
◆ Regional Outlook ◆

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GARY L. BEASLEY,
REGIONAL MANAGER

DAVID T. GRIFFITHS,
REGIONAL ECONOMIST

ROBERT L. BURNS,
FINANCIAL ANALYST

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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.**
- **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.

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 economies¹ 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 following²:

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

- **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

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.		JAPAN		EUROPE*		OTHER		
	CLAIMS	PERCENT	CLAIMS	PERCENT	CLAIMS	PERCENT	CLAIMS	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

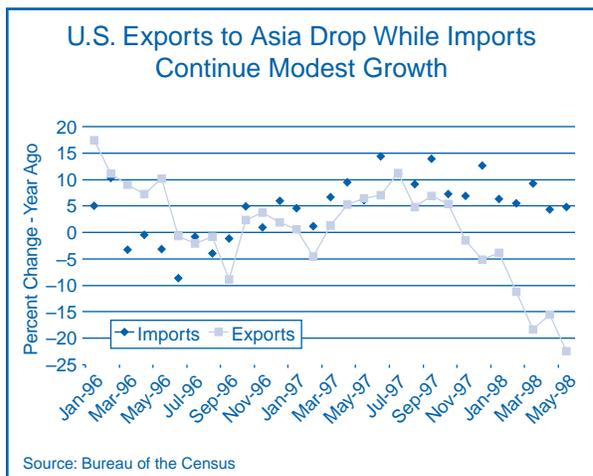
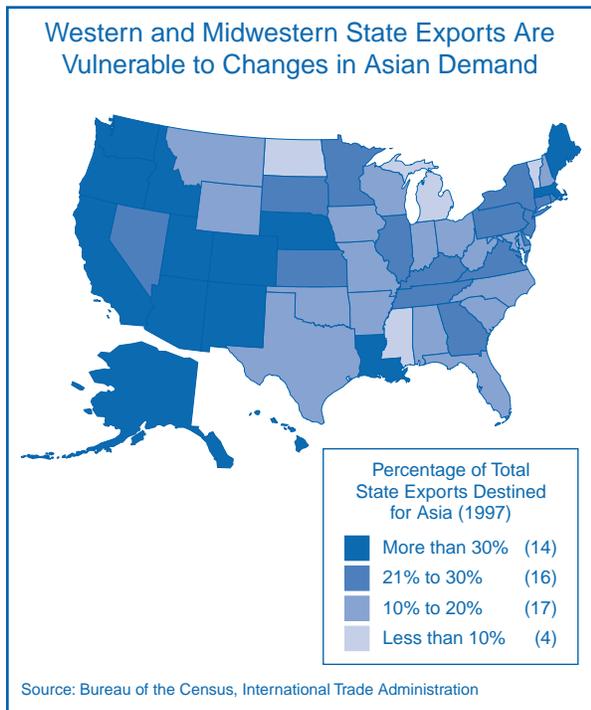


CHART 2



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

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.

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-

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

MEMPHIS 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	6,189.6	65%	100%	25%
TOP FIVE EXPORT INDUSTRIES				
AGRICULTURAL & LIVESTOCK PRODUCTS	1,742.8	77%	28%	58%
CHEMICAL PRODUCTS	722.8	30%	12%	24%
TRANSPORTATION EQUIPMENT	680.5	171%	11%	20%
TOBACCO PRODUCTS	638.9	25%	10%	73%
INDUSTRIAL MACHINERY & COMPUTERS	456.8	70%	7%	14%
TOTAL OF TOP FIVE EXPORT INDUSTRIES	4,241.8	65%	69%	32%

* 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 loans¹ (see Chart 1).

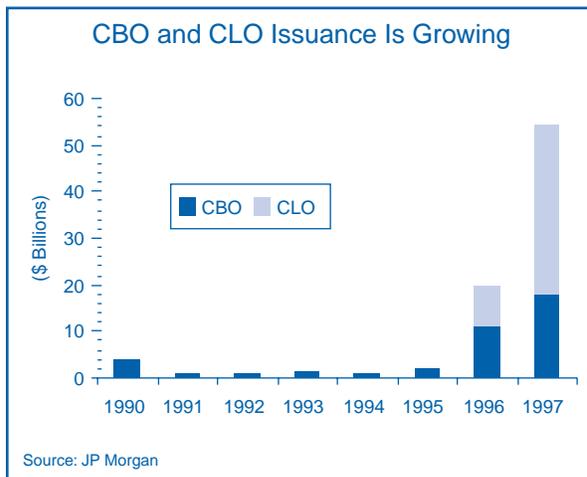
¹ CBOs/CLOs: An Expanding Securitization Product, p. 1, JP Morgan, September 1997.

