Regional Outlook

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FDIC
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The Asian Economic Crisis: Implications for the U.S. Economy

- **The impact of the Asian economic crisis on the U.S. economy has been increasingly evident, with some sectors experiencing slower growth as conditions in Asia continue to deteriorate.**

- **U.S. exports to Asia have decreased in recent months owing to falling demand for commodities, manufactured goods, and agricultural products.**

- **Slower U.S. growth resulting from reduced export sales and lower corporate profits could affect institutions throughout the nation.**

The economic crisis in Asia is now more than one year old, yet the consequences of the unprecedented slide in currency values are still reverberating throughout the global economy. There are growing indications that some sectors of the U.S. economy are beginning to experience slower growth directly attributable to problems in the Asian economies. It is difficult to assess how significant and long-lasting the effects of the crisis will be, but it is clear that earlier views that the crisis would pass quickly and be followed by renewed growth were too optimistic. The consensus among economists and analysts now is that the recovery will be measured in years, not months.

Causes of the Crisis

Most economists agree that the Asian economies[1] are in the midst of a steep and severe recession. For example, Indonesia's gross domestic product fell by more than 12 percent in the first half of 1998, a decline second only to the drop in economic activity in the Soviet Union following its collapse in the early 1990s. While Indonesia may be the most startling example of economic deterioration in Asia, the other Asian nations also have experienced weakened stock markets, falling real estate values, rising corporate bankruptcies, and growing problem loan portfolios among financial institutions. It is generally agreed (with the benefit of hindsight) that the conditions that precipitated these events included the following[2]:

- **Reduced Export Competitiveness:** Most of the Asian economies had effectively pegged their currencies to the U.S. dollar. Between mid-1995 and early 1997, the U.S. dollar increased in value by more than 42 percent against the Japanese yen and by 23 percent against the German mark. This increase significantly worsened the international competitiveness of many Asian firms relative to Japanese or European competitors in export markets, since the value of their currencies and the price of their exports rose along with the U.S. dollar. By late 1995, export growth among the Southeast Asia economies was slowing, and by mid-1996 it was near zero.

- **Excess Production Capacity:** Although Asian savings rates were among the highest in the world, domestic saving was not sufficient to fund the desired levels of investment in factories, roads, housing, and telecommunications. The resulting inflow of foreign capital funded rapid capacity expansion in key sectors such as autos, chemicals, and microchips. For example, capital inflows to Thailand totaled $1.9 billion in 1980 but rose to $15.2 billion by 1996. The increase in production capacity put downward pressure on prices and reduced earnings growth in key export sectors.[3]

- **Rapid Asset Price Appreciation:** Real estate, land, and share prices on the region's stock markets soared during the 1980s and early 1990s. In Indonesia, for example, the Jakarta Composite stock index

[1] Unless otherwise noted, "Asia" refers to the economies of China, Hong Kong, Indonesia, Japan, Malaysia, the Philippines, Singapore, South Korea, Taiwan, and Thailand.

[2] A comprehensive survey of recent events and links to other information sources is available at the *Asia Crisis Home Page,* www.stern.nyu.edu/~nroubini/asia/AsiaHomepage.html.

[3] A case in point is the growth of the auto industry. During the past several years, Korea invested heavily in new auto plants to satisfy both domestic and export demand. By 1999, Korean capacity is expected to reach 4.66 million light vehicles annually—2 million more than domestic demand. In Japan, excess capacity of 2.8 million vehicles is expected through 2002. Worldwide excess capacity in light vehicles is expected to reach more than 20 million units by 2002—more than the total 1997 production of General Motors, Ford, and Chrysler combined (*Wall Street Journal,* March 2, 1998). The result has been downward pressure on prices of domestically produced autos—down by 1.9 percent on the basis of the first-quarter 1998 producer price index—and imports, which have experienced price increases of less than 1 percent since mid-1996.

increased by nearly 53 percent in the two-year period ending in the first quarter of 1997.

- **Deteriorating Credit Quality:** Slower export growth and eroding competitiveness hampered Asian firms' ability to repay debt incurred to finance the growing levels of investment. Some Korean conglomerates were burdened with a debt load equal to 300 to 400 percent of equity. As much as two-thirds of this debt was short-term, with a maturity of less than 12 months. Additionally, the debt denominated in foreign currencies, such as the U.S. dollar, ballooned as local currency values dropped. With some firms struggling to repay mounting debt, banks began to experience a further deterioration in credit quality.

Some of the uncertainty about the strength and speed of the recovery in Asia is attributable to concerns about the faltering Japanese economy. As the second largest economy in the world and the engine of growth in the region, Japan must have a healthy economy if sustainable growth is to occur in the rest of Asia. With Japan currently in a deep recession and the outlook for its economy clouded by the halting pace of financial reform efforts, there is considerable uncertainty about how quickly economic and financial weaknesses throughout the rest of Asia can be repaired.

Impact on the U.S Economy

The Asian financial crisis could affect the U.S. economy through several avenues. Some firms and industries may be directly exposed, especially if they have operations in Asia. Banks may be exposed through changes in the financial condition of Asian borrowers. Other firms may be less directly exposed to economic conditions but will be affected by changes in relative prices and trade flows between the United States and Asia. The drop in Asian purchases of U.S. exports has hit agricultural products, commodities, and manufactured goods. As some recent corporate earnings announcements have shown, the crisis has been associated with profit growth that has failed to meet the market's expectations.

Banking

The U.S. banking industry has a smaller direct lending exposure to the Asian economies than either European or Japanese banks. As shown in Table 1, U.S. banks had outstanding loans of $22 billion at the end of 1997, which accounted for 8.5 percent of all international lending to Indonesia, Malaysia, the Philippines, South Korea, and Thailand. To the extent that exposures exist, however, large banks and not smaller regional or community banks account for most of the lending. While the overall direct lending exposure of the U.S. banking industry may be relatively small, the indirect exposure resulting from changing economic conditions in the United States as a result of the crisis could potentially affect small and large institutions in all areas of the country.

Agriculture

Key to understanding the impact on agriculture is the fact that in world markets, agricultural commodities are priced and traded in terms of U.S. dollars. The steep decline in value of Asia's currencies means that the price of imported agricultural commodities has rapidly risen. Over a longer period, higher import prices tend to stimulate production in the importing countries that can displace demand for imports. Thailand, for example, is positioned to increase production of poultry and sugar. Other world producers, such as Australia, whose currency also has fallen in value, are now more competitive suppliers of some agricultural products to the Asian market than the United States.

On the basis of analysis performed by the U.S. Department of Agriculture's (USDA's) Economic Research Services,[4] U.S. exports of red meat and poultry are expected to drop by 5 to 6 percent in fiscal 1998 and 1999 as a result of the Asian crisis. Exports of grains are projected to fall by at least 2 percent in fiscal 1999 as other world producers increase production in response to changing relative prices among major grain exporters. Overall, USDA expects agricultural exports to fall by 3 to 6 percent in fiscal 1998 and 1999, compared with the level of exports had the Asian crisis not occurred.

Commodities

Asian countries have become increasingly important commodity consumers in recent years. As a result, com-

[4] "World Agriculture and Trade," *Agricultural Outlook,* pp. 10–11.

Table 1

International Claims by Nationality of Reporting Bank
End December 1997

Total International Claims (million U.S. $)		U.S. Claims	U.S. Percent	Japan Claims	Japan Percent	Europe* Claims	Europe* Percent	Other Claims	Other Percent
Indonesia	58,388	4,898	8.4	22,018	37.7	15,044	25.8	16,428	28.1
Malaysia	27,528	1,786	6.5	8,551	31.1	12,997	47.2	4,194	15.2
Philippines	19,732	3,224	16.3	2,624	13.3	9,317	47.2	4,567	23.1
South Korea	94,180	9,533	10.1	20,278	21.5	29,614	31.4	34,755	36.9
Thailand	58,835	2,533	4.3	33,180	56.4	14,782	25.1	8,340	14.2
Total	**258,663**	**21,974**	**8.5**	**86,651**	**33.5**	**81,754**	**31.6**	**68,284**	**26.4**

* Includes France, Germany, Netherlands, and United Kingdom
Source: Bank for International Settlements

modity markets have been affected by falling demand for basic materials and fuels in Asia. The abrupt halt of construction activity in the region has reduced Asian imports of metals and metal products. Consequently, world copper and nickel prices fell more than 36 percent during the year ending June 1998. Asian developing countries also had stepped up their demand for petroleum products, accounting for two-thirds of the increase in world petroleum consumption between 1992 and 1996. As economic activity in Asia slowed, oil demand softened and world inventories expanded, causing prices to tumble from $20 per barrel in July 1997 to less than $14 per barrel in June 1998. To the benefit of U.S. consumers, the drop in oil prices has reduced the prices of gasoline and other refined petroleum products, but it has cut into profits of oil producers. While there are few indications of widespread financial problems in the industry, smaller and less geographically diversified producers may be exposed to adverse price and inventory changes.

Manufacturing

Asia accounts for a large and growing share of U.S. trade in manufactured goods. Between 1990 and 1996, U.S. exports of manufactured goods to Asia increased from $75 billion to more than $140 billion, accounting for nearly one-third of the increase in total U.S. exports of manufactured goods. For the U.S. economy as a whole, machinery, food products, and chemicals are the most exposed to a drop in Asia's demand for U.S. exports. Together, these industries account for nearly 70 percent of U.S. exports to Asia.

Between 1990 and 1996, U.S. imports of manufactured goods from Asia rose from $176 billion to more than $285 billion. Increased imports from China accounted for about one-third of the gain. U.S. imports from Asia are dominated by machinery and manufactured goods, including electronics and semiconductors, which together account for 93 percent of imports.

Asia's demand for U.S. exports will continue to weaken following the dramatic increase in import prices resulting from the drop in currency values. The latest trade data show that the dollar volume of U.S. goods exports to Asia (including both manufactured goods and other commodities) fell by 22.5 percent in May 1998 compared with one year earlier (Chart 1).

