New Guidelines for Bank Capital:
An Attempt to Reflect Risk

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For many years, bank capital has been a steadying influence on the banking industry, buffering the risks that banks face. Now it is receiving new emphasis. U.S. federal bank regulatory agencies—the Federal Reserve, the Comptroller of the Currency, and the Federal Deposit Insurance Corporation—and the Bank of England have proposed new guidelines aimed at establishing appropriate capital standards, which require that a minimum level of capital be held against assets.[1] Unlike the current standards,

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[1]The Board's guidelines released for comment on February 12, 1987 are based upon the proposed U.S./U.K. agreement on primary capital and capital adequacy assessment. One policy objective is to develop a convergence in the supervision and treatment of capital of international banking organizations, a topic not covered explicitly in this article. The February 1987 proposed guidelines revise the Board's January 1986 proposal for a supplemental adjusted capital measure.

these new guidelines relate a bank's capital to the risk profile of its assets. Although some aspects of the new guidelines remain to be worked out, the Federal Reserve Board would use them in tandem with existing capital guidelines in the supervisory process.

Regulators proposed the risk-based guidelines in view of major changes occurring in the banking industry that have dramatically altered the risk-taking environment. For example, banks now are able to pay market rates on most deposits. Also, they can continue to expand into certain new activities, and some of these new activities, such as securities underwriting or real estate development, are believed by regulators to involve considerably more risk than, say, buying U. S. Treasury bills. In addition, banks have been expanding into what are called off-balance sheet activities. These involve potential, or contingent, claims on a bank rather than actual, current claims, and hence are not on the bank's balance sheet. These activities typically produce fee income for the bank, and include such items as financial guarantees and trade-related credit. Overall, banks now face a much broader spectrum of potential risks—with chances for large gains or large losses—when choosing which assets to invest in and which services to offer.

The new guidelines divide banks' assets into five broad categories that correspond to levels of riskiness. Included in those categories are some off-balance sheet items, such as commercial and consumer credit lines, and guarantees, which the current capital measure ignores. Accordingly, a bank that has more assets in the high-risk categories or more off-balance sheet items will need a greater amount of capital than a comparable size institution with more liquid assets and a lower risk profile. In general, most banks, except perhaps the very largest, will not need to raise additional capital to meet the new guidelines unless higher minimum capital ratios are imposed as part of the new guidelines. To illustrate the local effects, adjusted capital ratios were estimated for banks in Pennsylvania, New Jersey, and Delaware; these banks generally have strong capital backing, and, indeed, their adjusted capital ratios are higher under the new guidelines. In the future, however, these guidelines will affect the distribution of capital among banks as well as incentives to invest in certain kinds of assets.

THE PURPOSES OF BANK CAPITAL AND HOW MUCH IS ENOUGH

The change in regulatory stance to a risk-adjusted capital measure that supplements the current capital guidelines points out the different functions that bank capital serves. Banks and their regulators may have quite different viewpoints about this matter, and correspondingly, about the appropriate amount of capital.

From the Bank's Viewpoint... Capital for a bank is primarily an investment in the institution, which carries a concomitant responsibility to return a yield to the investor. Bank capital can take the form of equity, such as common stock and perpetual preferred stock, or it can take the form of mandatory convertible debt issues that convert to stock at some future date. Reserves for loan losses and other contingencies also count as part of regulatory capital.[2] In effect, monies invested in the capital stock of a bank are available funds. Naturally, banks want to put that capital to use where it yields the most value per dollar invested in providing financial services to their commercial and retail customers, subject to risk constraints. However, each bank may emphasize different uses. For example, in a bank where top management believes its most important resource is its people, the emphasis

[2]For more discussion of the different items included in bank regulatory capital, see R. Alton Gilbert, Courtenay Stone, and Michael E. Trebing, "The New Bank Capital Adequacy Standards," Federal Reserve Bank of St. Louis *Review* (May 1985) pp. 12-20. The proposed definition of capital under the U.S./U.K. agreement in the new guidelines consists of base primary capital (such as common stock), which counts fully as primary capital, and limited primary capital (such as perpetual preferred stock and some mandatory convertible securities), which can count up to a specified percentage of base primary capital. See the Board's proposed guidelines, pp. 12-22 and 57-73.

will be on teaching employees new skills or reorienting their thinking to a riskier environment. Others will want to upgrade their technology in order to support their expansion into new activities and to modernize their operations. And banks that plan to acquire and merge with other banks need a sufficient capital base to allow such purchases and still meet regulatory capital standards.

In today's competitive marketplace, banks also prepare for the likelihood that they will accept some risks that result in unforeseen, negative effects on earnings. Banks use capital to buffer their unanticipated earnings losses. Without knowing exactly which losses will arise, bankers can plan for some overall dollar amount of losses on loans or investments, or losses through fraud, interest rate changes, and other factors. Banks, however, tend to weigh the costs—in terms of forgone earnings—of maintaining loan loss reserves and other buffers against earnings losses more heavily than the regulators do.[3]

...And From the Regulator's Viewpoint. Regulators are concerned not only about the safety and soundness of individual banks, but also about the banking system as a whole. They recognize that when a single bank fails, it may have adverse repercussions beyond that bank, particularly if it reduces public confidence in the ability of other banks to function normally. Regulators are responsible for ensuring public confidence in the banking system and in the payments mechanism, confidence that is essential to a safe and sound banking system. Therefore, regulators want to ensure that banks are managed prudently, with adequate internal controls, and that incentives encourage sound management practices for individual banks.

