

The Future of Banking Regulation in Developed Countries: Lessons from and for Europe

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If the bank regulatory structure in developed countries, particularly those in the EU (as well as the US), were not changed, considerable private and social costs could be incurred. We first outline the current EU regulatory framework and describe and analyze recent bank crises and failures. Based on this record and on the (beneficial for consumers) changes in EU banking regulation, on new data on bank capital/asset ratios in ten European countries, and on an analysis of market and technological changes, we conclude that the present regulatory structure is unlikely to achieve banking stability in the future. We then propose and describe a regulatory framework that can deal effectively with this situation and show how it would affect EU banks.

I. INTRODUCTION

The problems that have and might yet beset banks in the European Union (EU) should be of considerable interest to Americans as well as to Europeans. Unlike the United States (US), until 1999, EU banks have been permitted to branch without limit in their countries and, since 1993, the Second Banking Directive permits inter-country branching and cross-border provision of financial services. Moreover, the Second Banking Directive permits EU banks to undertake any financial service directly (e.g., securities underwriting and insurance) and to invest in and be owned by commercial companies. Thus, the EU countries have set their financial institutions on the road to total product, service, and geographic deregulation, well beyond the situation in the United States. However, within the EU there has been and still is considerable diversity, even after implementation of the Second Banking Directive. Although competition no longer is restricted legally, entry by banks from other EU countries has been limited by inertia, reinforced by differences in language and custom. Nevertheless, change is occurring, as the European Union becomes an increasingly integrated, liberalized financial market that is likely to be a model for the evolving banking regulatory structure in developed countries. The enlargement

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of the EU in 2004 with the Central and Eastern European countries and the introduction during 1999–2002 of the Economic and Monetary Union (EMU) with a common currency, the euro, will enhance this process further. Thus, the experience and prospects of EU banks should be of considerable interest to bankers, regulators, and citizens in the US and other developed countries.¹

In section II we outline the current EU regulatory framework. In section III we describe and analyze the European banking crises and disasters of the late 1980s and early 1990s, especially those in the Nordic countries of Norway, Sweden, and Finland. In section IV we present a new empirical data set on the evolution of bank capital ratios in 10 European countries. We analyze in section V why the EU evolving regulatory framework is unlikely to achieve banking stability in the future. Consequently, in section VI we propose and describe a regulatory scheme that could be readily adopted and efficiently administered and show, if adopted, how it would affect a sample of publicly traded EU banks. Section VII summarizes and concludes the paper.

II. EUROPE'S SINGLE BANKING MARKET

HISTORICAL BACKGROUND

On March 25, 1957 six countries (Belgium, France, Germany, Italy, Luxembourg, and the Netherlands) signed the treaty for the establishment of the European Economic Community (EEC). This treaty, which came to be known as the Treaty of Rome, came into force on January 1, 1958. The European Community, which was renamed European Union (EU) in the 1992 Maastricht Treaty, currently has 25 member states, including the 10 countries (primarily Central and Eastern European countries) which became EU members on May 1, 2004.

One of the objectives of the EEC Treaty was the establishment of a common market, which is characterized by the free movement of goods, employees, capital, and services and freedom of establishment. The Treaty provided that the common market would gradually be realized over a transitional period of 12 years and be completed by December 31, 1969. This target date was not met. In the 1970s no substantial progress was made due to a recession. It was not until the mid-1980s that the European integration process acquired new momentum. “Completing the Internal Market,” the title of the White Paper discussed by the European government leaders during their meeting of June 1985 in Milan, set the date of completion of the internal (i.e., common) market as December 31, 1992 (“Europe 1992”).

¹ For an analysis of the problems faced by banks and banking authorities in *developing* and *underdeveloped* countries, see Bery and García (1997), Goldstein (1997), Rojas-Suárez and Weisbrod (1995a and 1995b), *The Economist* (1997), and Bank for International Settlements (2002, chapter III).

THE INTERNAL BANKING MARKET: FREEDOMS AND PRINCIPLES

The internal market in the field of banking is to be achieved by means of three freedoms: capital movements, establishment, and provision of services. The first calls for the removal of all obstacles to capital movements among residents of the EU member states. Freedom of establishment allows the opening of a bank office in another member state. Freedom of provision of services entitles banks to offer banking services in another member state without having a physical presence in that state.

Liberalization of the movement of capital was addressed in an initial directive, adopted in 1960, several additional directives, and in a final directive, adopted in 1988. The 1988 directive stipulated that freedom of capital movements should, in principle, exist by July 1, 1990. Only Greece, Ireland, Spain, Portugal could apply derogation provisions until January 1, 1993. This deadline was extended to January 1, 1994, which was the start of the second phase of the Economic and Monetary Union (EMU), as implied by the Maastricht Treaty of February 1992. Since the beginning of 1994, there has been complete freedom of capital movements among all EU states.

Freedom of establishment and freedom of provision of services were facilitated by the 1989 Second Banking Directive (see below for a brief overview²). This both removes many national restrictions and coordinates some of the basic prudential regulations with which banks have to comply. An important aspect of this liberalization and coordination process is that it is based upon three principles, first introduced in the 1985 White Paper, on how to set up the regulatory structure. These principles are: partial or minimum harmonization, mutual recognition, and home country control. Partial or minimum harmonization implies a harmonization of only essential standards. These have been included in the national banking laws of the EU member states. Since all national banking laws now embody these essential standards, they can be recognized as equal to each other, which is the principle of mutual recognition. The harmonized essential standards and mutual recognition facilitate the application of the third principle: home country control and supervision by the member state in which the bank is based.

THE SECOND BANKING DIRECTIVE

The Second Banking Directive for universal banks (called “credit institutions” in the directive) forms the cornerstone of all directives for the business of these institutions in the context of the achievement of the single (or internal) banking market. All EU countries have now implemented the directive, adopted by the EU Council of Ministers in December 1989. At the heart of the directive is the requirement of a single license along with an agreed list of banking activities covered by this license.

² For a detailed overview, see Benink (1993) and Zimmerman (1995).

The single license implies that once an institution has obtained a banking license in one of the EU member states (the so-called “home country”), it can operate freely in all of the other member states (the so-called “host countries”), both through establishment of a local bank office and cross-border provision of banking services. The consequence of this free interstate branching and provision of services is that a host member state may no longer require authorization for these banks to operate in its banking market. Banks’ home states are responsible for their authorization and supervision.

The agreed list of banking activities is subject to the principle of mutual recognition, which implies that a host country must also allow non-domestic EU banks free access to its market. The list covers all major commercial and investment banking activities, implicating the endorsement of universal banking. Consequently, apart from traditional commercial banking activities, credit institutions can engage in all forms of transactions in securities, including transactions for their own account or for the account of customers in all types of security (short-term and long-term), participation in share issues and the provision of services related to such issues, and portfolio management and advice. (Banks may own insurance companies, as described below.)

Supervision by the home country and the application of the principle of mutual recognition are enabled by a harmonization of minimum supervisory standards. The Second Banking Directive harmonizes supervisory requirements related to sound administrative and accounting procedures, the initial capital necessary for authorization and the execution of activities, and the supervision of holdings of banks in sectors outside the banking business.

The directive introduces two limits on banks’ holdings in non-banking institutions. First, a credit institution may not have a qualifying holding (one with at least 10% of the outstanding shares or voting rights in an individual non-bank) exceeding 15% of its equity. Second, the amount of all such holdings may not exceed 60% of a credit institution’s equity. However, the member states need not (and, presently, do not) apply these limits to holdings in insurance companies, which enables banks to have insurance subsidiaries and to operate as a bank-insurer (the so-called concept of “bancassurance”).

Natural persons or legal entities considering the acquisition of or increase in a qualifying holding in a credit institution must notify the competent authorities of this intention beforehand. Notification must be made when the voting rights or shares held would exceed each of four thresholds: 10%, 20%, 33%, or 50%. This provision enables the supervisory authorities to review the structures of undertakings and, where appropriate, to reject them on account of the presumed adverse impact on sound and prudent management of banking activities. Thus, subject to the banking supervisors’ approval, commercial companies can own banks.

The Second Banking Directive forms the cornerstone of all directives for the business of credit institutions in the context achieving a single EU banking market. It is supplemented by a large group of coordinating directives in the

fields of consolidated supervision, annual accounts, large exposures, deposit-guarantee schemes, consumer credit, and capital-adequacy requirements.³ Moreover, the Financial Services Action Plan (1999–2005) gave additional and critical impetus to the integration process.

III. RECENT BANKING PROBLEMS IN EUROPE

Banking crises happen every now and then. Since the middle of the 1980s we have witnessed serious banking problems in Europe in France, Italy, and the United Kingdom, and full-blown crises in Norway, Sweden, and Finland. In France and Italy the cases of *Crédit Lyonnais* and *Banco di Napoli* stand out, while in the United Kingdom the losses of *BCCI* and the downfall of *Barings Bank* in 1995 have drawn a lot of attention. The Scandinavian banking crisis of the early 1990s is not as well known as the French, Italian and British cases, but was much more severe in terms of impact and almost caused a systemic crisis in the Nordic countries of Norway, Sweden and Finland.⁴

In each of the Nordic countries there were major changes in the regulatory regime. The common features of the regulatory reform in the three Nordic countries were that banks' regulatory balance sheet constraints were removed (including direct lending restrictions), interest rates became more market-determined and less administered, and banks' lending increased. This deregulation induced a more competitive and efficient market environment in banking, which was one of the policy objectives.

Banks in all three countries responded to deregulation in a remarkably similar way by substantially increasing the volume of lending in a short period. As a result of increased competitive pressures banks lowered credit rationing and risk thresholds. Bank lending as a proportion of GDP rose from 64% to 85% (1983–1986) in Norway, from 43% to 68% (1986–1990) in Sweden, and from 55% to 76% (1986–1990) in Finland. Property was used as collateral for a high proportion of loans. Banks also held more concentrated portfolios, as lending to property owners and property companies expanded particularly rapidly. Possibly fuelled, in part, by the increase of bank lending, asset and real estate prices rose sharply in the latter part of the 1980s. The rise in asset prices made banks more confident of borrowers' ability to service debt, and more optimistic about the value of the collateral, and, hence, less risk-averse. Bank profitability rose substantially because of this expansion.

