

Commercial Banking Structure, Regulation, and Performance:
An International Comparison

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Abstract: This paper provides detailed information on banking structure, permissible banking activities, regulatory structure, deposit insurance schemes, and supervisory practices in each of the 15 European Union countries, as well as in Canada, Japan, Switzerland, and the United States. Comparisons across the countries show there is a wide range of banking structures and supervisory practices, and there is a roughly equal division between those countries that rely on the central bank as the chief banking supervisor and those that do not. In addition, although all of the countries currently have deposit insurance schemes, these schemes differ widely in many respects. Cross-country comparisons of the different aspects of banking do reveal one common characteristic, however. Almost all of the countries allow a wide range of banking activities, including underwriting, dealing, and brokering in both securities and insurance, and these activities can generally be conducted either directly in a bank or indirectly through a subsidiary of a bank, rather than through a holding company structure. The notable exceptions to this common tendency are the United States and Japan. An appendix presents an exploratory regression analysis illustrating a way in which empirical examinations of bank performance might be enriched by taking into account differences in permissible banking activities across countries.

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I. Introduction

The United States and many other countries have experienced serious banking difficulties during the past 15 years. In the case of the U.S., not since the 1930s have so many banking institutions failed and cost so much to resolve.¹ In several other parts of the world, the situation has been no better, if not actually worse. Indeed, the relative costs of resolving banking problems have been particularly high in such countries as Finland, Norway, Spain and Sweden compared to the U.S.² At least for these particular countries the immediate crises are past. But for still others, like Brazil, Japan, Mexico, and Russia, banking problems have yet to be fully resolved.³

This troublesome situation for banks in several parts of the world has been attributed to "... a mixture of bad luck, bad policies ... and bad banking." More specifically, "... in addition to the volatility of the environment, an increase in bankers' inclinations and incentives to take risk

¹As Table A.2.a shows, for the period 1980 through 1995 a total of 1,563 commercial and savings banks failed with total assets of \$264 billion and an estimated cost to the Bank Insurance Fund (BIF) of \$37 billion. In the case of savings and loans, from 1980 through 1995 a total of 1,308 institutions failed with total assets of \$642 billion and an estimated cost to both the Federal Savings and Loan Insurance Corporation (FSLIC) and, after August 6, 1989, the Resolution Trust Corporation (RTC) of \$154 billion. As regards credit unions, a total of 2,311 institutions failed with total shares (deposits) of \$3.6 billion and an estimated cost to the National Credit Union Share Insurance Fund (NCUSIF) of \$0.7 billion. More detailed information and discussion of U.S. bank failures and failure costs is provided in Bartholomew and Whalen (1995), Barth, Brumbaugh and Litan (1992), Gordon and Lutton (1994), and Park (1994). For information and discussion of savings and loans, see Barth (1991), Brumbaugh (1988) and (1993), Esty (forthcoming), Kane (1989), Romer and Weingast (1992), and White (1991). Credit unions are discussed in Barth and Brumbaugh (1994a), Kane and Hendershott (forthcoming), and Wai (1995).

²See, for example, the comparative bank failure resolution costs provided in Bank for International Settlements (1993) and Caprio and Klingebiel (1996). More generally, "At least two-thirds of the IMF's 181 member countries have suffered banking crises since 1980. In developing and transition economies, the cost of resolving these crises has approached \$250bn ... in total - absorbing between 10 and 20 per cent of a year's national income in the cases of Venezuela, Bulgaria, Mexico and Hungary" (see Chote (1996, p. 8)).

³It is interesting to note that Baker (1996, p.II) reports that "Having avoided a single financial failure in the previous 20 years, Japan has now had eight in twenty months."

explains why banking no longer appears to be so safe” (see Caprio and Klingebiel (1996, pp. 2, 22)). Differences in the range of activities in which banks have been permitted to engage in different countries has not been found to be a cause of these banking problems. The problems, in any event, have elicited responses from the legislative and regulatory authorities in many countries. In the U.S., the response of the authorities was to implement a series of new laws and regulations during the past 15 years in an attempt to promote greater confidence and stability in the banking industry.⁴

The banking authorities in some of the other countries grappling with banking problems followed a similar strategy: new laws and regulations were implemented over the same time period to resolve existing banking problems and to lessen the likelihood of future problems. The laws and regulations that were implemented generally were designed to ensure that banks operate in a “safe and sound” manner. In this regard, new bank standards for capitalization, risk exposure, and information disclosure were established. In addition, modifications were made in the restrictions on the pricing of bank products; the allowable activities of banks; the extent to which banks could be owned by, and be owners of, nonbank firms; the restrictions on geographical expansion of banks through branching, merger and acquisition; the supervisory practices to contain bank risk-taking behavior; and the insurance or guarantee schemes to protect depositors from bank failures. The exact mix of laws and regulations implemented in individual countries reflected varying economic, political, and social considerations.

Importantly, the laws and regulations implemented in recent years were not always the result of independent actions taken by individual countries. Instead, many of the new laws and

⁴For information on these laws and regulations, see Spong (1994).

regulations were the result of a general movement towards greater regional, if not truly international, cooperation and uniformity through the workings of such groups as the Basel Committee on Banking Supervision (established by the central bank governors of the Group of Ten (G-10) countries and under the aegis of the Bank for International Settlements (BIS)), and the European Commission (established as the executive and administrative body for the member countries of the European Union (EU)).⁵ The extent to which this trend will continue, and could possibly lead to the establishment of supranational bank regulators and deposit insurance schemes, remains unclear.⁶

Whether the particular bank regulations now in existence in various countries are sufficient to accomplish the goal of greater confidence and stability in banking so as to minimize any adverse effects on real economic activity is a complicated issue. Banks engage in a variety of activities typically funded with insured deposits and subject to a variety of supervisory

⁵The EU was officially created in November 1993 with the implementation of the Maastricht Treaty. Prior to the treaty, the EU was known as the European Community (EC). For information on the origins and growth of the EU and EC, see Borchardt (1995) and Fontaine (1995). The BIS was founded in 1930 and is headquartered in Basle. Although it has 32 members, the board of directors of the BIS is made up of central bank representatives of the G-10 countries.

⁶It is reported that some believe the North American Free Trade Association (NAFTA) should combine with the EU and perhaps the post-communist countries to formally agree on free trade among themselves, creating the Transatlantic Free Trade Area (TAFTA) (see Brimelow (1996)). Furthermore, in an address by Michel Camdessus, Managing Director of the International Monetary Fund, at the Group of Seven (G-7) summit in Lyons on June 24, 1996, it was stated that “The dissemination of a clear set of internationally accepted standards could provide the basis for the regulation and supervision of banking systems around the world.” And “...that the IMF, because of its legitimacy and universal responsibility for surveillance, has a role to play in facilitating this globalization of standards for bank supervision developed in Basle and put in practice in the G-10 countries (see International Monetary Fund (1996a, p. 236)). [For a discussion of the role of the IMF as a potential international lender of last resort, see Barth and Keleher (1984)]. Lastly, Noia (1995, p. 30) states that “The problems of coordinating different countries’ DIAs [Deposit Insurance Agencies] are so big that they could be solved in various ways”...including... “the creation of a European DIA”...which... “could be something like a regional agency for Europe or an international deposit insurance corporation....”