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 = <u>7.5%</u>
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 = <u>26%</u>
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

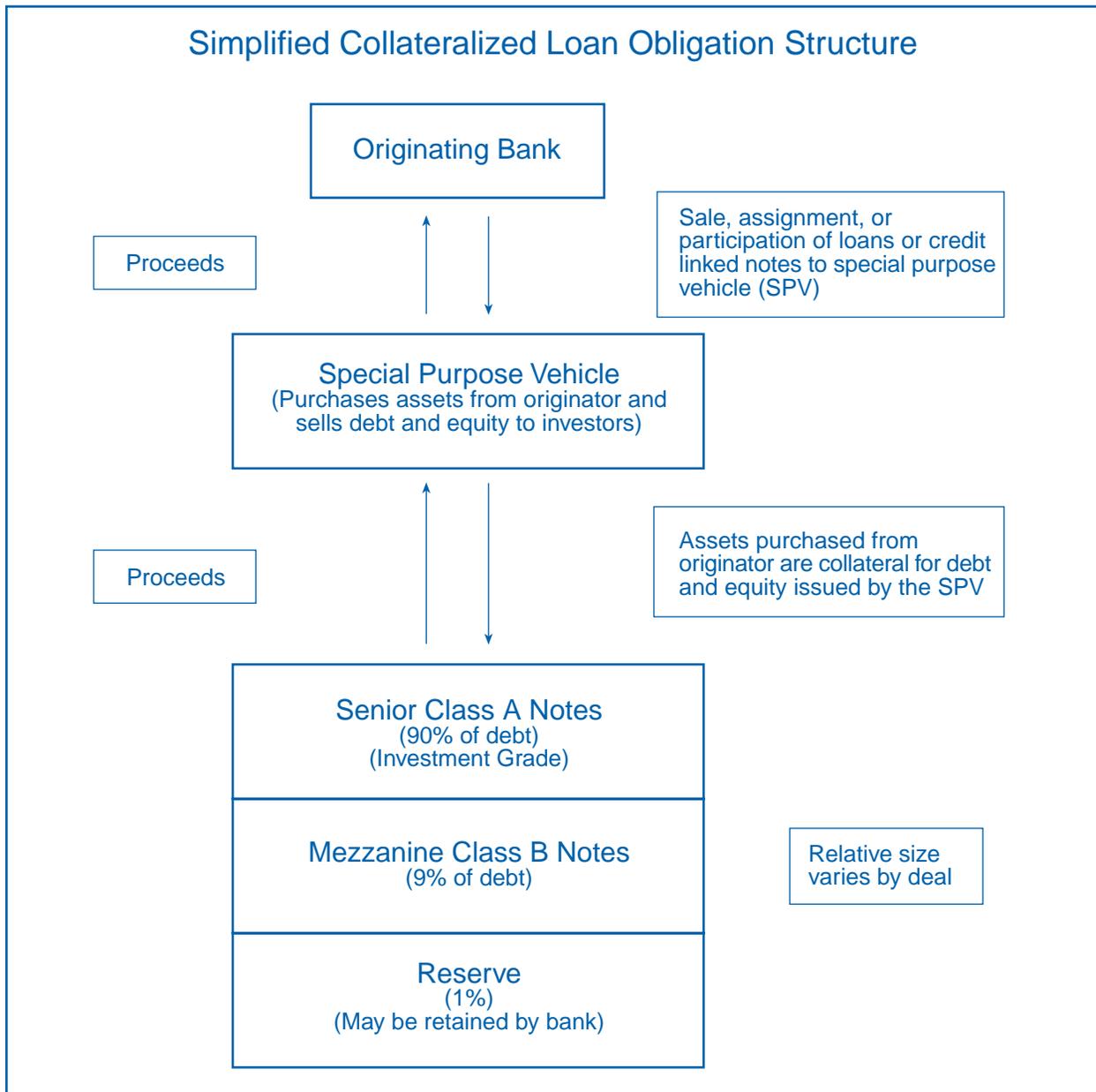
While the structures of CLOs and CBOs are similar, banks’ involvement as issuers of CLOs, and the forces driving this issuance, elevate the importance of considering CLO structures. Chart 2 presents the basic structure of a CLO. Although specifics may vary, most CLOs

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. risk-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.

*Kathy Kalsner, Chief, Financial Sector Analysis Section
Allen Puwalski, Senior Financial Analyst*

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.

difficult 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 unanswered 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

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.

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

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

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.

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.

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

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/efit

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.

*Gary Ternullo, Senior Financial Analyst
gternullo@fdic.gov*

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.