However, the economies of each of the Nordic countries moved into recession in the late 1980s and early 1990s, and asset prices fell. The combination of the sharp rise in borrowers' gearing ratios, a tightening of monetary policy, and a resultant rise in interest rates on floating-rate debt, created debt-servicing

³ Legislation in the field of capital requirements has followed the credit- and market-risk standards set by the Basel Committee (see section V).

⁴ Benink and Llewellyn (1994) and Drees and Pazarbasioglu (1995) present detailed analyses of the banking crises in Norway, Sweden and Finland.

problems for personal and corporate sector borrowers. Default rates rose sharply in each country, precipitating the deterioration in the financial performance of banks. The fall in property prices especially eroded the value of loan collateral held by banks. The combination of sharply falling real estate and other asset prices and a tight monetary policy was almost fatal for the banking sectors.⁵ For example, in Sweden, loans against real estate made in 1989 and 1990 accounted for around 80% of subsequent loan losses. A large proportion of Nordic banks had to be rescued by their central banks and governments at a relatively high cost. Taxpayers, rather than depositors, bore this cost. Atle-Berg (1993) calculates that the volume of official support operations by 1992 in Norway, Sweden and Finland amounted, respectively, to 2.8%, 3.1% and 7.2% of GNP.

The rapid deregulation in the Nordic countries caused a transitional period of adjustment from a credit-constrained to a credit-liberalized market regime. During such a transitional period, economic agents have to learn the new structural equilibrium relations. As long as learning is still taking place, expectation errors need not satisfy any of the optimality properties usually assumed in the rational expectations literature (Pesaran, 1987). This implies that in such a transitional phase of learning, systematic estimation errors by bankers will be made, sometimes resulting in bankers charging inadequate risk premiums, incurring huge credit losses, and the economy suffering substantial bank failures and insolvencies. Bisignago (1998, p. 297) also points to eventually dysfunctional actions resulting from “a search for institutional survival.” He explains (*ibid*): “Prudential behavior in a protected, if inefficient, financial institutional environment is sometimes replaced by aggressive, opportunistic behavior in a deregulated environment.” In addition to the example of Sweden, he cites “the aggressive property and portfolio lending behavior of U.S. savings and loan associations . . . [and] the speculative French and Japanese property investments by a variety of financial intermediaries.”

The movement from the regulated to the deregulated regime does not necessarily imply that, once the deregulated and new competitive steady-state equilibrium has been reached, the errors will be repeated. Indeed, most of the Nordic banks are currently doing quite well in terms of profitability. However, what can safely be concluded from the experience in the Nordic countries is that big shocks to banking systems (such as sharp changes in regulation or a substantial economic downturn) can easily produce severe reactions that result in substantial negative externalities. Furthermore, when governments find it politically necessary (as they usually do) to protect depositors from loss and forbear from closing insolvent banks, a moral hazard results. Stockholders get the benefit of decisions that turn out well, but do not bear the full cost of those

⁵ Apart from major changes in the regulatory regime in the three Nordic countries, some country-specific factors also played a role. For instance, in Finland savings banks were heavily exposed to currency risk due to low-cost borrowing in foreign currency; when the Finnish Markka fell, these banks faced severe losses.

that turn out badly. Regulation and supervision are or should be designed to obviate or greatly reduce these costs.

IV. EVOLUTION OF BANK CAPITAL RATIOS IN EUROPE

In Figure 1 we present the unweighted average capital/asset ratios of commercial banks in 10 European countries (Belgium, Denmark, Finland, Germany, Italy, the Netherlands, Norway, Spain, Switzerland, and the United Kingdom) from 1847 through 2001. For some countries we were able to obtain data as far back as the 19th century, including going back to 1847 for Denmark, 1851 for Norway, 1872 for Germany, 1880 for the United Kingdom, and 1891 for Italy. The data range for the Netherlands starts in the year 1900, for Switzerland in 1906, for Spain in 1923, for Finland in 1934, and for Belgium in 1935.

What can be observed from Figure 1 is that there has been a substantial decline of banks' capital/asset ratios. Starting with around 30% in 1850 through 1880, the average ratio declined to about 15% in 1915 through 1933, and further declined to around 7.5% in 1945, and to 5–6% through 2001. Interestingly, non-financial companies in the same group of 10 European countries have much higher capital/asset ratios (see Figure 2). During the period 1978 (the first year for which we could obtain data) through 2002, the ratio ranged between 31% and 58%.⁶

The reduction in European banks' capital/asset ratios during the 20th century appears due to several factors. One is the increasing diversification of banks in the late 1800s and early 1900s, which made it more unlikely that losses on particular assets or related groups of assets would deplete their capital. Another is that Europe generally did not experience banking crises in the 1930s (as documented by Schwartz, 1986), in part because the central banks had learned to control the money supply and in part because banks could diversify geographically with branches, unlike the situation on both counts in the US. A third, related factor, is the dominance of large banks and cartel banking in Europe. Although the public may not have been as well served as they would have been from a more competitive banking structure, banks rarely failed and other banks absorbed those that did. In the post–World War II years, as consumers increasingly used bank accounts to effect transfers (*giro* or check), depositors continued to expect that governments would not permit depositors to accept losses. Banks' historically low reported capital/asset ratios reflect this expectation.

The capital/asset ratios we present are understated, because they are derived from book values, which do not include the value of banks' charters as assets. Keeley (1990) shows that this value is enhanced by a fixed-rate deposit insurance

⁶ Consequently, we could not determine whether these companies' capital/asset ratios also declined during earlier years of the 20th century.

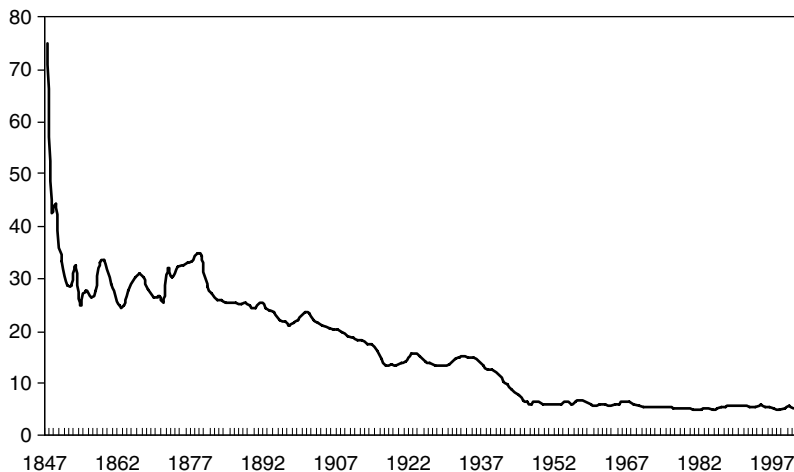


Figure 1: Average Capital/Asset Ratio of Commercial Banks Europe 1847–2001

Sources: For all 10 countries the data for the period 1983–2001 (or part of this period when other data sources were available) were collected using various issues of the (bi-)annual publication on bank profitability by the Organisation for Economic Co-operation and Development (OECD 1992, 2000 and 2002). As concerns the period 1964–1982, for all 10 countries the data were taken from Revell [1978 and 1983] in case no other data sources were available. For Belgium, the research department of the National Bank of Belgium provided the data for the period 1935–1996. For Denmark, the National Bank of Denmark's annual reports and various Danish official statistical reports provide the data for the period 1847–1995. For Finland, the Central Statistical Office of Finland compiled the data for the period 1934–1971. For Germany, the data for the period 1872–1954 were taken from Krümmel (1964) and for the period 1955–1967 from various issues of the monthly reports of the German Bundesbank. For Italy, the Historical Research Department of the Bank of Italy provided the data for the period 1890–1993. For the Netherlands, the data for the period 1900–1982 are based on a statistical report by the Dutch Central Bank. For Norway, the data for the period 1851–1993 are based on statistical reports by the Central Bank of Norway. For Spain, the Spanish Banking Council compiled the data for the period 1923–1963 from various statistical reports. For Switzerland, the Swiss National Bank provided the data for the period 1906–1996. Finally, for the United Kingdom, the data for the period 1880–1966 were drawn from Sheppard (1971) and the data for the period 1971–1983 were obtained from the British Bankers' Association.

system (and/or a system of implicit government guarantees). Following Merton (1977) he views deposit insurance as a put option on the value of a bank's assets at a strike price equal to the promised maturity value of its debt. Banks seeking

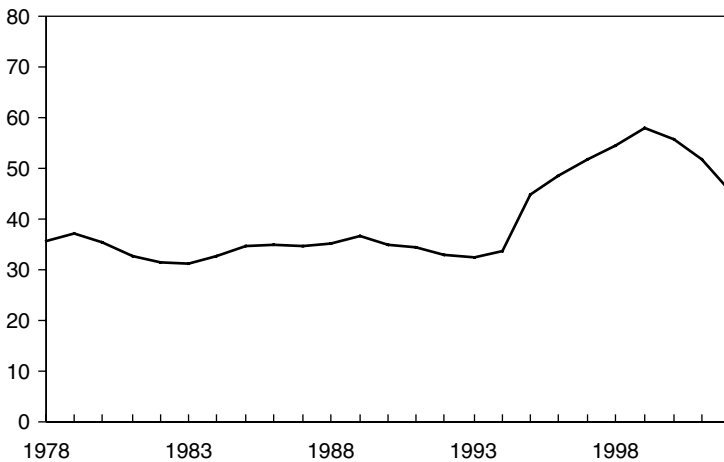


Figure 2: Average Capital/Asset Ratio of Non-Financial Companies Europe 1978–2002

Source: Study by the OECD (2004) with respect to all non-financial companies in the ten countries for the period 1995–2002 and data provided by Datastream for the largest fifteen non-financial companies (in terms of balance-sheet total) in the ten countries for the period 1978–1994.

to maximize the value of their equity will maximize the value of the put by increasing asset risk and/or minimizing invested capital relative to assets. Regulation may reduce risk-taking by banks, but also limits competition, which endows banks with market power and makes bank charters more valuable. In this way the potential loss of a charter and its value in the event of bankruptcy counterbalances banks' incentive for excessive risk taking and lower capital ratios, due to fixed-rate deposit insurance.