practices that affect their behavior. Deposit insurance or deposit guarantee schemes and supervisory oversight exist in all the industrial countries. Indeed, following the recent banking problems in different parts of the world, many countries previously without explicit deposit insurance schemes have recently established them. As these schemes become even more widespread, the potential for moral hazard and adverse selection problems is always present.⁷ Keeping such potential problems in check requires an appropriate combination of regulations, examinations, and supervisory actions to contain bank risk-taking behavior. If this is not done, the insurer and society will be inadequately protected from excessively costly and disruptive bank failures. At the same time, however, the overall regulatory, examination, and supervisory environment in which banks operate must not be so constraining as to prevent institutions from pursuing prudent and profitable opportunities, or so burdensome as to impose unnecessary costs on institutions. Otherwise, banks will be handicapped in competing in a rapidly changing and fiercely competitive global financial marketplace with less regulated firms able to supply both traditional and newer financial services in a more timely and efficient manner.⁸

The purpose of this paper is to provide information that may be useful in better understanding and addressing these important and controversial issues by examining the structure, regulation, and performance of banks from an international perspective. The structure

⁷In the context discussed here, “moral hazard” refers to the incentive for individuals or firms to engage in riskier activities when they are insured against adverse outcomes than otherwise, while “adverse selection” refers to the incentive for individuals or firms more at risk to adverse outcomes to seek insurance against such outcomes. Access to insured deposits by banks and limited liability protection to their shareholders give rise to these potential moral hazard and adverse selection problems.

⁸Some argue that there are other and more desirable ways than deposit insurance and constraining regulations to prevent serious and widespread banking problems from arising. See, for example, the discussion of narrow banking in Litan (1987) and Phillips (1995).

of banking in the EU and G-10 countries is compared and contrasted, in order to identify significant similarities and differences in the structure of banking in the 19 separate countries composing these two groups.⁹ The regulatory, supervisory, and deposit insurance environment in which banks operate in each of these countries is also compared and contrasted, enabling one to identify significant similarities and differences in the regulatory environment that may help explain the structure of banking in the various countries. Beyond this detailed comparison, the effect of the overall structural and regulatory environment on individual bank performance is investigated in order to evaluate the appropriateness of existing regulations in individual countries and any proposals for reforming them. More specifically, an exploratory empirical analysis based upon a sample of banks in the different countries is conducted to assess the effect of the different "regulatory regimes" on the performance of individual banks, controlling for various bank-specific and country-specific factors that may also affect bank performance. In this way, the paper attempts to contribute to an assessment of the appropriate balance between market and regulatory discipline that would ensure that banks have sufficient opportunities to compete prudently and profitably in a global financial marketplace. By presenting such an assessment, the paper provides information as to whether the U.S. is "out-of-step" with banking developments in other industrial countries.

The remainder of the paper proceeds as follows. In the next section, banking industry structure in the EU and G-10 countries is compared and contrasted. Section III compares the

⁹There is overlap between these two groups. Countries in both the EU and the G-10: Belgium, France, Germany, Italy, the Netherlands, Sweden, and the United Kingdom. Countries in the EU only: Austria, Denmark, Finland, Greece, Ireland, Portugal, Spain, and Luxembourg. Countries in the G-10 only: Canada, Japan, Switzerland, and the U.S. Since 1984 the G-10 has included 11 countries.

permissible activities, ownership opportunities, geographical expansion possibilities, and corporate organizational form of banks in the different countries. In section IV the deposit insurance schemes in all 19 countries are compared and contrasted. This is followed by a documentation of differences and similarities in supervisory practices and capital standards in section V. Section VI discusses a few issues that merit further consideration, while section VII contains the summary and conclusions. Based upon information derived from these comparisons, Appendix 1 presents an exploratory regression analysis illustrating that empirical examinations of bank performance might be enriched by taking into account the regulatory regime under which each bank operates, as well as bank-specific and country-specific factors.

II. Banking Industry Structure

One of the motivations for this paper is to understand better international differences in banking industry structure and regulation. As Baer and Mote (1985, p.1) stated more than a decade ago, "... systematic inter-country comparisons of structure and performance..." are "... of interest in their own right..." and "... offer the possibility of measuring the effects of regulation..." In the U.S., for example, banks face constraints on the extent to which they may engage in various security and insurance activities. It would be useful to know whether banks in other countries are granted greater freedom to engage in these activities. Furthermore, one may be able to use such information in an inter-country comparison of bank performance to assess the appropriateness of relaxing U.S. constraints in these specific areas. As a first step in

that direction, it is important to compare and contrast the role of banks and the structure of the banking industry in different countries.¹⁰

The specific countries chosen for the comparative examination are the EU and G-10 countries. As Table 1 shows, the 19 countries belonging to either of these two groups account for a relatively small percent of the world's population, but a large percent of both the world's Gross Domestic Product (GDP) and banking assets.¹¹ Indeed, these countries account for 79 percent of the world's GDP and 86 percent of the world's banking assets. By selecting these particular countries for a comparative analysis of bank structure, regulation, and performance one may identify some "stylized facts" that any truly general theoretical banking model ought to seek to explain.¹² Furthermore, the U.S. and the EU are frequently compared because they are roughly equal in terms of shares of both population and GDP. Yet, despite those similarities, the EU accounts for a significantly larger share of the world's banking assets than the U.S.

Table 1 also shows, perhaps not surprisingly, that these same 19 countries account for 96 percent of the world's mutual fund assets, 88 percent of the world's equity market capitalization, and 77 percent of the world's international debt securities. Given the recent privatization and

¹⁰Using some of this data for the EU and G-10 countries, Appendix 1 presents an exploratory empirical analysis of the impact of bank structure, regulation, supervision, and the macroeconomic environment on the performance of individual banks in the different countries.

¹¹World banking assets are calculated by totaling all asset-side items under the category "Deposit Money Banks" for every country included in International Monetary Fund (1996b). The banking assets for each of the 19 countries are calculated in a similar manner.

¹²In this regard, our paper follows the earlier work of Borio and Filosa (1994), who examine many of the same issues. Other related and informative material is found in Barfield (1996), Barth and Bartholomew (1992), Dermine (1990), Fingleton and Schoemaker (1992), Herring and Litan (1995), Hoschka (1993), Klein (1995), Mayer and Vives (1993), Mullineux (1992), Carmoy (1990), Organization for Economic Co-operation and Development (1992) and (1995b), Reincke (1995), Stone and Zissu (1994), and U.S. General Accounting Office (1994).

financial deregulation efforts in many countries, one would expect the shares of individual countries to change as domestic and international capital markets continue to both expand and evolve. Even so, the data clearly indicate some important differences in financing by business firms in individual countries. In particular, the U.K. and the U.S. are examples of stock market based financial systems, because stock issuance rather than bank lending is the most important source of funding for firms. As Table 2 shows, in 1993 the equity market capitalization-to-GNP ratios for the U.K. and U.S. were 110 percent and 80 percent, respectively. In contrast, France and Germany are examples of bank based financial systems in which stock issuance is significantly less important than bank lending as a funding source. The corresponding equity market capitalization-to-GNP ratios for France and Germany in 1993 were 35 percent and 2 percent, respectively.¹³

Whether a country has a bank-based or stockmarket-based financial system is important. Each type of system facilitates the flow of funds from savers to borrowers, but each has different implications for dealing with potential asymmetric information problems that arise between those providing the funds and those receiving them. In particular, borrowers typically have better information about their own riskiness than savers do. Savers must therefore distinguish good from bad risks. They must also monitor borrowers once funds have been provided to be sure the funds are being used as intended. Is the ideal financial system in terms of linking savers and borrowers one which relies heavily on banks through lending and stock ownership or control to

¹³It should also be noted that in Germany banks own or control a significant portion of corporate stock, whereas in the U.S. banks own or control a negligible portion.

resolve these potential informational and monitoring problems, or one which relies heavily on stock markets (or, more generally, capital markets)?¹⁴

By examining banking developments in these 19 countries covered by this paper, one is not only obtaining information about those countries accounting for the vast majority of the world's banking and other selected financial assets, one is also indirectly obtaining information about future bank regulatory, supervisory and deposit-insurance developments, because many emerging markets countries follow the lead of the EU and G-10 countries. Whether the German or U.S. type of financial system will be more widely adopted, however, remains to be seen.

