# Capital Requirements of Commercial and Investment Banks: Contrasts in Regulation

Banking authorities in the United States and the United Kingdom have made noteworthy progress toward converging regulatory capital standards for multinational banks. They are also seeking to include within the standards explicit treatment of capital market activities, an area in which commercial banks are in direct competition with securities firms. Within the United States, however, commercial banks and securities firms (investment banks) must adhere to very different capital requirements. As regulators address activities common to both industries, they must be mindful of the competitive effects of new requirements Otherwise, activities will be pushed to the least restrictive environment, which may be wholly unregulated.

Stockholders' equity and other forms of capital protect a company from insolvency by absorbing losses. A strong capital base protects customers and creditors by reducing the possibility that financial problems at a firm would cause it to default on its obligations. Government authorities use regulations to encourage adequate capitalization for two reasons. First, the public cannot easily evaluate the financial strength of companies as complex as commercial and investment banks. Second, the collapse of such companies can be detrimental to the financial system and cause undue financial loss.

To provide adequate protection against potential losses, quantitative capital standards use proxies to measure business risk. Such risk measures can be simple or complex, but they can never be wholly accurate. Many capital market professionals view the different capital requirements imposed on commercial and investment banks as a source of competitive inequity. Their calls to "level the playing field," however, are often disingenuous, focusing only on those disparities that work to their disadvantage.

This article examines how the diverse nature of commercial and investment banking has led regulators to develop quite different capital standards for the two industries. At a time when efforts are being made to bring the standards into closer conformity, it is important to emphasize that the capital requirements for these industries are rooted in the traditionally distinct activities of commercial and investment banking. The standards use very different time horizons, each reflecting how quickly managers within the industry can adapt to change and adjust their risk profiles. The standards also set the stage for differing treatment of weak and failing institutions in each industry. This article, then, seeks to clarify the logical basis of the capital requirements. The analysis suggests that the task of reconciling the two approaches to capital regulation may prove difficult.

The article begins with a brief review of the regulatory agencies responsible for overseeing the commercial and investment banking industries. The second section highlights the chief differences between the capital rules applied by the Securities and Exchange Commission (SEC) and the U.S. banking authorities. Each capital standard is then considered independently, with particular attention given to the methods used by regulators to assess the components of capital and to establish a standard of comparison.

**Regulatory structure**

Somewhat parallel federal oversight structures have developed in the U.S. commercial and investment

banking industries. Although the regulatory agencies have different priorities, they are motivated by the same basic concerns—protecting retail customers, safeguarding the integrity of the financial system, and advancing macroeconomic goals. Moreover, both industries face multiple government rulemakers, multiple examining authorities, and a federal insurance agency responsible for attending to failed firms.

The Securities and Exchange Commission has the broadest responsibilities among the securities rulemakers; it regulates diversified brokerage houses, underwriters and dealers in corporate securities, stock exchanges, and investment managers. The Commodities Futures Trading Commission (CFTC) and the U.S. Treasury regulate other aspects of the securities business. Supervisory responsibilities over securities firms are delegated to the various exchanges and the National Association of Securities Dealers (NASD), while retail customers are protected by the Securities Investor Protection Corporation (SIPC). This article will focus on the SEC's capital regulations for diversified broker-dealers, the principal operating units of U.S. investment houses. In this comparison of investment and commercial banking rules, the differences among SEC, Treasury and CFTC regulations are not material.

The principal federal authorities overseeing the commercial banking industry are the Federal Reserve, the Comptroller of the Currency, and the Federal Deposit Insurance Corporation (FDIC). Almost all commercial banks must join the FDIC, which provides protection for deposits of $100,000 or less. In addition, individual states charter and examine banks. Again, for the purpose of this discussion, it is unnecessary to make distinctions among the several bank rulemakers.

The Federal Reserve regulates bank holding companies and subjects them to consolidated supervision. An important premise of bank holding company oversight has been that the health of a bank cannot, in the final analysis, be separated from that of its parent and affiliates. In contrast, the SEC statutory mandate is limited to registered broker-dealer and investment management units only; it does not reach to the holding company level or to unlicensed affiliates. The Commission must depend on the premise that a broker-dealer can be financially separated from its unregulated affiliates and parent.

## Underlying differences

*Traditional business:* The two sets of capital requirements are logical outgrowths of the core business activities of the banking and securities industries as they were separated by the Glass-Steagall Act in 1933. Both industries function as middlemen in the credit and investment markets but traditionally specialize in different areas [1]

Traditional commercial banking involves intermediation in the primary credit market. Banks provide highly liquid assets to the public (mostly as deposits) to raise money that they usually lend directly rather than invest in marketable securities. Most loans are held until maturity. Asset turnover is, therefore, relatively slow

Investment houses, in contrast, traditionally act as principals for only temporary periods, and their assets turn over extremely quickly. Their core activity in the primary credit market has been underwriting new issues of marketable securities. In this activity, investment houses assume principal risk for only as long as it takes to sell assets to final investors. Securities dealers incur significant principal risk in the secondary market, reflecting speculative trading or inventory held to accommodate customers (market making), but the risk is also temporary.

