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## **The Basel Accords: The Implementation of II and the Modification of I**

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# The Basel Accords: The Implementation of II and the Modification of I

## Summary

Even though much has been clarified about the implementation of Basel II, the new international capital standards for the U.S. banking system, uncertainty still remains about how U.S. bank regulators will activate these more efficient capital standards that the European Union (EU) is already implementing. On September 30, 2005, U.S. bank regulators announced they were revising plans for implementing the Basel II framework for a small number of large banks. At around the same time, and more important due to its potential impact on the vast majority of U.S. banks, U.S. regulators published for comments an advance notice of proposed rulemaking (ANPR) that would amend the existing Basel I regulatory capital rules. One of the purposes of these modifications to Basel I is to address the competitive inequalities that could have emerged from the implementation of Basel II rules for large banks while smaller banks were operating under Basel I. The ANPR addresses some research findings that suggest that Basel II could significantly lower the risk-based regulatory capital requirements of the 10-20 larger Basel II banks, whereas smaller banks would be operating under the higher capital requirements of Basel I.

The Basel II NPR and the Basel I ANPR are of interest to Congress for several reasons. They would change the safety and soundness standards for U.S. banks, and they may be the subject of legislation as well as require new regulatory oversight. Moreover, they may have serious implications for the world's financial system in ways that could affect the U.S. economy. For such reasons, the United States Financial Policy Committee for Fair Capital Standards Act (H.R. 1226) was introduced in Congress on March 10, 2005. It would establish a mechanism for developing U.S. positions on Basel Committee issues. U.S. banking regulators are now reviewing comments on the ANPR. It remains undetermined as to whether Basel II or Basel I changes will precede the other or occur simultaneously. These developments remain subject to public comment and future agency decisions.

This report provides the basic information needed to understand the issues surrounding the proposed implementation of Basel II and the pending proposed modifications of Basel I in the United States. First, it gives a basic background on capital standards and how capital assessments were made before these accords. Second, it briefly explains how Basel I works. Third, it addresses the major problem with Basel I and the modifications being considered. Fourth, it describes the Basel II framework the United States may implement and the framework the EU is already implementing. The report concludes with a section on Congress and the Basel Accords.

This report will be updated as developments warrant.

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# The Basel Accords: The Implementation of II and the Modification of I

## Introduction

After more than five years of consideration, some uncertainties remain about how the Basel II capital accord will be implemented in the United States. Concerns about the costs and complexity of Basel II appear to have led U.S. regulators to propose that only 10-20 of the largest banks would be required to adopt Basel II. Other banks would be allowed to adopt Basel II on a voluntary basis.<sup>1</sup> The rest of the U.S. banking industry would be subject to a modified version of the existing Basel I or Basel I itself. U.S. regulators plan to change the methods used to determine the amount of regulatory capital banking institutions must hold. To this end, U.S. regulators have issued rulemaking proposals in the process of implementing the new Basel II capital accord and modifications of the Basel I capital accord under which all federally regulated banks are currently operating. The Basel capital accords are international regulatory safety and soundness<sup>2</sup> agreements that provide a framework for determining the minimum capital depository institutions must hold as a cushion against insolvency. Without a financial institution holding this minimum amount of capital backing, the regulators would not permit it to conduct normal banking business for risk of bankruptcy and the possible need for government financial rescue. For this reason, this minimum capital is called regulatory capital. In addition, these accords are “risk-based standards” that require banks to hold more capital as their asset profiles become more risky.

On September 30, 2005, U.S. bank regulators (the agency<sup>3</sup>) announced in a notice of proposed rulemaking (NPR) that they were revising plans for implementing the Basel II framework in the United States. Due to the agency’s desire to increase the risk sensitivity of the Basel I-based rules, the agency published at the same time (October 6, 2005), for comments, an advance notice of proposed rulemaking (ANPR) that would amend the existing Basel I regulatory capital rules. The purpose of these

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<sup>1</sup> The regulators expect that a subset of about 10 large international banks would be required to adopt Basel II as a result of meeting the criteria for mandatory adoption. Other large banks would be allowed to opt in to Basel II if they meet the requirements.

<sup>2</sup> For more on safety and soundness, See CRS Report RL33036, *Federal Financial Services Regulatory Consolidation: An Overview*, by Walter W. Eubanks.

<sup>3</sup> U.S. federal banking regulators are the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC), the Board of Governors of the Federal Reserve System (Fed) and the Office of Thrift Supervision (OTS). As a group, they referred to themselves as the “Agencies” for years. More recently, they have been referring to themselves as just the “agency.” Consequently, throughout this report both terms are used to refer to these federal regulators.

proposed modifications to Basel I is, in part, to address the competitive inequalities that could have emerged from the implementation of Basel II rules for large banks while smaller banks were operating under Basel I. These Basel I modifications seek to enhance the risk sensitivity of Basel I, and thus bank safety and soundness, while avoiding undue complexity and regulatory burdens. Another expected benefit of these modifications is that they will reduce regulatory capital held on certain assets. The ANPR addresses research findings that suggest that Basel II could lower the capital standards on the large banks adopting Basel II.<sup>4</sup>

The Basel II NPR and the Basel I ANPR are of interest to Congress for several reasons. They would change the safety and soundness standards for U.S. banks, and these regulatory changes may be the subject of legislation as well as require new regulatory oversight. Moreover, these changes might have serious implications for the world's financial system in ways that would affect the U.S. economy. For these reasons, the United States Financial Policy Committee for Fair Capital Standards Act (H.R. 1226) was introduced in Congress on March 10, 2005. It would establish a mechanism for developing U.S. positions on Basel Committee issues. The agency is now reviewing comments on the ANPR regarding modification to Basel I.<sup>5</sup>

The name, Basel Accord, comes from Basel, Switzerland, the home of the Bank for International Settlements (BIS). In 1974, BIS established the Basel Committee on Banking Supervision, made up of representatives from the monetary authorities of 13 countries — Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Spain, Sweden, Switzerland, the United Kingdom, and the United States — to consider capital adequacy issues and find practical ways to determine and mitigate bank risk, given different national systems of supervision and deposit insurance. The first accord, Basel I, was adopted in 1988, and is credited with improving stability of the international banking system, both through defining consistent safety and soundness standards, and by promoting better coordination among financial regulators and supervisors in participating nations.

Financial regulators in the United States and other industrial countries have recognized that Basel I is insufficiently sensitive in measuring the risks and determining the minimum regulatory capital needs of today's increasingly complex and dynamic banking operations. Consequently, a new accord (Basel II) has been negotiated. Prior to the actions of the agency on September 30, 2005, the federal bank regulatory agencies set forth in 2004 the following implementation schedule for Basel II: Midyear 2005, the NPR and updated guidance are to be published. Midyear 2006, the final rule and updated guidance were to be published. And, in January 2007, the "parallel runs" of the Basel I and II frameworks are to begin. Given the results, the final regulations for Basel II in the United States are to be published in January 2008.

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<sup>4</sup> Board of Governors of the Federal Reserve System, "Summary Findings of the Fourth Quantitative Impact Study," April 29, 2005, p. 8.

<sup>5</sup> R. Christian Bruce, "Implement Basel I Rewrite First, ABA Says, Urging Bank Agencies to Speed Up Revision," *BNA Banking Report*, June 6, 2005, p. 995.

