

Supervisory Insights

Devoted to Advancing the Practice of Bank Supervision

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Supervisory Insights

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Over the past 15 years, there has been a significant shift from asset-based liquidity management to more complex funding strategies that emphasize liability sources and off-balance-sheet funding. Consistent with this migration, measurements have shifted from more simplistic ratios toward more forward-looking measures. This article highlights some of these changes and discusses the importance of scenario analysis and contingency funding plans.

Managing Commercial Real Estate Concentrations 12

Rising growth in commercial real estate (CRE) lending and subsequent concentrations in many banks led to the joint agency supervisory guidance on managing CRE risk in 2006. This article discusses the scope of the guidance and elaborates on many of the topics in the guidance. Topics covered include market monitoring and analysis, credit underwriting and administration, portfolio management, credit risk rating and review, and stress testing. The authors also draw from their firsthand observations to share methods banks use to monitor and control CRE concentration risk.

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Letter from the Director

Since the publication of the June 2007 issue of *Supervisory Insights*, it has become increasingly clear that banks are entering a more challenging phase of the credit cycle. Risks that may have seemed hypothetical last year have become more concrete. In this more challenging environment, bank supervisors play an important role in ensuring that banks are a source of capital strength and liquidity for the financial system and a trusted source of financial services for consumers.

The articles in this issue of *Supervisory Insights* cover a range of topics of current interest in the bank regulatory arena. As always, the intent is to provide concrete information, derived from firsthand experience, that will be useful to bankers, bank examiners, and practitioners in related disciplines.

Liquidity has taken center stage in the last few months as investors have tried to limit their exposures to subprime mortgages, certain leveraged loans, and other illiquid or complex assets. ***“Liquidity Analysis: Decades of Change”*** describes how banks’ and examiners’ view of liquidity management has evolved in response to changes in the financial landscape. The article outlines the funding trends that have elevated some banks’ liquidity risk profiles and highlights the importance of a forward-looking approach to liquidity planning.

Bank supervisors continue to be attentive to the risk profiles of institutions with significant concentrations in commercial real estate, as evidenced by the publication of interagency guidance on this topic in December 2006. ***“Managing Commercial Real Estate Concentrations”*** provides additional context on some of the key risk management issues and practices that the authors have observed at banks both large and small.

Preventing bank fraud remains a high priority for both law enforcement and supervisory agencies. One of the primary means of monitoring potentially illicit activities is through Suspicious Activity Reports, or SARs. The usefulness of the information in the SAR is largely dependent upon the quality and timeliness of the data itself. ***“Connecting the Dots.... The Importance of Timely and Effective Suspicious Activity Reports”*** describes the importance of SARs and explains how banks can make their SARs more effective.

Data collected under the Home Mortgage Disclosure Act (HMDA) continue to reveal that certain minorities are more likely to receive high-cost mortgages than other racial or ethnic groups. As we begin to analyze the third year of HMDA pricing data, ***“HMDA Data: Identifying and Analyzing Outliers”*** shares insights on our analysis process and lessons learned from our analysis of the 2004 and 2005 pricing data.

The banking agencies issued guidance in 2005 aimed at the increasing instances of identity theft and online banking fraud. ***“Authentication in Internet Banking: A Lesson in Risk Management”*** discusses some of the risks inherent in Internet banking, the 2005 guidance intended to address these risks, and strategies that financial institutions and technology service providers have implemented to strengthen authentication standards for higher-risk online banking activities.

Our feature ***“From the Examiner’s Desk”*** uses experience from FDIC-supervised institutions in our Dallas Region to provide insights related to the risks of leverage strategies and associated expectations for managing those risks. Our other regular feature, ***“Accounting News,”*** will return in our Summer 2008 issue.

We encourage readers to continue to provide comments on articles, to ask follow-up questions, and to suggest topics for future issues. All comments, questions, and suggestions should be sent to **SupervisoryJournal@fdic.gov**.

Sandra L. Thompson
Director
Division of Supervision and
Consumer Protection

Liquidity Analysis: Decades of Change

FDIC Training Center: 1992

The year is 1992, and the FDIC is holding one of its first Financial Institution Analysis Schools in the newly constructed FDIC Seidman Center in Arlington, Virginia. The instructors have covered all other CAMELS component ratings,¹ and now a presumably unlucky instructor must rush through the final topic: *liquidity*. The instructor opens with “Liquidity should really be rated a 1 or a 5...you either have liquidity or you don’t.” While this definition perhaps possesses a kernel of truth in the extreme, many of the examiners and other specialists attending this session would come to find this feast-or-famine view of liquidity decidedly unhelpful as they began assessing widely divergent liquidity practices in the field.

After his opening statement, the instructor walked the class through several static balance sheet ratios commonly used by bankers and regulators to assess liquidity risk—ratios that implicitly assumed loans were illiquid, securities were liquid, and insured deposits were stable. Over the past 15 years, changes in funding have fundamentally altered these assumptions, making liquidity analysis and risk assessment more complex. This article will look at the most significant liquidity management advances over the past 15 years, including forward-looking cash flow metrics, more robust scenario analysis, and improved contingency funding planning. The importance of these tools is highlighted by recent events, which illustrate how rapidly liquidity conditions can change.

Regulatory Importance of Liquidity

During booming economic environments it is easy to take for granted the

availability of abundant liquidity. During periods of economic downturn, however, liquidity can quickly be elevated to the most important CAMELS component, as it is critical to the continued solvency of a distressed financial institution. A bank may have good asset quality, strong earnings, and adequate capital, but if it is unable to maintain sufficient liquidity, it runs the risk of failure. And the speed at which liquidity can evaporate makes effective risk analysis particularly relevant to bank regulators.

Analysis Framework

The level of a bank’s liquidity is analogous to the amount of water in a bathtub. There are multiple faucets that pour liquidity (cash inflows) into the tub and multiple drains where liquidity leaks out (cash outflows) of the tub. No bank has enough liquidity if we turn off all faucets and open all drains for an extended period. In fact, most banks could not long withstand an extended period when the pace of cash outflows rapidly exceeds the pace of cash inflows. By contrast, in an increasingly competitive environment, few banks can be profitable when drowning in liquidity by pursuing a liquidity maximization strategy. Liquidity management fundamentally involves optimizing the level of liquidity by identifying a variety of faucets to add cash flow when liquidity gets tight and developing strategies to reduce the liquidity drains during times of rapid outflow.

Bank managers can choose to emphasize liquidity sources from either the asset or the liability side of the balance sheet. Fifteen years ago, liquidity at most (nonmoney center) banks was biased toward asset liquidity, and analysis was less complex. Most often, large liquid investment portfolios provided for

¹ There are six regulatory component ratings: capital, asset quality, management, earnings, liquidity, and sensitivity to market risk, collectively known as CAMELS. Each individual component is rated on a scale from 1 to 5, with 1 being the best and 5 being the worst rating.

contingent liquidity needs and complemented operating cash flows as primary sources of liquidity. Over the past decade, liability sources of liquidity have become more centralized and liquidity analysis has become far more complex. Even the smallest banks have had to adjust to a decline in core deposits, and most banks have sought to improve profitability by reducing the size and liquidity of investment portfolios. Thus, most banks use wholesale funding sources and off-balance-sheet sources of liquidity regularly.

Role of Low-Probability Stress Scenarios in Liquidity Management

Bank managers must focus on adequate liquidity during both normal times and times of stress. Liquidity managers are rightly concerned with profitable, efficient operations in normal economic environments. The best managers use scenario analysis to balance the inverse relationship between liquidity and earnings during good times, but will also spend time evaluating the impact of stressful, low-probability liquidity events. When evaluating liquidity risk and isolating the liquidity component rating, examiners are primarily concerned with the risk management information derived from management's evaluation of more extreme liquidity scenarios.

These low-probability scenarios typically come in two broad categories: bank-specific and systemic. Bank-specific crisis scenarios are often the most useful and may include scenarios with deteriorating asset quality or operational fraud. For example, as credit quality for a specific bank deteriorates, the Federal Home Loan Bank (FHLB) or Federal Reserve Bank might restrict the availability of the funding that would otherwise be available by imposing larger haircuts, higher rates, or limits on eligible collateral. Most banks would benefit from considering the effect of these and other adverse scenarios on their operations. Systemic events may

involve disruptions to the broader capital markets or the payment system. Events in the summer of 2007 highlighted the possibility of a systemic shock wherein an entire class of securities (mortgage-backed securities containing subprime collateral) becomes illiquid and an entire class of wholesale funding sources (asset-backed commercial paper) becomes unattractive. These events have illustrated how complex and interlinked financial markets have become: liquidity events affecting one sector can be correlated in unexpected ways to liquidity of other sectors.

Events affecting banks' liquidity are, almost by their nature, unexpected. Unexpected changes in credit risk, operational disruptions, regulatory or policy changes can all affect the liquidity profile of specific asset classes, individual banks, or the financial system. Market participants experiencing these events tend to view them at the time as unprecedented. This perception is correct in the limited sense that each event is caused by unique circumstances. Nevertheless, a broader view of such events over time suggests that unexpected and unprecedented events happen relatively often. This observation suggests a lesson for liquidity risk management: Expect the unexpected. (See Table 1.)

Liquidity Risk Management— Balance Sheet Trends Diversify Liquidity Sources

Against the backdrop of uncertainty around potential liquidity events, bank managers have restructured their balance sheets and sought additional liquidity sources. Starting in the 1990s, loan growth has been outpacing traditional deposit growth, requiring banks to adjust their balance sheets to meet borrowers' demands. The level of core deposits began to erode, in part, because bank deposit accounts lost significant ground to higher-yielding mutual funds and the euphoria of the stock market, particularly during the late 1990s. Thus, as shown in Charts 1 and 2, financial institutions increasingly have

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Table 1

Expect the Unexpected	
1987	U.S. Stock Market Crash
1990	Collapse of U.S. high-yield bond market
1991	Oil price surge
1992	Britain removes pound from the European Exchange Rate Mechanism
1994	U.S. bond market crash
1995	Mexican crisis
1997	Asian crisis
1998	Russian default, ruble collapse, Long-Term Capital Management bailout
2000	Technology, media, and telecom sectors collapse
2001	September 11 payment system disruption
2002	Argentine crisis
2002	German banking crisis
2007	U.S. subprime mortgage turmoil
Next	?

Source: Freely adapted from a presentation by Leonard Matz, International Director, BancWare Academy for SunGard BancWare, at FFIEC Capital Markets Specialist Conference in June 2007.

funded loan growth not only by reducing their level of highly liquid investments, but also by seeking alternative funding sources. Now, most banks fund a portion of their balance sheet with wholesale funding such as federal funds, FHLB advances, repurchase agreements, and brokered deposits.

Reliance on FHLB Advances and Brokered Deposits Increases

Congress established the FHLB system in 1932 to facilitate the extension of mortgage credit to individuals by offering funding primarily to thrift institutions that were collateralized by loans on one- to four-family residential properties. As illustrated in Table 2, over the

past ten years, FHLB borrowings have increased significantly as legislation² expanded the role of the FHLB and as collateral requirements eased.

Brokered deposits have been used since the early 1950s and for much of that time have exemplified potential risks associated with banks' reliance on volatile funding sources. In 1959, for example, the FHLB Board limited brokered deposits to five percent of total deposits. In 1981, this limit was repealed, a decision that some observers subsequently viewed as an important contributor to the savings and loan crisis of the 1980s. As a result, in 1989, Congress began restricting insured institutions' access to brokered deposits, and by 1991, only well-capitalized institutions could accept brokered deposits without restriction.³ Banks' and thrifts' overall use of brokered deposits is comparable now in dollar volume to their use of FHLB advances (compare Tables 2 and 3).

Many interest rate sensitive deposits, such as Internet deposits, may not fall within the technical definition of brokered deposit (see 12 CFR 337.6), but their inherent risk characteristics are similar—premium rates, no relationship with the bank, and less stable sources of funding. While neither Call nor Thrift Financial Reports gather data on such deposits, there is little doubt that the level of rate-sensitive deposits held by banks and thrifts is significantly greater than that shown by the brokered deposits in Table 3.

Liquid Securities Decline

Investment securities are often used as a secondary source of liquidity through maturing securities, the sale of securities for cash, or pledging securities as collateral in a repurchase agreement or other borrowing arrangement. In this manner,

² Financial Institutions Reform, Recovery and Enforcement Act of 1989 and the Gramm-Leach-Bliley Act of 1999.

³ Institutions that are "adequately capitalized" may apply to the FDIC for a waiver in accordance with FDIC Rules and Regulations, 12 CFR 337—Unsafe and Unsound Banking Practices, section 337.6 Brokered Deposits, (www.fdic.gov/regulations/laws/rules/2000-5900.html). Capital categories are defined in FDIC Rules and Regulations, 12 CFR 325—Capital Maintenance, Subpart B – Prompt Corrective Action (www.fdic.gov/regulations/laws/rules/2000-4400.html).

Nondeposit Funding Sources Increase

Chart 1

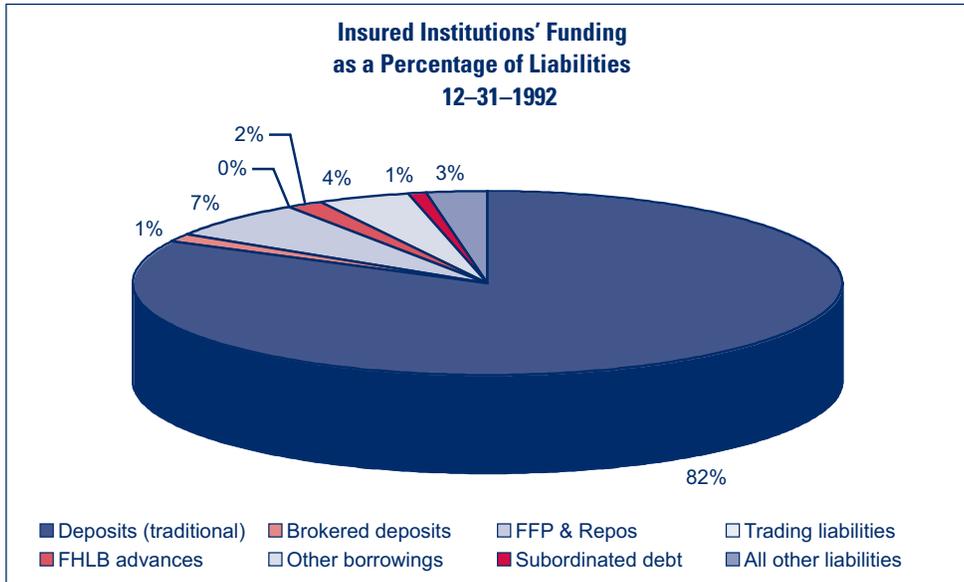


Chart 2

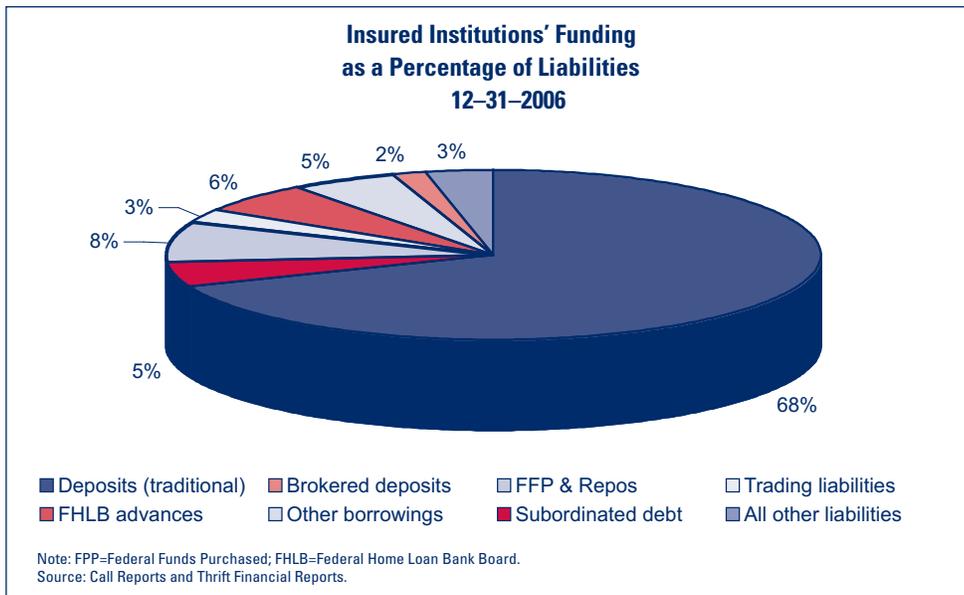


Table 2

	Total Membership	Total Borrowing Commercial Banks	Total Borrowing Thrifts	Total Advances
12/31/96	6,146	2,165	1,225	\$161 billion
12/31/06	8,125	4,245	954	\$641 billion

Source: Federal Home Loan Banks 1996 and 2006 combined financial reports.

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Table 3

Brokered Deposits Near FHLB Advance Levels		
Wholesale Funding Held by Financial Institutions (in millions)		
	Brokered Deposits	FHLB Advances
12/31/2006	\$523,014	\$640,681
12/31/2005	\$481,870	\$598,341
12/31/2004	\$422,626	\$541,857
12/31/2003	\$329,224	\$479,736
12/31/2002	\$284,613	\$450,587
12/31/2001	\$261,166	\$452,527

Source: Call Reports and Thrift Financial Reports

the securities portfolio serves as a reserve to help balance potential funding mismatches and provides a cushion for unanticipated funding needs.

The level of securities portfolios has declined slightly as a percentage of total assets—from 18.9 percent in 1996 to 16.7 percent by 2006.⁴ While the level of securities has declined only modestly, the liquidity of investment portfolios has declined more materially as banks have pledged more of their securities and as the composition of securities portfolios has changed.

Often, banks pledge investment securities as collateral for borrowing arrangements, such as secured FHLB borrowings and repurchase agreements, or to secure public deposits. Many times, the best or most liquid assets are those pledged. In each of the past five years, approximately 88 percent of FDIC-insured institutions reported that at least a portion of their securities portfolio was pledged. Furthermore, a larger volume of securities are being pledged today than ever before, primarily due to the expansion of FHLB advance funding to commercial banks. For example, the volume of pledged securities to total securities for FDIC-insured institutions averaged 44 percent in 2001;

in 2006, the average volume increased to 50 percent. The median percentage in 2006 also equaled 50 percent, which means that half of all banks in the United States have encumbered more than half of their securities portfolio through pledging, making those securities unavailable as a source of liquidity.⁵

Over time, perhaps due to intense pressure from shareholders to enhance earnings, the composition of banks' investment portfolios has shifted in a way that appears to reflect a preference for yield at the expense of liquidity. For example, at year-end 1992, U.S. Treasury securities comprised 27 percent of insured banks' investment portfolios; at year-end 2006, treasuries comprised only 2 percent of investment portfolios. During the same period, investment portfolios markedly increased their reliance on a variety of mortgage-related securities. Some of these nonagency securities have recently seen a marked decline in liquidity.