Both industries also have long established roles as agent. Investment houses "broker" securities, effecting transactions in the secondary securities markets at the behest of their customers. Although this activity has been centered on organized exchanges, direct dealer-to-dealer transactions in the over-the-counter market have become increasingly important in recent years. Banks act as "trustees," managing funds placed in their care.

*Time horizon:* Securities firms and banks adjust to internal and external changes over very different time horizons. Since the most basic need for capital is to protect an institution from the risk of insolvency, capital should be sufficient to absorb losses while an institution adapts to adverse developments. The time frames for adjustment, therefore, are key determinants of the structure of each capital standard.

Investment banks have very short time horizons: trading is hour by hour, arbitrage spans several days, and underwriting spans days or weeks. These firms can adjust their risk profiles quickly. In contrast, commercial bank risk profiles generally change much more slowly. Although specific transactions may have short maturities, customer exposures regularly span many years. In past years, both credit and interest rate risk varied with economic conditions and the business cycle. Changes in the local, national and international arenas developed over time and banks were expected to stand by their customers. As a result, the principal risks facing commercial banks changed slowly; some adjustments spanned several quarters while others spanned several years. Credit risk remains relatively slow to change although new financial techniques have reduced the

[1] Both also provide important securities custody services for their customers, but this activity is not addressed with capital requirements

time needed to adjust interest rate exposures.

The central difference between securities and banking capital standards reflects these differing time perspectives. Investment houses are evaluated on a liquidation basis and their accounting is mark-to-market. Commercial banks are evaluated as going concerns and their accounting is based on original cost. That is, most bank assets reflect contractual value rather than the value if offered for immediate sale (market value) The difference between these two modes of evaluation has practical significance beyond the structure of capital standards because it also reflects how failing firms are treated when the structure works properly.

The following sections discuss how differences in the capital rules derive from the liquidation and going concern approaches to evaluation as well as from differing authority over holding companies

**Broker-dealer capital requirement: a liquidation measure**

The underlying logic of the SEC's capital rule[2] is that a broker-dealer should be able to wind down its activities and protect its customers within one month The Commission evaluates the risk-adjusted liquidity of the firm with a conservative view of those assets that can be sold or collected in order to meet senior obligations in the very near term. The SEC's rule starts with total capital, applies a series of deductions to derive "net capital," and compares this measure to a required safety margin. Broker-dealers must operate with capital in excess of the requirement. Because a firm must cease operating if it fails the standard, the required margin is quite small. The supervisory process, however, also employs several higher "warning level" tests. Firms operating with net capital at or below warning levels are subject to special restrictions and close supervisory scrutiny. They must scale down their activities in line with their capital.

The permitted components of total capital reflect the short time frame of the capital rule. Equity and subordinated debt with more than one year to maturity are the core elements, but other subordinated debt of quite temporary duration is also allowed as capital. For example, an unusually large underwriting may be capitalized with temporary subordinated debt repayable within 45 days. Owners may also provide debt capital by pledging marketable securities instead of investing cash in the firm. Moreover, accrued liabilities for discretionary bonuses and some tax deferrals are allowable additions to capital.

The SEC requires three types of deductions from total capital. The first set addresses liquidity and includes intangible, fixed, and other illiquid assets, securities that do not meet a stringent test of marketability, and "disallowed" assets such as most unsecured receivables. The deduction of unsecured receivables reflects both liquidity and credit risk concerns. The next set of deductions addresses other forms of credit risk and introduces into the rule several incentives for efficient market practices.[3] Capital adjusted to this point in the calculation can be viewed as "liquid capital."

The third set of deductions from the total capital, called haircuts, gauges potential trading risk, that is, how much securities might decline in value prior to being sold. Net capital, which remains after all deductions, is compared to a mininum requirement and higher warning levels. The requirement is a small fraction of a proxy for the size of the firm. Broker-dealers can choose either a proxy for the size of senior obligations (6.67 percent of aggregate indebtedness under the basic method) or a proxy for the size of "customer" business (2 percent of aggregate debit items under the alternative method).[4] The SEC rule is briefly described in the Box.