Changes in the volume of exports at the national level do not adequately describe the variation in the export exposure of different regions of the country. Chart 2 (next page) shows the percentage of state-level exports

Chart 1

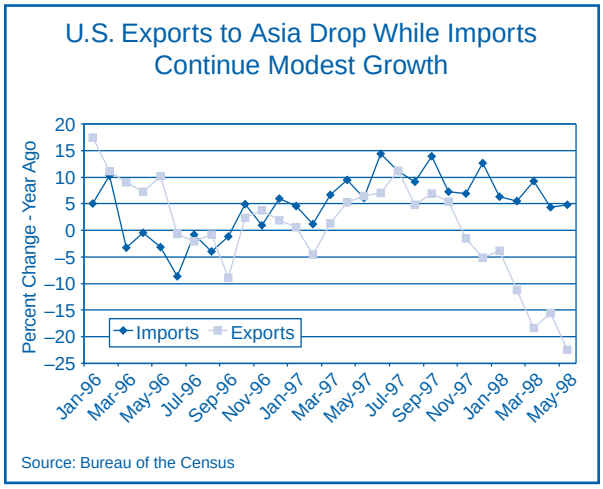
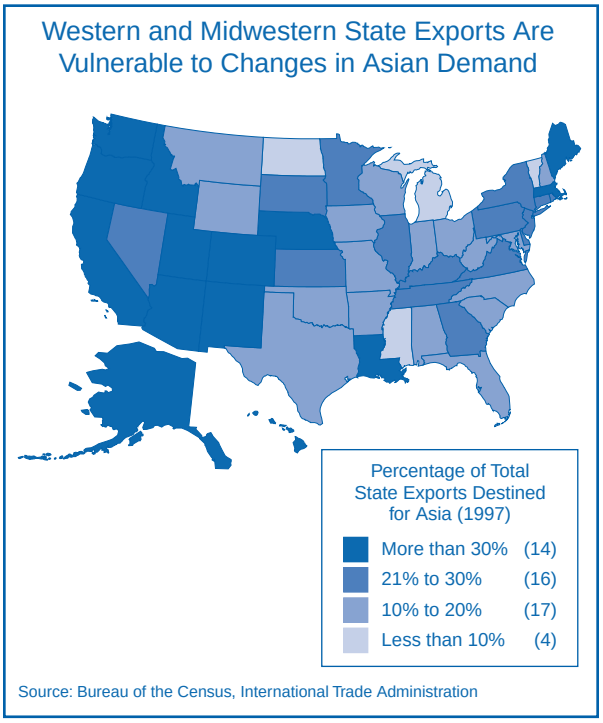


CHART 2



that are destined for Asia.[5] Clearly, Western states are most exposed to changes in the demand for U.S. exports, especially electronics, transportation equipment, and industrial machinery. A significant share of exports from the Midwest also is destined for Asia, including chemicals and machinery such as construction equipment.[6]

In the initial stages of the crisis, the consensus view suggested that the United States would be overwhelmed by cheap imports from Asia, as Asian countries exported their way to economic recovery. Although there has been an increase in U.S. imports from Asia, the growth has been well below expectations. In May 1998, goods imports were up by just 4.8 percent over the previous year. The reason that U.S. imports of Asian goods have not been greater is due in part to the severity of the economic downturn and the weakness of Asia's financial institutions. Many Asian manufacturers are dependent on components imported from neighboring countries or purchased on world markets. With the drop in currency values, all imported goods, including finished goods and intermediate goods that are used in the manufacturing sector, have become more costly. At the same time, Asia's weak financial systems have come under increasing pressure as the economic slump deepens. Many banks cannot, or will not, lend. Consequently, Asian firms cannot secure the capital to acquire imported inputs or to finance the sale of exports abroad. As the "credit crunch" abates, imports from Asia should rebound, placing greater pressure on U.S. manufacturers.

Corporate Profits

Profits of U.S. producers also will be affected by falling prices for import-competing goods and plummeting Asian demand for some U.S. exports. Although U.S. producers of import-competing goods will be under increasing competitive pressure, firms that use imported components from Asia will benefit from an effective reduction in costs. U.S. exporters may see disappointing Asian market profits offset by continuing strong sales in the U.S. and European markets. For these reasons, the impact of the crisis on corporate profits must be viewed in the context of gains and losses caused by changing relative prices of a firm's products and inputs.

A number of recent earnings announcements have failed to meet analysts' expectations. According to IBES International,[7] the crisis has contributed to a reduction of profit growth, although most of the slowdown is attributable to both falling prices and weak demand for semiconductors and oil. Operating profits of all companies tracked in the Standard & Poor's 500 stock index increased by 4.4 percent in the first quarter of 1998, the smallest increase since 1991. Excluding the energy and technology sectors, profits of the S&P 500 firms increased by 8.6 percent in the first quarter. On the basis of these results, the impact of the crisis on corporate profits appears to be highly concentrated among firms in a few industries.

Summary and Implications

The consequences of the Asian economic crisis continue to unfold. The slowdown in growth in most Asian economies has already reduced U.S. export shipments and put downward pressure on prices of commodities and agricultural products. How long this trend will con-

[5] The state-level export data are from the Export Locator series published by the Bureau of the Census. These data tabulate the value of exports as determined by the location of the exporter, which may differ from the location of the producer. Although these data are an imperfect measure of state-level export performance, they are still of value in assessing regional exposures and remain the most complete data available.

[6] A state-by-state analysis has been prepared by the U.S. Treasury and the U.S. Department of Commerce.

[7] As quoted in the *Wall Street Journal,* June 22, 1998, p. C1.

tinue is uncertain, but most analysts have dismissed the chances of a speedy recovery in Asia. Although most economists are not anticipating a recession in the United States in the foreseeable future, the indirect impact of the Asian crisis will be felt to some extent across most regions of the country.

Lenders should be cognizant of their customers' exposure to a continued drop in demand for exports or to further deterioration in the pricing environment. More generally, slower U.S. growth could affect even those borrowers that have little or no direct exposure to export markets. What is clear for insured institutions is that at this stage of the economic expansion and with a number of uncertainties about the global economic outlook, lending and strategic decisions predicated on an assumption of continued robust economic growth should be carefully scrutinized.

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Paul C. Bishop, Economist

Table 2

Boston Region: Merchandise Exports to Asia—1997

Includes China, Hong Kong, Indonesia, Japan, Malaysia, the Philippines, Singapore, South Korea, Taiwan, and Thailand

Industry Sector	Volume ($ Millions)	Export Growth 1993-97	Percent of Exports to Asia by Industry*	Export Exposure to Asia**
Total Exports to Asia	10,408.8	60%	100%	28%
Top Five Export Industries				
Electric & Electronic Equipment	2,246.0	100%	22%	29%
Industrial Machinery & Computers	1,928.8	69%	19%	27%
Chemical Products	1,277.3	45%	12%	28%
Scientific & Measuring Instruments	1,274.6	83%	12%	34%
Transportation Equipment	762.2	91%	7%	26%
Total of Top Five Export Industries	7,488.9	77%	72%	28%

* Percent of Region's total exports to Asia from each of the top five export industries.
** Percent of Region's total world exports for each industry destined for Asia.
Source: International Trade Administration

CLOs Lure Another Major Bank Asset off the Balance Sheet

- **Securitization of corporate loans and bonds is in full swing, with 1997 issuance exceeding that of securities backed by credit card loans.**

- **Collateralized loan obligation (CLO) and collateralized bond obligation (CBO) issuance has grown dramatically since 1996. Both CLOs and CBOs are potential bank investments that may grow in popularity if a current proposal to lower the risk weights for AAA-rated securities is enacted.**

- **These bonds may offer a higher yield than other AAA-rated securities, but they also may carry both deal- and issuer-specific risks that warrant closer scrutiny.**

- **Banks with an ample supply of low-margin commercial loans are expected to issue more CLOs to an increasingly demanding secondary commercial loan market.**

- **Securitizing investment-grade commercial loans has implications for capital adequacy.**

CBOs and CLOs are fixed-income securities that share many similarities with other asset-backed securities. In a CLO or CBO, commercial loans or bonds are pooled and securitized, and participation certificates in the underlying assets are sold to investors. The first CLO and CBO transactions occurred in the late 1980s, but issuance was slow until last year. During 1997, the estimated volume of corporate bonds and commercial loans securitized was $54 billion, more than double the amount securitized in 1996. In fact, the combined issuance of CBOs and CLOs in 1997 was more than the amount of credit card loans securitized during the year. The amount of securitized commercial loans and corporate bonds is expected to continue to grow this year, with an increasing number of deals backed by commercial loans[1] (see Chart 1).

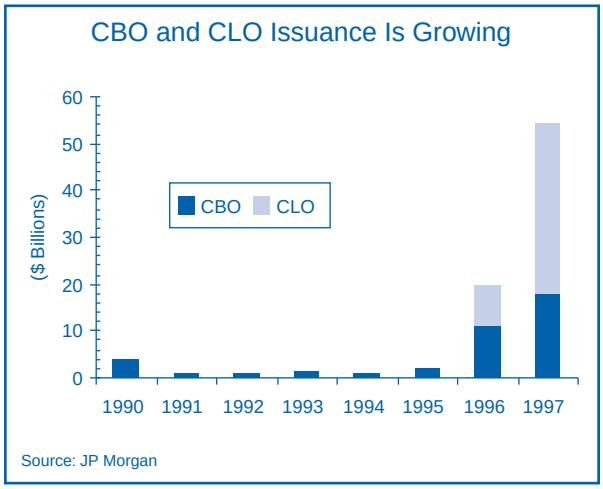
[1] *CBOs/CLOs: An Expanding Securitization Product,* p. 1, JP Morgan, September 1997.

CBOs and CLOs: A Natural Development in the Asset-Backed Securities (ABS) Market

The growth of the CLO market can be explained by several supply and demand factors. On the demand side, strong investor appetite for ABS has produced tremendous growth in the securitization of consumer loan segments such as credit card, auto, and home equity loans. The increasing comfort level of the capital markets with these asset classes and the various structures used to securitize them has facilitated the ABS market's expansion into nonconsumer loans, including corporate debt obligations and bank commercial loans. CBO and CLO structures represent a natural progression from the securitization of a pool of consumer loans to the securitization of a diversified package of corporate bonds or bank loans.

Increased standardization of terms among commercial lenders and more information flow on returns, defaults, and recoveries also have made commercial loans and corporate debt more desirable to institutional investors and an asset class viable for securitization. In addition, CLOs provide a way for investors, including banks, to own a credit-enhanced interest in a diversified pool of loans without directly owning the individual loans. Investors are increasingly considering collateralized bond and loan products as higher yielding alternatives to other ABS.

CHART 1



Foreign and, to a lesser extent, domestic banks have been large purchasers of CLOs and CBOs. Bank investment in CLOs and CBOs primarily has been in the most senior, highest investment-rated tranches. Together, foreign and domestic banks are estimated to have purchased almost one-half of the highest rated classes of CLO and CBO securities issued in 1997. Insurance companies dominated the purchase of the middle or mezzanine class of CLOs and CBOs.[2]

Last year the Federal Financial Institutions Examination Council proposed lowering the risk weighting for AAA-rated ABS from 100 percent to 20 percent. Bank investment in AAA-rated ABS products, including CLOs and CBOs, could increase substantially if the proposal is approved.

