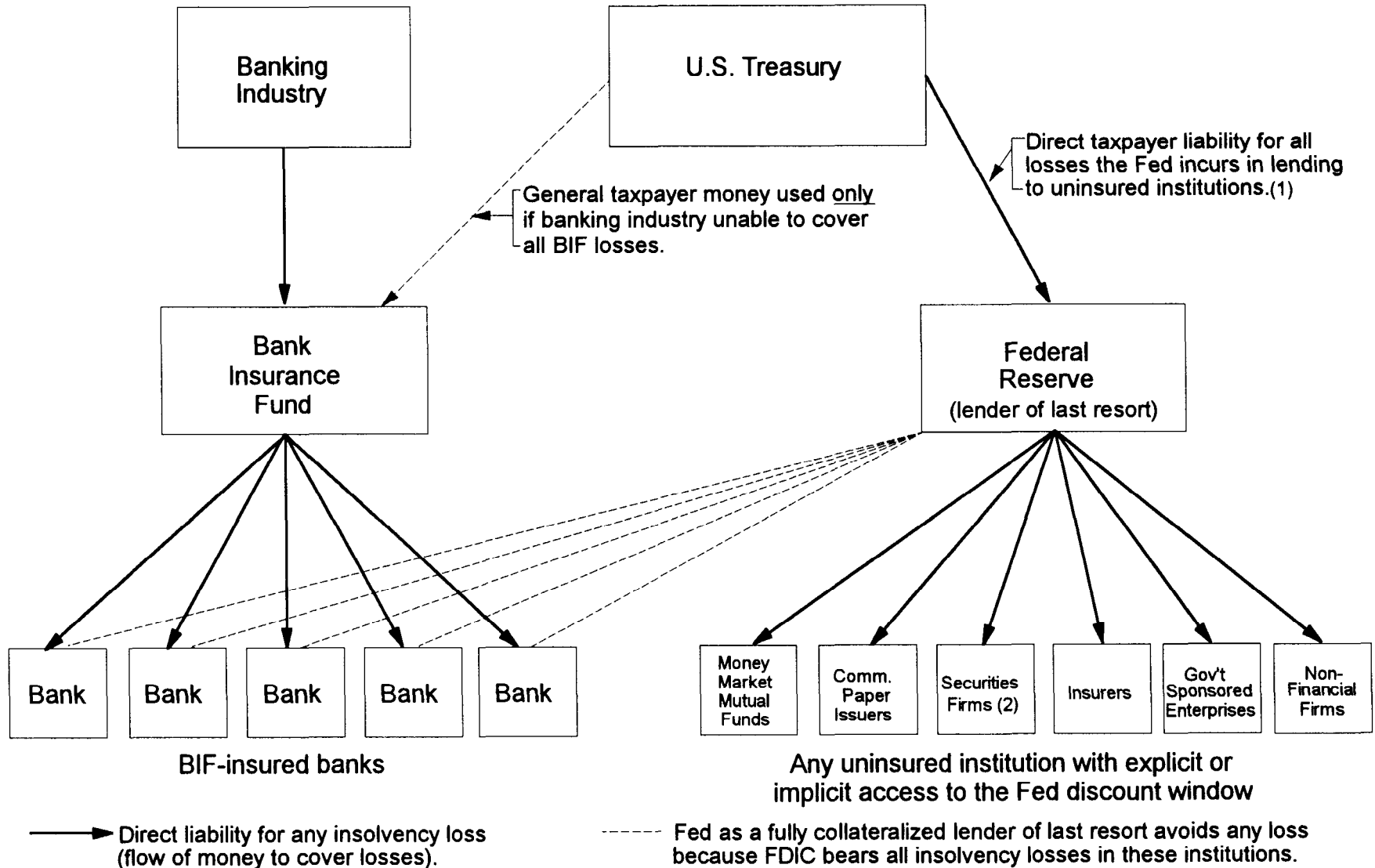


Sources: Bureau of Economic Analysis, Survey of Current Business; Economic Indicators; and the Federal Reserve's Flow of Funds reports.