Sufficient capital is critical to achieving these goals of safety and soundness. For many years, regulators have emphasized the importance of holding a certain amount of capital against assets as a buffer against adverse circumstances, to buttress both individual banks and the system. Because of these broader concerns, regulators may demand more capital than banks would otherwise raise. At the same time, regulators stress that capital helps protect the solvency of the Federal Deposit Insurance Corporation (FDIC) fund. The FDIC goes a long way toward instilling confidence in the system by insuring individual accounts of depositors of commercial banks and savings banks up to $100,000 in the event of a bank failure.[4] Thus, if a particular bank goes under, small depositors are protected. The insurance fund, however, is a backup measure, to be used only when a bank's own resources are exhausted. To the extent that banks have sufficient capital to withstand earnings setbacks, those banks will not have to rely on the aid of the FDIC to bail out their depositors.

CAPITAL TRENDS

Regulators and Capital Since the ABC System. Regulatory views on capital have continually emphasized its importance to the supervisory structure. Moreover, the idea of risk-related capital requirements is not a new one; in the 1950s the Federal Reserve implemented a variant of this concept called the Analysis of Bank Capital (ABC) system.[5] In some respects,

[3]In fact, one study finds that direct bankruptcy costs are negligible relative to the value of large banks. For a discussion of bank failure costs (and the associated leverage decision) in the 1930s and earlier, see Brian C. Gendreau, "The Private Costs of Bank Failures," this *Business Review* (March/April 1986) pp. 3-14.

[4]Regulators also have proposed risk-related insurance premiums instead of the flat premium currently in effect. Conceptually, these insurance premiums would relate the overall risk (credit risk, interest rate risk, and so on) of an institution to the yearly premium paid; more risky institutions would pay more for their depositors' insurance. See "Deposit Insurance: Analysis of Reform Proposals," Staff Study of the U.S. General Accounting Office, Volume 1, September 30, 1986, and Mark J. Flannery and Aris A. Protopapadakis, "Risk-Sensitive Deposit Insurance Premia: Some Practical Issues," this *Business Review* (September/October 1984) pp. 3-10.

[5]For a critical review of the supplemental capital proposal and how it relates to the earlier ABC system, see Paul Horvitz, "Warming Over the ABC Idea," *American Banker* (February 26, 1986) pp. 4-5.

the ABC system was a precursor of things to follow. Using a very precise formula, the ABC approach required a certain percentage of capital to be held against different asset categories. For example, the formula required that banks hold 0.4 percent capital against U.S. Treasury bills and 10 percent capital against business loans. Off-balance sheet items entered indirectly through a capital requirement against trust department activities equal to a certain percent of trust earnings.[6] Another forerunner of things to come was that small banks were thought to have fewer opportunities to diversify their portfolios, and therefore, they were subject to what was effectively a higher capital requirement than large banks. (There was a fixed capital amount, which translated into a higher percent of assets for small banks.) As the ABC system evolved over the years, it became more complex, more precise, and more difficult to administer. It was finally dropped in the mid-1970s because adequate capital levels could not be agreed upon.

For the next few years, regulators persuaded or cajoled banks into increasing capital when needed and, in extreme cases, required a bank to formulate a plan to raise capital. It wasn't until 1981 that federal bank regulators announced minimum primary capital-to-asset ratios. Primary capital consists mainly of equity, undivided profits, capital reserves, and reserves for loan losses—all of which are on banks' balance sheets.[7] But, at first, the regulators differed somewhat in setting the minimum requirements. The FDIC adopted a minimum primary capital-to-asset ratio of 5 percent. The Fed and the Comptroller set the ratio at 6 percent for banks under $1 billion in assets and at 5 percent for banks over $1 billion in assets, called regional banks. At that time, the capital-to-asset ratios of the 17 largest U.S. banks—often known as multinationals—were considered on an individual basis, depending upon the overall characteristics of each banking organization. In 1983, armed with new authority from the International Lending and Supervision Act, regulators adopted a (generally higher) minimum capital requirement for the largest banking organizations of 5 percent, the same as the regionals.[8] Two years later, in 1985, all three federal regulators agreed on *uniform* capital ratios—5.5 percent for primary capital and 6 percent for total capital—for all banks, regardless of size.[9]

How Have Capital-to-Asset Ratios Changed? After hitting a low point in the late 1970s following the demise of the ABC System, capital-to-asset ratios have risen for commercial banks in the U.S. during the 1980s, as regulators raised minimum capital requirements (see PRIMARY CAPITAL-TO-ASSETS RATIOS ARE RISING). In December 1980, commercial banks, on average, had primary capital equal to 6.3 percent of their assets, while by December 1986, their capital had risen a percentage point to 7.2 percent of assets. These average figures obscure differences among size classes, however. Small banks (those with less than $200 million in assets) long have maintained strong capital-to-asset ratios, and currently average 8.8 percent across the nation. In contrast, larger banks, encouraged by regulators, have raised substantial amounts of new capital in the last few years. Since 1980,