Deregulation changes the subtle balance between these two effects. Because deregulation increases competition, bank charter values will decline and, consequently, banks reach earlier the point that increased risk taking becomes attractive: the expected gain to bank stockholders of the enhanced value of the deposit insurance put option exceeds the expected loss of the charter value. Alternatively (or collaterally), although bankers may not behave opportunistically, loss of charter value is likely to reduce their banks' low measured capital/asset ratios to the point where unexpected losses result in insolvency. Thus, with the increase in deregulation since the 1980s, EU banks' *actual* capital/asset ratios have decreased by more than is shown in Figure 1, we believe substantially.

V. THE RATIONALE AND THE LIMITATION OF PRESENT PROCEDURES FOR REGULATING AND SUPERVISING BANKS

WHY REGULATE AND SUPERVISE BANKS?

The essential issue that should be considered before alternative regulatory schemes are evaluated is “Why do we regulate banks at all?” What is special about banks? Should all bank products be regulated or should regulation be limited to specific products, such as loans or deposits? These questions have been discussed in many publications. In this paper, we can only summarize some of these issues (with due apologies to the authors whom we neglect).

Dewatripont and Tirole (1994, p. 29) believe that “too much emphasis is being put on specific features of banks (transformation function, participation in the payments system, high leverage) or on various dimensions of regulation (specific requirements, deposit insurance, liquidity provision).” They point out that unregulated nonfinancial companies often transform long-term assets into short-term claims when they fund long-term projects with lower-maturity claims. The payments system is not the primary reason for regulation, they say, because insurance companies and pension funds, which do not participate in the system, also are regulated. (We additionally note that the central bank can maintain the integrity of the payments system through its control over the money supply without having to regulate banks.) They also reject high leverage because finance companies, which have higher leverage than industrial corporations, are not regulated for that reason. The “various dimensions of regulation,” they say, while of some importance, are not the primary reason for regulation. Rather, bank regulation is justified and required by “the need to protect small depositors (*ibid.*, p. 31).” They emphasize that “bank debt is primarily held by small depositors. Such depositors are most often unsophisticated . . . (and) have little individual incentive to perform the various monitoring functions (*ibid.*, pp. 31–32).” We agree that protection of depositors has been and is an important reason for regulating banks. However, if it were only small depositors for whom there was concern, banks could be required to offer privately supplied deposit insurance limited to the balances usually maintained by unsophisticated people.

In their survey of banking models, Freixas and Rochet (1997, p. 257) state: “In general, public regulation [of banks] is justified by market failures that can come about from (1) the presence of market power, (2) the importance of externalities, or (3) asymmetric information between buyers and sellers.” They then summarize many theoretical papers. They point out (and we agree) that the failure of any firm generates externalities. Furthermore, they conclude (*ibid.*, p. 263): “Few theoretical models of systemic risk are available so far, one exception being Rochet and Tirole (1996), which models the trade-off of the pervasive attitude of Central Banks to rely on peer monitoring by commercial banks and its necessary counterpart, namely the risk of failure propagation.” With respect to asymmetric information, the models they review point to depositors’ difficulty in monitoring banks, the moral hazard problem

engendered by deposit insurance, problems with developing risk-related deposit insurance premiums, and rules for closing insolvent banks.

Benston (1998 and 1999) points out that banks are not (or should not be) regulated because they provide loans to businesses and individuals. In the EU, the US, and most other developed countries similar loans are offered by many non-bank organizations, including commercial lenders (e.g., GE Capital Corporation, which makes general business and capital project loans, and Walter D. Heller, which makes inventory and accounts receivable loans), securities brokers and underwriters (which offer loans collateralized by securities), mortgage companies (which offer loans collateralized by real estate), consumer-loan companies (such as Beneficial Finance, which makes installment loans that often are not collateralized), automobile finance companies (such as GMAC and Volvo Truck Finance), and businesses generally (which finance purchases of sales of producer and consumer goods). None of these lenders are regulated as are banks; most are not regulated at all. Rather, it is the fact that banks finance their loans and other investments with deposits that is key.⁷

Three aspects of deposits that lead governments to protect depositors from loss should be distinguished. The first is the banking practice of fractional reserves, wherein removal by depositors or central banks of reserves from the banking system can result in a multiple contraction of the money supply and systemic collapse of banking and, often, of the economy. The second is the role of demand deposits as money, the principal means of payment for goods and services. The third is the political reality that almost no government will permit depositors (savings and time, as well as demand) to absorb losses should their banks fail.

Regulators world-wide tend to point to the first two roles—avoidance of the externality of systemic collapse, presumably caused by bank failures, and protection of the payments system—as the principal reasons for regulating and supervising banks. In their often expressed view, the insolvency or even the rumored insolvency of some banks would cause the public to lose confidence in banks generally, which would result in runs on solvent banks and the possible collapse of the banking and payments systems. We reject this argument, for three principal reasons.

⁷ We do not consider maintenance of competition, as in 1981 the Court of Justice determined that EU competition law is fully applicable to banks (Zücher case). Restrictions on banks' ownership by other corporations became an antitrust issue in the US only upon passage of the Bank Holding Company Act of 1970. The restriction was based neither on any actual event nor on research findings of events in other countries, but on a political scare tactic emphasized by then Treasury Secretary, John Connolly, in furtherance of his presidential ambitions. Unlike the situation in the US, banks in most countries of the EU have not been restricted from being owned by or owning the shares of non-financial companies, except as noted earlier in section II. There is no evidence of which we are aware indicating that this aspect of universal banking has resulted in anti-competitive concentrations of power (see Benston 1995, for a review and citations). Consumer protection was a late concern of the politicians and the banking authorities. There is no reason, though, to restrict to banks the scope of this concern, to the extent that it is valid. See Benston (1998 or 1999, chapter 2) and (2000), for extended analyses.

First, when banks' reserves are provided by a central bank, a systemic collapse is unlikely to occur as a result of the failure of one or more banks and cannot occur at all if the central bank does not want it to happen. Consider the situation of depositors who believe that their bank may be insolvent. If they run, they have only two alternatives. They can transfer their funds to another bank, in which event the money supply changes only if the former and receiving banks have different required or voluntary reserve requirements. Or, they can keep their funds out of any bank. With 100% de jure or de facto deposit insurance, this "run to currency" would not occur. But, even in the absence of deposit insurance or when there is partial coverage, the risks and inconvenience of holding and executing transactions in cash make a run to currency unlikely. Importantly, the central bank can offset the effects of a run to currency and of changes in reserve ratios on the money supply with open market operations.

Second, bank runs are more likely to be beneficial than harmful, both ex ante and ex post. Ex ante, faced with the possibility of runs, banks have incentives to operate their institutions so as to convince depositors that they have no reason to run.⁸ Indeed, there is evidence that depositors have been able to distinguish solvent from insolvent banks.⁹ Ex post, runs by depositors force insolvent banks to close quickly, thereby reducing the moral hazard cost of such banks making risky investments in an effort to gamble for resurrection.

Third, a bank failure might disrupt the payments system to the extent that checks and transfers are made in advance of payment. This occurs in the US because the Federal Reserve gives banks immediate credit for cash items (checks in the process of collection) and wire transfers before the receiving banks clear them. A bank failure might leave the Federal Reserve "holding the bag". These daylight overdrafts could be eliminated if the Fed either charged a market rate that included the opportunity cost of the risk or recorded payment to the sending bank only after it had charged the receiving bank. In the EU this is not a problem, because banks effect transfers among themselves in return for immediate payment.

Thus, we conclude that government insurance of deposits, de jure or de facto, is the only reason justifying the prudential regulation and supervision of banks in developed countries. Some have argued that even this is not a good reason for regulation, for several reasons. One is that banks or depositors could purchase privately provided insurance (e.g., English, 1993). A second is that banks could cross-guarantee deposits and regulate fellow participants (e.g., Wallison, 1990, Ely, 1994). A third is collateralization of deposits with short-dated securities that are marked to market daily (e.g., Litan, 1987, Benston, *et al.*, 1989, Merton and Bodie, 1993, and Edwards, 1996). Fourth, government-provided deposit insurance

⁸ Calomiris and Kahn (1991) and Flannery (1994) show that this purpose is served by banks giving depositors the option to remove (put) their deposits at par at any time.

⁹ In a well-constructed study, Calomiris and Mason (1997) show this to have occurred during the 1930s depression in Chicago. Kaufman (1994) reviews the arguments and evidence on bank runs and draws a similar conclusion.

coverage could be reduced to a relatively small amount that would protect unsophisticated depositors, with the balance either at risk or covered by privately provided insurance. Finally, some laissez-faire advocates have recommended returning to the pre-government-deposit-insurance world when depositors who were unable to withdraw their funds fast enough simply absorbed a loss, much as they do when other investments decline in value (Dowd, 1996).

However, a review of world practice reveals almost no instances in modern times when governments did not bail out depositors, regardless of whether deposit insurance was limited or was not a legal obligation.¹⁰ At the present time, almost all households and businesses in developed countries have bank deposit accounts. We believe that it is not conceivable that any democratically elected government would not bail out these depositors.¹¹ Consequently, unlike other creditors, depositors have little reason to monitor the risks taken by their banks and bankers have little reason to be concerned about depositors' concerns. We conclude, therefore, that banks are and should be regulated and supervised to reduce or eliminate the potential cost of losses imposed on solvent banks and their customers or on taxpayers, either directly via transfers from the Treasury or a bank-financed deposit insurance fund, or indirectly via inflation.

