Regional Outlook

Federal Deposit Insurance Corporation — Third Quarter 1998

FDIC
San Francisco
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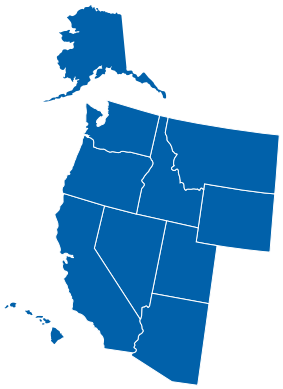

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In Focus This Quarter

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◆ ***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 obligations (CLOs) and collateralized bond obligations, securities with deal- and issuer-specific risks, are potential bank investments that may grow in popularity if a current proposal to lower the risk weights for AAA-rated securities is enacted. Banks with an ample supply of low-margin commercial loans are expected to issue more CLOs to an increasingly demanding secondary commercial loan market. An institution's CLO strategy may have implications that should be considered when evaluating its capital adequacy trends.** *See page 8.*

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◆ ***The Payment System: Emerging Issues*—The payment system is the heart of the U.S. economic infrastructure, moving value at the rate of 90 times the U.S. gross domestic product each year. The banking industry, although historically central to this movement, now faces a tangle of new technologies, new exposures, and new competitors that challenges its hold on the payments business. Its regulators face a different dilemma—that of how much intervention, if any, these changes warrant and how best to prevent the systemic exposures that increasingly large and rapid flows of money can create. Together, the issues they face frame a payment system that is fast becoming a technical and political contest.** *See page 14.*

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

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

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

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

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

Causes of the Crisis

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

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

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

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

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

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

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

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

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

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

Impact on the U.S Economy

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

Banking

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

Agriculture

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

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

Commodities

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

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

TABLE 1

International Claims by Nationality of Reporting Bank End December 1997									
Total International Claims (million U.S. $)		U.S.		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

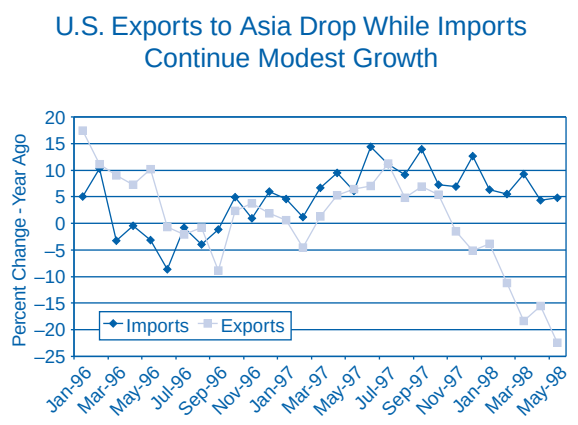
Asia accounts for a large and growing share of U.S. trade in manufactured goods. Between 1990 and 1996, U.S. exports of manufactured goods to Asia increased from $75 billion to more than $140 billion, accounting for nearly one-third of the increase in total U.S. exports of manufactured goods. For the 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

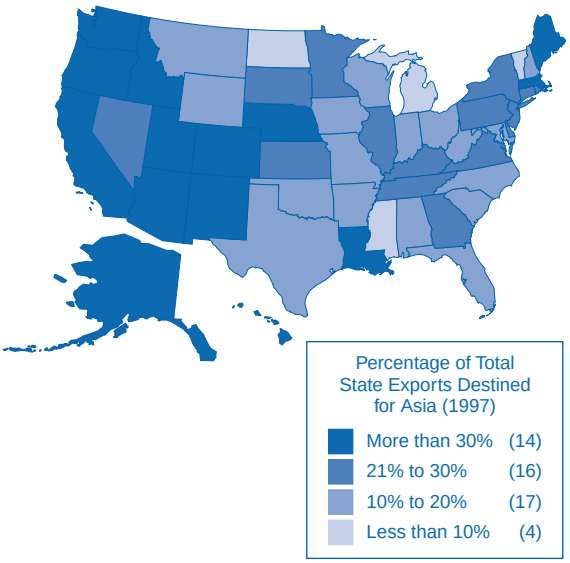
CHART 1



Source: Bureau of the Census

CHART 2

Western and Midwestern State Exports Are Vulnerable to Changes in Asian Demand



Source: Bureau of the Census, International Trade Administration

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

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

Corporate Profits

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

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

Summary and Implications

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

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

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

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

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

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

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Paul C. Bishop, Economist

Table 2

San Francisco 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	78,663.9	41%	100%	48%
Top Five Export Industries				
Electric & Electronic Equipment	21,661.6	94%	28%	57%
Transportation Equipment	14,841.6	–1%	19%	44%
Industrial Machinery & Computers	14,299.6	107%	18%	42%
Agricultural & Livestock Products	4,862.5	40%	6%	65%
Scientific & Measuring Instruments	4,484.5	86%	6%	43%
Total of Top Five Export Industries	60,149.8	55%	76%	48%

