

INTERNATIONAL RISK-BASED CAPITAL STANDARD: HISTORY AND EXPLANATION

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Introduction

A business firm's capital is expected to serve a variety of purposes. In the case of a bank, capital helps establish a level of confidence sufficient to attract enough deposits to fund its operations. Further, capital serves as a cushion to absorb unforeseen losses so that the bank can continue in business. Agreement on what constitutes sufficient capital, however, is not always easy to reach. In fact, from the earliest attempts to measure capital adequacy bankers and regulators have disputed what constitutes "capital" and what is "adequate."

During the last two decades banks have expanded into new activities. There have also been inroads by nonregulated, nonbank financial institutions into traditional banking activities and increased "globalization" of banking and finance. These developments have made the proper measurement of capital adequacy an urgent matter.

In late 1987, the Basle Committee on Banking Regulations and Supervisory Practices, composed of representatives of the central banks of major industrialized countries under the aegis of the Bank for International Settlements (BIS), developed a risk-based framework for measuring capital adequacy. The Committee's objective was to strengthen the international banking systems and to reduce competitive inequalities arising from differences in capital requirements across nations.

This article sketches the historical evolution of attempts to measure capital adequacy leading to the Basle accord. It also reviews how capital measures of U.S. banks would change under the risk-based framework and how the new guidelines would affect the larger banking organizations headquartered in the Fifth Federal Reserve District.

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Historical Perspective

Until World War II, the Federal bank regulatory agencies¹ measured capital adequacy as a percent of total deposits or assets. Prior to the great depression of the 1930s, the capital-to-deposit ratio was used. This ratio measured bank liquidity. During the depression the emphasis shifted to measures of solvency, centered around the capital-to-asset ratio.

During World War II bank assets expanded rapidly, primarily as a result of investments in U.S. government bonds. The Federal Reserve, in seeking a way to avoid penalizing banks for investing in these low-yield and "riskless" assets, devised a new ratio of capital to risk assets. For this purpose, risk assets were defined as total assets excluding cash, balances due from other banks, and U.S. government securities. Initially, a 20 percent standard for this ratio was established as "sufficient" capital. Thus, beginning in the mid-1940s the concept of capital adequacy became associated with the risks inherent in the earning-asset portfolio.

In 1952 the Federal Reserve adopted an adjusted risk asset approach to measuring capital. All assets were categorized according to risk with separate capital requirements assigned to each category. The minimum total capital required was the sum of the capital requirements of each category. Banks that exceeded this minimum by 25 percent rarely had their level of capital questioned.

In 1956 the Fed further refined its capital standard by coupling the adjusted risk asset approach with a liquidity test. The FDIC and OCC followed the lead of the Fed and also adopted this principal for measuring capital. This test required more capital from less liquid banks. It also considered some off-balance sheet items. The new standard assigned dif-

¹The three Federal regulatory agencies having responsibility for commercial banks are the Federal Reserve System (Fed), Federal Deposit Insurance Corporation (FDIC), and the Office of the Comptroller of the Currency (OCC).

ferent percentages of capital to the various categories of assets and liabilities. These percentages were used to derive the total amount of capital needed to protect the bank from losses on investments and from reductions in deposits and other liabilities. A ratio of actual capital to required capital was calculated and if the ratio was less than 80 percent, a bank was generally considered undercapitalized.

In 1962 the Comptroller of the Currency abandoned the risk assets standard on the grounds that it was arbitrary and did not consider factors such as management, liquidity, asset quality, or earnings trends. Moreover, the Fed, FDIC, and OCC disagreed over what constituted capital. The Fed continued to define capital as equity plus reserves for loan losses. In contrast, the FDIC and OCC allowed some forms of debt to count as capital. Thus, in the early 1960s regulatory opinion on capital adequacy became divided. The FDIC relied on a capital to average total asset ratio excluding fixed and substandard assets. The Federal Reserve continued to use risk assets as the denominator in its capital ratios although it frequently revised its definition of risk assets. For the remainder of the 1960s and '70s, the Federal bank regulators continued to use different definitions of capital and methods of measuring capital adequacy.

In 1972 the Fed capital standard was revised again. Asset risk was separated into "credit risk" and "market risk" components. In addition, banks were required to maintain a higher capital ratio to meet the test of capital sufficiency. Further, the Fed reintroduced both the capital to total asset and capital to total deposit ratios. This time, however, the former ratio was based on total assets less cash plus U.S. government securities, a rough "risk asset" adjustment. In practice, bankers and analysts used the FDIC and Fed standards more than those of the OCC.