Current Regional Economic Conditions

- **The Region continues to grow at a moderate rate.**
- **Low oil prices and lack of adequate moisture for crop development are among the issues that may adversely affect the Arkansas and Louisiana economies.**
- **Household debt relative to income is at a historic high.**
- **Bankruptcy rates for Memphis Region states remain among the highest in the nation.**

Regional Roundup

The Memphis Region continues its stable but moderate growth relative to the nation. The June release of the *Federal Reserve Beige Book* indicates modest labor shortages, continued low unemployment rates, and no significant wage or price pressures in the Region.

In the agricultural sector, early summer surveys show that crops in portions of **Louisiana** and **Arkansas** were being stressed by lack of adequate moisture. The dry weather coupled with weak prices for many commodities do not bode well for a repeat of recent years' favorable operating results. Low hog prices are reducing producers' revenues, and there is some concern that the Russian economic crisis may limit Arkansas and **Mississippi** poultry exports.

In Mississippi, last year's gross gaming revenues broke records, despite a slowdown in the growth of national gaming revenues. In fact, revenues may rise more in 1998 as some casinos finish new hotel construction.

In **Tennessee**, the **Memphis** residential construction market is the only major metro area with permits below last year's levels. Although overall job growth remains positive, some sectors of the metro economy—particularly the textiles segment of the goods manufacturing sector—have experienced job losses this year.

Oil prices continue to be watched closely in Louisiana, where the demand for onshore drilling and production equipment is reported to be weak. The decline in oil prices is forcing independent companies to curtail operations. Evidence supporting these reports is found in the state's rotary rig count, which in June 1998 was 200, well down from the November 1997 peak of 274. Because of sluggishness in the energy sector, manufacturing employment has slowed somewhat. Although

local banks typically do not make loans to independent producers, lower prices affect individuals and businesses not directly associated with the oil industry. The situation could lower credit quality of loan portfolios held by banks in the area, particularly if oil prices remain low for an extended period. (See *Regional Outlook*, second quarter 1998, for a discussion of the oil industry in the state.)

Expectations of future economic activity in the Region are generally optimistic. The Federal Reserve survey of employers' hiring intentions indicates that half of the employers surveyed anticipate adding jobs. Only in **Louisville, Kentucky**, and **Little Rock, Arkansas**, were expectations less optimistic. In these areas, only 30 percent of employers anticipate adding jobs. One factor contributing to lower optimism in Louisville is the announcement that United HealthCare Corporation is buying Humana, Inc., and moving the business to its Minneapolis headquarters. There are 4,000 Humana employees in Louisville, and an undetermined number of these jobs will be lost.

Economic Factors Are Influencing Household Borrowing

Borrowing patterns of households in the Memphis Region during 1997 and early 1998 shifted from installment and credit card loans to mortgage-related debt. This change follows several years of significant growth in installment and credit card debt held by financial institutions serving the Region. The shift to mortgage-related debt is attributable to economic factors, institutional factors, and tax considerations. The economic factors include substantial increases in residential property values, strong consumer confidence and increasing wealth, and changes in demographics. See *Current Regional Banking Conditions* for a discussion of insti-

tutional factors and trends in banks' consumer lending and single-family mortgage portfolios.

Growth in Household Wealth Is Based on Growth in Asset Values

Total Household Wealth Has Increased Substantially

Strong consumer confidence, increasing wealth, and income growth have increased consumers' willingness and ability to take on debt. The *Balance Sheet of Households and Non-Profit Organizations*, published by the Bureau of Economic Analysis, reveals that wealth is growing faster than personal income.¹ The statistics indicate that, nationally, household net worth increased 100.5 percent in the 10-year interval to 1997, while disposable personal income was up a much lower 74.4 percent. The most significant contributors to asset gains were corporate equities and mutual fund shares, whose value rose 306.3 percent and 424.5 percent, respectively. Over the same 10-year period, the value of household real estate was up a comparatively modest 59 percent, and homeowners' equity in residential real estate was up an even more modest 35.1 percent.

The largest contributor to liabilities was home mortgages, up 106.6 percent. Equity in residential real estate, calculated as a percentage of the value of household real estate, actually fell from 66.6 percent in 1987 to 52 percent in 1997. This percentage has gradually declined throughout the 10-year period. The gains in wealth during this expansion, through rising equity prices and other non-real estate assets, may have helped

¹ While these data are national, the general observation applies to the Region. The only readily available local measures of wealth comparable with national trends are mutual fund data published by *The Investment Company Institute*. The industry figures provide a state-by-state distribution of mutual fund accounts and assets based on reports representing 63 percent of industry assets. The latest December 1996 report provides data for year-end 1995. The information compiled from 1987 to 1995 indicates that the value of mutual fund assets (equities, bonds, and income funds) grew 193 percent in the Memphis Region. Nationally, growth was 237 percent. This comparison shows that for this asset category, the Region's growth was similar to but slightly less than the nation's. Over the same period, income growth was 82 percent in the Memphis Region, while nationally it was 59 percent. This information provides some circumstantial evidence that changes in ratios of wealth to income for the nation are reasonable but inexact proxies for the Memphis Region. Using this narrow measure of mutual fund holdings, the Memphis Region's wealth to income ratio grew more slowly than the nation's over this period. However, the point that the wealth to income ratio in the Region has increased significantly remains valid.

consumers feel more comfortable in diminishing their residential equity as a percentage of real estate value.