Information on bank structure in each of the 19 countries selected for examination is provided in Table 3.¹⁵ The data reveal substantial variation in bank structure in the individual

¹⁴For a discussion of these issues, see Allen (1993), Gilson (1995), and Prowse (1994). Of course, both types of financial systems simultaneously contain banks and stock markets (or, more generally, capital markets). There may therefore be a tendency to converge to a more uniform financial system to the extent stock-market type countries grant banks broader corporate control powers and bank-market type countries take actions that foster freer development of the capital markets. In this regard, Macey and Miller (1995, p. 112) state that "...while the degree of banks' influence in Germany ... is probably excessive, the level of banks' influence in the United States is likely too low."

¹⁵The focus of this paper is on commercial banks. However, it is clear that over time it is becoming ever more difficult to maintain distinctions among the different types of financial service firms. Indeed, in some of the countries regulations refer only to credit institutions, recognizing that the distinctions between commercial banks and other credit institutions are no longer important for regulatory purposes. To the extent possible, however, the paper is based upon an examination of the structure, regulation and performance of commercial banks. This facilitates comparisons between developments in the U.S., where commercial banks are still subject to different regulatory treatment than other financial service firms (including other depository institutions), and in other industrial countries. Tables A.2.b and A.2.c present some limited quantitative information on the role of commercial banks compared to other financial service firms in the U.S. As may be seen from these two appendices, the traditional role of commercial banks compared to nondepository financial service firms has declined over time, but nonetheless they remain the most important type of depository institution in terms of total assets. For more information and discussion of these and related trends in U.S. banking, see Berger, Kashyap and Scalise (1995), French (1994), Nolle (1995a), and Rhoades (1996).

countries.¹⁶ Population per bank is 142,023 for the EU countries, but only 52,773 for the G-10 countries. Luxembourg has the lowest population per bank (1,812), whereas Japan has the highest (831,760). Not surprisingly, given the restrictions on geographical expansion through branching, merger, and acquisition until recently in the U.S. compared to the other countries (as will be discussed below), the population per bank in the U.S. is only 23,508. This figure for the U.S. is less than 20 percent of the population per bank for the EU countries. However, when one examines banking offices (i.e., banks plus branch offices) rather than banks, the figures drop considerably – to 3,744 for the EU countries and 4,778 for the G-10 countries. The comparable figure for the U.S. is 3,962. The number of staff per banking office is 18 for the EU countries and 22 for the G-10 countries. Staff figures for the individual countries display much more diversity than population figures, ranging from a low of 9 people per banking office in Spain to a high of 44 in Switzerland.

As banks increasingly compete not only with one another but with other financial firms both domestically and across national borders, it becomes incumbent upon them to make every effort to operate efficiently. In those countries with relatively high figures for both population per banking office and staff per banking office, efficiencies are frequently being gained through office closings and staff reductions. The growing use of automatic teller machines (ATMs) and other types of information-oriented technology facilitate such closings and reductions by providing more efficient ways in which to deliver credit and payment services across vast

¹⁶To obtain a comparative perspective at different points in time, see Baltensperger and Dermine (1990) for related data for 1986 (as well as a discussion of many of the same issues addressed in this paper).

geographic areas. In addition, the elimination of excess capacity in the global banking industry is being accomplished through greater consolidation, mainly through mergers and acquisitions.

Table 3 also presents information on the extent to which deposits are the funding source for assets, and loans the primary balance-sheet asset of banks.¹⁷ In regard to these traditional banking activities, U.S. banks fund a larger share of their assets with deposits (74 percent) than banks in both the G-10 (61 percent) and the EU (51 percent). Loans account for 58 percent of assets for U.S. banks, whereas the corresponding figures are 62 percent and 53 percent for the EU and G-10 banks, respectively.

The figures in Table 3, moreover, show that banking markets in most of the examined countries are relatively concentrated. The largest three banks account for more than 50 percent of total bank assets in 12 of the 19 countries. The U.S. has the lowest degree of concentration – 13 percent. Information is also presented on the bank share of the total assets of all credit institutions (i.e., basically all depository institutions). These figures vary quite widely across the countries, reflecting differences in the extent to which banks are still considered and treated as a separate and distinct segment of all credit institutions.

Table 3 also provides information on banking assets per U.S. dollar (USD) of GDP. The range of variation is quite striking. In particular, Germany and the U.S. have the lowest figures (0.50 and 0.59, respectively) while Luxembourg has the highest (37.12).¹⁸ As discussed earlier, the figures in this table may be used in conjunction with other information to assess the relative

¹⁷Off-balance sheet activities have not yet been included in the analysis.

¹⁸The figure for Germany, however, increases more than threefold when one includes saving and cooperative banks. For the U.S., the figure increases to 0.83 when one includes savings banks, savings and loans, and credit unions.

importance of different sources of funding for business firms across countries and thereby the alternative ways in which potential informational and monitoring problems are resolved.

The information presented in Tables 1, 2, and 3 clearly shows there are substantial differences in the role of banks and the structure of banking industry across the EU and G-10 countries.

III. Permissible Activities, Ownership Opportunities, and Geographical Possibilities

An important factor in an examination of the performance of banks is the type and extent of activities in which they are permitted to engage. By restricting the type and extent of activities, laws and regulations limit the opportunity of banks, if not their shareholders, to select from various return and risk portfolios available in the marketplace. Banks may be restricted to a relatively narrow range of activities, mainly lending and deposit-taking activities, and prevented from owning or being owned by nonbanks. Alternatively, they may be permitted relatively wide latitude to engage in other activities, including various securities, insurance, and real estate activities, and to own or be owned by nonbanks.

Table 4 provides detailed information about the permissible securities, insurance and real estate activities of banks in each of the EU and the G-10 countries, and Table 5 summarizes the information in Table 4 to provide a more general comparison. There is not a uniform regulatory structure with respect to these particular activities, although there are common tendencies among most countries. In 14 countries securities activities are unrestricted, in 3 countries they are

permitted, and in 2 countries they are restricted.¹⁹ Insurance activities are permitted in 13 countries, restricted in 4 countries, and prohibited in 2 countries. Real estate activities are unrestricted in 5 countries, permitted in 6 countries, and restricted in 8 countries. Overall, real estate is the most restricted of the three activities.

The information in Tables 4 and 5 shows that the U.S. is “out-of-step” with the majority of the other countries in terms of providing banks with the opportunity to engage in securities, insurance, and real estate activities. In most other countries, banks may not only engage in a full range of securities and insurance activities, but do so directly in the bank and without mandated firewalls (i.e., restrictions designed to maintain securities and insurance activities separate from affiliated banks) (also see Tables 6a and 6b). This overall relatively limited regulatory intervention reflects, in part, actions recently taken within the EU to provide flexibility to all member countries to establish universal banking systems. To differing degrees, such systems have existed for some time in France, Italy, the Netherlands, and most notably, Germany. Switzerland should be added to this group, although it is not a member-country of the EU.²⁰ As

¹⁹Securities activities include underwriting, dealing and brokering all kinds of securities and all aspects of the mutual fund business. Insurance activities include underwriting and selling insurance products/services as principal and as agent. Real estate activities include investment, development and management. Unrestricted means that a full range of activities in the given category can be conducted directly in the bank. Permitted means that a full range of activities can be conducted, but all or some must be conducted in subsidiaries. Restricted means that less than a full range of activities can be conducted in the bank or subsidiaries. Prohibited means that the activity cannot be conducted in either the bank or subsidiaries.

