

# Eighth Note

*Thomas C. Melzer*  
President



## *Labor Market Dynamics and Inflation*

U.S. unemployment has been running at about 5 percent—its lowest level in 30 years—and the economic expansion is now in its seventh year. That good news, however, doesn't reveal the dynamic nature of our economy, which continues to undergo major restructuring with new firms, new products and new jobs attracting existing jobholders and new entrants to the labor force. Despite major layoffs that have grabbed headlines and contributed to job insecurity, we have seen a net increase of 11 million jobs over the past five years. Today, nearly 130 million civilians have jobs, representing 64 percent of the population—the largest fraction at work outside the home ever.

Free labor markets in this country operate as an “invisible hand” directing workers to their best job opportunities. In such labor markets, there are vast currents of searching, hiring, quitting, firing and retiring. Businesses begin, expand, contract and close by the thousands. Each month's employment growth represents just a tiny segment of the job creation and destruction that takes place. Based on rough figures for the economy as a whole, monthly net employment change amounts to less than 20 per-

cent of gross job creation. If you look at more accurate data for manufacturing, quarterly net employment change is less than 5 percent of gross job creation. Thus, for every net job gain in manufacturing, about 21 new jobs would have been created and 20 old jobs destroyed.

Some critics dismiss recent job creation, arguing that jobs have tended to be low-paying, part-time, temporary, and so forth. Yet, nearly 60 percent of net new jobs in recent years have been managerial and professional. Employment in these relatively high paid occupations has risen from 26 percent to 29 percent since 1992. Thus, despite the headlines about downsizing, the demand for skilled workers has been growing, and the “invisible hand” is supplying workers to meet that demand.

It is important to recognize that the way labor markets function is not the result of Fed actions, except in a very indirect way. The dynamics of labor markets emanate primarily from private decision makers: firms developing new products and new ways to produce, and workers developing skills to take on new jobs as opportunities become available. The Fed does play a role in making sure that price and wage signals are not distorted by inflation so that firms and workers can focus on these real factors in decision making. I like to think that the Fed has contributed to the sustainable job growth during the current expansion by providing one of the most stable and low inflation environments in history.

*What price convenience?*

# The ATM surcharge DEBATE

by Michelle Clark Neely

Most people balk at the idea of paying for something they're used to getting for free. So it's no surprise that the decision by the nation's two major automated teller machine (ATM) networks to let ATM owners charge non-customers a surcharge for using their machines is causing a stir. Although bank customers are used to paying a fee to their bank when they withdraw cash from an ATM that isn't owned by their bank, surcharges represent an additional fee—one that can more than double the cost of an ATM transaction.

A number of consumer groups and federal and state legislators have railed against these surcharges, proposing remedies ranging from increased disclosure to outright bans. Surcharge proponents say the fees represent the price of convenience. Foes say the fees are not only anticonsumer but anticompetitive, potentially hurting the nation's smallest financial institutions. The key question in the surcharge debate is this: Is government interference necessary or desirable, or should the marketplace decide?

## *The ABCs of ATMs*

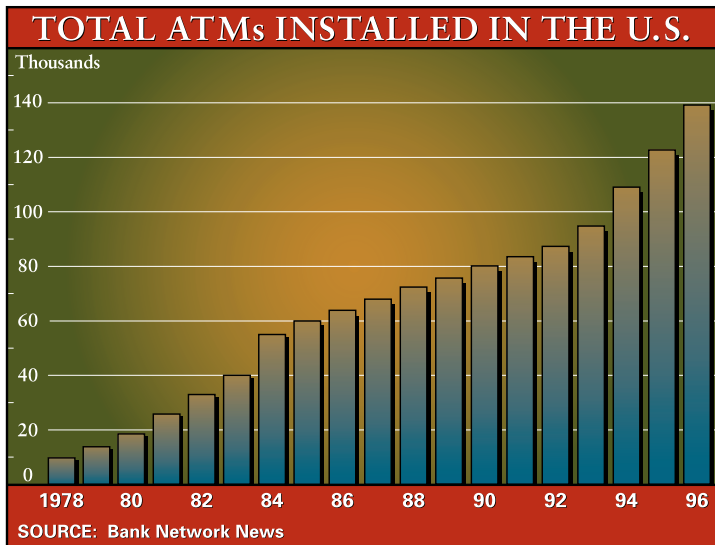
The nation's first ATMs were installed in the late 1960s. These

machines were rather primitive by today's standards, typically dispensing only cash. Modern ATMs, in contrast, offer a full range of functions, including deposit-taking and funds transfers, as well as check cashing and bill paying. Many also enable users to buy such disparate products as stamps, travelers checks, mutual funds and movie tickets. Despite the increasing availability of these new features, however, the bulk of ATM transactions continue to be cash withdrawals. A 1991 study of ATM use indicated that 86 percent of ATM transactions were cash withdrawals, with cash or check deposits comprising 10 percent of transactions and account transfers and bill payment making up the rest.<sup>1</sup>