Residential Property Values Have Increased

Sizable increases in the values of residential property have provided resources to collateralize loans. The highest levels of home equity lending are at insured institutions in metropolitan areas of Kentucky and Tennessee. One factor that has enabled the growth in home equity lending in recent years has been the rise in median home prices in most areas of the nation, with the concomitant increase in homeowner equity. In the Memphis Region, price increases for metropolitan areas in Kentucky and Tennessee generally have been greater over the past four years than price increases for the nation (see Table 1). These increases have provided homeowners with greater equity to draw on through mortgage refinancing or home equity lines.

Demographics Are Influencing Consumer Borrowing Trends

Changing Demographic Characteristics Also Affect Demand for Home Equity

The rapid in-migration to the Region that occurred from the early 1990s to 1997, particularly in the 25 to 34 age group, altered the characteristics of the population. A survey in the April 1998 *Federal Reserve Bulletin* indicates that the demographic characteristics of homeowners are a good indicator of the form of debt they will hold.² Households with home equity lines of credit are more likely to own more expensive homes, have higher

² Canner, Durkin, and Luckett, "Recent Developments in Home Equity Lending."

TABLE 1

MEDIAN HOME PRICES* HAVE CLIMBED IN KENTUCKY AND TENNESSEE METRO AREAS (PERCENT CHANGE FROM PRIOR YEAR)				
AREA	1994	1995	1996	1997
KNOXVILLE	6.8	11.2	5.0	2.2
LEXINGTON	6.1	3.8	5.4	5.1
LOUISVILLE	8.5	7.3	5.7	6.0
MEMPHIS	-0.8	0.2	11.1	7.9
NASHVILLE	4.6	4.9	5.5	1.2
U.S.	2.9	2.5	5.1	4.7

*FOR EXISTING SINGLE-FAMILY HOMES
SOURCE: NATIONAL ASSOCIATION OF REALTORS

incomes, have higher equity in their homes, and be better educated. In-migrants during this period were more likely to have these characteristics, as they were attracted by new higher wage jobs in the Region.

More recently, in-migration has slowed significantly as a result of national competition for labor and slower job growth in the Region. Therefore, continued increases in demand for home equity loans that are caused by shifts in the structure of the population are less likely in the near term, although normal changes through natural increase of the population can be anticipated.

Tax Ramifications Are a Factor in Consumer Borrowing Decisions

Consumer borrowing decisions have been influenced for many years by tax guidelines that generally permit deductions for interest paid on mortgages but not for interest paid on other forms of borrowings. Changes in tax laws in 1997 made such borrowings more attractive by, among other things, liberalizing the amount of gains from the sale of a home that may be excluded from taxable income.

Household Debt Service to Income Is Unchanged, While Total Liabilities to Income Have Increased

The burden of household debt service is the total interest and principal payments on all consumer and mortgage debt in the household sector compared with

disposable personal income. After sharp increases from 1994 to 1996, the household debt service burden was largely unchanged in 1997, as Chart 1 shows.

There are several possible reasons for the recent stability in the household debt service burden. They include tightening of underwriting standards by lenders, increased concern among households over rising debt levels, and economic factors, such as higher personal income levels and lower interest rates. Another partial explanation for this stability is that mortgage-related debt is increasingly being substituted for credit card and other consumer debt. Mortgage-related debt, whether first-lien mortgages or home equity lines, typically involves lower interest rates and longer repayment terms than consumer installment debt and credit card lines. Consequently, to the extent this substitution occurred, annual principal and interest payments would be lower relative to disposable personal income, even though the proportion of consumer household liabilities to income continued to rise in 1997 (see Chart 2).

A final factor contributing to the lower debt service burden is the increasing use of consumer leasing. Lease obligations are not included in the calculation of household debt service burden. Given the dramatic increases in automobile leasing in recent years (about one-third of new automobile transactions are now leases), current total household obligations, including lease payments, are believed to be well above the previous apparent peak in 1989 shown on Chart 1. The change in total household obligations to disposable personal income for 1997 could likewise be higher than shown if lease obligations are considered.

