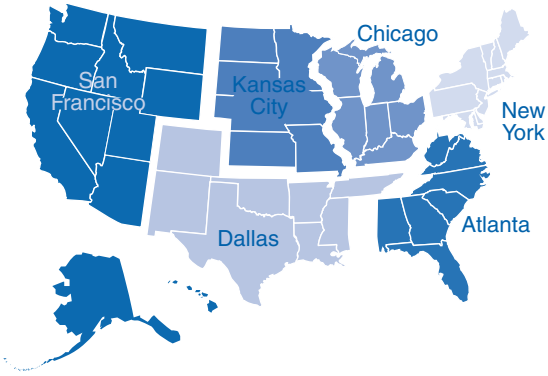
FDIC Outlook

WINTER 2003

In Focus This Quarter



Causes and Implications of Recent Interest Rate Volatility—Long-term interest rates took a roller coaster ride during the summer of 2003. The ten-year constant maturity treasury yield plummeted to a 45-year low on June 13, only to reverse course sharply over the next 45 days. This level of volatility is unusual by historical standards. Typically, such a sharp rise in interest rates is accompanied by strengthening economic data and accelerating inflation. While the emerging economic data were modestly positive over the summer, inflation continued to decelerate from already-low levels.

The short time frame for such a wide interest rate swing was also unusual, given the absence of major events or economic shocks during this period. Clearly, underlying fundamentals cannot explain fully such an abrupt movement in interest rates. So what caused this volatility? The blame probably can be laid at the feet of a "perfect storm" of related factors. The combination of mortgage-related hedging activity, deflation worries, and a rising federal budget deficit, among other factors, likely played a role. This article explores several possible catalysts of the recent increase in interest rate volatility and evaluates the likelihood that a more volatile interest rate environment may persist in the foreseeable future. *See page 3.*

By Maureen Raymond, Senior Financial Economist

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By Regional Operations Staff

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Causes and Implications of Recent Interest Rate Volatility

Long-term interest rates took a roller coaster ride during the summer of 2003. The ten-year constant maturity treasury yield plummeted to a 45-year low on June 13, only to reverse course sharply over the next 45 days (Chart 1). This level of volatility is unusual by historical standards. Typically, such a sharp rise in interest rates is accompanied by strengthening economic data and accelerating inflation. While the emerging economic data were modestly positive over the summer, inflation continued to decelerate from already-low levels.

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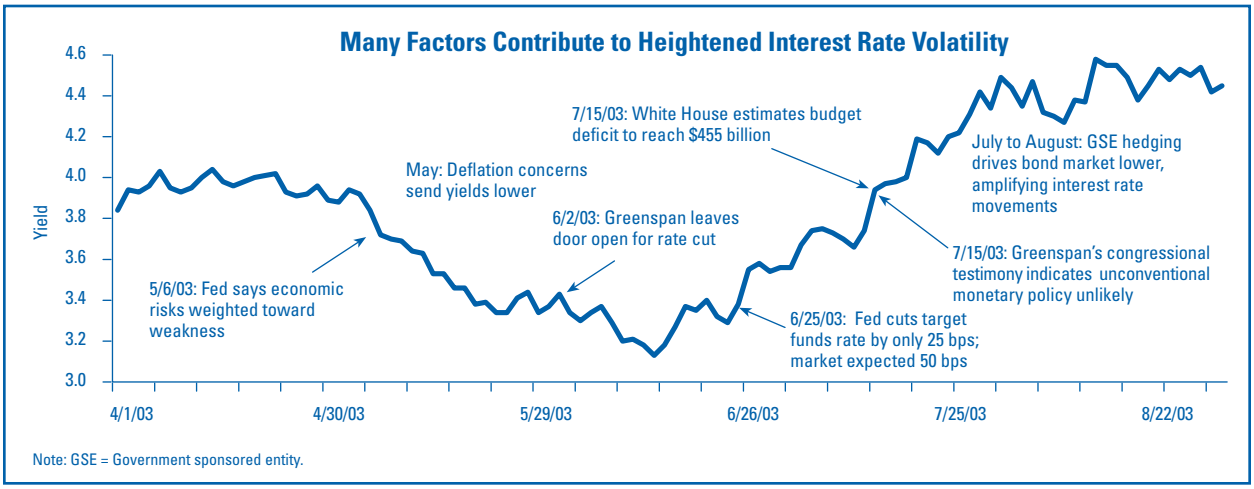
Putting Recent Volatility in Context

Before exploring the factors leading to the recent increase in interest rate volatility, it is useful to put it into historical context. As measured by a simple ratio of the standard deviation of the ten-year yield over its mean, interest rate volatility during the first nine months of 2003 was erratic, ranging from 0.01 to .67, compared with 1999 through 2002, when volatility had a much narrower range, between .01 and 0.36.[1] Previous periods of high volatility typically have been associated with periods of high inflation, such as that following the second oil shock in 1979 or the 1981–1982 recession. Certain one-time events, such as the 1987 stock market crash, also appear to be related to increased volatility (see Chart 2, next page).

Deflation Concerns May Have Boosted Interest Rate Volatility

A key difference between the recent economic environment and periods around previous recessions is the historically low levels of inflation and interest rates. In fact, "core inflation," as measured by the consumer price index less food and energy, has fallen continuously, from 2.8 percent in December 2001 to 1.2

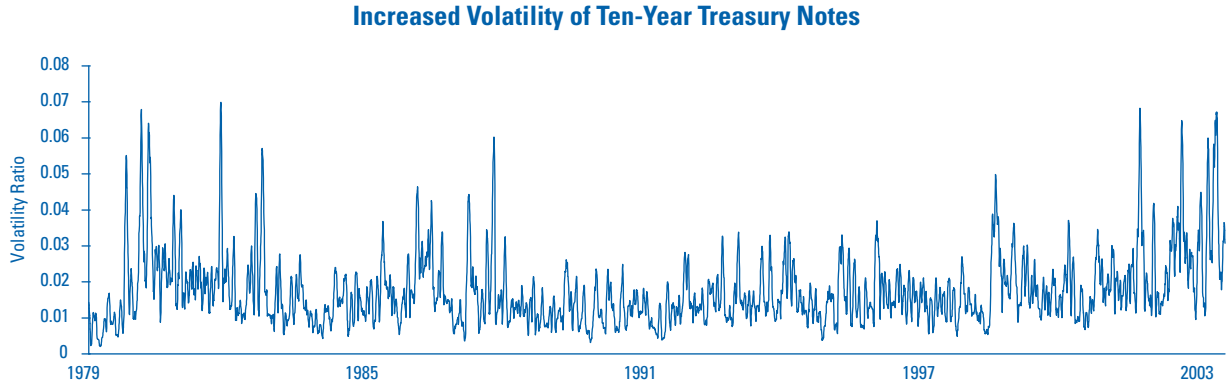
Chart 1



Note: GSE = Government sponsored entity.

[1] Interest rate volatility is calculated by taking a moving 20-day standard deviation of the ten-year Treasury Note's constant maturity yield *divided by* the 20-day moving average of that yield. Adjusting volatility for the underlying level of interest rates is indicated by historical evidence suggesting that high-yield periods are apt to witness larger daily deviations than low-yield periods.

Chart 2

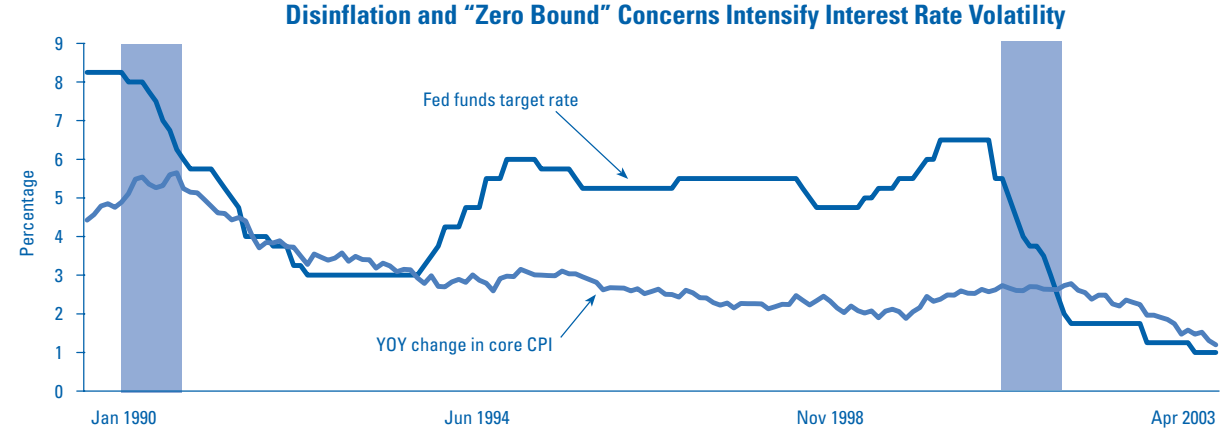


Note: Interest rate volatility is calculated by taking a moving 20-day standard deviation of the ten-year Treasury Note's constant maturity yield *divided by* the 20-day moving average of that yield.
Source: Bloomberg, FDIC.

percent in September 2003, leading to concerns about outright deflation, or a decline in the overall price level. With economic activity running below its potential for the past two years and historically low rates of capacity utilization in key industry sectors, core consumer price inflation has decelerated (see Chart 3). Typically, disinflation occurs during a recession, as sales drop and retailers are unable to pass on higher prices to customers; however, the low initial rate of inflation and the fact that inflation, as measured, may be overstated lead to expressions of concern about the risks of deflation on the part of the Federal Deposit Insurance Corporation, the Federal Reserve, and private-sector analysts.

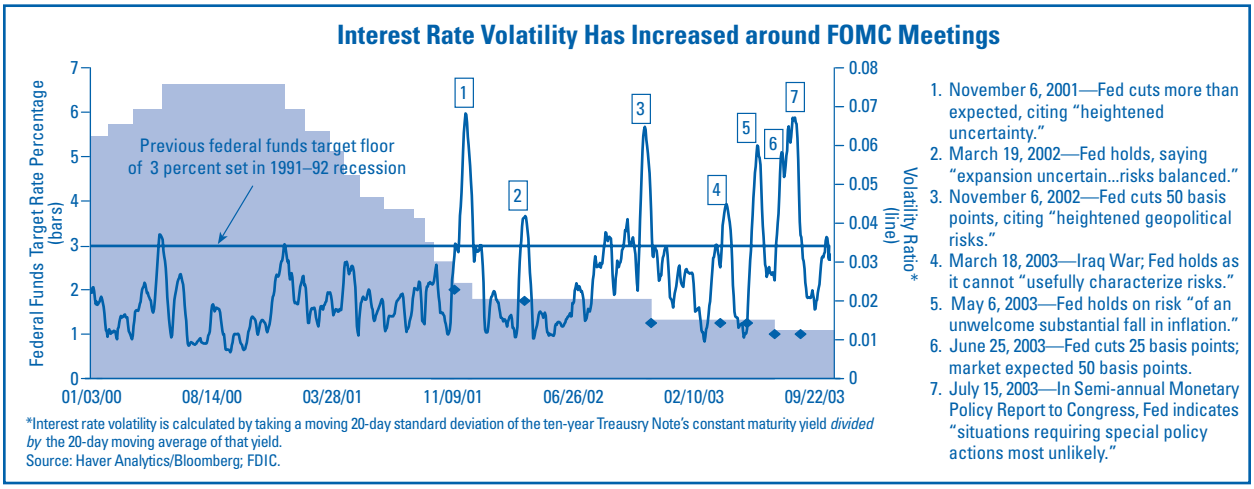
In the absence of actual deflation, it is important to note that policymakers' emphasis on this scenario arose from its potentially severe effects on financial institutions and economic activity. The Federal Reserve acknowledged in the official statement after its May 6, 2003, Federal Open Market Committee (FOMC) meeting that "the probability of an unwelcome substantial fall in inflation, though minor, exceeds that of a pickup in inflation from its already low level. The FOMC believes that, taken together, the balance of risks to achieving its goals is weighted toward weakness over the foreseeable future." This statement was the first to assess the risks of economic growth and inflation separately. Previous FOMC statements had characterized the balance of risks as being in the direction of either economic weakness (low inflation) or excessive inflation (strong growth). This was the first time that the Fed explicitly recognized that price changes could have upside *or downside* risks, depending on varying conditions of the real economy.

Chart 3



Notes: YOY = year-over-year; CPI = consumer price index; shaded areas are recession bands.

Chart 4



Further, the fact that nominal interest rates cannot practically be set below zero caused certain Federal Reserve officials to give public voice to contingency plans in the event the so-called "zero bound" was reached.[2] Certain Federal Reserve officials indicated in widely publicized speeches that in order to gain additional monetary policy traction after the federal funds target rate reached zero, the FOMC might orchestrate purchases of long-dated Treasury notes to "buy down" the long end of the yield curve. Although these discussions clearly were couched in hypothetical language, some bond traders appear to have taken speculative positions in anticipation of such a move. In fact, since the federal funds target rate breached 3 percent, the interest rate floor during the 1991–1992 recession, volatility appears to have risen in conjunction with FOMC meetings (see Chart 4).

A meaningful turning point in the bond market was reached on June 25, when the FOMC announced a 25 basis point cut in the federal funds target rate instead of the 50 basis point cut that many market analysts had been anticipating. It was at this point that bond yields began to rise rapidly, as traders who were betting on lower long-term interest rates moved to liquidate their positions. Since then, heightened interest rate volatility seems to have accompanied the market's anticipation of several FOMC meetings. In the aftermath of the June 25 announcement, statements of Federal Reserve officials no longer referred to the purchase of long-term Treasuries to ward off deflation. Chairman Greenspan's July 15 semiannual monetary policy report to Congress stated that "Given the now highly stimulative stance of monetary and fiscal policy and well-anchored inflation expectations, the Committee concluded that economic fundamentals are such that situations requiring special policy actions are most unlikely to arise."