Lower Capital Requirements, Higher Return Ratios Attract Banks to CLO Market

On the supply side, issuers of CLOs backed by *investment*-grade loans are motivated by regulatory capital treatment, return on capital, and relationship management. While the CLOs originated in the late 1980s were designed to purge the lender's balance sheet of lower quality commercial loans, the recent bank-issued CLOs have been secured by higher credit quality, lower margin commercial and industrial loans.

A bank that is capital constrained may view the CLO structure as an alternative to issuing additional equity. But more often, banks are motivated to securitize investment-grade commercial loans because by doing so they effectively subject themselves to the market's capital requirements for such loans instead of their regulator's. Tight competition has compressed the margin that banks earn on investment-grade loans to the point that more institutions are considering investment-grade lending to be an inefficient use of capital. As margins have declined, the CLO market has helped relationship managers rationalize lower pricing from the perspective of return on capital. *Since investment-grade and non-investment-grade-performing commercial loans have the same risk weightings for regulatory capital purposes, removing the higher quality, lower yielding assets from the balance sheet tends to leave existing bank capital supporting higher return activities.*[3] *In this way, a bank can improve certain profitability measures, but possibly with a higher risk profile.*

Table 1 (next page) illustrates the effects of a CLO on a bank's capital and return ratios. In order to compare the on- and off-balance sheet transactions, the costs of the CLO and the associated reserve requirement are analogized to the on-balance sheet funding costs and capital requirement if the assets remained on the balance sheet. The assumptions reflect the spreads and reserve requirement of a typical transaction. While the execution of the CLO costs more than the on-balance sheet financing of the loans, the risk-adjusted return on capital (RAROC) is greater with the CLO. The reserve requirement is minimized by the tiering of tranches in the securitization, which provides credit enhancement to the senior classes. The reserve fund, if retained by the issuing bank, represents recourse to the bank from the sold assets and requires capital at 100 percent under "low-level" recourse.

CLOs also may be used to facilitate corporate borrowing relationships. For example, banks that want to maintain relationships with corporate borrowers but are restrained by concentration limitations, either by borrower or by industry, may use CLOs to alleviate concentrations without disrupting borrower relationships.

Large commercial banks with significant holdings of investment-quality commercial loans are likely candidates to issue CLOs. CLO issuance by investment banks could grow as these institutions secure a stronger foothold in the commercial loan market. In 1997, foreign banks were the primary issuers of CLOs, but more U.S. banks are expected to issue CLOs in the future. Japanese and Asian banks may increase their CLO activity as they come under pressure to improve capital ratios and remove distressed loans from their balance sheets.

[2] *CBOs & CLOs—An Attractive Investment Class,* p. 5, Merrill Lynch & Co., Inc., December 1997.

[3] Pursuant to the Basle Accord, commercial loans generally receive a 100 percent risk weighting regardless of the credit rating of the loan. Proponents of CLOs have argued that banks can improve their risk-adjusted return on capital by removing the higher quality, lower earning commercial loans from the balance sheet.

Table 1

CLOs Can Facilitate a Higher RAROC on Investment-Grade Assets	
Assumptions:	
Amount of Loans in CLO:	$1 billion
Loan Portfolio Yield:	Libor + 50 bpts
Bank Funding Costs:	Libor – 10 bpts
CLO Funding Costs:	Libor + 24 bpts
Bank Retains 1% Reserve Fund:	$10 million
Before CLO	
Yield Less Funding Cost	(L+50) less (L–10) = 60 basis points
Net Spread Earned	.006 × $1 billion = $6 million
Risk-Based Capital Requirement	(8% on $1 billion) = $80 million
RAROC	$6 million/$80 million = 7.5%
After CLO	
Yield Less Funding Cost	(L+50) less (L+24) = 26 basis points
Net Spread Earned	.0026 × $1 billion = $2.6 million
Risk-Based Capital Requirement	(100% of Reserve Fund) = $10 million
RAROC	**$2.6 million/$10 million = 26%**

Source: Bear, Stearns & Co. Inc.

Arbitrage Opportunities Motivate Most Securitization of Subinvestment-Grade Debt

Issuance of CLOs backed by *subinvestment*-grade loans and most CBOs, which commonly are backed by a mixture of bonds with a subinvestment-grade weighted average, typically is motivated by the potential to capitalize on wide spreads between investment and subinvestment-grade debt. The securities backed by subinvestment-grade collateral, often referred to as "arbitrage" CLOs and CBOs, contain higher yielding, riskier securities such as high-yield debt, distressed bonds, highly leveraged loans, and emerging market debt. By assembling a diversified pool of higher yielding investments, asset managers can limit aggregate event risk and create a security with a lower required yield than the underlying collateral. Securitizations can include a combination of loans and bonds and are sometimes referred to as collateralized debt obligations or CDOs.

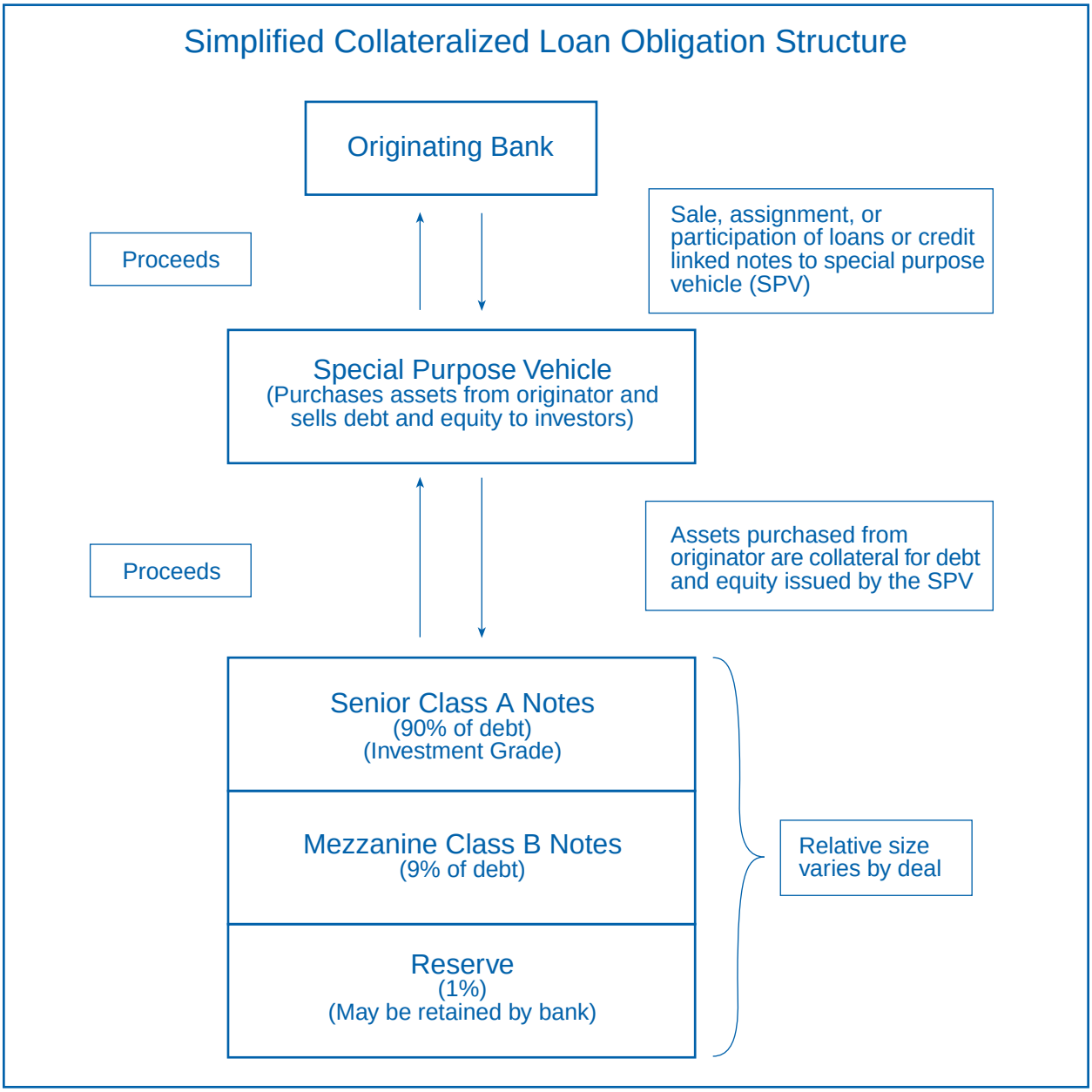
A Closer Look at CLO Structures

While the structures of CLOs and CBOs are similar, banks' involvement as issuers of CLOs, and the forces driving this issuance, elevate the importance of considering CLO structures. Chart 2 presents the basic structure of a CLO. Although specifics may vary, most CLOs use a stand-alone special purpose vehicle (SPV) or trust to purchase a diversified pool of assets from a bank originator or issuer. The purchase of the assets by the SPV is funded through the sale of debt securities to investors. The structure of the SPV may include one or more tranches of debt that are secured by the pool of assets owned by the SPV. The classes of debt are distinguished by their priority of claims on the cash flow from the collateral, with the most subordinated pieces functioning as an equity investment in the pool.

The senior tranche is usually the largest, has the greatest amount of credit protection, and earns the highest credit ratings in the CLO structure. *The rating of the senior class typically is higher than the average rating of the underlying pool of assets due to the tiering of claims among the debt classes and credit enhancement in the CLO.* The junior tranches of debt may be below investment grade or not rated. The reserve or "equity" portion may be retained by the issuing entity as a form of credit enhancement or sold to third-party investors who want a potentially higher return investment.

CLO collateral has included both funded and unfunded loan commitments, loan participations, and different types of credit default swaps. Loan assignments also may be transferred through a CLO but are less commonly included because of bank issuers' desire to main-

CHART 2



tain borrower relationships. The issuer may transfer the actual loan, the cash flow from the loan, or the default risk to investors.

CLOs typically rely on an asset manager or servicer to "manage" or protect the investors' interest in the collateral. The investment style or role of the asset manager may change depending on the purpose of the CLO. Securitizations that use an asset manager to actively manage the performance and market value of the collateral are referred to as "market arbitrage" or "market value" transactions. In these deals, the asset manager can trade assets into and out of the securitized pool in order to maximize the market value of the securitized portfolio. In contrast, most bank-issued CLOs are designed as "cash flow" transactions, in which the asset manager's role is more as a servicer than as a portfolio trader. These structures rely primarily on the ability of the collateral to make stable cash flow payments over a predetermined period and emphasize the credit quality of the collateral and the predictability of interest and principal payments rather than liquidity and market performance, as in market value transactions.