ATMs have changed the way Americans bank.<sup>2</sup> Unlike bank branches, ATMs are open 24 hours a day and are increasingly located in nontraditional locations like supermarkets, airports, casinos and shopping malls, as well as their traditional locations on bank premises. The number of ATMs installed in the United States has risen substantially since the late 1970s. Between 1978 and 1996, the number of U.S. ATMs rose at a compound annual rate of 15.9 percent, with much of the growth occurring between 1978 and 1987 (see chart on Page 6). The approximately 140,000 ATMs installed

in the U.S. currently handle an average of 6,400 transactions per month.

ATM use has also increased dramatically over the last two decades, with monthly transactions rising at an 18.6 percent annual rate since the late



1970s (see chart on Page 7). Although ATM use has been spurred by a variety of factors, the increasing availability of ATM networks is largely responsible for the uptick. The vast majority of today's ATMs are connected to regional (MAC, Most and BankMate, for example) or national (PLUS and Cirrus) networks, allowing customers to access their accounts from virtually anywhere in the nation and many parts of the world.

ATM networks reduce duplication and overcapacity, simultaneously lowering the cost of offering ATM services, while increasing availability for all ATM cardholders. Since 1982, the proportion of ATMs that are "shared," that is, used by customers of more than one bank, has increased from about a third to just under 100 percent. Moreover, the existence of shared networks has enabled very small depository institutions to offer ATM services to their customers, without significant capital outlays.<sup>3</sup>

### *Cost Saver or Money Maker?*

Although banks tout ATMs as a means of increasing customer convenience, an arguably more important motivation is the chance to cut costs. The drive to install new ATMs and expand ATM accessibility by joining networks is part of a larger effort by

banks to reduce operating expenses through technology. Since most traditional banking activities can be handled by ATMs, many banks view their installation as a way to cut current costs at the same time they're expanding services and possibly market share at a lower cost than building more bricks and mortar.

The difference in fixed costs between an ATM and a branch is substantial: An average full-service ATM costs about \$30,000 to purchase and install versus the \$1 million or so needed to build a full-service branch.<sup>4</sup> ATMs have lower variable costs, too. Although, admittedly, they need to be serviced and maintained, these costs are generally much less than that of branch-related expenses, such as employees, utility bills and upkeep. Consequently, ATM transactions like cash withdrawals and deposits are much cheaper than comparable teller transactions. Although estimates of the difference vary, 36 cents for an ATM transaction versus \$1.06 for a comparable teller transaction is typical.<sup>5</sup>

For a variety of reasons, most banks do not charge their customers fees to conduct ATM transactions at machines they own. In fact, a growing number of banks are encouraging their customers to switch from tellers to ATMs. Some are using carrots—reduced fees on bank accounts or lower minimum balances, for example—while a brave few (or foolish, depending on your view) have tried sticks—like First Chicago's April 1995 decision to begin charging holders of some account types \$3 for teller transactions that can be handled by ATMs.<sup>6</sup>

Most ATM users do end up paying fees, however, since banks usually charge a fee—frequently called a foreign fee—for using ATMs they do not own. Banks tend to pass on to their customers some, all, or all plus a premium, of the fees they pay to ATM networks and owners—which can be other banks or nonbanks—to cover the cost of foreign transactions. In a typical sharing arrangement, all banks in a network pay fees to the network owners to cover the costs of operations. The card-issuing bank pays an "interchange fee" to the ATM owner. The network keeps part of the interchange fee as a "switch fee" to cover its costs. Interchange fees, which typically range from 50 cents to \$2, are usually passed on to customers as foreign fees. Automated teller machine users can avoid these foreign fees by using either ATMs owned by their banks or bank tellers.

Whether ATMs are money makers, or even cost savers, for banks is debatable. Although it's pretty clear that

on a per-transaction basis, ATMs are cheaper than tellers, a number of studies have indicated that on an aggregate basis, ATMs can be more expensive since users of them tend to make more frequent, smaller-denomination transactions. A customer who has to wait in line for a teller may withdraw \$100 for a week, while another customer might make five trips to the ATM that same week, withdrawing \$20 each time.<sup>7</sup> There's also evidence that ATMs are not being fully utilized. A large proportion of ATM users, for example, will not use the machines to make deposits, requiring the continued use of more costly tellers to handle these routine transactions.