²⁰See, for example, Bisignano (1992) for a discussion of this categorization of countries based upon the existence of universal banks, among other related issues. It should be noted in this regard that Saunders and Walter (1994, p. 234) emphasize that “...no country in the developed world has a fully integrated universal banking system.” They add that “The closest example is Germany...”. For further discussion of this particular issue as well as an assessment of the pros and cons of universal banking systems, see their recent and comprehensive book on this subject.

a result of the recent actions taken in the EU, the divergence in the activities in which EU banks and U.S. banks are able to engage should widen still further over time, unless corresponding actions are taken in the U.S.

Table 4 also presents information about the extent to which banks are permitted to invest in nonfinancial firms and vice versa. In 11 countries, banks are unrestricted with respect to investing in nonfinancial firms. This type of investment is permitted in 2 countries and restricted in 6 countries. On the other hand, nonfinancial firms have wide access to bank ownership in 13 of the countries, with the remaining 6 countries imposing restrictions on such ownership. Once again, U.S. banks find themselves operating under the most restrictive regulatory regime with respect to ownership opportunities. This disparity raises the question of whether the atypical situation in the U.S. permits funds to flow appropriately from savers to borrowers without impeding risk-sharing opportunities and the efficient allocation of resources.

Table 4 provides information on whether geographical branching restrictions are imposed on banks within their own country. In all but one case— the U.S. — there are no legal branching restrictions.²¹ In the EU, moreover, the Second Banking Directive (issued in January of 1988 and implemented on January 1, 1993) specifies that banks may engage directly or through branches in an agreed upon broad list of activities in all the host member countries so long as their home

²¹Canadian law imposes branching restrictions on foreign-owned banks, however, and EU members may also treat foreign branches differently than branches of domestic banks. In Canada, moreover, “Under existing rules, no single shareholder may hold more than 10 percent of a Schedule I institution, which includes the six biggest domestic banks. The curb was put in place in the mid-1960s to thwart New York based Chase Manhattan’s plans to buy Toronto Dominion” (Simon, p. 20). Some Canadian bankers now believe this ownership restriction impedes the consolidation of the banking industry necessary “to compete not only with U.S. banks, but with non-bank financial groups, such as Fidelity Investments and GE Capital, which have significantly expanded in Canada in recent years” (Simon, p. 20).

countries authorize the activities. The directive thereby establishes the principle of mutual recognition, which means that each banking authority in the separate member countries is responsible for regulating and supervising its own chartered or licensed banks, both domestically and throughout the EU.

Table 7 provides the agreed-upon list of the approved activities that are considered to be the core activities of banks in the EU. Each member country must decide which of the activities will be authorized for its own banks. Universal banks, such as those in Germany, are typically permitted to engage in all of the activities on the list. However, such banks also typically engage in insurance and real estate activities, which are not included on the list of approved activities. Whether banks are permitted to engage in these activities is determined by home and host country regulations. Every authorized credit institution in each of the EU countries is covered by the directive, where such an institution is defined “as an undertaking whose business is to receive deposits or other repayable funds from the public and to grant credits for its own account.” As a result, “financial institutions such as investment firms, investment funds and insurance companies do not fall within its scope” (Benink (1993, p.55)).²² Basically, a credit institution is a bank or other depository institution.

This historic directive clearly provides for greater geographical expansion opportunities for banks in member countries by providing for a single banking license, or “passport,” that can be used throughout the EU.²³ But it also provides opportunities for regulatory arbitrage, in that

²²For a more thorough discussion of the various EC banking directives, see Benink (1993) and Zimmerman (1995).

²³Subsidiaries of non-EU banks that are authorized to operate in any EU country are treated the same as the domestic banks of that country. Branches of non-EU banks are not covered by the Second Banking

investment funds may flow to banks located in those countries permitting the broadest range of activities. If these banks are able to achieve competitive advantages through, for instance economies of scale and scope using new information and delivery technology, they may be able to capture significant market share throughout the EU, without even being required to establish an elaborate branch network. Of course, if such a situation arises, other, more restrictive member countries may relax their own regulations, which would lead to greater harmonization of the bank regulatory environment throughout the EU. Determining the exact balance between harmonization and independence among the member countries remains an important issue.

The U.S., despite being more restrictive than most of the other countries examined, has recently granted banks greater freedom to engage in a range of securities activities.²⁴ Since 1987, as Table 8 shows, 39 bank holding companies have been granted permission by the Board of Governors of the Federal Reserve System to establish Section 20 subsidiaries to engage in expanded security activities.²⁵ In March 1996, moreover, the Supreme Court ruled unanimously

Directive and thus are not eligible for the single passport. To operate throughout the EU, separate branches would have to be established in each member country. Furthermore, this directive includes a “reciprocal national treatment” provision under which the EU may deny issuance of a license to a bank owned by an institution in a country that does not provide national treatment to EU banks. See United States Department of the Treasury (1994) for elaboration on these issues.

²⁴The Banking Act of 1933, commonly known as the Glass-Steagall Act, restricts banks and bank-affiliated companies in many securities activities. The act allows banks and companies affiliated with banks to underwrite and deal in certain types of securities known as bank-eligible securities, which include U.S. government securities. Underwriting and dealing in other types of securities – known as bank-ineligible securities – are subject to specific restrictions. For more details, see Fein (1993) and United States General Accounting Office (1995).

²⁵Section 20 of the Glass-Steagall Act prohibits Federal Reserve member banks – all national banks and state banks that choose to become members – from affiliating with an institution principally engaged in underwriting securities. Based upon the interpretation of this prohibition by the Board of Governors of the Federal Reserve System, banks owned by holding companies are allowed to affiliate with institutions engaged in securities underwriting and dealing so long as the activity involving bank-ineligible securities generates 10 percent or less of the affiliate’s gross revenue (see United States

that national banks in small towns can serve as agents for any type of insurance regardless of state law. Furthermore, in September 1994 legislation was signed into law that provides banks greater opportunities for expansion through branches, mergers, and acquisitions throughout the U.S. (see Tables 9a and 9b).²⁶ Yet, despite these recent and important developments, the U.S. still remains more restrictive in regulating banks in these and other areas when compared to most other countries in the EU and G-10. This raises the question of whether the U.S. or these other countries have achieved the most appropriate balance between market and regulatory discipline to constrain both the kind and the extent of risky activities in which banks engage.

In view of debate in the U.S. over the most appropriate way to regulate the corporate structure of banks, it is interesting to note that in many of the G-10 and EU countries banks can engage in a wide range of activities directly in the bank, or through subsidiaries of the bank rather than through a holding company.²⁷ Tables 6a and 6b present information on whether bank holding companies are permitted or not, and on the permissible corporate organizational form in which to conduct securities, insurance, and real estate activities in selected EU and G-10

General Accounting Office (1995, p. 20) and Fein (1993)). Recently, the Board of Governors of the Federal Reserve System proposed raising the limit on bank-ineligible securities to 25 percent of a Section 20 subsidiary's gross revenue (see, for example, Taylor and Frank (1996)).