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

CLOs Lure Another Major Bank Asset off the Balance Sheet

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

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

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

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

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

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

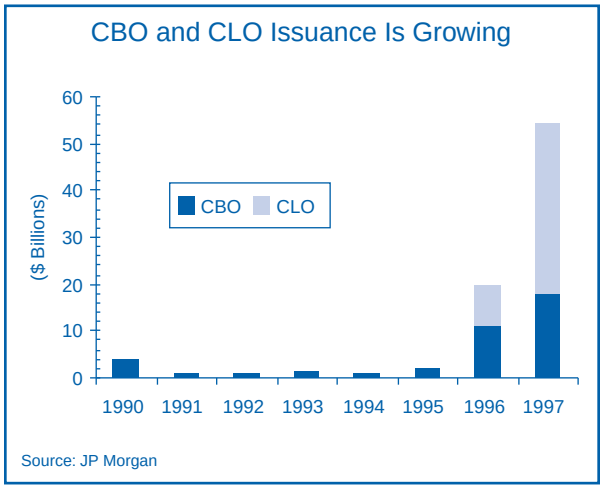
[1] *CBOs/CLOs: An Expanding Securitization Product,* p. 1, JP Morgan, September 1997.

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

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

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

CHART 1



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

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

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

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

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

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

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

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

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

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

Table 1

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

Source: Bear, Stearns & Co. Inc.