### Surcharge Skirmish

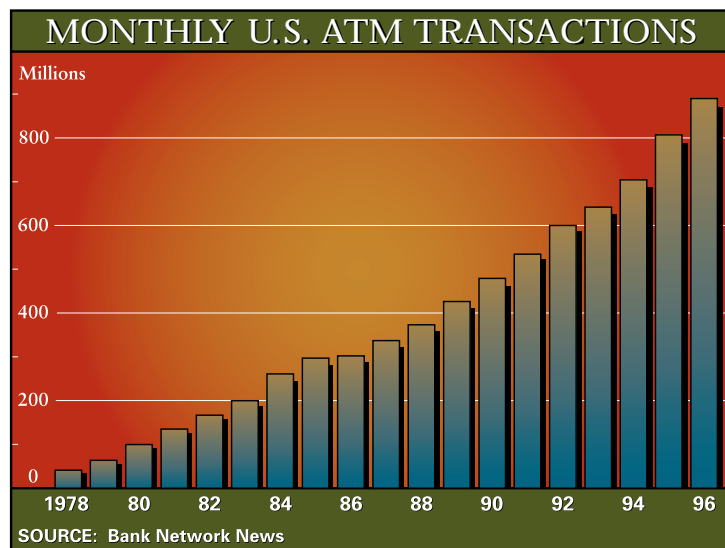
The war over ATM fees has heated up significantly with the introduction of surcharges. On April 1, 1996, the two largest national ATM networks—Cirrus, which is owned by MasterCard, and PLUS, which is owned by Visa—announced they were dropping their long-time ban on ATM surcharges by network members. The companies said their decision was due to competitive pressures from several regional networks that had already dropped surcharge bans. The outcry against surcharges was loud and immediate, with opponents accusing banks of “double dipping” and price gouging. Although 15 states already had laws or regulations overriding the bans, they were mostly small states. Thus, the elimination of the bans affected a significant number of ATM users in populous states like California, Illinois and New York.<sup>8</sup> A number of regional networks have since followed the lead of Cirrus and PLUS, allowing their members to levy surcharges for non-customer transactions.

As illustrated in the figure on the next page, the widespread introduction of surcharges means that customers who use ATMs that are not owned by their banks will generally pay two fees to withdraw cash—the foreign fee and the surcharge. Combined, these fees generally range from \$1.25 to \$2.50 or more. Surcharge opponents believe customers are being charged twice for the same transaction, since card issuers typically already pass on to consumers the interchange fee paid to ATM owners. Some opponents also charge that the fees are anticompetitive, since they put smaller banks with few proprietary ATMs at a disadvantage relative to larger banks. This

gives small-bank customers who are heavy ATM users a real financial incentive to move their accounts to larger banks that own a lot of ATMs. Surcharge proponents counter that ATM owners are not adequately compensated for the use of the machines by non-customers. Moreover, they say that profits generated from surcharges can be used to finance installation of ATMs in more remote locations, like vacation spots and ballparks.

Consumer groups, such as the U.S. Public Interest Research Group (USPIRG) and the Center for the Study of Responsive Law, have led the charge against surcharges, conducting studies that show, among other things, how much ATM fees have risen since the end of the surcharge ban and the proportion of ATMs that are not adequately disclosing the surcharge.<sup>9</sup> Some consumer watchdogs have also expressed concern that surcharges will disproportionately affect low-income customers, since they're more likely to live in areas with high ratios of ATMs to traditional branches.

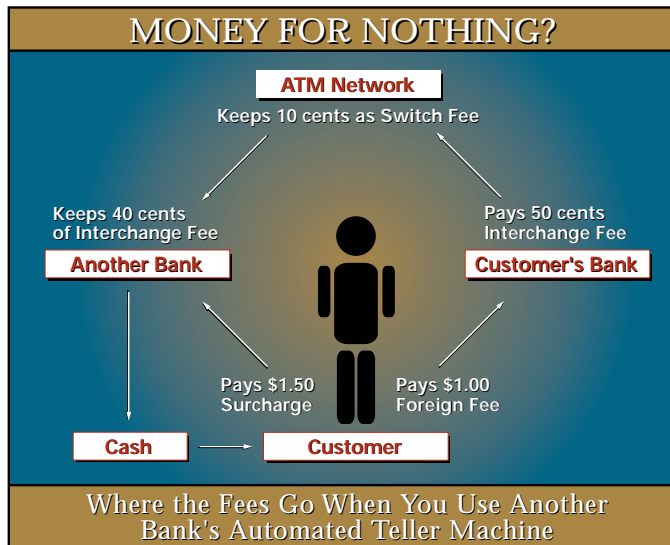
The U.S. Congress and several state legislatures have also addressed the surcharge issue. Rep. Marge Roukema (R-NJ), chairwoman of the House Subcommittee on Financial Insti-



tutions and Consumer Credit, and Sen. Alfonse D'Amato (R-NY), chairman of the Senate Committee on Banking, Housing and Urban Affairs, have been particularly vocal on the issue, each holding hearings and sponsoring legislation that would affect ATM surcharges. Roukema's bill would require ATM owners to dis-



close the amount of any surcharge on the ATM screen, as well as on the machine itself, and give consumers the opportunity to cancel the transaction without penalty. The bill also asks the General Accounting Office



(GAO) to study the feasibility of having ATMs disclose all fees—including any fees the customer's bank would levy—before initiating a transaction.