²⁶According to Kane (1996, p. 141), "...it was only with the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 (IBBEA) that the web of federal statutes has begun to slot into line with the economic realities of bank geographic and product-line expansion." Interestingly, federally chartered savings and loans are permitted to branch both interstate and intrastate free from any restrictions imposed by state laws.

²⁷Despite the restrictions on commercial banks in the U.S., unitary savings and loan holding companies may be commercial firms, and their non-savings and loan subsidiaries may engage in unlimited securities and insurance activities. For this and other reasons the savings and loan holding company law is more flexible than the Bank Holding Company Act (see Downey (1996)). There is no documented evidence, moreover, that this greater charter flexibility contributed to the savings and loan debacle in the 1980s (see Barth (1991)).

countries. In 11 of the 15 countries surveyed, bank holding companies are permitted, including the U.S. However, in 8 of these countries bank holding companies are infrequently used although they are permitted. Only in 3 countries (Italy, the Netherlands, and the U.S.) are bank holding companies permitted and widely used. In the other 12 countries they are either not permitted or not frequently used.

With respect to permissible corporate organizational form in which to conduct securities activities, in all 14 countries (omitting the U.S. for the moment) such activities may be conducted in a bank subsidiary. In 13 countries they may be conducted in the bank itself (Canada being the only exception). Furthermore, even though securities activities may be conducted in nonbank subsidiaries of bank holding companies in 7 of these countries, in all but possibly one country they are most frequently conducted either in a bank or a bank subsidiary.

With respect to permissible corporate organizational form in which to conduct insurance activities, in 13 countries (again omitting the U.S. for the moment) such activities may be conducted in a bank subsidiary. In 6 countries they may be conducted in the bank itself. Furthermore, in 8 of the 14 countries insurance activities may be conducted in nonbank subsidiaries of bank holding companies; yet, in only 2 of the 8 countries are such activities most frequently conducted through these nonbank subsidiaries.

With respect to permissible corporate form in which to conduct real estate activities, in 12 countries (once again omitting the U.S.) such activities may be conducted in a bank subsidiary. In 7 countries they may be conducted in the bank itself. In 6 of the 14 countries real estate activities may be conducted in nonbank subsidiaries of bank holding companies, but in only one country are such activities most frequently conducted in this manner.

Table 6b outlines corporate organizational structures permitted for the securities insurance, and real estate activities of U.S. banks, and highlights three main points. First compared to the other countries surveyed, variations in permissible forms of corporate organization for banks to engage in securities, insurance and real estate activities in the U.S. are so numerous and complex that it is difficult to summarize such practices in Table 6a. Second, U.S. banks are restricted to a narrower range of permissible activities than are banks in most G-10 and EU countries. Finally, unlike the other countries surveyed, U.S. banks are very restricted in their ability to engage in securities, insurance and real estate activities directly in the bank, or a subsidiary of the bank. More commonly, U.S. banking law requires banks to use a subsidiary of a bank holding company, not a subsidiary of the bank itself, for these activities.

The clear pattern that emerges from the information presented in Tables 6a and 6b is that the U.S. is “out-of-step” with most of the other countries with respect to permissible corporate organizational form in which to conduct securities, insurance, and real estate activities. In 13 of the 14 countries surveyed (omitting the U.S.), securities activities are most frequently conducted in either a bank or a bank subsidiary. In 12 of these countries, insurance activities are also most frequently conducted in either a bank or a bank subsidiary. In 11 of the 14 countries, real estate activities are most frequently conducted in either a bank or a bank subsidiary. When given a choice, banks in most countries appear to favor the less complex corporate organizational form in which to conduct these particular activities.²⁸

²⁸It might be noted that in the U.S., “Many BHCs [Bank Holding Companies] . . . appear to have been formed as a means of expanding geographically, both intra- and interstate, into areas in which branch banking was restricted, rather than as a means of engaging in activities prohibited to banks” (Task Force on the International Competitiveness of U.S. Financial Institutions (1991, p. 295)). This suggests that this particular corporate organizational form may have been mainly a market response to a specific

A key decision of the U.S. Supreme Court in *NationsBank v. Variable Annuity Life Insurance Company* (“VALIC”) in January 1995 provided the impetus for even more banks in the U.S. to be granted authority to engage in a wider range of activities. The reason, according to Williams and Jacobsen (1995, p.10), is that the decision gives “the Comptroller [of the Currency (OCC)] the ability to allow the business of banking conducted by national banks to evolve and service developing markets and emerging customer needs.” Or, stated another way by Williams and Jacobsen, “The Court’s broad-view approach will allow the Comptroller to approve, and banks to conduct, additional new activities in the future” (p. 22). They emphasize, however, that “The delicate task facing bank regulators is to allow innovation in a safe and sound manner, without smothering new activities with unnecessarily burdensome restrictions that undermine the benefits, to banks and their customers, of allowing banks to develop and offer new products and services” (p. 42).²⁹ The OCC apparently has the legal authority to permit national banks in the U.S. to operate, if they so choose, more like banks in many other countries. These activities would not be conducted directly in the bank, but instead indirectly through subsidiaries.³⁰

regulatory constraint rather than based on any inherent advantages to the bank holding company structure. Table A.2.d presents information on the rapid growth in importance of bank holding companies in controlling banks and bank assets across state lines since 1980.

²⁹Barth (1991) argues that overly restrictive laws and regulations were a major initial contributing factor in the savings and loan debacle in the U.S.

³⁰It is worthwhile pointing out, in this regard, that Thomas M. Hoenig, President of the Federal Reserve Bank of Kansas City, has recently stated that “In light of the costs and difficulties of implementing prudential supervision for larger institutions who are increasingly involved in new activities and industries, the time may have come to sever the link between these institutions and the safety nets, making it feasible to significantly scale back regulatory oversight of their operations” (Hoenig (1996, p. 11)).

In view of this situation, the OCC in November 1996 issued a rule revising its regulations governing corporate activities by national banks.³¹ In general, the rule permits national banks to seek OCC permission, on a case-by-case basis, to conduct activities not permissible for the bank itself through operating subsidiaries. In this way, effective January 1, 1997, banks have been provided with the potential to engage in a wider range of activities “that are part of or incidental to the business of banking.”³²

IV. Deposit Insurance Schemes

It is currently common for banks to accept deposits that are payable on demand at par value on a first-come, first-serve basis. These deposits are then used to fund illiquid loans whose values typically are difficult to assess by depositors as compared to bankers, which gives rise to an “asymmetry of information” problem. As a result of these differences in the two sides of the balance sheet and in available information, banks are subject to runs whenever depositors believe the value of bank assets is insufficient to fulfill the bank’s obligations to them, even when bankers know otherwise. If runs do occur and are widespread, banks could be forced to sell illiquid assets at “fire-sale” prices and thereby be driven into insolvency. An illiquidity problem, in other words, could be transformed into an insolvency problem. Such an event could result in severe disruptions in both the payments and credit systems, with adverse effects on the real

³¹See NEWS RELEASE, NR96-128 and NR96-129, Office of the Comptroller of the Currency, November 20, 1996.