Liquidity Risk Management—Moving beyond Traditional Liquidity Ratios

The best liquidity managers have moved beyond static balance sheet ratios in favor of forward-looking metrics, including cash flow projections and multiple scenario modeling. These managers also have developed contingency funding plans that consider the level and severity of various potential liquidity events.

Quantifying liquidity risk today is not as straightforward as it has been historically owing to the growth of wholesale borrowings, asset securitization, and Internet banking. In the past, financial institutions often relied on the assumption that any needed liquidity would come from the liquidation of their investment portfolios, preferably from short-term, highly

⁴ FDIC Statistics on Banking. See <https://banks.data.fdic.gov/bankfind-suite/>.

⁵ FDIC Uniform Bank Performance Reports. See <https://www.fdic.gov/resources/bankers/call-reports/call-data-ubpr.html>.

marketable securities. It was also fairly safe to assume that most liquidity pressure would come from deposit runoff. Given these assumptions, one could easily measure liquidity from a handful of static balance sheet ratios. Today, however, these assumptions no longer hold true, and banks have several more liquidity management options available to them, which also complicates how banks monitor—and examiners evaluate—liquidity.

Today, monitoring liquidity in many institutions requires careful consideration of potential adverse scenarios rather than just the quick calculation of a few ratios. Generally, banks should estimate likely future cash flows, stress those cash flow estimates under various scenarios, and develop detailed plans for coping with potential shortfalls.

Pro Forma Cash Flows

Pro forma cash flow statements are often a critical tool for managing liquidity risk. In the normal course of measuring and managing liquidity risk and analyzing an institution's sources and uses of funds, effective liquidity managers project cash flows under various liquidity scenarios. Cash flow projection statements may range from simple spreadsheets to very detailed reports, depending on the complexity and sophistication of the institution and its liquidity risk profile. While many banks are effectively using asset-liability management (ALM) software to monitor interest rate risk, fewer are using ALM software packages to measure liquidity, although much of the data captured in these models could be useful to liquidity management.

Given the critical importance of assumptions in constructing measures of liquidity risk and cash flow projections, institutions should ensure that assumptions used are reasonable and appropriate. Assumptions used in assessing the

liquidity risk of complex instruments, assets, liabilities, and off-balance-sheet positions with uncertain cash flows, market value, or maturities should be subject to documentation and review. Assumptions regarding the stability of retail deposits, brokered deposits, and secondary market borrowings should also be subject to scrutiny. Institutions with complex liquidity profiles should perform sensitivity tests measuring the effects of changes to material assumptions.

Contingency Funding Plans

Unforeseen liquidity events can negatively affect all institutions, regardless of their size and complexity. Such risks could arise from the inability to fund asset growth, difficulty renewing or replacing funding as it matures, the exercise of options by customers to withdraw deposits or use off-balance-sheet commitments, and other events. Both high-probability/low-impact events and low-probability/high-impact events can cause liquidity pressure—immediate and short-term or longer-term, sustained situations—that may escalate over time.

Institutions that rely on liability-based liquidity management benefit from having a contingency funding plan (CFP) that addresses when it is prudent to access alternative funding sources. Incorporating a CFP into an overall liquidity policy helps management monitor liquidity risk, ensure that an appropriate amount of liquid assets are maintained, measure and project funding requirements during various scenarios, and manage access to funding sources.⁶ In a crisis situation, management often has limited time to form a strategy, so it is important to have a well-developed contingency liquidity plan before a crisis occurs.

A robust CFP should identify relevant bank-specific and systemic stress events for which an institution should prepare.

⁶ From the FDIC's *Risk Management Manual of Examination Policies, Section 6.1—Liquidity*. See <https://www.fdic.gov/regulations/safety/manual/section6-1.pdf>.

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Stress events may include changes in credit ratings, deterioration in asset quality, Prompt Corrective Action (PCA) downgrade,⁷ unplanned asset growth, operating losses, negative media coverage, or other events that may cause market participants to question an institution's ability to meet its obligations.

A liquidity stress event often progresses through various stages and levels of severity. Institutions can use the different stages or levels of severity identified to design early warning indicators, assess potential funding needs at various points in a developing crisis, and specify comprehensive action plans. They should also conduct periodic testing of borrowing lines to assess the timing and logistical concerns involved with borrowing.

Managing Risks of More Complex Funding Strategies

An institution's financial performance and its market perception could have significant implications for the adequacy of its liquidity and cash flow projections, especially in institutions that rely significantly on credit-sensitive funds such as FHLB borrowings and federal funds. The FHLB scrutinizes an institution's credit risk profile on an ongoing basis. If asset quality deteriorates, the FHLB may refuse to renew advances upon maturity, accelerate repayment of advances due to a covenant breach, raise collateral requirements, or reduce funding lines. Additionally, many community banks' cash flow projections involve the use of back-up correspondent bank federal funds lines and securities sold under repurchase

agreement lines with securities brokers/dealers. These back-up lines may be a viable option under normal business conditions; however, many federal fund credit agreements contain a material adverse change clause, which allows the correspondent banks to terminate or reduce the lines at the first sign of trouble. Similarly, securities brokers/dealers may require the institution to pledge more collateral on repurchase transactions if the institution's financial condition deteriorates or the market value of the securities pledged declines. Management should understand the ramifications of having federal funds lines and FHLB advances curtailed if the institution's financial strength deteriorates, and the bank's CFP should identify alternative sources of funding.

Banks that use brokered deposits should monitor their capital levels closely, be familiar with the regulation governing brokered deposits, and understand the requirements for requesting a waiver from the FDIC.⁸ Deposits attracted over the Internet, through CD listing services, or through special advertising programs offering premium rates (to customers without another banking relationship) also require special monitoring. In May 2001, the federal bank regulatory agencies issued a joint agency advisory statement on brokered and rate-sensitive deposits, warning institutions that rely on a significant amount of these deposits to have proper risk management practices in place.⁹ For example, these institutions should have cash flow projections that address the risk that these

⁷ Capital categories are defined in FDIC Rules and Regulations, 12 CFR 325, Capital Maintenance, Subpart B—Prompt Corrective Action. See www.fdic.gov/regulations/laws/rules/2000-4400.html.

⁸ Banks that are considered only "adequately capitalized" under the Prompt Corrective Action (PCA) standard must receive a waiver from the FDIC before they can accept, renew, or roll over any brokered deposit. They also are restricted in the rates they may offer on such deposits. Banks falling below the adequately capitalized range may not accept, renew, or roll over any brokered deposit nor solicit deposits with an effective yield more than 75 basis points above the prevailing market rate. These restrictions will reduce the availability of funding alternatives as a bank's condition deteriorates.

⁹ FDIC PR-37-2001, Joint Agency Advisory on Brokered and Rate-Sensitive Deposits, May 11, 2001, at www.fdic.gov/news/news/press/2001/pr3701.html. The federal banking regulators include FDIC, Federal Reserve Board, Office of the Comptroller of the Currency, and Office of Thrift Supervision.

deposits may not roll over and provide a reasonable alternative funding strategy.

Banks that engage in asset securitization should be aware of the liquidity challenges associated with this activity. One significant liquidity danger relates to the early amortization clauses in the contracts/agreements. Such clauses are typically triggered by an indicator of deterioration in the performance of the underlying portfolio of securitized loans/receivables. The purpose of the early amortization is to protect investors from prolonged credit exposure in a pool of receivables by accelerating the repayment of principal of the securities. Investors may also lose confidence in the stability of the institution's asset-backed securities, limiting the institution's ability to raise new funds through securitization. Moreover, banks may be explicitly or implicitly obligated to repurchase loans previously sold. At the same time, the institution is continuing to book new receivables that need to be funded. In 2002, the federal banking agencies issued an advisory statement on asset securitization that stated, in part, that "any banking organization that uses securitization as a funding source should have a viable contingency funding plan in the event it can no longer access the securitization market."¹⁰

New Liquidity Metrics Provide Foundation for Next Big Stress Event

The banking industry has moved from asset-based liquidity management to a more complex world of liability and off-balance-sheet funding. Consistent with this movement, liquidity measurements have migrated from simplistic ratios that give an idea of the static level of liquidity toward forward-looking measures. These forward-looking measures should help bankers identify

alternative cash flow sources and strategies to reduce the magnitude of cash flow drains during times of stress. The knowledge gained by funding managers contemplating different liquidity situations that could arise through scenario analysis and planning a response to a liquidity situation further demonstrates the benefits of adequate contingency funding plans and ongoing scenario analyses.

Recently, investor confidence in the subprime loan market and commercial paper market has dropped. The marketability of subprime loans and mortgage-backed securities containing subprime collateral changed significantly in a short period. Spreads widened on higher-quality mortgage-backed securities, and institutions that focused on the subprime (and alt-A) market have seen a decline in market value.

Regardless of the outcome of this recent market turmoil, we can be certain there will be other unexpected liquidity events. For this reason, bankers and examiners alike need to consider a range of stressful liquidity environments to ensure adequate liquidity tomorrow.

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¹⁰ FIL 53-2002, *Interagency Advisory on the Unsafe and Unsound Use of Covenants Tied to Supervisory Actions in Securitization Documents*, May 23, 2002, at www.fdic.gov/news/news/financial/2002/fil0253.html.

Managing Commercial Real Estate Concentrations

Commercial real estate (CRE) loans comprise a major portion of many banks' loan portfolios. Demand for CRE lending—a traditional core business for many community banks—has been very strong in recent years, and a growing number of banks have CRE concentrations that are high by historical standards and rising. Growth in land acquisition, development, and construction (ADC) lending has been especially pronounced. Many de novo banks in areas with significant job and population growth (predominately in East and West Coast states) have used ADC loans as the primary asset class to drive growth and meet pre-opening projections. The rapid growth in CRE exposures in recent years presents additional challenges for bank management as it monitors and controls risks it may not have faced in the past.

In response to rapid growth in CRE loan concentrations and observed weaknesses in risk management practices at some institutions, the Federal Deposit Insurance Corporation (FDIC), the Board of Governors of the Federal Reserve System (FRB), and the Office of the Comptroller of the Currency (OCC) (collectively, the federal banking agencies) published *Joint Guidance on Concentrations in Commercial Real Estate Lending, Sound Risk Management Practices* (CRE guidance) in December 2006.¹ This article provides additional information and context to some of the topics discussed in the CRE guidance, drawn from the authors' firsthand observation of the risk management practices of both large and small banks. It covers market monitoring and analysis, credit underwriting and administration, portfolio management, credit risk rating and review, and stress testing.

Background

According to *History of the Eighties—Lessons for the Future*, the high number of bank and savings institution failures during the 1980s and early 1990s can be attributed primarily to overinvestment in CRE loans.² Weak underwriting standards and portfolio management techniques during this time contributed to a significant oversupply of CRE properties that weakened the entire CRE market, leaving borrowers unable to repay their loans and collateral that provided far less support than originally thought. Other factors that contributed to the CRE losses included:

- Lack of market information
- Highly leveraged transactions
- Relatively low borrowing costs and the easy availability of credit
- Government policy, including income tax benefits
- Long gestation periods that allowed supply-and-demand dynamics to change before a project's completion
- Nonrecourse lending and legal structures that shielded project sponsors from risk
- Out-of-area lending, including the purchase of loan participations from out-of-area lenders
- An unregulated real estate appraisal industry that often used inflated assumptions and relied on inexperienced appraisers

Today, many lenders, directors, and senior officers have not experienced a CRE downturn in their careers. They may never have learned the lessons of

¹ *Concentrations in Commercial Real Estate Lending, Sound Risk Management Practices*, Federal Register, Vol. 71, No. 238, December 12, 2006, pp. 74580–74588 (CRE Guidance). Also see FDIC FIL-104-2005 at www.fdic.gov/news/news/financial/2006/fil06104.html.

² See FDIC's *History of the Eighties—Lessons for the Future*, December 1997, at www.fdic.gov/bank/historical/history/contents.html.

the 1980s or may view them as distant history that “can’t happen again.” Industry and regulatory changes that arose from the tumult of the 1980s remain intact and are intended to prevent a re-occurrence of the ill-conceived practices of the past. For example, the appraisal industry is now regulated, and appraisal quality is far superior to what it was in the 1980s. Banks and thrifts must now follow federal appraisal regulations, and regulators require banks to establish an effective real estate appraisal and evaluation program to ensure independence and improve quality.^{3,4}

In addition to the changes regarding appraisals, the federal banking agencies, along with the Office of Thrift Supervision (OTS), have established underwriting and risk management requirements.⁵ A pillar of these requirements is loan-to-value (LTV) limits for different CRE property types. Adhering to these regulatory LTV limits should make institutions less vulnerable to downturns in CRE markets, as borrowers will have more tangible equity in the collateral real estate to cushion against declining values. Conversely, institutions that ignore these LTV limits and have substantial volumes of high LTV loans are more susceptible to the adverse affects of CRE downturns.

CRE loan growth recently prompted regulators to issue guidance to address concerns about CRE concentrations and to provide expectations for managing a concentrated portfolio. The CRE guidance recognizes that diversification can be achieved within CRE portfolios and differentiates risk in different types of

CRE loans. The guidance “focuses on those CRE loans for which the cash flow from the real estate is the primary source of repayment rather than loans to a borrower for which real estate collateral is taken as a secondary source of repayment or through abundance of caution.”⁶ The target of the guidance, then, generally would include development and construction loans for which repayment is dependent upon the sale of the property as well as properties for which repayment is dependent upon rental income.

The CRE guidance also identifies institutions that are potentially exposed to significant CRE concentration risk as those that have experienced rapid growth in CRE lending, have notable exposures to a specific type of CRE, or are approaching or exceed the following supervisory criteria:

- Total loans reported on the Report of Condition for construction, land development, and other land represent 100 percent or more of the institution’s total capital; or
- Total CRE loans as defined in the CRE guidance represent 300 percent or more of the institution’s total capital, and the outstanding balance of the institution’s CRE loan portfolio has increased by 50 percent or more during the prior 36 months.

These criteria are not limits and are viewed neither negatively nor as a safe haven. A bank can have significant diversification within its CRE portfolio or have a concentration within a specific CRE category. If a bank’s portfolio goes

³ The federal bank and thrift regulatory agencies have adopted substantially similar appraisal regulations. See 12 CFR 323 (FDIC); 12 CFR Part 34, subpart C (OCC); 12 CFR 208.18 and 12 CFR 225, subpart G (FRB); and, 12 CFR 564 (OTS).

⁴ FIL-74-94, *Interagency Appraisal and Evaluation Guidelines*, November 11, 1994, www.fdic.gov/news/news/financial/2003/fil0384b.htm.

⁵ See *Interagency Guidelines for Real Estate Lending Policies*: 12 CFR 365 and appendix A (FDIC); 12 CFR 34, subpart D and appendix A (OCC); 12 CFR 208, subpart E and appendix C (FRB); and 12 CFR 545 and 563 (OTS). See also *Interagency Guidelines Establishing Standards for Safety and Soundness*: 12 CFR 364, appendix A (FDIC); 12 CFR 30, appendix A (OCC); 12 CFR 208, appendix D-1 (FRB); and 12 CFR 570, appendix A (OTS).

⁶ CRE Guidance, p. 74585.

outside of these general guidelines, as many do, the bank will not automatically be criticized, but heightened risk management practices may be needed. Different CRE types may have different risk characteristics. Risk management practices should be commensurate with the complexity of the bank and its portfolio. The guidance states, “in evaluating CRE concentrations, the Agencies will consider the institution’s own analysis of its CRE portfolio, including consideration of factors such as:

- Portfolio diversification across property types.
- Geographic dispersion of CRE loans.
- Underwriting standards.
- Level of pre-sold units or other types of take-out commitments on construction loans.
- Portfolio liquidity (ability to sell or securitize exposures on the secondary market).⁷

These factors could mitigate the risk posed by the concentration. Additionally, banks that have experienced recent, significant growth in CRE lending will receive closer regulatory review than those that have demonstrated a successful track record of managing the risks of CRE concentrations.

The remainder of this article provides context and additional information for some of the topics addressed in the CRE guidance.

Market Monitoring and Analysis

A bank’s ability to monitor developments in its CRE market area is a critical element of successful CRE lending. Various tools may be available to monitor CRE markets, depending on the size of the market. In many larger metropolitan statistical areas (MSAs), institutions can

obtain market data for CRE other than single-family residential properties from national providers such as Property & Portfolio Research, Real Estate Investment Services, and Torto-Wheaton Research. Residential market information is also available from a number of national and regional providers. Outside of large MSAs, vendor data are often unavailable. In these areas, in-house knowledge and communication with local builders, developers, real estate agents, and civic leaders may be the primary tools for gathering information on market activity and gauging market conditions.

The level of CRE monitoring required can differ among institutions depending on exposure level or perceived risk in a product type or geographic area. Institutions involved in construction and development lending have a greater need to monitor CRE markets, as conditions can change dramatically between the time an institution makes a loan commitment and the time a project is completed. Monitoring speculative single-family housing development can be especially challenging. Institutions must have a clear understanding of the demand for housing within geographic areas, submarkets, or specific projects, as well as price points within markets or projects. Institutions should track available inventory and their own levels of exposure at a level of granularity sufficient to allow management to determine if the institution should curtail lending for specific products or in locations of concern, even if other products or locations continue to perform well. The granularity warranted may be product-by-product, location-by-location or some other degree (e.g., price point, speculative versus presold), depending upon the institution’s markets and product types.

Markets may be monitored by staff or management, but ultimately both must understand what is being monitored and why. The monitoring function can be organized in a variety of ways. For exam-

⁷ CRE Guidance, p. 74587.

ple, the institution may create a CRE risk management function that is responsible for establishing CRE concentration risk limits (approved by the institution's board) and overseeing compliance with those limits. To ensure that risk management and lending are working in concert, the two functions must communicate. The lending staff must pass along market information to the risk management function. Once risk management has compiled the information, it must deliver its market analysis back to the lending staff. (See Figure 1.) This mechanism ensures that both risk management and the lending staff are in agreement about the marketplace conditions and the lending strategy.