Arbitrage Opportunities Motivate Most Securitization of Subinvestment-Grade Debt

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

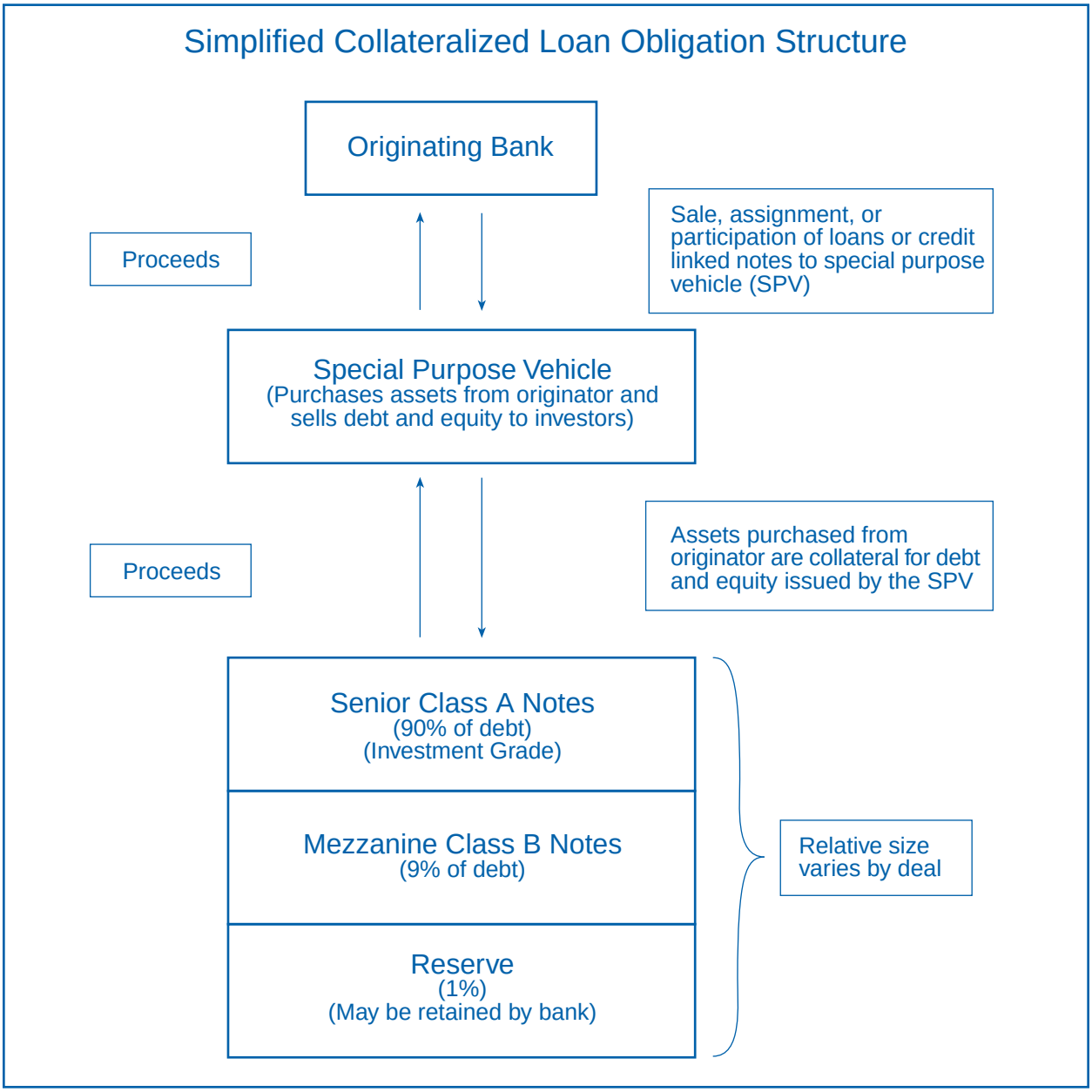
A Closer Look at CLO Structures

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

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

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

CHART 2



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

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

An Introduction to Delinked and Linked CLO Structures

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

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

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

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

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

The Role of Investment Rating Agencies

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

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

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

Implications for Insured Institutions

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

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

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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.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Emerging Issues in Large-Value Payments

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Sources of Additional Payment System Information

Electronic Bill Presentment

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

Digital Cash and Stored Value

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

Securing Online Transactions

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

Certificate Authorities

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

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

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

Payment System Vulnerability

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

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

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

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

Differing Perceptions, Common Threat

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

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

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

Signs of a Pause in the Prolonged Residential Housing Boom Raise Concerns about Banks' Exposure to Construction Lending

- **The highly cyclical residential construction sector has experienced a long period of prosperity; however, a few warning signs are emerging.**
- **In spite of the 1998 rebound in permit activity for the Region, permits continued to fall in Oregon and Utah, two states where other housing indicators were softening and economic growth has been tapering off.**
- **Residential building activity is outpacing new household formation (a situation that can lead to overbuilding) in Oregon and Nevada, the two states where community banks have the highest concentration in construction lending in the nation.**

Residential housing markets have enjoyed a long period of prosperity in many states in the San Francisco Region; however, recent trends in building permit activity may signal emerging weakness or overbuilding, or both, in a few states. In **Oregon** and **Utah,** softening in housing permits over a period of months, an indicator of a slowdown in future housing activity, suggests that the boom may be coming to an end. While the weakness may reflect the cyclical nature of construction activity, it is occurring at a time when the Region's financial institutions are recording rapid increases in construction lending.

Slower job growth, the Asian crisis, and changing demographics all contribute to concerns about housing indicators and increased construction lending. The Region, with a 3.2 percent job growth rate over the 12-month period ending in June 1998, continues to add jobs at a faster pace than the nation (2.5 percent). However, over the past year, job growth rates in most states in the Region have fallen moderately. Moreover, in part because of the Asian crisis, most state-by-state economic forecasts for 1998 project slower growth rates than in 1997. In addition, aside from **California,** population growth in the Region has slowed slightly but noticeably over the past two years. Slower population growth outside of California has translated into fewer new households formed and likely has reduced housing demand.

The Construction Sector Is Highly Cyclical

Lenders' assumptions about the outlook for the housing sector are very important, because construction is one of the most highly cyclical sectors of the economy. Construction projects are very sensitive to both the cost and availability of financing. Thus, changes in mortgage interest rates and overall economic activity tend to result in much larger swings in construction employment than in most other types of jobs. For example, over the past 25 years in the San Francisco Region, the annual percent changes in construction employment varied about four times more than changes in nonconstruction payroll jobs. Changing inflation expectations and consumer confidence, as well as wealth effects associated with stock market valuation, also can affect housing activity.

Not only does the construction sector experience large cyclical movements, but the timing of the peaks and troughs is significant. Nationally, declines in housing permits occur months or quarters in advance of changes in the overall economy; hence the sector is designated a leading economic indicator. At the state level, permits may occasionally move independently of national business conditions, but 8 of the Region's 11 states recorded downturns in permits prior to the 1990–91 recession.

The Region's Banks Are Highly Exposed to Construction Lending

The cyclical nature of the construction sector is important to the Region's financial institutions because sharp declines in construction activity are usually followed by

deterioration in the quality of banks' construction loan portfolios. This importance has grown as institutions have increased their exposure to construction lending. In the San Francisco Region, real estate lending is the largest single loan category at community banks (non-credit card banks with assets of less than $1 billion), accounting for 39.6 percent of total assets as of March 31, 1998. Construction loans, which include both residential and nonresidential construction and land development lending, account for about 5.2 percent of total assets. As a result, changes in real estate markets may have a significant impact on the health of banks in the Region (see ***Increased Construction Lending and Changing Residential Lending Practices Pose Risks to San Francisco Region Banks***).