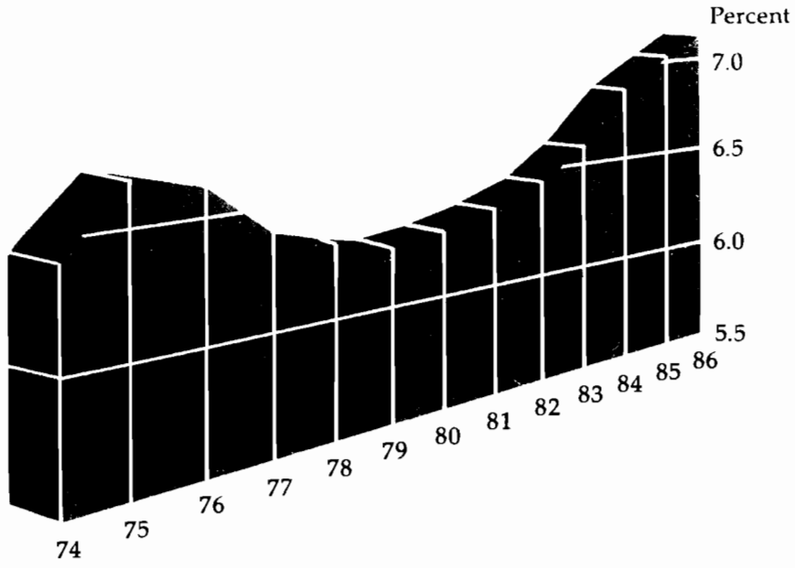
[6]Though trust activities are not the sort of off-balance sheet exposure that the new guidelines are aimed at, trust department assets are not on the bank's balance sheet. (Trust income is reported on the income statement.) A capital requirement against gross trust earnings reflected the risk that lower trust earnings might adversely affect the bank's earnings.

[7]Minimum ratios were also set for a bank's total capital (primary capital plus subordinated notes and debentures and some other items); these minimums usually were a half percentage point higher than the primary capital-to-asset ratios.

[8]Bank holding companies must meet the same minimum capital ratios as banks, although the components included in capital differ slightly.

[9]The regulators also established numerical zones for total capital for banks with more than $1 billion in assets. These zones set out objective standards on how the total capital ratio works with the minimum primary capital ratio, depending upon asset quality and other financial concerns.

Primary Capital-to-Asset Ratios Are Rising



SOURCE: *Statistics on Banking* (Washington, DC: FDIC, various years). These data are from year-end call reports for all insured commercial banks' domestic and foreign offices.

banks with assets between $1 billion and $10 billion have raised their capital ratios nearly one-half of a percentage point, to 6.6 percent. And the largest banks (greater than $10 billion in assets) have increased their capital ratios from 4.4 to 6.6 percent over the same period. Taken altogether, these numbers appear to support the claim of a stronger capital base for the banking system than a few years ago.

These numbers tell only part of the story, however, because the existing capital ratio is not sensitive to the risk exposure of the bank's assets nor does it capture off-balance sheet assets. Two banks can have the same capital ratio and the same asset size, but very different overall risks to their earnings streams if each invests and manages in a unique way. These sorts of differences are what the new guidelines hope to address.

THE FEDERAL RESERVE'S NEW CAPITAL GUIDELINES

The Purpose. The basic purpose of the new guidelines is to relate a bank's capital to its risk profile so that higher risk activities require relatively more bank capital. Accordingly, the guidelines allow capital standards to reflect developments in the banking industry that alter asset risk. Two important developments affecting bank risk have been the growth of off-balance sheet assets, such as standby letters of credit and consumer commitments, which are not included in the standard capital-to-asset ratio because they aren't counted as assets, and the reduction in liquid assets.

Banks have taken on additional risks via off-balance sheet activities, risks that now represent a substantial credit exposure. For example, standby letters of credit, where the bank "stands

by" ready to make payment in case the firm defaults on its transaction, pose a contingency risk because the bank may need to make good on its promise to provide payment. (These increased from 5.8 percent of the assets of U.S. banks at the end of 1981 to 11.4 percent in mid-year 1985.) Similarly, loan commitments expose the bank to risk because the bank promises to make a loan in the future at the customer's demand. Regulators recognized that implicitly banks—particularly large banks—had an incentive to circumvent existing capital requirements by adding these and other off-balance sheet items to earn fee income.

Banks also have reduced their holdings of liquid assets relative to total assets in the last few years. Indeed, for U.S. multinationals, the proportion of liquid assets to total assets fell from 15.6 to 12.8 percent from 1981 to 1985. Liquid assets—such as other institutions' certificates of deposit, federal funds sold, and short-term securities which are easily converted into cash—enable a bank to meet unexpected withdrawals, earnings losses, and so on. But generally, banks that are more aggressive in their funds management have substituted higher yielding, higher risk assets for lower yielding, lower risk assets. Since many higher risk assets are also less liquid, regulators grew concerned that the current incentives encourage holding a higher risk portfolio at the expense of holding liquid assets.