Sen. D'Amato's bill goes much further, requesting an outright ban on surcharges. This bill was prompted in part by a recent GAO survey—commissioned by D'Amato—that shows that the number of commercial banks and thrifts that surcharge rose more than 300 percent from December 1995 to early 1997.<sup>10</sup> Bernard Sanders (I-VT) has introduced a similar bill in the House. At the state level, bills to cap or ban surcharges have been introduced in California, Missouri and New York, among other states, although, so far, none has passed. Connecticut and Iowa already ban surcharges at ATMs in their states, and Arkansas, Mississippi and Wyoming have put caps on surcharge amounts.

Surcharge proponents argue that this legislation is unnecessary—and potentially harmful—to consumers and banks. They point to the vast majority of ATMs that already disclose surcharges and allow customers to cancel transactions if they don't want to pay fees. A federal disclosure law would be duplicative, they argue, because network operating rules, state laws and the Electronic Fund Transfer Act of 1978 already mandate disclosure of ATM surcharges.

As for a ban on fees, surcharge proponents say the market should

decide. After all, customers can choose to use machines that do not surcharge or get cash from other fee-free sources, like point-of-sale terminals at grocery stores and other retail establishments. Proponents maintain that income from surcharges will make it economically viable to install ATMs in more remote locations, which do not tend to generate as many transactions as centrally located ATMs, but provide valuable cash outlets. ATM analysts estimate that an off-premise ATM that does not surcharge needs to handle 3,000 transactions a month just to break even. With surcharging, the break-even point drops to 500 transactions.<sup>11</sup>

### A Consumer Backlash

Industry experts are divided about how consumers will ultimately respond to surcharges. Consumer anger about surcharges, and bank fees in general, can be traced in part to Regulation Q, which set ceilings on the interest rates banks could pay depositors. Because banks were restrained from offering customers competitive interest rates on deposits relative to money market mutual funds and other products, they frequently compensated by throwing in free services. However, when Regulation Q was eliminated in the early 1980s, the market for deposits became more competitive, leading banks to charge customers fees and require minimum balances. ATM fees hit a raw nerve with many customers because the machines have traditionally been marketed as a way for banks, and hence consumers, to cut banking costs. The average ATM user already pays about \$72 a year in foreign fees (72 visits a year at an average of \$1 per visit) on top of other fees that can total several hundred dollars.<sup>12</sup> Surcharges are expected to double the annual cost of using ATMs.

Although the reaction of consumers to surcharges was initially very negative, it may not lead to large-scale behavior changes. A 1990 *American Banker* survey of more than 1,000 bank customers found that 38 percent of cardholders cut back on ATM use when foreign fees were introduced, while almost half of those polled did not reduce use at all. In a survey on ATM use from two years earlier, however, 44 percent said they would reduce ATM transactions, while 30 percent said they would not use their cards at all if they had to pay for transactions that used to be free.<sup>13</sup>

In Texas, which has permitted surcharging since 1987, all 10 of the

state's largest banks levy a surcharge for foreign transactions.<sup>14</sup> Figures from Pulse, the regional ATM network that serves the state, show that 80 percent of all cash withdrawals from its ATMs are levied a surcharge, which averages 86 cents. The proportion of ATM users who are paying those surcharges is much smaller, though. A 1995 survey conducted by the network indicated that 77 percent of its customers avoid ATMs that surcharge; the survey showed that 20 percent of all surcharge revenue comes from the 3 percent of ATM users who are surcharged frequently.<sup>15</sup>

### A Competitive Challenge

Of course, the ultimate effect on consumers from surcharges depends in large part on how ATM owners respond to the ability to surcharge. While a number of ATM owners, especially large banks and nonbanks, wasted little time levying surcharges after the ban was lifted, others have not yet decided what to do. In California, banks and thrifts that own more than 2,000 ATMs have formed a no-surcharge alliance to counteract a \$1.50 surcharge being imposed by Bank of America, Wells Fargo and Home Savings Bank, which together control more than half of the state's ATMs.<sup>16</sup> Similar groups have popped up in other areas. Other markets, like New York City, have yet to see pervasive surcharging because the large ATM owners have not instituted it—yet.

Some bank ATM owners have rejected surcharging out of fear that it will turn consumers off not only on ATMs, but on other forms of electronic banking, too. Another concern is that the market for ATMs is already saturated—installations were growing at double-digit rates long before surcharging became widespread. Some believe that expansion from surcharging will reduce average transaction volumes at all machines, raising per-unit transaction costs.