An Introduction to Delinked and Linked CLO Structures

The variables in structuring a CLO are many. The relative size of the senior and subordinated tranches, the form of credit enhancement, the ability of the asset manager or servicer to adjust the asset pool, and the method and degree to which ownership of the underlying loans is conveyed to investors vary among CLOs. Despite the variations, two basic structures have emerged: "delinked" structures and "linked" structures. The primary difference between these two is the extent to which the SPV "owns" the securitized assets. An issuer may consider many factors when determining the type of structure to use, including the ability or desire of the issuer to transfer the loans without notifying the borrower, the credit quality of the loans, the investment rating of the bank issuer, and the desired capital treatment of the securitized loan.

In a delinked structure, the collateral is transferred from the issuer to the SPV. Delinked structures are generally treated as "true sales" for accounting purposes, and the loans in the CLO are removed from the issuer's balance sheet. Delinked CLOs are structured to insulate the investor from the credit quality problems or insolvency of the issuer. Ratings on delinked CLOs are predicated on the projected performance of the collateral and the credit enhancement structure rather than the credit quality of the issuer. Some delinked CLOs are similar to structures used in credit card securitizations that capitalize on the flexibility of a revolving master trust. The master trust structure is advantageous because it allows for the securitization of different types of assets, such as fixed or floating rate or revolving or term loans.

In linked transactions, also known as credit linked notes, the issuer retains ownership of the underlying collateral, and the *cash flow generated by the collateral pool* is conveyed or sold to the SPV. All or part of the credit risk from the underlying assets is transferred to the CLO investor using credit derivatives. As in delinked CLO structures, credit protection is provided through the layering or tranching of the debt sold and other credit enhancements.

Investors in linked CLOs are not completely insulated from the credit risk of the issuer. Because the issuer retains ownership of the underlying loans, a default or bankruptcy by the issuer could affect the transmission of cash flow to the CLO investors. As a result, investors in linked CLOs bear both the credit risk of the securitized loan pool and, to some degree, the risk that the issuer may become insolvent. *Because of this dual exposure, ratings on linked structures are typically capped by the credit rating of the issuer.*

The accounting and regulatory capital treatments of delinked and linked CLOs also differ. Linked structures generally do not qualify for sale treatment under generally accepted accounting principles because the assets remain under the control of the issuer. Issuers of linked CLOs may be granted some regulatory capital relief under the Basle Accord if the cash received from the securitization is assigned as collateral for the underlying loans. The Basle Accord, which governs capital adequacy requirements for Bank for International Settlements member countries, reduces the risk weighting on commercial loans that are secured by cash or certain types of risk-free marketable securities such as Treasury bills.[4] While linked CLOs may provide some form of capital incentive for foreign banks under the Basle Accord, linked structures offer little relief to U.S. banks because U.S. banks must maintain minimum leverage capital ratios in addition to risk-based capital ratios. Since the securitized loans count as assets of the bank issuer in a linked structure, the leverage ratio (roughly, book equity to book assets) is not reduced. Consequently, the linked CLO structure has been more popular among foreign banks.

The Role of Investment Rating Agencies

Although the approach may vary among rating agencies, the criteria used to determine the investment rating for CLOs are similar. Rating agencies evaluate the ability of the securitization vehicle to make interest and principal payments to holders of the debt. This analysis requires an evaluation of the credit quality of the underlying collateral pool, including the projected cash flow

[4] Under the Basle Accord and the U.S. risked-based capital guidelines, assets collateralized by cash or Treasury securities generally receive a preferential risk-weighting that may range from 0 to 20 percent. For background information regarding the risk weightings for collateralized transactions applicable to federally regulated institutions, see Federal Deposit Insurance Corporation Financial Institution Letter number 64–96 dated August 22, 1996.

generated by the pool, the credit enhancement, and any additional protection provided to the investors based on the structure of the securitization. The rating agencies set limits on the amount of industry and borrower concentration in a pool and statistically evaluate the effect of diversification among loans when estimating potential defaults and losses from the securitized assets over the life of the transaction. If the underlying collateral is not already rated—most commercial loans are not—the rating agency will grade the underlying loans and assign a rating to the security on the basis of the credit quality of the loans and the underwriting criteria used by the lender. Estimates of default probabilities, timing of default, and recoveries in the event of default are assigned to the loans and vary by collateral type and credit grade. These estimates are generally based on historical default studies authored by the various rating agencies.

Implications for Insured Institutions

The advent of CLOs poses new opportunities and risks to banks. The ability to transfer all or part of a commercial loan's credit risk to investors may have several consequences. When issuers of CLOs securitize their highest grade assets, they are effectively lowering the weighted average credit quality of their retained assets. An institution's loan loss reserving policies and capital adequacy should take into account the implications of its CLO strategy.

While the issuance of CLOs may be confined to larger banks that have considerable commercial loan portfolios, smaller banks or other types of institutions that desire a greater exposure to this type of lending may consider investing in CLOs. These instruments offer banks the opportunity to invest in a diversified pool of commercial loans. Because of credit enhancement features and diversification advantages, the most senior debt issued by the CLOs can earn a higher investment rating than the average rating on individual loans in the pool. Despite the investment rating, banks that invest in CLOs should be aware that CLO structures are less standardized than other ABS investments, and therefore, performance and underlying risk will be both issuer and deal specific.

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The Payment System: Emerging Issues

- **Essential to the transfer of value in the U.S. economy, the once-arcane and bank-centered payment system is undergoing considerable change as new technologies bring new opportunities, new exposures, and new competitors into the payments business.**

- **For most banks, the major issues lie in small-value payments, where they struggle for advantage in adapting new technologies into new products and services while protecting their traditional payments business from technologically adept nonbank competitors.**

- **For regulators and a handful of the largest banks, large-value payments present the most serious challenges, as technology has enabled increasing payment velocity and volume but also has created the potential for systemic failures.**

The payment system is the heart of the U.S. economic infrastructure, moving an estimated $670 trillion annually among consumers, businesses, financial institutions, and governments.[1] Despite this volume—an amount equal to roughly 90 times the U.S. gross domestic product—the payment system remains transparent to most users because of its dependability in moving value safely. Historically, banks have been essential to this movement, reaping, according to the ***Bank Administration Institute,*** an estimated $117 billion each year in revenues both as payment agents and as the holders of the funds from which those payments are made.

Broadly speaking, the payment system encompasses the numerous payment products, players, and the infrastructure that together transmit value throughout the economy. More specifically, it can be defined as a collection of individual systems constructed around specific payment products. Credit cards, for example, represent a payment system. So do debit cards, checks, foreign exchange, and even cash. This product-based definition is a relevant one for many bankers, since it centers on the products and services that generate revenue rather than on the less glamorous "back office" functions that are measured instead by their cost. A second definition segments the payment system by payment size. Using this definition, the payments world is divided into systems that carry *small-value* or *retail* payments and those that carry *large-value* or *interbank* payments. This latter classification is oriented more toward infrastructure than product but is convenient from a regulatory perspective because the seriousness of the risk posed varies considerably by payment size.

However defined, the payment system today is a source of new opportunities and exposures—a result of a host of new technologies that the "information revolution" has spawned. These technologies create different issues for banks and regulators. For banks, the issues involve adapting the technologies into new products and services while protecting their payments business from nontraditional competitors that specialize in its creation and use. For regulators, the issues involve managing the risks—principally systemic risk—that accompany the large increases in payment volume and velocity enabled by technology. Taken together, these issues frame a payment system that can be both a political and a technological battleground, with significant incentives for participants to shape payment products and channels in a way that favors their own objectives.

Small-Value Payments: A Technological Brawl

Nowhere has the battle to shape the payment system been more contentious than in the small-value segment, where emerging information technology can best be leveraged into new fee-based retail products. There are two battles here. The first involves *maintaining the monopoly over the payments infrastructure* that connects each bank with the Federal Reserve and, by extension, with every other depository institution in the United States.[2] While this infrastructure is interbank—that is, it is dedicated to settling accounts between institutions and does not directly extend to their customers—the ability to aggregate and settle individual retail payments through it has enabled the banking industry to maintain its centrality to the nation's monetary flows.

[1] Estimate for 1996 from the National Automated Clearing House Association; www.nacha.org/resources/marketing/direct-payment/us-payments-96.gif.

[2] Depository institutions were granted exclusive access to this infrastructure upon its creation by the Federal Reserve Act of 1913.

The second battle involves exploiting new technologies either to attract new customers or to serve existing ones more profitably. This battle is both highly visible and highly technical and underscores the potential of the passing of information to eclipse the passing of value as the most critical profit opportunity in payments. The best example of this potential is *bill presentment*, the process of posting vendor invoices—such as credit card or utility statements—on the Internet to facilitate electronic payment. The crucial question concerns where the customer transaction data will lie. If they lie on vendors' sites or on the sites of nonbanks that concentrate such data, those entities will effectively "own" the customer by owning the information needed to cross-sell or otherwise add value during the billing process. Owners of customer-specific data also can tailor new services—a process that can develop loyalty as well as related sales. Losing this battle would be doubly costly for banks because, regardless of where the data reside, electronic payments will eliminate most of the float in the payment process, to the benefit of vendors and largely at the expense of banks.

Another battle is building between banks and nonbanks with respect to *digital cash* and *stored value* applications. These applications are directed at the micropayment sector—that is, payments that are normally considered too small for credit cards. Whether they reside on a computer or a smart card, these applications substitute electronic data for actual cash, with the amount stored on each card covered dollar for dollar by balances on account with an issuer. The struggle is for the right to issue this value, and the ***American Bankers Association*** has contended that regulated depository institutions alone should be permitted to do so.[3] The battle here is for more than just fees, for the interest on the balances that back this electronic value could provide issuers with substantial new sources of income.

With some new payment technologies, the distinction between opportunity and risk can blur. As the Internet enables the distance between shopper and shopkeeper to increase, the need to authenticate unseen customers, merchants, and banks increases as well. At the same time, the open nature of the Internet requires that the privacy and integrity of transaction information be protected. The building blocks to accomplish this are neither simple nor easily interwoven—successfully combining cryptographic protocols, specialized security hardware, and existing information systems is a dif-

[3] *The Role of Banks in the Payments System of the Future,* www.aba.com.

Emerging Issues in Small-Value Payments

Maintaining the payment system monopoly. Access to Federal Reserve payment services has historically been limited to depository institutions. Maintaining that monopoly—and thus maintaining its centrality to current and future payment products and services—is an important issue to the banking industry.

Electronic bill presentment is the process of presenting bills and receiving payments electronically. Internet bill presentment may be one of the most hotly contested services, because the owner of the site where invoices are posted could cross-sell to customers as well.

Digital cash and stored value are applications in which electronic data substitute for cash. Such applications can run on either smart cards or personal computers. An important issue is who holds the balances that back electronic value, because, unlike with paper cash, issuers may be able to earn interest on the digital balances held by consumers.