Although there is still no schedule for implementation of the modified Basel I, on September 30, 2005, the agency announced a revised schedule for implementing Basel II, delaying the implementation at least one year. In this announcement, the regulators proposed to subject all institutions adopting Basel II to a minimum three-year transition from Basel I to Basel II. Moreover, adopting institutions are subject to an annual floor below which they cannot reduce their regulatory capital. The “parallel runs” of the Basel I and Basel II frameworks are to begin in January 2008. In January 2009, the most by which a Basel II-adopting institution may lower its minimum regulatory capital is 5% of what the same bank would be required to hold if it did not adopt Basel II. In 2010, the maximum reduction is 10%. Finally, in 2011, the maximum reduction is 15%.<sup>6</sup> Thus, in this transition period, the maximum advantage Basel II banks may have over Basel I banks is 15% less regulatory capital, according to this schedule.<sup>7</sup>

## Capital

In general, capital is the owners’ investment in an institution, and it rises and falls with the book value of an institution’s assets.<sup>8</sup> The more capital a bank has, the greater the cushion it has against insolvency. Thus, regulators who guard the financial systems of their countries have an interest in the amount of risk the banks take on and require the owners to hold some minimum level of capital — their own resources — at risk, to avoid failures or taxpayer-funded rescues.<sup>9</sup> Capital is costly, however, in part because it restricts the amount of profitable activities in which a bank may engage. Thus, owners often have an interest in maintaining a low amount of capital, and in the absence of supervisory disincentives that amount could be lower (and the risk taken higher) than the level the government regulators mandate for safety and soundness.<sup>10</sup> The Basel Accords are attempts to base capital requirements on risks taken and thereby align institutions’ profit incentives with their own safety and soundness, apart from any national supports, insurance, or guarantees.

Whether or not regulatory minimum capital requirements actually affect a banking institution’s investment decision making depends on whether or not the minimum regulatory capital requirements are binding. That is, investment decisions

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<sup>6</sup> Board of Governors of the Federal Reserve System, “Banking Agencies Announce Revised Plan for Implementation of Basel II Framework,” NR 2005-99, Sept. 30, 2005, p. 2.

<sup>7</sup> R. Christian Bruce, “Implement Basel I Rewrite First, ABA Says, Urging Bank Agencies to Speed Up Revision,” BNA Banking Report, June 6, 2005, p. 995.

<sup>8</sup> The value of the capital is only realized when assets are written off.

<sup>9</sup> Capital requirements are not to be confused with reserve requirements. Minimum reserve requirements pertain to the amount of cash a depository institution must hold in relationship to deposits (in the form of loans) outstanding to assure liquidity, and for monetary policy purposes. Minimum capital requirements pertain to owners’ investment in the firm and are relevant to solvency.

<sup>10</sup> By the same token, a sudden, large drop in the owners’ capital in the institution often reduces the creditworthiness of the bank and thus raises the borrowing costs to the bank in acquiring new assets.

rest on the capital charge for that investment. Economic capital, on the other hand, is the capital that a bank would maintain in the absence of any regulatory capital to cover losses in extreme or unlikely situations in order for the bank to survive. If the regulatory capital requirement is lower than the economic capital held by the institution, then the regulatory capital requirement is not binding. The institution could make portfolio investment decisions independently of the regulatory capital requirement. On the other hand, if the regulatory capital standards are above the economic capital, then the institution's portfolio asset selections will be constrained by the regulatory capital requirements. The regulatory capital requirement is binding. Regulators and institutions prefer to have the economic capital higher than the regulatory capital requirement, allowing investment decisions to be made without regulatory capital requirement playing a constraining role.

## **The Leverage Ratio**

In the post-1988 U.S. banking history, the leverage ratio has been a key regulatory tool and is expected to continue to be a key behind-the-scenes tool when Basel II and the modified Basel I are implemented. The leverage ratio plays a significant role in limiting institutions' ability to acquire assets because it restricts the amount of assets achievable given the amount of capital available. U.S. regulators require banks to maintain a minimum leverage ratio. The leverage ratio is the amount the owners have invested in the bank (equity) divided by the value of a bank's total assets. For example, at the margin, if the bank invests in a \$1,000 project using \$200 of its own money and borrows \$800, the leverage ratio is 20%. The lower the leverage ratio the greater the returns on the investment, but also the greater the risk.<sup>11</sup> In this case, if the bank regulator sets a minimum leverage ratio at 50%, this project might not be undertaken because the leverage ratio increases the amount of capital that must be held against the portfolio. (In reality, the minimum leverage ratios are much lower than in this example.)

## **Prompt Corrective Action (PCA)**

Under the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA, P.L. 102-242) Congress mandated that regulators require prompt corrective action when a bank's minimum leverage ratio falls below 3%, or 4%, depending on the type of banking institution. That is, banks must maintain the equivalent of at least 3% of their financing in the form of core capital (equity). Institutions that are below this ratio are to be ordered by their primary regulator to take mandatory action

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<sup>11</sup> In this example, let's assume the project is equally likely to pay either \$1200.00 or \$1500.00 at the end of the year. That means the return on the investment is either 20% or 50%. So the expected return is 35%. The standard error of the return, a measure of risk, is 15% (the unbiased estimate is 21.2). If, on the other hand, the bank decides to finance the investment with \$200 of its own money and with \$800 borrowed at 10% interest (leverage), then expected return and its risk are altered. The bank's return after paying off the debt is now either \$1200-\$880 = \$320 or \$1500-\$880 = \$620. The expected return on the bank's \$200 is either 60% or 210% for an expected return of 135%. The standard error of the return is 75% (unbiased estimate is 106.1%). Both the expected return and the risk increased dramatically with leverage. The leverage ratio is 5. The risks of this investment went from 15% to 75% by borrowing 80% of the cost of funding at 10%.



to rebuild their capital. If capital levels and ratios are not restored to standard, it could lead to regulators taking punitive action and even placing the bank in conservatorship to avoid a failure or lower the rescue costs in the event of failure. Even though Basel II and the proposed modifications of Basel I are far more sophisticated tools than the leverage ratio and its enforcement through PCA, U.S. regulators do not plan to remove the leverage ratio from their toolbox. Used as a trigger for intervention, the leverage ratio limits the opportunity for bank supervisors to practice forbearance toward undercapitalized banks.

## Capital Requirements before Risk-Based Capital

In the United States prior to the 1980s, there was no formal numerical standard or across-the-board capital regulation in effect. Instead, regulators assessed capital-asset ratios on a case-by-case basis. In those times, the bank regulators' judgments on the quality of management (based on observing decision-making processes and results), the nature of investment portfolios, and the economic environment were critical to determining the level of capital a bank was required to maintain. The regulatory determination was essential because the advent of deposit insurance in the 1930s lowered the need for bank capital.<sup>12</sup> That is, because depositors were insured, they did not need to closely monitor the safety and soundness of a bank. Knowing that most depositors had no reason to worry about getting their funds returned to them in the event of a bank failure, the bank owners could take greater risks, and reap greater rewards, with no concern that depositors would withdraw funds. The somewhat ironic result of deposit insurance was that capital-asset ratios for all banks experienced a long historical decline until the end of World War II and then moved in a narrow range until the mid-1980s, as shown in **Figure 1**.