In responding to these developments, regulators contend that the risk-based guidelines will reduce the (distorted) incentives to shift into off-balance sheet assets by requiring capital backing for them. And they hope to stop the downward trend in the proportion of low-risk assets banks hold by requiring less capital to back them.

How Do the New Guidelines Classify Assets According to Risk? The guidelines chart a bank's risk profile by establishing a relationship between assets and five general categories of risk, to be weighted at 0, 10, 25, 50, or 100 percent. Each asset is assigned a category depending on its credit risk, which is based mainly on the type of borrower. The risk categories cover both assets that are in the standard ratio as well as off-balance sheet assets. Off-balance sheet assets convert to a balance sheet equivalent before being placed in a risk category. Interest rate and foreign exchange contracts incorporate more complex conversion factors. (See RISK CATEGORIES, ASSETS, AND CONVERSION FACTORS: A SUMMARY, p. 26.)

Asset categories place cash and balances with Federal Reserve Banks in the lowest risk class, with a weight of 0 percent, meaning that cash and Federal Reserve deposits require no capital backing. Put another way, banks that wish to expand these assets can do so without adding regulatory capital. The next category receives a 10 percent weight. It includes claims that are backed by the full faith and credit of the U.S. government and that are highly liquid. Some examples are short-term U.S. Treasury securities and short-term claims on U.S. government agencies, such as the Government National Mortgage Association (Ginnie Mae) and the Federal Housing Administration. The 25 percent category captures long-term U.S. Treasury securities and long-term claims on U.S government agencies. Though there is no risk of default, the higher weight reflects the interest rate risk inherent in the longer maturity—the risk that the price of the security will rise or fall as interest rates fluctuate. Short-term interbank claims, whether domestic or foreign, also fall within this category; for example, fed funds sold to a domestic bank and certificates of deposit of a foreign bank are treated alike.

Assets that generally have more credit risk than those in the above categories but less credit risk than the typical commercial bank loan fall in the 50 percent category. This category includes claims on U.S. government-sponsored agencies, such as mortgage-backed securities issued by the Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal National Mortgage Association (Fannie Mae). These claims are considered somewhat more risky because they are not explicitly guaranteed by the full

faith and credit of the U.S. government. General obligation debt of state and local governments also falls in this category. Assets in the highest risk category receive a 100 percent weight, meaning they count fully as assets when calculating the risk-adjusted capital ratio. Many of the usual bank assets fall within this group, including commercial and industrial loans, residential real estate loans, and consumer loans. So do corporate securities, commercial paper, and loans to foreign governments.

Off-balance sheet assets are included in the guidelines on a "credit equivalent" basis; that is, the face amount of the item is multiplied by a conversion factor to make it into an on-balance sheet equivalent credit, which then is assigned a risk category. The proposed guidelines apply a 100 percent conversion factor to financial guarantees that are effectively a direct extension of credit to the customer. Such direct credit substitutes would include standby letters of credit that back repayment of commercial paper or other commercial loans. Trade-related guarantees like commercial letters of credit convert at 50 percent; they present a contingency risk to the bank if the party defaults on its obligations or does not perform up to standard. Another group of off-balance sheet items that represent commitments to extend credit have various conversion factors depending upon the maturity, such as overdraft facilities, revolving credit, and home equity lines; the unused portion of these credit lines counts as an asset, too.

In the February 1987 proposed guidelines, the regulators expressed a desire to include the credit risks of *interest rate swaps and forward foreign exchange contracts* in the risk-based capital measure, and in March, the Federal Reserve proposed a way to do that.[10] The proposal is aimed at only the largest banking organizations and is consistent with the credit equivalent approach used in the treatment of other off-balance sheet assets. The credit equivalent amount is the sum of both a measure of potential exposure and current exposure. Potential exposure represents the risks that may arise later in the contract because of fluctuations in interest rates or exchange rates; it is calculated by multiplying the conversion factor times the notational value of the contract. Current exposure is simply the marked-to-market value—that is, the amount the banking organization would have to pay in today's market to replace the net payment stream in the contract. See EXAMPLE OF CAPITAL-TO-ASSET CALCULATIONS (p. 32) for an illustration of the calculations involved in the risk-adjusted measure.

How Will the Guidelines Be Used? The Federal Reserve is careful to stress the *supplemental* nature of the new capital guidelines. That is, these guidelines add to the current capital guidelines rather than replace them.[11] But federal bank regulators disagree on this matter—the Federal Reserve and the FDIC agree that the risk-based ratio would be used in tandem with existing capital ratios, while the Comptroller wants the risk-based capital ratio to replace the existing minimums for all national banks. To the extent that the adjusted ratio requires less capital, the Comptroller's proposal would allow banks to reduce their regulatory capital, an outcome the Fed is strongly opposed to. Aside from this issue, however, the regulators are in basic agreement, and this difference may be resolved before the final guidelines are released.

In accordance with the supplemental concept, the Fed views the risk-adjusted capital measure as an additional component in the supervisory

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[10]For an understandable discussion of interest rate swaps and how they work, see Jan G. Loeys, "Interest Rate Swaps: A New Tool for Managing Risk," this *Business Review* (May/June 1985) pp. 17-25.