Risk management staff should provide its analysis of market data to senior management in a manner they can use to develop a comprehensive lending and risk mitigation strategy. A common delivery method is to provide lenders with a "heat map" that details management's view of the demand for product types in each geographic market and directs lenders' degree of aggressiveness for those products. A heat map can serve as a quick

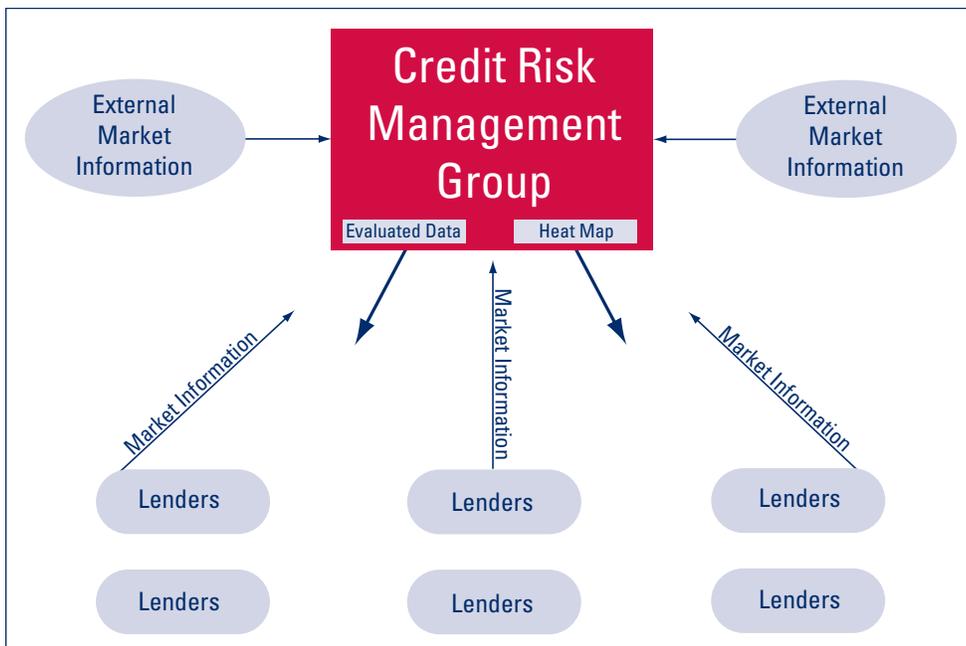
reference to identify whether the strategy for a particular market or product type is to grow, maintain, or reduce exposure. In markets where demand is very strong, management may instruct lending staff to pursue additional opportunities and adjust pricing and other terms to attract additional business. In areas where management deems risks to be higher, lenders may be instructed to curtail or discontinue lending activities altogether.

No matter the form of the market analysis, management must convey its strategy to lending staff in a timely manner and maintain sufficient oversight of lending activity to ensure that the loans being originated are consistent with management's strategy. Reporting systems should be sufficiently detailed to identify situations where the strategy is not being followed.

Credit Underwriting Standards and Administration

A CRE concentration increases the importance of sound lending policies. An institution's lending policies should

Figure 1. Communication must occur between lending and risk management functions.



communicate the level of risk acceptable to its board of directors. The policies should provide clear and measurable underwriting standards that enable lending staff to evaluate all relevant credit and market factors. The CRE guidance provides several internal and external factors that should be considered when establishing policies, such as market position, historical experience, present and prospective trade area, probable future loan and funding trends, staff capabilities, and technology resources.

Institutions should also consider the following items with regard to managing construction loans:

- Independent property inspections—There should be initial site visits and ongoing inspections during the construction phase.
- Loan disbursement practices—They should be based on engineering or inspection reports, requirements for lien waivers from subcontractors, etc.
- Sponsor/developer experience level—Institutions should establish standards to ensure that the sponsor/developer as well as the underlying contractor has a proven track record and sufficient experience in the market and in the property type being developed to complete the proposed project.
- Loan agreements, collateral documentation, and appraisal practices—Robust loan agreements and collateral documentation are expected. Plans and budgets are also needed to establish disbursement/draw schedules. Loan agreements should clearly communicate draw schedules, release provisions, and repayment requirements.
- Debt service coverage analysis—Debt service coverage thresholds as well as presold or preleased standards are useful tools to control the risks in a CRE transaction.
- Sponsor or guarantor financial analysis, if applicable.

An institution's lending policies should permit only limited exceptions to underwriting standards. When an institution permits an exception, it should document how the transaction does not conform to the institution's policy or underwriting standards and why the exception is in the best interest of the bank. The institution should also ensure that appropriate management approvals are obtained. Robust risk management systems can also track the number of exceptions by type and amount to help point out areas of policy that may need permanent amendment or that need to be reinforced by the institution's board of directors.

Portfolio Management

The bank should have a management information system (MIS) that provides sufficient information to measure, monitor, and control CRE concentration risk. This includes meaningful information on CRE portfolio characteristics relevant to the institution's lending strategy, underwriting standards, and risk tolerances. Many institutions will want to expand the level of information captured to specifically include underwriting characteristics, such as LTVs, debt service coverage levels, speculative versus presold units, etc., to allow for more enhanced reporting and analysis. Information can be captured on mainframe systems or other systems—including the use of simple spreadsheets—but should be retained in a form that can be readily accessed for analysis purposes.

MIS reports may include:

- CRE loan segmentations (to determine diversification within a portfolio)
- Established concentration limits (for CRE in aggregate as well as by subcategory)
- Concentration reports by property type

- Presold (considered lowest risk, but purchaser deposit amounts should be considered)
 - Speculative (no sales contract or prelease agreement exists)
 - Portfolio or borrower aging (age of CRE inventory by portfolio or borrower)
 - Aggregate by market (CRE inventory broken down by market or submarket)
 - Aggregate by price range (CRE inventory broken down by price range)
- Borrower concentration reports, including guidance line (informal, uncommitted) limits
 - Loan underwriting exception reports (CRE loans requiring loan policy exception approvals)
 - Number and volume of exceptions by nature, justification, and trends
 - Performance of exception loans compared with loans underwritten within guidelines
 - Supervisory LTV exception reports⁸
 - Typical loan production and performance reports by type, region, officer, etc.

Many banks fail to collect the data necessary to produce the reports listed above. They may have separate legacy systems that do not aggregate data efficiently, if at all. In addition, many banks do not have the resources to search hard copy files and backfill data into their systems. Management first needs to identify the drivers that will affect segmentation at origination and then capture those data fields on the system. These drivers could be LTV, rate type (fixed versus floating), debt coverage ratios, or large tenants that could create concentrations when aggregated.

CRE markets are typically cyclical. Strong markets promote additional building, which can result in oversupply followed by weakened market fundamentals. Consequently, the real benefit of implementing systems to identify and control CRE concentrations lies in limiting the level of risk brought on by those concentrations when markets begin to falter. While it may be easy to manage a concentration during the good times, managing one once market demand has slowed is much more challenging.

Good risk management starts with setting reasonable concentration limits for different products and markets. Adjusting those limits when market fundamentals change is also a prudent risk management tool. After all, how beneficial can market monitoring and analysis be if concentration limits and exposures are not adjusted when that market information indicates a change in market conditions? Listed below are some examples of possible indicators that particular markets are at or near a peak. The specific numerical examples are not intended to represent triggers we believe bankers should use, but merely to illustrate that management may wish to consider a number of concrete numerical indicators in forming a judgment about the risks in a particular market:

- Loan pricing becomes too thin for the underlying risk (e.g., construction loan pricing has fallen almost 150 basis points in recent years owing to competition).
- Underwriting weakens to unreasonable levels or to levels banks previously would not have approved (e.g., deposits for qualifying presold condominium units are reduced by half to entice enough preconstruction buyers to demonstrate demand for a project).

⁸ Appendix A to 12 CFR 365—Interagency Guidelines for Real Estate Lending Policies—states that loans exceeding the supervisory LTV guidelines should be recorded in the institution's records and reported to the board at least quarterly. See section titled "Loans in Excess of the Supervisory Loan-to-Value Limits."

- Inventory and planned production are excessive relative to market dynamics (e.g., office space in the pipeline exceeds several years' absorption rate without any significant increase in employment expectations; condominium units in the pipeline exceed the level of several prior years' sales).
- Speculators drive prices to unwarranted levels (e.g., home prices increase by 30 percent year-over-year for an extended period, while inventory is expected to grow to unprecedented levels).
- The regional or national economy shows signs of stress.

If CRE lending is a substantial source of revenue, the decision to reduce exposure levels will likely be met with significant resistance from managers and loan officers concerned about short-term earnings performance. If CRE lending is the primary earnings driver, the institution should be prepared to diversify into other areas of lending or wait for CRE markets to return. The failure to control exposure levels when warning signs are evident can result in excessive loan losses. The level of losses will generally depend on the quality of loan underwriting and the breadth and depth of the CRE market downturn.

Unfortunately, the importance of CRE portfolio management and appropriate concentration limits becomes most apparent only when the bank's market enters a downturn. As loan quality deteriorates, banks must expend significant resources, both human and monetary, for collection and, in some cases, foreclosure on the underlying collateral. While the direct costs of these actions are apparent, there are often other costs that bear mention. If market conditions deteriorate severely, sponsors or developers may simply abandon a project, especially if they have insufficient capital invested and there is no recourse to the principals. In many instances during the 1980s

and early 1990s, developers walked away from partially finished properties, and some lenders were forced to complete projects to salvage their investment. In many of these instances, costs escalated dramatically as lenders were forced to restart projects and remediate shoddy workmanship, adopt engineering and architectural changes to make the project viable, pay off subcontractor liens, and pursue zoning or other legal issues.

Another major expense often overlooked is the opportunity cost of holding a large volume of nonearning assets. Lenders often severely underestimate the length of time necessary for the sale of foreclosed assets in a distressed market. Additional costs accrue during the holding period, including property taxes and the cost of sales, maintenance, and security. Many lenders found during the CRE downturn of the 1980s and early 1990s that the "first loss is the best loss," meaning that it would have been cheaper in the long run to have disposed of distressed CRE assets earlier rather than later.

Credit Risk Rating and Review

Risk rating systems can vary greatly between community and large banks. One solution does not and should not fit all banks—the risk rating and review process should be commensurate with the bank's size and complexity. A small, noncomplex bank may need only a one-dimensional rating system with a small number of rating grades, while a large or complex organization may require a rating system with more grades to measure risk levels adequately. Larger banks often use rating systems that assign separate ratings for default risk and loss severity. This type of system has the added benefit of delineating credit risk, which should aid lenders in mitigating those risks.

In addition to being used to determine capital levels, adequacy of the allowance

for loan and lease losses, and loan pricing strategy, risk ratings can be used as a parameter for setting concentration limits and sublimits. Risk ratings should be accurate and uniformly applied across product lines and geographic areas. Banks identified as having CRE concentrations possess an additional level of risk and complexity that should be considered when evaluating the risk rating and review system. Risk rating and review processes should have the following characteristics:

- Transparency
- Granularity
- Independence

Transparency is critical for any risk rating system. Account officers, loan review personnel, and regulatory examination staff should be able to review rating guidelines and reach the same conclusion on the rating grade assigned to individual credits. This becomes increasingly important as the bank grows and more people are involved in the risk rating process. Specific, objective rating criteria rather than broad, subjective criteria promote consistency in the rating process. Transparency is generally evaluated by reading the bank's rating policy guidelines and conducting transaction testing. The key is to have someone other than the original credit analyst attempt to come to the same conclusion using the tools provided by policy. If agreement with a high percentage of assigned credit ratings cannot be achieved, the rating guidelines may need further clarification.

Granularity is also necessary to provide an accurate assessment of portfolio risk. At a minimum, the risk rating system should rank order risk in the portfolio and provide enough grades so that the vast majority of loans do not fall into just one grade. A granular rating system that effectively rank orders risk should aid management in identifying the exposures that should be reduced or

eliminated if a CRE downturn appears to be on the horizon.

Independence in the validation process is the third leg to any successful rating system. Individuals outside the lending process should evaluate and validate the entire process. Banks with limited staffing resources can use external audit staff or consulting firms to conduct the validation. As banks grow, this process is typically brought in-house. The review and validation personnel will generally be the best resource for identifying problems in the rating system. Credit review personnel should provide the board and senior management with periodic feedback regarding the effectiveness of the rating system and any recommended changes for improving transparency and granularity.

Portfolio Stress Testing and Sensitivity Analysis

Most geographic locations in the United States have not experienced serious declines in CRE markets for a number of years. Much has changed in CRE lending since the last downturn. Some analysts suggest that a major sea change has occurred in the form of greater transparency and liquidity that acts as a cushion against the deep losses of the 1980s and 1990s. Banks may tend to believe that the losses during that time were much more severe than they would ever again encounter. Yet, while the CRE credit market has been influenced by excess liquidity for a number of years, recent events in the credit markets for housing and leveraged finance demonstrate that liquidity can evaporate quickly if lenders' and investors' perceptions of the level of risk inherent in those loan products change.

In light of the possibility of significant losses in CRE portfolios, banks with concentrations in CRE can use stress testing to assess the extent of their exposure to a downturn in CRE markets. Stress testing can also inform

management of the institution's specific vulnerabilities to CRE markets and indicate where actions should be taken to mitigate those risks.

The CRE guidance includes a general expectation that an institution with CRE concentrations will conduct portfolio stress testing consistent with the size, complexity, and risk characteristics of its CRE loan portfolio. However, the guidance does not provide specific minimum expectations. Following are examples of the types of stress tests commonly used in banks.

Transactional Sensitivity Analysis

Most institutions that specialize in CRE lending, and especially ADC lending, are accustomed to running analyses to determine loan and project exposure as part of the underwriting process. Before making a commitment for financing, an institution will analyze sponsor and lender assumptions to determine the degree to which a project can withstand market fluctuations and still repay the loan. Analysis covers testing the common assumptions and combinations of assumptions shown in Table 1.

Table 1

Assumptions to be tested for CRE lending		
Properties for Sale	Properties for Lease	Loan Variables
Absorption rates	Absorption rates	Interest rates
Sales prices	Rent rates	LTV ratios
Contingency reserves	Vacancy rates	Amortization term
	Rollover risk	
	Reserves for maintenance and improvements	

Given that some of the assumptions interact with other assumptions, a range of outcomes may be used to determine if the loan meets the institution's under-

writing criteria and lending standards. Along with project assumptions, loan-specific variables, such as interest rates and LTV ratios inferred from capitalization rates, are commonly analyzed.

While loan-level sensitivity analysis is a valuable tool for all banks originating CRE loans, this type of analysis could be performed on a portfolio-wide basis. Such an analysis would measure the depth and breadth of the portfolio's vulnerability to changes in real estate markets and interest rates. These analyses can be conducted on a scheduled basis or when market fundamentals dictate. Systematically aggregating the results of individual transactional stress tests could involve:

- Determining market fundamentals for each product type and geographic market where the bank has funds committed. (For practical purposes, it may be necessary to establish a materiality threshold.)
- Developing sensitivity analysis forecasts, such as increased vacancy rates in the market by product type, slower absorption rates, reduced sales prices, higher capitalization rates, or higher interest rates.
- Testing each credit in the portfolio, considering the current status of each project against the impact of the sensitivity analysis forecasts.
- Aggregating the impact of each tested credit to determine the vulnerability within the portfolio.

For income-producing properties with long-term, fixed-rate loans and long-term tenants, the analysis may reveal little or no additional exposure unless capitalization rates are expected to increase on the specific property type. However, the analysis of loans granted for speculative lot development projects with slower absorption rates could reveal substantial additional exposure, suggesting that the bank should consider limiting its expo-

sure in certain geographic markets or product types.

Stressed Loss Rates

Stressed loss rate testing entails determining loss rates at levels that could be expected during CRE market downturns and forecasting the ultimate effect of these losses on capital. The stressed loss rates would be developed through an analysis akin to the following:

- Obtain historical loss rates on CRE loans (the “reference portfolio”) at the most granular level available. (Available data will often be fairly general in nature—losses on hotels, retail buildings, office buildings, etc.—rather than for more specific product types—suburban hotels versus downtown hotels, multitenant office buildings versus owner-occupied office buildings, etc.) In banks with more limited CRE lending experience, the data may be at higher levels, such as all types of ADC loans or even all CRE loans. Generally, the longer a bank has been a CRE lender, the more granular the loss data.
- Identify loss rates that occurred as a result of previous market downturns, generally the highest loss rates experienced in the reference portfolio. Loss rates may lag the downturn by a number of months or years.
- Identify the similarities or differences between the bank’s current portfolio and the historical reference portfolio, and adjust the loss rates appropriately.
 - In general, the loss rates from the reference portfolio will be a good starting point. The historical loss rates are applied at the same granular level as the reference portfolio.
 - Adjustments to the historical loss rates may be necessary to account for differences in the current portfolio. This is especially true if the data for the reference portfolio lack

granularity. For example, the ADC loss history on the reference portfolio is for a geographically diverse group of loans, but the current portfolio is largely concentrated in one location. In this case, an upward adjustment in loss rates would seem necessary to address the additional concentration risk.

- Calculate the losses that would be expected in a market downturn by applying the adjusted historical loss rates to the current portfolio.

If the bank has not previously experienced significant CRE downturns, using external data may be more appropriate than using internal data. The FDIC has historical CRE data that could be used to construct loss rates, although the FDIC data lacks much granularity.⁹

Like an aggregate transactional sensitivity analysis, stressed loss rate testing can provide useful input to a bank’s capital, earnings, and liquidity planning. While not providing specific information for managing CRE concentrations, it should inform management of the possible level of the bank’s exposure if a CRE downturn were to occur. The usefulness of this type of test relies heavily on the reference portfolio selected to conduct the test. In institutions with limited or only recent experience in CRE lending, the historical perspective required to conduct this sort of stress analysis would be based on external data that may or may not be applicable. In these institutions, the type and level of adjustments to historical loan loss rates are critical elements to developing a useful outcome.

Scenario Analysis

Thus far, the examples cited have not necessarily been related to a particular, perhaps local, event. For risk management purposes, a bank may develop stress scenarios customized to its circumstances to make assumptions about how its CRE

⁹ See Statistics on Depository Institutions at www2.fdic.gov/sdi/index.asp.

portfolio would react. For example, a community bank might assume layoffs at a major employer and measure the anticipated results on new housing demand and other CRE property performance. The trickle-down effect of the layoffs could spread across CRE property types if local businesses' revenues slowed and tenants were unable to make their lease payments.

The results of the scenario might affect the bank's other credit portfolios and lines of business, in addition to CRE loans. Although most banks do not perform bankwide scenario stress testing, the process of developing such stress tests may be useful for planning purposes and to identify potential vulnerabilities. (See, for example, the discussion of planning for contingencies in "Liquidity Analysis: Decades of Change" in this issue of *Supervisory Insights*.)

Ratings Migration Analysis

Another technique used by some banks with larger portfolios and more sophisti-

cated internal data is to stress ratings migrations. This process requires a review of prior years' migrations to determine the typical migration experience. Each year a percentage of credits (obligors in cases of banks with two-dimensional rating systems) improves, remains the same, or declines. If sufficient data exist to capture a CRE downturn, the bank could select the year with the highest percentage of downgrades as the stress year. Alternatively, the bank could develop a relationship between economic variables and ratings migrations. If these data are not available, a bank might choose to apply conservative estimates of migrations to establish a stress year.