Bank examiners' strict enforcement of capital requirements in the 1950-1970 period played a major role in maintaining bank safety. However, in the late 1970s, even as bank failures began to grow along with discussions of interest rate deregulation,<sup>13</sup> regulators allowed bank capital ratios to remain steady at near historically low levels, while economic conditions deteriorated. By 1981, declining bank capital raised the specter of multiple bank failures. Since one way to lower the risk of failure is to raise capital, two regulators, the Federal Reserve Board and the Office of the Comptroller of the Currency, announced that they were raising capital requirements. They raised them still higher in 1983 in view of congressional recognition of the problem large U.S. banks had with nonperforming Third World loans (P.L. 98-181, Title IX).<sup>14</sup> The Federal Deposit Insurance Corporation adopted

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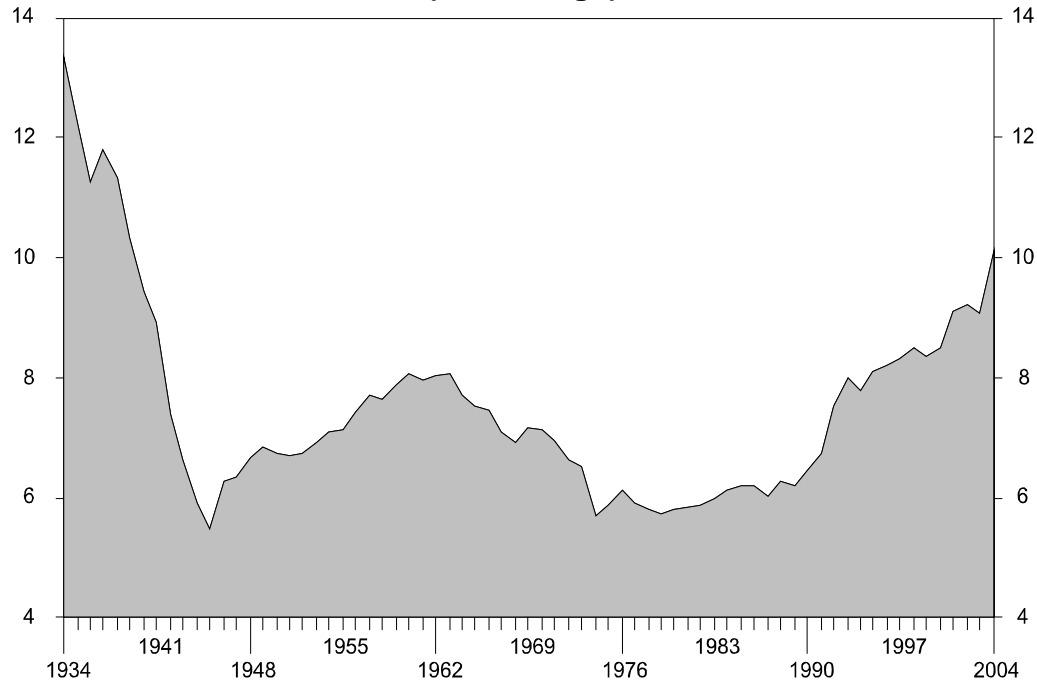
<sup>12</sup> Trade-offs between capital adequacy and deposit insurance in financial terms are examined in Alex J. Pollock, "Cheap Capital: Call It Deposit Insurance," *American Banker*, June 5, 1991, p. 4.

<sup>13</sup> See CRS Report RL30816, *The Anticipated Effects of Depository Institutions Paying Interest on Checking Accounts*, by Walter W. Eubanks, for a discussion of interest rate deregulation and safety and soundness of depository institutions.

<sup>14</sup> See U.S. Congress, House Committee on Banking, Finance, and Urban Affairs, Task Force on the International Competitiveness of U.S. Financial Institutions, *The Basel Accord*, 101<sup>st</sup> Cong., 2<sup>nd</sup> sess., H.Rept. 101-7 (Washington: GPO, 1991), pp. 318-322. At the same (continued...)

an identical standard in 1985. Bank capital rose in response to the new standards. But it was not until after full implementation of Basel I in the early 1990s, and the failures and shutdowns of undercapitalized banks in the 1980s and early 1990s, that capital ratios rose rapidly. By the end of 2002, bank equity capital was up to 9.2% of total assets, or almost \$780 billion. Capital for FDIC-insured banks reached 10.3%, or \$1.1 trillion, by 2005.<sup>15</sup>

**Figure 1. FDIC-Insured Bank Equity Capital, 1934-2004  
(Percentage)**



**Source:** FDIC 2005 Annual Report. Appendix A, p. 107. [<http://www.fdic.gov/about/strategic/report/2005annualreport/ar05final.pdf>].

## Basel I and the Proposed Modifications

The current Basel I Capital Accord was published in July 1988 and fully implemented in the United States by the end of 1992. Even though U.S. banking regulators began implementing Basel I in 1988, Basel I did not become recognized in U.S. banking law until 1991 when the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA)<sup>16</sup> was adopted. Under Basel I, the capital that is held against a bank's assets can be of two components — core ("tier 1") capital and supplementary ("tier 2") capital. Core capital consists of common shareholders'

<sup>14</sup> (...continued)

time bank capital requirements were being raised, regulators for the distressed savings and loan industry were lowering them to avoid having to close failures and pay off depositors — a practice known as forbearance. The ultimate losses were much higher as a result.

<sup>15</sup> See [<http://www2.fdic.gov/qbp/2005dec/all2a.html>] and [<http://www2.fdic.gov/qbp/2005dec/all3a1.html>].

<sup>16</sup> 105 Stat. 2236. § 481 implicitly endorsed Basel I.

equity (issued and fully paid), most retained earnings, and certain perpetual noncumulative preferred stocks. Supplementary capital includes subordinated debt, limited-life preferred stocks, and loan loss reserves up to 1.25% of the risk-weighted asset.<sup>17</sup> These two components must sum to the overall minimum capital requirement of 8% of a bank's risk-weighted assets.

Basel I standards are also roughly risk based: banks must hold more core and supplementary capital against assets deemed riskier and may hold less against assets deemed safer. The accord divides bank assets into categories, or “buckets,” and applies risk weights to each bucket. **Table 1** lists the main buckets. An asset with a 100% weight requires 8% capital. For example, unsecured corporate and consumer loans have a weight of 100%, meaning that the bank must hold capital equivalent to 8% of their value. At the low extreme, cash, and debt due from or guaranteed by an Organization for Economic Co-operation and Development (OECD) member government, carries a bucket weight of zero, meaning that no capital is required for such investments.

In short, Basel I transformed capital regulation into a system of weighted risk categories, or buckets, applied to all U.S. banks. This framework for risk-based capital adequacy is currently used by 110 countries. It strengthened the stability of the international banking system because it required most banks to raise their level of capital at the time it was introduced. Most importantly for purposes of international trade and investment flows, it helped to remove a source of competitive inequality among banks that varied dramatically from nation to nation.

## Major Problems with Basel I

Most arguments for switching from Basel I are based on the observation that Basel I's “bucket” system is overly simple, leads to inefficient uses of capital, and does not necessarily lower the costs of bank failures. Technological advances in communications and finance, combined with geographical and financial instrument diversification and global market integration, have made banking systems too dynamic and complex for the 1980s-style Basel I to be efficient. Large, internationally active banks now use far more complex risk models and have developed advanced reserve and capital management techniques. In this rapidly changing environment, the Basel I framework is said to be unable to yield accurate or timely information on major banks' safety and soundness. Three specific problems have effectively undermined Basel I: insufficient recognition of risk mitigation techniques, regulatory arbitrage, and a perceived increase of operational risk. None is adequately accounted for in Basel I. Consequently, banks tend to hold inappropriate levels of regulatory capital given the riskiness of their assets — in some cases, regulatory capital is insufficient, in others it is excessive.

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<sup>17</sup> Goodwill — an accounting construct measuring the market value of a bank's reputation and a major point of contention in the savings and loan failures — is not included in any capital.

**Table 1. Basel I Asset-Weighting Percentages**

<b>Percentage of the regulatory capital requirement 100% weight = 8% capital</b>	<b>Percentage of asset required to be financed by capital</b>	<b>Major asset categories or buckets</b>
Zero	Zero	Cash; amounts due from central banks; claims guaranteed by OECD-member central governments; gold.
20%	1.6%	Assets collateralized by government securities or conditionally guaranteed by central governments; claims on depository institutions; cash in process of collection; guarantees of public-sector entities (including government-sponsored enterprises).
50%	4%	Revenue bonds; credit equivalents of interest rate and exchange rate contracts that are off-balance-sheet items; residential first mortgages.
100%	8%	All other claims on private obligators [bonds]; business and consumer loans; government obligations paid solely by private parties; fixed assets and real estate; investments in subsidiaries; all other assets generally.
200%	16%	Asset-backed securities with a BB rating for an NRSRO.

**Source:** CRS summary of the regulations set forth in 12 C.F.R Part 3. The actual categories are very detailed and have been modified over time.