[11]The framework for setting the minimum level for the risk-adjusted capital measure assumes the current minimum capital standards will remain the same for primary and total capital. However, the Federal Reserve probably will establish new numerical zones for banks with over $1 billion in assets to replace the zones currently used for total capital, and these new zones may be higher. These zones would set out objective standards on how the risk-adjusted ratio would work in tandem with the minimum primary capital ratio.

Risk Categories, Assets, and Conversion Factors: A Summary

Asset Risk Categories

0 Percent Weight
- Cash—domestic and foreign
- Claims on Federal Reserve Banks

10 Percent Weight
- Short-term claims (1-year or less) on U.S. government and its agencies

25 Percent Weight
- Cash items in process of collection
- Short-term claims on U.S. depository institutions, foreign banks, and foreign central banks
- Long-term claims on U.S. government and its agencies
- Claims collateralized by cash or U.S. government or agency debt (including repurchase agreements)
- Claims guaranteed by the U.S. government or its agencies
- Local currency claims on foreign central governments to the extent that bank has local currency liabilities
- Federal Reserve Bank stock

50 Percent Weight
- Claims on U.S. government-sponsored agencies
- Claims collateralized by U.S. government-sponsored agency debt (including repurchase agreements)
- General obligation claims on states, counties, and municipalities
- Claims on multinational development institutions

100 Percent Weight
- All other assets not specified above, including:
  - Long-term claims on domestic and foreign banks
  - Claims on private entities and individuals
  - All other claims on foreign governments and private obligors

Selected Off-Balance Sheet Assets and Conversion Factors

Off-Balance Sheet Assets	Conversion Factors
• Direct credit substitutes - Financial guarantees - Standby letters of credit	100 percent
• Sales and repurchase agreements and asset sales with recourse	100 percent

Off-Balance Sheet Assets		Conversion Factors
• Trade-related contingencies - Commercial letters of credit - Bid and performance bonds - Performance standby letters of credit		50 percent
• Other commitments - Commercial and consumer credit lines - (including home equity lines) - Overdraft facilities - Revolving underwriting facilities - Underwriting commitments	Maturity[a] Over 5 years 1-5 years 1 year or less	 50 percent 25 percent 10 percent

Interest Rate and Foreign Exchange Contracts and Conversion Factors

Interest Rate Contracts
- Single currency interest rate swaps
- forward rate agreements
- interest rate options purchased

Exchange Rate Contracts
- Cross currency interest rate swaps
- forward foreign exchange contracts
- foreign currency options purchased

Exclusions
- Spot foreign exchange contracts
- futures and options contracts traded on organized exchanges and marked-to-market daily.

Conversion Factors for Calculating Potential Exposure[b]

Remaining Maturity	Interest Rate Contracts	Exchange Rate Contracts
Less than 3 days	0 percent	0 percent
3 days to 1 month	0 percent	1 - 2 percent
1 month to 3 months	0 percent	2 - 4 percent
3 months to 1 year	0 percent	4 - 8 percent
1 year or more	0.5 - 1.0 percent per complete year	5 - 10 percent plus 1 - 2 percent per complete year

[a] Maturity is the original maturity date or the earliest possible time that the bank may unconditionally cancel the commitment, whichever comes first.

[b]The methodology used in determining the conversion factors is explained in a technical working paper by the Staff of the Board of Governors, titled "Potential Credit Exposure on Interest Rate and Exchange Rate Related Instruments." Estimates were made of the probability distributions of potential replacement costs for various contracts over their remaining life, assuming matched pairs of contracts. The confidence limits for these distributions correspond to the ranges for the conversion factors.

structure, to be taken together with other quantitative and qualitative information. It would add significantly to the off-site information regulators gain through financial statement analysis and surveillance techniques, which are important in tracking a bank's ongoing financial condition. The adjusted measure would also be used in conjunction with the on-site information gained during the examination of a bank and its records. For example, examiners look at collateral and guarantees associated with loans, both important factors affecting credit risk. Examiners also consider the concentration of assets in various industries when assessing the risk of the portfolio.

HOW WILL THE GUIDELINES AFFECT CAPITAL RATIOS IN THE TRI-STATE AREA?

Banks in Pennsylvania, New Jersey, and Delaware generally have strong capital positions. The same factors that lead to the healthy financial condition of these banks, the superior asset quality, and the low incidence of problem banks have enabled them to build up their capital at a moderate pace.[12] Over the last few years, banks in the tri-state area have raised their average capital-to-asset ratio, but not by as much as the typical U.S. bank. Currently, the average capital ratio for banks in the tri-state area is 7.02 percent, just under the 7.20 percent national average, and considerably above the 5.5 percent minimum regulatory standard.