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Figure 3

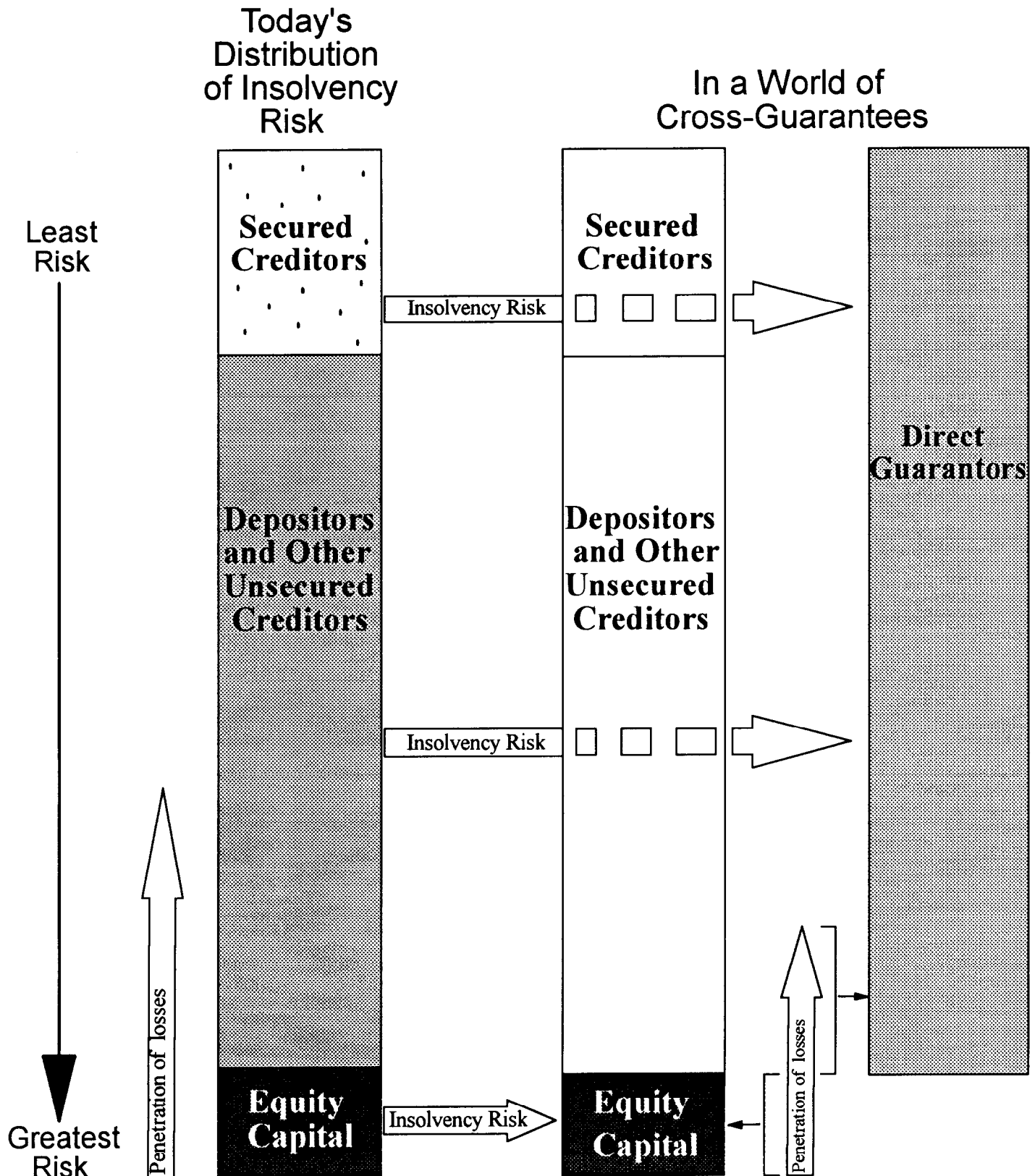
Present Structure of the Federal Safety Net



(1) The Emergency Liquidation provision of FDICIA (Section 473) made direct access to the Fed discount window by non-depository institutions more explicit.

(2) Customer balances in broker/dealer subsidiaries of securities firms are protected against the insolvency of the broker/dealer by the Securities Investor Protection Corporation, up to specified limits.