## Regulatory Arbitrage

The idea behind risk-weighted capital rules is to link capital to riskiness and, thus, enable institutions to price assets according to their riskiness. Economically, the higher the quality of a loan or investment, the lower the return. If risk-weighting is accurate, there is an incentive to invest in high-quality, low-risk assets. On the other hand, because of the higher capital requirements for undertaking risky investments, the banks must raise their price to justify such investments. Under the Basel I framework, however, because of the limited number of categories, banks have an incentive to take on higher risk assets within each very broad bucket, without shifting into a higher capital-consuming bucket. This is called “regulatory arbitrage,” or “gaming the system.” For example, usually investors distinguish among commercial loans by demanding higher yields for higher risks. Basel I’s bucket approach does not. It places a capital charge of 8% on all commercial loans, even though a triple A-rated commercial loan carries a lower yield than a B-rated one.

Since both loans carry the same capital charge, Basel I gives the bank an incentive to carry more B-rated than triple A-rated commercial loans because they have higher yields with the same capital charge. For greater profits, banks are likely to sell triple A-rated loans to acquire higher-yielding B-rated, or even lower-rated, loans.

## **Risk Mitigation**

Risk mitigation is an internal step banks can take to control their risks. Many prudently managed banks take credit (and interest rate and other) risk mitigating measures by investing in offsetting assets such as loan insurance, derivative hedges, collateral liens, and other protections from losses. Under Basel I, acquiring an asset whose risk of default decreases as another asset's default risk increases would increase a bank's capital requirement, even though the bank is sounder as a result of having assets with these offsetting characteristics in its portfolio. Risk mitigation is more easily accomplished in today's markets because a smaller portion of large banks' portfolios consists of loans, and a growing portion is now tradable instruments related to interest rates, equities, commodities, currencies, and government and corporate securities. Risk mitigating techniques are much more effective using these tradable instruments than adjusting loan portfolios.

## **Operational Risk**

Operational risks can produce losses resulting from inadequate or failed internal processes, people, and systems, or from external events including legal and compliance-related risks. Operational risks include poor accounting, lapses of governance controls, settlement failures, poor or fraudulent managers and traders, and security and process failures. Despite the fact that some of these risks are captured under credit risk, operational risks have historically played major roles in depleting capital from failed banks which have met the minimum credit-risk-based requirements. Operational risk is a major cause of bank failures. It is not, however, explicitly taken into account in Basel I. Fraud contributed to eight of the 11 U.S. bank failures in 2002 and was the direct cause of failure in several of these cases. There is considerable controversy over how to assess a capital charge for operational risk because it is not clear how such a charge would be quantified. The general approach for most corporations is to require sufficient risk-reducing activity so that fraud has a better chance of being detected.<sup>18</sup> For other regulated U.S. financial corporations, explicit capital charges are required as an "add-on" to all other capital charges.<sup>19</sup> The lack of such charges in Basel I is considered to be a serious omission.

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<sup>18</sup> This is the approach of the Securities and Exchange Commission, for example, particularly in implementing the Sarbanes-Oxley Act of 2002 (P.L. 107-204).

<sup>19</sup> This is the approach taken by the Office of Federal Housing Enterprise Oversight with respect to the large housing government-sponsored enterprises.

## The Proposed Modifications of Basel I

Even though the problems with Basel I were well known to the agency, it was willing to keep most banks operating under the Basel I framework because of recognition that the costs would likely outweigh the benefits of Basel II for all but the largest, most complex banks.<sup>20</sup> Nevertheless, to mitigate any potential competitive effects of Basel II and to improve the risk sensitivity of the current Basel I-based capital rules, the agency issued the ANPR to seek comment on possible changes to the Basel I rules. As Federal Reserve Governor Bies said, “The ANPR reflects our attempt to mitigate some of the consequences arising from differences between Basel I and Basel II, while acknowledging that simpler capital rules are still appropriate for nearly all U.S. banking organizations. To be quite clear, the Federal Reserve will not look upon institutions as having deficient risk-management systems simply because they choose to stay under the Basel I framework.”<sup>21</sup> Moreover, the ANPR proposes no change in the leverage ratio or prompt corrective action, nor does it propose introducing operational risk provisions for Basel I banks, arguing that operational risk is implicitly covered by the Basel I risk-based framework.

### The Proposed Basel I Modifications

**Taking Care of Risk Arbitrage.** To address the problem of regulatory arbitrage, the ANPR would increase the number of risk-weight categories. **Table 1** shows that Basel I now has five risk-weight categories — zero, 20%, 50%, 100%, and 200% — which limit the differentiation of credit quality. The ANPR suggests four additional categories: 35%, 75%, 150%, and 350%. The increased number of categories should improve risk sensitivity. Banks will have more categories in which to place assets based on their riskiness, thereby reducing the possibility of placing a risky asset in a category which requires less capital than should be prudently held against the asset. Even though the additional categories increase the accuracy of assigning the appropriate regulatory capital to the riskiness of asset default, this method is not likely to be as accurate as the Basel II framework, and therefore is not expected to give the same result as Basel II. The ANPR would allow banks to use external credit ratings in determining the riskiness of certain assets, such as revenue bonds. Based on the rating of a nationally recognized statistical rating organization (NRSRO), such as Standard and Poor’s Corporation (S&P) or Moody’s Investment Services (Moody’s), a bank may assign a weight of 20%, 35%, or 50% to a revenue bond if the NRSRO gives the securities a rating of AAA, A, or BBB+, respectively (see **Table 2**). Under Basel I, this same bond would have to be given a 50% risk weight (See **Table I**).

**To Encourage Risk Mitigation.** The ANPR would expand the agency’s recognition of financial collateral and guarantors. Under the existing Basel I, the

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<sup>20</sup> Since its original implementation, the Basel I rules have been modified 26 times in recognition of some of its shortcomings.

<sup>21</sup> Remarks by Susan Schmidt Bies, “Recent Development in Regulatory Capital,” at the S&P’s North American Financial Institution Conference, New York, Nov. 30, 2005, p. 2. [<http://www.federalreserve.gov/boarddocs/speeches/2005/20051130/default.htm>].

agency recognizes as collateral, (1) cash on deposit at banking institutions, and (2) securities issued or guaranteed by central governments of OECD countries, U.S. government agencies, U.S. government-sponsored enterprises, and multilateral lending institutions. The ANPR would recognize more forms of assets used as collateral, including short- or long-term debt securities that are externally rated as at least investment grade by an NRSRO. The NRSRO-rated debt securities would be assigned to a risk-weight category as shown below in **Tables 2** and **3**. For example, a collateralized asset with a BBB+ rating would be assigned to the 50% risk-weight category.

**Table 2. Illustrative Risk Weights Based on External Ratings**

Long-term rating categories	Examples	Risk weights
Highest two investment grade ratings	AAA/AA	20%
Third-highest investment grade rating	A	35%
Third-lowest investment grade rating	BBB+	50%
Second-lowest investment grade rating	BBB	75%
Lowest-investment grade rating	BBB-	100%
One category below investment grade	BB+, BB, BB-	200%
Two or more categories below grade	B and Lower	350%

**Source:** The Agencies, October 6, 2005, ANPR, pp. 9-10.

**Table 3. Illustrative Risk Weights Based on Short-Term External Ratings**

Short-term rating category	Examples	Risk weights
Highest investment grade rating	A-1	20%
Second-highest investment grade rating	A-2	35%
Lowest investment grade rating	A-3	75%

**Source:** The Agencies, October 6, 2005, ANPR, pp. 9-10.

Similarly, under the current Basel I, there is only limited recognition of guarantees provided by independent third parties. The guarantees that Basel I recognizes are only those offered by the institutions listed in the previous paragraph. The agency would expand the recognition of guarantors to any entity whose long-term senior debt has been assigned an external credit rating of at least investment grade by an NRSRO. The agency would use the same weighting system that is used to prevent risk arbitrage and support risk mitigation, shown in **Table 2** for long-term

rating categories and **Table 3** for the short-term categories.<sup>22</sup> Note that ratings in these tables are S&P.