Table 1 compares the capital ratios under the old and new guidelines for banks of different size classes in Pennsylvania, New Jersey, Delaware, and the region as a whole. The standard capital-to-asset ratios in the top portion of the table clearly show area banks are starting from a strong position as they move to the adjusted capital measure. The bottom portion gives estimates of how banks in this region would be affected by the proposed guidelines, using the asset risk categories and off-balance sheet assets (other than foreign exchange and interest rate swaps), and associated weights. Because these estimates required numerous assumptions about the data for individual bank assets, they are best viewed as illustrative of the effects, and are not to be interpreted as precise measurements.[13] Nevertheless, the estimated risk-adjusted ratios for area banks are well above the existing minimum capital requirements, and, in fact, are consistently higher than the current capital ratios. Banks in each size classification have higher ratios, from a gain of 1 percentage point for large banks to a gain of nearly 3 percentage points for small banks. What's more, even the few banks in the region that currently have standard capital ratios under 5.5 percent will find their estimated ratios to be substantially higher.

The risk-adjusted ratios were also estimated with interest rate and foreign exchange contracts included with other off-balance sheet items. For banks under $5 billion, the estimates change barely at all, while banks over $5 billion experience a 0.3 percent drop in their capital ratios. These results suggest that even large regional banks in the tri-state area have minimal exposure to off-balance sheet risk from these types of contracts, and would experience little effect if the guidelines should be extended in this fashion.

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[12]For a discussion of the financial condition of these banks, see Thomas K. Desch and Richard W. Lang, "The Health of Banking in the Third District," this *Business Review* (September/October 1985) pp. 3-11.

[13]Many assumptions were necessary to estimate the adjusted capital-to-asset ratios using call report data because the data are not entered in the same way as the items in the risk categories. For example, asset categories in the proposed guidelines distinguish between claims collateralized by U.S. government or agency debt (25 percent) and claims collateralized by U.S. government-*sponsored* agency debt (50 percent). Line items on the call report, however, do not tell what percent of claims, such as repurchase agreements, are collateralized, much less what form the collateral takes. A complete listing of these types of assumptions is available on request from the author.

TABLE 1

Total Assets (in millions)	Primary Capital-to-Asset Ratios Delaware[a]	New Jersey	Pennsylvania	Tri-State
Below $200	8.80	7.39	9.48	8.89
$200-$400	7.10	6.35	8.21	7.53
$400-$1,000	6.52	6.75	7.80	7.41
$1,000-$5,000	6.90	6.66	7.03	6.82
Above $5,000	—	6.10	6.57	6.52
Average	6.99	6.64	7.20	7.02
Below $200	11.59	9.73	12.52	11.74
$200-$400	8.27	8.03	10.24	9.41
$400-$1,000	6.73	8.31	9.99	9.32
$1,000-$5,000	8.25	8.07	8.76	8.34
Above $5,000	—	7.72	7.47	7.50
Average	8.25	8.20	8.50	8.40

SOURCE: Data are from December 31, 1986 call reports.

[a]Delaware banks include only the home-state banks, not Financial Center Development Act banks or consumer credit banks.

[b]Proposed estimates exclude foreign exchange and interest rate contracts.

These findings are not surprising, despite the fact that the debate surrounding this risk-based proposal has focused on the increased risks that banks are taking. One explanation for the strong showing of area banks is that three of the five proposed asset risk categories are weighted at substantially less than 100 percent, and cash-type assets not at all, in summing up the assets. For area banks, this change apparently more than compensates for the addition of some off-balance sheet assets (at the various weights) in the calculation.

Another reason why area banks come out stronger under the proposed guidelines is their moderate size. Typically, the largest banks are most likely to engage actively in off-balance sheet activities, including guarantees that are related to loan commitments, standby letters of credit, and so forth. Small banks, in contrast, tend to hold larger proportions of liquid assets, which would fall into the lower risk categories. In the tri-state area, only about 45 banks are larger than $1 billion in assets, while nearly three-fourths are under $200 million in assets. Table 2 (p. 30) illustrates the proportion of off-balance sheet assets to primary capital for area banks. The calculations show that, overall, about 26 percent of the 426 banks have off-balance sheet assets greater than their primary capital, and the largest banks, those above $5 billion, have the highest average ratio at 5.9. When interest rate and foreign currency contracts are

TABLE 2

Average Ratio of Off-Balance Sheet Items to Primary Capital

Bank Size (Total Assets in millions)	Number of Banks	Proposed Guidelines		With Foreign Exchange and Interest Rate Swaps	
		% of Banks	OBS/C Ratio	% of Banks	OBS/C Ratio
Below $200	297	10.8%	1.79	10.8%	1.79
$200-$400	45	37.8	1.93	40.0	1.95
$400-$1,000	37	64.9	2.14	67.6	2.58
$1,000-$5,000	38	76.3	2.70	78.9	3.01
Above $5,000	9	100.0	5.85	100.0	8.29
TOTAL	426	26.0%	—	26.8%	—

NOTES: To focus on those banks with the most off-balance sheet activity, only banks with ratios of off-balance sheet items to primary capital (OBS/C) greater than 1.0 are included in the last four columns.

Off-balance sheet items, including foreign exchange and interest rate contracts, are included at their full value, not the credit equivalent, in the calculations.

added, the percent of banks involved remains about the same, but the level of off-balance sheet exposure relative to primary capital rises somewhat further for the largest banks.