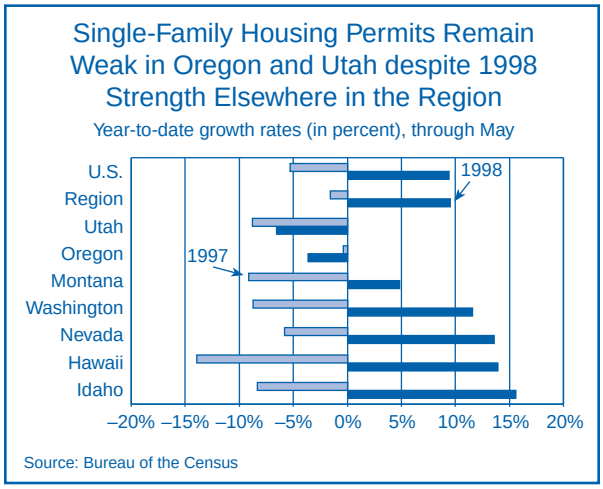
The analysis that follows examines several state-level housing markets. In Oregon and Utah, housing permits have shown unusual weakness in 1997 and 1998. Comparing the number of housing permits to new households focuses attention on the potential for overbuilding in **Nevada** and Oregon.

Continuing Weakness in Housing Permit Activity in Oregon and Utah Is a Concern

The Region as a whole reported moderate growth in total housing permit activity throughout 1997 (4.9 percent) and strong growth in permit activity in the first five months of 1998 (10.6 percent annual rate). However, the performance was not uniform across the Region's states. For example, in 1997 California registered a rapid increase in permits (nearly 20 percent) that masked declines in seven other states.

Unlike the other states that experienced declines in housing permit activity in 1997, Oregon and Utah continued to experience declines in the first five months of 1998 (see Chart 1). Moreover, this weakness is consistent with other housing and construction indicators for these two states; housing price appreciation has slowed and sales activity remains below mid-1990s peaks. The weakness in permits, as well as slower rates of job growth in both states over the past year, is a significant indication that the extended housing booms in these states may be coming to an end.

CHART 1



Shifting Demographics May Be a Factor in Future Permit Activity outside of California

Shifting demographics may be having an effect on housing activity across the Region. California experienced significant out-migration during the early 1990s when the state suffered a prolonged recession. However, as the state's economy began to accelerate in the latter half of the 1990s, its population growth rate also has increased, and many of its housing markets have registered strong improvements. While still low by historic standards, California's population growth rate for 1997 had doubled from its 1995 low of 0.6 percent.

However, California's increased population growth rate has been accompanied by slower growth rates elsewhere in the Region. Most states in the Region began reporting slower population growth rates and new household formation rates after 1995. Although the Region, excluding California, still is adding residents at a rapid pace of about 2 percent per year, the growth rate is down from about 2.5 percent earlier in the 1990s (see Chart 2, next page). In **Arizona, Idaho, Montana,** and **Wyoming,** population growth rates for 1997 were at least 1 percentage point below 1994 rates, according to Census Bureau figures. **Hawaii,** Nevada, and Utah reported nearly 1 percentage point declines in their population growth rates over the same period. Furthermore, most states also are reporting declines or slower growth in the 25- to 34-year-old population cohort, which typically accounts for a large share of first-time home buyers.

CHART 2

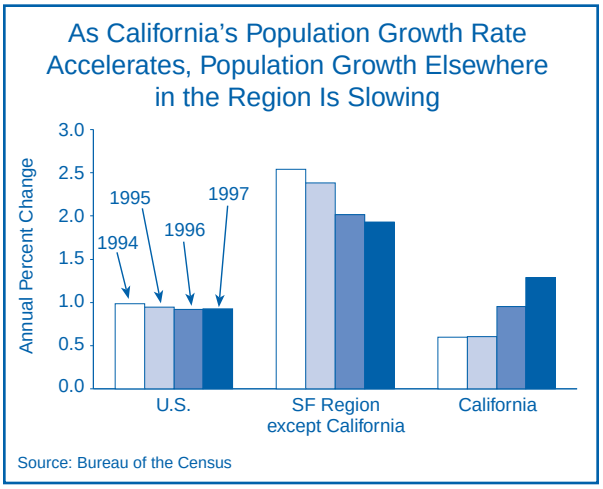
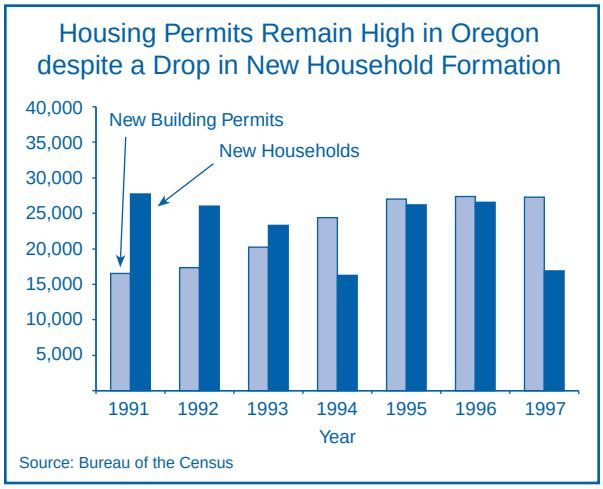