However, while the Federal Reserve may no longer be considering implementing unconventional monetary policy to ward off deflation, it appears that short-term interest rates could remain unchanged until the U.S. economic recovery develops more fully. According to the statements following the FOMC meetings in August, September, and October, "policy accommodation can be maintained for a considerable period." This statement seems to have had the desired effect of convincing markets that the Fed is serious about staying accommodative until its "predominant concern" about a further fall in inflation has been reduced. With the large output gap and overcapacity, the economy can grow for some time above trend before the excess capacity is worked off and disinflation ceases to be the predominant concern. But how long is a "considerable" period? As long as markets continue to speculate on this issue, interest rates are likely to remain volatile. Such a position was articulated recently by Federal Reserve Bank of Kansas City President Thomas Hoenig, who indicated that the Fed should begin to consider changing interest rates "once the economy achieves sustainable growth with increases in employment and with upward pressure on prices."[3] Most analysts expect that the FOMC will maintain a highly accommodative policy stance until significant job

[2] Ben S. Bernanke, "Deflation: Making Sure 'It' Doesn't Happen Here," remarks before the National Economists Club, Washington, DC, November 21, 2002.

[3] Bloomberg. "Hoenig Says 4% Growth Needed to Boost Jobs." October 7, 2003.

growth and accelerating inflation become sustained trends. Still, as the market grapples with the question of what exactly is an "accommodative policy," high interest rate volatility will likely persist.

Mortgage Hedging Amplifies Long-Term Yield Movements

According to some analysts, another significant contributor to increased interest rate volatility over the summer was the reaction of large holders of mortgage-related assets, such as Fannie Mae and Freddie Mac, to rising interest rates. These companies, along with other large holders of mortgage assets, engage in a risk management technique known as dynamic hedging.

Hedging mortgage-related assets is complicated by the fact that the timing of future cash flows can only be estimated. The timing of cash flows will change as more or fewer mortgage holders decide to prepay their mortgages—a unique feature to this type of debt instrument. This characteristic requires that hedge positions be adjusted as the estimates of the timing of future cash flows change. The adjustment process is referred to as dynamic hedging.

For those homeowners not seeking to liquidate equity, the most important factor governing individuals' decisions to refinance a mortgage is the rate on the mortgage held relative to one that is potentially available. The persistence of low mortgage rates over roughly the past two years led to record levels of refinancing and a steady increase in home ownership. This boom in mortgage originations ultimately resulted in a significant increase in outstanding mortgages and a mortgage market dominated by loans that were originated at rates close to record lows. Another factor of this boom is that the holdings of mortgage-related assets have become more concentrated at fewer, larger companies.[4]

In mid-June 2003, when mortgage rates began rising from 45-year lows, estimates of the rate at which mortgage holders will prepay their debts fell dramatically. As mortgage rates rise and expected prepayments slow, dynamic hedging strategies require that hedges be adjusted to match new expectations about the timing of future cash flows. As the expected return of mortgage principal moves further into the future, hedge positions are adjusted to compensate. Prepayment estimates, and therefore the expected timing of future cash flows, changed dramatically in mid-June, and large holders of mortgage-related assets moved in concert to adjust hedge positions.

Although maintaining dynamic hedging strategies is complex, involving swaps, futures, and cash market purchase and sales, the theoretical relationship to interest rate volatility can be illustrated by the following example.[5] To offset the increasing exposure to rising rates caused by a slower return of principal, a hedger can sell Treasury securities. The decreased demand for Treasury securities embodied by these sales puts downward pressure on their value and pushes Treasury yields higher. The increased volatility of Treasury rates in this example is caused by the fact that rising rates motivated the sale of securities, and the sale of the securities itself pushes rates still higher. When these conditions reverse and interest rates fall, dynamic mortgage hedgers buy Treasuries, pushing prices up and supporting the downward momentum in interest rates. According to a ***Federal Reserve*** study, similar behavior among large mortgage asset holders has been enough to amplify movements in Treasury market yields (see Chart 5, next page). The study finds the magnitude of this effect to be an increase in interest rate volatility of between 16 and 30 percent.[6]

Rising Federal Budget Deficits Also May Be Affecting Interest Rate Volatility

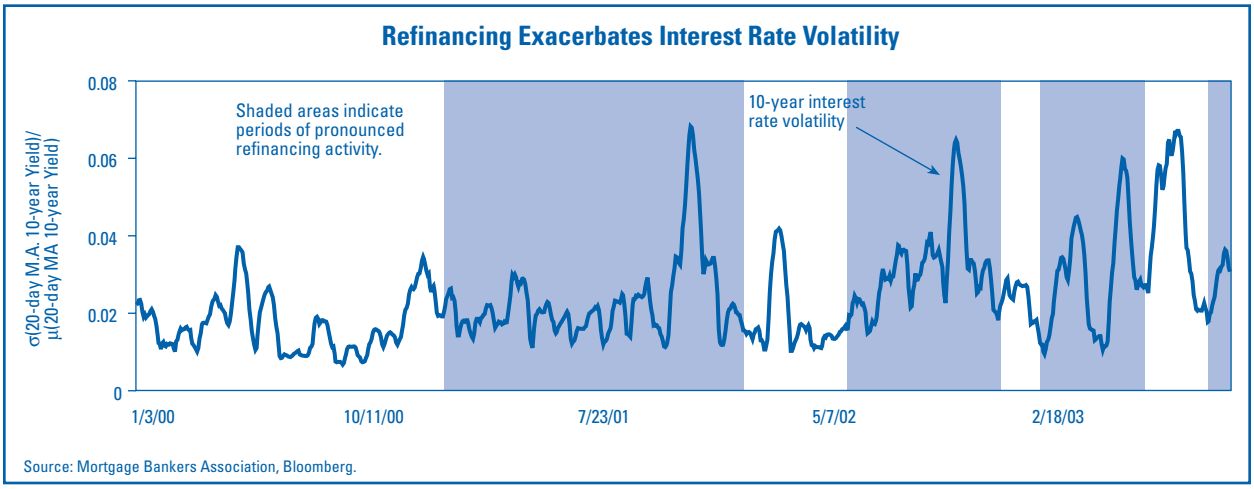
Another factor influencing the interest rate outlook and, possibly, adding to the recent interest rate volatility is the growing size of projected federal budget deficits. A combination of factors—including the costs of the wars in Afghanistan and Iraq, the 2001 and 2003 tax cut packages, and the revenue shortfall associated with the 2001 recession and declining equity prices—turned a $255 billion federal budget surplus in 2000 into a projected $480 billion deficit in 2004. The result

[4] Since 1998, outstanding mortgage-related debt has expanded more than 10 percent a year. As of June 2003, mortgage securities pools issued by government-sponsored housing enterprises such as Fannie Mae and Freddie Mac totaled $3.2 trillion. Mortgage debt, which accounts for 58 percent of gross domestic product, has reached $6.6 trillion. The derivative positions needed to hedge the prepayment and interest rate risk of these portfolios are massive.

[5] See International Monetary Fund, *Global Financial Stability Report*, World Economic and Financial Surveys. Washington, DC: September 2003.

[6] Robert Perli and Brian Sack, "Does Mortgage Hedging Amplify Movements in Long-term Interest Rates?" Washington, DC: Federal Reserve Board, August 2003.

Chart 5



has been a dramatic increase in the issuance of Treasury debt. In 2000, net retirement of debt by the Treasury was $296 billion, compared with a net issuance of government debt of $258 billion in 2002.

While it is clear that the federal government's demand for credit has risen dramatically, the effect of this increased demand on long-term interest rates is not clear. Leading economists and scholars assert that increases in future deficits raise long-term interest rates. Professor Martin Feldstein of Harvard University, former chairman of the Council of Economic Advisors under President Reagan, explains this concept as follows: "An anticipated future budget deficit means a smaller amount of funds at that future date to finance investment in plant and equipment. Restricting that investment will require a higher real rate of interest. Similarly, the anticipated budget deficit means that individuals will have to be offered a higher yield in the future to induce them to hold the larger amount of government debt in their portfolios. Both of these effects raise the expected future interest rate and therefore…they raise the current long-term rate as well."[7]

Key policymakers also have asserted that higher budget deficits cause interest rates to rise. Even the current chairman of the Council of Economic Advisors, Gregory Mankiw, stated recently that "the budget deficit is a cause for concern…it could push up interest rates. But at the moment high interest rates are not the U.S. economy's main problem. Indeed interest rates are very low."[8] Finally, Alan Greenspan argued last year that "some of the firmness in long-term interest rates probably is the consequence of the fall of projected budget surpluses and the implied less-rapid paydowns of Treasury debt."[9]

The widening federal government deficit, and the increased demand for funding it entails, raises concerns about crowding out private investment (see Chart 6, next page). However, given the relatively weak growth in U.S. investment spending in recent years and the still historically low level of interest rates, it is not clear that increased government demand for credit has yet had a meaningful effect on interest rates. As investment spending recovers and the overall demand for credit rises, upward pressure may be applied to interest rates. As markets try to decipher this impact on interest rates, volatility may heighten.

Large Foreign Purchases of Treasuries Add to Interest Rate Concerns

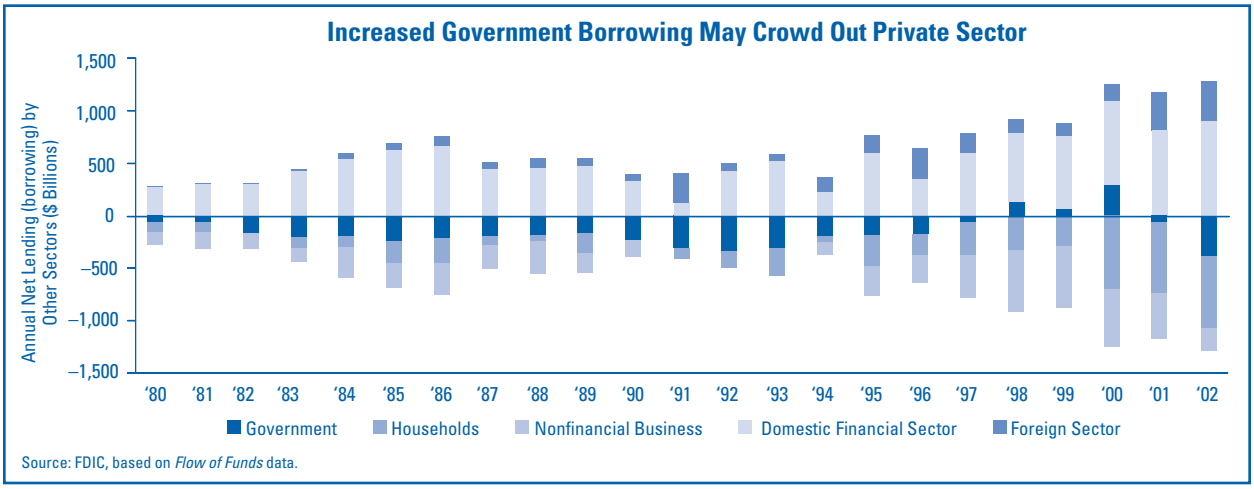
The effect of budget deficits on interest rates presumably would be even more substantial if the United States did not have access to international capital markets. The reduction in national savings from budget deficits manifests itself in both lower domestic investment and more borrowing from abroad. The mirror image of a reduction in net foreign investment is an

[7] Martin S. Feldstein, "The Budget Deficits and the Dollar," *NBER Macroeconomic Annual 1986,* edited by Stanley Fischer, Cambridge, MA: MIT Press, 1986.

[8] Gregory Mankiw, "Deficits could increase rates," Reuters, October 6 , 2003.

[9] Alan Greenspan, "The Economy," Remarks at the Bay Area Council Conference, San Francisco, January 11, 2002.

Chart 6

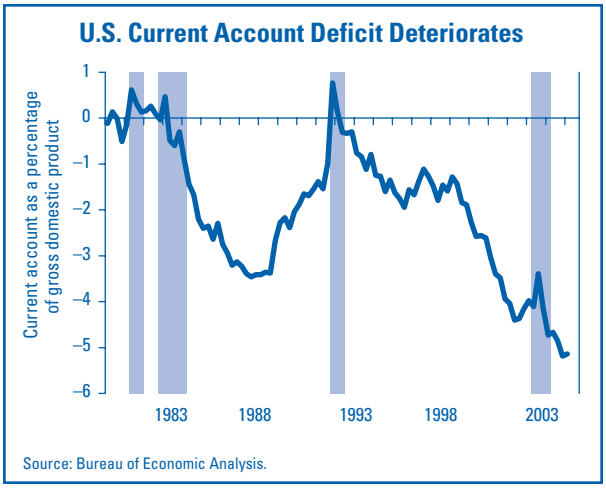


expansion in the current account.[10] If the United States imports more goods and services than it exports or has a current account deficit, then it must be selling assets or borrowing the difference from abroad. The United States has a very large current account deficit, requiring it to borrow from abroad on a massive scale. The shortfall or current account deficit was about $139 billion in second quarter 2003 alone, about 5 percent of gross domestic product (see Chart 7). The United States needs to attract more than $2 billion in foreign capital every working day just to finance the current account deficit. To the extent these foreign inflows are invested in U.S Treasury debt, interest rates are reduced. Large shifts in foreign holdings of U.S. Treasury debt or speculation regarding shifts or the rate of net new purchases could elevate interest rate volatility. The heavy reliance on, and the volatile nature of, international capital may raise interest rate volatility.

Many of this nation's trading partners, particularly in Asia, currently run bilateral trade surpluses with the United States. As they recycle dollars gained in the sale of exports, they typically purchase U.S. Treasury or other lower-risk debt. In addition, after a decade of economic stagnation, Japan continues to follow a policy of intervention in the exchange rate market to limit yen appreciation and thereby encourage Japanese exports. To implement this policy, the Bank of Japan has sold yen and bought dollar-denominated assets, such as U.S. Treasury and agency securities. From January through July 2003 alone, Japan sold about 9.03 trillion yen (U.S. $80.5 billion) and purchased U.S. Treasuries. Japan is the largest foreign holder of U.S. Treasury notes and bonds, with $444 billion out of the $1.39 trillion held abroad as of July 2003. The total amount of Treasury securities outstanding is about $3.5 trillion, so foreign holdings account for about 40 percent of all Treasury debt outstanding.