A major public policy concern related to ATM surcharging is its effect on bank competition. Smaller banks and credit unions are not only less likely than large banks to own ATM machines but are also more likely to offer free or low-priced ATM services to their customers. With surcharging, the card-issuing bank loses control over its customers' ATM fees: The bank can still eat the foreign use charge, but is unable to waive the surcharge. Customers of these smaller banks—especially those who are heavy ATM users—are likely

to migrate to banks that own a lot of ATMs to avoid the surcharges. To avoid this loss of business, smaller banks will have an incentive to withdraw from ATM networks—which also hurts bank customers and could possibly destabilize the networks—and install their own ATMs, further saturating an already crowded market.

### A Market Solution

Surcharges are clearly not popular with consumers. Bank customers have been encouraged over the years to rely more and more on ATMs, and now they're being charged for something that used to be free. But ATMs are also becoming more convenient, and consumers have access to cash virtually anywhere they go. Still, at this point, no one is forced to pay a surcharge. It seems clear that the market has segmented by willingness to pay: Customers who wish to avoid surcharges are able to do so and customers who are willing to pay them—because of increased convenience or an unwillingness to shop around—do pay them. As long as surcharges are adequately disclosed and consumers have non-surcharge alternatives, like their own banks' ATMs, there is no reason to ban them on consumer protection grounds.

In an era of dwindling bank competition from hundreds of mergers, however, policymakers and regulators are likely to cast a dim view on ATM surcharging if it inhibits competition. Some analysts have suggested that ATM owners and networks will be vulnerable to antitrust charges if they collect both interchange fees and surcharges. But caps or an outright ban on surcharges at the federal level is highly unlikely, since Congress is generally resistant to calls for price controls, although surcharge opponents may be able to push through surcharge bans or caps in some additional states. Ultimately, though, market forces will determine whether surcharging is a profitable strategy for ATM owners. Cash-hungry consumers will vote with their ATM cards.

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#### ENDNOTES

- 1 See Humphrey (1994).
- 2 Unless otherwise indicated, all derivations of the word "bank" in this article refer to any or all U.S. depository institutions, including commercial banks, savings and loans, savings banks and credit unions.
- 3 For more information on ATM networks, see Laderman (1990) and Trautman (1989).
- 4 See Rose (1996), p. 693.
- 5 See Rose (1996), p. 694.
- 6 See Meier (1995).
- 7 See Humphrey (1994) and Horvitz (1996) for more information on ATM costs and profitability.
- 8 See Bureau of National Affairs (1996), p. 726.
- 9 See U.S. Public Interest Research Group (1997).
- 10 See GAO (1997).
- 11 See Morrow (1997).
- 12 See Morrow (1997).
- 13 See Homa (1990).
- 14 See Olaya (1996).
- 15 See Horvitz (1996), p. 59.
- 16 See Gilroy (1997).

#### REFERENCES

- Bureau of National Affairs. "Further Legislation on ATM Fees Is Unnecessary, Industry Tells Subcommittee," *BNA's Banking Report*, Vol. 66, No. 17 (April 28, 1996), pp. 726-27.
- Gilroy, Tom. "Several California Banks Form Alliance to Fight ATM Surcharges," *BNA's Banking Report*, Vol. 68, No. 9 (March 3, 1997), p. 411.
- Homa, Lynn. "ATM Fees Are Gaining Acceptance; Few Consumers Curtail Usage," *American Banker* (October 24, 1990), p. 6.
- Horvitz, Paul M. "ATM Surcharges: Their Effect on Competition and Efficiency," *Journal of Retail Banking Services* (Autumn 1996), pp. 57-62.
- Humphrey, David B. "Delivering Deposit Services: ATMs Versus Branches," *Economic Quarterly*, Federal Reserve Bank of Richmond (Spring 1994), pp. 59-81.
- Laderman, Elizabeth S. "Shared ATM Networks: An Uneasy Alliance?" *Weekly Letter*, Federal Reserve Bank of San Francisco (February 23, 1990).
- Meier, Barry. "Need A Teller? A Big Bank Plans \$3 Fee," *New York Times* (April 27, 1995).
- Morrow, David J. "Has Your ATM Eaten Your Wallet?" *New York Times* (May 4, 1997).
- Olaya, Phil. "Consumers Union: ATM Fees Will Sweep the Nation," *American Banker* (June 25, 1996).
- Rose, Peter S. *Commercial Bank Management*, 3rd edition (Chicago: Richard D. Irwin, 1996), pp. 693-95.
- Trautman, William B. "Regulating Communication Technology: The Case of Automated Teller Machine Networks," *A Rand Note*. The RAND Corporation (October 1989).
- U.S. General Accounting Office. *Automated Teller Machines: Banks Reported That Use of Surcharge Fees Has Increased*. GAO/GGD-97-90 (May 1997).
- U.S. Public Interest Research Group. *Twice as Many Charge Consumers Twice* (April 1, 1997).