CHART 3



An Excess of Housing Permits Relative to New Households Formed May Be an Issue in Oregon and Nevada

A comparison of the number of housing permits and net new household formation is an indicator of the potential housing supply in the pipeline and the potential demand from households. Over a long period of years, these indicators tend to roughly balance out, but on a year-to-year basis they may vary widely, depending on the point in the business cycle. During and after recessions, when housing demand softens, the growth in the number of housing permits tends to fall below the rate of new household formation, creating a negative gap, which may indicate a shortage of housing units. During periods of expansion, the number of new housing permits often is larger than the number of new households formed, creating a positive gap. However, a large and persistent gap also may suggest that an excess inventory of housing units is building.

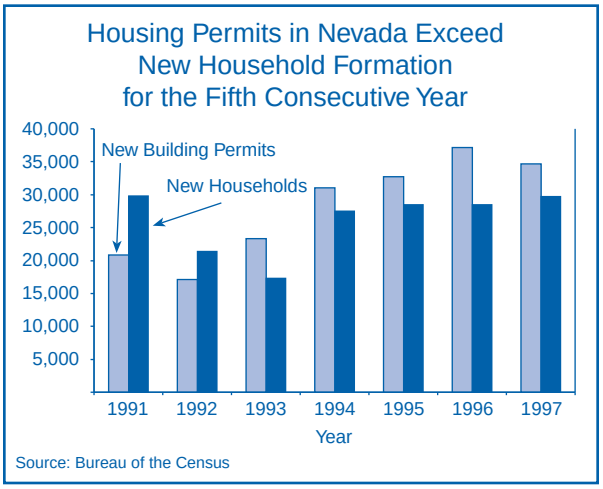
In 1997, the most recent period for which data are available, the Region reported 51,000 more housing permits issued than the number of net new households formed. Oregon and Nevada, which have been among the Region's fastest growing states for several years, reported large excesses of permits over new households relative to their populations. However, the positive gaps for Oregon and Nevada may be occurring for different reasons.

Oregon's 10,400-unit gap between housing permits and new households, shown in Chart 3, is of note because of its size and the recent softening in both the state's economy and housing markets. Employment growth over the 12 months ending in June 1998 slipped to 2.3 percent, near the national average. Fewer sales of existing houses, slower home price appreciation, and weak construction job growth in 1998 all are consistent with slowing in housing permit activity. The slowdown also may be linked to slower net in-migration, which is reflected in the lower number of new households formed in 1997 (see Chart 3). Oregon's sizable positive gap and other indications of slowing are significant because community banks hold 9.2 percent of their assets in construction loans, the second highest share in the nation.

In contrast to Oregon's softening, Nevada's residential real estate markets continued to boom at mid-year 1998. The state reported nearly a 24 percent increase in housing permits for the first five months of 1998 compared with the same period in 1997. Although Nevada's 5,000-unit gap in 1997 is less than the 1996 gap, shown in Chart 4, it is still fairly large relative to the state's small population. Despite this gap, the market remains healthy. Existing housing sales in the first quarter of 1998 were at their highest level in ten years, while housing price appreciation remained moderate.

Still, the potential exists for residential overbuilding in Nevada. Although the state's employment growth rate remains high at 4.2 percent for the 12 months ending in June 1998, it is the slowest job growth since 1992. Furthermore, with population growth moderating slightly and permit activity soaring, the housing gap could widen significantly in 1998. Overbuilding is a concern in Nevada because the state's community bank exposure to construction lending as of March 1998 was 15 percent of assets, the highest in the nation.

CHART 4



Implications: Most states in the San Francisco Region have experienced prolonged residential housing booms in the 1990s; however, recent economic and housing conditions may be an indication of change. In this situation, lenders should not assume that the boom in construction will go on indefinitely, especially given the highly cyclical nature of the residential construction sector.