None of the agencies established a firm minimum capital ratio. Instead, the capital positions of banking institutions were evaluated on an individual bank basis. Particular attention was directed toward smaller banks whose loan portfolios were not as diversified and whose shareholders were fewer in number than those of larger institutions. It was reasoned that small or "community banks" might have a hard time raising capital in times of difficulty and therefore should be more highly capitalized at the start than larger institutions. Table 1 shows the banking industry's capital-asset ratios from 1960 to 1980. The table shows that there was a steady downward drift in the ratio, which can be explained by a number of factors. Chief among these would be the attractiveness of increased leverage in banking and reliance on other

Table I
**RATIO OF EQUITY CAPITAL
TO TOTAL ASSETS**
1960-1980
(Percent)

Year-end	All banks
1960	8.1
1965	7.5
1970	6.6
1975	5.9
1980	5.8

techniques to manage balance sheets, e.g., liability management.

In late 1981 the three Federal bank regulatory agencies announced a new coordinated policy related to bank capital. The policy established a new definition of bank capital and set guidelines to be used in evaluating capital adequacy. The new definition of bank capital included two components: primary and secondary capital.

Primary capital consisted of common stock, perpetual preferred stock, surplus, undivided profits, mandatory convertible instruments (debt that must be convertible into stock or repaid with proceeds from the sale of equity), reserves for loan losses, and other capital reserves. These items were treated as permanent forms of capital because they were not subject to redemption or retirement. Secondary capital consisted of nonpermanent forms of equity such as limited-life or redeemable preferred stock and bank subordinated debt. These items were deemed nonpermanent since they were subject to redemption or retirement.

In addition to the new definition of capital, the agencies also set a minimum acceptable level for primary capital and established three zones for classifying institutions according to the adequacy of their total capital. As shown in Table II, different standards were applied to "regional" and "community"

Table II
**ACCEPTABILITY ZONES FOR TOTAL CAPITAL
ESTABLISHED IN 1981**

Zone	Regional organizations	Community organizations
1	Above 6.5%	Above 7%
2	5.5% to 6.5%	6% to 7%
3	Below 5.5%	Below 6%

banking organizations. "Multinational" banks were excluded from the measurement system altogether. Multinational organizations were defined as those with consolidated assets above \$15 billion. There were seventeen such organizations in 1981. Regionals were defined as organizations with assets from \$1-\$15 billion while community organizations included all companies under \$1 billion.

The Fed and OCC established minimum ratios of primary capital to total assets of 5 percent and 6 percent for the regional and community organizations, respectively. If an institution's primary capital **exceeded** the minimum and total capital was in Zone 1, its capital was assumed to be adequate. For organizations with capital ratios in Zone 2, other factors such as asset quality and the level and quality of earnings entered the determination of capital adequacy.

The FDIC's capital adequacy guidelines set a 5 percent minimum for the equity capital ratio, defined as capital minus 100 percent of assets classified as loss and 50 percent of assets classified as doubtful at the most recent examination. In addition, the FDIC excluded limited-life preferred stock or subordinated debt from its definition of capital. These items must be repaid and unlike true capital, they are not available to absorb losses.

In 1983 the Fed amended its guidelines to set a **minimum capital ratio of 5 percent for multinational organizations**. It also expanded the definition of secondary capital to include unsecured long-term debt of holding companies and their nonbank subsidiaries. In 1985 the Fed guidelines were amended once again when the uniform minimum primary capital ratio was set at 5.5 percent and uniform total capital at 6 percent. In addition, new zones for measuring the adequacy of total capital were adopted, namely, greater than 7 percent, 6 to 7 percent, and less than 6 percent.

In reaction to the use of a simple capital-to-asset ratio, banks began to adjust their portfolios increasing the share of higher yielding assets but requiring no more capital than lower yielding assets. In particular, some banks switched from short-term, low-yield, liquid assets to higher yielding **but** riskier assets (i.e., loans). Also, since the capital requirements only applied to assets carried on the balance sheet, banks began to expand off-balance sheet activities rapidly. Some institutions attained their ratios by packaging assets and selling them to investors, reducing their risk in the process.

While the ratio of capital to total assets served as a useful tool for assessing capital adequacy for a time, it became increasingly apparent that the type of risks

being assumed **by** banks required a new approach to measuring capital. Accordingly, in February 1986, the Fed proposed standards for measuring capital on a risk-adjusted basis. The proposal, followed shortly by a similar proposal from the OCC, was designed to: 1) address the rapid expansion of off-balance sheet exposure; 2) reduce incentives to substitute higher-risk for lower-risk liquid assets; and 3) move U.S. capital policies more closely into line with those of other industrialized countries.