## Critiquing the Consumer Price Index

by Kevin L. Kliesen ]

The Senate Finance Committee released a report late last year that claims the consumer price index (CPI) overstates the actual rate of price inflation by a little more than 1 percentage point a year. This report was the product of the Advisory Commission to Study the Consumer Price Index, chaired by Stanford University Professor Michael Boskin.<sup>1</sup> Although economists have known for quite some time that the CPI overstates inflation, and thus changes in the cost of living, the report put an old issue back on the front burner: What can the Bureau of Labor Statistics (BLS) do to improve the best known measure of inflation?

### *The Nuts and Bolts of the CPI*

Many people, including Federal Reserve policymakers, view monthly movements in the CPI as a reasonable proxy for changes in the economy's aggregate price level—otherwise known as the inflation rate. This is because the CPI attempts to aggregate a large

number of individual prices into a single quantity known as an index number. For example, the BLS collects data on a monthly and bimonthly basis from a “market basket” of about 95,000 goods and services—everything from calculators to CAT scanners. The BLS then ultimately groups these prices into seven major expenditure categories, which are then combined into one number.<sup>2</sup>

According to economic theory, a price index should be able to measure a change in the cost of maintaining a fixed, or constant, standard of living over time. The basic idea underlying the construction of the CPI is to determine what percentage of specific goods and services—known as weights—the typical consumer purchases each month.<sup>3</sup> The BLS does this based on results from the Consumer Expenditure Survey (CES). To gauge how these prices change over time, the CPI holds the weights constant until the next CES is completed, which is about every 10 years. For example, the current CPI uses weights from the 1982-84 CES.

In addition to an inflation gauge, the CPI attempts to measure changes in the cost of living for a large number of people. According to the BLS, the incomes of about 80 million people are adjusted annually based on changes in the CPI. These include recipients of Social Security payments and food

stamps, as well as workers covered under collective bargaining agreements. Many public- and private-sector wages and pensions are also adjusted this way. By the same token, the IRS uses the CPI to adjust income tax brackets. Clearly, then, an accurate measure of the CPI is crucial for a variety of reasons.

### *The Boskin Commission Report*

In January 1995 testimony before Congress, Federal Reserve Chairman Alan Greenspan caused a stir by arguing that the CPI overstates changes in the cost of living by 0.5 to 1.5 percentage points a year. It was against the backdrop of Chairman Greenspan's testimony that the Senate Finance Committee commissioned the group of economists headed by Professor Boskin to study the issue.

The commission identified four types of biases that, in its view, cause the CPI to overstate changes in the cost of living by about 1.1 percentage points per year.<sup>4</sup> The first is substitution bias, which occurs when consumers substitute between types of goods and services when relative prices change. A fixed market basket measure like the CPI assumes that, contrary to standard economic theory, consumers do not substitute Big Macs for Whoppers when the price of one rises relative to the other. In the commission's view, substitution bias accounts for almost 40 percent, or 0.4 percentage points, of the total bias.

The second shortcoming is called new product bias. This occurs when new goods and services are introduced into the economy but are not incorporated into the fixed market basket of the CPI until much later. For example, computers were not incorporated until 1987, and cellular phones will not be added until 1998. A further problem is that a large part of the price declines for many of these new goods occur over the early stages of the product cycle, when they have not yet been included in the CPI.

Related to the new product bias is the problem of quality bias. New and improved products often cost more because of their enhanced features. In theory, however, such improvements should not count as a net price increase to the consumer. Examples that improve living standards include new medical procedures and more energy-efficient central air conditioners.



While difficult, accounting for this quality change is nevertheless necessary. The BLS reports that the price index for new cars would have increased by 80 percent more than it actually did from 1967 to 1994 had it made no quality adjustments to the series. Together, the new product and quality biases amount to 0.6 percentage points of the total bias, according to the commission.<sup>5</sup>

The final type of bias identified is called outlet bias, which occurs because discount stores like Sam's and Wal-Mart tend to sell goods at prices lower than department stores. Thus, if a discount store sells Good X for \$100, while the department store sampled by BLS sells the same good for \$110, an upward bias will occur if the discount store price is not also included in the sample. In sum, outlet bias is of lesser importance in the commission's view, amounting to just 0.1 percentage points of the total.

### What Should Be Done?

The Advisory Commission has recommended that the BLS make the CPI into a true cost of living index by—in essence—following what the Department of Commerce did with the National Income and Product Accounts in January 1996. Previously, the price measures used to calculate real GDP and its components were based on fixed weights like the CPI. Now, however, they are computed using expenditure shares, or weights, that change roughly every other year, rather than every 10 years like the CPI.

Although the BLS agrees with many of the commission's recommendations, Commissioner Katherine Abraham says that to do as the commission suggests, the BLS would require expenditure share data that is not available without more frequent Consumer Expenditure Surveys.