CHART 1

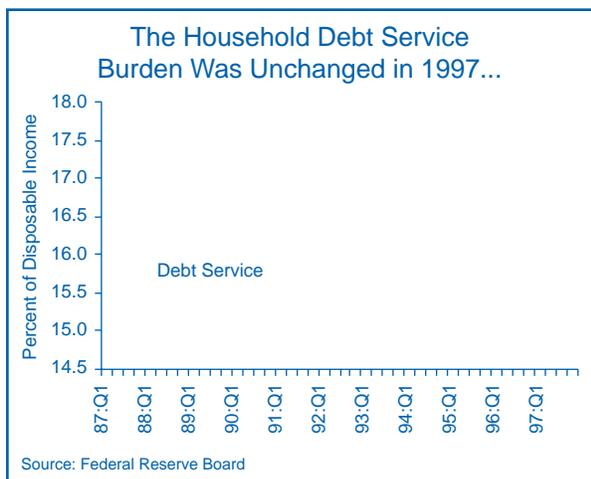
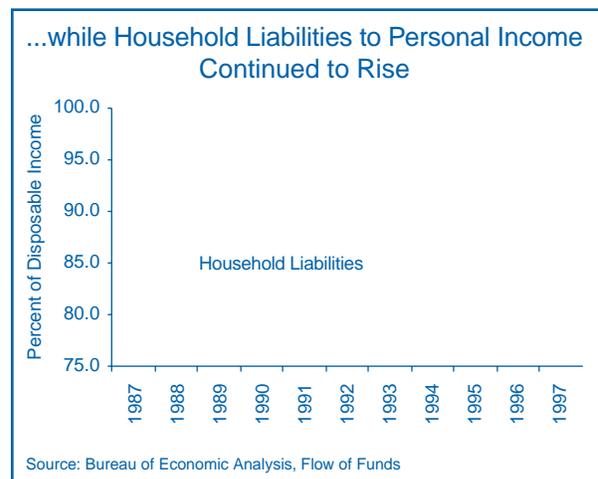


CHART 2



Bankruptcy Rates Remain High

Many financial institutions are concerned about consumer loan losses and the historically high levels of bankruptcy filings. Personal bankruptcy rates have dropped slightly from early 1997 levels but are higher than 1996 filings. Personal bankruptcy filing rates for states in the Memphis Region continue to be among the nation's highest. The 1997 personal bankruptcy filing rates per 1,000 population together with the percentage changes from 1992 for each state were Arkansas 5.99 (+79 percent), Kentucky 5.43 (+38 percent), Louisiana 5.17 (+40 percent), Mississippi 6.95 (+48 percent), and Tennessee 9.63 (+22 percent).³ The national average bankruptcy rate was 5.04 per 1,000, up 42 percent since 1992.

The geographic distribution of bankruptcy rates is one indication of the comparative financial health of each community. Chart 3 shows that in Tennessee, high bankruptcy rates prevail in the metro areas, in most of the western urban and rural counties of the state, and in some of the counties in the southeast. The other Memphis Region states, with few exceptions, have high bankruptcy rates concentrated only in the metro areas.

³ Administrative Office of the U.S. Court (Haver Analytics and CDB Infotek). Data include Chapter 7 and Chapter 13 filings by households.

For a discussion of possible reasons for higher bankruptcy rates, see *Regional Outlook*, first quarter 1997. Chart 4 shows the change in bankruptcy rates from 1996 to 1997 by county. In the Memphis Region, bankruptcy rates increased in 348 counties and decreased in only 88 counties.

Implications: While income growth, lower borrowing costs, and changing borrowing patterns have led to improvements in households' ability to service debt during 1997, total liabilities to income continue to rise. The high level of total liabilities could cause problems for borrowers if economic conditions change or if households reacquire substantial credit card and installment debt after adding to mortgage-related debt. Although the switch from unsecured consumer debt to mortgages is generally viewed as a reduction in the overall risk profile, lenders should consider the household's total financial position when making underwriting decisions. A sharp increase in interest rates, particularly if coupled with an overall economic slowdown, could increase financial stress for consumers and have a significantly greater effect on mortgage-related debt than has been the case in the past.

David T. Griffiths, Regional Economist
Robert L. Burns, Financial Analyst
Gary L. Beasley, Regional Manager