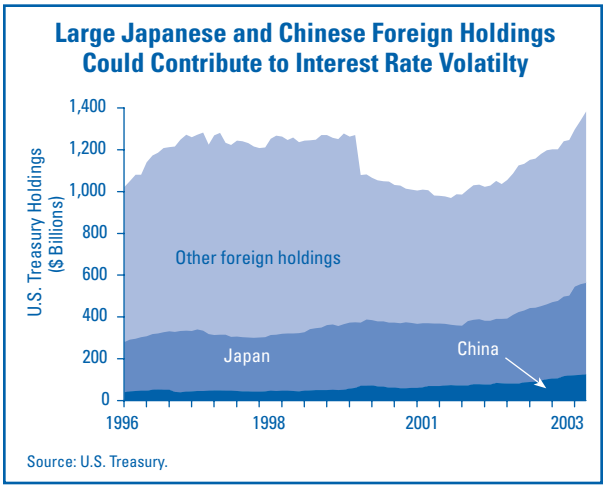
China is also a large purchaser of U.S. Treasury and agency securities. As it recycles its current account surplus with the United States, China needs large dollar reserves in order to maintain the yuan's dollar peg against speculative attacks and maintain a currency exchange rate peg of 8.3 yuan per dollar. According to the U.S. Treasury, China is the third largest owner of U.S. Treasury bonds, and these holdings surged 23

Chart 7



[10] The current account is equal to net exports (exports minus imports) of goods and services plus net factor income (interest payments received from abroad minus interest payments made to foreigners from abroad) plus net unilateral transfers (such as direct foreign aid payments).

Chart 8



percent to $126 billion through the fall of 2003 (see Chart 8).

Some economists argue that there is a risk, although small, that if Japan and China ever sold their large Treasury holdings it could cause havoc in the U.S. Treasury market, forcing yields even higher. Volatility could increase should any shift take the form of an abrupt shock, rather than a gradual change in investment strategies. An immediate floating of the Chinese yuan, for example, might engender such a shock. If these nations scaled back their demand for U.S. Treasuries, interest rates could rise. How abruptly rates would rise would depend on the nature of the event. However, it is not clear whether instigating such instability in international currency and bond markets would be advantageous for any of the parties involved. It is most unlikely that either China or Japan would sell their large holdings of Treasuries, considering the negative consequences of such a move on their economies and export markets.

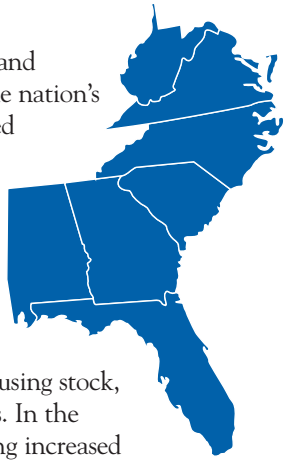
Conclusion

Several factors contributed to the 2003 episode of heightened long-term interest rate volatility. These included deflation worries, mortgage-hedging activity by large holders of mortgage-backed securities, budget deficit concerns, and increased foreign buying of U.S. Treasury debt. The key question is whether these factors will prove to be one-time shocks or permanent fixtures of the interest rate environment going forward. To the extent that deflation concerns fade as the economy gains traction and generates new jobs and inflation pressures build, this factor should fall by the wayside. However, until we reach that stage in the recovery, and markets continue to speculate on when the Federal Reserve will move from an accommodative stance, volatility may persist. Still, other factors may add to interest rate volatility over the next several years. The ever-expanding mortgage-backed securities market and the concentration of holdings at large agencies will likely persist as a potential catalyst of interest rate volatility. Interest in U.S. securities by nations that either run bilateral trade surpluses with the United States or need to invest dollars acquired through currency management activities likely will remain a source of potential volatility. This source may become more pronounced should China choose to float its currency abruptly, or should Japan cease its recent efforts to weaken an appreciating yen. Finally, the growing budget deficit may cause uncertainty about the future course of interest rates and thus may add to volatility whenever budget estimates are revised or developments occur that may affect the outlook for the federal pocketbook.

Maureen Raymond, Senior Financial Economist

Atlanta Regional Perspectives

How Might a Slowdown in the Housing Industry Affect Bank Earnings?



Despite the recent recession and subsequent weak recovery, the nation's housing industry has remained resilient. Fueled by 30-year-low mortgage rates and the perceived lack of investment alternatives such as the equity markets, demand for housing soared. Developers, in response, continued to add to the nation's housing stock, unlike during past downturns. In the Atlanta Region, homebuilding increased more rapidly than in the rest of the nation. Low mortgage rates and continuing home price appreciation also have contributed to a boom in cash-out refinancings, which moderated the severity of the recent recession by supporting consumer spending. By third quarter 2003, however, higher long-term interest rates may portend a slowdown in the housing industry.

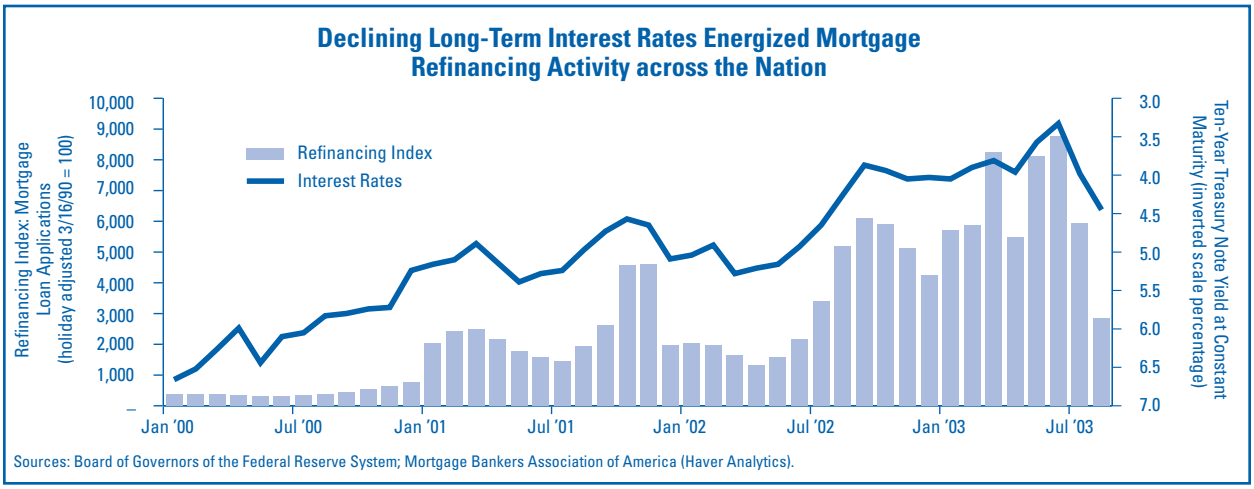
The Atlanta Region's banking and thrift industry also has performed well during the past several quarters, in large part thanks to record earnings generated by funding the construction, purchase, and refinancing of housing. However, recent evidence may point toward a weaker housing market going forward. This article discusses the implications of a slowdown in the recent housing boom on the earnings performance of insured financial institutions based in the Atlanta Region.

Interest Rates and Housing Trends

Interest Rates Play an Important Role in Shaping the Health of the Housing Industry

Historically, levels and changes in mortgage rates have been key factors in determining trends in the construction, purchase, and refinancing of housing. Typically, as long-term interest rates decline, housing affordability increases, enabling more people to buy homes. Between 2001 and early 2003, sustained declines in mortgage rates more than offset lower personal income growth associated with the recent recession and supported affordability at record levels.[1] In response to continued growth in demand, residential permit issuance and housing starts increased. Low mortgage rates also energized mortgage refinancing activity (see Chart 1), which helped homeowners consolidate debt. In addition, continuing home price appreciation allowed borrowers to tap equity that, in turn, helped support consumption nationally and mitigated the lingering effects of the recent recession.

Chart 1



Sources: Board of Governors of the Federal Reserve System; Mortgage Bankers Association of America (Haver Analytics).

[1] Some evidence suggests that demand for housing also has been strengthened by the apparent lack of investment alternatives in the wake of equity market declines. Affordability measures the ability of a household to qualify for an 80 percent mortgage on a median-priced existing single-family home; affordability is a function of income and interest rates.

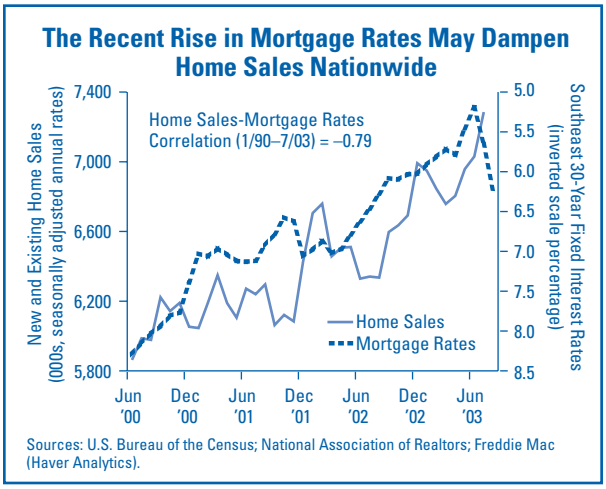
The Recent Rise in Long-term Rates Is Affecting the Housing Sector

Mid-year 2003 may have heralded a change in the interest rate environment as mortgage rates rose more than 100 basis points between June and August, the most rapid increase in nearly a decade. In some respects, the immediate impact of rising rates on housing markets was positive, as developers, homebuyers, and homeowners rushed to lock rates before rates rose further. Subsequently, housing starts and home sales surged to record levels, and mortgage applications continued to increase. In contrast, however, the number of mortgage refinancing applications immediately fell, and, by late August 2003, purchase applications also started to decline.

Continued Increases in Mortgage Rates Could Affect Housing Markets Adversely

History has shown an inverse relationship between long-term interest rates and growth in the housing market (see Chart 2). If mortgage rates continue to climb and the economy fails to post higher growth rates, housing affordability likely will suffer. Recent declines in purchase mortgage applications may portend a slowdown in home sales. Similarly, softer demand in the wake of mortgage rate increases could constrain rates of home price appreciation, which has minimized declines in household net worth following the downturn in the stock market during the three years.[2] Housing has represented a key area of support for a weak recovery in recent quarters; should this industry slow in response to rising interest rates, the prospects for the nation's economic growth could dim somewhat.

Chart 2



Implications for the Atlanta Region Banking Industry

Despite the relatively weak economic recovery, community banks[3] headquartered in the Atlanta Region have reported strong earnings growth during the past several years, driven primarily by increased income from residential real estate mortgage and refinancing activity. As a percentage of gross revenue, income from real estate lending (REL)[4] rose from 38 percent at year-end 1998 to 49 percent at year-end 2002. Although community banks nationwide have placed more reliance on REL, the Atlanta Region is home to a disproportionate share of these institutions. The Region is home to 13 percent of all community banks nationwide; however, 22 percent (146 banks) of the community banks that are ranked in the 90th percentile for REL income to gross revenue are based in the Atlanta Region.[5] Moreover, several metropolitan statistical areas (MSAs) that are home to a significant share of banks with relatively high levels of REL income also are located in the Region. For example, the average ratio of REL income to gross revenue reported by community banks based in the **West Palm Beach-Boca Raton** MSA is 63 percent, which exceeds the national 90th percentile. Other areas where REL income has increased sharply since 1998, or where at least three of the community banks are in the 90th percentile, include the **Naples, Fort Lauderdale, Sarasota-Bradenton, Atlanta, Tampa-St. Petersburg-Clearwater,** and **Jacksonville, Florida,** MSAs (see Chart 3).

Many of the community banks based in the Atlanta Region actively support the production of housing. The Region's top earnings performers reported an average construction and development (C&D) loan exposure of 9.6 percent of assets, while some of the community banks with lower levels of earnings reported C&D loan-to-asset ratios of 6 percent or

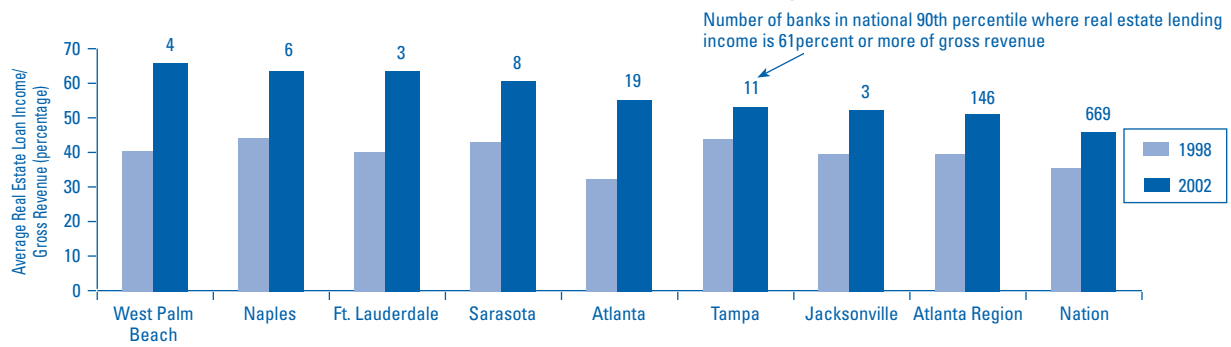
[2] Thomas A. Fogarty, "Mortgage rate rise may slow home price growth," *USA Today*, August 20, 2003.

[3] Community banks hold assets less than $1 billion and exclude de novos, specialty institutions, and thrifts.

[4] REL consist of all income received from real estate lending activities.