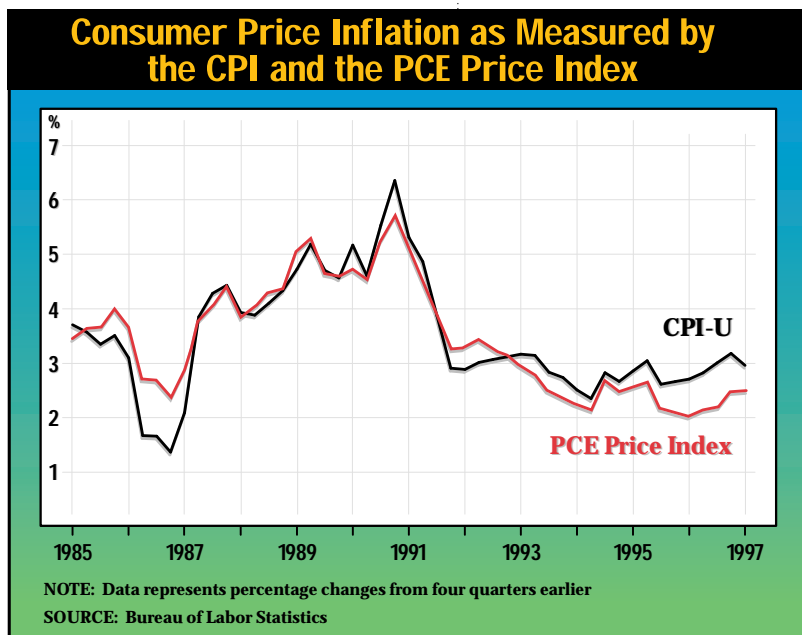
Nonetheless, the BLS is currently publishing an experimental "geometric mean" CPI index that is designed to remove the "lower level" substitution bias noted by the Boskin Commission. Briefly, there are two types of substitution bias, upper and lower level. Lower level bias occurs, for example, because the CPI cannot account for consumer substitution between two brands of ice cream when the price of one changes. Upper level bias, on the other hand, occurs because the CPI cannot account for substitution across expenditure categories—like ice cream and sherbet. When all is said and done, the BLS

expects the experimental index to increase by about 0.25 percentage points a year less than the CPI.

Perhaps a better estimate of consumer price inflation can be derived from the monthly personal consumption expenditures (PCE) price index published by the Commerce Department. This price index is used to convert the GDP's current-dollar value of consumer spending into an inflation-adjusted measure. Although the PCE price index employs existing CPI components, it is—in principle—free of upper level substitution bias. As the figure below indicates, although the two measures increased at roughly the same rate between 1985 and 1992, the PCE deflator has since increased at a much slower pace—2.44 percent a year versus 2.85 percent for the CPI. According to BLS economists, most of this difference is due to the way the PCE index is computed.

#### REFERENCES

- <sup>1</sup> The other commission members were Ellen Dulberger of IBM, Robert Gordon of Northwestern University, and Zvi Griliches and Dale Jorgenson of Harvard University.
- <sup>2</sup> These seven categories, along with their current expenditure shares, are: housing (41.2 percent), food and beverages (17.5 percent), transportation (17.1 percent), medical care (7.3 percent), apparel and upkeep (5.3 percent), entertainment (4.4 percent), and other (7.1 percent). In all, commodities comprise about 43 percent of the total, while services comprise the remainder.
- <sup>3</sup> The CPI measure referred to in this article is the CPI for all urban consumers (CPI-U), which covers about 80 percent of the population.
- <sup>4</sup> The commission also reported that the "plausible range" of the total yearly bias could be as little as 0.8 percentage points or as much as 1.6 percentage points.
- <sup>5</sup> Not everyone who has studied the issue agrees with this assessment. See Hulten (1997).



Despite its faults, the CPI is well-known—both in terms of how it is constructed and its popularity as an income escalator. These attributes, while important, should not deter policymakers from obtaining the best estimates possible under the dual constraints of data availability and economic knowledge.

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#### FOR FURTHER READING

- Abraham, Katherine G. "Testimony before the Senate Finance Committee," February 11, 1997.
- Boskin, Michael J. "Toward a More Accurate Measure of the Cost of Living," Final report from the Advisory Commission to Study the Consumer Price Index, United States Senate Finance Committee, December 4, 1996.
- Hulten, Charles. "Quality Change in the CPI: Some Missing Links," *Review*, Federal Reserve Bank of St. Louis (forthcoming).
- Moulton, Brent R. "Bias in the Consumer Price Index: What Is the Evidence?" *Journal of Economic Perspectives* (Fall 1996), pp. 159-77.
- U.S. Department of Labor. *BLS Handbook of Methods*. Bureau of Labor Statistics, Bulletin 2414 (September 1992).