Securing online transactions. Ensuring the integrity, privacy, and authenticity of electronic transactions is widely desired by those engaged in electronic commerce. With larger payments, desirability will become necessity. Current implementations use combinations of encryption algorithms and specialized hardware.

Banks as certificate authorities (CAs). Authenticating Internet payers and payees may require a complex public key infrastructure in which trusted organizations supply decryption keys to authenticate the counterparties to a transaction. Some banks are already acting as CAs. Others are weighing the benefits and largely uncertain exposures of providing such a service.

Electronic Funds Transfer '99 (EFT 99). On January 2, 1999, the U.S. government will be required to make benefit and vendor payments electronically. This mandate raises issues of how to provide service to the "unbanked," how to provide service internationally, and for vendors, how to integrate remittance data with the payment itself.

Development of financial electronic data interchange (EDI) standards. For bank commercial customers to benefit from electronic payments, banks must be able to handle remittance information—information that accompanies payments and identifies sender and transaction detail. Standardizing such data is an important step in enabling banks to receive them and pass them on to their customers.

Point of sale check truncation. Checks are costly to handle and time-consuming to collect. Check truncation reduces cost and eliminates float by converting the check into an electronic transaction at the point of sale. Although banks will have fewer checks to handle under check truncation, they will lose float and the return on investment in check-handling equipment.

ficult matter in itself if the whole is not to be weaker than the individual parts.

The VISA and MasterCard Secure Electronic Transaction (SET) protocols, designed to protect Internet credit card transactions, illustrate the complexity that banks and their customers will need to navigate in *securing online transactions*. Under SET, all banks and merchants will use digital certificates to authenticate themselves to consumers and each other for each Internet transaction.[4] These certificates are electronic messages that contain a decryption key for the sender that is itself authenticated by a trusted third party. The infrastructure for storing, distributing, and vouching for these keys, known as a Public Key Infrastructure (PKI), will contain several tiers of certificate authorities (CAs) and will be difficult and costly to implement. Banks not only will use these certificates, but many are considering becoming—or have already become—CAs themselves. While *banks acting as certificate authorities* may represent a logical progression in banking services, there is little evidence of a homogeneous legal infrastructure or legal precedent sufficient to guide digital signature disputes. These voids leave unanswerable the question of whether the expected gains from providing such services will compensate for the potentially long-tailed liability from doing so.

A major stimulus for electronic payments could come on January 2, 1999, when the U.S. government is required by law to convert its vendor and benefit payments from paper checks to electronic transfers—the so-called *Electronic Funds Transfer '99 (EFT 99)* program. Three separate challenges arise from this mandate. The first is that the "unbanked"—those segments of the population that are socially, economically, or geographically distanced from a financially bank-centric world—must eventually be provided with a cost-effective means to receive, store, and spend their electronic value.[5] The second challenge is that the EFT mandate applies internationally as well as domestically. Given the need for each international payment to settle in two currencies and countries, the ability to provide efficient cross-border EFT will vary considerably from country to country.[6]

Perhaps more challenging to many financial institutions is that electronic payments to vendors, unlike those to individuals, will require electronic remittance data to accompany the payment itself. This information goes beyond simple routing instructions and includes the information—such as purchase order or invoice numbers—necessary for the vendor to apply the payment correctly. According to a study by ***Booz-Allen & Hamilton,*** only slightly more than 5 percent of financial institutions were able to receive and forward such remittance information as of early 1997.[7] Developing this capacity will therefore be an industrywide challenge. Once again, there is an opportunity disguised as a cost. The development and implementation of *financial electronic data interchange (financial EDI)* standards will enable financial institutions to retain control of—and add value to—business-to-business transactions when commercial payments migrate to the Internet.

The U.S. government is not alone in seeking an end to costly paper-based payments. Vendors too are pressing for the elimination of the slow check presentment process wherein checks must physically be moved from vendor to vendor bank to issuer bank before funds can be transferred. *Point of sale check truncation* shortens this process by converting the check into an electronic payment at the point of sale, leaving the customer with an executed check and the vendor with a transaction that will settle like a debit card—and in doing so eliminates much of the potential for check fraud. While this process is beginning to displace physical presentment, the outlook for banks is mixed. As the volume of checks that must be physically handled decreases, so too will the income from float and the returns from past investments in check-handling capacity.

Large-Value Payments: Making the World a 'Good and Final' Place

Unlike small-value payments, the issues surrounding large-value payments are not strategic ones for banks, and less technological wizardry pervades them. Instead, the common factor is the systemic risk posed by payment failures. For this reason, regulators—particularly the Federal Reserve and the world's other central banks—take very seriously the payments "plumbing" that is otherwise obscure even to many bankers. In an

[4] Depending upon card brand and SET version, consumer certificates may be required as well.

[5] Because of resistance from bankers and benefit recipients, compliance waivers are envisioned that will make the program largely voluntary until the details of the special electronic transfer accounts (ETA) are worked out.

[6] www.fms.treas.gov/eft.

[7] *Remittance Data Study,* Booz-Allen & Hamilton; www.fms.treas.gov/eft/remit.html.

electronic and intangible world where a bank's accumulated exposures can routinely exceed its equity, the overriding objective for payment system designers, users, and regulators is "good and final" payment—a term referring to funds that are both irreversible and fully collected.

Recognition is building concerning the payment system's *vulnerability* and just how critical it is to the U.S. economy. An October 1997 report issued by the ***President's Commission on Critical Infrastructure Protection (PCCIP)*** warned that "the nation's core payment systems…seem to present a serious physical vulnerability within the financial system."[8] The source of that vulnerability, in the eyes of the commission, stemmed not so much from a lack of security as from the critical importance of those systems to settling financial transactions throughout the economy and the lack of available alternatives if they failed. As such, it was feared that the payment infrastructure provides an enticing target for cyber-terrorists and information warriors and that such threats will only grow in the future.

Concentration refers to the fact that while banks are central to payments and all enjoy equal access to Federal Reserve payment services, some banks are clearly more central than others. According to March 1998 Call Report data, a mere 25 banks hold nearly two-thirds of the U.S. banking industry's transaction accounts.[9] Should one of these large banks suddenly fail, its inability to fund settlements could result in a loss of payment system liquidity and disruption of domestic and foreign financial systems alike. While this concentration is not new, what *is* new is the considerable increase in concentration that the new megamergers promise.[10] How and whether to inoculate the payment system from the weight of these super-institutions will become an issue for the regulatory community.

The criticality of a nation's payment system is not confined within its own borders. Because of globalization and the increasing velocity of payments, threats to one country's system become threats to those of other countries as well. There are a number of these emerging cross-border concerns. The most immediate and visible is the *Year 2000* or *Y2K problem*. Because banks and the payment networks that join them are heavily computerized, the latent points of vulnerability to software and hardware failures have grown factorially with the number of interconnected internal and external systems. In this context, the concern is that any banks that have failed to correct their Y2K exposures will transmit that failure via the payment system to other institutions throughout the world, delaying or even arresting settlements in the process. This concern is heightened because, in both Asia and Europe, bank resources needed to fix Y2K are being consumed instead by more immediate problems. In Asia, it is surviving the decay in currencies and credits. In Europe, it is *the Euro,* which rates as an issue in itself—demanding the modification

Emerging Issues in Large-Value Payments

Payment system vulnerability. According to the PCCIP, the nation's core payment systems may present a serious physical vulnerability within the financial system.

Payments concentration. Payment services are concentrated in a relatively few large banks, and that concentration is growing as megamergers are creating a smaller number of superbanks.

Y2K. The Year 2000 problem threatens to disrupt payments by transmitting computer problems via the payment system from banks that have not fixed the problem to banks that have.

The Euro. Bank and interbank systems in Europe and abroad must be modified to accept the Euro. In addition, the resources required to implement the Euro must be diverted from resolving Y2K problems.

Foreign exchange settlement risk. Foreign exchange transaction exposures can be many times a bank's capital. The failure of a major creditor to pay could drain essential liquidity from international markets.

Achieving finality in gross payment systems. Making a given country's domestic payments irrevocable and immediate is a major step in avoiding the international spillover of internal financial crises.

Collateralizing net payment systems. According to the BIS, systems that do not permit immediate final settlement must be collateralized to ensure the eventual satisfaction of member positions in the event of a participant's failure. Like finality, collateralizing helps prevent the internationalization of a domestic failure.

[8] www.pccip.gov/report_index.html, p. A39.

[9] Transaction accounts, in essence, are those accounts from which third-party payments can be made. The data used here are based only on transaction accounts held on behalf of other public and private financial institutions here and abroad—accounts from which interbank transfers are made.

[10] As of March 31, 1998, the top three U.S. bank holding companies held approximately 25 percent of all reported interbank transaction deposits. The mergers announced through June 30, 1998, would increase that concentration to over 34 percent.

of bank and interbank payment systems throughout the world in anticipation of that currency's January 1, 1999, launch.

Although less well known to the general public, *foreign exchange settlement risk* remains of considerable concern to the Bank for International Settlements (BIS) and its member central banks. This exposure arises because cross-border payments, unlike domestic payments, have no single central bank to guarantee settlement, leaving U.S. banks exposed to their foreign counterparties and correspondents—sometimes for several days—for more than $244 billion in daily trades.[11] Potential solutions to this problem include netting—offsetting risks so that only the differences are due—and simultaneous settlement. An ongoing effort by several of the world's largest banks to provide simultaneous cross-border settlement, a project known as the Continuous Linked Settlement Bank, will require considerable international cooperation since it will effectively span the central banks in each country whose currency it settles.

Efforts by individual countries to solidify their payments infrastructure are ongoing as well. *Achieving finality* in payments—a term meaning that a completed payment is irrevocable—is the most prevalent, and recognizes that payments must be irreversible to establish the liquidity for those that follow. One way of speeding up finality is with real time gross settlement (RTGS) systems. "Real time" means that there is no delay in settlement. "Gross settlement" means that transactions are settled in the full amount for which the original payment instructions were entered. FedWire, the U.S. Federal Reserve's large-value payment system, is an RTGS system. Many other countries also have them, and still more are developing or planning them. Complementary to RTGS systems are net or provisional settlement systems, which total up the accumulated debits and credits for each participant over the course of some period—usually one day, offset them against each other, and settle at the end of the period. The New York Clearing House's Clearing House Interbank Payment System is one such system. Although their use leads to smaller, or *netted,* settlement amounts for each participant and substantially lower liquidity demands on the payment system as a whole, payments in such systems are not final until the last creditor pays. Thus, there is a daily threat of recalculation and a potentially fatal change in mem-

[11] *Settlement Risk in Foreign Exchange Transactions,* March 1996, and *Central Bank Survey of Foreign Exchange and Derivatives Market Activity,* May 1996; Bank for International Settlements; www.bis.org/publ.