Under the Fed proposal, assets and certain off-balance sheet items were assigned to one of four broad risk categories and weighted by their relative riskiness. The sum of the weighted asset values served as the risk asset total against which primary capital was to be compared. The resulting ratio was to be used together with the existing primary and total capital-to-total asset ratios in determining capital adequacy.

Before the 1986 proposal could be put into effect, however, the U.S. bank regulators requested public comment on a revised risk-based capital framework for banks and bank holding companies. This proposal, announced in January 1987, was developed jointly **by** U.S. and Bank of England authorities. During the comment period on the revised proposal, the U.S. bank regulators continued to seek international agreement on the proposal, an effort that led in December 1987 to still another framework for risk-based capital that had been developed jointly with representatives from 11 other leading industrial countries.² This proposal has undergone continued refinement and final guidelines were adopted officially in December 1988.

The Risk-Based Capital Framework

The risk-based capital (RBC) framework, which was adopted as an international standard addresses primarily credit risk. It has four broad elements as follows:

1. A common international definition of capital. Core or Tier 1 capital consists of permanent shareholders' equity. Supplemental or Tier 2 capital is a "menu" of internationally accepted non-common equity items to add to core capital. Each country has some latitude as to what supplemental components will qualify as capital.
2. Assigning one of four risk weights (0, 20, 50, and 100 percent) to assets and off-balance sheet

²Belgium, Canada, France, Germany, Italy, Japan, Netherlands, Sweden, United Kingdom, United States, Switzerland, and Luxembourg.

items on the basis of broad judgments of relative credit risk. These categories are used to calculate a risk-based capital ratio. Off-balance sheet items are also assigned a credit conversion factor that is applied before the risk weight.³

3. A schedule for achieving a minimum 7.25 percent risk-based capital ratio by the end of 1990 (3.625 percent from Tier 1 items) and 8 percent by the end of 1992 (4 percent from Tier 1 items).
4. A phase-in period, from 1990 to 1992, during which banking organizations can include some supplemental capital items in Tier 1 capital on a temporary basis.

The RBC framework focuses on credit risk only. As such, the proposal does not take into account other factors that affect an organization's financial condition, such as liquidity and funding. Also overlooked are factors such as interest rate risk, concentrations of investments and loans, quality and level of earnings, problem and classified assets, and quality of management. These factors must also be considered in measuring financial strength and they will continue to be assessed through the examination process. Further, the Fed Board of Governors has indicated that it may consider incorporating interest rate risk before the new RBC takes effect.

Risk-based and traditional capital policies The international risk-based capital standard differs in some respects from all the previous risk-based capital proposals made by U.S. regulators. It reflects changes suggested by banking supervisors in foreign countries and comments received from the public. An important aspect of the implementation of the RBC standard in the United States is that it will apply to *all* banks, not just international banks as required by the Basle accord. Further, the Fed has determined that a risk-based ratio similar to the risk-based capital framework for banks will be applied to bank holding companies on a consolidated basis. The difference in the capital framework for banks and the framework for bank holding companies rests with a slightly broader definition of capital for bank holding companies. The following is a brief review of the principal differences between the RBC framework and

³Each balance sheet item is multiplied by the appropriate risk weight to arrive at the credit equivalent amount. For example, cash is assigned a zero weight. Similarly, off-balance sheet items would be multiplied by a credit conversion factor and then by the appropriate risk factor. For example, a long-term loan commitment to a private corporation has a conversion factor of 50 percent and a risk category of 100 percent.

traditional capital guidelines that have been used in the United States.

Core and supplemental capital components The RBC standard like the 1987 U.S./U.K. proposal, divides capital into two components: core capital (Tier 1) and supplemental capital (Tier 2). After an initial phase-in period, core capital will consist entirely of permanent shareholders' equity, which is defined in Table III. This is in contrast to the current definition used by U. S. banking regulators which includes both common and perpetual preferred stock, mandatory convertible debt instruments, and allowance for loan and lease losses. While mandatory convertible debt instruments may be included in core capital to a limited degree during the phase-in period, after 1992 these components can be used only as supplemental capital.