[5] The 90th percentile consists of banks that have an REL-to-gross-income ratio of at least 61 percent.

Chart 3



Note: Only Metropolitan Statistical Areas with at least 50 percent of gross revenue from real estate lending and a minimum of three banks in the 90th percentile are shown.
Source: Bank and Thrift Call Reports, December 31.

less.[6,7] Among insured institutions based in the Region, this loan segment has grown by almost 200 basis points during the past two years and, by year-end 2002, comprised an average 7.6 percent of assets, up from 5.7 percent at year-end 2000. Given the recent rise in intermediate- and long-term interest rates and its potential adverse effects on the housing sector, the top performers may encounter an earnings challenge should housing absorption slow.

In addition to residential lending exposures for housing production and permanent financing, community banks headquartered in the Atlanta Region have exposure to the housing market through holdings of mortgage-backed securities (MBS). After reporting a relatively low level of MBS holdings at year-end 2000, community banks grew MBS holdings to 5 percent of assets at year-end 2002. These securities also generated about 5 percent of gross revenue during 2002. The positively sloped yield curve during the past several quarters increased the attractiveness of MBS, giving community banks an opportunity to pick up yield. However, the increased yield did not come without additional risks. The increase in MBS holdings may lead to a heightened level of interest rate risk. Further, the sharp upward movement in the intermediate- and long-term rates during June 2003 likely will reduce the market value of many MBS. As a result, investment portfolios that are heavily weighted toward holdings of MBS likely would swing from appreciation to depreciation.

During the past few years, growth has occurred in other components of gross revenue among the Atlanta Region's community banks, potentially softening the blow to earnings if the housing market cools. Income in categories such as interest on treasury and municipal bonds, deposit service charges, and other noninterest income, including automated teller machine and check-printing fees, has grown during the past two years. Revenue growth from these sources has helped offset declining income from all other loan categories, including commercial and industrial (C&I) and individual loans.

Many industry observers are hopeful that C&I lending will expand as the economy improves and business investment revives. Income from C&I lending is expected to replace income lost from the anticipated slowdown in housing. The recent Senior Loan Officer survey of major commercial bank lenders conducted by the ***Federal Reserve Board*** found that most respondents have stopped tightening lending standards for small and large business credits, and that interest rate spreads on C&I loans have declined for the first time since 1998.[8] Although this anecdotal information is consistent with the supposition that C&I lending will rebound, history and recent data might suggest otherwise. Coming out of the 1990/1991 recession, a substantial lag occurred before business lending started to grow, as C&I lending did not rebound until late

[6] Top performers are community banks ranking in the 90th percentile as measured by pretax net income to gross revenue percentage.
[7] Poorer performers are community banks ranking in the 10th percentile as measured by pretax net income to gross revenue percentage.

[8] Kent Hoover, "Business loan demand drops at banks," *American City Business Journals*, August 25, 2003.

1994.[9] Currently, many corporations are hoarding cash and likely will tap this source before borrowing to finance expansion. Also, the expected rebound in business investment spending may not be as robust as forecast. Overcapacity still exists in many industries, and many firms are using improved cash flow to pay down debt.[10] Ultimately, the revenue outlook for community banks in the Atlanta Region looks particularly challenging should housing-related activities slow without an ample pickup in business lending.

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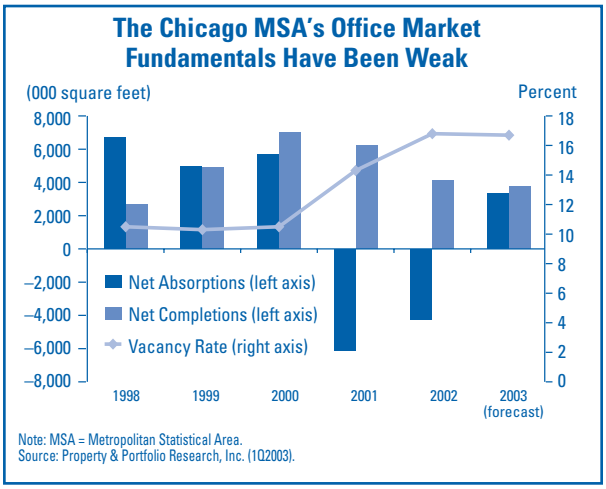
[9] "Marinac's Weekly Musings," *FIG Partners, LLC*, September 15, 2003.
[10] Matt Krantz, "Recovering companies reducing debt loads; capital spending takes a back seat," *USA Today*, September 25, 2003.

Chicago Regional Perspectives

The **Chicago** metro area's economy is the largest in the nation. Like other markets, it has experienced weakness in recent years. In addition, the sizable banking sector is highly competitive and likely to become more so in the near future, as numerous banking organizations have announced plans to enter or expand operations within the Chicago market. Increased competition could pressure loan and deposit pricing, affecting overall earnings performance. This article examines important economic trends, the Chicago banking environment, and prospects for heightened competition in the Region's largest market.

Chart 1



The Chicago Metro Area's Economy Is Underperforming That of the Nation

The Chicago metro area's economy is one of the largest and most diverse in the nation. While weakness in one sector often can be mitigated by strength in another, its overall economic performance recently has been subpar, in part owing to the following trends.

Employment Trends Remain Weak

As of mid-2003, the Chicago labor market continued to shed more jobs and recorded a higher unemployment rate than the nation. Job losses in the Chicago metropolitan statistical area (MSA) have been concentrated in the manufacturing sector, which represents 12 percent of total employment and is one of the higher-paying employment sectors. More recently, state government employment also has contracted sharply, as budget cuts have hampered this traditionally more stable economic sector.

The Chicago Office Market Remains under Pressure

The Chicago office market, like that of most metro areas, has weakened in recent years (see Chart 1). The office market has undergone two consecutive years of negative net absorption, declining starts, and falling rents. Although much of the new planned downtown office space in the Chicago MSA appears to be heavily preleased, filling vacated space may be difficult should the absorption of new space be the result of tenants relocating, rather than expanding.[1] The suburban office market has performed worse, and vacancy rates exceed those of the downtown area.

The health of the commercial real estate (CRE) sector in the Chicago MSA is important, given the high CRE exposure reported by insured institutions based in this market.[2] However, the vast majority of insured institutions in the Chicago market are not heavily exposed to construction and development lending, often the riskiest form of CRE. And while suburban office market fundamentals have weakened, this segment is but one among many subcategories of nonresidential real estate lending. Nevertheless, recent office market trends illustrate that prudent management of CRE lending programs warrants continuous monitoring.

The Residential Real Estate Sector May Be Softening

Housing affordability in the Chicago MSA is relatively low compared with the rest of the Midwest. In recent years, home price appreciation has been strong and has outstripped income growth; these trends could dampen future rates of appreciation. Mortgage rates also have trended higher recently, further constraining housing affordability. While the housing market

[1] Preleasing data are available from *Property & Portfolio Research, Inc.,* first quarter 2003, p. 2.

[2] Insured institutions headquartered in the Chicago MSA maintained a median level of CRE to Tier 1 capital of 292 percent as of June 30, 2003, compared with 237 percent for all other MSAs in the nation.

currently does not represent a serious concern for the health of the Chicago economy, local consumers may not be able to continue to rely on growth in home equity as a source of financial strength. While past-due first mortgages held by community institutions based in the Chicago market have risen recently, past-due and nonaccrual rates remain favorable compared with those of other MSAs.[3]

The Delayed Expansion of O'Hare International Airport May Hamper Future Growth

The planned expansion of O'Hare has been delayed owing to the weak financial condition of major airlines and reevaluation of the hub model.[4] This expansion is important to the growth prospects of international business, transportation, and Chicago's standing as a tourism center.[5]

The Chicago Banking Market Traditionally Has Been Highly Competitive

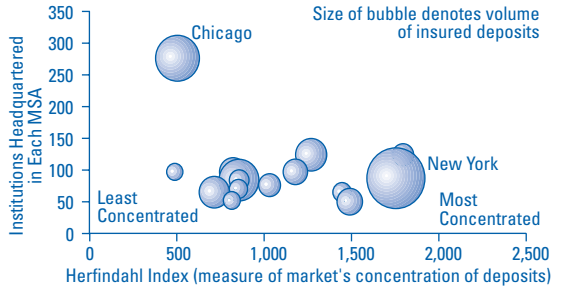
The presence of many insured institutions and a relatively high number of banking branches has made Chicago one of the nation's most competitive banking markets. Two hundred seventy-six insured institutions maintain headquarters in the Chicago MSA, more than twice that of the second-place market. In addition, 35 insured institutions headquartered elsewhere maintain branches in the Chicago metro area. With several large institutions headquartered in Chicago as well, the Chicago market ranks third in the nation in total assets.

Limits on branching in Illinois that existed for many years contributed to the current competitive climate. Some legislators were concerned that branching by larger institutions would hurt the area's community banks.[6] As a result, the Chicago market is highly fragmented and is not dominated by a small group of financial institutions, as is the case in many other markets (see Chart 2).

The presence of newer institutions also can fuel competition. Among the nation's larger banking markets, the

Chart 2

The Chicago Deposit Market Is Large, Highly Fragmented, and Home to Many Insured Institutions



Sources: Summary of Deposits, June 2002; FDIC's Research and Information System, June 30, 2003.
Note: Fifteen largest markets shown, based on number of institutions headquartered there.

number of newer institutions in the Chicago MSA has been second only to Atlanta during the past several years.[7] Newer institutions often focus on building market share in the first few years of operation, a strategy that can place competitive pressure on prices and services in a given market, as established institutions seek to retain customers.

Banking Performance Reveals Some Competitive Pressures

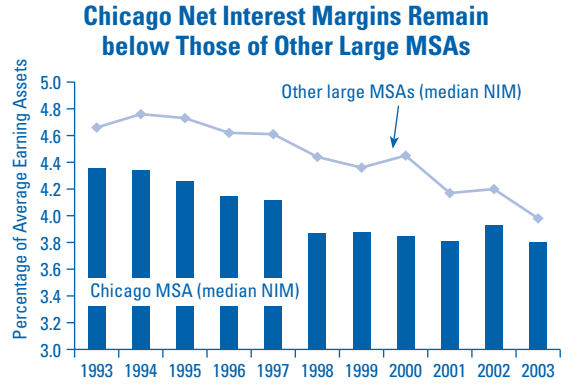
Strong competition can affect loan and deposit pricing, which flows through to net interest margins (NIMs). Community banks in the Chicago metro area report lower NIMs than the nation's other 14 largest banking markets.[8] In a continuation of a long-term trend, median year-to-date annualized NIMs as of June 30, 2003, were 3.80 percent, compared with 3.98 percent for the largest banking markets combined (see Chart 3).

Some of this gap in NIMs may occur because community institutions in other large markets have larger shares of nonresidential real estate and construction and development lending, which tend to be higher-yielding loan segments. However, competition is likely a factor in lower asset yields in the Chicago banking market as well. A closer look at asset yields among community banks reveals that the spread between those in the 90th percentile and the median has widened in

[3] Community institutions are defined as those that hold less than $1 billion in assets, excluding institutions established within the past three years and specialty banks (e.g., credit card lenders).
[4] The hub model routes much of an airline's traffic through a central point.
[5] Economy.com, June 2003, Chicago Prècis.
[6] Illinois law restricted bank branching until 1993. "In Chicago, Expansion a Step-by-Step Process," *American Banker,* September 5, 2002.

[7] Institutions less than three years old in markets that are headquarters to at least 50 insured institutions.
[8] The 15 largest markets are determined by the number of insured institutions headquartered in the MSA. These markets are Chicago; Boston; Minneapolis; Atlanta; Philadelphia; Kansas City; New York; Los Angeles; St. Louis; Dallas; Baltimore; Cincinnati; Washington, D.C.; Denver; and Houston.

Chart 3



Notes: MSA = Metropolitan Statistical Area. NIM = net interest margin.
2003 margins shown through June 30.
Source: Bank and Thrift Call Reports for community institutions in the Chicago MSA.

the Chicago market, while it has narrowed among banks in other large MSAs. Evidence suggests that increases in nonresidential lending have contributed to the relatively higher yields for institutions in the 90th percentile. For some, however, higher asset yields may be the result of favorable loan pricing—a result of finding niches in a market large enough to afford many lending opportunities.

Chicago community banks report funding costs that are in line with those in other large MSAs and have tracked very closely with other large markets during the past decade.[9] Deposit pricing may become more of an issue if retail banking competition intensifies as expected.

Competition in the Retail Banking Arena Is Increasing

The Chicago banking market appeals to many institutions based outside the area. A recent article stated, "the joke in the Chicago banking community is that there are not enough street corners to accommodate all the bank branches that out-of-towners want to open up in their city."[10] The market is large, not dominated by any one player, and represents a potential growth opportunity for some institutions. At $93 million, the Chicago market ranks 15th among MSAs nationally for deposits per branch, a situation likely resulting from its highly concentrated population and relatively high per capita income. Competitors may be drawn to the Chicago market in part because of the high level of deposits per branch; lower cost outlays associated with certain branch types, such as supermarket branches; and reasonable funding costs relative to other large markets.

Recent announcements by banking organizations headquartered outside the Chicago metro area suggest that growth plans are on a fast track. Bank of America, Washington Mutual, Fifth Third, National City, and others have announced plans that would add 250 to 350 branches to the 2,164 already in the Chicago banking market.[11] Bank of America reentered Chicago with a retail branch in January 2003 and has plans for 30 more by the end 2004.[12] Bank of America expects much of the initial deposit growth in Chicago to come from its large private banking customer base. Washington Mutual Inc. (Wamu), one of the largest mortgage lenders in the country, has established a presence in the Chicago market and has been adding branches aggressively. In June 2003, the company opened 28 branches, with plans for 70 by year-end. Many of Wamu's new customers previously had relationships with established banks in the area.[13] Bank One, which currently has the largest share of deposits in the Chicago MSA, has begun adding branches; 13 are planned for 2003 and 15 for 2004.[14] Bank One has introduced free checking and eliminated teller fees to encourage customers to use its branches.