It is important, though, to emphasize that government-provided deposit insurance should be limited to transactions accounts (demand deposits) and, preferably, to individuals' savings accounts of relatively small amounts. Transactions accounts are covered, because these are the basic means of payment that can be and, to fulfill their function as means of payment, must be known to be withdrawable immediately at par. Consequently, alert depositors and businesses with sufficient funds on deposit to warrant close monitoring and those with several bank accounts, can avoid losses by withdrawing funds rapidly. Losses, therefore, would be borne by primarily small and less

¹⁰ See Benston (1995). The only important exceptions we know of are the United Kingdom, which limited coverage to 75% of deposits (90% since 1996) up to £20,000, Argentina (which now has deposit insurance), and the US since passage of the Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991, after which depositors in an increasing number of failed banks who had more than \$100,000 in accounts at those banks were not covered. See Benston and Kaufman (1997).

¹¹ As noted earlier in section III, depositors in banks in the EU countries that failed were bailed out. In Japan, despite the fact that several banks have become insolvent, no depositor has had to bear losses. New Zealand has no deposit insurance and has announced publicly that "haircuts" would be imposed on depositors of failed banks; however, foreign banks, particularly Australian banks, which are unlikely to allow their subsidiaries to fail, own almost all the banks. In the US, after the Federal Savings and Loan Insurance Corporation (FSLIC), for which the US Treasury was not a surety, had become insolvent, then President Bush announced that as long as he was president, no depositor would lose any money. Despite the fact that he had no legal authority to make this gesture, no other politician (including his opponent for the presidency) objected. The FDIC Improvement Act of 1991 formally made deposit insurance an obligation of the Treasury. However, the additional requirement that solvent banks must replenish depletions of deposit insurance fund (now fixed at 1.25% of deposits) has made banks as a group responsible for all losses up to the total amount of their capital.

sophisticated depositors and those with balances that are not sufficiently large to warrant the cost of closely monitoring their banks.

We would limit deposit insurance coverage to a maximum per account, in part because sophisticated depositors with large balances can withdraw their funds rapidly (run). This possibility not only gives bankers additional reason to manage their risks to keep the confidence of large depositors, but also forces the early closure of banks that experience runs, thus limiting losses that are likely to be incurred if the banks continued operations. However, government owned or controlled banks necessarily offer their depositors full insurance, since governments have both the means and strong incentives to forbear from closing these banks. Hence, rather than give these inherently inefficient banks a competitive advantage, we would have governments insure all the deposits at other (privately owned) banks. Furthermore, once deposits have been de facto or de jure insured from loss, it is politically very difficult for governments to take away this benefit. As we describe later, there are other (and, we suggest, better) ways whereby banks can be monitored by the market and the cost to government of deposit insurance almost eliminated.

Insurance of savings accounts is a benefit that, we also believe, cannot politically be taken from the public, as these accounts represent a means by which relatively poor people can invest their funds with absolute safety and flexibility. It might be well to limit coverage of the amounts in these accounts. However, this does not appear possible, because individuals or brokers can place their funds in several banks and because the accounts of proprietorships and individuals cannot be distinguished. Furthermore, demand deposits can be readily swept into nominal savings accounts overnight and returned automatically to nominal demand deposit accounts as checks are presented. Although we conclude that it is not practically possible to limit coverage on savings accounts, we suggest below several means that should prevent the deposit-insurance safety net from being extended to investments generally that might be mislabeled "savings deposits."

WHY THE PRESENT EU REGULATORY STRUCTURE HAS PARTIALLY SUCCEEDED, BUT IS LIKELY TO FAIL

Past Partial Success

Until the early 1980s, banks in many EU countries operated in markets that were protected from competition. Entry was restricted into national banking markets. Although banks within countries could compete with each other and with other providers of financial services, they tended to adhere to customary arrangements and markets. Consequently, EU banks generally were profitable and could operate with low levels of capital and, until the early 1980s, very few banks failed. Losses were not imposed on depositors or taxpayers, because other banks were willing to absorb the costs, in part to avoid government action that might reduce their cartel profits.

The situation changed in the 1980s when banks in the Scandinavian countries, the United Kingdom, France, and Italy absorbed substantial losses. As we explain earlier in section III, removal of regulatory restrictions that protected bankers in these countries from competition and kept them from learning to operate in a risky environment, resulted in losses that overwhelmed their capital.

Future Problems

We believe that the situation has changed and the solvency of banks in the EU is likely to be threatened, because of three factors: greater competition among EU banks; competition from non-banks enabled by electronics (both of which erode their charter values and, hence, their economic capital/asset ratios); and losses to no-longer-protected undiversified banks. Although these factors are also relevant for banks in the US and other developed countries, we think that in particular the first and third factors will play a particularly important role in the EU. A few years ago the European Central Bank (1999) concluded in a report:¹²

EMU [European Monetary Union] is likely to act in the medium and long-term as a catalyst to reinforce already prevailing trends in the EU banking systems. In particular, EMU is expected to reinforce the pressure for the reduction of existing excess capacity, to put profitability under pressure and to lead to increased internationalization and geographical diversification, also outside EMU, as well as to increased conglomeration and mergers and acquisitions. Overall competition in banking within the Euro area is likely to increase considerably (p. 1).

In addition, competition from non-banks is likely to increase, as electronic transfer becomes increasingly useful, accepted, and cost effective. Non-banks also are likely to offer fund transfer services via the Internet or other systems that, for many depositors, will be superior to the products provided by banks. Governments might attempt to make such transfer accounts illegal. But, it does not seem possible for governments to bar transfers among companies in the form of electronic entries on accounts payable and receivable that otherwise would have been made by check. It then would be a small step for companies to offer transfer services to customers and the public generally. Indeed, many commercial banks evolved from merchandising and trading companies that originally enabled such transfers as part of their basic businesses.¹³ More importantly, it would be detrimental to their economies if governments prevented or constrained such technology changes.

Diversified banks usually can absorb losses, despite their holding apparently low levels of capital, because the losses rarely are incurred on large portions of

¹² For an overview of recent developments and risks in the euro-area banking sector, see European Central Bank (2002).

¹³ For example, Citibank originated in this manner. See Van Cleveland and Huertas (1985).

their assets. In the past, European banks operating in cartels and in otherwise protected markets had an unbooked asset, “charter” value, that could be protected by prudent banking. Ultra-conservative accounting practices (e.g., hidden reserves and overstated allowances for loan losses) also resulted in understated reported assets and equity capital. Consequently, even undiversified and apparently thinly capitalized banks rarely failed. For reasons that we discuss next, we believe that these unbooked assets and understated equity capital are largely no longer present and it is no longer feasible nor desirable for governments to protect these banks so that they will not incur losses that might deplete the low levels of capital that they have been permitted to hold by government-provided *de jure* deposit insurance and by the banking authorities who offered *de facto* deposit insurance.

One important reason for our present concern is that it is now recognized in the EU that preventing the establishment of new banks is detrimental to consumer and national welfare. This means that existing undiversified banks will be confronted with less protection and more competition. Moreover, the new banks entering the market rarely can be well diversified. In the past, this problem was dealt with through regulatory limits and controls on the assets in which banks could invest. However, this has not been an effective solution because there is no way to predict reliably which assets will suffer declines, the extent of such declines, or the timing of such events. Furthermore, the assets on which substantial losses might be incurred—commercial loans, real-estate-related loans, and derivatives—are the basic products offered by most banks, their *raison d’être*.

Due to the increasing importance of the three factors discussed above, we seriously doubt that banks in the EU, as well as in the US and other developed countries, now hold sufficient levels of capital to absorb the losses they might incur.

Inadequate Regulatory Response to Insufficient Capital—The Basel and EU Capital Standards

International banking supervisors have attempted to redress this situation in ways that, we submit, are more likely to increase than decrease the risk of bank failures, particularly of large banks that are active participants in derivatives and other securities markets. True, the credit-risk capital standards for international banks, initiated by the Basel Committee on Banking Supervision in 1988 and implemented in two EU directives in 1989, effective as of the beginning of 1993, have served to increase, somewhat, the amount of capital held by banks (Basel Committee, 1988). However, the attempt to relate the capital requirements to banks’ risk exposure has been and, we believe, will continue to be seriously and dangerously inadequate.

The Basel I capital requirements have been determined by pre-specified risk weights applied to five credit-risk categories of on- and off-balance sheet assets. These categories are very broad; in particular, the same risk weight is applied to

all commercial loans. Most importantly, a portfolio approach is not followed, which invalidates the risk measures that are made. In addition, changes in the market values of some assets, such as derivative instruments, can rapidly make the periodically reported numbers irrelevant.

In the Basel Committee's and European Commission's consultative papers (Basel Committee, 1999, and European Commission, 1999), which were presented in June and November 1999 respectively and issued for comments from the international banking community through March 2000, these concerns are acknowledged and some improvements are proposed. Importantly, the Committee and the Commission propose replacing the existing system by a system that would use external (private credit agency) credit assessments for determining risk weights.¹⁴ The intended result is to reduce risk weights for high quality corporate credits, and to introduce a higher-than-100% risk weight for certain low quality exposures. But, since unrated credits are assigned only a 100% risk weight, it is likely that particularly risky companies will avoid being rated. The basic question, though, is to what extent can the banking authorities rely on the judgments of rating agencies? As is well known, these agencies have a mixed track record. Furthermore, how will the banking authorities determine which agencies' ratings will be acceptable? Will new entrants to the ratings business be recognized? In addition, US companies are likely to gain more from such an approach, because more are rated than companies in the EU or other developed countries. Will each country, then, encourage the establishment of ratings companies to serve their companies, and who would have the political courage to challenge the bone fides of these companies?

The foregoing might explain why both the Basel Committee and the European Commission issued revised versions of their consultative papers in 2001 and 2003, which would allow a sub-group of banks to use their internal ratings of loans as a basis for setting regulatory capital charges. The obvious advantage is that banks have more information than the rating agencies about their borrowers, particularly smaller borrowers. However, there are important implementation problems. Internal rating systems differ significantly across banks. A substantial effort would have to be made to calibrate these internal systems, so that different banks and different countries would apply the same capital standards (*Financial Times*, 1999, and Basel Committee, 2000). Another question is how to solve the incentive problem, i.e., how to prevent bankers from generating overly optimistic internal ratings in order to lower the regulatory capital requirement (Benink and Wihlborg, 2002).

It also is important to note that the Internal Risk Based (IRB) approach that may be used by internationally active banks in place of the 1988 Basel Capital Accord standard is seriously biased towards understating capital if the Advanced approach (A-IRB) is used, and overstating capital if the Foundation approach (F-IRB) is used.