In the case of bank holding companies, both cumulative and noncumulative perpetual preferred stock are included in core capital. The aggregate amount of perpetual preferred stock included cannot exceed 25 percent of core capital, however. Perpetual preferred stock in excess of this percentage can be included in Tier 2 without limit.⁴ By allowing bank holding companies to include some cumulative perpetual preferred stock in core capital, the Fed is giving bank holding companies more flexibility in raising capital while recognizing the value of perpetual preferred stock in the holding companies' capital structure. At the same time, the limits on the maximum amount of preferred stock included in Tier 1 are meant to protect the integrity of a holding company's common equity capital base.

The Fed also may designate certain subsidiaries whose capital and assets may be excluded from capital requirements. Securities affiliates of bank holding companies fall into this category. However, to be excluded the Fed has specified that strong barriers between affiliates, adequate capitalization of nonbank subsidiaries, and any other protections that it deems necessary must first be in place to safeguard the health of affiliated banks.

Table IV shows the results of applying the concept of RBC core capital to the 35 largest banking organizations in the Fifth District, i.e., those organizations with total assets greater than \$500 million as of mid-1988. The calculations are estimates only, inasmuch as the information necessary for

⁴"Dutch Auction" preferred stocks are those types of preferred stock (including remarketable preferred and money market preferred) on which the dividend is reset periodically to reflect current market conditions and an organization's current credit rating. These stocks are excluded from Tier 1 but may be included in supplemental capital without limit.

Table III

RISK-BASED CAPITAL COMPONENTS*Core Capital*

Common stock, at par value

Perpetual preferred stock (preferred stock having no stated maturity date and which may not be redeemed at the option of the holder)

Surplus (amounts received for perpetual preferred stock and common stock in excess of its par or stated value but excluding surplus related to limited-life preferred stock, capital contributions, amounts transferred from retained earnings and adjustments arising from Treasury stock transactions)

Minority interest in consolidated subsidiaries

Retained earnings

Less: Treasury stock (the cost of stock issued by the institution and subsequently acquired, but that has not been retired or resold)

Goodwill (excess of cost of an acquisition over the net asset value of the identifiable assets and liabilities acquired)

Supplemental Capital

Limited-life preferred stock including related surplus

Reserve for loan and lease losses

Perpetual debt (unsecured debt not redeemable at the option of the holder prior to maturity, but which may participate in losses, and on which interest may be deferred)

Mandatory convertible securities (equity commitment and equity contract notes-subordinated debt instruments maturing in 12 years or less. Holders may not accelerate the payment of principal. Must be repaid with common or preferred stock or proceeds from the sale of such issues)

Subordinated debt (with an original maturity of not less than 5 years)

precise calculation of the ratios is not currently available. For example, some of the items including capital components are not currently reported by banking organizations and a breakdown of risk assets and off-balance sheet items is not currently available.

Further, data are not available to calculate the relative share of first mortgages on 1-4 family properties in the loan portfolio and there is not enough information to measure the percentage of loan commitments having original maturities exceeding one year. Likewise, a breakdown of standby letters of credit by use is unavailable. With these limitations in mind, the estimates show that all 35 of these organizations are currently above the 4 percent minimum guideline for Tier 1 capital and the 8 percent minimum standard for total capital required by the end of 1992.

Allowance for loan losses The RBC Standard defines general loan loss reserves as charges against earnings to absorb future losses on loans or leases. Such reserves are not set aside for specific assets. Under the RBC guidelines, the general reserve for loan losses is relegated to supplemental capital, but no limit is placed on the total general loan loss reserve. After 1990, however, the reserve is limited to 1.5 percent of weighted risk assets. After 1992 the reserve may not represent more than 1.25 per-

Table IV

**ESTIMATED RISK-BASED CAPITAL POSITION
BY SIZE GROUP FOR FIFTH DISTRICT
BANK HOLDING COMPANIES**

(Percent weighted average)

June 30, 1988

Asset Size	Primary Capital to Total Assets	Tier 1	Tier 1 plus Tier 2
Over \$15 billion	7.5	7.0	9.5
\$5-\$15 billion	7.7	7.3	9.8
\$1-\$5 billion	8.5	10.2	12.0
\$500 million-\$1 billion	8.0	10.1	11.7

cent of weighted risk assets.⁵ This represents a major departure from earlier U.S. capital guidelines in which the reserve for bad debts counted as primary capital.