De novo branching is likely to segment a highly fragmented market further. Some insured institutions may rely on de novo branching until acquisition targets become available. Others may be content with the growth that they can obtain through de novo branching, particularly in the faster-growing outlying areas of the Chicago market, rather than trying to expand market share downtown. Gaining substantial market share likely would challenge any newcomer to the Chicago banking market. Establishing a sizable market share quickly would require multiple acquisitions. Yet such acquisitions often cause customers to migrate toward community banks, as some perceive that larger institutions fail to maintain existing customer services.

[9] Markets where at least 50 community institutions are headquartered.
[10] "Windy city's bank scene about to become 'it' spot," *US Banker,* July 2003, p. 12.
[11] Ibid.
[12] Ibid.
[13] "Signs of Life, A few gutsy companies think now is the time to grow," *Business Week,* July 14, 2003.
[14] Ibid.

Competition May Affect Fee Income and Loan Product Offerings

Increased competition can affect more than loan and deposit pricing. With many institutions focusing more on retail banking, Chicago-area institutions could experience other costs. Many insured institutions have offset compressed margins in recent years by bolstering noninterest income. Often, this noninterest income growth has been generated by higher fees, such as automatic teller machine charges. This option may be less viable as institutions try to gain or maintain market share. In addition, as large banks more aggressively pursue market share, community banks' more profitable business lines may come under pressure. For instance, some large institutions are automating small business lending, traditionally a niche for smaller institutions. This situation could heighten competition for certain community banks.

Strong Competition Is Expected to Continue, but Insured Institutions Can Succeed

The Chicago banking environment has been fragmented and highly competitive for a long time. Although pockets of economic weakness exist, this diverse economy has proven fairly resilient, and insured institutions have continued to perform well. With competition in retail banking expected to increase, margins are likely to remain under pressure. Nevertheless, effectively managed insured institutions should be able to continue to capitalize on the opportunities available in such a large and diverse market.

Mike Anas, Senior Financial Analyst

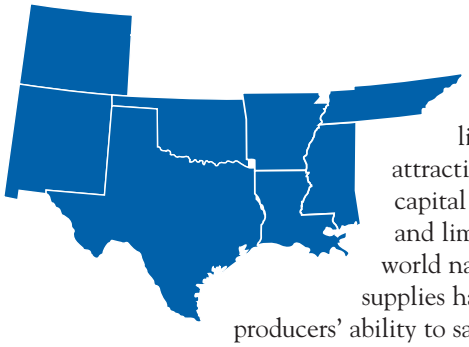
Dallas Regional Perspectives

Rising Natural Gas Prices Pose Opportunities and Challenges for the Dallas Region

Overview: Natural gas prices are expected to remain high—the result of rapidly growing demand and tight gas supplies. Residential and commercial users will be affected; however, industrial users are expected to bear the brunt of higher prices. Overall, the effects of higher natural gas prices on the U.S. and Dallas Region economies likely will be relatively modest during 2003 and 2004, with a slight dampening effect on overall economic growth. Higher prices will affect certain key industries in the Dallas Region. Upstream industries, such as oil and gas extraction and oilfield services, are expected to benefit most from higher natural gas prices. However, downstream industries, such as petrochemical companies, and indirect users, such as the manufacturing and agricultural sectors, will be adversely affected as operating costs rise, plants are shuttered, and operations are moved overseas.[1]

Natural gas prices have risen significantly since 2000. Natural gas prices in the United States have risen from an average of $2.20 per million British thermal units (mmbtu) between 1993 and 1999 to an average of $4.20 since 2000 (see Chart 1). Moreover, on an energy equivalent basis, prices for natural gas have been as high as those for crude oil during 2003, which has not been the case historically. The near doubling of natural gas prices is the result of increasing production failing to keep pace with soaring consumption. The supply and demand imbalance has also contributed to heightened price volatility, as wide price swings have occurred in response to small demand shifts because of the relatively tight supply of natural gas.[2]

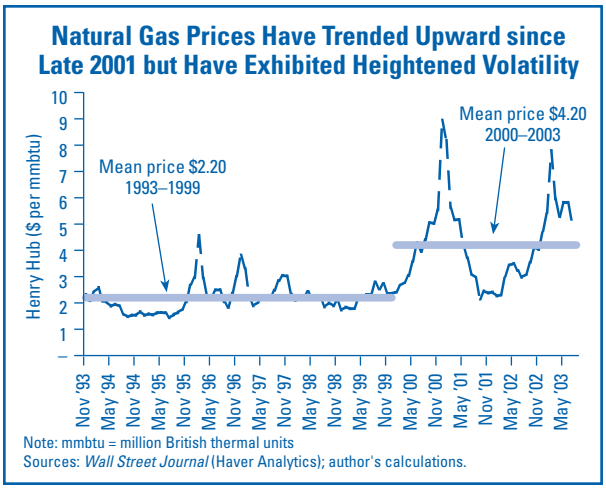
Shifts in demand can be attributed, at least in part, to broad weather-related temperature swings, enactment of environmental legislation, the housing boom of the past decade, the proliferation of new gas-fired electrical plants, and the downturn and subsequent weak recovery in the national economy. Meanwhile, natural gas supplies are not keeping pace with increasing demand. Maturing gas wells and more rapid depletion rates,



increasing price volatility (which has limited the attractiveness of new capital investment), and limited accesses to world natural gas supplies have hindered producers' ability to satisfy demand.

High natural gas prices likely will dampen U.S. economic growth. Recent economic indicators point toward a U.S. recovery that is gaining momentum. A rebounding economy is likely to increase demand for natural gas, placing further upward pressure on prices. Historically, demand for natural gas has correlated strongly with economic growth.[3] A sustained period of higher natural gas prices would be expected to dampen U.S. economic growth slightly. Consumers would be forced to spend more on energy, leaving less for discretionary spending. Given the recent near doubling of natural gas prices, real U.S. gross domestic product growth during 2003 and 2004 could be constrained by 25 to 50 basis points.[4] The worst of the fallout from higher natural gas prices would be expected during the remainder of this year and early in 2004.

Chart 1



[1] For purposes of this article, the term "upstream" refers to the oil and gas extractive and oilfield services industries, and "downstream" refers to industrial users of natural gas in the production process.
[2] The coefficient of variation (a measure of relative price volatility) of natural gas prices was 25 percent from 1994 through 1999; however, that figure has jumped to 39 percent since 2000.

[3] Standard & Poor's Industry Surveys: Natural Gas, May 15, 2003.
[4] The Dismal Scientist from Economy.com, "Macroeconomics of Natural Gas," by Mark Zandi, June 17, 2003, and The Kiplinger Letter: Forecasts for Management Decision-Making, Vol. 80, No. 2, July 3, 2003.

Higher natural gas prices will benefit the natural gas industry, but create problems for industrial users. The oil and gas extraction industry and oilfield service firms (upstream industries), concentrated in the Dallas Region (see Map 1), have benefited the most from higher natural gas prices. One industry forecast predicts double-digit increases in revenue growth for the natural gas industry in 2003.[5] Indeed, employment in these sectors has stabilized and even expanded in some areas. However, future job gains may be modest because of cost-cutting measures and efficient use of new technology.

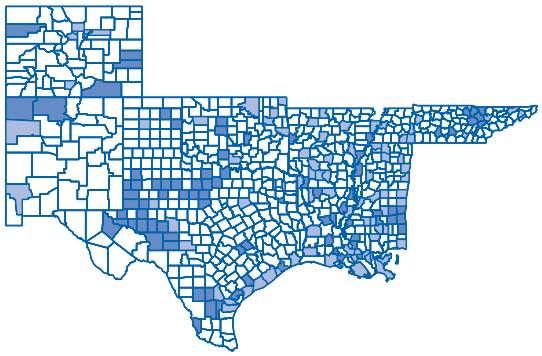
Industrial users of natural gas (downstream industries), such as manufacturing and agricultural producers, have been affected adversely by higher prices (see Map 1). This category of users represented 35 percent of U.S. natural gas consumption in 2002.[6] Natural gas accounts for at least 30 percent of all energy used in most industries; however, the bulk of consumption is in the chemical and petroleum manufacturing industries. The chemical industry's bottom line, in particular, has been hurt significantly this year by higher natural gas prices.[7]

Furthermore, high prices have prompted natural gas-intensive industries to scale back operations and employment, transfer production overseas, and shutter plants. Businesses can choose to pass higher costs on to customers, switch to cheaper alternative fuels, reduce other production costs, or absorb the higher costs. However, manufacturers typically have not been able to pass on these higher costs because of competition and excess capacity that have limited their pricing power.[8]

The Dallas Region economy will benefit and be challenged by higher prices for natural gas. Natural gas producers that benefit from higher prices are concentrated in **Texas**, **Louisiana**, **New Mexico**, **Oklahoma**, and **Colorado**. The Region produces more than half the nation's natural gas, but accounts for only one-third of its consumption. Because higher natural gas prices are a boon to upstream producers that drill and produce natural gas, higher industry incomes should benefit the regional economy overall.

Map 1

Upstream and Downstream Industries Are Located throughout the Dallas Region



Counties in **dark blue** represent large concentrations of oil and gas extraction employment (**upstream industries**) that are three times the state's share of total jobs in that industry.

Counties in **light blue** represent large concentrations of chemical and petroleum product manufacturing employment (**downstream industries**) that are three times the state's share of total jobs in that industry.

Sources: Bureau of Labor Statistics; author's calculations.

However, high prices are expected to hurt several key manufacturing industries in the Dallas Region because of their significant use of natural gas. Almost half the nation's *industrial* gas usage occurs in the Dallas Region, with Texas and Louisiana representing almost 40 percent of the total.[9] Specifically, the Gulf Coast area has the greatest direct exposure to higher prices because of the abundance of energy firms and petrochemical and chemical plants that rely heavily on natural gas. **Arkansas**, **Mississippi**, and **Tennessee**—states with significant shares of employment in the manufacturing sector—also are exposed to higher natural gas prices because of the energy-intensive nature of certain industries, such as fertilizer, plastics, paper, automobiles, steel, cement, glass, and food processing.

Higher gas prices could affect insured institutions. Economic conditions would be expected to rebound in areas in where drilling activity is on the rise; as a result, loan demand could increase among banks based in these areas. Although Call Report data do not indicate whether banks are participating in financing for drilling activity, anecdotal reports suggest that smaller banks have started or are expanding lending for energy projects.[10] Some of this lending activity is attributed to an increase in energy operations spurred by higher prices, as well as community banks looking for niche

[5] Economy.com, U.S. Industry Outlook, October 23, 2003.

[6] See the Energy Information Administration website, http://www.eia.doe.gov.

[7] Thaddeus Herrick, "Natural-Gas Prices Rock U.S.'s Chemical Industry," *Wall Street Journal,* June 18, 2003.

[8] Fifteen counties that are home to 34 banks are characterized by high employment concentrations in both oil and gas extraction and the chemical or petroleum products manufacturing industries. These counties were removed from our analysis for purposes of comparison.

[9] JPMorgan Securities Inc., Office of the Chief Economist, "Global Issues: Energy and the Recovery," July 8, 2003.

[10] John Reosti, "Small Lenders Finding Room in Energy Biz," *American Banker*, August 28, 2003, p.1.

Table 1

Banks Based in "Downstream Counties" Have Performed More Poorly than Banks Based in "Upstream Counties"

Sector(s) in Counties with at Least 3 Times Total Employment	Number of Counties	Number of Banks	2Q03 Total Assets ($ Billion)	Median Past-Due Ratio (%) 2Q03	Median Past-Due Ratio (%) 2Q02	Median Return on Assets (%) 2Q03	Median Return on Assets (%) 2Q02
Oil and gas extraction (upstream)	75	121	20.7	2.19	2.10	1.26	1.26
Chemical and allied products with petroleum and coal products (downstream)	65	176	24.6	2.53	2.38	1.06	1.16

Source: Bank and Thrift Call Reports.

opportunities in smaller energy credits. However, heightened price volatility, the need for greater levels of capital investment, and the specific skills required to conduct drilling activities heighten the complexity of this type of lending.

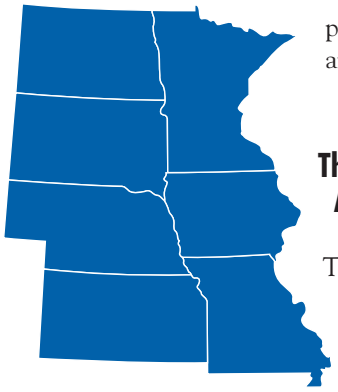
The chemical and petrochemical refining areas on the Louisiana and Texas coastlines, and in areas with high shares of employment in the manufacturing and farming sectors, would be disproportionately hurt by higher gas prices. Should these industries be forced to scale back operations and lay off workers, individual and commercial borrowers may find it more difficult to remain current on their debts. As a result, insured institutions based in these areas could be challenged by declining loan demand and weakening credit quality.

As shown in Table 1, banks headquartered in counties with large employment concentrations in upstream industries ("upstream counties") are performing better than banks based in counties with significant concentrations of employment in downstream industries ("downstream counties"). Insured institutions based in downstream counties report a lower median return on assets and higher past-due ratios. Obviously, there are a variety of factors that affect the performance and condition of institutions in these areas, and many of these factors take time to work through the balance sheets of individual institutions. Given the price volatility of natural gas and the heavy exposure to gas prices, it would be reasonable to expect that gas prices are one of the reasons for the differences between the upstream and downstream counties. Should natural gas prices remain high for a sustained period, the significance to institutions in downstream counties could increase because it will affect employment and profitability of firms that depend on natural gas.

Dallas Staff

Kansas City Regional Perspectives

Drought conditions remain a significant issue in the Kansas City Region, with implications for the Region's economy and insured institutions. This article describes the effects of drought conditions on the Region's cattle and crop producers and assesses their effects on farm bank credit quality.