Liquid capital, as a measure, differs significantly from total capital. Liquid capital is the excess of marketable and easily liquidated assets over senior liabilities. Liquidity, thereby, is given primary importance, and unmarketable, unsecured assets are heavily penalized with a 100 percent capital requirement. In this context, the SEC applies a definition of marketability which is quite stringent in most circumstances: the security must be exchange traded, or bid and offer quotations must be readily available and settlement of sales at such prices must be possible within a relatively short time. Marketable assets and liabilities must be valued at current prices and unrealized gains and losses reflected in net worth each day. Marketable assets are assumed to be saleable, but this is not the point of the capital charge; liquidity is. A security that does not pass the marketability test need not be deducted from total capital to the extent that a bank has already lent funds secured by the asset.

Most unsecured receivables and advances are also deducted in full, although a few routine receivables are only deducted when aged. To secure a receivable under the rule, collateral must meet the same marketability tests as inventory. This aspect of the rule helps insulate broker-dealers from their affiliates because it encourages firms to take marketable collateral to secure

[2]SEC Rule 15c3-1, Net Capital Requirements for Brokers and Dealers Treasury requirements for specialized dealers in government securities and CFTC rules for futures commission merchants are quite similar to the SEC rule at the conceptual level discussed here

[3]For example, there is a capital charge for securities purchased but not yet received within 30 days, while the capital charge for securities sold but not yet delivered applies after only 5 days

[4]"Customers" are specifically defined within the SEC rules Not all counterparties are customers, principals of the firm and other broker-dealers are excluded

## Box: Securities and Exchange Commission Uniform Net Capital Rule for Brokers and Dealers

The SEC first adopted a capital rule in 1944 to establish a standard of financial responsibility for registered brokers and dealers The most recent comprehensive update of the rule was implemented in 1982. Firms that provide retail brokerage services and that underwrite or deal in corporate or municipal securities must abide by the rule.

The capital rule is a liquidity test in the sense that it seeks to ensure that liquid assets, adjusted for trading risk, exceed senior liabilities by a required margin of safety A broker-dealer should be able to liquidate quickly and to satisfy the claims of its customers without recourse to formal bankruptcy proceedings The test is a two-step procedure first, a determination of the amount of net capital available to meet a firm's capital requirement, and second, a determination of the capital requirement (that is, the margin of safety). Net capital is total capital reduced by various charges and by haircuts that measure trading risk. A firm may choose either the basic or the alternative requirement. (See Figure 1.)

**Total capital**

Total capital equals net worth plus subordinated liabilities and is augmented by allowable credits It is determined by generally accepted accounting principles on a mark-to-market basis. To be counted as capital, subordinated debt must have a minimum term of one year and may not be prepayable without the prior written approval of the broker-dealer's examining authority (New York Stock Exchange or NASD). Subordinated debt may be in the form of either borrowed cash or borrowed securities, the latter serving as collateral for "secured demand notes." The rule also allows two forms of temporarily borrowed capital Broker-dealers are permitted to obtain temporary subordinations not exceeding 45 days in maturity as often as three times a year to capitalize underwriting and extraordinary activities. A firm may also have a revolving subordinated loan agreement providing for prepayment within a year

All of the above are treated as satisfactory subordination agreements by the rule and thereby qualify for total capital. However, the rule establishes more demanding specifications that, if met, would qualify subordinated borrowings from a partner or stockholder as what can best be called "near equity." Net worth plus this near equity must equal or exceed 30 percent of the total of net worth and subordinated debt

Allowable credits to total capital include certain deferred income tax liabilities and accrued liabilities that are payable solely at the discretion of the firm, such as bonuses and profit sharing.

Broker-dealers are prohibited from distributing equity capital (for example, through dividends or unsecured loans to owners) if doing so would reduce the firm's net capital below warning levels Supervisory authorities set warning levels somewhat higher than the minimum requirement, for example, one is 120 percent of the basic requirement

*Capital charges:* Total capital is reduced by nonallowable assets and various special charges. An asset is considered nonallowable if it cannot be immediately or quickly converted into cash. This definition applies to fixed and intangible assets, investments and unsecured receivables from affiliates and subsidiaries, most other unsecured receivables, and nonmarketable securities. Special charges include specified types of receivables from other broker-dealers not collected within 30 days and other specified receivables aged beyond 11 or 60 days Credit exposure is also deducted for purchased securities not received within 30 days and for most sold securities not delivered within 5 days. There are also charges for giving excessive margin on repurchase transactions when a dealer borrows. (If excessive margin is taken when a dealer lends under a resale agreement, the requirement is increased.) Such charges encourage good business practices.

*Haircuts* The rule recognizes that the prices of marketable assets and liabilities may move adversely during liquidation, thereby reducing net capital available to cover a firm's obligations. The deduction for price risk in the firm's proprietary positions, haircuts, are percentages of the market value of security and forward positions held by the broker-dealer As a measure of price risk, haircut factors vary in accordance with the type and remaining maturity of securities held or sold short.

