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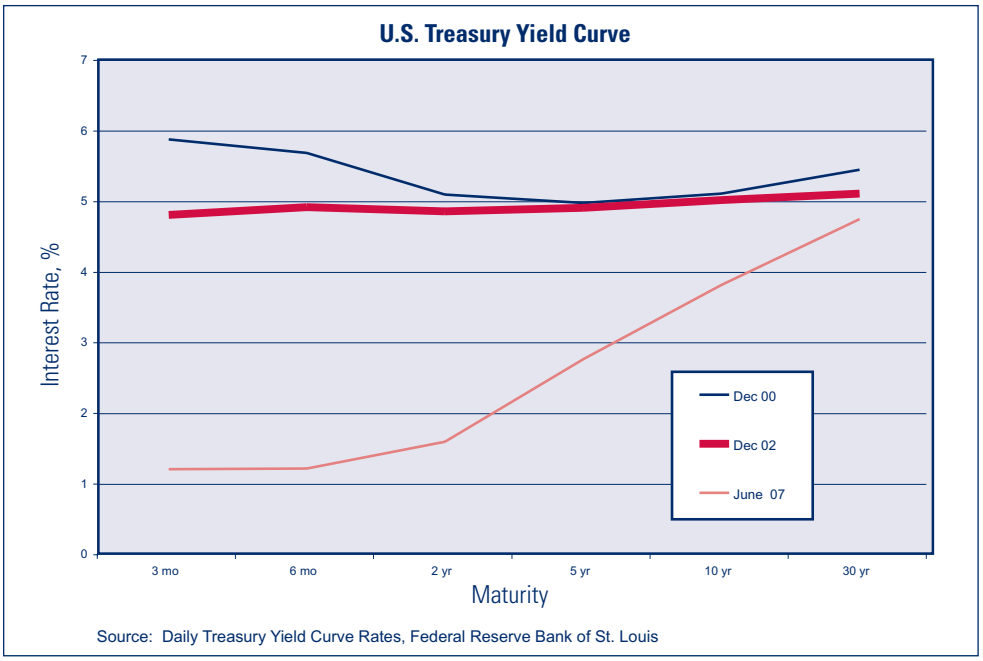
Chart 1: Short-term U.S. Treasury Rates Have Increased from Historic Lows



Source: Daily Treasury Yield Curve Rates, Federal Reserve Bank of St. Louis

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.

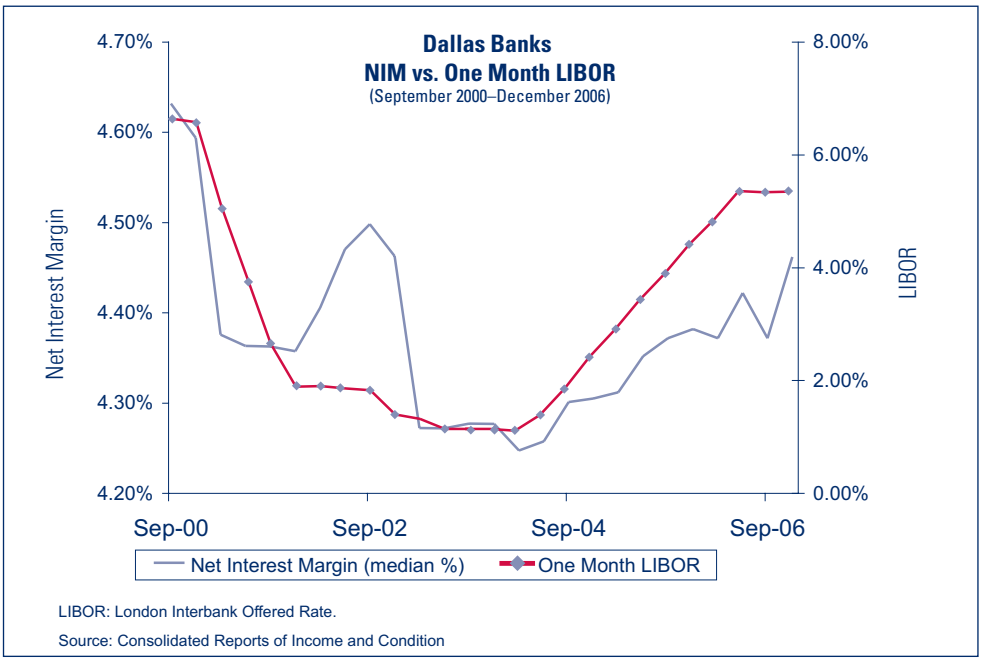
Banks employing leverage strategies have used four principal types of funding sources—federal funds purchased, Federal Home Loan Bank advances, brokered deposits,[2] and securities sold under agreement to repurchase. Most of the transactions involve a combination of these borrowings.

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.

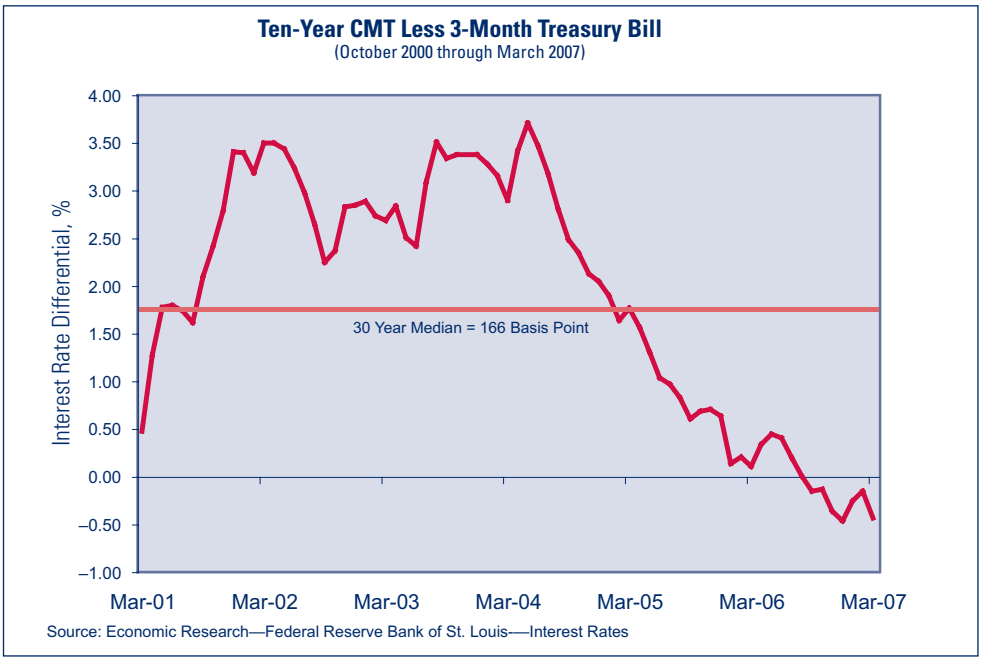
Chart 2: NIMs at Dallas Banks Declined from 2000 to 2004, Then Recovered



LIBOR: London Interbank Offered Rate.

Source: Consolidated Reports of Income and Condition

Chart 3: Previous Wide Spreads Have Narrowed Significantly



Source: Economic Research—Federal Reserve Bank of St. Louis—Interest Rates

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	*$40MM U.S. agency security, no call, 2-year maturity*	*$40MM Fannie Mae current coupon 30-year fixed-rate mortgage pass-through security*
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*.