Sources of Additional Payment System Information

Electronic Bill Presentment

Checkfree . . . . . .www.checkfree.com/ebill
Microsoft-First Data
Corp . . . . . .www.msfdc.com

Digital Cash and Stored Value

Cybercash . . . . . .www.cybercash.com
Digicash . . . . . .www.digicash.com
Mondex . . . . . .www.mondex.com
VISACash . . . . . .www.visa.com

Securing Online Transactions

Certicom . . . . . .www.certicom.com
Entrust . . . . . .www.entrust.com
RSA . . . . . .www.rsa.com
SETCO . . . . . .www.setco.org

Certificate Authorities

Certco . . . . . .www.certco.com
Digital Signature Trust . . .www.digsigtrust.com
GTE Cybertrust . . . . . .www.cybertrust.gte.com
Verisign . . . . . .www.verisign.com

Electronic Funds Transfer '99, Financial EDI, and POS Check Truncation

National Automated
Clearing House
Association . . . . . .www.nacha.org
U.S. Treasury Financial
Management Service . .www.fms.treas.gov/eft

Payment System Vulnerability

President's Commission on
Critical Infrastructure
Protection . . . . . .www.pccip.gov

The Euro, Foreign Exchange Settlement Risk, Payments Finality, and Collateralization

Bank for International
Settlements (BIS) . . . .www.bis.org/publ
Federal Reserve Board
of Governors . . . . . .www.ny.frb.org
New York Clearing
House Association . . .www.chips.org
U.S. Federal Reserve . . . .www.bog.frb.fed.us

bers' liquidity positions if a major creditor bank fails. For such systems, the BIS is encouraging member *collateralization* levels sufficient to cover at least one, and preferably two, of each system's largest net creditor banks at any one time.[12] While these are not new issues in developed nations, the increasing extent to which financially underdeveloped and underregulated countries are involved in global payments confers new importance on the development of finality and collateralization in payment systems worldwide.

Differing Perceptions, Common Threat

Banks are united neither in their perceptions of these issues nor in their desire for regulation to address them. With respect to small-value payments, large and small banks have disagreed over whether the Federal Reserve should withdraw from providing retail payment services—a debate that ended in favor of the small bank faction earlier this year when the Fed announced that it would remain an active and, according to some large banks at least, a subsidized competitor in clearing and settlement. There also has been disagreement, again along lines of size, over whether the issuance of new products such as stored value cards should be limited to regulated depository institutions. In large-value payments, the differences are due more to relevancy than competition. Few small banks will feel compelled to address foreign exchange exposures or the vulnerabilities of the national and international payments infrastructure.

Whatever their individual perceptions of the issues surrounding the payment system, all banks are susceptible to its interruption. Likewise, they are strategically vulnerable—individually and as an industry—if they fail to preserve their role as a trusted gateway for the settlement of their customers' obligations. This is perhaps the most critical of all payments issues facing banks, for while their daily operations may depend on their continued success in maintaining the payment system's dependability, nothing short of their payments franchise may rest on their ability to market this success to their customers as a feature essential to the entire range of current—and future—payment services.

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[12] *Report of the Committee on Interbank Netting Schemes of the Central Banks of the Group of Ten Countries* (Lamfalussy report), November 1990; BIS; www.bis.org/publ.

Region's Economic Growth May Become Increasingly Constrained in 1998

- **Last year was the strongest yet for the current economic expansion in New England. However, the economy's 1997 momentum may not have carried into 1998 for several of the Region's states.**

- **For some time, economists across the Region have expected increasingly tight labor markets to constrain the current economic expansion. Evidence of such constraint may now be appearing, as the pace of job growth slowed during late 1997 and early 1998 in several New England states.**

- **The housing markets in most of the Region's states set new sales records in 1997. In states such as Massachusetts, early 1998 activity handily surpassed last year's levels. However, limited inventory may constrain future growth in greater Boston—the Region's largest housing market.**

Massachusetts Continues to Drive the Region's Economic Growth, but Other States May Be Slowing

Massachusetts, accounting for about one-half of the Region's economic activity, continues to drive the current expansion to new heights. Job and income growth have been quite strong, while home sales and prices reached new highs in 1997. Another milestone was achieved in Massachusetts last year as well. The state joined **Connecticut** in posting the first net increase in manufacturing payrolls since 1984. These gains persisted in early 1998.

New Hampshire's economy, whose performance is strongly tied to that of Massachusetts, continues to thrive. In the past several months, **Rhode Island** has also "joined the party" after many years on the sidelines. In fact, in June 1998 Rhode Island's unemployment rate fell to 4.1 percent, its lowest monthly level since late 1989 and its first time below the national average in 18 months.

Despite the fact that 1997 was the strongest year of the current economic expansion, some states may have lost momentum in early 1998. Recent trends in job growth, which drives economic activity through income and spending gains, seem to indicate that the Region's economy might slow this year.

Table 1 shows two possible perspectives on year-to-date employment trends across the Region. The left-hand column shows the average employment levels during January through June 1998, expressed as a percentage change from the same six months in 1997. The middle column shows the average monthly percentage changes in employment during the first half of this year expressed at an annual rate. At 2.5 percent for the Region, the former generally shows that growth over the prior year has been quite strong (boosted, in part, by a mild winter this year) and has roughly matched the national rate. However, the latter measure of 1.5 percent suggests that the recent trend in New England job growth is not as robust. At the state level, month-to-month movements in nonfarm employment in Connecticut and **Maine** essentially resulted in only a minute gain to net payrolls, on average, between January and June of this year. Of all the states, only Massachusetts averaged monthly gains equivalent to the national rate in the first half of 1998, but even this pace is much slower than the 3.2 percent suggested by the year-over-year comparison.

Table 1

Job Growth May Be Easing in Some States
(nonfarm payrolls, percent change)

	January through June 1998		1993 to 1997 compound annual rate
	year ago	monthly*	
U.S.	2.7	2.4	2.4
Region	2.5	1.5	1.9
Connecticut	2.2	0.3	1.2
Maine	2.2	0.5	1.6
Massachusetts	3.2	2.4	2.2
New Hampshire	1.6	1.5	3.1
Rhode Island	1.8	1.8	1.1
Vermont	1.5	1.7	2.1

*Average monthly change, at seasonally adjusted annual rate
Source: Bureau of Labor Statistics

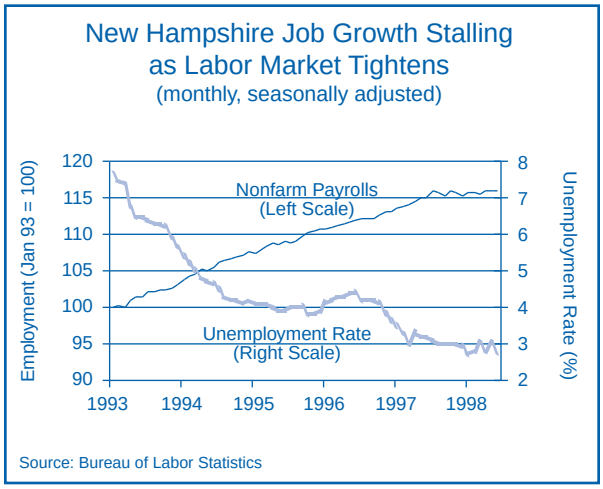
The right-hand column in Table 1 shows the average annual changes in employment for 1993 through 1997—an indicator of "trend" job growth for this expansion. Job gains in the first half of 1998 for both New Hampshire and **Vermont**, however measured (either column), have fallen below the trend for the current expansion. This drop reflects the age of the employment cycle in those states (both states have been in an expansionary phase longer than other states in the Region). The recent slowdown in job gains may also reflect increasing difficulties in finding labor.

Massachusetts May Be the Next of the Region's States Slowed by Tight Labor Markets

During the first half of 1998, several states in the Region saw their pace of employment growth slow significantly. Among the six states, Maine likely experienced an increased fallout from economic weakness in Asia and slower national economic growth during the second quarter. In addition to the slower national economy, job growth in states such as New Hampshire, Connecticut, and Vermont may have slowed because of increasingly tight labor markets (or a lack of unemployed persons with the necessary skills). New Hampshire is perhaps the clearest example of this trend. Its unemployment rate, at just under 3 percent, is one of the lowest in the Region, while the Region's unemployment rate in early 1998 was almost a full percentage point below the national average.

Chart 1 illustrates how New Hampshire's recent slowdown in job growth has coincided with a drop in its unemployment rate below the 3 percent level (1998 data are January through June). Some economists contend that the state may be at its "natural" rate of unemployment, below which any additional movements would be accompanied by increasing wage inflation. This rate can vary from state to state. For example, although Connecticut's unemployment rate averaged a much higher 3.9 percent during the first six months of 1998, anecdotal reports suggest that several thousand positions in some industries, such as information technology, remain unfilled because of a lack of qualified candidates. The state's construction industry also has a tight labor supply this year. The tight labor market may soon result in greater wage inflation in these industries. Like New Hampshire, Connecticut saw its rate of job growth slow, from a trend of 1.6 percent per year in 1996 and 1997 to a minute gain during the first six months of 1998.

CHART 1



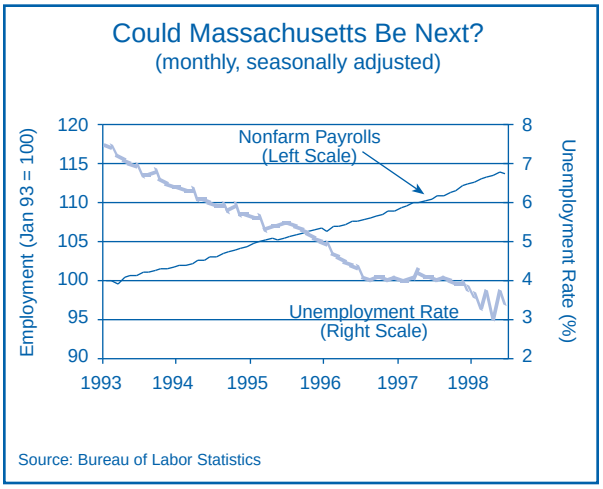
New Hampshire's slowdown in job growth in early 1998 also may be partly due to a persistent problem of undercounting jobs at smaller firms. For the past several years, the state's employment growth has at first appeared weak, only to be revised upward with the release of the annual benchmark revisions in March of the following year. Thus, the extent of New Hampshire's slowdown in job growth (if any) this year will not be known with certainty until March 1999.

In the absence of any upward revisions, the concern for the Region's economy is that New Hampshire may be on the leading edge of a trend, in which the economy's growth is restrained by a lack of labor or much higher unit labor costs—as less productive workers are employed or existing workers must be paid more to retain their services. Either condition could slow the pace of business expansion and would likely constrain consumer spending and home sales.