For government and high-grade corporate debt, some forms of hedging serve to reduce haircuts Moreover,

Figure 1

**SEC Net Capital Computation**

| | |
|---|---|
| Total capital. | Equity<br>Allowable subordinated debt<br>Allowable credits |
| Less deductions: | (Illiquid assets)<br>(Unsecured receivables)<br>(Charges for aged credit exposure)<br>(Market risk haircuts) |
| → Net capital | Compared to |
| Requirement | 6⅔ percent aggregate indebtedness,<br>or 2 percent aggregate debit items |
| Excess capital: | Net capital less the requirement |

**Box: Securities and Exchange Commission Uniform Net Capital Rule for Brokers and Dealers** *(continued)*

Figure 2

**Summary of Haircuts Applied to Unhedged Positions**

Government and agency securities
- 0 to 6 percent in 12 maturity subcategories
- 6 percent applies to 25 year bonds

Municipal securities:
- 0 to 7 percent in 16 maturity categories
- 7 percent applies to 20 year bonds

Commercial paper, bankers acceptances, and certificates of deposits
- 0 to 0 5 percent in 5 maturity categories
- 0.5 percent applies to 9 month paper

Investment grade corporate debt:
- 2 to 9 percent in 9 maturity categories
- 9 percent applies to 25 year bonds

Preferred stock: 10 percent

Common stock and "all other"
- 30 percent under the basic method
- 15 percent under the alternative method

within the several maturity subcategories into which government, high-grade corporate and municipal debt securities are grouped, short positions serve to offset long positions fully Forward contracts receive the haircuts applicable to their underlying securities Futures and options positions are also explicitly treated. The rule specifies additional haircut charges where the broker-dealer has an undue concentration in securities of a single issuer. For broker-dealers choosing the alternative method of calculating required capital, lower haircut percentages may be taken on certain securities positions, including undue concentration and underwriting commitments. Most important, the haircut on common stock and "all other" securities is 15 percent instead of 30 percent

*Capital requirement·* Net capital must exceed a minimum absolute dollar level and one of two standards that relate to the size of a broker-dealer's business

The basic method requires that net capital exceed 6⅔ percent of aggregate indebtedness, which includes all liabilities less those specifically exempted In essence, aggregate indebtedness is any liability not adequately collateralized, secured, or otherwise directly offset by an asset of the broker-dealer It also includes contingent, off-balance sheet obligations. Few large investment houses choose to use the basic method because, as noted above, it requires a 30 percent haircut on common stock and "all other" securities. This method is usually chosen by smaller retail-oriented brokerage firms.

The alternative method requires that net capital exceed two percent of aggregate debit items computed in accordance with the Reserve Formula under the Customer Protection Rule. These debit items are the gross debit balances of particular asset accounts and generally represent good quality customer receivables The rule uses these debit items as a proxy for the size of customer-related business. For small broker-dealers whose business is heavily retail-oriented, these aggregate debit items can represent a majority of a firm's assets. However, for most large broker-dealers who are not heavily retail-oriented, these debit items usually constitute less than 25 percent of total assets.

For major firms, the alternative method applies a lower percentage factor to a smaller base than does the basic method and permits a 15 percent haircut on "all other" securities rather than 30 percent To qualify for this method, however, a firm must hold a greater reserve under the Customer Protection Rule calculation

receivables.

The capital rule's focus on liquidity is designed to work in concert with the SEC's Customer Protection Rule.[5] Put simply, the Customer Protection Rule seeks to compel a broker-dealer to (1) balance its liabilities to customers with receivables due from customers plus a segregated cash reserve, and (2) place all fully paid for customer securities in possession or control (a custodial obligation).[6] Moreover, if a firm maintains a greater segregated cash reserve, it may choose the less burdensome alternative capital requirement.

Trading risk is explicitly treated to gauge how marketable assets might decrease in value, and marketable liabilities might increase in value, if a firm must be liquidated Risk factors (haircuts) for investment grade securities have been developed from statistical measures of price volatility.[7] For example, three-month Treasury bills are haircut 0.5 percent and 30-year bonds are haircut 6 percent of market value. Haircuts are also applied to off-balance sheet market exposures such as futures, forwards, and options. Many forms of hedging and arbitrage are recognized as having less risk than

[5]Rule 15c3-3, the Customer Protection Rule, was established in the early 1970s in response to the back office problems suffered on Wall Street during the late 1960s

[6]That is, customer securities are those for which the broker has already received full payment and exclude securities purchased on margin

[7]The haircuts reflect price volatility measured over several years and cover relatively large price changes The factors do not, however, cover the extraordinary price movements that occurred in October 1987

uncovered positions. "All other" securities, such as common stock and low-rated bonds, require 15 percent capitalization.[8]

Credit risk is subsumed into this structure at several points. The credit risk on marketable debt securities is covered by the market risk haircuts. Broker-dealers usually sell such assets long before a default occurs.[9] Temporary credit exposures resulting from routine transactions are not treated consistently by the SEC because broker-dealers are presumed to avoid credit losses rather than to reserve for them. Capital charges for unsettled transactions, while based on credit risk, are designed to encourage efficient business practices. In contrast, most other unsecured receivables require 100 percent capital coverage, while secured receivables and the default risk on forward trades incur no capital charges. Finally, the 100 percent deduction for unmarketable assets to meet the liquidity intent of the rule more than sufficiently covers credit risk as well.