**Mortgages.** One important modification of Basel I addresses mortgages, a significant category of assets in the portfolios of banks. As **Table 1** shows, first- lien residential mortgages (which are one- to four-family mortgages) get a 50% risk-weight rating. The banking industry has argued that the one-size-fits-all 4% capital requirement is excessive in many cases. The agency in this ANPR suggests switching to a collateral-based method of assigning risk weights to the first lien on one- to four-family mortgages. Using the loan-to-value ratio (LTV) to determine risk-based capital requirements is suggested.

**Table 4. Illustrative Risk Weights for First Lien on One- to Four-Family Residential Mortgages (after consideration of PMI)**

LTV ratio	Risk weights
91-100%	100%
81-90%	50%
61-80%	35%
≤60%	20%

**Source:** The Agencies, October 6, 2005, ANPR, p. 14.

This approach would be using data that is already used in the loan approval process. However, the banking institution would have to consider assigning the risk weight after taking into account the private mortgage insurance (PMI) that is provided by an insurer with an NRSRO-issued long-term debt rating of a single A or higher. Because the agency argued that a blanket acceptance of PMI may overstate its ability to effectively mitigate risk, especially on higher-risk loans and novel products, the agency could place risk-weight floors on mortgages with PMI. That would limit the risk-lowering ability of private mortgage insurance.

On multifamily residential mortgages, the agency plans to maintain the 100% risk weight currently assigned to these mortgages under Basel I. Many multifamily mortgages currently get a 50% risk weight. However, the Agency is considering modifying the risk-based rules to lower the capital requirement for multifamily residential mortgages. One consideration is to be sensitive to the loan size relative to the value of the collateral position, and the history of the loan performance. The more favorable these factors are the more likely the mortgages will be permitted to carry a risk weight lower than 100%.

**Retail Loans.** Retail exposures such as consumer loans, credit card, and automobile loans currently get a risk weight of 100% under Basel I. The agency is

<sup>22</sup> See the Agencies, *Risk-Based Capital Guidelines; Capital Adequacy Guidelines; Capital Maintenance: Domestic Capital Modifications*, Joint Advance Notice of Proposed Rulemaking (ANPR). Oct. 6, 2005, p. 6. [<http://www.federalreserve.gov/boarddocs/press/bcreg/2005/20051020/attachment.pdf> ].



considering allowing banks to use a more risk-sensitive approach to determining the required capital for these assets. Banks would determine the amount of capital they have to hold by using the borrowers' credit scores or the borrowers' ability to service these types of debt. Banks would be allowed to hold less regulatory capital against consumer loans and credit card debt extended to borrowers with higher credit scores and collateral.

**Other Assets.** The ANPR suggests ways to improve the risk sensitivity used in determining the regulatory capital for the following types of assets: commercial real estate, small business loans, short-term commitments such as asset-backed commercial paper (ABCP), and early amortization. Under the current Basel I framework, all these other types of assets are assigned a fixed risk weight (or a fixed credit conversion factor (CCF)) to take them from off-balance-sheet receivables to on-balance-sheet receivables. The agency seeks comment on whether to remove these assets from the one-size-fits-all measurement to a system where the characteristics of the asset determine the risk weight assigned to it. For example, a small business loan that is now assigned a risk weight of 100% under Basel I, could be assigned a risk weight of 75% if its credit risk is mitigated by acceptable collateral, and if the loan would fully amortize within seven years. On the other hand, short term commitments, such as asset-backed commercial paper now has a credit conversion factor of zero. That means that banks can extend this short-term credit commitment without holding any risk-based capital against the inherent risk exposure. The agency is considering whether to apply a 10% CCF to short-term commitments.

In sum, with the exception of operational risk, the proposed modifications of Basel I explicitly address the key problems with this framework by increasing the sensitivity of the framework to changes in risk. The agency's omission of provisions to incorporate operational risk in this ANPR suggests that regulators believe the regulatory capital required for operational risk is implicitly captured in the provisions for credit risk. The ANPR relies heavily on external ratings of borrowers' creditworthiness. NRSROs play a critical role in assigning risk weight to bank assets, such as corporate and municipal bonds. For mortgages, loan-to-value ratios are expected to play a dominant role in determining the risk weight assigned to mortgages as the ANPR stands.

## **The Basel II Capital Framework**

Before discussing the version of Basel II that the United States plans to implement, it may be helpful to briefly outline the overall Basel II capital framework that is being implemented in other industrialized countries. Between 1992 and 2001, numerous new and old risk-based capital questions related to risk management and supervision were put to the Basel Committee on bank supervision. The committee's cumulative responses are presented in the form of Basel II. The expectation is that for some banks Basel II will replace the current Basel I capital accord beginning in January 2007. The Basel II capital accord is to improve safety and soundness by being a more comprehensive framework which is more accurately sensitive to risk and, therefore, able to adjust measures of capital adequacy to risk more accurately

than the current framework. It also represents a shift in regulatory philosophy toward greater use of market signals in determining the adequacy of capital. Basel II has three reinforcing principles, known as “pillars.” For measurement, Basel II has three methods to calculate capital adequacy — the standardized, foundation, and advanced approaches, which are discussed after its three pillars

## **Pillar One**

The first pillar is the minimum capital requirement, which may be seen as essentially an improved Basel I. It is the rule a bank uses to calculate its per-loan minimum risk-based required capital, taking explicitly into account each loan’s unique credit risk.<sup>23</sup> For example, unlike the bucket approach of Basel I where all assets in a bucket — such as commercial loans — are assigned the same specific risk weights, in Basel II a commercial loan with a “triple A” rating is assigned a lower risk weight than a B-rated commercial loan. Other types of loans are also differentiated according to their perceived risk. The specific risk of the loan or exposure is estimated by the bank and is validated by its regulators. Thus, the pillar one refinements specifically take into account and correct for the Basel I problems with regulatory arbitrage. Basel II also takes into account risk mitigation measures taken in bank assets. While the capital requirement is determined for each asset, risk-offset relationships that can be demonstrated to the satisfaction of the regulators will reduce risk-based capital requirements.

In addition to credit risk, pillar one explicitly accounts for operational risk. Banks using the basic indicator approach must hold capital for operational risk equal to the average over the previous three years of a fixed percentage of positive annual gross income. Figures for any years of zero or negative annual gross income should be excluded from both the numerator and the denominator in this calculation. Basel II also includes advanced measurement approaches to operational risk under which a bank uses an internal model to determine its risk-based capital requirement for operational risk. Some have argued that operational risk is already included in the credit-risk-based calculations. Others have argued that the capital charge for operational risk should be at the discretion of bank supervisors and therefore not an explicit universal requirement. Furthermore, other analysts argued that a capital charge for operational risk does not necessarily mitigate operational risk itself, because it is not directly linked to operationally risky behavior. Operationally risky behavior may be only indirectly countered by the supervisory review process and market disclosure of bank operations.

## **Pillar Two**

The second pillar focuses on bank supervisory judgments. It is the supervisory review process, which is less tangible than pillar one, but somewhat more determinable than in the pre-Basel era. Pillar two requires banks to maintain internal assessments of risks relative to capital. This is a process rather than a static quantitative assessment as in pillar one. Pillar two is a dynamic requirement that

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<sup>23</sup> This is the risk that a borrower fails to make the contractual payments on a timely basis or fails to fully discharge the terms of the contract.

risk and capital self-evaluations must take place over the business cycle as well as in a period of noncyclical stress.<sup>24</sup> This is also a component of pillar one. The bank supervisory agencies have a key role to play under this pillar. The agencies must assess the institutions' validation of the methodology and processes used in these bank self-examinations. "The supervisory review process of the framework is intended not only to ensure that banks have adequate capital to support all the risks in their business but also to encourage banks to develop and use better risk management techniques in monitoring and managing risk."<sup>25</sup>

Under pillar two the supervisory review provides the opportunity to consider risk management in more detail. For example, credit risk concentration, the treatment of interest rate risk in the banking book, and business and strategic risk, which are not covered under pillar one, are transparently examined in a supervisory controlled environment under pillar two. Validation of risk management mechanisms and accountability of determinations concerning stress testing, and residual risk take place under pillar two.