WHAT LIES AHEAD? SOME OPEN ISSUES

The risk-adjusted capital guidelines are a regulatory response to the increased variety and higher level of risks that banks face in today's financial system. These guidelines were developed in close cooperation with the Bank of England in an effort to agree on a uniform standard. More particularly, they are intended to eliminate some distortions that have arisen in recent years in the incentives to hold liquid assets and to expand into off-balance sheet activities. Through the guidelines, the risk exposure of a bank is related to five major categories of asset risk, ranging from highly liquid and marketable assets to typical commercial loans. Because of the weights chosen for the different risk categories, few banks nationally, and probably none in the tri-state area, will need to raise new capital to meet the guidelines. The incentives to hold capital against various assets will become more explicit, however, resulting in some redistribution of capital both within and among banks.

These proposed guidelines have stirred debate on at least three issues that regulators and bankers must grapple with as the guidelines are implemented. The first issue concerns the potential for credit allocation. By their nature, the risk-based guidelines attempt to restructure capital incentives for holding different assets. Since more capital must be held against assets in the higher risk categories, bankers have an incentive to reduce those assets and increase assets in lower risk categories. And the use of credit conversion factors for off-balance sheet assets, while tailoring the guidelines to individual items, increases the chances of credit allocation. Moreover, there is considerable disagreement on whether particular assets, such as loan commitments, are assigned to the right categories. As a result, some critics oppose the guidelines on the grounds that regulators should not become involved in credit allocation. Regu-

lators respond that they want to clarify the relationship between credit risk and capital so that bankers can take these general risk categories into account when choosing their activities and assets. Since the guidelines formally recognize that more capital is needed to back higher risk assets, regulators appear willing to accept some redirection of resources. This acceptance stems from a belief that, in total, the risk-adjusted guidelines are not introducing new distortions, but are simply eliminating old ones.

The second issue focuses on the ways in which the adjusted capital ratio is a partial measure of the riskiness of a bank's assets, and some perceived disadvantages to that approach. The guidelines' five broad risk categories would surely be more finely divided for a truly risk-based measure. Further, the guidelines look at only one asset at a time and ignore diversification effects. They do not attempt to incorporate the interaction among the different asset returns or the presence of a common factor among assets, which would be part of the assessment of the riskiness of the whole portfolio. A well-diversified portfolio of assets does not concentrate too heavily on assets in one industry or area, so that adverse economic conditions in one sector do not overwhelm the entire portfolio. In addition, the risk-adjusted measure emphasizes the credit risk of the asset and not the risks that banks face due to interest rate changes, exchange rate movements, and so on (although the March proposal was a step in that direction). Regulators are well aware of the limitations inherent in the risk-adjusted capital ratio. They also want to find the balance between the need for quantitative analysis and the need for subjective judgment that is critical to the examination process. Thus, a comprehensive evaluation of the different risks that banks face need not be part of the risk-adjusted ratio since this analysis is covered within the supervisory and examination framework.

A third unresolved issue centers on how these guidelines will evolve over time. Will the risk-adjusted guidelines receive greater emphasis over time relative to the standard capital ratios? How will they be integrated with the examination process? Will the regulatory agencies attempt to expand the risk measure to make it more comprehensive? The regulatory agencies already have taken steps to fine-tune the proposed guidelines by adding conversion factors and by expanding the coverage of off-balance sheet assets. What other adjustments lie ahead? Finally, will regulators set the minimum capital standards for the risk-adjusted measure above 5.5 percent, the current minimum for primary capital, and perhaps raise them later?[14] If so, the guidelines will have more of a bite in the future.[15]

These issues and the questions they raise point to the complexity of the task ahead. The risk-adjusted approach to regulatory capital entails major changes that will take a while to work out. Whatever precise form it takes, the risk-adjusted capital measure will be a significant regulatory tool in assessing the capital position of a banking organization.

[14]The Federal Reserve has not set an overall capital rate.

[15]The guidelines also would have more of a bite if loan-loss reserves were phased out of primary capital. The Board raised this possibility and asked for comment.

Example of Capital-to-Asset Calculation

Under the proposed guidelines, where all assets are multiplied by risk weights, calculating the ratio of capital to assets involves several steps. Assets on the balance sheet are simplest: they are just multiplied by their risk weights. Off-balance sheet items are more complex because "credit equivalents" must be determined before multiplying by the risk weights. For off-balance sheet items other than interest rate and foreign exchange contracts, the credit equivalent equals the dollar value of the asset times a conversion factor. For interest rate and foreign exchange contracts, calculating the credit equivalent involves one more step: after multiplying the dollar value of the asset times the conversion factor to get the potential exposure, the current exposure (the marked-to-market value) is added.[a]

To see these calculations played out, imagine a bank with $100 million in on-balance sheet assets distributed among each of the asset risk categories, a selected mix of $100 million of off-balance sheet assets, and primary capital equal to $7 million.[b]

Balance sheet assets	$100 million
Off-balance sheet assets	
Standby letters of credit	20 million
Consumer credit lines (3-yr.)	40 million
3-mo. forward foreign exchange contract	10 million
3-yr. fixed/floating interest rate swap	30 million
Primary capital	7 million

Step 1: Calculate risk-weighted balance sheet assets.