CHART 3

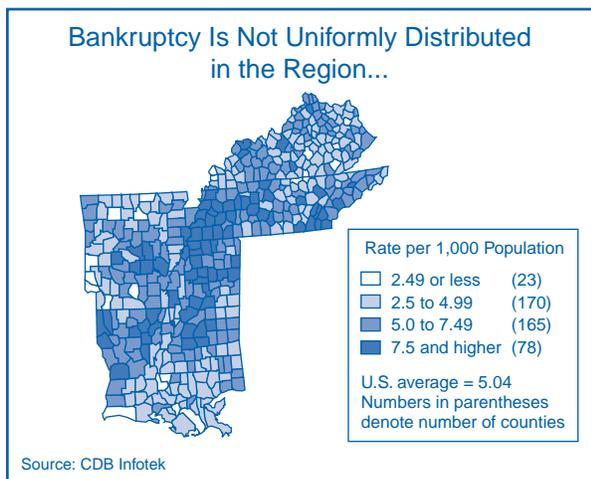
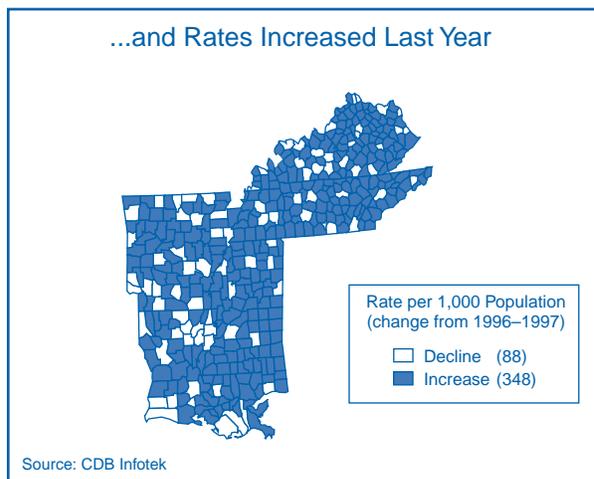


CHART 4



Current Regional Banking Conditions

- The Region's financial institutions continue to report solid financial performance and adjust to industry trends.
- Consumer loans are a declining segment of many bank and thrift portfolios but represent a majority of total loan losses.
- Consumers are increasingly turning to home equity loans as a substitute for traditional consumer credit, and banks are including new market segments not previously thought to be candidates for home equity lines.

First Quarter Performance Continues 1997 Trends

The beginning of 1998 has seen a continuation of several trends discussed below that affect financial institutions in the Memphis Region. Banks and thrifts continue to adjust to these trends while posting solid performance. During the first quarter of 1998, Memphis Region institutions:

- improved aggregate return on assets by 7 basis points over the first quarter of 1997 to 1.35 percent;
- maintained low levels of nonperforming assets; and
- held aggregate leverage capital ratios at 8.9 percent of average assets.

Although the aggregate return on assets improved, the Region's aggregate net interest margin (NIM) declined 10 basis points from the fourth quarter of 1997 to 4.3 percent. The average NIM, which does not have the large bank bias of aggregate performance measures, fell even more dramatically during the period, from 4.67 percent to 4.51 percent. The flattening of the yield curve during late 1997 and early 1998 (discussed in the *Regional Outlook*, second quarter 1998) is one likely reason for declining margins. The yield curve has continued to flatten throughout the first half of 1998, and long-term rates have crept lower. Additional effects from the shape of the yield curve may emerge as institutions' balance sheets adjust to the current interest rate environment.

Institutions' nonperforming asset levels benefited from a sharp seasonal decline in past-due and nonaccrual consumer loans. Despite this one-quarter decline and a

longer term pattern of declining loan portfolio share, consumer loans remain an area of concern. While overall lending to this market segment has declined, household demand for mortgage products by households has climbed steadily. Recent trends in consumer debt and underwriting are discussed further in this article and in *Regional Economy*, with a particular emphasis on home equity lines of credit (HELOCs).

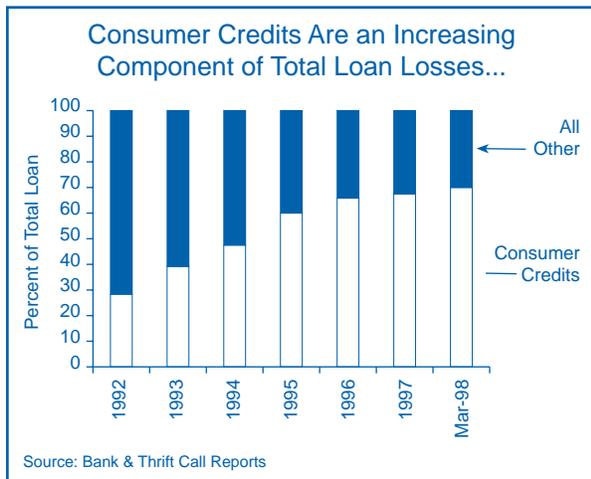
Relative Levels of Consumer Loans Have Declined, but Some Concerns Remain

The Region's banks have seen a slowdown in recent years in consumer loan¹ growth rates and a decline in that segment's relative share of loan portfolios. Since year-end 1995, consumer loans have declined from an average of 21.2 percent of bank loan portfolios to 19.1 percent as of March 31, 1998. Although their share of total loans has declined, consumer loans represent a growing share of total loan losses. As Chart 1 shows, consumer loan losses comprised slightly more than 70 percent of total charge-offs during the first quarter of 1998. Also, the percentage of aggregate past-due consumer loans remains higher than past-due percentages for all loans. As shown in Chart 2, past-due levels for consumer loans were up slightly in 1997 but declined in the first quarter of 1998, consistent with seasonal patterns in recent years. As of March 31, 1998, 2.85 percent of consumer loans were past due or in nonaccrual status, compared with 2.3 percent of total loans.