³²This development may enable national banks, for example, to engage in securities activities more efficiently through operating subsidiaries rather than through a securities subsidiary of a bank holding company, which also has a separate national bank subsidiary.

economy. One way to prevent such a dire situation is to have a central bank stand ready to provide whatever liquidity is necessary either directly to solvent banks (i.e., serving as a lender of last resort) or indirectly through open market operations, thereby keeping runs from spreading throughout the banking industry. Another way is to establish a deposit insurance scheme in which depositors are protected against the loss of their deposits. In this latter case, when depositors are protected from losses, any incentive for a run on banks is eliminated. However, once a country decides to establish a deposit insurance scheme, the way in which that and associated regulatory-supervisory schemes are structured affects both the likelihood of moral hazard and adverse selection problems arising and the degree of severity should those problems arise.³³

Table 10 presents information on the structure of the deposit insurance schemes that have been established in each of the EU and G-10 countries.³⁴ When comparing these schemes, it is important to note that a minimum level of harmonization exists among the EU countries due to the Directive on Deposit-Guarantee Schemes adopted on May 30, 1994. This directive requires that all member countries ensure that at least one deposit-insurance scheme be established and officially recognized as of July 1, 1995. Each of the schemes must at the very least provide a

³³For further discussion of these issues, see Barth and Brumbaugh (1994a) and (1994b) and the references cited therein. Of course, the failure of a large financial institution may also lead to an economy-wide financial crisis. For a discussion of systemic risk, see Board of Governors of the Federal Reserve System (1994), Borio and Van den Bergh (1993), and Kaufman (1995).

³⁴Additional sources of information on different countries' deposit insurance schemes include Banking Federation of the European Union (1995), Bartholomew and Vanderhoff (1991), Institute of International Bankers (1995), Kyei (1995) and Noia (1995).

uniform minimum amount of coverage to protect depositors.^{35, 36} If a country has a scheme providing depositor coverage that exceeds the minimum amount, then branches of banks belonging to schemes in other countries with less coverage may obtain the extra coverage by joining the host country insurance scheme. For most other aspects of the insurance schemes that are established in the EU, decisions are left to the discretion of the individual member countries. Overall, the directive expands the pool of depositors in the EU explicitly protected against losses from bank insolvencies.

The deposit insurance schemes in existence do indeed vary from one country to the next. Several salient differences in the schemes may be noted based upon the information in Table 10. The earliest deposit-insurance scheme established among the 19 countries was in 1933 in the U.S., while the most recent scheme was established in 1995 in Greece. Over half of the deposit-insurance schemes were established within the past two decades. Of course, in many of these countries an implicit if not explicit scheme was undoubtedly in place.

As may be seen in Table 10, in 7 countries the insurance schemes are administered by the government, in 7 countries the schemes are administered by the banking industry, and in the remaining 5 countries the schemes are administered jointly by government and industry. Most (16) of the countries, moreover, make it compulsory that banks join the insurance scheme. Perhaps most importantly, these countries differ with respect to whether funding is provided ex

³⁵A scheme that incorporates a coinsurance provision is compatible with this requirement because the guarantee may be limited to a specified percentage of deposits. The percentage guaranteed, however, must be equal to or exceed 90 percent of aggregate deposits until the amount to be paid reaches 20,000 ECU (see Raworth (1995, p.99)).

³⁶According to Commerzbank (1994, p. 62), “Originally, an upper limit was envisaged for deposit insurance in order to preclude cross-border competition in this area.”

ante (i.e., a reserve fund is established before bank failure losses occur), or ex post (i.e., funds are obtained after bank failure losses occur). In 13 countries the scheme is funded ex ante whereas in 6 countries the funding is ex post. No country appears to make explicit the source of funding for catastrophic losses resulting from bank failures that overwhelm the reserve fund or the ability of participating banks to cover the losses.³⁷ In the case of ex ante funding schemes, only 3 countries specify a minimum reserve level for the fund. Only Portugal, Sweden and the U.S., moreover, specify risk-based deposit-insurance premiums.

Table 12, which summarizes some of the information in Tables 10 and 11, shows that the amount of coverage per depositor for the ex ante schemes ranges from a low of 12,030 USD in Spain to a high of 491,129 USD in Italy. In the U.S., the comparable figure is 100,000 USD placing it third in terms of coverage among the countries examined, excluding Finland and Germany.³⁸ When one compares the amount of coverage per depositor to per capita GNP, one finds that in only four countries (Belgium, Luxembourg, Spain and Switzerland) is the coverage amount less than per capita income. In the case of Germany, each depositor of a bank is insured for up to 30 percent of the capital at the time of the last published annual accounts of that bank, although all payments end once the insurance fund is depleted. Interestingly, Roth (1994, p. 44) states that “This unique scheme implies that the coverage will decline as the level of capital decreases.” He adds that “This could be an incentive for depositors to withdraw funds from

³⁷The lack of a pre-specified plan to handle catastrophic losses was an issue raised in the massive losses incurred by savings and loans in the 1980s and the early 1990s in the U.S. (see Barth (1991)).

³⁸Actually, in the U.S. an individual may have an individual account, a joint account, a revocable trust account, and IRA and Keogh accounts, each of which is separately insured up to \$100,000 at the same bank. Additional insurance may be obtained by placing deposits in multiple banks.

suspect bank” (p. 44). In the case of Finland, each depositor of a bank is insured in full. The United Kingdom and Ireland are the only countries that have made coinsurance a part of the deposit-insurance scheme, whereby depositors share in any losses resulting from bank failures.³⁹ Over the last 50 years in Switzerland no public funds have been used to prevent the insolvency of a privately owned bank, and no statutory deposit insurance scheme has been implemented. Switzerland, however, does provide for preferential rights to individuals with savings deposits (up to 10,000 S.F. per depositor) when resolving an insolvent bank.

Existing differences in the deposit insurance schemes in these countries may result in individuals choosing physically distant banking relationships. Individuals may, with the liberalization of capital flows across national borders, choose banks otherwise offering essentially the same services on the basis of deposit-insurance protection. This may especially be the case in an increasingly global banking market when both nonresident depositors are covered and foreign-currency-denominated deposits are covered by such schemes (see Table 10). Furthermore, the differences in the deposit-insurance schemes may result in foreign branches obtaining insurance coverage in a country even though that country has no authority to regulate the risk-taking behavior of those branches because of mutual recognition. In this regard Baltensperger and Dermine (1990, p. 33) state that “As long as national authorities do not delegate their powers to a supranational authority, we recommend that they keep full responsibility for domestic markets. This is justified because a bank failure will affect the local economy, the deposit insurance system or the lender of last resort. Supervision should not be

³⁹Italy and Portugal have schemes in which depositors are fully protected up to specified maximum amounts and then are partially protected for additional specified amounts, thereby incorporating a coinsurance element.

entirely delegated to the supervisor of the parent bank.” It has also been argued that the fact that, for example, “German banks will not be allowed to offer their own more generous level of protection elsewhere within the EU” . . . “would seem to be at odds with the principle of home-state regulation; it also impedes competition” (see Commerzbank (1994, p. 62)).

V. Supervisory Practices and Capital Standards

The degree to which particular supervisory practices and capital standards are suitable for addressing banking risk is a complex issue, depending upon the structure of the deposit insurance scheme as well as the permissible activities, ownership opportunities, and geographical possibilities of banks. Nevertheless, there can be no doubt that supervisory practices and capital standards, like regulatory constraints and deposit insurance schemes, affect the performance of banks. If supervision is lax and capital standards are inadequate, moral hazard and adverse selection problems may flourish. The result in such a situation would be excessive risk-taking by banks and thereby the likelihood of greater losses associated with bank failures⁴⁰ If, on the other hand, supervision and capital standards are overly restrictive and burdensome, the financial position of banks will be weakened vis-a-vis their actual and potential nonbank competitors.⁴¹

⁴⁰Beyond the immediate costs of resolving bank failures, of course, there are the societal costs of both a misallocation of investment resources and a redistribution of wealth.