The bank would use the results of the stress year migration to move the appropriate volume of exposures in each current rating grade to the grades reflected in the stress year ratings matrix. The new volumes in each grade would then be processed through the bank's allowance for loan and lease loss model to determine what provisions might be needed to value the CRE portfolio and the

Table 2

Effects of a market downturn								
Average Annual Migration Rate								
	1	2	3	4	5	6	7	8
1	92.08	7.09	0.63	0.15	0.06	0.00	0.00	0.00
2	0.62	90.83	7.76	0.59	0.06	0.10	0.02	0.01
3	0.05	2.09	91.37	5.79	0.44	0.16	0.04	0.05
4	0.03	0.21	4.10	89.38	4.82	0.86	0.24	0.37
5	0.03	0.08	0.40	5.53	83.25	8.15	1.11	1.45
6	0.00	0.08	0.27	0.34	5.39	82.41	4.92	6.59
7	0.10	0.00	0.29	0.58	1.55	10.54	52.80	34.14
Stress Scenario—Annual Migration Rate is Double the Average Rate								
	1	2	3	4	5	6	7	8
1	84.14	14.18	1.26	0.30	0.12	0.00	0.00	0.00
2	0.31	82.61	15.52	1.18	0.12	0.20	0.04	0.02
3	0.03	1.05	85.97	11.58	0.88	0.32	0.08	0.10
4	0.02	0.11	2.05	85.25	9.64	1.72	0.48	0.74
5	0.02	0.04	0.20	2.77	75.76	16.30	2.22	2.90
6	0.00	0.04	0.14	0.17	2.70	73.94	9.84	13.18
7	0.05	0.00	0.15	0.29	0.78	5.27	25.19	68.2

effect of these provisions on earnings and capital. When compared to the current ratings, the effect of a market downturn could be measured (see Table 2).

Conclusion

History has clearly demonstrated that CRE can experience cyclical changes in which supply and demand get out of balance, resulting in significant losses for financial institutions. To reduce potential losses in the future, banks must have strong board and management oversight as well as robust risk management processes for their CRE loan portfolios to recognize and control risk through all phases of the economic cycle. Bank management should also be willing to forego potential CRE income when the risk exceeds the reward.

A well-diversified bank is, in general, better insulated against market downturns. However, investing in assets that management does not understand can also carry significant risks. When prudent diversification across a variety of asset classes is difficult to achieve, it becomes even more important for management to deploy tools and implement strategies similar to those outlined here to recognize and control the risk

taken. The CRE guidance provides a good framework to assist banks in addressing the concentration risk and also helps establish the federal banking agencies' expectations during subsequent risk management examinations.

Regulators and bank management must not become complacent or static in their approach to risk management; they must continually evolve and change as the environment changes and new risks appear. With the risk management tools listed in the CRE guidance and further supported by other regulatory guidance, there is no reason CRE loans cannot continue to be a favored asset class for banks.

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CRE Regulations and Guidance Applicable to FDIC-Supervised Institutions

To assist and encourage banks to recognize and control CRE lending risks, bank regulators have developed a significant body of regulatory guidance for CRE transactions. Much of this guidance is based on lessons learned in downturns of the past, especially the banking crisis of the late 1980s and the early 1990s.

- FIL-104-2005, Joint Guidance on Concentrations in Commercial Real Estate Lending, Sound Risk Management Practices (www.fdic.gov/news/news/financial/2006/fil06104.html)
- 12 CFR 365, Real Estate Lending Standards and Interagency Guidelines for Real Estate Lending Policies (www.fdic.gov/regulations/laws/rules/2000-8700.html)
- 12 CFR 323, Appraisals (www.fdic.gov/regulations/laws/rules/2000-4300.html)
- Interagency Appraisal and Evaluation Guidelines (www.fdic.gov/news/news/financial/2003/fil0384b.html)
- FIL-90-2005, Residential Tract Development Lending (www.fdic.gov/news/news/financial/2005/fil9005.html)
- FIL-94-1999, Interagency Guidance on High Loan-to-Value Residential Real Estate Lending (www.fdic.gov/news/news/financial/1999/fil9994.html)

Connecting the Dots . . .

The Importance of Timely and Effective Suspicious Activity Reports

Do you ever wonder what happens to all the Suspicious Activity Reports (SARs) financial institutions file? Do you think that SARs just disappear into a black hole and are never reviewed? While these are common notions voiced throughout the banking industry, they cannot be further from the truth. The significance of the SAR process in the fight against terrorism, drug trafficking, money laundering, bank fraud, and other financial crimes cannot be overstated.

History clearly shows that there is often a financial connection to crime. Connecting the dots between criminal activity and the financial transactions that facilitate such activity is invaluable, not only in identifying, investigating, and ultimately prosecuting criminals, but also in preventing and deterring crime. SARs play a critical role in exposing the financial links to illicit activities, on both a case-by-case and industrywide basis. The U.S. Department of the Treasury's Financial Crimes Enforcement Network (FinCEN), bank supervisory agencies, and law enforcement depend on SARs to identify, investigate, and analyze criminal activity. Overall, the banking industry has been diligent in detecting and reporting suspicious activity; however, merely filing a SAR may not be enough. The agencies depend on complete, accurate, and timely reports to use SAR information effectively and efficiently.

Examiners play a significant role in ensuring SAR data integrity, and Bank Secrecy Act/Anti-Money Laundering (BSA/AML) examinations nationwide continue to reveal common issues with SAR filings. This article will highlight the importance of SARs, provide examples of how various agencies use them, discuss common SAR filing issues and their potential negative impact on SAR utility, and offer tips and guidance on what makes an effective SAR. By better understanding how SARs are used and focusing on SAR quality, examiners and bankers can help to improve the reliability and integrity of the information and thereby help ensure that SAR users have this critical information to fight financial crimes.

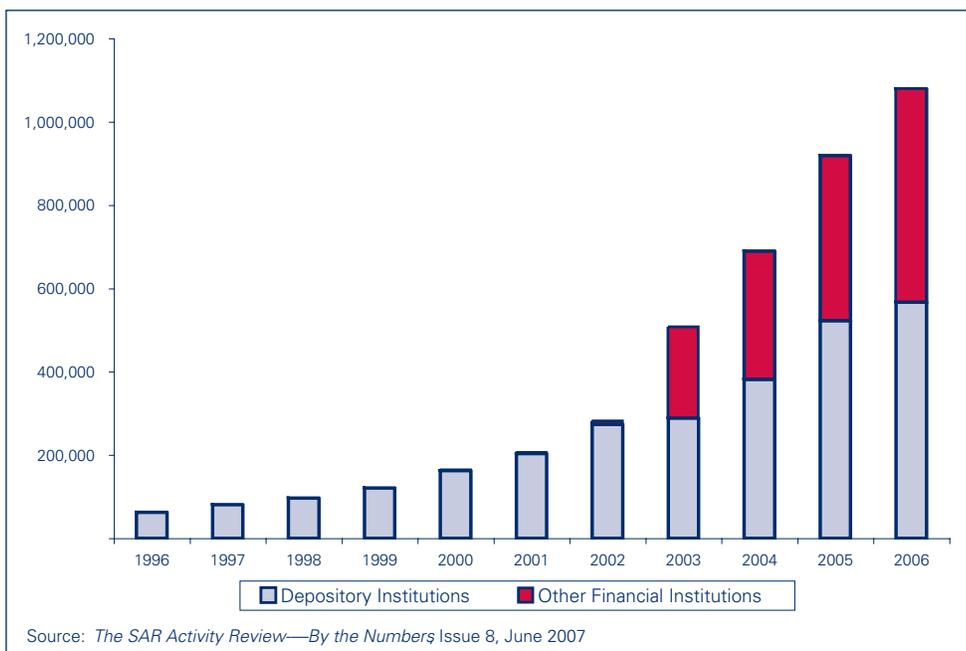
SAR Filings Exceed 1 Million in 2006

Since the late 1980s, depository institutions have been required to report known or suspected criminal violations to FinCEN. In April 1996, the SAR replaced the Criminal Referral Form as the standard form to report suspicious activity.¹ At that point, depository institutions (i.e., insured banks, credit unions, and thrifts) were the primary filers of SARs. However, following the terrorist events of September 11, 2001, the USA PATRIOT Act² expanded SAR requirements to other types of financial institutions, including certain money services businesses (MSBs),³ casinos and card

¹ SAR forms are available at www.fincen.gov/reg_bsaforms.html#SAR.

² The Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001 (USA PATRIOT Act) is arguably the single most significant AML law Congress has enacted since the BSA itself. Among other things, Title III of the USA PATRIOT Act (International Money Laundering Abatement and Anti-Terrorist Financing Act of 2001) criminalized the financing of terrorism and augmented the existing BSA framework by strengthening customer identification procedures; prohibiting financial institutions from engaging in business with foreign shell banks; requiring financial institutions to have due diligence procedures and, in some cases, enhanced due diligence procedures for foreign correspondent and private banking accounts; and improving information sharing between financial institutions and the U.S. government. See <http://fl1.findlaw.com/news.findlaw.com/cnn/docs/terrorism/hr3162.pdf>.

Chart 1: SAR Filings Skyrocket



clubs, and certain segments of the securities and futures industries. As a result, the number of SARs filed annually has increased dramatically. As shown in Chart 1, all financial institutions subject to SAR requirements filed more than 1 million SARs in 2006—five times more than were filed in 2001. While other financial institutions have contributed significantly to the escalation in SAR filings, depository institutions continue to file the majority of SARs—more than 565,000 reports, or approximately 53 percent of the reports filed in 2006. As the number of SARs filed annually continues to rise, ensuring that depository institutions file quality SARs in a timely manner becomes increasingly important. (See text box, “SAR Reporting Requirements” on page 31.)

SARs Serve Many Purposes

With limited exceptions, SARs are used to report all types of suspicious activity affecting depository institutions, including but not limited to cash transaction structuring,⁴ money laundering, check fraud and kiting, computer intrusion, wire transfer fraud, mortgage and consumer loan fraud, embezzlement, misuse of position or self-dealing, identity theft, and terrorist financing. All SARs filed are centralized in a secure database that can be accessed by authorized users, including representatives from FinCEN, bank supervisory agencies, and law enforcement. These agencies rely on SARs for a number of different purposes; yet, whether FinCEN is analyzing the entire SAR database to

³ Generally, MSBs include the U.S. Postal Service and five distinct types of financial services providers: (1) currency dealers or exchangers; (2) check cashers; (3) issuers of traveler’s checks, money orders, or stored value; (4) sellers or redeemers of traveler’s checks, money orders, or stored value; and (5) money transmitters. However, a business in one of the first four categories is considered an MSB only if it engages in such transactions in an amount greater than \$1,000 for any person on any day in one or more transactions. Refer to www.msb.gov and 31 CFR 103.11(uu).

⁴ Structuring is defined in 31 CFR 103.11(gg) as the act of conducting or attempting to conduct one or more transactions in currency in any amount, at one or more financial institutions, on one or more days, in any manner, for the purpose of evading the currency transaction reporting requirements. See *Federal Financial Institutions Examination Council (FFIEC) BSA/AML Examination Manual*, August 24, 2007, Appendix G, “Structuring,” at www.ffiec.gov/pdf/bsa_aml_examination_manual2007.pdf.

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identify trends or a law enforcement agent is following up on a single SAR, the integrity of the data is critical to the government's efforts to fight criminal activity.

Use by FinCEN

FinCEN makes SAR and other BSA-related data available to authorized agencies and also plays a key role in analyzing the data to identify emerging trends and patterns associated with financial crimes.⁵ FinCEN analyzes SAR data to identify institutions with filing problems, such as missing information or incomplete SAR narratives,⁶ and uses sophisticated trend analysis and data-mining techniques to pinpoint emerging industry vulnerabilities, such as the recent rise in consumer and mortgage loan fraud.⁷ FinCEN also performs key word searches within SAR narratives to identify potential indicators or specific geographic areas linked to terrorist financing or drug trafficking.⁸ In testimony before the U.S. House of Representatives Financial Services Subcommittee on Oversight and Investigations in May 2007, FinCEN's deputy director, William Baity, noted that FinCEN produced 176 complex analytical products in fiscal year 2006, including reports concerning trends in mortgage loan fraud, the role of domes-

tic shell companies in financial crime and money laundering, and financial activity along the U.S. southwest border to identify potential money laundering hot spots so that law enforcement can better direct resources.⁹

Use by Bank Supervisory Agencies

Public confidence in the banking system can be undermined when an institution insured by the Federal Deposit Insurance Corporation (FDIC) is a victim of internal or external fraud.¹⁰ Depository institutions incur millions of dollars in fraud losses annually, and, in extreme cases, fraud can contribute to a bank's failure and result in significant losses to the Deposit Insurance Fund.¹¹ Prompt identification and follow-up regarding suspected fraud is vital to the strength of the banking system and the Deposit Insurance Fund. SARs alert bank supervisory agencies such as the FDIC to fraud so that they can initiate an appropriate and timely response.

Bank fraud allegations or suspicions of wrongdoing may come to the FDIC's attention through the on-site examination process, an anonymous tip, or a referral from an outside law enforcement agency. More commonly, fraud against

⁵ In addition to SARs, BSA-related data include Currency Transaction Reports (CTRs), Reports of International Transportation of Currency or Monetary Instruments (CMIRs), Designations of Exempt Person (DOEPs), Reports of Foreign Bank and Financial Accounts (FBARs), and Reports of Cash Payments Over \$10,000 Received in a Trade or Business (8300s). See www.fincen.gov/reg_bsaforms.html.

⁶ The SAR narrative refers to Part V of the Suspicious Activity Report by Depository Institutions (Form TD F 90-22.47), titled Suspicious Activity Information Explanation/Description. This mandatory section is to be used to provide a complete chronological account of the suspected violation of law or suspicious activity.

⁷ "Staying Alert to Mortgage Fraud," *Supervisory Insights*, Vol. 4, Issue 1, Summer 2007, discusses the housing boom of the early 2000s and how the resultant demand led to increased mortgage fraud activity. See <https://www.fdic.gov/regulations/examinations/supervisory/insights/sisum07/sisummer07-article2.pdf>.

⁸ BSA Advisory Group, "Section 5—Issues and Guidance," *The SAR Activity Review—Trends, Tips & Issues*, Issue 11, May 2007, pages 39–42, at www.fincen.gov/sarreviewissue11.pdf#page=45.

⁹ See FinCEN Deputy Director Baity's testimony at www.fincen.gov/testimony5102007.html.

¹⁰ FDIC, *Risk Management Manual of Examination Policies*, Section 10.1, *Suspicious Activity and Criminal Violations*, www.fdic.gov/regulations/safety/manual/section10-1.html#part1.

¹¹ "Enforcement Actions Against Individuals 2005: A Year in Review," *Supervisory Insights*, Vol. 3, Issue 1, Summer 2006, highlights a calendar year of FDIC-issued enforcement actions against individuals for insider fraud, with a focus on the resultant losses to institutions. See <https://www.fdic.gov/regulations/examinations/supervisory/insights/sisum06/sisummer06-article3.pdf>.

state nonmember banks is identified by bank management and brought to the FDIC's attention by a SAR filing. Each FDIC region has a SAR review process to follow up on depository institution SARs filed within its supervisory territory. This process identifies and responds to priority SAR filings, which generally include SARs involving institution-affiliated parties (IAPs)¹² and those having a material impact on the financial soundness of the institution.

The FDIC is particularly interested in SARs that name IAPs as suspects. Fraud perpetrated by employees, officers, or directors can be especially damaging and may require an immediate regulatory response. If warranted, the FDIC can pursue civil enforcement actions against IAPs, including Removal and Prohibition Orders under section 8(e) of the Federal Deposit Insurance Act (Act) and Civil Money Penalties under section 8(i) of the Act. Many FDIC enforcement action cases against IAPs originate from SARs.

The FDIC's Office of Inspector General, Office of Investigations (OIG-OI) conducts criminal investigations based on allegations of fraud at FDIC-supervised institutions, working either independently or jointly with other law enforcement agencies. Many of the OIG-OI's investigations originate from SARs filed by FDIC-supervised institutions and involve IAPs.

Often these investigations result in parallel criminal and civil enforcement action proceedings. Cooperation between the OIG-OI and other law enforcement agencies can be instrumental in bank fraud investigations and prosecutions. In fact, a number of successful cases in recent years have highlighted the collective work of several agencies.¹³ As of September 30, 2007, the OIG-OI had 106 open bank investigations under way, involving an estimated \$1.7 billion in potential fraud. Seventy-seven percent of these cases were being pursued jointly with the Federal Bureau of Investigation (FBI).¹⁴

Use by Law Enforcement

"Whether motivated by criminal greed or a radical ideology, the activity underlying both criminal and counterterrorism investigations is best prevented by access to financial information by law enforcement and the intelligence community. The FBI considers this information to be of great value in carrying out its mission to protect the citizens of this country, and over the past few years, we have made significant advances in utilizing this information to carry out our mission."

- Testimony of Salvador Hernandez, deputy assistant director, Criminal Investigative Division, National Crimes Branch, FBI, before the Financial Services Subcommittee on Oversight and Investigations, May 10, 2007¹⁵

¹² Institution-affiliated party is defined in section 3(u) of the Federal Deposit Insurance Act (12 U.S.C. 1813(u)) as—(1) any director, officer, employee, or controlling stockholder (other than a bank holding company) of, or agent for, an insured depository institution; (2) any other person who has filed or is required to file a change-in-control notice with the appropriate Federal banking agency under section 7(j) of the FDI Act; (3) any shareholder (other than a bank holding company), consultant, joint venture partner, and any other person as determined by the appropriate Federal banking agency (by regulation or case-by-case) who participates in the conduct of the affairs of an insured depository institution; and (4) any independent contractor (including any attorney, appraiser, or accountant) who knowingly or recklessly participates in—(A) any violation of any law or regulation; (B) any breach of fiduciary duty; or (C) any unsafe or unsound practice, which caused or is likely to cause more than a minimal financial loss to, or a significant adverse affect on, the insured depository institution. See www.fdic.gov/regulations/laws/rules/1000-400.html#1000sec.3u.

¹³ The FDIC OIG's Semiannual Report to Congress for October 1, 2006, to March 31, 2007, details a number of successful internal and external bank fraud investigations that highlight the cooperative efforts of OIG investigators, FDIC divisions and offices, U.S. Attorney's Offices, and others in the law enforcement community. See pages 18–30 at www.fdicig.gov/semi-reports/sar2007mar/SemiMar07.pdf.

¹⁴ Source: FDIC OIG-OI.

¹⁵ See complete testimony at www.fbi.gov/congress/congress07/hernandez051007.htm.

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Law enforcement agencies use SARs to identify financial links to illicit activity. These agencies supplement ongoing investigations by querying FinCEN's database for name matches to existing suspects and their known associates. For example, if the U.S. Drug Enforcement Administration (DEA) is investigating a specific individual in a narcotics case, agents would likely query the FinCEN database by name to identify additional leads, such as bank accounts, individual and business associates, geographic locations, or aliases. The search would likely include both SAR data and other BSA-related data such as Currency Transaction Reports, which could identify additional information about the suspect.

In recent years, law enforcement agencies increasingly have used SARs to generate new leads and determine whether to open new cases. For example, an agency may identify and pursue a structuring case on its own merits based on a SAR filing, and in the course of such an investigation might further determine that structuring took place to cover up other illicit activities, such as drug trafficking or tax evasion. This proactive approach to using SARs is best exemplified by the development of joint agency SAR Review Teams.