Consumer loan growth at the Region's banks may have slowed because households were recognizing that they were reaching the limits of their debt-carrying capacity.

¹ For purposes of this article, consumer loans include credit card and installment loans but no form of mortgage debt.

CHART 1



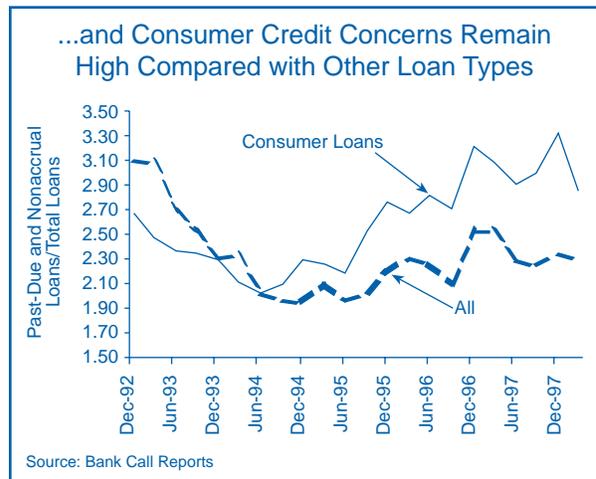
Loan officer surveys and anecdotal evidence, however, suggest that strong demand for consumer loans still exists. The slowdown in consumer loan growth more likely happened because lenders have selectively tightened credit standards and terms for most consumer debt and because consumer credit has been consolidated into mortgage products, as discussed later in this article.

The January 1998 *Senior Loan Officer Survey* conducted by the *Federal Reserve Board* was the ninth in a row to find that the percentage of banks tightening standards on consumer loans was significantly greater than the percentage of banks loosening standards, although the number and percentage of banks tightening standards continued to decline. The net percentage of banks reporting tighter standards was down again in the May 1998 *Senior Loan Officer Survey*. These results suggest that lenders may be reaching what banks view as appropriate underwriting standards for consumer loans in the current climate.

However, concerns about consumer underwriting practices persist. As part of each examination, FDIC examiners complete a credit underwriting survey on the bank's lending policies and practices. Surveys completed during the fourth quarter of 1997 and first quarter of 1998 revealed continuing concerns about consumer loan underwriting. In particular, examiners in the Memphis Region noted that many banks were frequently or commonly originating loans when borrowers lacked a demonstrated ability to repay the debt.

Average levels of credit card debt held by the Region's banks were little changed in recent quarters and repre-

CHART 2



sent less than 1 percent of total loans. Although the Region's banks reported little change, the credit card industry as a whole appears to be continuing its aggressive pursuit of customers. Credit card mailings, which had decreased in late 1996, rose to almost 800 million per quarter in 1997.

Even as consumer loan portfolio levels have fallen in recent quarters at the Region's banks, households have added to first-lien residential mortgage and HELOC balances. Although the reasons behind the growth in first-lien positions are closely linked to generally positive macroeconomic conditions such as high employment levels and low interest rates, the growth in HELOCs may also be attributable partly to the increasing use of such products as a substitute for more traditional forms of consumer debt.

Home Equity Lending Activity Is Growing

Home equity lending has taken on increased importance for the Region's institutions (see also *Regional Outlook*, fourth quarter 1997). The total funded amount of HELOCs held by Memphis Region banks has increased from just under \$2 billion as of the first quarter of 1994 to over \$3.8 billion as of the first quarter of 1998. The unfunded amount available on such loans has also increased, totaling \$3.9 billion as of the first quarter of 1998. Aggregate holdings of HELOCs² reached 2.5 per-

² For purposes of this article, home equity lending specifically refers to revolving, open-end loans secured by 1- to 4-family residential properties and extended under lines of credit. Traditional home equity loans (closed-end, fixed-amortization, second mortgages) are not included.

cent of total loans on December 31, 1997, before a slight seasonal drop to 2.47 percent as of March 31, 1998. Home equity lending is growing among the Region's thrifts as well.

Somewhat surprisingly, the most recent growth in HELOCs has occurred during considerable mortgage refinancing activity. Often, borrowers refinancing first-lien positions roll other mortgage debt, such as home equity loans, into the new first-lien mortgage. Because mortgage refinancings result in faster repayments on outstanding HELOCs, the comparative financial statement analysis discussed above likely understates the growth in new HELOCs.