### **Pillar Three**

The third pillar represents a change from previous safety and soundness rules: bank supervisory use of market signals and market discipline. Pillar three is a set of public information disclosure requirements that a bank must make about itself. These disclosures are said to enable creditors and investors in financial markets to assess a bank's risk posture accurately and adjust borrowing and capital costs accordingly. The idea behind this requirement is to bring market discipline to bear so that bank management and their regulators have an incentive to adopt strong safety and soundness practices. Comparison across banking institutions could be more easily made by depositors and investors, as well as regulators. This knowledge, in turn, would affect the willingness of investors to invest.

The degree of disclosure is constrained by the enforcement powers of the regulatory agency, which varies from country to country. Basel II suggests that the supervisory agencies use moral suasion for reprimands and financial penalties to bring about necessary disclosures. While the disclosure requirement does not conflict with requirements regarding accounting standards, the Basel II requirements are more narrowly focused. Banks and their supervisors must decide to disclose information upon which users can rely to make economic decisions regarding these institutions. Yet, Basel II does not set a benchmark for achieving sufficient disclosure. Disclosure of credit risk is of two types: qualitative and quantitative. The qualitative disclosures are information concerning the condition of the establishment, such as the top corporate entities to which Basel II applies.

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<sup>24</sup> Business cycle stresses are shocks, for example, that can be attributed to fluctuations in the economy, while noncyclical stresses, which may be correlated with the cyclical components, are those that are not attributable to such fluctuations, such as interest rate risk and other exogenous changes.

<sup>25</sup> Bank for International Settlements, Basel Committee on Bank Supervision, *International Convergence of Capital Measurement and Capital Standard, A Revised Framework*, June 2004, p. 158.

Qualitative disclosure would include the roles of the entities within the group and the type of restrictions on transferring capital within the group. A description of the capital structure addresses specific risk issues, such as credit, market, and interest rate risks. Pillar three would also seek disclosure of the banks' risk exposure and assessment. Quantitative disclosures such as the banks' tier one and total capital adequacy ratio and their components must be made public on a periodic basis. If risk exposure or other critical factors change in the interim, the bank should disclose such information as soon as practicable and not later than the deadlines set.

## Measuring Capital Adequacy for Credit Risk

In the United States, the agency has already proposed to implement only one of the three approaches Basel II offers to measure bank capital adequacy, described below — the advanced internal ratings-based (A-IRB) approaches. To the extent that Basel II is more risk sensitive than Basel I, the modifications the agency plans to make to Basel I are expected to bring these two methods of determining regulatory capital closer together in terms of competitive impact on banks in the United States. However, the ANPR seeks comment on whether to allow banks that are not subject to Basel II on a mandatory basis to continue to use the current Basel I. Other countries sticking to the original Basel II framework are offered three approaches as well. The three approaches to calculating the minimum allowable regulatory capital under Basel II are the standardized approach, the foundation internal ratings-based approach (F-IRB), and the advanced internal ratings-based approach (A-IRB). The Basel II approaches are all more risk sensitive than Basel I.

**The Standardized Approach.** The standard approach is very close to the calculus under Basel I. Under this approach, to calculate the capital requirement of a bank's asset, the total exposure to losses from an asset is multiplied by the supervisory-determined risk weight. Compared to Basel I, the major differences are that capital required for credit risk is no longer capped at 8% when the risk weighting equals 100%, and the standard moves away from the uniform 100% risk weights for all corporate credits. A corporate claim could receive a risk weight of 20%, 40%, 100%, or 150% depending on its external credit rating. There are at least five other modifications in the weighting structure, including retail lending, residential properties, and commercial real estate.<sup>26</sup> The general notion is that degree of riskiness can be more finely differentiated under Basel II. In many aspects the national supervisory agency is given some latitude in applying the standardized approach to its banks. However, in other aspects, Basel II specifies clear limits. For example, risk mitigation efforts cannot reduce capital requirements to less than 20%.

The modifications of Basel I proposed by the regulators are almost identical to the standardized approach. However, it is not known if the modified Basel I will be implemented simultaneously with Basel II. Furthermore, established NRSROs have played a critical role in assigning risk weights to bank assets, such as corporate and municipal bonds. There are questions about the existence of similar organizations in many other countries.

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<sup>26</sup> Bank for International Settlements, *International Convergence of Capital Measurement and Capital Standards*, June 2004, pp. 15-47.

**The Foundation Internal Ratings-Based (F-IRB) Approach.** U.S. bank regulators have also not proposed to adopt the foundation internal ratings-based approach. However, foreign competitors to U.S. banks may be allowed to use this method. For this approach, banks must meet stringent qualifying criteria. National supervisors would use quantitative as well as qualitative measures to determine which banks may apply the F-IRB approach. The evaluative process would include rating system design, risk-rating system operation, corporate governance, and most critically, validation of internal estimates. In this approach, regulatory capital is determined by a bank's own assessment of the risk of default on each of its assets based on its own data and methodology, and certain supervisorily determined risk parameters. The first is the probability of default (PD) of each asset. Next, the bank must estimate the loss severity. This estimate is also called the "loss given default" (LGD). The third measure is the amount at risk in the event of default (exposure at default, or EAD). This represents the nominal value of the assets at the time of default. The fourth element is the maturity (M), which is considered an explicit risk component. Banks will make their own estimate of PD, but the LGD and EAD would be provided by their supervisors. These risk parameters are inserted into a supervisory formula, the output of which is the bank's risk-based capital requirement for the asset.

Under F-IRB approach, the risk-based capital requirement for an asset is a measurement of the unexpected losses on the asset. The banks must categorize banking-book exposures into broad classes of assets with different underlying risk characteristics: corporate, sovereign, bank, retail, and equity. Within some of the classes, there are subcategories. Under corporate, there are five subclasses: project financing (i.e., power plant), object financing (i.e., aircraft, ship), commodities financing (i.e., crude oil, metals, or crops), income-producing real estate (i.e., office buildings, warehouse space), and high-volatility commercial real estate (i.e., land acquisition for development). Under retail there are three subclasses as well.

**The Advanced Internal Ratings-Based (A-IRB) Approach.** U.S. bank supervisors have selected the advanced internal rating-based approach for U.S. Basel II banks, because it would allow the selected banks to use more of their existing internal assessments and management technology to calculate their regulatory capital requirements. More recently, questions have been raised as to the readiness of international banks for the A-IRB approach. Consequently, the Basel Committee is now engaged in the fifth quantitative impact study (QIS5) to determine the abilities of these institutions to carry out the Basel II requirements in Europe and Asia. Like the foundation approach, first the bank must determine its PD for all assets. The bank must also estimate its LGD and its EAD, plus its M for each asset. For each exposure, the risk weights would be a function of these parameters. Securitization and equity exposures are different, and retail exposures do not use M.

To calculate the capital charge, the bank's portfolio would be broken down into five categories: corporate, retail, bank, sovereign, and equity. Supervisory approval is needed before a bank can use its own internal ratings-based approach for these five categories. After the bank determines the PDs, LGDs, and EADs for all exposures, these parameters are mapped into risk-based capital requirements for the portfolio. These risk-based capital requirements include unexpected (a deviation measure) losses only.