When originally proposed, the limitation on the amount of eligible reserves seemed critical for U. S. banks, some of which had used the one-time provision in 1987 in connection with loans to less developed countries (LDCs) to build up reserves well in excess of the allowable RBC percentages. Based on June 30, 1988 data, seven of the 35 Fifth District companies included in the study would not be able to fully use their reserve for loan losses. All seven companies would, however, still be above the proposed final minimum total capital standard of 8 percent. Thus, it appears the limitation may only affect the large multinational companies,

Treatment of intangibles Intangible assets arise when the stock of a company is acquired for cash. In a cash transaction, accounting rules require that the assets of the acquired company be assigned a market value. In banking, a value is also assigned to core deposits (demand deposits and interest bearing deposits under \$100,000) under the rationale that these deposits are valuable to the acquiring company. The values assigned to core deposits and balance sheet assets are denoted as identifiable intangibles. The amount paid for a bank in excess of revalued assets and identifiable intangibles is known as goodwill.

Goodwill must be deducted from capital in computing the risk-based capital ratio. Identifiable intangibles, however, may or may not require the same deduction. Different Federal bank regulators will treat these items in compliance with their respective proposed guidelines.

For bank holding companies, the Fed will exempt until December 31, 1992, any goodwill existing prior to March 12, 1988, after which time it must be deducted from capital. Any goodwill arising from an acquisition on or after March 12, 1988, will be deducted from capital immediately. An exception to this rule may be made for goodwill arising from the acquisition of a failed or problem bank. At the present time, the Fed does not plan to deduct automatically any other intangible assets from the capital of state member banks or bank holding companies.

⁵The Basle Committee on Banking Regulations and Supervisory Practices has agreed to attempt to resolve the question of what constitutes a general reserve for loan and lease losses. If an agreement can be reached, then general reserves would be included in Tier 2 without limit. Otherwise, the limitations noted above will apply.

It will, however, continue to monitor the level and quality of intangibles, particularly where such intangibles exceed 25 percent of Tier 1 capital.

Term and subordinated debt Under current guidelines, banks are allowed to count subordinated debt with an original average maturity of seven years as secondary capital. Similarly, bank holding companies may include as secondary capital unsecured term and subordinated debt meeting the same criterion. Under the RBC standard, only subordinated debt instruments with an original average maturity of five years may be included as supplemental capital. While initially there is no limitation on the amount of such debt that may be included in Tier 2 capital, after 1992 a limitation applies; instruments includable in Tier 2 will then be limited to 50 percent of core capital. According to the RBC standard, all unsecured term debt issued by bank holding companies prior to March 12, 1988, and qualifying as secondary capital at the time of issuance, will be grandfathered and included in supplemental capital. Bank holding company term debt issued after that date must be subordinated to qualify as supplementary capital for the holding company.

By including subordinated debt in supplemental capital, the Fed recognizes that subordination does afford some protection for depositors in the event of failure. At the same time, subordinated debt of bank holding companies provides a cushion to senior creditors, and thus promotes stability in funding operations. The debt, however, is not permanent; it must be repaid and is therefore not available to absorb losses. In recognition of these factors the Fed established a five-year original maturity requirement as the minimum period necessary to provide stable funding. In addition, a five-step amortization schedule is used to discount subordinated debt and limited-life preferred stock as they approach maturity.

Application to All banks

The Federal banking regulators have agreed that the information necessary to calculate capital will be collected routinely from institutions with assets over \$1 billion. Examiners will monitor the risk-based capital positions of smaller institutions during on-site examinations and inspections. Institutions with assets under \$1 billion may be required to report limited information between examinations, but the plan is to hold such reporting requirements to a minimum.

Summary

The adoption of an international risk-based capital standard under the Basle accord reduces some of the deficiencies in measurement of capital adequacy that

have emerged in the 1980s. The new RBC standard represents a major step in establishing uniform capital standards for major international banks. The accord should contribute to a more stable international banking system and help reduce competitive inequalities among international banks stemming from differences in national supervisory requirements. The application of the RBC standard to large Fifth District banking organizations shows that these organizations exceed the minimum guidelines that will be required in 1992. Therefore, it does not appear that Fifth District banks organizations will be among those who will need to undertake special efforts to either raise more capital or shed assets to meet the new standard. In this regard, however, it should be noted that

the standards are intended as minimums and that rapidly expanding organizations are expected to stay above the minimums. A number of Fifth District bank holding companies have grown rapidly in recent years and a continuation of this growth will necessitate the generation of new capital. The RBC standard does not, however, take account of all the risks to which banking organizations are exposed, specifically, risks associated with management, liquidity, funding, and asset quality. These risks will continue to be assessed by examiners and will be taken into account before a final supervisory assessment of an organization's capital is made. Further, the Federal Reserve is studying the feasibility of expanding the standard to address interest rate risk.