The structure of the SEC's rules, coupling the Net Capital Rule requirement for liquidity and the Customer Protection Rule requirement for coverage of customer payables, has practical application to the treatment of a failing firm. As a securities house weakens toward warning levels, it must constrain its business. It should not be able to double its bets and risk tripling its losses. Once a warning level is breached, the examining authority would seek further constraint. Thus, a firm's ability to compete, already weak, would be further undermined at a time when it still had positive liquid capital, that is, liquid assets in excess of senior liabilities. Facing an untenable position, management would then seek to sell or merge the company before the situation required a SIPC-managed failure. This approach has been used many times during the past two decades and, when it worked as intended, SIPC faced little or no loss. As a result, the insurance corporation operates with a low level of reserves, $393 million (as of August 1987), and a minimal $100 per firm annual premium. Of course, in cases of fraud neither this, nor most other structures work neatly.

*Observed capital levels:* Market pressures, rather than regulations, determine how much excess net capital securities firms need to compete successfully. Wall Street firms place great importance on the absolute amount of their excess net capital because it demonstrates their ability to serve large customers and handle large transactions. Most firms have increased their capitalization in recent years. At year end 1986 sixteen diversified firms reported average net capital 7.3 times larger than minimum requirements. In absolute terms, average excess capital was $408 million, while the average requirement was only $65 million. In comparison, total capital averaged $1.4 billion, with a range from under $300 million to over $3 billion. Equity constituted 61 percent of total capital in this sample.

The relationship between total, net and required capital is determined by the composition of a firm's business. Dealing, arbitrage and underwriting generate high haircuts that reduce net capital but change each day. Haircuts may not be particularly high on those days for which financial statements are prepared. Firms specializing in these activities tend to report more than 40 percent of their total capital as "excess." In contrast, retail brokerage causes other deductions and the final requirement to be larger. Several of the large retail houses report only 20 percent of their total capital as excess.

Although the minimum requirement is a proxy for size, it is not tied to assets. Among the sixteen firms, the minimum requirement ranged from 0.1 to 1 percent of total assets. The effective capital requirement of the SEC standard can be viewed as the difference between total and excess capital. This measure combines most aspects of the SEC rule to show how much of the firm's total capital is in use. The effective requirement reported by the sixteen firms averaged 5.1 percent of assets—a figure on par with banking standards of 5.5 percent. However, the effective requirements ranged from 1.6 to 16 percent.

*Holding company implications:* Because regulations extend only to the licensed subsidiaries of investment houses, the firms frequently perform in unregulated affiliates activities that would be uneconomic if held to SEC requirements. This consequence of securities industry regulation has grown in importance with recent capital market innovations. As investment houses have broadened their activity to include new products that entail nonmarketable credit exposure, the portion of their business accomplished in unregulated affiliates has grown. Swaps, whole-mortgage loan trading, and bridge loans are among the innovations handled in affiliates. In consequence, the SEC, the CFTC and the Treasury have all written their capital rules to foster financial separation of affiliates. Transactions between regulated and unregulated affiliates are treated harshly; for example, unsecured loans require a 100 percent capital charge and have the effect of transferring liquid capital. Moreover, even secured transactions are closely reviewed by examining authorities. This structure, however, does not forbid advances to or investments

[8]Most major houses choose the alternative requirement and are subject to a 15 percent haircut on "all other" securities Under the basic requirement, this haircut is 30 percent

[9]Defaulting debt securities usually trade at a small fraction of face value The broker-dealer would, therefore, reflect losses day by day as the price dropped rather than wait until the asset was weak enough to warrant a write-off

in affiliates; it merely applies a strict capital evaluation. A firm willing to move liquid capital out of its regulated unit is not constrained by regulation so long as its net capital remains above warning levels.

The investment houses usually publish consolidated holding company financial statements that display gross capital. The reports footnote the excess net capital within the firms' regulated broker-dealer subsidiaries. Competitive pressures to report impressive excess capital figures are a strong incentive to maximize the liquid capital within registered broker-dealer subsidiaries.