## Measuring Capital Adequacy for Operational Risk

For Basel II banks, operational risk is “the risk of direct or indirect losses resulting from inadequate or failed internal processes, people, systems, or external events.”<sup>27</sup> Basel II offers three methods for calculating the minimum regulatory capital for operational risk. They include the basic indicator approach, the standardized approach, and the advanced measurement approach (AMA). Banks are expected to use the approach or approaches most suited to their operations. However, the banks must qualify to use the standardized approach and the AMA. Furthermore, once a bank has been approved for a more-advanced method of calculation, it may not revert to a simpler approach without prior approval. On the other hand, the primary supervisor of the bank may force a bank to use a less-advanced method to calculate its operational risk if the bank’s operation warrants such a change. As previously mentioned, the agency proposed to make only one of the approaches described below — the Advanced Management Approach (AMA) — applicable to U.S. Basel II banks.

**The Basic Indicator Approach.** The minimum regulatory capital a bank must hold for operational risk is equal to 15% of its positive annual gross income averaged over the previous three years. Any year that gross income was negative or zero should be excluded from the calculation.

**The Standardized Approach.** The standardized approach first divides the bank’s activities into eight lines of business: corporate finance, trading and sales, retail banking, commercial banking, payment and settlement, agency services, asset management, and retail brokerage. Gross income within each line of business serves as a proxy for the scale of business operation and therefore is used as the weight of risk exposure within the lines of business. The minimum capital for each line of business is calculated by multiplying the gross income from that line by a fixed percentage ( $\beta$ ). The total minimum regulatory capital requirement is calculated as a three-year average of the sum of the minimum regulatory capital across each business line annually. In any year, negative changes due to negative gross income may offset positive changes in other lines of business without limits. On the other hand, if the aggregate capital charge for all the business lines is negative for a given year, the input in the numerator will be zero.

**The Advanced Measurement Approach (AMA).** In order for a bank to use the advanced measurement approach to calculate its minimum regulatory capital for operational risk under the Basel II framework, the bank must be approved by its primary supervisor. To qualify for AMA, the bank’s board of directors and senior management must demonstrate that they are actively involved in the oversight of the operational risk management of the bank. The bank’s operational risk management system must be proven conceptually sound and implemented with integrity with sufficient resources, controls, and audits in the major lines of business. In addition, the bank must meet a long list of qualitative and quantitative standards set by the framework and needs the approval of the bank’s primary supervisor.

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<sup>27</sup> Operational Risk Consultative Document, Basel Committee on Banking Supervision, Jan. 2001, [<http://www.bis.org/publ/bcbcsa07.pdf>]

Although the AMA does not specify the approach or the assumptions the bank uses, it requires the bank to demonstrate that its operational risk measures meet a soundness standard comparable to that of the internal ratings-based approach for credit risk. The bank needs to have a credible, transparent, well documented, and verifiable approach for weighting these fundamental elements in its overall operational risk measurement system. For example, there may be cases where the internal and external estimates of event data would be unreliable for business lines because of a small number of observed losses. In such cases, scenario analysis, business environment, and other control factors may play a more dominant role in the risk measurement system. As mentioned previously, only the AMA approach to operational risk will be used by the U.S. banks subject to Basel II.

## **Is Procyclicality No Longer a Concern?**

Some U.S. bank supervisors and academics have expressed concerns about the procyclical characteristics of Basel II.<sup>28</sup> Procyclicality means that banks would be able to disproportionately expand lending when economic activity is expanding and would be required to disproportionately contract lending when economic activity is contracting. This is so because in economic expansions lending is less risky, and the framework would require less regulatory capital, fueling the credit expansion. In economic contractions, when lending tends to be more risky, the framework would require higher levels of capital, slowing or possibly preventing banks from lending. While there is logic to the pattern, it could also be contrary to the intent of monetary policy to ease credit and expand lending to reverse a contraction, or to tighten credit and slow lending when the economy is overheated and likely to become inflationary. Too much procyclicality, in other words, has a destabilizing tendency on the economy.<sup>29</sup>

The June 2004 version of Basel II compensates for this procyclical bias through the supervisory review process (pillar two): supervisory review could make capital adjustments called “cyclical buffers.” The amount of supervisory adjustments made would be determined by stress test data, among other considerations. The stress tests are simulations of sharply adverse conditions. For each bank, the stress tests supply information — such as how long the bank’s current level of capital would last under adverse conditions — that is used as input to supervisory decisions to modify required capital. Supervisory review places a critical responsibility on bank supervisors in times of recession. The fact is that the more accurately regulatory capital is tied to risk, the greater the regulatory incentive for appropriately priced risk taking. Supervisory calming of risk-taking fears in adverse climates is critical to the efficient use of capital. The issue remains about the accuracy of any pillar two supervisory adjustments over the business cycle, and whether or not these supervisory adjustments would be applied correctly across institutions.

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<sup>28</sup> Testimony of Donald E. Powell and John D. Hawke, Jr., before the U.S. Congress, House Financial Services Committee, Subcommittee on Domestic and International Monetary Policy, Trade and Technology, Feb. 27, 2003, [<http://financialservices.house.gov/media/pdf/022703jh.pdf>].

<sup>29</sup> Anil Kashyap and Jeremy Stein, “Cyclical implications of Basel II capital standards,” Federal Reserve Bank of Chicago Economic Perspectives, First Quarter 2004, p. 18.

## How the Accords Compare

**Table 5** compares the capital charges that a bank would be required to hold under pre-Basel standards, under Basel I, and under Basel II, using a single category of bank asset — a \$100 commercial loan — with different risk ratings. **Table 5** does not cover the proposed modifications of Basel I announced in the October 6, 2005, ANPR because the proposed changes were not specific enough to allow comparable estimates at this time. The three credit ratings are AAA, the safest rating, BBB, a middle risk rating, and a B rating, a low grade and the riskiest on this table. **Table 5** shows that before Basel I, the minimum capital requirement for these three risk grades of commercial loans would have been determined by the judgment of the bank examiners and supervisory agency. Under Basel I, a more rigid system would have required a fixed 8% of the loan regardless of the actual and varying risk of default. Under Basel II, a range of possible capital amounts would result. The exact amount would rest on the judgment of the bank and its examiners and supervisory agencies and would vary according to general economic conditions for any given credit rating. Consequently, for the B-rated \$100.00 commercial loan, a capital requirement could range from \$3.97 to \$41.65, a wide range that implies considerable supervisory discretion and considerable variation in LGD characteristics of corporate credits.

**Table 5. Minimum Capital Required for a \$100.00 Commercial Loan Before Basel I, After Basel I, and Under Basel II**

	AAA Credit Risk	BBB Credit Risk	B Credit Risk
Before Basel I	Supervisory Judgment	Supervisory Judgment	Supervisory Judgment
After Basel I	\$8.00	\$8.00	\$8.00
Under Basel II Advance Internal Ratings-Based <sup>a</sup>	\$0.37 to \$4.45 and Supervisory Judgment	\$1.01 to \$14.13 and Supervisory Judgment	\$3.97 to \$ 41.65 and Supervisory Judgment

**Source:** Federal Deposit Insurance Corporation. [<http://www.fdic.gov/bank/analytical/fyi/2003/011403fyi.html>].

- a. Calculations reflect representative lower and upper bounds to be held in support of the \$100.00 commercial loan. The quality of these loans refers to one-year default possibilities corresponding to the historical average for the given rating. The calculations include an operational risk charge, which is determined by using the basic indicator approach where capital charge is equal to 15% of the institution's average gross income over the previous three years. Return on assets (1.41%) is a proxy for average gross income. This is multiplied by the amount of the loan (\$100.00) as an estimate of operational risk (.15x \$1.41=\$.21). Lower bound reflects an LGD of 10% (high recovery) with a one-year maturity loan. Upper bound reflects an LGD of 90% and a five-year maturity loan.