Chart 2 highlights the issue for the Region's largest economy, Massachusetts. The state's unemployment rate briefly reached 3 percent during April 1998 and averaged about 3.4 percent during the first six months of 1998. As in New Hampshire, a sustained tightening in the Massachusetts labor market to an unemployment rate below 3 percent might jeopardize the state's five-year run of strong net job creation.

Implications: Slower job growth and an overall weakening in the Region's pace of economic expansion would intensify competitive pressures, hindering insured institutions' ability to meet revenue growth targets. Decreased margins, a less favorable risk-return (pricing) position, and weakened underwriting stan-

CHART 2



dards may result from a more intensely competitive environment.

Home Sales Recording New Highs in Some States, but a Lack of Inventory May Impede the Region's Strongest Market—Greater Boston

Sales of existing homes, except for a respite in 1995 following the last significant upswing in national interest rates, have generally risen across the Region since 1992. However, in recent years some states have seen stronger housing markets than others. For example, Massachusetts, Connecticut, and Rhode Island reached record sales levels during 1997 and the first quarter of 1998 (see Table 2). Data for New Hampshire are incomplete for 1995 and 1997, but the observation for the third quarter of 1997 suggests that it too may have set a new sales record last year. Maine had its strongest year for home sales this decade in 1997, but volume was still well off the peak seen in the mid-1980s. Vermont, after very strong years in 1993 and 1994, saw existing home sales decrease during the past three years.

The strongest substate housing markets in the Region have been those with rapid growth in high-paying financial services and technology jobs or vacation/retirement areas, where demand has benefited from the recent surge in stock market wealth. These areas include greater **Boston,** Cape Cod and the Islands, Fairfield County in Connecticut, and Maine's southern coastal towns.

The Region's largest housing market is undoubtedly that in the towns and cities of greater Boston. As the area has

TABLE 2

EXISTING HOME SALES SETTING NEW RECORDS IN CT, MA, & RI
(QUARTERLY SALES AT SEASONALLY ADJUSTED ANNUAL RATE, THOUSANDS)

	1998 Q1	1997	81Q1 THROUGH 98Q1 PEAK (QUARTER)
CONNECTICUT	58.0	55.0	58.0 (98Q1)
MAINE*	14.5	14.7	28.9 (86Q4)
MASSACHUSETTS	104.5	94.3	104.5 (98Q1)
NEW HAMPSHIRE**	N/A	21.9	21.9 (97Q3)
RHODE ISLAND	16.8	14.3	16.8 (98Q1)
VERMONT	N/A	8.1	12.3 (93Q4)

*QUARTERLY DATA FOR 1990 AND 1991 ARE NOT AVAILABLE
**QUARTERLY DATA FOR 1995 ARE INCOMPLETE, ONLY Q3 AVAILABLE FOR 1997
SOURCE: NATIONAL ASSOCIATION OF REALTORS

driven the state's (and Region's) economic expansion during the 1990s, its steady gains in jobs, income, and consumer confidence have helped to increase home sales. Low, stable interest rates and modest aggregate price appreciation have also played a part. The elimination of rent controls in Boston and a general lack of new apartment construction have led to very low apartment vacancy rates in greater Boston. This situation, along with escalating rents, has further fueled the recent strength in home sales.

This strong demand has been met by a generally low inventory of homes for sale—particularly in high-end properties. As of March 31, 1998, the number of homes listed through the Massachusetts Multiple Listing Service (MLS) was at an eight-year low. The March 1998 inventory of about 10,000 homes was some 30 percent below the level in 1991—one of the worst years of the last recession, when many homeowners owed more on their homes than the homes were worth in the marketplace. It is unclear how much of the drop in MLS listings was due to increased owner listings spurred by the strongest sellers' market the area has seen in over ten years.

The number of homes available for sale has been limited by several factors, including residents choosing to renovate rather than sell, holdout sellers awaiting this year's increase in exclusions for capital gains on the sale of a primary residence, and stricter septic tank regulations (Title 5). Also, as an influx of new residents has threatened to "disrupt" the quality of life in sought-after communities around greater Boston, many towns have

limited the issuance of building permits, increased minimum lot sizes, or placed nondeveloped parcels into land banks, ostensibly to conserve the environment. These tactics have greatly limited the ability of developers to build new homes that could be sold readily in the current climate.

Because Massachusetts' housing market is primarily driven by trade-up purchases, many home seekers are second- or third-time buyers who can afford large down payments. Many are also seeking higher quality, newer, or lower maintenance properties. Although a respectable level of homes for sale exists in older, less spacious properties and in less desirable areas, the greatest increase in demand has been among buyers seeking homes on the opposite end of the spectrum. Strong demand and limited inventory have made rapidly rising prices, instances of buyer bidding wars, and very short turnaround times on newly listed, sought-after properties commonplace in many high-end neighborhoods.

Some concern exists, given the trade-up nature of the state's housing market and the rapid price appreciation that is now spreading to lower value homes, that first-time buyers may be priced out of the market in increasing numbers. A recent survey by ***Ernst & Young's Kenneth Leventhal Real Estate Group*** placed Boston as the fourth most expensive housing market in the nation, with the New York metro area (including parts of southwestern Connecticut) ranked as the most expensive. Both metro areas posted a decline in affordability from the prior year's survey. According to ***Runzheimer International***, the cost-of-living gap between greater Boston and the national average was 21 percent in 1997, while the cost of housing was 70 percent above the national average.[1]

A widespread increase in starter home prices could impede the pace of sales as the inability to buy works its way up the home-sales food chain. Without new home buyers, existing owners likely would not be able to trade up to another property, thus limiting other sellers, and so on. However, recent strong demand for second or vacation homes around the Region probably would not be affected by higher prices for starter homes.

[1] "Newcomers to Bay State Face Housing Sticker Shock," *Wall Street Journal*, July 15, 1998.

To some extent, the nature and level of demand is shifting already. Less affluent or first-time buyers have been less able to find lower priced, newer homes around Boston. Many have purchased homes farther away, such as in the communities beyond I-495 and in Rhode Island. The latter's recent gains in existing home and retail sales can be attributed partly to workers attracted by the state's lower home prices, who commute from Rhode Island to jobs in Massachusetts or southeastern Connecticut's tribal casinos. New Hampshire also continues to attract first-time buyers from Boston, despite the arduous commute.

Sales of condos and townhomes have been accelerating and are providing some outlet for buyers with lower incomes and fewer space requirements who choose to remain near Boston. However, the Region's early 1990s overhang of condos has been mostly absorbed, and prices are surpassing prerecession highs in some areas as inventory dwindles.

Implications: The Region's smaller insured institutions (assets under $1 billion) have increased their reliance on real estate loans to an even greater share of assets than before the last real estate crash in the late 1980s and early 1990s. Residential real estate typically accounts for the majority of real estate loans (and all loans, for that matter) at many of these institutions. Some of the loans in these portfolios may be at risk for the following reasons:

New England's high-priced housing market (particularly around Boston) may be more at risk from a softening economy and potential layoffs than other markets. Massachusetts has (and requires) the highest share of dual-earner households in the country, in part because of high home prices and monthly mortgage payments in the greater Boston market.

Much of the state's prosperity in recent years can be attributed to the creation of high-paying jobs in the technology and financial services industries. These industries (and their employees' incomes) are particularly vulnerable to an increase in interest rates, a softening stock market, and ongoing weakness in Asia. The strong stock market has allowed for larger bonuses in financial services and increased the wealth realized from high-tech company stock options. This boost to

household income would be curtailed if the stock market were to enter a period of prolonged weakness.

In the current housing environment, loan-to-value (LTV) ratios, sources of repayment (borrower income), and the durability of underlying collateral (home) prices on newly originated mortgages deserve close scrutiny. With refinancing activity also at a high level, the rising number of cash-out refis and the increased incidence of high LTV home equity lending also warrant increased attention. In the hottest markets, where buyer bidding wars and other nonsustainable factors have led to rapidly escalating prices (and "comps"), the appraised value of a home being financed (refinancing, second lien, or first mortgage) may be more vulnerable to abrupt decline should the economy sour.

Norman Williams, Regional Economist

Regional Banking Issues

- **Profitability remains strong and stable but may be pressured by refinancing activity.**
- **Savings institutions are highly concentrated in the Boston Region.**
- **The form of ownership of savings institutions results in significantly different risk profiles.**

Overview of Financial Performance

Overall banking conditions in the Boston Region remain sound. Profitability is strong and stable. The Region's insured institutions have posted a collective average return on assets (ROA) of approximately 1.3 percent for the past six quarters and a return on equity (ROE) of 14.9 percent. These levels may come under pressure, as the low, flat yield curve that has persisted since January will likely pressure net interest income for many of the Region's insured institutions, particularly those with large concentrations in floating- or adjustable-rate mortgages. There was some evidence of declining net interest margins in the first-quarter results; however, the full effect of this refinancing wave will not be visible until the second half of this year. Capital ratios remain stable in stock-owned institutions and continue to grow for mutually owned institutions. Asset quality indicators also remain favorable, although evidence continues to suggest that relaxed underwriting standards may lead to a dilution of asset quality that will become apparent in a softer economic environment.

Focus on Savings Institutions

Savings institutions are a significant force in the Boston Region. Of the 446 institutions headquartered in the Region as of March 31, 1998, 308 had savings bank or savings and loan charters. These companies comprise 69 percent of all insured institutions and approximately one-third of the Region's total banking assets. This concentration is significantly greater than in the rest of the nation, where only 14 percent of institutions are similarly chartered. This article focuses on the performance of savings institutions, specifically addressing the risk profiles associated with the differing forms of ownership.

Overview

Of the 308 savings institutions based in the Boston Region, 240 are mutually owned institutions that are essentially controlled by management and a board of trustees or directors. The rest are stock-owned, many of which converted to stock form during the economic boom of the mid-1980s. The stock form of ownership places a different fiduciary responsibility on an institution's management than that of a mutually owned institution. The responsibility to maximize shareholder value becomes an overriding factor in corporate decisions, and pressure from shareholders to increase returns often leads to decisions that might not have been made in a mutually owned institution. This is not necessarily a negative factor, as shareholders often push for greater efficiency, more diversification of business activities, or tighter expense control, all of which can strengthen an institution while increasing shareholder returns. However, aggressive expansion into new or higher risk activities in an effort to increase shareholder returns can cause severe problems.