**Banking capital requirement: a going concern measure**

The capital base of a commercial bank protects the institution from the risk of insolvency by absorbing losses in times of poor performance. In so doing, capital also enhances the safety of depositors' funds, helps maintain public confidence in the bank and the industry, and supports expansion of the institution. If these purposes are to be achieved, a bank's capital must not impose financial burdens when a bank is facing difficulties (for example, dividends need not be paid in such circumstances). In order to insure that a banking institution can weather adverse conditions and unexpected losses, regulators impose capital regulations with a multiyear time horizon. In this context, capital for commercial banks must be permanent, and most subordinated debt is included only in a secondary capital measure. This structure is in sharp contrast with SEC rules that give certain subordinated debt the same weight as equity.

Existing standards for U S. banks and their holding companies emphasize the permanence of the capital instrument. All common stockholders' equity and general (unallocated) loss reserves are included in primary capital. Perpetual preferred stock and subordinated debt that must be converted to or replaced with stock may provide a portion of primary capital. Certain types of perpetual debt may also provide a limited portion of holding company capital. Secondary capital includes perpetual and mandatory convertible instruments in excess of the limits allowed as primary capital. It also includes limited-life preferred stock and subordinated debt with an original maturity in excess of seven years. Unsecured senior debt with original maturities beyond seven years is recognized as secondary capital at bank holding companies but not at banks.

Bank supervisors evaluate the risk profile of an organization within the examination process. They pay careful attention to earnings, asset quality, management factors, liquidity, and off-balance sheet activities as well as capital. The quantitative measure of bank capital against a set standard is only one aspect of the evaluation. Moreover, the relative importance of such quantitative standards and their sophistication have varied widely over the past few decades. Since 1981, for example, the quantitative standard has been a simple primary-capital-to-total-assets ratio.

The capital-to-assets ratio is a leverage standard applied to on-balance sheet activity that can provide indirect protection against liquidity risk In recent decades, however, liquidity risk has been addressed through other supervisory methods. During the 1960s, attention was focused on the mix of liquid assets; in the 1970s, it turned to the availability of managed liabilities More recent supervisory methods address both factors and encourage increased use of longer-term borrowings. As a result, term debt, whether or not subordinated, is beneficial chiefly as a liquidity buffer at commercial banks and is included only in secondary capital Although this structure is significantly different from the SEC rules, which focus on liquidity and permit large amounts of debt capital, liquidity risk is central to overall supervisory standards in the banking industry as well.

In a series of steps from 1981 through 1985, the banking authorities applied steadily tighter standards for primary-capital-to-total-asset ratios of banking institutions. Banks and bank holding companies are now subject to a minimum standard of 5.5 percent. The standard for total capital-to-total assets, which includes secondary capital, is now 6 percent. In applying these simple standards, bank regulators presume a moderate degree of credit risk and prudent levels of liquidity and off-balance sheet exposure. Banks with significant off-balance sheet exposures are expected to operate above the minimum ratios. In recent years many larger banks have raised significant amounts of new capital, reduced low-profit balance sheet investments, and expanded off-balance sheet activities. The latter two trends justified development of a risk-based proposal.

Early in 1986, U.S. banking authorities proposed a quantitative capital measure that would be more explicitly and systematically sensitive to the risk exposure of individual banks. The Bank of England joined in refining the proposal and a joint U.S.-U.K. version was published in February 1987. The new risk-based capital proposal centers on a ratio of primary capital to weighted risk assets and encompasses both on- and off-balance sheet exposures. Risk weights vary from zero for assets such as cash to 100 percent for standard risk assets such as commercial loans. The proposal as published in February 1987 is summarized in the Appendix. This risk-based capital standard is still under development, and banking authorities in several other financial centers have joined the effort to establish a consistent measure of bank capital.

Quantitative evaluations of bank capital, both estab-

lished and proposed, focus almost wholly on credit risk because such losses have been the dominant factor in most banking problems. Even when the root cause was management or macroeconomic problems, the usual result was credit losses. Because trading risks are typically quite modest relative to most banks' overall strength, the system has addressed these exposures through the examination process rather than the quantitative capital rule.

The dominance of credit risk in U.S. capital standards reflects banks' traditional economic purpose of providing credit on both a secured and unsecured basis to a broad mix of customers—some strong, some weak. A modest amount of credit loss is viewed as a normal cost of doing business, and a component of capital, the loan loss reserve, is established to absorb such losses. In this context, banks face only fractional capital requirements on standard commercial lending; under existing rules the requirement is 5.5 percent of exposure. In contrast, SEC requirements call for 100 percent capital support of unmarketable, unsecured credit exposure.

The comparison between bank and SEC standards is more complex for credit exposure in the form of marketable securities. For example, SEC haircuts on high quality corporate bonds range from 2 percent (if due in less than 1 year) to 9 percent (if due in 25 years), while low quality marketable debt requires 15 percent capital support. High grade commercial paper requires no capital support at a dealer if it matures within 30 days (and 0.25 percent if due in six months), compared to the 5.5 percent required at banks for the floating prime-based loan the commercial paper may have replaced. Of course, broker-dealers are not presumed to be in the business of holding term loans to maturity, and in fact, most paper is sold within days.