¹⁴ See Altman and Saunders (2001) for a description and effective devastating critique of the proposal.

Kupiec (2004) has analyzed these alternative approaches extensively. He finds (ibid, p. 4): “compared to the true capital needed to ensure a regulatory target solvency margin of 99.9% the June A-IRB approach undercapitalizes banks by more than 80% assuming that all capital is Tier 1 (equity) capital. . . . If widely adopted, the regulatory standards set by the A-IRB approach will allow a system-wide bank insolvency rate similar in magnitude to the 6.4% failure rate experienced by insured U.S. savings and loan institutions during the height of the 1980s crisis.” In contrast, he finds that under similar conditions the F-IRB approach overstates capital requirements by more than 700% for high-quality (low-default) portfolios and 170% for low-quality portfolios. Kupiec (ibid, p. 5) concludes that the Basel Committee calibrated the models “to encourage banks to transition from the Standardized and F-IRB approaches to the A-IRB approach.”¹⁵

Notwithstanding the problems discussed above the Basel Committee reached agreement on the Basel II Accord in June 2004, in which the IRB approach is one of the key factors. Moreover, in July 2004 the Basel II Accord was translated into a new proposal for an EU’s Capital Requirements Directive (CRD). As a potential future successor of the internal ratings, there also is an intention to investigate whether sophisticated banks could be allowed to use credit-risk portfolio models for calculating regulatory capital requirements. However, the use of credit-risk models is, in the view of the Basel Committee and the European Commission, something for a later stage, since these models face even greater problems than market-risk models, particularly with respect to the availability of data.

The Basel Committee also is concerned with market risk — the risk of losses in on- and off-balance-sheet positions arising from movements in market prices. A bank’s market risk exposure can be expressed in terms of a “value-at-risk” (VAR) metric, which provides an estimate of the likely maximum amount that could be lost on a bank’s portfolio with a certain degree of statistical confidence.¹⁶ In January 1996 the Basel Committee amended the 1988 credit-risk capital accord to incorporate market risks. This amendment allows banks to calculate VAR using their internal models (which should meet certain regulatory standards) to determine regulatory capital requirements for market risks (Basel Committee, 1996). The new approach was also translated into a 1996 EU directive, the second capital-adequacy directive (CAD-II). This new regulatory framework for calculating market-risk capital requirements was implemented at the beginning of 1998, both in the EU as well as in the US and other developed countries.

The new approach has the clear advantage of inducing banks to start thinking more in terms of exposures, risks and management of these risks. The result

¹⁵ Kupiec is concerned with bank solvency rather than with the protection of deposits; hence, he emphasizes Tier 1 capital.

¹⁶ Jorion (1997) presents an excellent study of value-at-risk.

should be a professionalization of risk management. However, we question the usefulness of VAR measurements, because they might lull banking supervisors into believing that banks have sufficient capital to cover the market risks of their securities, despite the basic unreliability of VAR models. For example, Goodhart, *et al.* (1998, chapter 5) describe the three basic VAR models and cite Beder (1995) as finding that the models “can lead to substantially different risk estimates, as do variations in the three major model parameters (i.e., holding period, confidence interval, data window) for a given model type” (pp. 73–97).

Moreover, Goodhart (1996) observes: “In so far as value-at-risk models are conditioned on historical data for asset market co-variances obtained over a normal calm period, these may seriously understate the extent of market covariance, and hence of portfolio riskiness, during occasional bouts of instability” (p.44). A complicating factor, as noted by Danielsson *et al.* (2001), is that these models treat risk as a fixed exogenous process. This, however, is not the case. Market volatility is, in part at least, the outcome of interaction between market players and is thus endogenous. This endogeneity may matter enormously in times of crisis.

Furthermore, the “losses” incurred on derivative instruments that are not regularly traded are measured by marking the derivatives to model rather than to a non-existent market. The amount of the “losses,” therefore, can be substantially affected by the models’ assumptions.

The Basel Committee attempts to counteract bankers’ overly optimistic assessments by multiplying the VAR predictions by a factor of at least three (based on the ex-post performance of the models) to determine the required capital amount. However, VAR models are subject to manipulation that could allow opportunistic or overly optimistic traders to take excessive risks, at least in the short run, that might deplete their bank’s capital before the supervisors can react. Furthermore, banks that use VAR models rarely stress test the models daily or even weekly to determine if they might exceed risk limits, because of the cost of measuring the required assumptions and making the required calculations.

Finally, as Herring (2005) asks, “Is the game worth the candle?” He analyses the benefits and costs of implementing the Basel II-proposed risk models. There are few benefits other than encouraging banks to think carefully and quantitatively about the credit risks they have incurred. The costs include a substantial increase in complexity over the flawed-but-simple Basel I rules, the imposition of standardized models and parameters on banks that might restrain technological advances, the difficulty for banking supervisors to evaluate and verify the models employed by banks (whose employees are usually better paid and technically more knowledgeable than examiners), problems with different standards imposed on international banks by the individual countries in which they operate, and bias towards encouraging procyclical lending patterns. He also points out that protection against interest-rate risk is still not included in Basel II. And, the definition of capital has not been changed to have it reflect

economic rather than accounting values. Hence, he concludes, as do we, that the costs of Basel II will greatly exceed the benefits.

Summary and Conclusion

Changes in laws and advances in technology are reducing the charter value of banks in the EU, the US and other developed countries. This increases banks' incentives to take risks that serve to increase the value of the deposit-insurance put option. They also have incentives to understate to the banking authorities (and possibly to themselves) the risks they face by possibly manipulating or choosing among the VAR models and being overly optimistic about credit risk. Although the CEOs and directors of banks may not deliberately hold an insufficiently high level of capital necessary to avoid insolvency, they may be lulled into believing that they are adequately capitalized if they adhere to the Basel Committee's models (which they are unlikely to understand). Furthermore, the banks' portfolio managers, who might understand the shortcomings of the A-IRB approach particularly, often have strong incentives to take risks in pursuit of profits on which their compensation is based.

Thus, even if senior bank managers do not deliberately increase risks in an attempt to keep up reported net profits or optimize the value of the deposit insurance put option, risk taking by subordinates, operating losses resulting from greater competition, and unexpected credit (loan) and market (securities) losses are likely to overwhelm the capital now held by many EU banks. The Basel-initiated capital standards not only do not effectively address this problem, but also exacerbate it.¹⁷

Consequently, we conclude that the present system of regulation and supervision should be changed to one that is incentive-compatible for both bankers and regulators and that imposes relatively little cost on deposit-service providers and almost no cost on the explicit or implicit deposit insurance fund, and hence on prudently managed banks or taxpayers.

VI. PROPOSAL FOR THE REGULATION AND SUPERVISION OF BANKS IN DEVELOPED COUNTRIES

In this section we propose securing deposits against loss to the de jure or de facto deposit insurance fund by requiring firms that offer deposit services to over-collateralize the deposits they hold *or* to hold a high level, relative to on- and off-balance-sheet assets, of capital (equity and explicitly non-insured debt that cannot run), either of which should be sufficient to absorb almost all potential losses. We begin by showing how deposits can be defined so as to limit the deposit-insurance safety net. In this regard, we point out that

¹⁷ Also see U.S. Shadow Financial Regulatory Committee (2000) for an analysis of the Basel Committee past and proposed capital standard that reaches the same conclusion.

investment accounts that can be used for payments are not and should not be considered to be deposits and, hence, should be excluded from bank regulation.

DEFINITION OF DEPOSITS COVERED BY GOVERNMENT-PROVIDED INSURANCE

Earlier, we established that the only reason for regulating and supervising banks is to protect prudently run banks and taxpayers from bailouts of depositors. We accept as a political “fact of life” that, if necessary, such bailouts will occur and that depositors cannot be relied on to monitor deposit providers, either because depositors can take the usually cheaper alternative of running or because they do not believe that their funds actually are at risk. As noted earlier, we nevertheless would limit deposit insurance coverage. However, this limitation is not desirable where there are government run depositories, as is the situation in the EU and in many countries. State-owned or controlled banks (such as *Crédit Lyonnais*), government-run postal banks, and privately owned banks that clearly are too big to fail (such as *ABN-AMRO*, *Barclays*, *Deutsche*, and *Citibank*) have an unfair competitive advantage over banks that might be allowed to fail with losses imposed on some depositors. In addition, entry into new markets by banks will be easier if potential depositors do not have to determine how the new bank is operated. Consumers should benefit from this enhanced competition. Hence, we propose that governments publicly acknowledge that *all* deposits are 100% guaranteed. This acknowledgement puts all banks within the EU and countries that have government run or controlled banks or where very large banks are considered to be “too large to fail” on a common footing, which benefits both the banks and consumers. Furthermore, depositor protection should be applied continuously and immediately, as is done in the US by the Federal Deposit Insurance Corporation (FDIC). Depositors should not have to suffer any delay in accessing their funds, which should obviate any incentive for depositors to run and any concern by the banking authorities that actions taken against a potentially insolvent bank might disrupt the payments system.¹⁸

It is important, therefore, that deposits be well defined so that the deposit-insurance safety net is not extended to cover investment accounts that are masquerading as deposits. A method that has been used until now is to limit the term “deposit” to an account offered by a chartered financial institution. However, as we discussed earlier, technology is likely to permit other companies to offer payments services; it would be costly to consumers and probably not possible to prevent such changes from occurring. This situation can be dealt with in two ways. One is to clarify the definition of a deposit; the second is to protect the deposit insurance fund or taxpayers from losses.

¹⁸ See Kaufman and Seelig (2002), to whom we are indebted for this provision, for additional discussion.