Changing conditions may be especially relevant to the Region's community banks, because as a group they have heavy exposure to construction lending and they have been recording rapid increases in construction and land development loans. The maturity of the nation's economic recovery, the inherent volatility in construction activity, and increased construction lending by banks all indicate that lenders should carefully monitor housing conditions in their markets for signs of weakness. Such action may be especially timely in states like Oregon and Utah, where banks are heavily exposed to construction lending and housing indicators are showing signs of weakness, or in states like Nevada, where residential construction continues to grow faster than household formation.

Gary C. Zimmerman, Regional Economist

Increased Construction Lending and Changing Residential Lending Practices Pose Risks to San Francisco Region Banks

- **The Region's insured financial institutions continue to report strong earnings, solid asset quality, and increased leverage capital ratios.**

- **Amid reports of loosening underwriting standards, the recent growth and high concentrations in construction lending at banks in faster growing states warrant attention.**

- **Residential lending standards have come under pressure from nontraditional lending practices at large banks and nonbank competitors.**

Overview

Most of the insured institutions in the San Francisco Region performed admirably in the first quarter of 1998.

- Strong asset quality and noninterest income growth, coupled with ongoing gains in operating efficiency, continue to drive earnings to record levels. The 873 insured institutions in the Region posted a collective return on assets (ROA) of 1.27 percent and a return on equity of 14.00 percent. Both of these profitability measures compare favorably with the national averages of 1.2 percent and 14.42 percent, respectively, and represent solid increases over prior-year performance.

- Favorable economic conditions also translated into improvement in reported asset quality. As of March 31, 1998, loans that were reported 30 days or more past due plus nonaccrual loans as a percentage of total loans fell to 1.96 percent, well below the national average of 2.23 percent.

- Excellent earnings and minimal asset growth boosted the Region's leverage capital ratio to 7.73 percent, the highest level in over a decade, despite a 73 percent dividend payout ratio.

Although the Region as a whole performed well, the following states are showing signs of deterioration:

Hawaii's prolonged recession continues to have a negative effect on the state's insured financial institutions. As a group, these institutions are the weakest in the Region. During the first quarter of 1998, ROA declined to 0.94 percent from 0.99 percent a year earlier. These returns are well below both the Region's and the nation's ROAs of 1.27 percent and 1.22 percent, respectively. Problem assets in Hawaii are also on the rise. Loans and leases past due 30 days or more plus nonaccrual loans inched up from 3.23 percent to 3.30 percent of total loans during the past 12 months. Problem assets are centered primarily in residential real estate loans and secondarily in commercial real estate loans. Hawaii's recession has hit community banks (less than $1 billion in total assets) the hardest, since they lack the geographic diversity of larger institutions. Although profits at community banks improved during the past 12 months, their ROA of 0.82 percent continues to lag large banks' ROA of 1.01 percent. Furthermore, asset quality at community banks continues to deteriorate. The ratio of loans and leases past due 30 days or more plus nonaccrual loans to total loans at these institutions climbed from 6.64 percent to 7.28 percent during the past 12 months.

The ripple effect of slower economic conditions in **Montana** is showing up in the financials of the state's insured financial institutions, which reported slightly lower profits and an increase in nonperforming assets during the past 12 months. Residential real estate, commercial real estate, and construction loan portfolios accounted for the bulk of the deterioration. The dollar volume of foreclosed properties almost doubled, to $8,149 million. Community banks appear to be bearing the brunt of the state's economic slowdown; their ratio of foreclosed assets plus noncurrent loans to total assets, at 1.12 percent, is the second highest in the Region, behind only Hawaii's community banks.

Community Bank Construction Lending Soars in Some States

Real estate markets in much of the San Francisco Region are experiencing a boom that is fueling a resurgence in construction lending. Although both banks and thrifts are actively involved in construction lending, banks hold the predominant share of construction loans in the San Francisco Region. Furthermore, Chart 1 shows that the construction loan exposure at the Region's community banks[1] is well above the exposure for the Region's large banks (non-credit-card banks with over $1 billion in assets). Among these community banks, those in the Region's faster growing states have a higher level of construction loans than peer institutions in other states. The increased concentration of construction loans in some states raises some concerns, given the apparent loosening of construction loan underwriting standards noted by bank examiners nationwide and the traditionally higher risk of construction lending.

Although the Region's community banks are less heavily exposed to construction loans in aggregate than they were prior to the 1990–91 recession, **Nevada** and **Oregon,** two of the Region's faster growing states, have much higher levels of exposure than they did during that period. Chart 2 shows that, while community banks as a whole in 1990 had about 8.3 percent of their assets invested in construction loans, community banks in Nevada and Oregon currently have 14.7 and 9.2 percent, respectively, of their total assets in construction loans. Chart 2 also reveals that community bank exposure in Nevada far exceeds the level that California's community banks had prior to the 1990–91 recession.