Interest rate and trading risk are not treated systematically within the current bank capital standards; rather they are addressed during on-site examinations. As banks trade actively in more sectors of the secondary capital markets, trading risk may warrant explicit treatment. Viewed in terms of securities industry haircuts, the existing 5.5 percent bank standard is, at best, a rough average requirement for unhedged positions that appear on the balance sheet. The price risk features of forward contracts such as futures and options are not captured. The proposed U.S.-U.K. calculation would generally lead to lower requirements than those of the SEC for a naked trading exposure but would be similar when applied to the mix of inventory carried by a bank dealer in government securities (see risk weights in the Appendix).

*Consolidated oversight:* In order to implement the Bank Holding Company Act of 1956, the Federal Reserve established consolidated oversight of banking organizations. This approach reflects the importance of public confidence in banks and a concern that the public may be unable to distinguish a bank from its affiliates for this purpose. Holding company activities are limited by law and interaffiliate relationships are regulated. Separation of bank and nonbank subsidiaries is encouraged. Credit extended to nonbank affiliates must be collateralized and is subject to strict limits.

Bank holding company regulation also differs from securities industry rules by requiring that holding company activities be explicitly permitted. Thus, activities deemed inappropriate by regulators are usually forbidden to banks or their affiliates. The SEC, in contrast, writes its rules to make such activities uneconomic within regulated broker-dealer units. Bank capital standards are applied to both the bank and to the consolidated holding company. This constraint effectively addresses those nonbank affiliates that perform limited banking activities in states where the lead bank is not permitted to do business. Other types of affiliates, moreover, should be capitalized at levels appropriate to their lines of business. Some activities, however, are not appropriately treated by bank capital standards, leading to excessive constraint on some affiliates and little constraint on others.

As banks have become more active in capital markets, they have adapted their organizational structures. In some cases, these changes alter the nature of their capital requirements. For example, a recent ruling by the Federal Reserve Board would permit bank affiliates to underwrite municipal revenue bonds provided the volume of such underwriting is only a small portion of the affiliate's business. Implementation of this new power has been temporarily delayed by Congress, but several banks have reorganized in anticipation of the end of the moratorium. To meet the volume test, many banks are transferring their existing securities trading and municipal bond underwriting departments into a holding company affiliate. Before these affiliates can engage in new activities, they must be licensed by the SEC and subject to its capital rule. Thus, a degree of functional and overlapping regulation is evolving.

*Observed capitalization*: The ten largest bank holding companies in the United States reported year-end 1986 ratios of primary capital to total assets averaging 7.0 percent. The lead banks in these organizations reported slightly lower ratios, averaging 6.8 percent. Capital ratios have been improving in recent years; in 1982 when the standard was first used, the average was only 4.8 percent. Capital ratios for holding companies now range from roughly 6 to 8 percent, and the spread is even narrower for the lead banks. Their capital is far greater than that of the investment houses in absolute terms; primary capital of this sample averaged $5.8 billion.

## Conclusion

The regulatory capital requirements imposed on commercial and investment banks are designed to address the traditional business activities of each industry. Direct competition between these industries within the capital markets, however, is not traditional. It involves products which introduce risk elements from both arenas. Securities firms are assuming more term, nonmarketable credit exposure, particularly for performance on complex new instruments. In addition, investment banks have begun to provide merchant banking services, investing directly in their own deals either temporarily (bridge loans) or permanently Concommitantly, banks have begun to deal in options and other difference contracts in addition to their established trading presence in the foreign exchange and public securities markets. The turnover of bank assets has also been increased by securitization of previously unmarketable assets These activities generate significant noncredit risk.

Although supervisors of both banking and securities firms attempt to assess the credit and price risk of new activities, they differ in the capital burden they now require. It is not clear how the common risks could be best included within both industries' quantitative capital calculations so as to place similar requirements on banks and securities houses. Two approaches come to mind. First, segments of one standard could be grafted to the other, even though the resulting structure might not be internally logical. For example, the SEC haircut measure of trading risk could be included within the bank calculation despite its shorter time horizon. Alternatively, activities could be segmented among separately capitalized affiliates, with each affiliate subject to either a bank or a securities style standard.

Authorities in the United Kingdom have perceived a need to achieve greater consistency in the capital requirements placed upon banks and securities firms. As a result, the Bank of England and the Securities and Investment Board have coordinated efforts while implementing the Financial Services Act of 1986. Similar coordination also would be beneficial within the United States.