Limitation of Deposit Insurance to "Deposits"

We argue that, to be considered a "deposit," the safety of which is government guaranteed, an account must be repaid at par and must offer explicit interest payments that do not exceed a relatively small amount above the comparable Treasury rate.¹⁹ This interest-rate ceiling is designed to prevent some banks or other payments-service providers from attracting de jure or de facto government-insured deposits that might be invested in particularly risky assets and to make it administratively easier to distinguish deposits from other (uninsured) investment accounts.²⁰

The deposit-rate ceiling makes it possible to avoid two, substantially less desirable, alternatives. One is to continue to restrict deposit accounts to firms that have a bank charter. As we discuss later, this procedure would restrict developments, particularly electronic fund transfers, that could offer substantial economies to businesses and consumers and that non-banks might better provide. The second is to restrict insured-deposit providers from investing in specified assets or activities. In the US, such restrictions have included high-yield, high-risk high-yield (junk) bonds, equity investments in companies, and securities and insurance underwriting and sales. More often than not, the restrictions have served to restrain competition rather than risk. Furthermore, there is little reason to believe that government regulators are more competent than bankers in deciding which assets and activities are best undertaken separately or as part of an overall strategy. Consequently, we would restrict banks' and other firms' liabilities that are insured by governments, the so-called "deposits", rather than the assets in which these firms may invest.

Note that "deposits" do not include all alternative means of effecting payments. One such alternative is investment accounts, offered by either banks or non-banks, which give people the opportunity of transferring claims with a check-like demand instrument or via electronic command. The transfers could be made at par with overdraft arrangements provided by the investment provider. For example, people could hold an equity mutual fund against which checks are written. The investor could purchase overdraft protection that would pay the check should the account decline in value, creating a loan for which the investor is obligated. Although this kind of account provides a means of making

¹⁹ For example, interest promised on demand deposits might be limited to 100 basis points above the Treasury bill rate. Time deposits similarly could be paid up to a larger premium above the rate on Treasuries of a similar maturity and would be subject to a penalty upon withdrawal before maturity that would reduce their ex post rate to below the demand deposit maximum.

²⁰ The US Congress imposed a similar constraint on the interest rate of savings and time deposits (Regulation Q) when federal deposit insurance was established, for much the same reason. The Regulation Q ceiling "worked" for over 30 years, because it was higher than the market rate and, hence, was not binding for prudently run banks. Unfortunately, it was not tied to a market rate; consequently, when it became binding in 1979, banks first benefited and then suffered the consequences of disintermediation, which, eventually, led to its removal. An earlier, but shorter-lived episode in 1966–68 had similar consequences; however, because market rates declined below the ceiling, it was not removed.

payments that is very similar to demand deposits, it does not create an insurable deposit and, hence, should not be of regulatory concern. Similarly, credit cards provide holders with an alternative means of making payments that are not (and should not be) controlled by the banking authorities. These examples illustrate our position that it is not protection of the payments system that should concern banking regulators, but protection of the deposit insurance fund and taxpayers.

PROTECT THE DEPOSIT INSURANCE FUND AND TAXPAYERS FROM LOSSES

We now propose two *alternative* requirements for insured-deposit providers that, if adopted, would virtually eliminate losses to the deposit insurance fund, namely: collateralized deposits *or* relatively high capital (a form of collateralization). For each of these requirements, we offer a means for the banking authorities to monitor adherence to the requirements and deal effectively with deviations therefrom, and a means of assuring the bankers and the public that the authorities will act responsibly.

Collateralized Deposits

Deposit providers could over-collateralize all of their deposit liabilities with obligations for which default and interest-rate risk can be calculated daily with precision and objectivity.²¹ The extent of over-collateralization should be such that, based on past experience, there is a very small probability (say 0.001) that the immediately obtainable market value of the collateral will be less than the amount of the insured deposits. Treasury bills are the most obvious collateral. However, commercial paper, longer-term Treasury obligations, and even very liquid corporate bonds could be used as collateral. The advantage of this proposal (which previously has been offered by Litan, 1987, Bryan, 1988, Benston, *et al.*, 1989, and Edwards, 1996) is that it is relatively easy to impose and, as we show below, to monitor and enforce. Collateralized deposits is preferable to the similar narrow bank proposal (offered principally by Litan and Bryan), because it does not require a radical restructuring of the banking system, wherein an existing bank would be divided into a separately incorporated company that offered only deposit services and another that offered only loans and other financial services. Banks with collateralized deposits could still offer the full range of banking services and obtain the advantages of economies of scope (including marketing economies and transaction and information economies garnered by customers as well as banks).

Importantly, collateralized deposits would permit non-bank firms to offer deposit services without having to subject themselves to banking supervision of their entire company, which is likely to be costly to the firm and difficult for the supervisors. If firms (such as Microsoft) simply provide adequate collateral and make the required reports, they should be allowed to offer fund transfers and deposit services to whomever they wish.

²¹ This requires a legally perfected lien on specified assets in favor of depositors.

The banking authorities should require firms (including banks) that collateralize deposits to report daily via computer or the Internet the amount of deposits, the financial instruments used as collateral and their market values, and the extent of over-collateralization, given a pre-established requirement based on the expected variance of the market values of the portfolio of instruments (as noted earlier). This pre-established over-collateralization should be sufficient for the authorities to take action before the “cushion” is depleted. A deposit-provider that violates its over-collateralization requirement should be subjected to a pre-determined fine, which could be avoided by the provider pledging other assets that were much more than sufficient to cover a shortfall. Independent public accountants or government auditors can confirm that the provider is reporting accurately the existence and value of the collateral with periodic audits. It would not be necessary for the banking authorities otherwise to supervise or regulate firms that over-collateralize deposits.

Relatively High Capital

Equity and Debt Capital When deposits are not collateralized, they should be covered by capital—equity and debt capital. To count as capital this debt must be explicitly and credibly uninsured and may not be redeemed except from funds that were obtained from new issues that replace the debt capital, or, if otherwise redeemed, the bank still would fully meet its regulatory capital requirement. The debt must include a provision to that effect; holders of the redeemed debt must receive legal assurance that if this provision has not been met they will be liable for the funds illegally received. A bank may not repurchase debt capital before maturity, directly or indirectly (e.g., through related enterprises). Furthermore, the obligations should include a covenant that gives the banking authorities the right to suspend interest payments if the bank’s capital is deficient, as specified in the structured early intervention and resolution regulation (presented below), so that funds are not withdrawn from a capital-deficient bank.

The capital requirement may be viewed as a form of over-collateralization. The difference is that, unlike the market-quoted and traded financial instruments used to collateralize deposits directly, it is costly and often not possible for bankers to obtain daily or reliable market values for such important banking assets as commercial loans, some consumer loans, some securities, bank buildings and equipment, and usually unrecorded intangible assets, such as employee training, computer programs, and customer goodwill. The amount of the asset equivalent of contingent liabilities (such as guarantees on acceptances and underwriting contracts) also may be difficult to estimate. The amount at risk on derivatives that are not priced by the market is difficult to estimate and the amounts can change rapidly and substantially. Furthermore, it is costly and often not possible for banking supervisors to validate value estimates that bankers might report.

Consequently, we conclude that the capital requirement should be substantial. It should be sufficient to give bank capital holders overwhelming incentives to

avoid risks and monitor the activities of employees that might destroy the capital holders' investments, thus obviating the moral hazard problem. Whether or not, absent this requirement, bankers actually would have sought to maximize the deposit-insurance put option, a bank's capital should be sufficient to absorb the present value of almost all losses that might be incurred inadvertently, if not advertently. These possible losses include contingent amounts on off-balance sheet obligations, such as guarantees on loans sold and on arrangements among customers. Thus, the deposit insurance fund and taxpayers would be protected from all but losses incurred because of massive undetected fraud or substantial adverse economic conditions.

The capital requirement should be expressed as a ratio of capital (equity and debt capital) to assets. Included in "assets" are off-balance sheet items expressed as the asset equivalents of contingent liabilities, as presently calculated for the Basel capital requirement. Assets and liabilities should be measured in terms of objectively determined and readily verified market values, as these numbers (rather than book values) provide a meaningful estimate of the amount that actually covers deposit liabilities. Because the market values of many of the most important assets held by banks cannot be measured reliably, the required capital/asset ratio should be conservatively determined. However, conservative accounting should not be used as a substitute for adequate capital. In particular, the contra-asset account, allowance for loan losses, should measure the market (going-concern) value of loans, and not an over-estimate against which possible future losses might be charged. Since the interest rate on loans includes a risk premium to compensate the bank for expected losses, in general there should be no allowance for loan losses unless expected losses have changed as of the end of the period or to adjust individual loans or a portfolio of loans to their market values.²²

We do not suggest adjusting the capital/asset ratio for differences in the credit, market, or interest-rate risk of a bank's assets and liabilities for two reasons. As we discussed in our criticism of the Basel credit-risk-based capital/asset ratio, risk should be measured with respect to the portfolio of a bank's assets and liabilities, not to individual assets. Furthermore, it should relate to risks that a bank would take or be subject to, rather than risks that it previously experienced. We do not see how this can be reliably estimated. That is why we propose a capital/asset ratio that is sufficiently high to give bankers strong incentives to manage risk so that costs are not imposed on the deposit insurance fund or taxpayers. In order to quantify the sufficiently high capital/asset ratio, we return to Figures 1 and 2, showing the historical capital/asset ratios of commercial banks in Europe and the present capital/asset ratios of non-financial companies. Based on these ratios, we suggest a ratio of 15%. We do recognize that the suggested ratio is not (and probably cannot be) scientifically determined and may be considered by some observers, particularly bankers, to be high. We next present our reasons for concluding that, contrary to bankers' concerns, our suggested procedure will be

²² See Benston and Wall (2005) for a proof and discussion.

neither costly to their shareholders nor disruptive to the banking system, and present some data indicating the effect on EU banks were our proposal adopted.

Bankers have objected to a high capital/asset ratio, because they see capital as much more costly than deposits. They are correct, for three important and somewhat different reasons. De jure or de facto government-insured deposits are a relatively inexpensive source of funds when the full cost of the insurance is not charged to banks. But, it is well recognized that this is a reallocation of wealth that has the additional undesirable effect of encouraging at least some bankers to impose negative externalities on others by taking excessive risks. The second reason is that a high equity capital requirement might subject banks to higher income taxes, because factor returns to equity capital generally are not permitted as deductions from taxable income. This situation could easily be remedied by permitting debt capital to count fully as meeting the capital requirement.²³ This debt would have to be sold in sufficiently large denominations (e.g., €50,000 or \$50,000 per obligation) so that holders could not claim that they thought they were investing in government-guaranteed certificates of deposit. The third reason is that equity capital is more costly to issue than debt capital and may be prohibitively costly for small banks. If existing stockholders control the bank, they probably would be unwilling to give up control and, if they did not, outsiders rarely would be willing to invest. However, debt capital can be sold to pension funds, insurance companies, and the like, which are protected by the contractual features of debt and which can be effective monitors of bank operations and risk taking. That is why we propose that debt capital (as specified earlier) be counted equally with equity as regulatory capital.