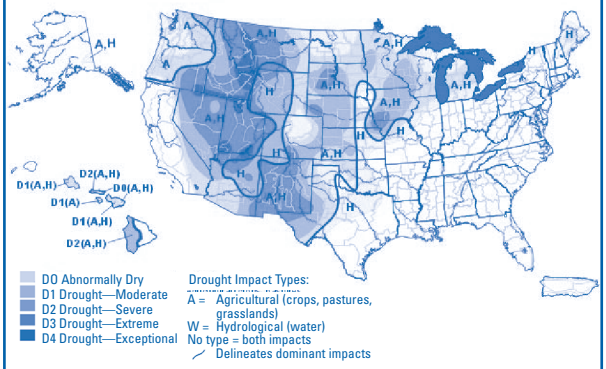
Drought Continues to Stress Much of the Western Part of the Kansas City Region

Nearly half the nation experienced severe drought conditions during spring and summer 2002. The hardest-hit parts of the Kansas City Region were much of western **South Dakota**, a large portion of **Nebraska**, and northwestern **Kansas**. The duration and intensity of the drought devastated much of the pastureland in these areas and severely damaged wheat, corn, and soybean production. Crop yields dropped significantly, and many cattle producers were forced to liquidate some or all of their herds because of a lack of forage.

Rainfall in the spring and early summer of 2003 helped alleviate the situation throughout much of the Region. However, the hot, dry weather pattern that characterized late July and August further eroded topsoil moisture conditions. As a result, almost the entire Region is now experiencing at least moderate agricultural drought conditions (see Map 1), and certain areas have been subject to more long-term stress (see Map 2). In areas of persistent drought, farm bank performance has begun to deteriorate.

Map 1

U.S. Drought Monitor, September 16, 2003



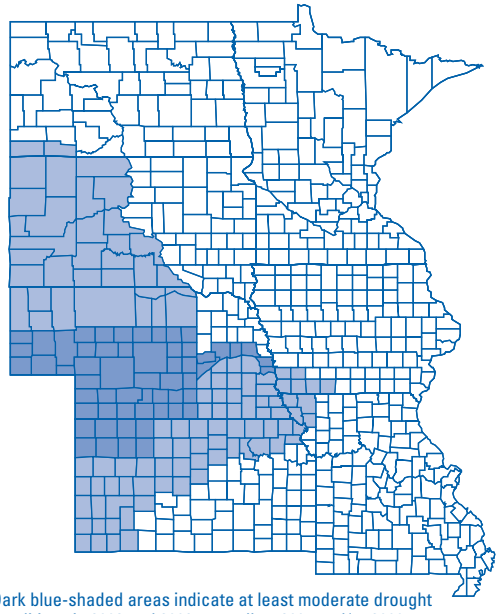
Note: The Drought Monitor focuses on broad-scale conditions. Local conditions may vary.
Source: U.S. Drought Monitor, http://drought.unl.edu/dm.

The Region's Economy Was Affected Adversely by the 2002 Drought

The 2002 drought caused sharp declines in prices and rising feed costs that hurt cattle industry revenues throughout the Region. Faced with a shortage of feed and water, many cattle producers liquidated herds, resulting in a precipitous drop in cattle prices and producer revenues. The Nebraska Choice Steer Price declined 20 percent from $79 per hundredweight in first quarter 2001 to a four-year low of $63 per hundredweight in third quarter 2002.[1]

Map 2

Persistent Drought Conditions Continue in Western Kansas City Region



Dark blue-shaded areas indicate at least moderate drought conditions in 2002 and 2003, as well as 2001 and/or 2000.

Light blue-shaded areas are counties with at least moderate drought conditions in the past two years, but not in 2000 and 2001.

Source: U.S. Drought Monitor, http://drought.uml.edu/dm.

[1] *Livestock Price Outlook*, July 2003, Table 5. Purdue University and University of Illinois, http://www.farmdoc.uiuc.edu/marketing/livestockoutlook/07003cattle/0703cattle_text.html.

Table 1

The Region's Western States Experienced Higher Acreage Abandonment and Lower Crop Yields in 2002

	Wheat						Corn					
STATE	Planted Acres (000s)	Regional Share	Percent Abandoned[1] 2002	Historic Abandon Rate	Yield (bu/acre)	Historic Yield[2]	Planted Acres (000s)	Regional Share	Percent Abandoned[1] 2002	Historic Abandon Rate	Yield (bu/acre)	Historic Yield[2]
Kansas	9,600	36%	16	8%	33	44	3,250	8%	23	7%	116	138
Nebraska	1,650	6%	8	7%	32	41	8,400	21%	13	4%	128	138
North Dakota	9,080	34%	13	5%	27	30	1,230	3%	19	18%	115	110
South Dakota	3,030	12%	46	12%	26	37	4,400	11%	27	10%	95	110
	23,360	89%	18	7%	30	37	17,280	44%	19	7%	117	130
Iowa	20	0%	20	18%	50	46	12,300	31%	3	2%	165	144
Minnesota	2,040	8%	10	3%	34	41	7,200	18%	7	8%	157	142
Missouri	900	3%	16	9%	45	51	2,800	7%	4	4%	105	120
	2,960	11%	12	5%	37	44	22,300	56%	4	4%	155	141

Source: Various USDA commodity reports.
[1] The term 'abandon' is used to signify that the crop was not harvested for grain as intended. Wheat producers typically let cattle forage on abandoned wheat acreage, and corn producers harvest abandoned corn as silage for livestock.
[2] Historic abandon rate and historic yield rate based on five-year averages 1997 through 2001.

Many crop producers in Kansas, Nebraska, and the **Dakotas** also were affected adversely by drought conditions. Persistent drought contributed to declining production, particularly in areas without irrigation. Producers of wheat and corn were forced to abandon historically high acreage because of crop failures, and yields on harvested acres were low (see Table 1). Reduced crop yields resulted in rising commodity prices, which minimized some of the production loss, but these price increases were offset somewhat by a decline in government subsidies.

Because of extremely low commodity prices, government subsidies to the Region's farmers averaged $8.7 billion, or 96 percent of net farm income, from 1999 through 2001. However, when commodity prices improved in 2002, rising above target prices established in the 2002 Farm Bill, farmers received significantly lower subsidies. The level of government payments to the Kansas City Region declined to $3.2 billion, or 62 percent of net farm income, in 2002. No consensus exists as to whether higher commodity prices helped increase net farm income for successful producers during 2002. A study conducted by the ***Food and Agricultural Policy Research Institute*** suggests that, in the aggregate, the loss of subsidies can outweigh the benefits of moderate gains in commodity prices.[2] Farmers who experienced low yields not only benefited little from higher commodity prices, but also received less government assistance. As for the cattle industry, the 2002 Farm Bill does not include subsidies for cattle farmers, and producers received only $250 million in assistance as part of the disaster bill enacted in 2003.[3]

When government payments are excluded, the Region's net farm income was $2 billion in 2002, double the 2001 figure and the third consecutive increase since 1999. However, when government payments are included, net farm income declined by almost half, from $9 billion in 2001 to $5.2 billion in 2002.

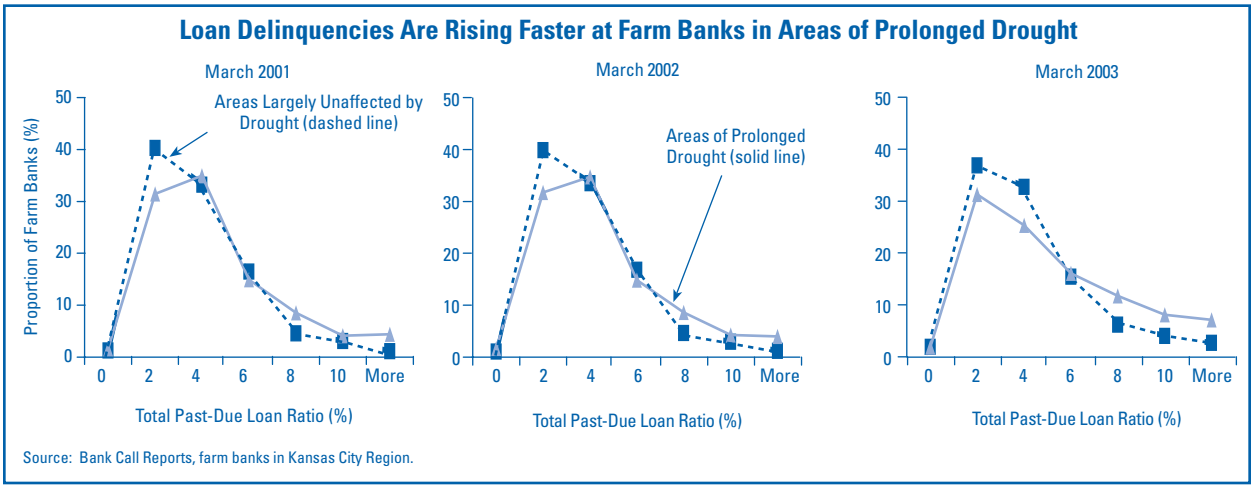
Farm Bank Loan Portfolios Are Now Showing the Effects of the Drought

A considerable lag typically exists between the time serious problems occur in the agricultural industry and the time farm banks report weakening credit quality, in large part because of "carryover debt." Farm revenues generally are volatile, as they are subject to swings in production levels and prices. Therefore, it is not uncommon for borrowers to carry over operating loans to the next season, pledging equity in real estate and

[2] See Patrick Westhoff, "Income and Risk in Today's Agriculture," presentation to the National Agricultural Credit Committee meeting, Chicago, Illinois, September 2003, http://www.fapri.missouri.edu/FAPRI_Publications.html.

[3] Cattle producers are eligible for an aggregate $250 million in assistance under the Livestock Assistance Program authorized by the Agricultural Assistance Act of 2003.

Chart 1



machinery to shore up collateral margins. Federal Deposit Insurance Corporation (FDIC) examiners began observing rising levels of carryover debt among borrowers in the Kansas City Region in 1998 as a result of declining commodity prices. Between 1998 and 2002, one-quarter to one-half of FDIC examinations of farm banks indicated increasing levels of carryover debt; a much smaller percentage reported declining levels of carryover debt.[4]

Many agricultural borrowers in the Kansas City Region have been under stress since 1999, when prices for corn, wheat, and soybeans declined substantially. Many farm operations would have failed had it not been for the high government assistance to farmers. Although the payments prevented widespread farm failures, net farm income remained under pressure, and farm banks continued to work out repayment arrangements with agricultural borrowers.

Delinquency data are beginning to show some deterioration in credit quality. Farm banks based in areas of persistent drought (shaded areas in Map 2) have reported higher delinquency levels than those based in areas largely unaffected by persistent drought (unshaded areas in Map 2) (see Chart 1). The share of farm banks in persistent drought areas with delinquency ratios of at least 8 percent was 17.1 percent in 2001and 16.9 percent in 2002, nearly twice that of farm banks in areas largely unaffected by persistent drought. Although farm banks in both areas reported rising delinquency levels in March 2003, the increase was larger for those based in areas characterized by persistent drought. The difference was even greater among farm banks based in the dark-shaded counties of Map 2, areas under the most persistent drought conditions. An extremely high 41 percent of those institutions reported loan delinquency ratios of at least 8 percent as of March 31, 2003.

The greater increase in loan delinquencies among farm banks based in the hardest-hit areas (some of the most rural and agriculturally dependent parts of the Region) has occurred not only because these areas have suffered from repeated years of poor yields, but because these banks tend to hold higher concentrations of direct agricultural credits. In March 2003, farm banks based in dark-shaded areas of Map 2 reported a median agricultural production loan concentration of 40 percent, versus 28 percent for farm banks in lightly shaded areas and 25 percent for farm banks in nonshaded areas. As a result, the effects of poor production are exacerbated among farm banks based in drought-persistent areas.

Owing to their reliance on the agricultural sector, farm banks in the persistent drought areas find it difficult to shift concentrations away from agricultural lending. Farm banks in less rural areas have been more successful at diversifying exposures and have scaled back concentrations in agricultural loans. Moreover, although all farm banks have reported rising exposures in loans secured by farmland, this is occurring for different reasons. Banks based in the less rural areas could be experiencing increased demand for hobby farms and rural estate living. However, among banks based in the more rural areas, the increase in loans

[4] *Reports on Underwriting Practices, Kansas City Region.* These reports aggregate safety and soundness loan underwriting survey results in six-month periods ending March 31 and September 30.

secured by farmland is probably attributable to increases in carryover debt.

The Agricultural Outlook Remains Mixed

Prospects for many cattle producers are much improved over 2002. Smaller herds and lower levels of imports from Canada have contributed to higher prices.[5] Revenues of cattle producers are expected to grow overall; however, producers who were forced to liquidate herds will face higher prices to rebuild them.

The outlook for crop production is mixed. Winter wheat production has increased, and prices are up as well. Estimates for spring wheat production also are favorable. However, the late summer drought is expected to have an adverse effect on corn and soybean yields. Although production should improve from 2002 levels, it could remain well below historical averages in the most drought-stricken areas.

Not All the News Is Bad for the Region's Farm Banks

Credit quality appears to be eroding somewhat among the Region's farm banks, particularly those in the areas hit hardest by drought. However, there is positive news.

Capital protection and loan loss reserve coverage remain high among the Region's farm banks, even in areas significantly hurt by the drought. Farm banks headquartered in areas of the most persistent drought reported a median leverage capital ratio of 10.0 percent as of June 30, 2003, down slightly from recent years, but well above levels during the 1980s agricultural crisis and the 1988 drought. Moreover, these banks reported a historically high ratio of median loan loss reserves to total loans of 1.8 percent. In addition, farm real estate prices remain stable or have risen in many areas, providing ongoing collateral protection.

Still, the effects of drought remain a critical issue for farm banks headquartered in the Kansas City Region. A high 18.4 percent of farm banks based in the areas of most persistent drought are rated 3, 4, or 5 for asset quality, compared with 10.1 percent of farm banks in areas largely unaffected by persistent drought.