The Cross-Guarantee System Shifts All Creditors' Insolvency Risk in a Bank or Thrift to an Independent Set of Guarantors



Guarantors That Pledge Capital to the Cross-Guarantee System While Keeping That Capital Employed Elsewhere Will Provide Far More Capital Backing For A Depositor Protection System Than Can A Separately Capitalized Insurance Entity

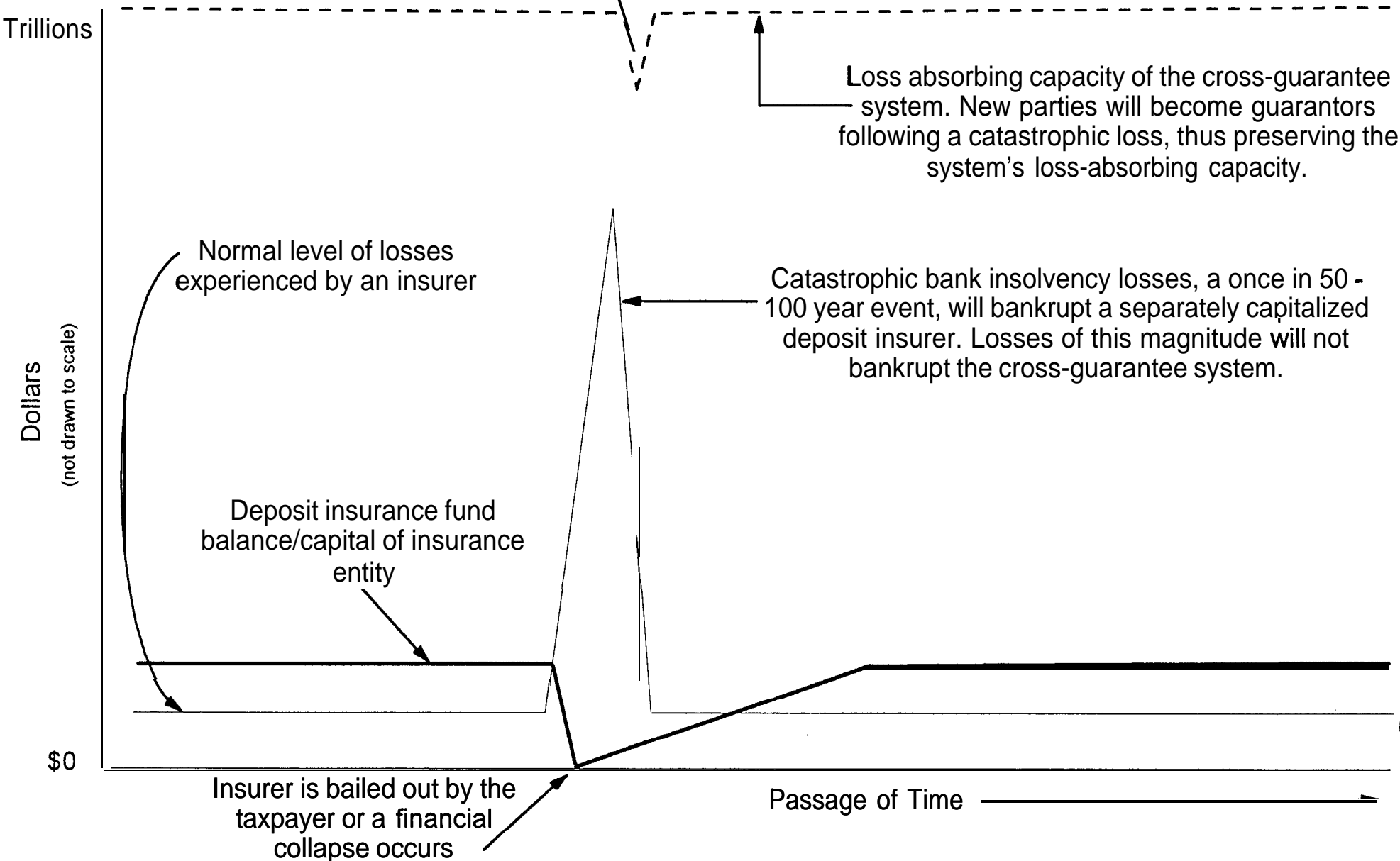


Figure 6