Although the banking authorities have resisted permitting subordinated debt to be counted fully as capital, we point out that debt capital, as we define it, has features that they should find very attractive—indeed, more attractive than equity capital. The banking authorities in the EU and the US generally prefer equity because they say it is “permanent.” However, debt that qualifies as capital cannot be redeemed except from funds that were obtained from new issues that replace the capital. Thus, the debt would be as permanent as equity. Unlike ordinary subordinated debt, the authorities would have the legal right to suspend interest payments on debt capital, thereby preventing funds from being withdrawn

²³ The efficacy of this proposal is illustrated by the substantial increase in capital issued by US bank holding companies when the Federal Reserve permitted them to count as Tier 1 capital preferred stock on which the dividends payments were treated for taxation as deductible interest. The use of these “trust preferred securities” (TPS) is much more complicated than what we propose. Essentially, corporations establish a trust that issues preferred stock in exchange for the corporation’s bonds, with the preferred dividends paid from interest payments on the bonds. The interest payments are deductible expenses for the corporation. When the trust is consolidated with the parent corporation, its financial statements report preferred stock, rather than debt. After the Federal Reserve accepted TPS preferred stock for Tier 1 capital for bank holding companies (BHCs) in October 1996, by December 1997 111 BHCs issued \$24 billion in TPS, with an additional \$6 billion issued in the next two years. The issuing BHC compared to BHCs that did not issue TPSs tended to be larger, have a greater proportion of foreign and other uninsured deposits, greater growth potential, and lower regulatory capital. See Benston, *et al.* (2003) for a more complete description and analysis, from which these data were taken.

from a capital-deficient bank. In addition, the market rate of interest at which debt capital is traded or, if not traded, the difficulty encountered by a bank in refinancing it, would give the banking authorities and the public early market-derived warnings of a bank's weakness. Finally, some European authorities appear concerned that holders of debt capital might claim that they were covered by implicit deposit insurance, because, unlike the situation where deposit insurance is explicit, the liabilities covered are not clearly specified. However, our proposal for defining covered deposits should obviate this concern.

Thus, if debt capital were counted fully as regulatory capital, except for those banks that would lose the underpriced deposit-insurance subsidy, the additional capital requirement would not be costly to banks and would provide the banking authorities with additional information and the benefit of banks being more effectively subjected to market discipline.

Implementation of a 15% Capital Requirement As we now illustrate, banks could readily and almost costlessly implement a higher capital requirement if they were permitted to count debt capital fully as regulatory capital. To determine the effect of this change, we examined the financial statements of 145 EU commercial banks as reported by Global Village in \$US with balance-sheet data as of year-end 1999 through 2003 (the last year available). All EU countries as of May 2004 are represented, except Lithuania, Slovakia, and Slovenia. In Table 1 we disaggregate the banks into five groups according to their total assets as of December 31, 2003. The banks range in size from \$US 1.1 through \$US 1,034.1 billion; the 50 largest (\$US 50+ billion) banks hold 91.8% of the total assets and the 50 smallest hold but 1.3% of the total assets. Table 2 presents the banks' ratios to total assets of equity, long-term debt (which includes deposits at banks and other parties plus subordinated debt), equity plus long-term debt, and customer time deposits for each year-end, 1999 through 2003. The largest banks tend to hold the smallest ratios of equity to assets—about 4.3%, while the smallest banks hold about 11%. However, on average, all the banks hold substantial amounts of long-term debt that easily could be transformed into explicitly uninsured debt that could qualify for regulatory debt capital. Banks that pose risks to debt holders would have to and should pay higher interest rates. As shown in Table 2, on average for all groups of banks, the sum of equity plus long-term debt is about 26% of assets, well above our suggested 15%. Furthermore, some customer time deposits also could be converted to capital-qualified subordinated debt.

The extent to which some banks would hold less than 15% of equity plus long-term debt to total assets if the long-term debt were converted to regulatory debt capital is shown in Table 3. The number of banks that would not meet the 15% requirement for each of the five years studied is shown in Panel C. Panels A and B give these numbers as percentage of the total number of banks studied (145) and as percentages of the banks in each asset-size group. About a third of the banks would be undercapitalized (Panel A). The percentages are somewhat

Table 1: Number and Total Assets as of Dec. 31, 2003 of EU Commercial Banks

Total Assets (\$US billions)	number of banks	average per bank	total amount	percentage of total
250+	23	519.0	11,936	72.4
50 < 200	27	118.4	3,196	19.4
10 < 50	45	25.5	1,147	7.0
5 < 10	24	7.2	172	1.0
.2 < 5	26	1.8	46	0.3
All	145	113.8	16,497	100.0

greater for the smaller banks (Panel B). Thus, there is a considerable amount of heterogeneity in the capital held by EU banks. Consequently, a higher (15%) capital requirement alone would not be sufficient to forestall potentially costly bank failures. Effective enforcement also would be necessary.

Structured Early Intervention and Resolution The banking authorities could monitor banks' adherence to the capital requirements as follows. First, periodic reports would be made quarterly, as at present. These reports could be audited by independent certified (chartered) public accountants who are approved by the authorities, and signed by the bank's directors, as is the general EU practice. As noted earlier, it would be preferable if market values rather than only traditional cost-based accounting numbers were reported, as is the requirement in Denmark. The capital requirements would follow the procedures for structured early intervention and resolution (Benston and Kaufman, 1988 and 1997). In brief, four capital/asset "zones" or "tripwires" would be established. When a bank's capital/asset ratio is in the highest zone, say 15% or above, it would be subjected only to overall supervision that would be limited to assuring that the bank's sources of cash flows were reasonably diversified, that there were no conflicts of interest that might deplete the capital, that the internal accounting system was likely to prevent or uncover substantial fraud, and that the financial reports were accurate. Attestation by independent certified (chartered) public accountants, supplemented by in-place (field) examination when analysis of a bank's reported data or other indicators suggested unusual or suspicious happenings, would be sufficient for all of these purposes other than the diversification requirement, which could easily be observed.

Should a bank's capital/asset ratio fell below 15%, it would have to submit a business plan showing how it would recover its previous status and it could be subjected to greater supervision and to restraints on growth and dividend distributions, at the discretion of the authorities. Should the bank's capital/asset ratio sink below the next tripwire, perhaps 10%, the authorities would have no alternative but to take pre-specified actions that might include restraints on growth and dividend payments and suspension of interest payments to

Table 2: Equity, Long-term Debt, and Time Deposits Ratios to Total Assets at 145 EU Commercial Banks

Total Assets \$US billions 12/31/03	1999	2000	2001	2002	2003
Equity to Total Assets (%)					
250+	4.0	4.1	4.2	4.3	4.3
50 < 200	4.2	4.1	4.2	4.2	4.4
10 < 50	5.6	5.8	5.6	5.8	5.6
5 < 10	9.2	8.6	9.0	8.9	8.9
.2 < 5	11.0	11.0	10.8	11.0	11.1
All	6.7	6.6	6.6	6.7	6.7
Long-term debt (deposits at banks and other parties plus subordinated debt) to Total Assets (%)					
250+	23.5	21.3	23.7	21.2	20.1
50 < 200	26.1	26.2	26.5	27.2	25.4
10 < 50	24.6	24.7	23.3	22.6	21.7
5 < 10	12.2	14.1	13.1	13.0	15.0
.2 < 5	8.6	11.3	11.6	12.1	13.0
All	19.8	20.3	20.2	19.8	19.5
Equity plus long-term debt to Total Assets (%)					
250+	27.5	25.5	27.9	25.6	24.4
50 < 200	30.3	30.3	30.7	31.3	29.8
10 < 50	30.3	30.5	29.0	28.4	27.3
5 < 10	21.4	22.8	22.1	21.9	23.9
.2 < 5	19.7	22.4	22.4	23.1	24.1
All	26.5	26.9	26.8	26.5	26.2
Customer time deposits					
250+	18.6	16.6	14.4	13.8	13.5
50 < 200	13.3	13.8	14.4	14.2	13.7
10 < 50	18.9	20.1	18.1	19.3	16.0
5 < 10	22.0	24.7	24.6	23.1	18.6
.2 < 5	19.2	21.8	18.1	21.0	17.8
All	18.3	19.4	17.9	18.4	15.9

Source: Global Village data, all banks in all 25 EU countries except Lithuania, Slovakia and Slovenia (no banks were included) for which balance-sheet data were reported for each year-end, 1999 through 2003.

debt-capital holders, as well as direct monitoring and supervision of the bank's activities. This step provides a solution to the "regulatory moral hazard problem," wherein the regulators tend to forbear from taking action against a bank that appears to be important to a community or a politically powerful constituency. If the bank failed to restore its capital/asset ratio and it fell to a level where the bank was weak but not insolvent, say 5%, the authorities would have to take over the bank. It is very doubtful, though, if this ever would occur, because, if the bank were still economically solvent, the managers and owners would be far better off merging or selling the bank as a whole or in parts.