Not only are construction loans at record levels in some states, but growth in construction loans at the Region's community banks increased a robust 28 percent from the first quarter of 1997 to the first quarter of 1998.[2] However, growth has not been uniform across the Region. Community banks in states showing strong economic growth—such as Nevada, **Arizona,** Oregon, **Utah,** and **Washington**—registered some of the largest increases in the percentage of assets held in construction loans. Nevada's community banks, for example, registered an increase of almost 50 percent in construction loans since the first quarter of 1997, while community banks in Arizona, Oregon, and Washington all recorded growth in excess of 30 percent. By contrast, community banks in Hawaii recorded overall declines in construction loans.

FDIC examiners throughout the nation have noted a steady deterioration in construction loan underwriting standards since September 1996, according to the FDIC's ***Report on Underwriting Practices.*** Chart 3 (next page) shows a growing share of banks making speculative construction loans, financing borrower interest payments during the loan term, and relying solely on the project for repayment. In particular, Chart 3 shows that the percentage of banks frequently or commonly funding speculative construction loans increased from about 11 percent as of September 1996 to almost 40 percent as of March 1998. Prudent underwriting standards are often an institution's best means of

[1] Community banks are defined here as non-credit-card banks with total assets less than $1 billion.

[2] A constant sample of banks during this period was utilized to minimize the effects of industry mergers, acquisitions, and consolidations.

CHART 1

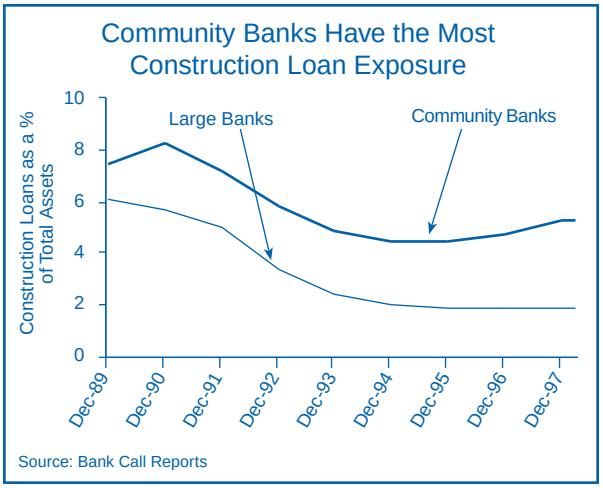


CHART 2

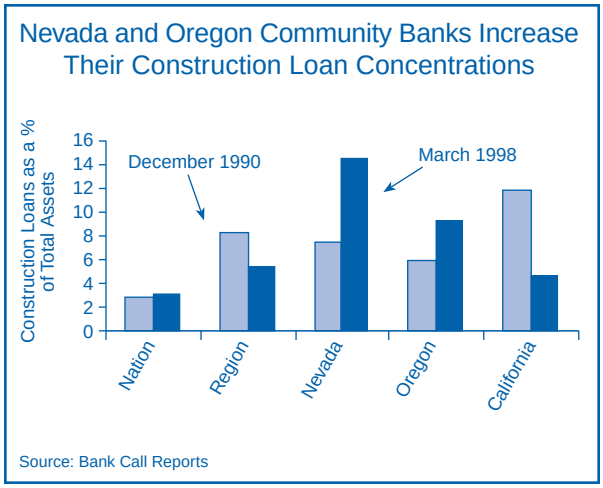
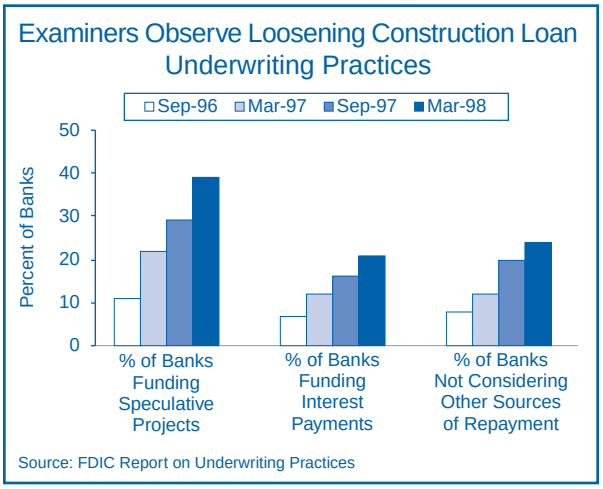


CHART 3



limiting the risk associated with a concentration in a particular category of assets. Looser underwriting standards can weaken a bank's ability to withstand a downturn in the economy.