The Parties to a 100% Cross-Guarantee Contract

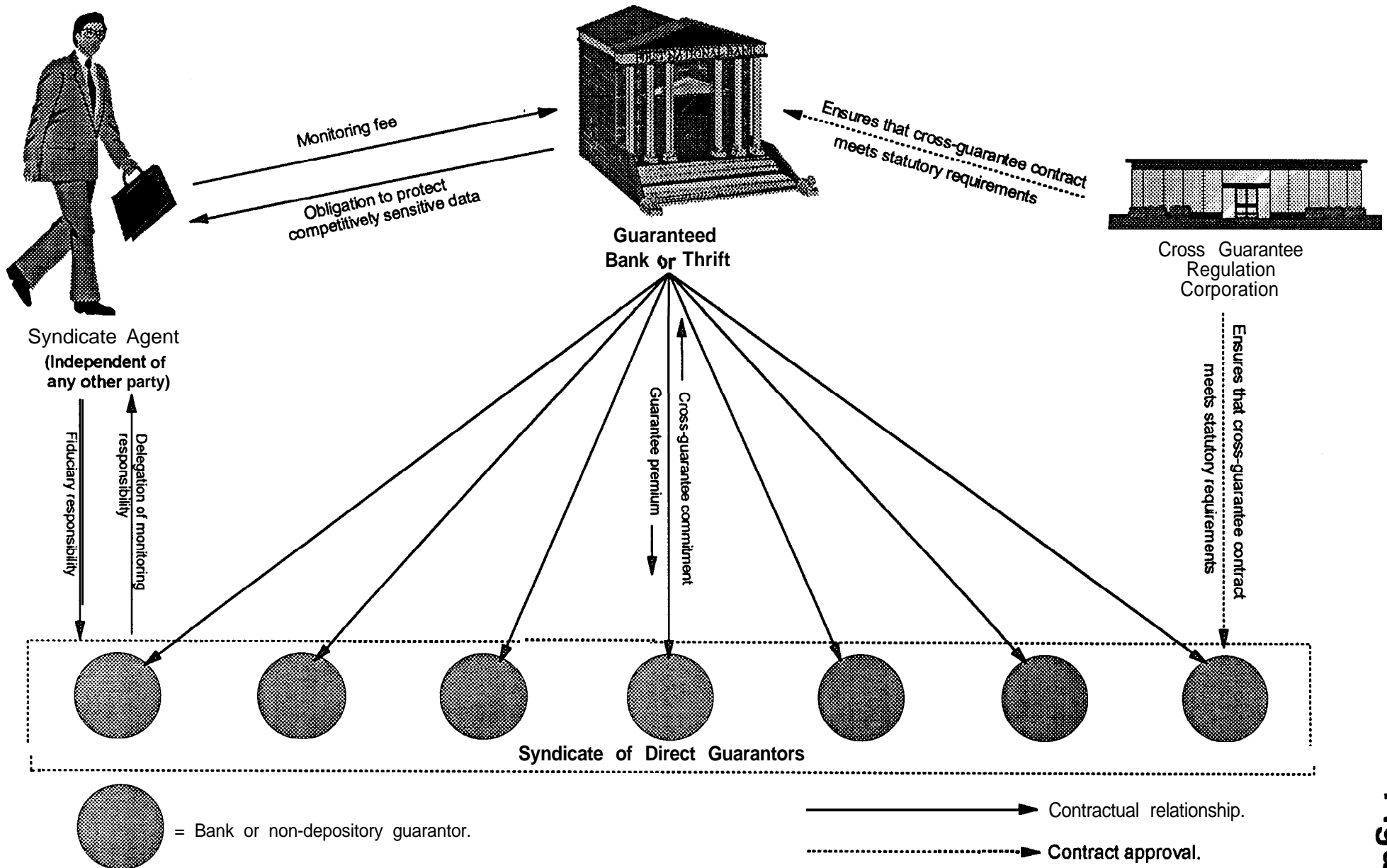


Figure 7

The Focus of Regulatory Concerns Will Shift Dramatically Under the Cross-Guarantee System

The Present Regulatory System Tries to Preserve Systemic Stability by Preventing the Failure of Individual Institutions

In a World of Cross-Guarantees, Regulatory Concern Will Focus Only on Preserving Systemic Stability