As of March 31, 1998, 138 commercial banks in the Region held home equity lines of credit in excess of 2 percent of total loans, down from a seasonal high of 150 banks in December 1997. Some banks reported considerably higher levels of home equity lines; 34 banks held home equity lines ranging from 5 to 19 percent of total loans. These 34 banks had total assets of \$37 billion, or 15 percent of the Region's total assets. While this group includes some of the larger banks in the Region, 24 of them reported total assets of less than \$500 million. One common characteristic of these banks and the larger group of 138 banks is that most are in or near metropolitan areas. Additionally, most of these banks are in either **Tennessee** or **Kentucky**. Economic conditions contributing to these geographic concentrations are discussed in *Current Regional Economic Conditions*.



A major factor in the growth of home equity lines is the substitution of this loan type for other forms of consumer credit, either to consolidate existing debt or to finance new expenditures.

According to the Mortgage Bankers Association, approximately 40 percent of home equity loans are for debt consolidation. A research study by *Brittain Associates*, released June 9, 1998, estimated that 4 million households nationwide had used equity loans during the preceding two years to pay down revolving credit card debt totaling an estimated \$26 billion.

In theory, refinancing credit card and other consumer debt into single home equity loans should improve borrowers' financial position and ability to withstand eco-

nomical hardship. HELOCs generally carry lower interest rates and longer maturities than most other consumer debt. In addition, interest paid on HELOCs can be deductible for taxpayers who itemize deductions, assuming certain conditions are met. Lower rates, extended maturities, and tax deductibility lower monthly payments and improve borrower cash flow. In practice, however, the use of HELOCs may not improve borrowers' financial positions. Home equity borrowers may pay off credit cards and other consumer debts by tapping into what represents a major source of household net worth, only to then "reload" on these other credit sources.

Active mortgage refinancing in recent quarters also has allowed consumers ample opportunity to "cash out" equity in their homes and roll debt into first-lien mortgages. Like home equity lending, mortgage refinancing gives consumers the opportunity to then "reload" on these other forms of debt. This trend was noted in the May 1998 *Senior Loan Officer Opinion Survey* conducted by the Federal Reserve Board.

Active Subprime and '125' Home Equity Markets Have Developed

Traditionally, HELOCs were used by households with relatively strong financial positions. This general observation and the blended nature of home equity debt (representing elements of both consumer loans and residential mortgages) have historically combined to hold delinquency rates on home equity loans at lower levels than other forms of consumer debt. As discussed above, changes in underwriting standards and HELOC use make past indicators of performance less meaningful.

In more recent years, HELOC use has expanded to other consumer market segments. A subprime market has emerged as lenders have advertised debt consolidation to borrowers with low income levels, little or no equity in their homes, or poor credit histories. Also, financial institutions have targeted many high-income consumers for HELOCs, offering credit that often exceeds the value of the home. Loans to this market segment have been associated with loan-to-value limits of 125 percent or more and are often referred to as "125s." While both these market segments have been served predominately by nonbank lenders, some banks and thrifts in the Region have changed underwriting standards to compete for these credits.

Loss expectations for 125s are difficult to predict because they are relatively new and there is little historical performance information about them. The bulk of such loans were originated during 1997, and 125s even two years old are rare. However, because these loans share characteristics of both mortgages and credit card debt, loss rates may be expected to fall somewhere between those of traditional home equity loans and credit card receivables.

Anecdotal evidence suggests that, while some larger banks in the Region are offering 125s, few smaller banks are participating in this market. Banks of all asset sizes are experiencing increases in the volume of HELOCs and, in many cases, are offering loans with loan-to-value limits of 95 to 100 percent, waiving closing costs, providing favorable interest rates, or supplying incentives such as free travel to new HELOC customers.



Implications: The trends discussed above point to the potential migration of consumer lending problems to home equity and first-lien mortgage loan segments. At

the same time, some evidence indicates that underwriting standards for these loan types are being relaxed. The January 1998 Federal Reserve Board *Senior Loan Officer Survey* revealed evidence of eased standards and terms for home equity lending. Between 15 and 20 percent of respondents, on net, eased standards on these loans during 1997. Similar percentages made such loans more accessible to more consumers by various methods, such as reducing fees. The May *Senior Loan Officer Survey* did not have questions concerning home equity lending.

But are risks to the Region's lenders increasing? Foreclosure rates for recent vintage HELOC pools (originated in 1995 and 1996) have risen faster and much higher than rates on previously originated pools. While HELOCs retained in bank and thrift loan portfolios tend to exhibit lower delinquency and loss rates than those sold into the secondary market, the observation of elevated risk can be applied to these loans as well. As a result, both lenders and examiners have had to reconsider the attention required for this loan type.

Robert L. Burns, Financial Analyst

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