Today, SAR Review Teams, coordinated by the U.S. Department of Justice through the U.S. Attorney's Offices, exist in 80 of the 94 federal judicial districts nationwide. The primary purpose of a SAR Review Team is to systematically review all SARs that affect a specific geographic jurisdiction, identify individuals who may be engaged in criminal activities, and coordinate and disseminate leads to appropriate agencies for follow-up. The composition of these

teams, while varying by location, generally includes representatives from law enforcement and various regulatory agencies, with the U.S. Attorney's Office and the Internal Revenue Service's Criminal Investigations Division (IRS-CID) typically in a lead role. Other participants may include representatives from the FBI; the DEA; the Bureau of Immigration and Customs Enforcement; the Bureau of Alcohol, Tobacco, Firearms, and Explosives; the U.S. Secret Service; and state and local law enforcement. A number of SAR Review Teams also have representation from bank supervisory agencies, including the FDIC.¹⁶ Coordination among the respective agencies results in improved communication and more efficient resource allocation.

Common SAR Mistakes and Weaknesses

Banks must file complete, accurate, and timely SARs in order for FinCEN, bank supervisory agencies, and law enforcement to gain maximum benefit from the information.¹⁷ Preparation errors and filing weaknesses, including late submissions, can reduce SAR effectiveness.

Incomplete or Inaccurate Data Fields

Parts I through IV of the SAR are essentially objective data fields that call for specific information about the filing institution, the suspect(s), the nature of the suspicious activity, any regulatory or law enforcement contacts made before the SAR was filed, and the contact person for additional information. Each numbered reporting field can be used to query the information in the database; therefore, omissions and inaccuracies in

¹⁶ As of September 30, 2007, the FDIC participated in SAR Review Teams in California, Connecticut, Illinois, Iowa, Kansas, Maine, Massachusetts, Minnesota, Missouri, Nebraska, New Hampshire, New York, North Dakota, Puerto Rico, Rhode Island, South Dakota, and Vermont.

¹⁷ There are four types of SAR forms filed by the different industries: SAR by Depository Institutions (SAR-DI/TD F 90-22.47); SAR by MSBs (SAR-MSB/TD F 90-22.56); SAR by Casinos and Card Clubs (SAR-C/FinCEN Form 102); and SAR by the Securities and Futures Industries (SAR-SF/FinCEN Form 101). SAR references in this section pertain to the SAR by Depository Institutions. See www.fincen.gov/reg_bsaforms.html.

any of the data fields can reduce the overall utility of the data. For example:

- Not identifying the bank's primary federal regulator in Part I—Reporting Financial Institution Information, or not denoting an IAP relationship in Part II—Suspect Information, can prevent the appropriate regulator from promptly detecting and responding to a priority SAR.
- Not listing all suspects individually in separate Part II sections can prevent law enforcement from linking suspects to existing investigations or from generating new leads for suspects reported by multiple financial institutions.
- Not specifying occupation or type of business in Part II can hinder users' ability to understand why the reported activity is suspicious for a particular customer.
- Not appropriately characterizing the suspicious activity in Part III—Suspicious Activity Information, can skew FinCEN's semiannual analysis of industry trends, as published in *The SAR Activity Review—By the Numbers*.
- Not aggregating the suspicious activity dates and dollar amounts in Part III when filing a SAR for continuing suspicious activity can cause law enforcement to overlook the severity of a situation and delay an investigation.
- Not indicating in Part III that a particular law enforcement agency has been contacted can result in duplicative investigative efforts by multiple agencies and waste valuable resources.

Insufficient SAR Narratives

Part V—Suspicious Activity Information Explanation/Description, commonly referred to as the SAR narrative, provides the only free-flow text area to summarize the suspicious activity. The SAR narrative is often the basis for sophisticated data mining, as well as crucial decisions regarding whether to investigate a suspect

further. Incomplete, incorrect, illogical, or disorganized narratives can make analysis difficult and adversely affect users' decisions. For example:

- Incomplete narratives that do not describe suspect relationships or do not explain the nature of ongoing suspicious activity can reduce the effectiveness of FinCEN's key word searches, lead to decisions not to pursue suspicious activity, or delay investigations while additional facts are gathered.
- Narratives that do not clearly explain why an activity is suspicious can hinder a user's ability to understand the possible criminal action and to make an informed, appropriate, and timely decision whether to pursue an investigation.
- Narratives that refer to attachments are particularly problematic because information contained in tables, spreadsheets, and similar attachments is not keypunched into the FinCEN database. Worse yet, submitting an entire narrative as an attachment results in no description of the suspicious activity.

Untimely SARs

Timely filings enable SAR users to identify and respond promptly to potential criminal activities. Nonetheless, examinations continue to find late SARs, as well as SARs that are not filed every 90 days for ongoing suspicious activity. Untimely SARs can be particularly detrimental when terrorist financing is suspected, in criminal cases where asset seizures are possible, or when significant fraud threatens the viability of a depository institution. In such situations, time is of the essence; therefore, not only is it important to file a SAR within the prescribed period, but bank management is encouraged to contact law enforcement directly to ensure immediate attention to the matter.

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Submitting an Effective SAR

SAR filing deficiencies often result from internal control weaknesses. On a macro level, it is important for financial institutions to establish strong overall risk management practices with respect to suspicious activity monitoring and reporting, including effective policies and procedures, strong management information systems, appropriate staffing and senior management oversight, comprehensive training, and periodic independent testing.¹⁸ On a micro level, it is beneficial for financial institutions to establish comprehensive procedures for SAR preparation, review, and approval. The following steps can help to ensure that complete and appropriate SAR information is collected, organized, and maintained.

Conduct thorough research and analysis to gather as much information as possible about the potentially suspicious activity. FinCEN's *Guidance on Preparing a Complete and Sufficient Suspicious Activity Report Narrative* provides extensive tips on what information to collect and how to organize it effectively.¹⁹ Generally, the guidance indicates that the filing institution should consider all pertinent information it has available through the account opening process and due diligence efforts.

Accurately complete all objective data fields and write a clear and comprehensive SAR narrative. The SAR should be completed as fully as possible. Although information called for in Parts I through IV occasionally may be unknown or unavailable and should be left blank, Part V—the SAR narrative—should always include a detailed description of the suspicious activity.

An effective SAR narrative should clearly detail:

- **Who** conducted the suspicious activity
- **What** instruments or mechanisms were used to facilitate the suspect transaction(s)
- **When** the suspicious activity took place
- **Where** the suspicious activity took place
- **Why** you (the filer) think the activity was suspicious
- **How** or by what method of operation the suspicious activity took place

All SARs are potentially useful, but a SAR containing complete factual data and an effective narrative can determine whether FinCEN gleans useful statistical data, the FDIC takes appropriate and timely action with respect to bank fraud, or law enforcement opens a criminal investigation. For example, a SAR clearly evidencing a deposit structuring pattern extending over a lengthy period and involving a large dollar amount, or a SAR specifically detailing statements by a suspect to a bank employee regarding intent to evade financial reporting requirements, is more likely to get law enforcement's attention than a SAR that understates the severity of the activity or omits potentially incriminating suspect statements. FinCEN's *Guidance on Preparing a Complete and Sufficient Suspicious Activity Report Narrative* includes several examples of both useful and ineffective SAR narratives, with a discussion of the strengths or weaknesses of each.

Maintain comprehensive SAR supporting documentation, since it provides the critical evidence associated

¹⁸ See *FFIEC BSA/AML Examination Manual*, August 24, 2007, "Suspicious Activity Reporting – Overview," "Suspicious Activity Reporting – Examination Procedures," and Appendix L, "SAR Quality Guidance" at www.ffiec.gov/pdf/bsa_aml_examination_manual2007.pdf.

¹⁹ See www.fincen.gov/sarnarrcompletguidfinal_112003.pdf.

with the suspected activity. SAR supporting documentation should be described in the SAR narrative and refer to all documents or records that assisted a financial institution in making the determination that certain activity required a SAR filing. Documentation may include transaction records, new account information, tape recordings, e-mail messages, and correspondence.²⁰ One IRS-CID special agent indicated that the following types of documentation can be particularly useful:

- Account opening information for all suspects, such as account signature

cards and corporate filings identifying officers and directors

- Account statements for all affected product types
- Photocopies (front and back) of all applicable financial instruments associated with the suspicious movement of funds, including monetary instruments and deposit tickets
- Complete wire transfer records, including wire request forms identifying the individual initiating the wire transfer, who may not be the named originator

SAR Reporting Requirements

The U.S. Department of the Treasury's financial recordkeeping regulations (31 CFR 103.18) require federally supervised banking organizations to file a SAR when they detect a known or suspected violation of federal law meeting applicable reporting criteria. FDIC Rules and Regulations (12 CFR 353) detail the SAR filing requirements that apply to state-chartered nonmember banks, including dollar amount thresholds, filing timelines, and record retention.¹

Dollar Amount Thresholds – Banks are required to file a SAR in the following circumstances: insider abuse involving any amount; transactions aggregating \$5,000 or more where a suspect can be identified; transactions aggregating \$25,000 or more regardless of potential suspects; and transactions aggregating \$5,000 or more that involve potential money laundering or violations of the BSA. It is recognized, however, that with respect to instances of possible terrorism, identity theft, and computer intrusions, the dollar thresholds for filing may not always be met. Financial institutions are encouraged to file nonetheless in appropriate situations involving these matters, based on the potential harm that such crimes can produce. Even when the dollar thresholds of the regulations are not met,

¹ Similar regulations are applicable to other federally supervised banking organizations by their respective primary regulator. See 12 CFR 208.62, 211.5(k), 211.24(f), and 225.4(f) (Board of Governors of the Federal Reserve System); 12 CFR 748 (National Credit Union Administration); 12 CFR 21.11 (Office of the Comptroller of the Currency); and 12 CFR 563.180 (Office of Thrift Supervision).

financial institutions have the discretion to file a SAR and are protected by the safe harbor provided for in the statute.²

Filing Timelines – Banks are required to file a SAR within 30 calendar days after the date of initial detection of facts constituting a basis for filing.³ This deadline may be extended an additional 30 days up to a total of 60 calendar days if no suspect is identified. FinCEN guidance recommends that banks file an updated SAR at least every 90 days in situations where the suspicious activity is ongoing.⁴

Record Retention – Banks are required to maintain copies of any SAR filed and the original or business record equivalent of any SAR supporting documentation for five years from the date of filing. Supporting documentation, though not submitted to FinCEN with the original SAR, is considered part of the SAR and must be retained and made available to authorized agencies upon request.

² BSA Advisory Group, "Section 4 – Tips on SAR Form Preparation and Filing," *The SAR Activity Review—Trends, Tips, & Issues*, Issue 6, November 2003, page 55, at www.fincen.gov/sarreviewissue6.pdf#page=60.

³ Initial detection is discussed in the BSA Advisory Group's "Section 5—Issues and Guidance," *The SAR Activity Review—Trends, Tips & Issues*, Issue 10, May 2006, pages 44–46, at www.fincen.gov/sarreviewissue10.pdf#page=47. According to the guidance, "The 30-day (or 60-day) period does not begin until an appropriate review is conducted and a determination is made that the transaction under review is 'suspicious' within the meaning of the SAR regulations."

⁴ BSA Advisory Group, "Section 5—Issues and Guidance," *The SAR Activity Review*, Issue 1, October 2000, page 27, at www.fincen.gov/sarreviewforweb.pdf#page=30.

²⁰ FinCEN Advisory, FIN-2007-G003, *Suspicious Activity Report Supporting Documentation*, June 13, 2007, www.fincen.gov/Supporting_Documentation_Guidance.html.

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■ All pertinent loan documents

See the text box titled “Important SAR Preparation Guidance” for a list of resources on completing SARs.

Making the Connection

The quality of SAR data is crucial to the effective implementation of the suspicious activity reporting system, which not only forms the cornerstone of the overall BSA reporting system but is critical to the United States’ ability to use financial information to combat terrorism, terrorist financing, money laundering, and other financial crimes.²¹ SARs play a vital role in the investigation and prosecution of criminal cases by law enforcement, as well

as in the issuance of civil enforcement actions by bank supervisory agencies and in the identification of financial crime patterns and trends by FinCEN. Examiners and bankers share an important responsibility in ensuring that SARs are complete, accurate, timely, and effective so that users can readily connect the dots to identify, analyze, and investigate financial crime.

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Examiner
Rocky Hill, CT

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Case Manager (Special Activities)
Braintree, MA

Important SAR Preparation Guidance

FinCEN Resources:

- *Preparation Guidelines for Suspicious Activity Report Form (SAR)*, revised November 28, 2006, provides line-by-line guidance to assist financial institutions in preparing SARs. See www.fincen.gov/sarguidelinesv4.pdf.
- *Guidance on Preparing a Complete and Sufficient Suspicious Activity Report Narrative* provides a recommended process to organize and write SAR narratives and also includes sanitized examples of sufficient and insufficient SAR narratives. See www.fincen.gov/sarnarrcompleguidfinal_112003.pdf.
- *Suggestions for Addressing Common Errors Noted in Suspicious Activity Reporting* lists ten common SAR filing errors and includes suggestions to reduce incomplete and incorrect SARs. See www.fincen.gov/SAR_Common_Errors_Web_Posting.pdf.
- *The SAR Activity Review—Trends, Tips & Issues*, published approximately semiannually under the auspices of the BSA Advisory Group, includes a section titled “Tips on SAR Form Preparation and Filing.” See www.fincen.gov/reg_sar.html.

- *Index to Topics for “The SAR Activity Review” Volumes 1–11* categorizes all prior issues by topic and provides a direct link to the information. See www.fincen.gov/reg_sar_index.html.
- *The SAR Activity Review – By the Numbers* provides semiannual SAR statistics by type of financial institution, type of suspicious activity, and geographic location. See www.fincen.gov/reg_sar.html.

Other Resources:

- *FDIC Risk Management Manual of Examination Policies*, Management, Section 9.1 – “Fraud,” and Section 10.1 – “Suspicious Activity and Criminal Violations.” See www.fdic.gov/regulations/safety/manual.
- *Federal Financial Institutions Examination Council Bank Secrecy Act/Anti-Money Laundering Examination Manual*, August 24, 2007, pages 60–76, 356–357. See www.ffiec.gov/pdf/bsa_aml_examination_manual2007.pdf

²¹ See FFIEC BSA/AML Examination Manual, August 24, 2007, *Suspicious Activity Reporting—Overview* at www.ffiec.gov/pdf/bsa_aml_examination_manual2007.pdf.

HMDA Data: Identifying and Analyzing Outliers

Data collected under the Home Mortgage Disclosure Act (HMDA)¹ continue to reveal that certain minorities are more likely to receive high-cost mortgages than other racial or ethnic groups. A 2006 Federal Reserve study relying on HMDA data from 2005 found that 55 percent of African-Americans and 46 percent of Hispanics, compared to only 17 percent of non-Hispanic whites, received “higher-priced” conventional home purchase loans. The study indicated that borrower-related factors, such as income, loan amount, and gender, accounted for only one-fifth of this disparity.² The troubling trends continue, as the Federal Reserve’s analysis of 2006 HMDA data again found that African-American and Hispanic borrowers were more likely than non-Hispanic white borrowers to obtain higher-priced loans.³

The FDIC is strongly committed to protecting consumers and ensuring adherence to the letter and spirit of the fair lending laws, including the Equal Credit Opportunity Act (ECOA) and the Fair Housing Act (FHA),⁴ by the banks

we supervise. Information collected under HMDA, including pricing data,⁵ serves as a useful tool to identify potential discrimination and to support implementation of the fair lending laws. As discussed in a *Supervisory Insights* article in summer 2006,⁶ FDIC examiners conduct a fair lending examination in conjunction with each scheduled compliance examination—following Interagency Fair Lending Examination Procedures.⁷

While the HMDA pricing data do not include underwriting criteria (such as loan-to-value ratios, debt-to-income ratios, or credit scores) necessary to reach conclusions about discriminatory lending, the data can be used to identify situations that indicate a need for further review. To detect illegal discrimination using HMDA data, a series of careful steps are required. This article describes the process the FDIC uses for loan review and analysis at institutions that, based on an initial screening of HMDA data, have pricing practices that may be discriminatory—outlier institutions. The article offers suggestions to bankers and examiners gleaned from analyses of two years of HMDA pricing data.

¹ Home Mortgage Disclosure Act, 12 U.S.C. § 2801, et seq.

² Robert B. Avery, Kenneth P. Brevoort, and Glenn B. Canner, “Higher-Priced Home Lending and the 2005 HMDA Data,” *Federal Reserve Bulletin*, September 2006, at A159.

³ Robert B. Avery, Kenneth P. Brevoort, and Glenn B. Canner, “The 2006 HMDA Data,” *Federal Reserve Bulletin*, September 12, 2007, p. 38.

⁴ Equal Credit Opportunity Act, 15 U.S.C. § 1691 et seq., and Fair Housing Act, 42 U.S.C. § 3605 et seq.

⁵ Beginning with the 2004 HMDA data, institutions have been required to report data on certain higher-priced loans. For the purposes of HMDA, a higher-priced first lien loan has an interest rate of 3 percentage points or more above the yield for a Treasury security of comparable term. A higher-priced junior lien has an interest rate 5 percentage points or more above the Treasury yield. Lenders are also required to report whether loans are covered by the Home Ownership and Equity Protection Act (HOEPA). Under HOEPA, special restrictions and disclosures are required for first lien refinance loans that have an interest rate of 8 percentage points or more above the yield for comparable Treasury securities, as well as junior liens that have an interest rate of 10 percentage points or more above the Treasury yield.

⁶ The summer 2006 issue of *Supervisory Insights* contains a discussion of how the HMDA data are used in the fair lending examination process, as well as a description of the new reporting requirements under the HMDA, which were effective with the 2004 data. See “From the Examiner’s Desk . . . Two Years After: Assessing the Impact of the New HMDA Reporting Requirements,” *Supervisory Insights*, Vol. 3, Issue 1, <https://www.fdic.gov/regulations/examinations/supervisory/insights/sisum06/sisum06-article4.pdf>.

⁷ Incorporated in the FDIC Compliance Examination Handbook. See www.fdic.gov/regulations/compliance/handbook/html/chapt04.html.

Using the HMDA Data to Evaluate Fair Lending Concerns

Initial Screening and Statistical Analysis

Once the Federal Reserve Board releases HMDA data for a particular year, FDIC examiners, economists, fair lending specialists, and policy analysts work together to identify institutions that exhibit a greater risk of fair lending violations.⁸ As part of this work, the FDIC uses the HMDA pricing data to identify specific institutions that demonstrate any of the following characteristics:

- A disparity between the average annual percentage rate for protected classes (minorities and women) and nonprotected classes;
- A high incidence of higher-priced mortgages for protected classes; and
- A high incidence of HOEPA loans for protected classes.

FDIC staff conducts statistical analyses of the data to identify institutions that have unusually high pricing disparities between majority and minority groups. Each outlier institution is then notified that a review of HMDA data has raised questions about its pricing of home mortgage loans and is asked to provide information about its loan pricing policies and procedures, such as rate sheets and a description of any discretionary pricing policies.