Gary Haberman

### Appendix: Joint United States-United Kingdom Proposed Risk-Based Capital Standard February 1987

In February 1987, the Federal Reserve published for comment a proposed framework for evaluating the adequacy of commercial bank and holding company capital with regard to both on- and off-balance sheet risk * It was jointly developed with the Bank of England, the Office of the Comptroller of the Currency and the FDIC This summary is presented because the framework is a more informative structure than the simpler standard now in use by U.S bank regulators that uses a ratio of primary capital to total assets The proposal is still under development as part of a multinational effort to bring consistency to the evaluation of capital at major banks in all international financial centers †

**Capital-to-risk ratio**

The proposal would create a capital-to-risk ratio to relate a banking institution's adjusted primary capital to its weighted risk assets Primary capital should be freely available to absorb current losses while permitting an organization to function as a going concern Under the proposal, it would consist of two classes of capital funds: base primary capital and limited primary capital The latter would be limited to a specified percentage of base primary capital.

**Primary capital**

The February 1987 proposal defined base primary capital funds to include common stockholders' equity, general reserves for unidentified losses, and minority interests in the equity accounts of consolidated subsidiaries. Other capital instruments would be qualified as limited primary capital to the extent the total does not

**Proposed Capital Standard**

Risk ratio is compared to a requirement

$$\text{Risk ratio} = \frac{\text{Adjusted primary capital}}{\text{Weighted risk assets}}$$

Adjusted primary capital = Base primary capital
+ Limited primary capital
− Deductions

Weighted risk assets = Sum (risk weights × assets)
+ Sum (risk weights × conversion factors × off-balance sheet exposures)

*Federal Register*, vol 52, no 33, p 5119, February 19, 1987

†On December 10, 1987, banking authorities released the next version of this capital proposal

## Appendix: Joint United States-United Kingdom Proposed Risk-Based Capital Standard *(continued)*

exceed 50 percent of tangible base primary capital, that is, base primary capital reduced by intangible assets. Limited primary capital funds would include perpetual preferred stock, limited-life preferred stock with an original maturity of at least 25 years, and certain debt that is subordinated to deposits. To qualify, subordinated debt must be unsecured, repayable only with equity or similar debt, and convertible to equity if other capital is depleted. It must also permit deferral of interest payments during periods of financial distress.

**Deductions from primary capital**

The February 1987 proposal would calculate adjusted primary capital by adding base and limited primary capital and deducting intangible assets and equity investments in unconsolidated affiliates. When deducted from capital, an equity investment in an affiliate would also be deducted from the risk-weighted asset base.

**Proposed risk weights**

Each of a banking organization's assets would be assigned to one of five risk categories and weighted according to the relative risk of that category. The determination of asset groupings and the assignment of weights primarily would reflect credit risk considerations, with some sensitivity to liquidity and interest rate risk. The categories would distinguish among broad classes of obligors and, to a lesser extent, among maturities and types of collaterization. A credit equivalent approach would be used in weighting the risks of off-balance sheet activities. Under this approach, the face amount of an off-balance sheet exposure would be multiplied by a credit conversion factor, and the resulting credit equivalent amount would be assigned to the appropriate risk category as if it were a balance sheet item. Assets collateralized by cash or U.S. government securities would be accorded a lower risk weight, but the proposal would not explicitly recognize other forms of collateral or guarantees in weighting asset risk. However, examiners would continue to consider all forms of collateral and guarantees in evaluating asset quality and making an overall assessment of capital adequacy.

The following tables provide a summary of major asset and off-balance sheet weightings contained in the February 1987 U.S.-U.K proposal.

Table A

**Summary of Risk Weights for On-Balance Sheet Assets**

0 percent
- Cash—domestic and foreign

10 percent
- Short-term (one year or less) claims on U.S. government and its agencies

25 percent
- Cash items in process of collection
- Short-term claims on domestic and foreign banks
- Long-term claims on and guarantees of the U.S. government
- Claims (including repurchase agreements) collateralized by cash or U.S. government or agency debt
- Local currency claims on foreign governments to the extent that bank has local currency liabilities

50 percent
- Claims on or collateralized by U.S. government-sponsored agencies
- Municipal general obligations

100 percent
- Claims on private entities and individuals
- Claims on foreign governments that involve transfer risk

Table B

**Conversion Factors for Off-Balance Sheet Exposures**

100 Percent
- Direct credit substitutes including financial guarantees and standby letters of credit
- Repurchase agreements and other asset sales with recourse, if not already included on the balance sheet

50 Percent
- Trade-related contingencies including commercial letters of credit and performance bonds
- Other commitments with original maturity over five years, including revolving underwriting facilities

25 Percent
- Other commitments with original maturity of one to five years

10 Percent
- Other commitments with original maturities of one year or less

Note: Swaps, over-the-counter options, and other difference contracts would be treated separately