Evidence of such problems can be seen in the experience of mutual savings banks that converted to stock form in the mid-1980s. According to the ***FDIC Banking Review*** (Winter 1995), the failure rate for converted institutions was three times that of all other savings institutions during the banking crisis of the early 1990s. Many analysts attribute the higher failure rate to the rapid growth realized by these institutions in an effort to leverage very high capital levels and improve ROE. The fact that the growth was centered in higher risk real estate and commercial lending resulted in heavy losses when the economy turned sour.

While conditions are clearly different today, the pressure to improve shareholder returns is ongoing and may be intensifying as institutions strive to increase earnings to support today's elevated stock prices. Earnings gains in the first few years of the current expansion were largely derived from improved asset quality, which

resulted in lower overhead expense, higher net interest income through the conversion of nonperforming assets to earning assets, and lower (or negative) loan loss provisions. Although asset growth was fairly slow through the end of 1995, improving asset quality and favorable interest rate swings were sufficient to boost earnings at an acceptable rate. However, asset quality is very strong now and nonperforming asset levels are at historic lows; consequently, further earnings gains through asset quality improvement will be relatively small. Gains in operating efficiency continue but may be leveling off as well. With margins also under pressure, institutions are seeking additional means to maintain earnings growth to satisfy shareholder demands. Mutually owned institutions (mutuals) are experiencing the same earnings trends and competitive pressures as their stock-owned counterparts, with the single exception that the impetus for improvement is largely internal rather than shareholder driven. The following discussion differentiates how institutions under these two forms of ownership are dealing with these pressures and highlights areas of risk that bear watching.

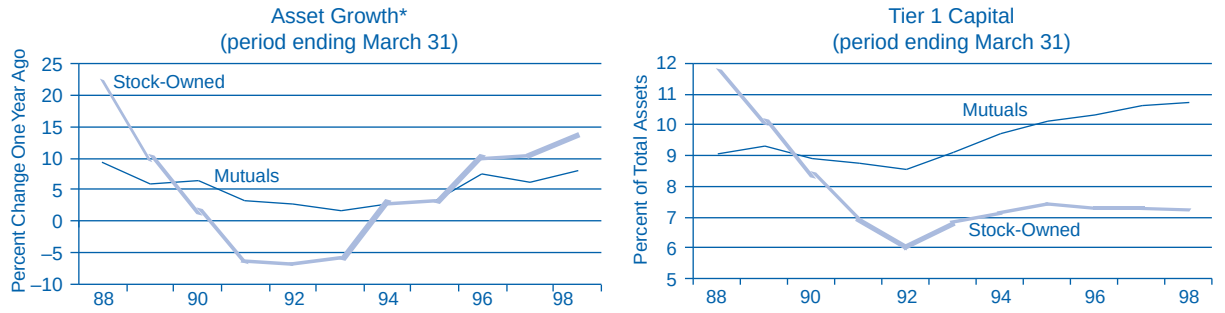
Capitalization

The most obvious difference in operating strategies for the two forms of ownership is the degree of operating leverage employed to generate earnings. Chart 1 displays historical ratios for institutions in existence as of March 31, 1998. As the chart indicates, stock institutions have a much higher degree of leverage (lower capital ratios) than mutuals. Stock institutions entered the last recession with higher capital ratios than mutuals because most of them converted to stock form during the mid-1980s and were flush with capital. These high ratios fell sharply after the conversion period through a combination of rapid growth followed by heavy operating losses in 1990 and 1991. Since then, earnings have improved steadily, and the core capital level has been maintained at approximately 7.25 percent of total assets over the past three years. Average dividend payouts have been maintained in the 45 to 50 percent range, so as earnings improved over the past few years, stock institutions have become more reliant on asset expansion to maintain leverage. They have done so through acquisitions as well as strong internal growth. The asset growth rates reflected in Chart 1 are adjusted for merger activity to provide an indication of how aggressively savings institutions are growing internally. Stock institutions are growing significantly faster than mutuals. Over the past three years, stock institutions have realized a compound growth rate of 11.3 percent, compared with 7.2 percent for mutuals. While this pace of growth is not as rapid as that of the mid-1980s, it is accelerating and bears watching. (See Table 1 for comparative performance measures on stock and mutual institutions.)

The Current Period of Strong Growth Carries Different Risks from Those of the 1980s

Core deposit growth has averaged less than 5 percent for both types of savings institutions over the past three years; therefore, both are becoming increasingly reliant on noncore funding sources to support asset expansion. Chart 2 (next page) shows that this reliance is particularly evident for stock institutions. The percentage of

CHART 1



* Adjusted for merger activity
Source: Call and Thrift Financial Reports—savings institutions only

Table 1

Strong Asset Growth and Lower Capital Levels Bolster ROE at Stock-Owned Savings Institutions

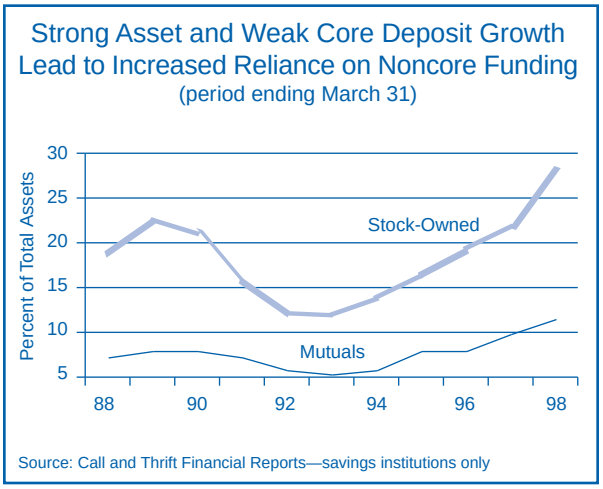
	Stock-Owned		Mutual	
	3/31/98	3/31/97	3/31/98	3/31/97
Net Interest Margin	3.58	3.78	3.79	3.84
ROA	1.10	0.89	1.03	1.06
ROE	12.85	10.41	8.95	9.67
Tier 1 Leverage	7.25	7.29	10.74	10.61
Asset Growth % (YOY)*	13.79	10.32	7.95	6.24
Noncore Funding/Total Assets	27.88	21.88	11.44	9.81

* Year over year, adjusted for merger activity.
Source: Call and Thrift Financial Reports—savings institutions only

assets supported by noncore funding has now surpassed levels attained in the late 1980s and is growing at a pace mirroring that period. For example, in the three-year period ending March 1989, noncore funding grew from 10 percent of total assets to 23 percent of total assets. That percentage rose from 16 to 28 percent over the three-year period ending March 1998.

What is strikingly different about the current expansion is that it is not being achieved through rapid loan growth. Over the past three years, internally generated loan growth at both stock and mutual institutions has approximated 8 percent. During the rapid growth of noncore funding in the 1980s, total loans also increased from 70 percent of total assets to 78 percent of total assets. Over the past three years, this percentage has actually declined from 66 to 60 percent. The recent rapid growth of stock institutions is largely attributed to well-defined leveraging strategies at several of these companies involving the purchase of mortgage-backed securities funded by wholesale deposits and borrowings. Mutual institutions have not pursued this strategy to any great extent and now maintain loans at 66 percent of total assets, up slightly from 65 percent three years earlier.

Chart 2



The increased reliance on noncore funding sources introduces an added element of interest rate risk, particularly in leveraging strategies that involve the acquisition of assets with embedded options, such as mortgage-backed securities. Some of these strategies entail the use of borrowings with embedded options as well to increase the potential spread/return on the investment strategy. Additionally, the cost of wholesale funding moves with the national markets and is much more difficult to manage than the cost of traditional core deposits, particularly nonmaturity deposits. Sophisticated management skills and tools are required to ensure that these strategies are deployed in a manner that does not increase an institution's overall interest rate risk exposure to excessive levels.

Loan Concentration Levels Are Higher in Stock-Owned Savings Institutions

While stock-owned institutions have a lower percentage of assets invested in loans, it does not necessarily follow that their credit risk exposure is lower. Mutuals operate from a strong capital base, and when loans are weighed against capital and historical loss rates are considered, it is clear that, on average, stock institutions have a greater appetite for credit risk than mutuals.

From a loan portfolio concentration perspective, both types of institutions are predominantly residential lenders. As of March 31, 1998, stock-owned institutions had 65 percent of loans concentrated in 1- to 4-family and home equity loans. For mutuals, the concentration was 71 percent. While losses on these types of loans are typically low, it is noteworthy that residential loan loss rates for existing stock-owned institutions are historically twice the level incurred by existing mutual institutions. Loss rates have been generally higher for all other forms of real estate and consumer lending as well. It is interesting to note that overall loan yields for both types of institutions are comparable, suggesting that stock institutions are not being compensated for the additional risks incurred, at least not in yield.

Table 2 sets forth the percentage of tangible equity capital exposed to certain loan sectors that have historically borne greater risk than residential loans. As of March 31, 1998, stock institutions generally had greater concentrations in these higher risk loans relative to tangible capital than did mutuals. Over the past few years, there has been a steady decline in all real estate concentrations in the stock institutions, with a noticeable shift toward commercial and consumer loans. At current levels, aggregate exposures to any single sector do not appear excessive. Table 2 places the exposure levels in perspective by comparing current levels with levels when the Region was entering recession. For the most part, exposures are lower now than in March 1989—and keep in mind that these numbers are for institutions that survived the banking crisis. For purposes of comparison, the final column in Table 2 provides similar concentration levels for savings institutions that did not survive. Clearly, heavy concentrations in higher risk assets contributed to the demise of these institutions when the boom of the 1980s went bust.

To summarize, the influence of shareholders can be seen clearly when the risk profiles of stock-owned savings institutions and mutuals are contrasted. With their focus on maximizing shareholder wealth, higher degrees of operating leverage, more complex interest rate risk profiles, and greater concentrations in higher risk assets are evident. These strategies have resulted in higher ROEs than realized by mutuals, but they also increase exposure to potential economic downturns. While shareholder influence is by no means unique to savings institutions, most have had a relatively short track record dealing with this constituency. The major concern for converted savings institutions, and for any institution going through a mutual-to-stock conversion, is that unrealistic shareholder expectations for earnings growth may result in the pursuit of strategies that increase the overall risk profile to excessive levels.

Daniel Frye, Regional Manager

Table 2

Greater Concentrations in Higher Risk Loans Noted at Stock-Owned Savings Institutions
(Loans as a percentage of tangible equity)

	3/31/98		3/31/89		
	Stock	Mutual	Stock	Mutual	Failed "SI"
Construction & Development	22.21	16.58	89.12	38.40	151.29
Commercial Real Estate	134.99	73.56	122.51	77.66	186.58
Multifamily Real Estate	23.85	17.19	37.05	23.45	81.26
Commercial and Industrial	60.22	24.20	64.18	30.87	115.19
Consumer	55.24	35.39	46.70	55.35	59.86

Source: Call and Thrift Financial Reports—savings institutions only

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