Asset Category	Balance Sheet Assets	Weighted Assets
0%	5	0
10%	15	1.50
25%	25	6.25
50%	15	7.50
100%	40	40.00
		55.25

[a]A positive marked-to-market value means that the bank suffers a loss when the counterparty defaults on the contract and the bank has to replace it. A negative marked-to-market value for a contract indicates a default would result in a (theoretical) profit for the bank. However, a negative marked-to-market number may offset the amount of potential exposure (from future rate changes) only until the credit equivalent amount falls to zero.

[b]For the purposes of illustration, the following assumptions are made:

(1) all off-balance sheet items are claims on individuals or private entities, so their risk categories are 100 percent;
(2) the current exposure numbers in Step 3 are purely illustrative and represent the marked-to-market value of the contract as of the reporting date;
(3) the conversion factors in Step 3 are at the lower end of the range.

Step 2: Calculate credit equivalent amounts for off-balance sheet assets other than foreign exchange contracts

Off-balance Sheet Asset	Nominal Amount	×	Conversion Factor	=	Credit Equiv.	×	Asset Category	=	Weighted Assets
Standby Letter of Credit	20		1.00		20		100%		20.00
Consumer Credit Line (3-yr. maturity)	40		0.25		10		100%		10.00
									30.00

Step 3: Calculate credit equivalent amounts for foreign exchange contracts

Off-balance Sheet Asset	Nominal Amount	×	Conversion Factor	=	Potential Exposure	+	Current Exposure	=	Credit Equiv.	×	Asset Cat.	=	Weighted Assets
3-mo. forward foreign exchange contract	10		0.04		0.4		0.1		0.5		100%		0.50
3-yr. fixed/floating interest rate swap	30		0.015		0.45		-0.2		0.25		100%		0.25
													0.75

Step 4: Calculate ratio of capital to assets

Current guidelines:	$7 million/$100 million	=	7 %
Proposed guidelines:	$55.25 million		
	$30.00 million		
	$ 0.75 million		
	$7 million/$86.00 million	=	8.14 %

Philadelphia/RESEARCH

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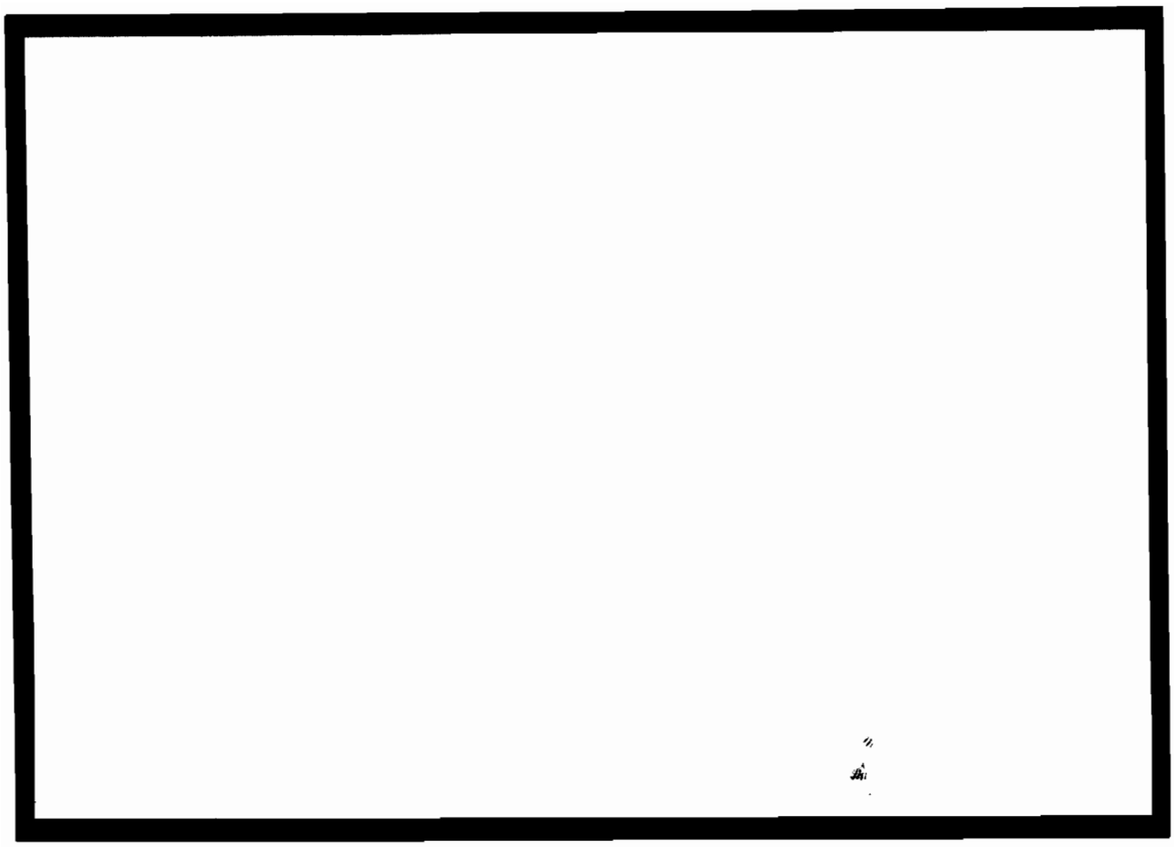

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