⁴¹Recognizing the importance of the double-edge aspect to bank regulation early on, Buser, Chen and Kane (1981) develop a model taking into account the “joint responses of regulator and regulatee” (p. 53). Also, given the specific focus of this paper, it should be mentioned that recently Santomero and Trester (1993) develop a model “...to determine qualitative characteristics of an optimal regulatory strategy” (p. 4) which “...highlights...the need for international harmonization of policy...in a unified European banking system” (p. 5).

It is for this reason that a comparison of supervisory practices and capital standards, in addition to regulatory constraints and deposit-insurance schemes, is important.

Table 11 presents selected information on supervisory practices and capital standards in the EU and G-10 countries. (Table 12 summarizes some of this information for ease of comparison.) Table 11 presents information on the various components of capital that are permitted to be included in meeting the capital standards in the different countries (the qualitative or numerical standards themselves are noted below). The table also presents information on the examination process, regulatory information disclosure, limits on bank risk exposure, and limits on bank activities abroad, among other factors. Clearly, the information in the table shows there is a wide range of practices and constraints in the different countries.

There is no uniform supervisory-authority scheme across all the countries. In some countries the principal bank supervisory authority is the central bank, while in others it is a separate authority.⁴² The U.S., with three federal agencies (the Office of the Comptroller of the Currency, the Board of Governors of the Federal Reserve System, and the Federal Deposit Insurance Corporation) and 50 state bank regulatory agencies, not to mention the Securities and Exchange Commission, has the most extensive regulatory/supervisory scheme of all 19 countries.

A number of important comparisons emerge from Table 11. First, on-site examinations are conducted in all of the countries, though the frequency is not uniform. Second, in the U.S. and 8 other countries, banks pay for the examinations.⁴³ In the remaining 10 countries they do

⁴²According to Giddy (1994, p. 14), "In an ideal world, the bank supervisory agency would be separate and independent and have the sole function of administering liability-side prudential regulation."

⁴³In the U.S., national banks are assessed an examination charge by the Office of the Comptroller of the Currency. State banks that are members of the Federal Reserve System do not pay it when examined, but must pay state authorities when they conduct an examination. State banks that are not members of

not. Third, in all 19 countries external audits are required. In Switzerland, moreover, the audits are an official part of the supervisory system.⁴⁴ Fourth, none of the countries publicly discloses the examination reports. However, in the U.S. and four other countries, enforcement actions (such as cease and desist orders or supervisory agreements) taken against banks are disclosed. Fifth, in all but two countries consumer protection laws exist. Sixth, almost all countries place no limits or restrictions on banks' foreign activities. Seventh, rates paid on deposits or charged on loans are largely determined by market forces rather than by regulatory fiat in these countries. Eighth, countries do establish lending limits to address various types of risk exposure, most often in the case of loans to single borrowers, persons connected with the bank, and large exposures. In most cases, countries do not establish lending limits on particular sectors or countries that contain risk exposure.

One of the more important issues in regulating and supervising banks involves capital standards. In this regard, the Basle Committee on Banking Supervision adopted the Basle Accord in July 1988, with the approval of the G-10 countries plus Luxembourg. The accord is voluntary and applies only to internationally active banks. It is composed of four basic elements. First, it specifies a definition of Tier 1 (or core) capital, consisting primarily of common stockholders' equity and noncumulative perpetual preferred stock. Second, it specifies additional components of capital constituting Tier 2 capital. Third, a general framework for assigning assets and off

the Federal Reserve System are examined by, and must pay, state authorities, but do not pay their federal-level regulator, the FDIC. In general, banks in the U.S. are examined annually, with federal and state regulators alternating years for state banks. Hence, while national banks pay for annual exams, state banks generally pay only every other year when examined by state authorities.

⁴⁴In the U.K., external audits are a requirement of Companies Act legislation rather than banking legislation and thus form an important, if not official, part of the supervisory process.

balance sheet items to broad risk categories is specified to enable the calculation of a risk-based capital ratio. A minimum ratio of total capital (Tier 1 plus Tier 2) to risk-weighted assets of 8 percent (of which at least 4 percent should be in the form of core capital) was specified by year-end 1992.⁴⁵

In the case of the EU, two primary directives addressing capital standards were adopted: one in April 1989 (EC Own Funds Directive), and the other in December 1989 (EC Solvency Ratio Directive). These two directives are compulsory for all banks incorporated in the member countries of the EU. As with the Basle Accord, banks in the EU are required to meet a minimum 8 percent risk-weighted total capital ratio (by January 1, 1993). The EC Directives refer to “original own funds” and “additional own funds,” which correspond to Tier 1 capital and Tier 2 capital.⁴⁶

With respect to capital standards, the U.S. is unique among the 19 countries examined in that under the Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991 the bank regulatory authorities assign each and every bank to one of five possible capital categories (see Table 13). These are as follows: (1) well-capitalized; (2) adequately capitalized; (3) undercapitalized; (4) significantly undercapitalized; and (5) critically undercapitalized. The regulatory authorities primarily rely upon the Basle Accord when assigning banks to the five different categories. The categorization of all banks provides the basic framework for prompt

⁴⁵For a critical assessment of the Basle standard, see Benston (1992).

⁴⁶In June 1993 a third primary directive addressing capital standards was adopted – EC Capital Adequacy Directive. This directive sets minimum capital requirements for the market risk of trading positions in securities and derivatives as well as for foreign exchange risk as calculated by a standardized method. It became effective January 1, 1996.

corrective action to contain and to resolve problems. More specifically, banks that are assigned to the top two capital categories and for which no other supervisory problems have been detected are not subjected to any mandatory enforcement actions, with the possible exception of access to brokered deposits by adequately capitalized banks. On the other hand, banks that are assigned to the bottom three categories automatically are subjected to various mandatory enforcement actions. As Table 13 shows, the mandatory actions become progressively more severe as a bank is assigned to successively lower capital categories, until it faces receivership when categorized as critically undercapitalized.⁴⁷ The prompt corrective action framework clearly limits the discretion of the bank regulatory authorities in the U.S. compared to those in the other 8 countries examined in dealing with banks identified as having capital problems. Yet, even with mandatory prompt corrective action, the U.S. still has a more restrictive regulatory environment than most other industrial countries. This raises questions about the appropriate tradeoff between different constraining regulations, various supervisory practices, capital standards, and features of the deposit-insurance scheme.

⁴⁷For more information on this issue, see Carnell (1992) and Spong (1994). Despite being relatively new, one recent empirical assessment of prompt corrective action concludes that the "...results raise doubts about whether PCA [Prompt Corrective Action] legislation will reduce BIF [Bank Insurance Fund] losses" (See Gilbert (1992, p. 20)). Furthermore, Alice M. Rivlin, Vice Chair of the Board of Governors of the Federal Reserve System, states that "Supervisory sanctions under Prompt Corrective Action were to be based on the bank's risk performance as measured by its levels of regulatory capital, in particular its leverage ratio and total risk-based capital ratio under the Basle capital standards." Yet, "These standards now seem well-intended but rather outdated." The reason, according to Vice Chair Rivlin, is that "the scope and complexity of banking activities has proceeded apace during the last two decades or so, and standard capital measures, at least for our very largest and most complex organizations, are no longer adequate measures on which to base supervisory action...." In addition, "Research shows that CAMEL ratings are much better predictors of bank insolvency than 'risk-based' capital ratios" (see Rivlin (1996, pp. 5-6)).