The FDIC continues to monitor drought conditions closely, engaging in outreach activities with bankers, other regulators, and trade groups, and, as needed updating bank management on farm lending best practices. For example, FDIC staff from the Kansas City Region hosted roundtable discussions on agricultural trends and conditions in Grand Island, Nebraska, and Hays, Kansas, on May 21 and May 22, 2003, respectively. These outreach events helped the Region develop a best practices document entitled, "Effective Strategies for Managing Agricultural Credit Risk." The Region provided copies of this document to all state nonmember banks located in the drought areas of Nebraska and western Kansas.[6]

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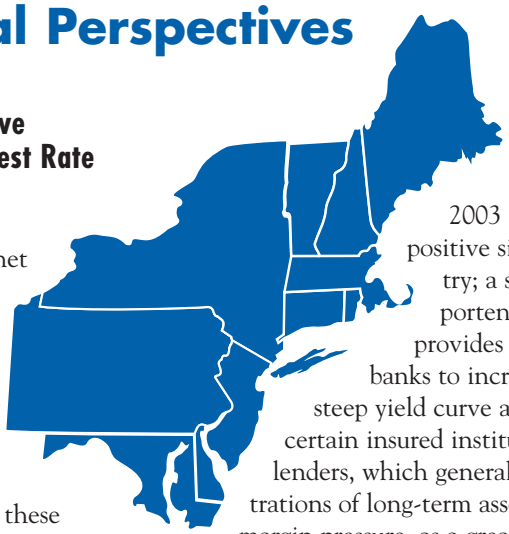
Senior Financial Analyst

[5] In May 2003, Canada reported an incident of bovine spongiform encephalopathy (BSE, or "mad cow disease"). In response, the United States, the primary importer of Canadian cattle, temporarily banned Canadian cattle imports. The United States imported 1.7 million head of cattle from Canada in 2002. Source: *USDA Backgrounder*, report updated July 10, 2003. http://www.usda.gov/news/releases/2003/05/bg0166.html.

[6] Interested parties may request a copy of this document by submitting an e-mail to Assistant Regional Director Pamela Farwig at PFarwig@FDIC.gov.

New York Regional Perspectives



Dramatic Changes in the Yield Curve Have Implications for Bank Margins and Interest Rate Risk Management

Generally, a steep yield curve benefits the net interest margins (NIMs) of insured institutions because the asset yields of many banks are based on intermediate- and long-term market interest rates, and costs of funds are based on short-term rates. The shape of the yield curve is particularly important to community banks, especially residential mortgage lenders, because these banks typically "fund short and lend long." In other words, the NIMs of these institutions depend on the spread between short- and long-term rates. Additionally, community bank earnings rely more on margin revenue than do the earnings of larger, more diversified insured financial institutions that generate higher volumes of noninterest income (see inset box for more detail on the Region's large banks).[1]

The steepness of the yield curve that developed in third quarter 2003 generally is considered a positive sign for the banking industry; a steep yield curve typically portends economic growth and provides an opportunity for some banks to increase margins. However, a steep yield curve also likely will challenge certain insured institutions. Residential lenders, which generally hold higher concentrations of long-term assets, may experience margin pressure, as a greater percentage of their assets may be locked in at below-market rates. Also, banks that increased concentrations of long-term securities before the rise in interest rates may experience a decline in the value of securities portfolios and a reduction in gains on the sale of securities. This article examines the effects of recent interest rate changes on the operations of the Region's community banks and identifies banking industry and market conditions that likely will affect interest rate risk management.

An Increase in Securities Gains and a Decline in Problem Loan Costs Have Helped to Offset Margin Compression among the Region's Large Banks

Large institutions based in the New York Region reported a decline in the NIM in second quarter 2003.[2] Falling market interest rates contributed to lower asset yields, but reductions in funding costs decelerated as short-term rates neared record lows. Similar to the Region's community banks, deposit costs may have approached a floor. Large bank securities gains increased in second quarter 2003 as the value of fixed-income investment portfolios rose with the significant decline in long-term interest rates. Nonetheless, securities gains likely will dissipate in coming quarters, reflecting the dramatic rise in long-term rates in third quarter 2003.

Large banks based in the Region reported a drop in problem loan costs in second quarter 2003 compared with a year ago. Loan delinquency and charge-off rates declined, and a reduction in provisions for loan losses reflected expectations of continued moderation in problems associated with large corporate loans and improvement in overall credit quality. Although corporate credit quality may weaken if the economic recovery stalls, the review of large syndicated bank loans conducted by federal banking regulators in 2003 showed that credit quality weakness has moderated. For information on the interagency Shared National Credit review, see the interagency September 2003 press release "Bank Regulators' Data Show Stabilization in Credit Quality."[3]

[2] "Large institutions" are defined as insured institutions that hold more than $10 billion in assets. This definition does not include credit card banks.

[3] http://www.fdic.gov/news/press/2003/pr 8903.html

[1] Data in this article refer to community banks unless otherwise noted. "Community banks" are defined as insured institutions that hold less than $10 billion in assets. This definition does not include credit card banks and banks less than three years old.

A Look Back: Flattening in the Yield Curve during 2002 and the First Half of 2003 Contributed to Margin Compression

During the year ending second quarter 2003 long-term interest rates dropped significantly, in large part because of concerns about the prospects for U.S. economic growth and expectations that the Federal Reserve would cut interest rates further. The decline in long-term rates contributed to flattening in the yield curve. In June 2003, mortgage rates fell to 45-year lows, and loan refinancing activity exploded. The Mortgage Bankers Association Refinancing Index reached the highest point on record, doubling since the beginning of the year.[4] Loan demand and mortgage origination income increased for many banks, though asset yields contracted as loans were made at low rates. As a result, the median asset yield for community banks based in the Region declined 94 basis points from mid-2002 through mid-2003.

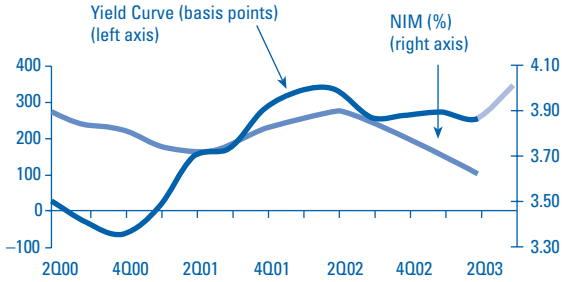
Bank funding costs also declined with overall interest rate movements, but not as dramatically as asset yields. The latest cut in the federal funds rate in June 2003 helped to reduce funding costs for the Region's insured institutions in second quarter 2003 to an all-time low.[5] However, the decline in funding costs decelerated as short-term interest rates neared record lows. Deposit costs approached a floor, indicating that banks faced some competitive resistance to lowering deposit rates further. The median cost of funds reported by the Region's insured institutions declined 62 basis points during the year ending second quarter 2003, a less significant drop than the 94 basis point decline in asset yield. Consequently, the median NIM reported by the Region's insured institutions has declined sharply for four consecutive quarters, hitting a 12-year low of 3.63 percent in second quarter 2003 (see Chart 1).

A Look Ahead: The Steeper Yield Curve Likely Will Bolster Bank Margins, but the Recent Significant Rise in Long-Term Interest Rates Is Expected to Challenge Some Banks

The yield curve steepened significantly in third quarter 2003 as confidence in the nation's economic recovery grew. Expectations for further rate cuts waned, and investors sold long-term U.S. Treasury securities, driving down prices and increasing yields. The 112 basis point increase in the average ten-year U.S. Treasury yield during July and August represented the largest increase for a two-month period since January and February 1980. A steep yield curve and economic growth typically provide opportunity for banks to grow NIMs. However, among some of the Region's community banks, NIMs may weaken and securities gains may dissipate.

Chart 1

Flattening Yield Curve Contributed to NIM Compression in Mid-2003; However, Yield Curve Has Since Steepened



Notes: NIM = net interest margin. "Yield Curve" is the difference between the yield on ten-year and three-month U.S. Treasury securities. Shaded line represents the average for 3Q03.
Sources: Federal Reserve Board; Bank and Thrift Call Reports.

Banks Holding High Levels of Long-Term Assets May Experience Weaker NIMs

Rising interest rates may pressure the margins of a greater percentage of banks based in the New York Region compared with elsewhere in the country because of the Region's higher concentration of residential lenders. Residential lenders, which typically hold relatively high concentrations of long-term assets, comprise one-third of insured institutions headquartered in the Region, compared with less than 10 percent in the rest of the nation.[6] Generally, these banks will have greater shares of assets locked into lower rates and will be less able to reprice assets upward as market rates increase. The median level of long-term assets to earnings assets for the Region's banks is double that of the nation. The median level of long-term assets among the Region's residential lenders

[4] Mortgage Bankers Association of America via Haver Analytics. Data available from January 1990.

[5] Bank and Thrift Call Reports. Median cost of funds data are available from first quarter 1984.

[6] "Residential lenders" are defined in this article as insured institutions that hold less than $10 billion in assets and at least 50 percent of assets in one- to four-family residential loans or mortgage-backed securities. This definition does not include banks less than three years old.

also is higher than that of residential lenders nationwide (see Chart 2).

Nevertheless, although higher than the nation's, concentrations of long-term assets reported by the Region's banks have remained stable, despite record refinancing activity and borrowers' preference for long-term, fixed-rate mortgages during the 2002–2003 refinancing wave. This stability likely results from a significant degree of refinancing activity within existing long-term categories; that is, refinancing between 15- and 30-year mortgages. In addition, banks have implemented strategies to mitigate the risk of holding long-term loans, for example, selling loans in the secondary market. Furthermore, the Region's banks have increased concentrations of longer-term liabilities, probably to match long-term asset concentrations and lock in longer-term funding at record low interest rates. Time deposits, which constitute more than one-third of the funding for the Region's banks, have lengthened in maturity or repricing structure. The median percentage of time deposits maturing or repricing beyond one year has increased from 27 percent to 34 percent during the past year.[7]

Securities Gains May Dissipate Following the Significant Rise in Long-Term Interest Rates

Securities gains, which benefited from declining interest rates in 2002 and the first half of 2003, boosted the overall net income of the Region's insured institutions during the past year (see Chart 3). However, such gains likely will dissipate following the significant rise in long-term rates in third quarter 2003. In particular, banks that increased holdings of longer-term securities just before the sharp rise in rates may experience depreciation in this portfolio segment, precluding any potential boost to future earnings from securities gains.

An increasing percentage of banks in the New York Region grew concentrations of long-term securities in the first half of 2003 compared with a year ago. Fifty-two percent of banks increased concentrations of securities maturing or repricing in more than five years during the first half of 2003, compared with 41 percent of banks a year earlier. These banks may have to decide whether to reduce holdings of long-term, depreciated securities in favor of higher-yielding investments, emphasizing the need for strong interest rate risk measurement and management practices.

Dramatic Yield Curve Changes Heighten the Importance of Interest Rate Risk Management

The wide fluctuation in interest rates during the past year has created a dynamic interest rate risk (IRR) management environment. Banks have been challenged to evaluate the reasonableness and accuracy of IRR management models under a wide range of interest rate scenarios. Management has had the opportunity to assess how well these models have accommodated significant reductions in short-term rates followed by a sharp drop and subsequent rapid rise in long-term rates. Dramatic changes in interest

Chart 2

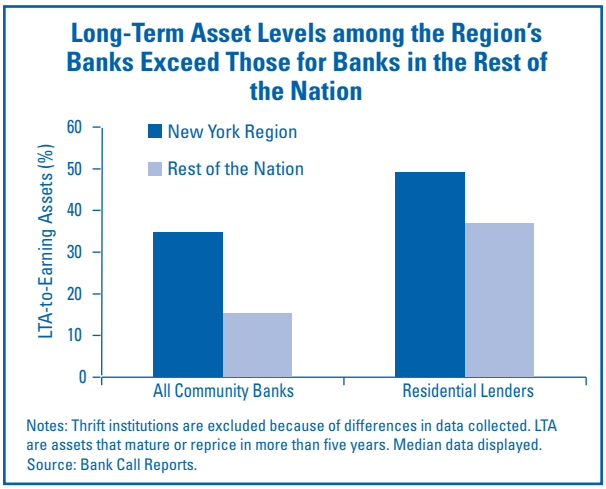
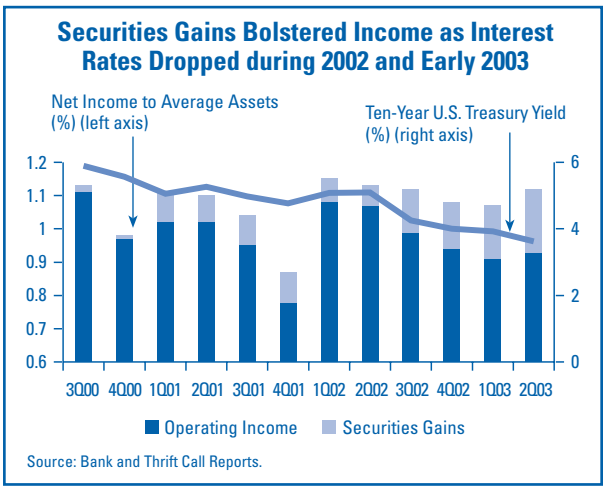


Chart 3



[7] Asset and liability maturity/repricing data exclude thrift institutions because of differences in the data.

rates heighten the importance of prudent asset and liability management practices, such as ensuring that fluctuations in the NIM and investment portfolio depreciation levels remain within established limits and policy guidelines. Ultimately, comparing the output of IRR models with actual results can help management identify ways to enhance IRR measurement systems.