Several factors make construction lending a risky line of business for a bank. First, the construction industry is one of the most highly cyclical sectors of the economy and is extremely dependent on favorable economic conditions and interest rates (see ***Signs of a Pause in the Prolonged Residential Housing Boom Raise Concerns about Banks' Exposure to Construction Lending***). Second, some key risks are inherent in all construction lending: cost overruns; the uncertainty of the value of the project upon completion; the lengthy lags between project planning, construction, and completion; and the fact that partially completed projects typically have substantially less value than completed projects. While some risks in construction lending (such as its dependence on interest rates and economic conditions) are beyond bank management's control, management can somewhat mitigate these macroeconomic risks with concentration limitations, prudent underwriting practices, and increased capital and reserve levels.

Implications: Community banks in some of the Region's faster growing states have much higher levels of exposure to construction lending than they did before the 1990–91 recession, and recent growth in construction lending at these institutions has been especially strong. Furthermore, economic factors such as the slowdown in population growth and the gap between permits issued and new household formation in some of the faster growing states could negatively affect banks concentrated in construction lending in these states. Loosening underwriting standards and the traditionally higher risk of construction lending also pose risks in the event of an economic downturn. Managers of insured financial institutions with high concentrations in construction loans should closely monitor local economic and real estate market conditions.

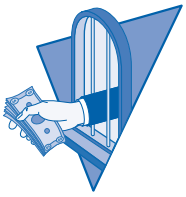
Residential Lending Standards Come under Pressure from Large Banks and Nonbank Lenders

In addition to increasing their exposure to construction loans, it appears that some banks may be easing credit standards in an effort to compete for residential mortgages and other consumer loans. Throughout the nation, finance companies and other subprime lenders are offering loan packages that allow the consumer to consolidate all mortgage, home equity, and credit card debts into one loan secured by the borrower's residence. Debt consolidation loans are not a new idea; however, some institutions have acknowledged increasing the maximum threshold amount financed in relation to the value of the collateral. Loan-to-value (LTV) ratios have increased from previous standards of 80 to 90 percent to as much as 125 percent of appraised value.

Some banks in this Region are joining this trend toward high LTV residential lending: A number of institutions routinely offer 100 percent financing. Institutions extending this type of credit also are permitting extended periods of interest-only payments, in some cases as long as ten years. It appears that most small community banks are not actively seeking these types of loans. However, interest in participating in high LTV residential loan programs could increase if both consumer demand and competition from larger institutions continue to grow.

Residential mortgage lending represents a significant business for insured financial institutions in the Region. A total of 272 institutions hold portfolios of residential mortgage loans that exceed 25 percent of total loans and 100 percent of Tier 1 capital. By the first quarter of 1998, insured institutions in the Region had over $281 billion or about 41 percent of their total loans in 1- to 4-family mortgages, making residential lending the largest single loan category for the Region's institutions. The Region's banks currently have approximately 37 percent of the Region's total outstanding 1- to 4-family mortgages, up from 25 percent as of year-end 1984.

Underwriters of high LTV mortgages should be careful not to make credit and pricing decisions based on assumptions that the favorable economic conditions experienced over the past six years will continue indefinitely. Low interest rates, coupled with high employment and rising income levels, have contributed to consumers' ability to service increasing debt loads. These circumstances also are major factors in the increasing value of residential properties in most of the Region's major markets. Adverse changes in these key factors could increase potential credit losses from this type of lending. There are additional considerations that lenders should take into account:



- Loans collateralized by 1- to 4-family dwellings with high LTVs generally will not meet secondary market standards set by government-sponsored enterprises, such as Fannie Mae and Freddie Mac, meaning the loans will likely be less liquid and will remain in the loan portfolio (at least initially).

- Banks that engage in this type of lending may be more exposed to changing economic conditions that adversely affect consumer income levels and the value of residential properties.

While consolidating unsecured debt into a secured loan structure may provide some comfort to the lender, the possibility remains that some consumers will simply increase credit card debt after the consolidation is completed, thereby increasing the likelihood of bankruptcy.

Implications: Single-family residential mortgage lending is the most significant loan category for insured financial institutions in the San Francisco Region. Some institutions have loosened underwriting standards in response to increased competition from finance companies and subprime lenders. High LTV debt consolidation financing is more common now than in the past. The performance of these loans is at greater risk in the event of an economic downturn than traditional single-family mortgage loans. Consequently, management needs to ensure that changes in the credit risk profile of the loan portfolio caused by eased underwriting standards are incorporated into the bank's allowance for loan and lease loss adequacy reviews.

Millen L. Simpson, Financial Analyst
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