The FDIC uses this additional information to help determine whether a fair lending review of any of the outlier banks will be required. For example, some banks submit documentation showing that they price loans based on nondiscretionary factors, such as rate sheets that

indicate a specific rate or rate spread based on borrower credit scores or loan amount. In this case, an examiner will review a sample of loan files to determine if pricing is indeed based on the criteria provided. If the review confirms that this is the case, the matter is closed. If the file review shows that the bank does not use rate sheets, or examiners find discrepancies between rates charged to borrowers and the rate sheets, a more intensive fair lending review is generally required.

Criteria Interviews

If a more in-depth review of an outlier bank is needed, fair lending specialists and examiners conduct “criteria interviews” with bank management. The primary purpose of the criteria interviews is to gain an understanding of the parameters loan officers use to make pricing decisions. Such criteria might include credit score, loan-to-value (LTV) ratio, debt-to-income ratio, loan amount, collateral, and market competition. The criteria interviews help examiners and fair lending specialists determine how banks put their written policies into practice.

The information gathered in the criteria interviews must be comprehensive and accurate, because it drives our statistical analysis and leads to our conclusions about whether pricing discrimination exists. Accordingly, it is critical that the interviewed bank personnel have in-depth operational knowledge of the loan products being discussed and can explain who makes pricing decisions and how they are made. The FDIC uses the information the bank provides during the criteria interviews to determine which factors and variables to use in the statistical analysis that we develop for the bank—each statistical analysis is customized

⁸ Because of the time necessary to report and compile the data, it takes approximately eight months before the federal financial institution regulators have all the HMDA data for the previous calendar year. The 2004 aggregate data were made available to the regulators in September 2005. The 2005 and 2006 aggregated data were released in August 2006 and August 2007, respectively.

on the basis of pricing criteria the individual bank provides. As a result, the questions we ask in the criteria interviews are specific to each bank.

File Reviews and Follow-up Statistical Analysis

After the criteria interviews are completed—and the analysis framework is developed in consultation with Washington office specialists and economists—examiners gather data from each loan file relevant to the bank’s pricing criteria. A statistical analysis is then performed that incorporates the pricing criteria the bank supplied in the interviews and data gathered through the file review. To address the pricing criteria a bank uses, each statistical analysis is developed individually for the bank in question. Our analysis may show that once we control for various nondiscretionary pricing factors that are not included in HMDA data, there is no longer evidence that discrimination in pricing exists.

Notification to Bank of “Reason to Believe”

If the analysis indicates that the difference in pricing cannot be explained by nondiscretionary pricing policies, the FDIC formally notifies the bank that we have reason to believe that discrimination in loan pricing exists.⁹ The bank is advised of the type of loans for which the FDIC has identified potential pricing discrimination and the racial, ethnic, or gender group affected by the

discrimination. The bank is given an opportunity to respond and submit any additional information it would like the FDIC to consider in determining whether the laws that prohibit lending discrimination have been violated. Through this process bank management sometimes realizes that not all of the pricing criteria actually used by the bank were provided to the FDIC during the criteria interview and will cite new criteria that should be included in a statistical analysis.

To decide whether to consider any additional pricing criteria, the FDIC must assess the credibility of the bank’s response. Among other things, the FDIC reviews the bank’s written policies and guidance to determine if they support management’s assertion that additional pricing criteria should be considered in our statistical analysis.

Referral to the Department of Justice

If the FDIC finds that the information the bank submits does not convincingly refute the preliminary finding of discrimination, we finalize the examination and refer the case to the Department of Justice (DOJ). (See text box, “Department of Justice Referrals.”) The DOJ may conduct its own investigation and go forward with a case, or it may defer to the FDIC’s supervisory and enforcement process.¹⁰

⁹ The analysis identifies statistically significant disparities between prices charged to target and control group borrowers. “Statistically significant” is defined as a significance level of 5 percent or better. This significance level means that there is a 5 percent or lower probability that an observed disparity would occur if there were no underlying systematic difference in treatment (that is, differences were truly random). Economists and statisticians consider statistical significance levels of 5 percent or better to be a strong indicator that the observed disparity is not likely to be due to random chance. Many courts also accept a statistical significance level of 5 percent as sufficient to rule out chance. See *Waisome v. Port Auth.*, 948 F.2d 1370, 1376 (2d Cir. 1991).

¹⁰ The DOJ’s independent investigation may be broader in scope than that of the FDIC. The FDIC’s evidentiary threshold for referral is lower than the evidentiary standard for the DOJ to proceed with an action. The “reason to believe” standard required for an FDIC referral does not require that the FDIC have sufficient evidence to prove a violation with certainty. Instead, a “regulatory agency has reason to believe that an ECOA violation has occurred when a reasonable person would conclude from an examination of all credible information available that discrimination has occurred.” See *Policy Statement on Discrimination in Lending*, April 15, 1994, 59 FR 18266-01, p. 18271.

Department of Justice Referrals

Pursuant to the ECOA statute, agencies “shall refer the matter to the Attorney General whenever the agency has reason to believe that one or more creditors has engaged in a pattern or practice of discouraging or denying applications for credit in violation of section 1691(a) of this title.” [Emphasis added] 15 U.S.C. § 1691e(g).

Lessons Learned

The FDIC’s review of the pricing data reported for 2004 and 2005 has not only enabled us to resolve discriminatory pricing practices; it has also helped us refine the process we use to obtain and analyze pricing data. We have identified several practices by banks that make the review and analysis of pricing data more efficient for both banks and the FDIC.

Removing discretion in pricing decisions reduces risk of discrimination. When a bank provides clear guidance to loan officers on its pricing policies, the risk that loan officers will treat borrowers differently for inappropriate reasons is reduced. When a bank uses rate sheets and loan officers are not allowed discretion in pricing, the pricing policies of the bank are transparent and the risks of discriminatory pricing are further reduced. Allowing discretion in pricing decisions introduces more risk that illegal discrimination will occur, although it does not signify conclusively that pricing discrimination exists.

Documentation minimizes questions. Beyond providing clear pricing guidance, banks that clearly document how pricing decisions are made generally will have expedited file reviews. Examiners sometimes find that although the bank may have stated clear pricing policies in the criteria interview, the loan files lack evidence of consistent use of the policies. For example, a bank

may report during criteria interviews that its loan officers rely on the borrower’s credit score to make a pricing determination, but the file review finds no credit reports in many of the loan files.

Similarly, the bank may report that if a customer has frequently been more than 60 days late on any credit line with the bank, it will require a higher rate on a subsequent mortgage. This bank’s loan files should contain information that documents the delinquencies, such as a copy of the customer’s file printed from a loan officer’s computer screen at the time the bank was underwriting the loan. If such verification does not appear in the loan file, it is extremely difficult to re-create that information during the file review. In these situations, the FDIC must assess the bank’s credibility, as well as the adequacy of management controls and oversight.

Comprehensive information enables accurate analyses. Obtaining clear information about a bank’s practices is key to the FDIC’s ability to conduct fair lending reviews. The FDIC’s goal in loan reviews is to understand how loans are priced, whether loan officers or other staff members have discretion in assigning an interest rate, and exactly where discretion lies. To understand the bank’s lending process, examiners need to have access to any pricing guidance the bank provides to its loan officers and to be informed of any other factors that loan officers incorporate in making pricing decisions.

Examiners must understand the criteria that are used to make pricing decisions and how those criteria work in practice. For example, if a bank prices loans differently in different markets, examiners will need to know how the markets are delineated, why they were chosen, and how prices differ across markets. Obtaining this information is necessary because we sometimes must run a separate analysis for each market

to incorporate the different pricing criteria a bank uses in different markets.

We often have to ask bank staff for additional details in order to ensure that we have complete information. For example, a bank may state that it uses both the borrower and co-borrower credit scores in establishing a loan rate. To incorporate these criteria into a statistical analysis, the FDIC needs to know how much weight is given to the scores and how each of the scores is used (e.g., higher score only, average of the two scores). Similarly, if a bank states that it uses a credit score and LTV ratio to determine a rate, we need to know what credit score range and what LTV range lead to what rates. It is very important to obtain this type of information early in the process so that we have access to all the criteria a bank uses before performing the file review and any statistical analysis. If we must revise our approach to accommodate new information obtained later in the process, both the FDIC and the bank will have to expend additional resources.

Bank management should be very clear during criteria interviews about the factors used in pricing decisions—including a comprehensive description of all the factors used in pricing loans. Some banks have hired third parties to perform statistical analysis of their loan data after being notified of FDIC's preliminary findings of discrimination. If a bank chooses to do this, it is imperative that the bank provide consistent information to the FDIC and the third party. Problems can arise when third parties are provided different data sets than were provided to the FDIC or are told of different criteria that went into pricing decisions than were communicated to the FDIC.

Monitoring of pricing decisions is essential. Regardless of whether banks allow pricing discretion, periodic monitoring of pricing decisions is a key component of an effective compliance

management program. One bank's guidelines outlined pricing policies that eliminated discretion, but when the bank analyzed its own data it found that interest rates given to similarly qualified borrowers varied tremendously. Going forward, the bank directed its compliance officer to review all loans for compliance with the applicable rate sheet before the loans would be funded. The bank coupled this monitoring with loan officer training on pricing guidelines. Another bank, which allows discretion in pricing, has its compliance officer flag all higher-priced loans and discuss the reasons for the pricing decision with the appropriate loan officer.

Conclusion

Analysis of HMDA data for fair lending purposes can be time-consuming for both an institution and the FDIC. We often find that only an in-depth analysis can determine whether pricing differentials are due to discriminatory practices or other variables. The FDIC is committed to a process that is fair and applied consistently across lenders. To work toward these goals, our review of 2006 HMDA data will direct the majority of resources to institutions that show the greatest risk of discriminatory practices while incorporating the lessons learned from previous reviews.

It is our responsibility as a financial regulator to ensure that the unfairness resulting from discriminatory pricing is addressed. When discriminatory pricing practices exist, they are usually caused by ineffective compliance management at the bank. In the absence of clear pricing criteria, pricing may be driven in part by lenders' biases, resulting in illegal discrimination. The banks where we have seen the most problems allow discretion in pricing and fail to monitor the pricing process.

The FDIC is continually assessing our supervisory practices for identifying fair

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lending violations. One of our goals is to maximize the value of the HMDA data to ensure effective examinations and enforcement. We encourage the institutions we supervise to continue to provide us with feedback and ideas on how to make our fair lending reviews as efficient as possible, while ensuring that HMDA data continue to help root out any discriminatory credit practices.

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Authentication in Internet Banking: A Lesson in Risk Management

The business model that banks use to offer products and services to their customers has evolved significantly. Most banks have supplemented tellers, drive-ups, and other facilities with electronic capabilities, many of which are facilitated by the Internet. This shift to Internet-based banking and e-commerce in general is accompanied by new risks as well as an increase in existing risks. Security weaknesses in Internet-based processes create opportunities for savvy hackers to compromise systems and steal data. The Internet provides an effective and anonymous medium for thieves to advertise and sell the stolen data. In response, the bank regulatory agencies and the banking industry have sought ways to mitigate these vulnerabilities.

Authentication—the validation of a customer’s identity—is a critical element of an effective information security program. This article defines authentication and describes instances when stronger authentication is needed, the authentication strategies some banks are using, and the roles and responsibilities of both bankers and regulators.

What Has Changed, and Why did the Old Processes Fail?

For years, financial institutions relied on user identification (IDs) and secret passwords to authenticate electronic banking customers. Because customers transacting business over telephone lines or through their computers could not show an ID card in person, user IDs and passwords served the same purpose—authenticating the customer to the financial institution. Using passwords as access credentials proved to be effective as long as the risks of compromise remained low.

When online banking (PC banking) emerged some years ago, passwords continued to provide reliable and secure

access through dial-up connections and software provided by the financial institution. The online connection was made only to the bank, and opportunities to compromise the connection or steal access credentials were very limited. Although PC banking proved to be a viable product, problems such as slow dial-up connections and the expense of distributing and updating customer software prompted financial institutions to search for alternatives.

The Internet seemed to be the perfect answer. Rather than relying on banks to support and distribute online banking software, customers can simply access their financial information using their bank’s Web site. Faster telecommunications offerings, such as digital subscriber line (DSL) and cable modems, provide the speed that dial-up connections lacked. But while the Internet offers a cheaper and faster product, it also contains serious new security vulnerabilities. Internet connections establish a pathway for hackers and thieves to access and steal sensitive personal information, including the banking records that many customers store on their home computers. Phishing, pharming, spyware, malware, worms, nimbdas, viruses, buffer overflows, and spam—all relatively recent entries to our vocabulary—have raised electronic/Internet banking risk levels to new highs, and financial institutions have had to increase security measures to address those risks.

Financial institutions offering Internet banking products have generally done a good job of providing security-related information on their Web sites to both educate customers about the threats and instruct them on how to report suspected fraud. Providing educational materials to customers that explain how to recognize phishing e-mails and describe how to secure personal computers against viruses and Internet schemes

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continues to be an important bank activity. Customer education adds value to banks' information security efforts, but banks still must address the risks of compromised access credentials.

The Regulatory Response

While numbers published in various periodicals and by consulting organizations place Internet fraud losses in the billions of dollars, it is very difficult to know just how large bank-specific losses are. One reason for this lack of information is that financial institutions are generally reluctant to discuss these issues publicly. Most financial institutions have borne these losses and not passed them on to the customers whose accounts were compromised. Financial institutions may simply cover these losses to avoid both the negative publicity and the legal requirements related to Internet fraud losses.

These losses often result from fraud committed using compromised access credentials. In response, in 2001 the Federal Financial Institution Examination Council (FFIEC) issued guidance titled *Authentication in an Electronic Banking Environment*.¹ This guidance explained the nature of a variety of threats and how banking customer access credentials could be compromised (stolen) and fraud perpetrated. However, the guidance lacked formal mandates and did not require action, so it did not prompt most financial institutions to act.

To draw attention to the issues associated with Internet banking fraud, in December 2004 the FDIC published a study focused on Internet ID theft—*Putting an End to Account-Hijacking*

Identity Theft.² The study concluded that passwords alone were no longer an adequate authentication strategy when assets and personal information were at risk.

On October 12, 2005, the FFIEC issued further guidance titled *Authentication in an Internet Banking Environment*.³ The new guidance, which replaced the 2001 guidance, required financial institutions to perform risk assessments of their electronic banking products and services. Institutions were expected to implement stronger authentication procedures for high-risk transactions, but they had considerable leeway regarding the authentication methods they chose to implement. They were expected to comply with the guidance by year-end 2006.

A common misinterpretation of the guidance made by both bankers and industry affiliates is that the banking agencies require multifactor authentication for high-risk transactions. In fact, what the guidance requires is *stronger* authentication to mitigate high risk. Traditional single-factor authentication should be augmented to create a level of security capable of coping with the risks of the transactions.

Where risk assessments indicate that the use of single-factor authentication is inadequate, financial institutions should implement multifactor authentication, layered security, or other controls reasonably calculated to mitigate those risks. The agencies consider single-factor authentication, as the only control mechanism, to be inadequate in the case of high-risk transactions involving access to customer

¹ FIL-69-2001, *Authentication in an Electronic Banking Environment*, August 24, 2001, <https://www.fdic.gov/news/inactive-financial-institution-letters/2001/fil0169.html>.

² FIL-132-2004, *Identity Theft: Study on 'Account Hijacking' Identity Theft and Suggestions for Reducing Online Fraud*, December 14, 2004, <https://www.fdic.gov/news/inactive-financial-institution-letters/2004/fil13204.html>.

³ FIL-103-2005, *Authentication in an Internet Banking Environment*, October 12, 2005, <https://www.fdic.gov/news/inactive-financial-institution-letters/2005/fil10305.html>.

information or the movement of funds to other parties.⁴

After careful study, the FFIEC agencies concluded that stronger authentication, including multifactor authentication, should be considered an industry best practice. They also concluded that multifactor authentication, layered security, and compensating controls could all mitigate different levels of risk. The authentication guidance provides a framework for improving online banking security by using stronger authentication.

What Is Authentication?

Successful authentication occurs when an individual presents evidence or proof that confirms a previously established identity. For example, if you moved to a new country, to establish residency you might have to present a number of documents that identify you. Once these documents have been scrutinized and found to be in order—part of a process called *enrollment*—you might then be issued an official government ID card for future use. This process of producing documents to prove an identity is commonly referred to as *identification*. *Authentication* occurs when you are later asked to produce the official ID card, such as when cashing a check—the ID card authenticates you as having been previously identified.

Bankers can accomplish and manage authentication easily with face-to-face customer interaction; however, authenticating a disparate customer base remotely connecting to Internet banking platforms using traditional physical security tools presents certain challenges:

- The distribution of software, hardware, cards, and other authentication-enabling technologies to a large Internet banking customer base is generally expensive to implement and administer.

- Banking customers are generally not receptive to paying security-related fees or enrolling in and installing security software and hardware on their home computers.

The difficulty and expense of implementing authentication standards typically increase proportionately with the strength and reliability of the solution. For instance, passwords present fewer challenges than fingerprint scanning. Authentication methodologies generally rely on one or more of the following three factors:

- Something you *know* (e.g., password)
- Something you *have* (e.g., ATM card)
- Something you *are* (e.g., fingerprint)

Requiring *one* of these factors to authenticate an individual is an example of single-factor authentication. Passwords are perhaps the most commonly used single-factor authentication methodology. Multifactor authentication consists of using two or more factors together. Using an ATM card is a common example of multifactor authentication—the card is something you have, and the personal identification number (PIN) is something you know. Both are required to complete a transaction. The use of two authentication factors in ATM transactions is considered strong authentication.

When Are Stronger Controls Necessary?

Banks traditionally have acknowledged the risks inherent in large dollar transactions, such as those initiated in commercial accounts and by customers who have high balances and corresponding activity. Stronger authentication, including multifactor authentication, has been an integral part of many financial institutions' risk management strategies for these higher-risk customers. But before the guidance was issued, most banks

⁴ FIL-103-2005.

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had not implemented stronger authentication for all customers. The guidance, while addressing both commercial and consumer accounts, is clearly directed at protecting the more vulnerable consumer account access credentials used in Internet banking. The mandated stronger authentication provides improved protection for all Internet banking customers.

The 2005 guidance instructed financial institutions to conduct and document the results of an Internet banking risk assessment. In the assessments, banks were required to identify high-risk transactions and, if they existed, strengthen Internet authentication standards if only passwords were used. The guidance defines high-risk transactions as those that allow the transfer of funds to third parties or provide access to nonpublic personal information. For example, bill pay, a common Internet banking product, allows funds to be transferred to third party payees. This is considered a high-risk transaction.

Today, the vast majority of banks that offer Internet banking are subject to the provisions of the guidance.⁵ Telephone banking operations are also subject to the guidance when high-risk transactions can be conducted over the phone. It is important that financial institutions identify the banking systems and products that require stronger authentication and the degree of risk inherent in each. Internet banking transactions range from paying a small water bill to authorizing a large wire transfer. Obviously these two transactions are very different, and creating the wire transfer would carry much more risk than paying a water bill. The level of risk depends on the potential harm if the risk is left unmitigated.