Although the Basle Accord and the EC Directives are viewed by many as providing uniform minimum capital standards for banks in those countries abiding by them, in reality they do not. Nor do the two capital standards affect banks in the individual countries equally regardless of which standard is applied. A major reason is that there are differences in the items that may be included as components of capital for purposes of fulfilling the standards. As Table 11 shows, countries differ in terms of the various items that are includable. One must therefore be careful when comparing capital measures for banks in different countries.⁴⁸ Indeed, a bank might satisfy the capital standards in its own country, but not meet the standards set by the Basle Accord and the EC Directives if it were headquartered in another country.⁴⁹ Furthermore, capital standards are continuing to be modified over time. As a result, a bank may satisfy the standard one time period but not another even if its financial condition were to remain essentially unchanged. Clearly, capital standards and the measurement of capital for meeting those standards are crucial factors in designing an appropriate regulatory/supervisory/deposit-insurance scheme. Determining the most appropriate scheme for each and every country is a continuous and ongoing topic of debate and research.

VI. Additional Issues to Consider

⁴⁸This situation may improve over time. For example, Germany's second largest bank (Dresdner Bank) in its 1995 annual report "for the first time gave details about its hidden reserves...". In doing so, "Dresdner officials said the bank isn't switching to international standards, but has instead decided to disclose a comparable amount of revealing detail using German accounting" (see Gumbel (1996, p. B10B)).

⁴⁹For an excellent discussion of all these issues, see Board of Governors of the Federal Reserve System and Secretary of the Department of Treasury (1992). Also, see Hall (1993, Chapter 8).

The information from the international comparisons provides a fairly broad perspective on banking issues that are currently being examined and debated in many countries. Nevertheless, additional issues remain to be considered in future work. Two issues in particular are worth noting here: the emergence of electronic banking, and the ongoing globalization of banking.

There is currently substantial interest in the opportunities and challenges presented to banks and their regulators by a growing use of electronic payment media.⁵⁰ A wide spectrum of issues emerges, ranging from questions about the appropriate definition of money for monetary policy purposes to concerns about the potential for fraud and money laundering. Even narrowing the inquiries down to the effect of electronic banking on bank performance is a challenge, but one can certainly suggest a few possibilities. Using Table 14 as a guide, it is clear that for the industrial countries listed, there is substantial variation across countries in the extent to which cash versus cashless payments are used, as well as significant differences in the public's reliance on relatively simple technology like ATMs.⁵¹ Such factors are important because they indicate that banks differ in the degree to which they currently rely on relatively costly cash, check and other paper-based services, versus less expensive payment media such as ATMs and electronic funds transfer point-of-sale (EFTPOS) terminals. In addition, as Figure 1 illustrates, there is currently a vastly different potential across the EU and G-10 countries for involvement in

⁵⁰See, for example, Bank for International Settlements (1996a) and (1996b) for, respectively, studies on the security aspects of electronic money and implications of electronic money for central banks; and United States Department of the Treasury (1996) for a primer on the possible policy implications of the emergence of electronic money and banking, including consumer protection, law enforcement, bank supervisory issues.

⁵¹For more information and discussion of this general topic, see Humphrey, Pulley and Vesala (1995).

electronic commerce over the Internet. Future analysis of performance should attempt to explicitly incorporate differences in the use of modern information technology and the type of service delivery mechanisms employed by banks to facilitate transactions.

A second major development influencing bank performance is the ongoing globalization of banking. The exploratory empirical analysis presented in Appendix 1 takes into account not only bank-specific variables, but macroeconomic, regulatory, supervisory, and deposit-insurance variables as well. Yet, the analysis incorporates these additional influences on a “home-country” basis only – only the regulatory environment of the country in which a bank is chartered or licensed is directly considered. But if a significant portion of a given bank’s portfolio is booked or net income is derived from activities in other countries, one would expect the regulatory environment in those countries also to influence the bank’s performance.⁵² Table 15 illustrates the fact that large banks in particular may be affected by the “foreign country” environment. Using six large U.S. multinational banks as examples, the table shows that as much as 51 percent of these banks’ assets are booked abroad, and a substantial portion of net income is also generated by overseas operations.⁵³ While cross-border macroeconomic, regulatory, supervisory,

⁵²It becomes even more complicated than simply taking into account the laws and regulations in both the country in which a bank conducts its domestic business and the other countries in which its foreign business is conducted. The reason is that U.S. banks, for example, are subject to U.S. laws and regulations when engaging in activities outside the U.S., in addition to U.S. laws and regulations governing their domestic activities and foreign laws and regulations governing their foreign activities. In this regard, “under the applicable regulation implementing these statutes - known as Regulation K - the Federal Reserve Board” . . . “does . . . provide U.S. banks the opportunity to perform activities abroad they are precluded from engaging in at home, in an effort to give them a more level playing field vis-a-vis foreign firms. However, it is important to note that the extent of some of their activities in foreign markets remains substantially more circumscribed than that of their competitors, and the organizational structures through which they must operate create certain costs” (see Task Force on the International Competitiveness of U.S. Financial Institutions (1991, pp. 124-125)).

⁵³Nolle (1995b), on the other hand, presents aggregate data on foreign banking operations in the U.S.

and deposit-insurance effects on individual bank performance have not yet been taken into account, their influence could nonetheless be significant, and thus deserves further consideration in future research.^{54, 55}

VII. Summary and Conclusions

This paper provides detailed information on banking structure, permissible banking activities, regulatory structure, deposit insurance schemes, and supervisory practices in each of the 15 European Union countries, as well as in Canada, Japan, Switzerland and the United States. Comparisons across the countries show that there is a wide range of banking structures and supervisory practices, and there is a roughly equal division between those countries that rely on the central bank to be the principal bank supervisor and those that do not. In addition, although all of the countries currently have deposit insurance schemes, these schemes differ widely in many respects. Cross-country comparisons of the different aspects of banking reveal one common dimension, however. Almost all of the countries allow a wide range of banking activities, including underwriting, dealing, and brokering in securities and insurance, and those activities can generally be conducted directly in a bank or indirectly through a subsidiary of a bank, rather than through a holding company structure. The notable exceptions to this common

⁵⁴Tables 16 and 17 provide more general information on the extent to which both U.S. banks operate abroad and foreign banks operate in the U.S., respectively.

⁵⁵These are at least three additional issues to consider in future work on bank performance that merit mention here. First, one should distinguish between public or state-owned banks, which benefit from special privileges and have their own unique incentive structure, and privately owned institutions. Second, one should take into account the fact that tax rates on banking institutions vary across countries. And third, one should allow for differences in the corporate organizational form of firms providing banking products and services.

tendency are the United States and Japan. Indeed, the U.S. and Japan are the most restrictive of all the countries in providing banks with the opportunity to engage, if they so choose, in a broad range of activities demanded in the world's financial marketplace.⁵⁶ Despite cross-country differences in the range of permissible banking activities, moreover, many of the EU and G-10 countries have experienced similar banking problems in recent years. However, these problems have generally resulted from losses associated with declining values in commercial real estate loans, not securities and insurance activities.

An exploratory analysis presented in Appendix 1 suggests that empirical examinations of bank performance might be enriched by taking into account a broader range of variables including permissible banking powers. Additional research is needed to establish more firmly the exact effect of various laws and regulations on bank behavior and performance. International comparisons and analyses that take explicit account of the regulatory regime under which banks operate should be a part of this additional research. Such research should be an important input into policy debates over whether and how to reform existing banking systems in countries around the world.

⁵⁶In the case of Japan, moreover, "The U.S. occupation authorities revamped the Japanese banking system in the 1945-50 period, and since it was the conventional American wisdom of the time, the authorities instituted a Glass-Steagall type of statute. So until recently, the banking and securities businesses went their separate ways..." (See Asher (1995, p. 43)).