Table 3: Number of EU Sample of Banks with Less Than 15% Equity, Long-term Debt, and Time Deposits Ratios to Total Assets

Total Assets \$US billions 12/31/03	1999	2000	2001	2002	2003	
A. Percentages of total sample of 145						
250+	6	5	6	7	5	
50 < 200	5	4	2	3	4	
10 < 50	9	8	10	10	10	
5 < 10	8	8	6	8	7	
.2 < 5	8	8	8	6	6	
All	37	33	31	35	32	
B. Percentages of total assets group						
250+	39	30	35	43	30	
50 < 200	26	22	11	19	22	
10 < 50	29	27	31	33	31	
5 < 10	50	46	38	50	42	
.2 < 5	46	46	42	35	35	
All	37	33	31	35	32	
C. Number of banks						
	total over five years		number in each year			
250+	23	9	7	8	10	7
50 < 200	27	7	6	3	5	6
10 < 50	45	13	12	14	15	14
5 < 10	24	12	11	9	12	10
.2 < 5	26	12	12	11	9	9
all	145	53	48	45	51	46

*Mandatory Regularly Refinanced Debt Capital*²⁴ The capital requirement could be supplemented by requiring relatively large banks to hold a portion of their debt capital in maturities that come due quarterly, as suggested by Calomiris (1999) and the U.S. Shadow Financial Regulatory Committee (2000), and that

²⁴ The idea of using debt that is subordinated to deposits (which, as we discuss earlier, is similar to though importantly different from debt capital) as an instrument of disciplining banks goes back to the 1980s, in particular to proposals made in the U.S. by the Federal Deposit Insurance Corporation (1983) and by Benston *et al.* (1986). A more recent elaboration can be found in Calomiris (1999) and Benink and Wihlborg (2002). The idea was part of a joint statement by a sub-group of the Shadow Financial Regulatory Committees of Europe, Japan, and the U.S. (1999) and of Europe, Japan, Latin America, and the U.S. (2001), a statement by the European Shadow Financial Regulatory Committee (2000), and a key element in proposals from the U.S. Shadow Financial Regulatory Committee (2000 and 2001).

are subordinated to all other debt.²⁵ The regular refinancing requirement is valuable, because it can provide the banking authorities with early warnings of a bank's financial difficulties. The warnings are in the form of higher interest payments that must be offered on its replacement debt and difficulties the bank might experience in finding debt-capital holders. Higher interest payments also are a form of market-determined risk-based deposit insurance premiums that should serve to mitigate banks' incentives to take excessive risks. Another advantage of debt capital is that, unlike equity holders, debt holders might bear the costs of losses from bad bets and poor operations, while not obtaining the benefits from good bets and operating risks that turn out well. The regulatory benefit of debt-capital holders being subordinated to other debt holders is that this maximizes their incentives to monitor banks' risk taking and other operations.

An important advantage of requiring regularly refinanced debt capital is that it creates a credible form of market discipline, mitigating the incentives that banks might have to present to their supervisors internal ratings and VAR systems that underestimate credit and market risk ("gaming and manipulation"). Supervisors could monitor closely the risk premium on debt capital of each individual bank to establish whether the market's perception of increased riskiness is consistent with a bank's ratings systems and models. Importantly, the risk premium demanded by market participants takes into account the risk of a bank's total portfolio of assets, liabilities, and operations. This information should be integrated into the supervisory review process ("pillar II" of the Basel II Accord). As part of the supervisory process a supervisor might decide to monitor and supervise a bank more extensively and, if necessary, increase its capital requirement. However, such supervisory interventions might not be necessary, because, knowing that their supervisor is watching the yield spread on their debt capital and might act on this signal, bankers will have strong incentives to monitor and control the risks undertaken by employees and forebear from taking excessive risks.

The portion of regularly refinanced debt capital that relatively large banks would be required to hold could be set in line with levels of subordinated debt currently held by relatively large banks. Empirical evidence compiled for Europe by Sironi (2001 and 2003) and the Basel Committee (2003b) and for the US by the Federal Reserve Board (1999) suggests a ratio of around 2%. This is confirmed by our sample of 145 EU banks. As shown in Table 4, the larger banks have held somewhat more than 2%.

As an additional requirement the interest rate that banks could offer on debt capital might be restricted to a fixed premium or percentage over the rates paid on government obligations of the same maturity. As a result, risky banks would

²⁵ Kupiec (2005) also proposes a 2% subordinated debt requirement and shows analytically that if the risk on the risk of the debt were limited to 20 basis points, no additional capital requirement would be needed. He does not say, however, how that level of risk could be determined or enforced.

Table 4: Subordinated Debt to Total Assets, EU Commercial Banks

total assets (\$US billions)	1999	2000	2001	2002	2003
250+	2.2	2.3	2.5	2.5	2.3
50 < 200	2.0	2.2	2.4	2.5	2.4
10 < 50	1.2	1.3	1.7	1.7	1.8
5 < 10	0.9	1.1	1.2	1.4	1.3
.2 < 5	1.0	1.1	1.1	1.2	1.3
all	1.4	1.5	1.8	1.8	1.8

be unable to issue or refinance the debt, which would require them to shrink in size (thereby reducing their capital requirement) or limit risk taking.

ADVANTAGES OF THE PROPOSED REGULATORY SYSTEM

If the proposed regulatory system were adopted, there would be very few, if any, charges against the deposit insurance fund or the taxpayers. Supervisory costs would be very low, as all that would be required is reviewing the reports provided by holders of insured deposits and determining that the reports were accurate and relevant. Insured deposit providers that collateralized their deposits or that met their capital requirements and did not hold very undiversified portfolios would be free from supervisory interference. Not only would their operating costs be lower, but more importantly, they would be free to innovate and take appropriate risks.

The proposed system also meets all the concerns of those who have studied the causes of bank crises worldwide. The causes of these crises, as described and analyzed and then summarized in papers presented at a conference sponsored by the Federal Reserve Bank of Chicago and the Economic Development Institute of the World Bank and published in Caprio *et al.* (1998), are: (1) government macroeconomic actions or failures to act that result in substantial declines in asset values, thereby causing banks to incur large losses (such as unexpected increases in inflation that reduce the value of fixed-interest long-term obligations, increases in property taxes that decrease the value of real estate collateral, decreases in the money supply by the central bank or its failure to offset other causes of decreases, underpriced and poorly designed deposit insurance, and fixed exchange rates that collapse); (2) government regulations that require banks to hold undiversified portfolios and to lend to particular borrowers or groups that will not or cannot repay the loans; (3) inadequate supervision and failure to act promptly to resolve insolvent banks and politically driven forbearance to act at all against powerful banking interests; and (4) large credit losses resulting from bankers' poor and over-optimistic lending practices, inadequate internal controls, and concentrated patterns of lending and risk exposure. The

proposed system deals with the first by requiring banks to hold sufficient capital to absorb the effects of all but the most destructive government actions. The second (government interference) is obviated by removing bank-specific regulations from all aspects of banking other than deposit insurance and capital, as is a substantial portion of the third concern, because little supervision would be required. The moral hazard of government officials failing to act is dealt with by the pre-determined rules of structured early intervention and resolution that first give the banking authorities discretion to act but, should a bank's capital ratio decline sufficiently, then require them to act. Finally, higher capital requirements and the market discipline of having to refinance debt capital give bankers strong incentives to manage their credits effectively. Importantly, if they fail to do so, either because of poor, over-optimistic, or opportunistic management or just bad luck, higher capital requirements will make their equity and debt capital investors rather than depositors, taxpayers, and prudently run banks pay the cost.

VII. SUMMARY AND CONCLUSION

In this paper we develop a framework for improving the banking regulation in the EU, the US and other developed countries. Special focus is on developments in Europe, because the "Europe 1992" internal market program implies that the EU countries have set their financial institutions on the road to total product and service deregulation, well beyond the situation in the US and other countries. The EU becomes an increasingly integrated, liberalized financial market that is likely to be a model for the evolving banking regulatory structure in developed countries. The recent enlargement of the EU with the Central and Eastern European countries and the introduction of the Economic and Monetary Union (EMU) with a common currency, the euro, are enhancing this process further. Thus, the experience and prospects of EU banks should be of considerable interest to bankers, regulators, and citizens in the US and other developed countries.

We present an empirical analysis showing the evolution of the capital/asset ratio of commercial banks in 10 European countries. For some countries the data go back as far as 1850. Capital ratios at the end of the 20th century are historically low, having declined substantially since the 19th century. This is worrying, because the solvency of banks in the EU is likely to be threatened from three factors: greater competition among EU banks, competition from non-banks enabled by improvements in technology (notably electronics), and losses by no-longer-protected undiversified banks. It is even more worrying since attempts by international banking supervisors, such as those working together in the Basel Committee and the EU, to redress this situation have been inadequate. Consequently, we submit our own proposal for the regulation and supervision of banks in developed countries.

The first element of our proposal is that when there are government owned or controlled banks or major banks that are “too big to fail” (that is, have losses imposed on depositors should the banks become insolvent), governments should publicly acknowledge that *all* deposits are 100% guaranteed. At the same time, however, we narrow down the scope of the guarantee by explicitly (and publicly) defining a deposit as an account that must be repaid at par and must offer explicit interest payments not exceeding a relatively small amount above the comparable Treasury rate.

The second element of the proposal is to secure deposits against loss to the deposit insurance fund or to taxpayers by requiring firms that offer deposit services (including non-banks) to over-collateralize the deposits they hold *or* to hold a high level, relative to on- and off-balance-sheet assets, of capital (equity and explicitly non-insured debt capital). Allowing debt capital to count fully as capital would eliminate the higher income-tax cost of capital to banks. Were deposits secured in either of these ways, it would be very likely that equity- and debt-capital holders could absorb almost all potential losses.

The third element, which is applied to depository institutions, is structured early intervention and resolution. As banks’ capital/asset ratios decline, this system of predetermined capital/asset zones or tripwires first permits and then requires the government banking authorities to take actions to redress the capital decrease and to take over (resolve) the bank while its economic capital is positive. Consequently, there would be no need for risk-based capital calculations or intrusive regulatory restrictions and there would be very few, if any, charges against the deposit insurance fund or the taxpayers.

Finally, relatively large banks should be required to meet a portion of their capital requirement with debt capital that must be refinanced quarterly. Interest paid on these obligations and the ability of banks to refinance them periodically, would provide the supervisory authorities with early warnings on excessive risk-taking by banks, and give banks strong incentives to avoid or control such risks. Interest on debt capital also could be restricted to no more than a specified amount or proportion above comparable-maturity government obligations. These requirements would impose market discipline directly on banks, thereby reducing much of the need for additional governmental regulation and supervision.

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