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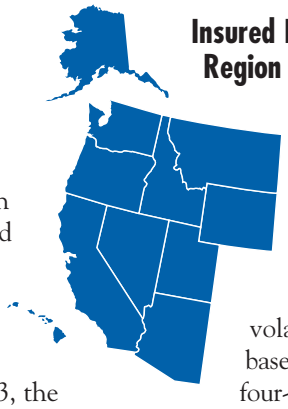
San Francisco Regional Perspectives



Low Interest Rates Have Benefited the Region's Economy and Insured Institutions

Economic conditions in the San Francisco Region, like those in the nation, have been sluggish; employment growth during second quarter 2003 was flat compared with one year ago. However, interest rates, at a four-decade low, mitigated the effects of weak job growth and boosted the Region's housing sector. During the first half of 2003, the volume of residential building permits in **Hawaii, Wyoming,** and **California** increased year-over-year at more than five times the national rate. Low interest rates and relatively high rates of home price appreciation have allowed homeowners to take cash out when refinancing, bolstering consumer spending and lowering monthly debt service levels. The rate of home price appreciation across the Region during the year ending June 30, 2003, was strongest in California, Hawaii, and **Nevada**.

Insured institutions headquartered in the San Francisco Region continued to perform well despite weak economic conditions. Credit quality was favorable as median past-due ratios declined year-over-year across major loan categories and remained well below national levels.[1] Lower interest rates benefited asset quality and augmented earnings in two ways. First, lower rates contributed to higher securities prices, allowing approximately one-third of the insured institutions based in the Region to recognize securities gains in the first half of 2003. Second, the record number of mortgage refinancings boosted fee income. Although banks and thrifts based in the Region have benefited from low interest rates, institutions with significant mortgage lending and mortgage servicing operations have faced challenges created by the record level of prepayments. This article examines these challenges, focusing on the potential for heightened levels of credit and extension risk.

Insured Institutions Based in the San Francisco Region Hold Relatively High Concentrations of Mortgage-Related Assets

Banks and thrifts headquartered in the Region are heavily involved in mortgage servicing and hold shares of mortgage-related assets that exceed the national average, increasing their sensitivity to interest rate volatility. As of June 30, 2003, insured institutions based in the Region held 40 percent of all one- to four-family mortgages serviced for others by institutions nationwide, in part because institutions based in the Region hold the two largest servicing portfolios. As of June 30, 2003, mortgage-related assets represented 45 percent of the assets held by the Region's banks and thrifts, significantly above the 33 percent for institutions nationwide. These assets are concentrated in banks and thrifts headquartered in California and **Washington**. Interest rate declines during the previous three years have driven refinancings to all-time highs, resulting in record prepayments of existing mortgages and reducing the value of mortgage-servicing assets (MSAs).

Record High Prepayment Speeds Occurred Nationwide, and Studies Indicate Significant Differences in Prepayment Speeds among the Region's States

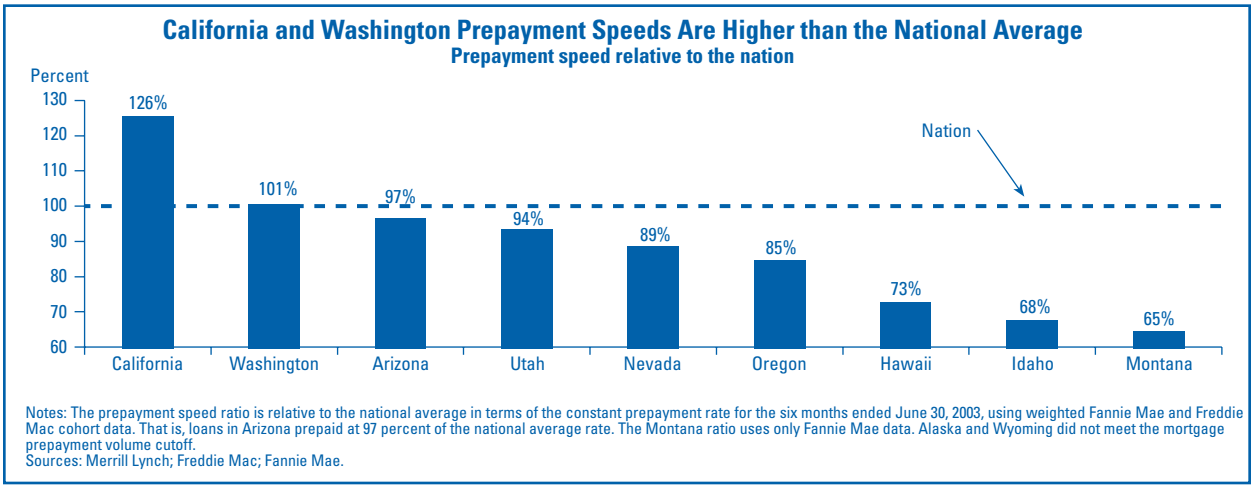
The significant decline in interest rates during the past three years triggered a record wave of mortgage loan originations, resulting in historically high levels of prepayments.[2] In August 2003, ***Economy.com*** forecast that the dollar volume of annual originations would triple from 2000 to 2003. Prepayment speeds for individual states differ from national averages, in part because of differences in rates of home price appreciation, personal income per capita levels, and percentages of adjustable-rate mortgages (see Chart 1).[3]

[1] The median past-due ratio reported by insured institutions based in the San Francisco Region as of June 30, 2003, was 1.11 percent, compared with 1.83 percent for the nation.

[2] The 30-year constant maturity treasury (CMT) rate fell one-third from January 2000 to June 2003.

[3] Kurt van Kuller, *Prepayments Fastest in CA, MA, and Midwest*, Merrill Lynch Global Securities Research & Economics Group, Municipal Credit Research, pp. 1–13, July 25, 2003.

Chart 1



Differences in prepayment speeds may affect the valuation of MSAs that are concentrated in a specific geographic area. During the first half of 2003, insured institutions based in California and Washington posted the highest prepayment speeds in the Region and ranked second and twelfth nationally. In particular, the rate of home price appreciation in California has exceeded the national average significantly, both year-over-year and over the previous five years. In addition, banks and thrifts based in California hold the Region's highest share of adjustable-rate mortgages (ARMs). In contrast, institutions in **Idaho** and **Montana** reported the lowest prepayment speeds in the Region, with per capita income, rates of home price appreciation, and shares of ARMs lower than the national averages. These differences in prepayment speeds may contribute to certain mortgage pools generating actual cash flows that differ from projected cash flows, which were based on national prepayment speeds. Nationwide, record-high prepayment speeds have had an adverse effect on the value of MSAs. The value of assets that are related to mortgages held by banks and thrifts headquartered in states with relatively high prepayment levels may be impaired further.

Writedowns of Mortgage-Servicing Assets Are on the Increase in the Region

Mortgage-servicing asset values are based on the underlying portfolio of mortgages serviced. As those mortgages prepay, especially at higher speeds than originally estimated, the value of the MSA must be written down to correspond with the shrinking pool of serviced mortgages.[4] Many insured institutions based in the San Francisco Region that service one-to-four family mortgages have written down the value of MSAs. The number of banks and thrifts in the Region that reported one-time MSA writedowns in excess of mortgage-servicing fee income more than doubled from 2001 to June 30, 2003.[5] During the same period, the book value of these assets declined almost 40 percent. Accelerated mortgage prepayments also have reduced the value and marketability of older servicing portfolios.

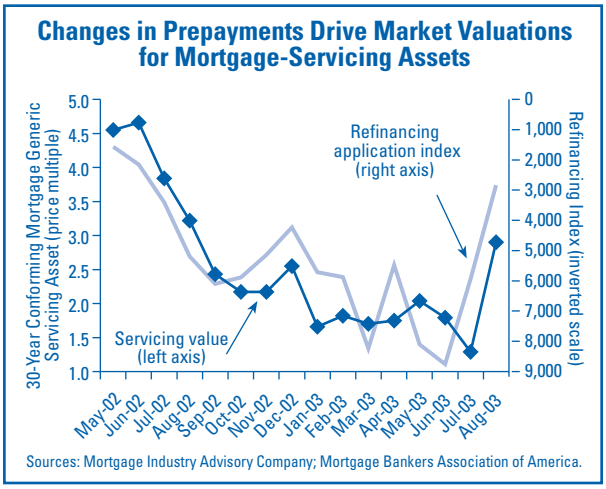
Higher Interest Rates May Increase the Value of Mortgage Servicing but Also May Heighten Extension and Credit Risk

Although long-term interest rates declined to historically low levels during second quarter 2003, rates rose sharply in third quarter 2003. Rate increases have positive implications for MSA valuations. However, rising rates also may challenge earnings and asset quality, particularly for the Region's mortgage servicers. First, the large volume of new mortgages extended at low interest rates may contribute to margin compression going forward. Second, default rates may increase on adjustable-rate mortgages as the interest rate ratchets

[4] For details on the valuation of mortgage servicing assets, refer to the FFIEC Interagency Advisory on Mortgage Banking Activities dated February 25, 2003 (http://www.fdic.gov/news/news/financial/2003/fil0315.html).

[5] For the year ending December 31, 2001, 13 percent of insured institutions in the San Francisco Region reported one-time MSA writedowns in excess of mortgage-servicing fee income; this number increased to 29 percent for the six months ending June 30, 2003.

Chart 2



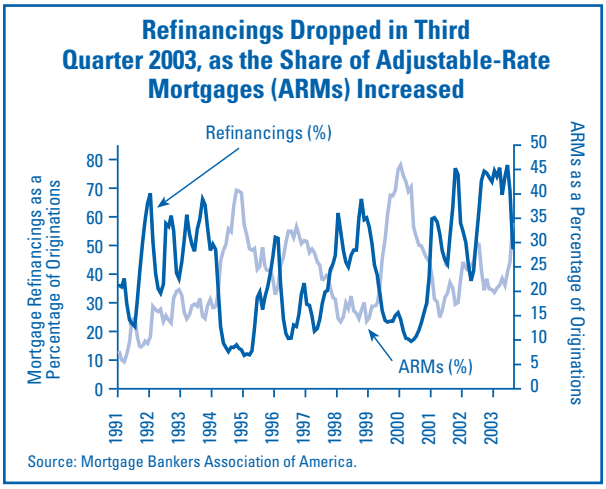
upward, potentially making monthly payments unaffordable for some borrowers.

Further interest rate increases likely will ease mortgage-servicing price pressures and improve the marketability of these portfolios. Data from the ***Mortgage Industry Advisory Company*** suggest that the increase in long-term interest rates and declining mortgage refinancing activity during third quarter 2003 had an immediate, positive impact on servicing asset values (see Chart 2).[6] As these values increase, insured institutions based in the Region may be able to recapture some of the losses on mortgage servicing assets that were recognized in prior quarters.[7] However, the increase in value of MSAs linked to recently originated, relatively low-yielding mortgages could be limited.[8]

Although rising interest rates may benefit mortgage-servicing asset values, earnings concerns may emerge, particularly for servicers of one-to-four family mortgages.[9] Extension risk may heighten because newly originated, low-rate mortgages likely will prepay more slowly. As a result, mortgage lenders could be saddled with asset yields that do not increase commensurately with funding costs as rates rise, compressing net interest margins. Also, the unintended consequences of hedging interest rate risk (IRR) increases the complexity of IRR management. An August 2003 ***Federal Reserve*** study found that hedging mortgage-backed securities by buying or selling U.S. Treasury securities resulted in greater rate swings.[10] In addition, when MSAs were hedged with mortgage loans, the sharp rise in interest rates caused the duration of these assets and the hedge to extend significantly.[11]

The level of credit risk also could increase as interest rates move higher, both on seasoned and newly originated loans. ARM default rates may climb as monthly mortgage payments increase. Data from the ***Mortgage Bankers Association of America*** show that ARMs tend to become more popular than fixed-rate mortgages as rates rise and refinancing activity declines (see Chart 3). This is particularly true in the San Francisco Region, where many metro areas, including **Los Angeles, Phoenix, San Diego, San Francisco,** and **Seattle,** ranked in the top ten nationally in terms of the share of variable-rate mortgages originated during 2002. Historically, when demand for mortgages was curbed sharply by rising interest rates, loans originated in these periods have performed poorly. Lenders may be tempted

Chart 3



[6] This is based on the value of "Generic Servicing Assets," which are proxy mortgage-servicing assets created by the Mortgage Industry Advisory Company. For more detailed information, refer to http://www.servicing.com/miac/introtoGSAs.html.

[7] The ability of insured institutions to recapture prior losses is governed by Financial Accounting Standard (FAS) 133. FAS 133 allows insured institutions to recapture temporary impairment on mortgage-servicing assets.

[8] Melanie Harwood, "The Mortgage Servicing Shuffle: What to Do When Values Weaken," *Community Banker,* pp.18–22, December 2002. The article quotes the chief executive officer of a mortgage brokerage firm saying that investors would prefer mortgage-servicing assets linked to mortgages with higher interest rates.

[9] As of June 30, 2003, 96 insured institutions based in the San Francisco Region reported MSAs.

[10] Roberto Perli and Brian Sack, "Does Mortgage Hedging Amplify Movements in Long-term Interest Rates?" *Federal Reserve,* pp. 1–19, August 2003.

[11] "Analyst Roundtable: What Will Fill Revenue Void as Refi Business Wanes?" *American Banker,* August 28, 2003.

to relax underwriting standards as they face pressure to keep loan origination volume at high levels.[12]

Conclusion

The recent low interest rate environment boosted the San Francisco Region's lackluster economy, particularly the housing sector. However, the record wave of mortgage refinancings adversely affected earnings and prompted many of the Region's insured institutions to write down the value of mortgage-servicing assets. Now that rates have started to move up, the value of these assets could increase. At the same time, banks and thrifts with significant mortgage banking operations may be vulnerable to earnings pressures and asset quality concerns going forward.

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[12] Mortgage Market Trends, *Office of Thrift Supervision Research & Analysis Directorate* 3 (3), November 1999. The Office of Thrift Supervision cites a similar period of reduced origination activity in 1995 after a refinancing boom. Mortgages originated during that period have performed poorly, suggesting an easing in underwriting standards in an attempt to maintain origination volume.

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