Responding to the Challenges of Authentication

There are a variety of authentication products and services on the market, each with varying degrees of strength and reliability. Most FDIC-supervised institutions are customers of technology service providers (TSPs). Major TSPs have implemented authentication products from known vendors who use methodologies that the banking industry generally considers to be effective. Regulators, including the FDIC, have closely scrutinized and vetted TSP authentication product offerings. While many are not examples of true multifactor authentication, they can offer strong protection (especially when combined) and meet the provisions of the guidance. These products represent affordable and effective solutions for community banks.

FDIC-supervised banks should be in a good position to select an authentication product that mitigates the risks inherent in their Internet banking environments. While all the large TSPs have created and offer authentication products, it is up to the banks to install and properly implement them. As with any automation and security product, improper installation can render a solution ineffective.

Some TSPs offer tiers of authentication, with each tier relying on others to provide an effective overall solution. Since each tier must often be purchased separately, an institution may pick and choose pieces of a TSP's authentication product offering. Such a strategy can help minimize cost, but institutions may sometimes select pieces that do not work together effectively. Another common problem is weak authentication enrollment processes. For example, relying only on a weak password (such as a mother's maiden name) during the initial identification phase is a weak

⁵ FIL-77-2006, *Frequently Asked Questions on Authentication in an Internet Banking Environment*, August 21, 2006, <https://www.fdic.gov/news/inactive-financial-institution-letters/2006/fil06077.html>.

enrollment procedure. A better enrollment process might involve mailing a unique password to the customer. The customer uses the unique password for the initial sign-on but then must change the password for future use.

Some banks have implemented controls that involve identifying the device used to establish the Internet banking connection. For example, the device (such as a computer, personal digital assistant, or cell phone) the customer uses to connect to the bank can be uniquely identified by the bank as belonging to the customer. This method of authenticating the customer—referred to as *device authentication*—is considered a compensating control that strengthens authentication.

Financial institutions often select two or three authentication solutions that can be implemented together to achieve acceptable levels of risk mitigation:

- Shared information—Secret information or images that are shared between the customer and the bank
- Device identification—A profile of the connecting device that can be used to authenticate the user in future transactions
- Geo-location—Establishing the geographic location from which the customer is connecting
- Internet Protocol (IP) intelligence—Using the customer's unique IP address
- Encrypted cookies—Special bits of data that the bank places on the customer's computer to assist in authenticating the customer
- Out-of-band communication—Cell phone call or e-mail message providing verification

Each of these processes alone adds strength to the authentication process.

Combining several processes greatly increases the strength of the security and is an effective risk management strategy.

For consumer accounts, most banks are using combinations of geo-location, device identification, shared information, and IP intelligence, with challenge questions as the primary fallback. Challenge questions, generally set up at enrollment, involve the customer answering several questions. If a customer cannot be authenticated using normal routines, a challenge question is posed. A customer who answers correctly is authenticated and provided with access. The most effective challenge questions rotate from session to session; otherwise, they are little more than another password.

The agencies expect financial institutions to implement strategies that address the risks in their particular environment when considering how to authenticate Internet banking customers. Moreover, authentication processes should be implemented using logical and prudent risk management principles such as those described in the FFIEC *Information Technology Examination Handbook*, including:

- Classifying and ranking sensitive data, systems, and applications
- Assessing threats and vulnerabilities
- Evaluating control effectiveness⁶

Risk Management Procedures and Examiner Review

One of the primary factors that the agencies consider in reviewing banks' efforts to comply with the guidance is the risks and how the bank's authentication strategy mitigates those risks. When selecting authentication products and services, vetting the products offered by the TSP and performing vendor due diligence are critical for both financial institutions and service providers.

⁶ FFIEC, *Information Technology Examination Handbook*, Information Security Booklet, Information Security, July, 2006, at <https://ithandbook.ffiec.gov/it-booklets/information-security/>.

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Due diligence should include acquiring a sound working knowledge of the technology and being able to both explain and defend the solution during regulatory scrutiny. Using a one-time password-generating token along with a user password is generally accepted as strong authentication, as is the two-factor authentication for ATM use discussed previously. Thus, examiner review and assessment of these technologies is fairly straightforward. On the other hand, evaluating technologies purchased from less well-known sources can be more difficult. If the bank has purchased a solution from a vendor whose claims are not easily understood or are filled with technical jargon, examiners may need to review the solution more closely. In some cases, information technology examination specialists may need to evaluate the solution.

Feedback from bankers indicates that the level of online banking fraud is down and that the guidance may have had a positive effect. During on-site examinations and telephone contacts earlier in the year, examiners began noting the progress banks have made in implementing authentication solutions. Although the effort is not yet complete, of more than 500 institutions assessed, 92 percent have complied with the guidance and implemented stronger authentication for their high-risk transactions. While a few institutions may have procrastinated thinking there would be relief through extended compliance dates, or otherwise may not have acted, most banks that have not yet complied with the guidance have plans in place and are making progress. Many of these banks are serviced by small, regional-based TSPs and may either be waiting for their turn to have a product installed or waiting for one to be tested and available for installation. The FDIC continues to monitor banks' compliance efforts and risk assessment efforts, and, if necessary, will consider enhancing examination

procedures to include a formal review of banks' authentication strategies.

Authentication—One Part of Enterprise Risk Assessment

A common criticism of security processes in general is that they do not provide guarantees. In the real world, there are no guaranteed solutions to protect systems and data. Implementing strong authentication is only part of an effective enterprise-wide risk management program. Managing information technology risks is a dynamic proposition that should be proactive rather than reactive. Effectively managing authentication risks today may limit vulnerabilities in the future. Managing access credentials, whether for remote banking customers or bank employees accessing confidential systems, is an important element in a bank's information security plan and risk assessment. The authentication guidance provides the impetus for performing and managing periodic evaluations of the threats and vulnerabilities of Internet banking products and services as part of the bank's comprehensive risk management program.

Strong authentication practices coupled with other security policies such as back-end fraud detection are elements of an effective information security plan. And like any good plan that assesses risk, the plan must be revisited and revised regularly as the threat and vulnerability landscape changes. Technology changes daily, and the best way to maintain a proper defense is to keep a constant vigil. Internet banking risk assessments and evaluations should have a permanent place in every bank's enterprise risk assessment strategy.

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From the Examiner's Desk ... Community Bank Leverage Strategies: Short-term Rewards and Longer-term Risks

Community banks are constantly seeking ways to improve their earnings performance. Starting in 2000, net interest margins (NIMs) in many banks supervised by the FDIC's Dallas Region showed a declining trend, and bankers explored a number of different methods to improve noninterest income as well as their net interest margins.¹ This article discusses one of these solutions—using leverage through wholesale funding. Though leverage strategies could be implemented in any geographic area, we will use FDIC-supervised community banks in the Dallas Region to illustrate this strategy. We will offer insights for bankers and examiners concerning the risks of entering into leverage transactions and the expectations of risk management when conducting this business activity.

Leverage strategies are often said to be sold and not bought. More precisely, these strategies are usually suggested by an outside party such as a securities sales representative, rather than initiated within the bank. Sales pitches usually focus on the potential rewards of the transactions, without an adequate disclosure and analysis of the potential risks. As indicated in this article, these risks can be considerable.

Overview of a Leverage Transaction

Leverage strategies involve single or multiple transactions in which a financial institution purchases assets, typically investment securities, and funds the transaction(s) with wholesale funding. The strategy generally is a departure from the institution's core business activities and usually results in a significant volume of assets and liabilities

being added to the balance sheet with a corresponding decrease in regulatory capital ratios.

A financial institution's primary goal in entering into a leverage transaction is to increase the level of earnings and to improve return on equity (ROE). Institutions that initiate leverage transactions typically have high levels of regulatory capital and below-average ROE. These banks generally have been unable to increase their loan base in their delineated lending area because of their locale or competitive conditions and, accordingly, increased their level of earning assets through these leverage transactions. The participants view these transactions as having a low level of risk (interest rate or credit) and requiring only minimal overhead, especially in relation to the significant increase in assets. Because of changes in market conditions, however, these expectations are not always fulfilled.

Profile of a Leverage Candidate

The most common identifying feature of a new participant in a leverage program is rapid asset growth funded with wholesale borrowings. Generally, the asset growth will be centered entirely in the investment portfolio. The most common characteristics of a potential leverage candidate are:

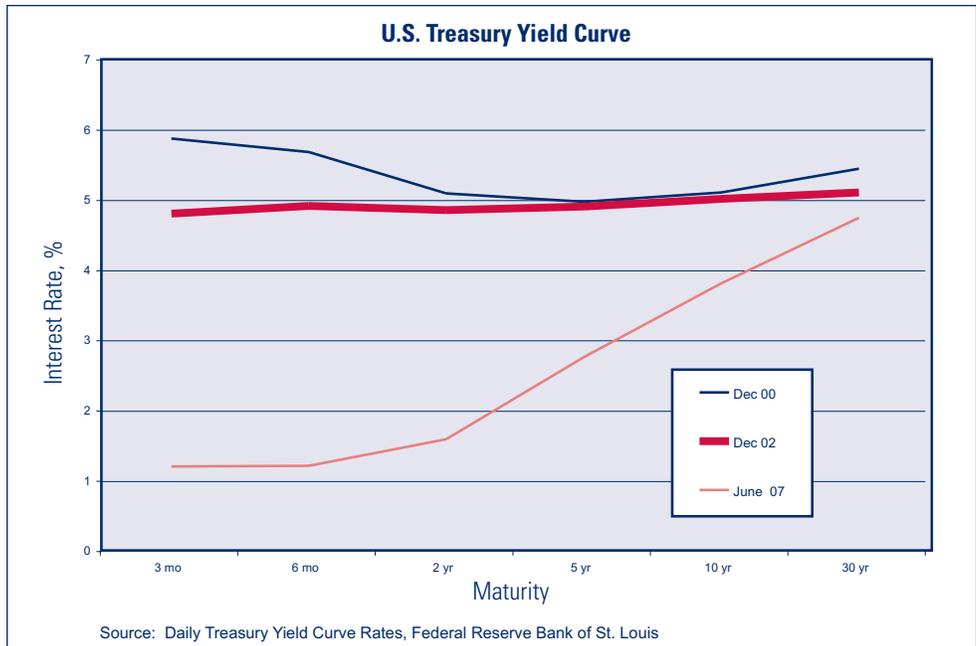
- Small asset size
- Located outside a metropolitan area
- Relatively high leverage capital ratio
- Mediocre earnings
- Low loan demand
- Few prospects for asset growth

¹ The FDIC's Dallas Region supervises insured state-chartered institutions that are not members of the Federal Reserve located in Colorado, New Mexico, Oklahoma, Arkansas, Louisiana, Mississippi, Tennessee, and Texas.

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Chart 1: Short-term U.S. Treasury Rates Have Increased from Historic Lows



Investment and Funding Options in Leverage Transactions

Real estate mortgage investment conduits (REMICs) have been the primary type of investment securities used by Dallas Region banks in leverage transactions. REMICs' cash flow characteristics, which are more structured than mortgage pass-through securities, allow institutions entering into a leverage transaction to target the degree of interest rate risk based on the risk characteristics of the particular REMIC selected. Other securities used in these strategies include U.S. agency securities, mortgage pass-through securities, and bond mutual funds. The initial spread on the leverage transaction (the difference between the cost of funds and the yield on the securities) is a function of the risk the institution is willing to take; however, the spread

can change over time and can even become negative.

Banks employing leverage strategies have used four principal types of funding sources—federal funds purchased, Federal Home Loan Bank advances, brokered deposits,² and securities sold under agreement to repurchase. Most of the transactions involve a combination of these borrowings.

Financial Environment

To understand more fully what precipitated the use of leverage strategies in some Dallas Region community banks and the risks that emerged, it is necessary to review the interest rate environment starting in 2001 as well as these banks' financial positions and operating results. Chart 1 illustrates three points in time on the Treasury yield curve: December 2000, December 2002, and June 2007.

² Brokered deposits are subject to regulatory limitations and potential restrictions as defined in 12 CFR 337.6. See FDIC Rules and Regulations, www.fdic.gov/regulations/laws/rules/2000-5900.html#2000part337.6.

Chart 2: NIMs at Dallas Banks Declined from 2000 to 2004, Then Recovered

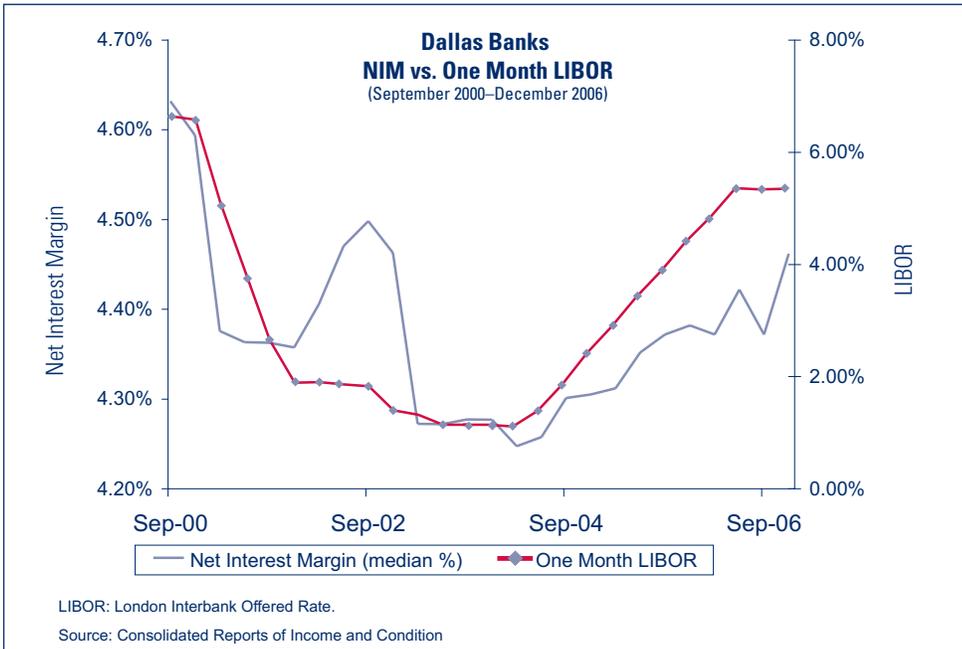
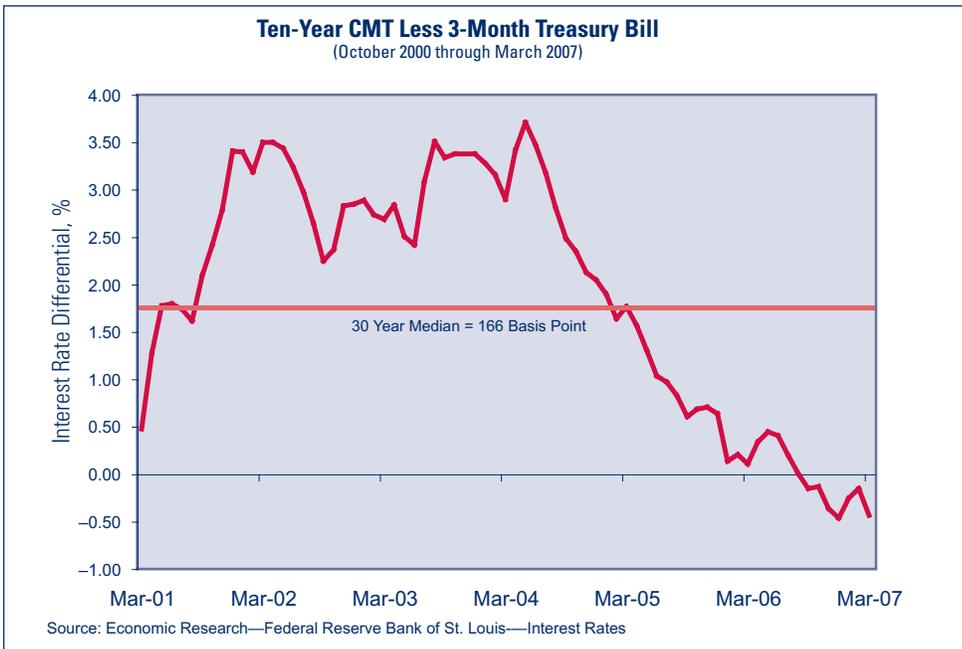


Chart 3: Previous Wide Spreads Have Narrowed Significantly



Starting in 2001 and over the next two years, the Federal Reserve lowered short-term interest rates to historically low levels. While this trend resulted in a lower cost of funding for most financial institutions with relatively short-term funding bases indirectly tied to money

market rates, it did not improve net interest margins. Some financial institutions started to pursue other business strategies to improve their earnings. Chart 2 shows this declining trend in NIMs in institutions supervised by the Dallas Region from 2000 to 2004.

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While the Federal Reserve was decreasing short-term interest rates, longer-term rates changed little—fluctuating within a 100-basis-point range. As shown in Chart 3, the Treasury yield curve steepened significantly, and for about three years, the spread between the yield on the three-month Treasury bill and the ten-year constant maturity Treasury (CMT) yield moved well above historical norms. (Over a 30-year period, the median spread of the ten-year CMT over the three-month Treasury bill was 166 basis points.) This environment of a steepening yield curve facilitated institutions entering into leverage strategies. Investing in debt securities with extended maturities and embedded options in a steep-yield-curve environment will widen this spread and improve earnings, at least for a time.

During 2003, the Federal Reserve started raising short-term interest rates, and in late 2005, the yield curve became inverted (short-term rates were higher than longer-term rates), as noted in both Chart 1 and Chart 3. Eventually, some of the institutions participating in leverage strategies that invested in longer-term securities experienced nominal to negative spreads between the cost of their funding and yields on their securities used in the leverage transaction.

Hypothetical Example

To further illustrate the risk-reward profile of a leverage strategy, we can look at an example of two hypothetical banks (Opportunity Bank and Fortuity Bank) that engage in a leverage activity.

Table 1

Leverage Bank Example—Agency Bullet vs. Mortgage-Backed Security		
	Opportunity Bank	Fortuity Bank
Prior to Leverage		
Total Assets	\$100,000,000	\$100,000,000
Tier 1 Leverage Ratio	12%	12%
Return on Assets (ROA)	1.00%	1.00%
Return on Equity (ROE)	8.33%	8.33%
Leverage Transaction		
Purchase	<i>\$40MM U.S. agency security, no call, 2-year maturity</i>	<i>\$40MM Fannie Mae current coupon 30-year fixed-rate mortgage pass-through security</i>
Funding	FHLB fixed-rate advance, 18-month maturity	LIBOR floating-rate advance
Spread*	40 basis points	500 basis points
One Year Subsequent to Leverage		
Total Assets	\$140,000,000	\$140,000,000
Tier 1 Leverage Ratio	9.29%	10.06%
Increase in Earnings (Net of Tax)	\$105,600	\$1,320,000
ROA	0.79%	1.63%
ROE	8.81%	17.63%
*Federal Home Loan Bank of Dallas—Rates History, Federal Reserve Bank of St. Louis Interest Rates, FannieMae Benchmark Securities—Constant Maturity Debt Index Series History		
Source: Authors' calculations		

In this hypothetical example, the market rates used for the purchased funding and investment yields are typical of actual spreads in effect during a steeper yield curve environment. Table 1 details the results of these leverage strategies one year after consummation, assuming no change in interest rates or in the asset/liability mix of the two institutions.