## Remaining Concerns about Basel II

Basel II is, in some ways, a work in progress. Some specific requirements of banks within nations that subscribe to the accord are left up to national regulators. The broader framework requires bank management and bank supervisory authorities to be more involved than before in determining minimum bank capital. The expected outcome is a much more risk-sensitive risk management system. As mentioned previously, the agency expects about 20 large U.S. banks will be operating under Basel II by the implementation date of January 2009. The agency assumes that most of these institutions are already operationally “disposed” (meaning they are technologically capable to operate under Basel II) to this system, running complex risk-assessment models, and handling risk through a wide variety of hedges and other insurance. However, one of the most important acknowledgments not reported in the findings of the fourth quantitative impact study (QIS4) is that the selected banking institutions were not as operationally disposed as they said they were for adopting Basel II. QIS4 showed that the capital savings for particular institutions was larger than expected. For this reason, the agency revised its Basel II implementation plans, capping the allowable capital savings during the transition period. The works in progress, Basel II and the modifications to Basel I, have some remaining concerns, including the cost and complexity and the market competitive changes they are likely to bring about to the participating institutions.

### Cost and Complexity

The agency has sought comment on a revised capital standard framework for U.S. banks: Basel II for 10 to 20 large international banks and a modified Basel I for the remaining 8,000 or so smaller banks. The agency has also asked for comment on whether remaining on the existing Basel I standards should be an option. Consequently, the agency has opened the possibility of a trifurcated capital standard framework for U.S. banks: Basel II for 10 to 20 large international banks, a modified Basel I, and the existing Basel I standards for the 8,000 or so smaller banks. The regulatory burdens of these proposed new capital standards are yet to be determined. However, if the capital savings that Basel II and the modified Basel I promise are realized, the new frameworks would be beneficial to the adopters, and Basel I could be abandoned. On another aspect, the results of the quantitative studies suggest that the large banks are incurring some cost in making themselves operationally disposed<sup>30</sup> to Basel II. At the same time, the studies also indicate that the capital savings for adopting banks could exceed 20%. Capital savings of such magnitudes would make it easier for banks to absorb the additional cost of compliance. At the same time, these savings would place non-adopting banks at a significant competitive disadvantage, which would induce them to embrace the newer standards. On the

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<sup>30</sup> The cost of implementation may impact adopting Basel II and modified Basel I. However, because many larger banks have already invested in risk-management processes including personnel, software, and hardware in order to conduct their day-to-day operations, the costs of implementing Basel II are expected to be relatively lower than for the smaller banks adopting the modified Basel I because the modifications in Basel I may not require totally new investments.

other hand, the initial caps the agency placed on the allowable capital savings could slow the migration to the newer standards.

The regulatory capital requirements for U.S. banks would be far more complex under the agency's new Basel II proposals. For mandatory Basel II banks and those banks opting for Basel II as stated in the NPR, senior executives would be required to sign off and be accountable for the integrity of the internal management systems and processes that generate the data for determining bank capital. These executives must ensure that their internal systems can stand up to regulatory scrutiny and will be held liable (liability and penalties are not yet clear) if they are found negligent in these duties. Covered banks must have already made or be willing to make major investments to upgrade their core data processing systems and information technology architectures. In addition, internal audit and control functions must be able to collect extensive internal data and be operational in time to meet the January 2012 implementation.. In short, before 2012, these banks must already have taken on the cost of re-engineering their management governance structure and their operations in the context of Basel II.<sup>31</sup>

## **Market Competitiveness**

While there might be significant market competitive issues to be addressed between a bank's selection of Basel I, the modified Basel I, and Basel II, it is premature to have a meaningful discussion of what those issues are at this time. In contrast, the international competitive issues are more clear. The European Union (EU), for example, is implementing Basel II in all member countries. The delay in implementing Basel II in the United States may place U.S. banks at a disadvantage in the EU because Basel II institutions are likely to be required to hold less regulatory capital to support the same level of assets. Furthermore, foreign banks under Basel II with subsidiaries in the United States could be forced to use the most costly Basel II methods to calculate their regulatory capital in these subsidiaries, which may put the United States at a disadvantage in attracting these banks. In short, the lack of synchronisation of the implementation and the lack of uniformity of frameworks could make it difficult to achieve a level, competitive playing field for international banking.

## **Congress and Basel II Implementation**

Although Congress may choose to act on the Basel accords, the accords are not international treaties needing congressional approval. They are international banking regulation recommendations, which U.S. bank regulators helped to develop. The Federal Reserve has taken the lead as the nation's central bank. For example, Basel I was originally a proposal of the Federal Reserve Bank of New York to the Basel Committee in 1986. Its standards were adopted by the monetary authorities in the G-10 countries as guidelines in 1987. The agreement to use Basel I as a common approach to evaluate bank capital adequacy came in 1988 with an effective date at

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<sup>31</sup> These requirements could be as stringent, if not more so, than those already required under the Sarbanes-Oxley Act.

the end of 1992. Congress did not make the agreement a formal part of U.S. banking law in 1991. Instead, Congress mandated that U.S. regulators adopt a risk-based standard in determining capital requirements. However, by 1991, the regulators had already required banks under their supervision to use Basel I to calculate their regulatory capital. The leverage ratio requirements coupled with prompt corrective action were major modifications that were applicable to U.S. banks and not other Basel I adopting countries. Similarly in the case of Basel II, U.S. regulators have been both instigators and participants. William J. McDonough, retired president of the Federal Reserve Bank of New York, was also chairman of the Basel Committee on Bank Supervision at the BIS when Basel II was first announced. However, it is important to note that to successfully implement capital standards in the United States, all federal regulators must agree to the changes in the existing standards, because of the U.S. functional and competitive regulatory structure.<sup>32</sup>

The purpose of the United States Financial Policy Committee for Fair Capital Standards Act (H.R. 1226) is to set up “a mechanism for developing uniform United States positions on issues before the Basel Committee on Banking Supervision at the Bank for International Settlements, to require a review on the most recent recommendation of the Basel Committee for an accord on capital standards, and for other purposes.” Such a committee does not exist today. However, the members of the committee would consist of all the members of the agency. The bill was introduced partly in response to disagreements among the members of the agency in congressional hearings.<sup>33</sup> If the agency fails to overcome the problems that Basel II implementation has encountered since the consultative document was published in 2003, Congress might move to enact H.R. 1226. The review committee it would establish would be headed by the Secretary of the Treasury. The bill would have the review committee undertake many things that the agency currently does such as report the accord to Congress. However, the report to Congress would come prior to agreement to any future Basel accord. The evaluation of new accords would have to consider factors, such as cost and complexity, laid out in the bill, and the review committee would have to report its evaluations to Congress.

This bill (H.R. 1226) has been reintroduced in the 109<sup>th</sup> Congress, succeeding H.R. 2043 in the 108<sup>th</sup> Congress that was marked up by the subcommittee

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<sup>32</sup> See CRS Report RL33036, *Federal Financial Services Regulatory Consolidation: An Overview*, by Walter W. Eubanks.

<sup>33</sup> Christian Bruce, “Agencies Spar Over Capital Requirements As Discord Persists on Basel II Agreement,” *BNA Banking Report*, May 16, 2005, p.1, [<http://ippubs.bna.com/NWSSTND/IP/BNA/bar.nsf/SearchAllView/09D20CE5C743FB1F85257001000A97AE?Open&highlight=BASEL,II,REGULATORS,DISAGREEEE>]; Ethan Zindler, “At Senate Hearing, a Chorus of Basel II Criticism,” *American Banker*, Nov. 14, 2005, p. 4; Christian Bruce, “Hawke Voices More Doubts on Basel II, Says Flexibility Needed for Target Dates,” *BNA Banking Report*, Dec. 22, 2003, p. 1, [<http://ippubs.bna.com/NWSSTND/IP/BNA/bar.nsf/SearchAllView/DFC30642EF8A67A485256E020009AE10?Open&highlight=HAWKE,VOICES,MORE,DOUBTS,ON,BASEL,II>].