One year after they initiated the transactions, the Tier 1 capital ratios of both institutions have declined but still remain well above regulatory minimums. Opportunity Bank's ROA actually decreased, which would be expected, since the spread on the transaction of 40 basis points was smaller than the net interest margin before consummation of the transaction. Opportunity Bank's ROE increase appears relatively small compared to that of Fortuity Bank. Fortuity Bank's ROA and ROE show significant increases, but with a corresponding significant degree of risk, since it is investing in securities with an estimated life in excess of five years that could extend, and the transaction is funded with short-term repriceable funds.

For banks that engage in extreme levels of leverage, the risk can be substantial. As interest rates rose rapidly in 2004–2006 and the yield curve flattened, the performance of some leverage programs sharply deteriorated. ROAs of some banks adopting these strategies have dropped by as much as 80 percent from 2004 to mid-2007. Table 2 illustrates the effect of a flattened yield curve on the two banks in our hypothetical example.

These examples illustrate the risk and reward spectrum for an institution engaging in leveraging. However, they need to be viewed in conjunction with the underlying risk and risk management practices, both of which are discussed in the following sections.

Risks Inherent in Leverage Strategies

Implementing a leverage strategy can introduce several new risks to a financial institution's balance sheet.

Interest rate risk, or the exposure of a bank's current or future earnings and capital to adverse interest rate changes, is the primary risk in most leverage strategies. The interest rate risk arising from leverage includes several components:

- **Repricing risk**, sometimes referred to as gap risk, results when the maturity or repricing date of the asset differs substantially from the repricing date of the funding source. Leverage strategies often consist of longer-term assets funded with short-term liabilities. While this will maximize the initial spread in the transaction, it will also create future repricing risk.
- **Option risk** is the risk from volatile cash flows resulting from options embedded in a bond. A common example is the call feature on many bonds. Mortgage securities contain option risk, which is the underlying borrower's inherent ability to prepay the loan. Option risk is present in many leverage structures but is often overlooked or inadequately assessed. Changes in market interest rates will

Table 2

Leverage Bank Example: Year 2—Flat Yield Curve		
	Opportunity Bank	Fortuity Bank
ROA	0.56%	0.84%
Change in Earnings	-29.11%	-48.47%

Source: Authors' calculations

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change the effective maturity of these assets. This cash flow volatility complicates the funding strategy and also necessitates risk measurement systems capable of adequately capturing option risk.

- **Yield curve risk** is the risk from changes in the shape of the yield curve. It occurs when the asset and the funding source are priced from two different points on the yield curve. Recent history is a good example of yield curve risk as illustrated in Charts 1 and 3. High spreads resulting from strategies originating during periods with a steep yield curve will usually evaporate when the yield curve flattens.

Basis risk is the risk arising from assets and liabilities that are priced to different rate indices. Basis risk is present in all financial institutions to some degree and generally exists with the leverage strategies described in this article. Basis risk usually is not as pronounced as the other interest rate risks, but it can be a significant factor because of the small margins usually associated with leverage programs.

Liquidity risk resulting from leverage strategies can be significant. Because wholesale sources of funding are generally more sensitive to the value of collateral pledged to secure funding as well as the bank's financial condition, liquidity risk for banks employing leverage strategies is often more complex and sometimes less obvious than the liquidity risk in a typical community bank. For example, funding sources such as Federal Home Loan Bank advances or repurchase agreements have margin requirements. Additional collateral may be required if the market value of the assets serving as collateral declines substantially. Also, wholesale funding sources are more credit sensitive than core deposits. Therefore, the availability

of these funding sources could become constrained should the institution's financial condition deteriorate. Because of these unique liquidity characteristics, traditional static measures of assessing liquidity are not very effective and can often be misleading.

Market risk is the potential change in value of a bank's assets and liabilities caused by changes in interest rates. Market risk should be viewed on both macro and micro bases, affecting the change in value of specific assets as well as the change in value of the entire balance sheet. Because of the potential duration mismatch between the assets and funding, there may be significant risk to economic value of equity (EVE) from leverage. From the micro perspective, the potential market risk of the leveraged assets can create liquidity problems. As mentioned previously, much of the wholesale funding used for leverage is secured by the same assets acquired in the strategy. If these assets have a high level of market volatility, then adverse interest rate changes will not only affect earnings but also will reduce collateral available for continued funding and potential margin calls.

Operational risk in leverage strategies is the risk arising from inadequate internal controls, poor strategic decisions, or inadequate management information systems. Perhaps the most common operational risk noted with leverage is failure to understand all the risks inherent in these strategies.

Another significant operational risk is **model risk**, which arises from inadequate risk quantification methods. Small community banks without sophisticated asset/liability systems often undertake leverage strategies. Unless the risk measurement systems are upgraded to assess the unique risks properly, management will be unable to manage the strategy properly and may be unable to avoid adverse consequences.

Regulatory risk is the risk that poorly structured or badly managed leverage strategies will result in regulatory criticism. If the leverage results in unsatisfactory levels of market and liquidity risk, then the financial institution's primary regulator may pursue corrective action (including formal enforcement action). Since many wholesale funding sources are credit sensitive, the implementation of a formal enforcement action may constrain the institution's ability to secure future funding, including brokered deposits. Regulatory restrictions include a prohibition against acceptance of brokered deposits by any bank failing to meet at least an "adequately capitalized" standard, and a requirement to obtain FDIC permission to accept brokered deposits if the bank is not "well capitalized."³

Credit risk. Most leverage strategies employed by the banks considered for this article added little credit risk to the balance sheet. For these banks, investments generally consisted of bonds with explicit government guarantees and agency securities. Whole loans, corporate bonds, or private-label asset-backed securities could be used in leverage strategies, but they seldom are. However, the credit quality of the financial institution itself is a significant type of credit risk. As long as the institution remains financially strong and profitable, access to wholesale funding should remain plentiful and reasonably priced. However, if an adverse interest rate environment results in a weakening financial condition, funding sources, especially unsecured funding, may become more limited and more expensive.

Risk Management Practices

Leverage strategies can add risks and complexity to a financial institution's balance sheet. Examiners encountering

these programs generally look for the following risk management practices:

- **Management expertise and sound strategies**—Effective management will understand all of the risks involved in leverage strategies and the potential financial effects from adverse scenarios. Sound strategies will be developed that do not rely excessively on optimal market conditions such as a steep yield curve. Potential worst-case scenarios will be identified and quantified. Properly designed strategies may also include exit strategies if risk analysis identifies potential market scenarios that could be detrimental to the bank's financial performance.
- **Adequate policies and procedures**—A well-managed program will include formal policies and procedures that specifically address leverage and will provide proper guidance for management. Policies will include appropriate limits for all risks identified in the program, including limits for interest rate risk, liquidity, funding concentrations, and collateral availability.
- **Risk measurement systems**—Leverage portfolios often contain embedded options and require robust interest rate risk measurement systems. In addition, assumptions and interest rate scenarios should be appropriate to capture all material risks.
- **Contingency funding plan**—Because of the unique liquidity risks and the fact that current funding sources may evaporate during certain adverse events, a well-managed leverage program will include a formal contingency funding plan. Such plans will identify plausible stress events of differing levels of severity and evaluate potential funding needs. Alternative funding sources that will be

³ Section 38 of the Federal Deposit Insurance Act, Prompt Corrective Action (12 USC § 38) defines "adequately capitalized" and "well capitalized" institutions. See www.fdic.gov/regulations/laws/rules/1000-4000.html#1000sec.38.

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available during stress events should be identified.⁴

- **Audit processes and controls**—A well-structured leverage program will have strong internal controls as well as formal audit and internal review processes.

Conclusion

A small number of institutions supervised by the Dallas Region have engaged in leveraging strategies, and a number of other institutions have expressed an interest in pursuing this business activity. Although financial institutions implementing leverage strategies are not subject to automatic regulatory criticism, these strategies can introduce significant risk. Strategies that are poorly structured,

contain excessive risk, or are implemented without a sound risk management program will likely result in criticism and possible corrective action. Leverage strategies should not be undertaken without a complete prepurchase risk analysis. Acceptable policies and procedures must be put in place to measure, monitor, and control the risks inherent in such programs.

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⁴ For an expanded discussion of contingency funding plans, see "Liquidity Analysis: Decades of Change" in this issue of *Supervisory Insights*.

Overview of Selected Regulations and Supervisory Guidance

This section provides an overview of recently released regulations and supervisory guidance, arranged in reverse chronological order. Press Release (PR) or Financial Institution Letter (FIL) designations are included so the reader may obtain more information.

Subject	Summary
<p>Final Rule Implementing Exceptions and Exemptions for Banks from the Definition of Broker (FIL-92-2007, October 25, 2007; <i>Federal Register</i>, Vol. 72, No. 191, p. 56514, October 3, 2007)</p>	<p>The FDIC distributed Regulation R, a joint rule of the Federal Reserve Board (FRB) and the Securities and Exchange Commission. The rule implements provisions of the Gramm-Leach-Bliley Act that provide exceptions for banks from the definition of broker under the Securities Exchange Act of 1934 when they conduct certain securities transactions. Financial institutions have until the first day of their first fiscal year that commences after September 30, 2008, to comply with the requirements in Regulation R. See www.fdic.gov/news/inactive-financial-institution-letters/2007/fil07092.html.</p>
<p>Final Rules on Expanded Examination Cycle for Certain Institutions (FIL-90-2007, October 24, 2007; <i>Federal Register</i>, Vol. 72, No. 185, p. 54347, September 25, 2007)</p>	<p>The FDIC, FRB, Office of the Comptroller of the Currency (OCC), and Office of Thrift Supervision (OTS) (collectively, the federal bank and thrift regulatory agencies) issued final rules on expanding the range of small institutions eligible for an extended 18-month on-site examination cycle. The final rules allow well-capitalized and well-managed banks and savings associations with up to \$500 million in total assets and a composite CAMELS rating of 1 or 2 to qualify for an 18-month (rather than a 12-month) on-site examination cycle. See www.fdic.gov/news/inactive-financial-institution-letters/2007/fil07090.html.</p>
<p>Proposed Statement of Best Practices on Garnishment Orders of Exempt Federal Benefit Funds (FIL-87-2007, October 9, 2007; <i>Federal Register</i>, Vol. 72, No. 188, p. 55273, September 28, 2007)</p>	<p>The FDIC, FRB, OCC, OTS, and National Credit Union Administration (collectively, the federal financial institution regulatory agencies) sought public comment on a proposed statement encouraging federally regulated financial institutions to minimize the hardships on federal benefit recipients and to do so while remaining in compliance with applicable law. See www.fdic.gov/news/inactive-financial-institution-letters/2007/fil07087.html.</p>
<p>Comments Sought on Alternative Methods for Allocating Dividends (FIL-85-2007, September 26, 2007; <i>Federal Register</i>, Vol. 72, No. 180, p. 53181, September 18, 2007)</p>	<p>The FDIC issued an Advance Notice of Proposed Rulemaking seeking comments on alternative methods for allocating dividends as part of a final rule to implement the dividend requirements of the Federal Deposit Insurance Reform Act of 2005 and the Federal Deposit Insurance Reform Conforming Amendments Act of 2005. Comments were due by November 29, 2007. See www.fdic.gov/news/inactive-financial-institution-letters/2007/fil07085.html.</p>
<p>Final Rule Implementing Section 670 of the John Warner National Defense Authorization Act for Fiscal Year 2007 (FIL-87-29-2007, September 24, 2007)</p>	<p>The FDIC distributed the Department of Defense's final rule regulating the terms of certain credit extensions to active duty service members and their dependents. The law and rules took effect October 1, 2007. See www.fdic.gov/news/inactive-financial-institution-letters/2007/fil07083.html.</p>
<p>Proposed Revisions to the Reports of Condition and Income for 2008 (FIL-82-2007, September 18, 2007)</p>	<p>The FDIC, FRB, and OCC (collectively, the banking agencies) sought comments on a number of proposed reporting changes related to one-to-four family residential mortgage loans, including reporting interest and fee income on and the quarterly average for such mortgages separately from income on and the quarterly average for other real estate loans. Comments were due November 13, 2007. See www.fdic.gov/news/inactive-financial-institution-letters/2007/fil07082.html.</p>

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Statement on Loss Mitigation Strategies for Services of Residential Mortgages (FIL-76-2007, September 4, 2007; FIL-77-2007, September 4, 2007)

The federal financial institution regulatory agencies and the Conference of State Banking Supervisors issued a statement and supplement encouraging institutions and their subsidiaries that service mortgage loans to pursue strategies to mitigate losses while preserving affordable, sustainable mortgage obligations. See www.fdic.gov/news/news/financial/2007/fil07076.html and www.fdic.gov/news/news/financial/2007/fil07077.html.

Interagency Statement on Enforcement of Bank Secrecy Act/Anti-Money Laundering Requirements (FIL-71-2007, August 23, 2007)

The federal financial institution regulatory agencies issued an interagency statement setting forth their policy on the circumstances in which an agency will issue a cease and desist order to address noncompliance with certain Bank Secrecy Act/Anti-Money Laundering (BSA/AML) requirements, particularly in light of the specific BSA/AML compliance provisions of section 8(s) of the Federal Deposit Insurance Act and section 206(q) of the Federal Credit Union Act. See www.fdic.gov/news/news/financial/2007/fil07071.html.

Applicability of Market Risk Capital Rules (FIL-64-2007, July 18, 2007)

The FDIC issued a statement reminding banks that reporting a significant amount of trading assets on the balance sheet, or increasing the percentage of assets reported as trading assets, may subject a bank to the market risk capital requirements (12 CFR 325, Appendix C). See www.fdic.gov/news/news/financial/2007/fil07064.html.

Proposed Interagency Questions and Answers Regarding the Community Reinvestment Act (FIL-63-2007, July 11, 2007; *Federal Register*, Vol. 72, No. 132, p. 37922, July 11, 2007)

The federal bank and thrift regulatory agencies published proposed revisions to the Interagency Questions and Answers Regarding Community Reinvestment (Interagency Q&As). The proposed Q&As contain revisions intended to encourage institutions to work with homeowners who are unable to make mortgage payments and clarify that institutions of all sizes should receive favorable consideration for providing credit in a manner that is responsible to the needs of their communities. There are also nine new Interagency Q&As, as well as substantive and technical revisions to existing ones. Comments were due September 10, 2007. See www.fdic.gov/news/inactive-financial-institution-letters/2007/fil07063.html.

Interagency Statement on Subprime Mortgage Lending (FIL-62-2007, July 10, 2007; *Federal Register*, Vol. 72, No. 131, p. 37569, July 10, 2007) and Proposed Illustrations of Consumer Information for Subprime Mortgage Lending (FIL-67-2007, August 14, 2007, *Federal Register*, Vol. 72, No. 156, p. 45495, August 14, 2007)

The federal financial institution regulatory agencies issued a final Statement on Subprime Mortgage Lending to address issues relating to certain adjustable rate mortgage products that can cause payment shock. The statement describes the prudent safety and soundness and consumer protection standards institutions should follow to ensure that borrowers obtain loans they can afford to repay. See www.fdic.gov/news/news/financial/2007/fil07062.html.

The agencies subsequently published for comment proposed Illustrations of Consumer Information for Subprime Mortgage Lending, intended to assist institutions as they implement the Consumer Protection Principles portion of the Interagency Statement on Subprime Mortgage Lending. Comments were due October 15, 2007. See www.fdic.gov/news/inactive-financial-institution-letters/2007/fil07067.html.

Guidance on Bank Secrecy Act Suspicious Activity Report Supporting Documentation (FIL-55-2007, June 26, 2007)

The FDIC distributed guidance from the Financial Crimes Enforcement Network (FinCEN) reminding financial institutions to provide all documentation supporting the filing of a Suspicious Activity Report upon request by FinCEN, appropriate law enforcement, or a supervisory agency. See www.fdic.gov/news/inactive-financial-institution-letters/2007/fil07054.html.

Guidelines on Affordable Small-Dollar Loan Products (FIL-50-2007, June 19, 2007)

The FDIC issued “Affordable Small-Dollar Loan Guidelines” that encourage financial institutions to offer small-dollar credit products and to promote these products to their customers. The products should be affordable, yet safe and sound, and consistent with all applicable federal and state laws. See www.fdic.gov/news/inactive-financial-institution-letters/2007fil07050.html.

Illustrations of Consumer Information for Nontraditional Mortgage Products (FIL-51-2007, June 20, 2007; *Federal Register*, Vol. 72, No. 110, p. 31825, June 8, 2007)

The federal financial institution regulatory agencies published final illustrations of consumer information intended to assist institutions as they implement the consumer protection portion of the Interagency Guidance on Nontraditional Mortgage Product Risks. The consumer protection section of the guidance sets forth recommended practices to ensure that consumers have clear and balanced information about nontraditional mortgages before choosing a mortgage product or selecting a payment option for an existing mortgage. Use of the illustrations is optional. See www.fdic.gov/news/news/financial/2007/fil07051.html.

Final Rule on Deposit Insurance Late Assessment Penalties (FIL-43-2007, June 4, 2007)

The FDIC issued the final rule to implement provisions of the Federal Deposit Insurance Reform Act of 2005 that provide penalties for failure to timely pay assessments (12 CFR § 308.132(c)(3)(v)). The FDIC applied these provisions beginning with the assessment collection made on the June 29, 2007, payment date. See www.fdic.gov/news/news/financial/2007/fil07043.html.

List of Distressed or Underserved Nonmetropolitan Middle-Income Geographies (PR-45-2007, June 1, 2007)

The federal bank and thrift regulatory agencies announced the availability of the 2007 list of distressed or underserved nonmetropolitan middle-income geographies in which bank revitalization or stabilization activities will receive Community Reinvestment Act consideration as community development. See www.fdic.gov/news/news/press/2007/pr07045.html.

Deposit Insurance Assessment Rate Adjustment Guidelines for Large Institutions and Insured Foreign Branches in Risk Category I (FIL-40-2007, May 16, 2007; *Federal Register*, Vol. 72, No. 92, p. 27122, May 14, 2007)

The FDIC issued guidelines for determining how adjustments of up to 0.50 basis points will be made to the quarterly assessment rates of insured institutions defined as large (generally, over \$10 billion in assets), Risk Category I institutions, and insured foreign branches in Risk Category I. These guidelines provide further clarification of the analytical processes, and the controls that will be applied to these processes, in determining assessment rate adjustments. See www.fdic.gov/news/news/financial/2007/fil07040.html.

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