# Permits, Contracts, Closings:

REAL ESTATE IN THE EIGHTH DISTRICT

by Adam M. Zaretsky

National real estate markets have been booming for several years now. In fact, many analysts labeled 1994 a banner year because of the strength of residential construction and sales. All told, construction started on almost 1.2 million new single-family houses, and a record-breaking 4 million existing homes were sold that year. The following year, new construction and existing sales returned to average levels, before rebounding to above-average levels in 1996. In that year, construction began on about 1.15 million new single-family homes, and nearly 4.1 million existing homes were sold.

The Eighth District's seven states also enjoyed a record year of residential construction and sales in 1994.<sup>1</sup> About 138,000 new single-family houses were built, and slightly more than 708,000 existing homes were sold. As with the rest of the nation, though, 1995 was an average year for District real estate construction and sales, followed by another boom in 1996 when almost 144,000 new single-family homes were built, and about 736,000 existing homes were sold.

National and District nonresidential real estate markets have also been growing, but without the peaks and valleys seen in residential markets.<sup>2</sup> The amount of square footage built in the nation went from about 936 million in 1992 to more than 1.2 billion last year—a greater than 28 percent increase. In the District's seven states, square footage built went from about 142.5 million in 1992 to almost 207 million last year—a 45 percent increase. Since the beginning of this year, though, some of the fervor in both housing and nonresidential markets has waned, most likely signaling a return to more stable, sustainable growth rates.

## *Lively Local Markets, Low Mortgage Rates*

Healthy local economies have been the driving force behind these gains. Even with globalization occurring in much of the economy, local influences continue to dominate movements in real estate markets because housing and other buildings are immovable goods. And, for the most part, local economies in the District have recently been quite healthy. Many areas have been experiencing very low levels of unemployment, relatively strong job growth and better-than-average personal income growth.<sup>3</sup>

Movements in interest rates, which considerably affect the num-

ber of households that can afford to buy a house, have also helped carry the trend. According to the National Association of Home Builders (NAHB), a 1 percentage point decline in mortgage rates means more than 4 million additional households can afford to buy a \$100,000 home. For example, the monthly mortgage payment for a \$100,000, 30-year loan at the current rate of almost 8 percent would be about \$734. To qualify for this loan, a household would typically need an annual income of at least \$31,500.<sup>4</sup> The same loan at 7 percent, however, would cost \$665 monthly and require an annual household income of \$28,500—almost 10 percent less. Since 1994, interest rates on conventional 30-year mortgages have generally fluctuated somewhere between 7 percent and 8.5 percent, with the low of 7.03 percent occurring in January 1996. The high of 9.2 percent came in December 1994. Between 1994 and 1996, average mortgage rates fell 55 basis points.<sup>5</sup> In April 1997, the year-to-date average mortgage rate hit 7.88 percent, up 7 basis points from the 1996 average rate, but still hovering near levels not seen essentially since the early 1970s.

## *Location, Location, Location*

The District still contains some of the most affordable housing markets in the nation. According to the NAHB, housing affordability conditions improved nationwide in the fourth quarter of 1996, but are still better in smaller cities and towns than in larger coastal cities.

The NAHB computes its quarterly Housing Opportunity Index (HOI) by measuring the share of homes sold in a specific market that a household earning the median income in that market could afford to buy (see table note). The index uses a national, weighted average of mortgage rates from adjustable- and fixed-rate loans and accounts for differences in house prices by market area.

As the table shows, housing is cheaper and more affordable in the District's major metro areas than in the rest of the nation, with St. Louis and Memphis having the most affordable markets. It also shows that housing affordability has worsened over

the past year in St. Louis, Little Rock and Louisville, while it improved in the rest of the country. In each of these three cities, median house prices grew faster than median income between the fourth quarters of 1995 and 1996, making home ownership tougher for many households. At the same time, however, this growth has also meant that real estate prices appreciated faster in these metro areas than they did in the rest of the nation, thereby increasing household wealth.

### Building Where We Live . . .

In the first quarter of this year, the number of building permits issued for single-family homes in District metropolitan areas was below last year's record-high levels. Evansville, Ind., and Fort Smith, Ark., are the only District metro areas where more construction permits were issued through March of this year than last. The recent declines, though, have generally not been as great as those that occurred in 1995 after 1994's high levels. In addition, the current drop reflects both a return to more stable, long-run growth for these areas, as well as the effects of early spring flooding and an unusually wet winter.

In the District's four major metropolitan areas (Little Rock, Louisville, Memphis and St. Louis), single-family home building permits issued in the first quarter of 1997 were down considerably from a year ago—ranging from 9 percent in Louisville to 26 percent in Little Rock. These declines were about the same as those that occurred in 1995. And as in 1995, the rate of decline in most of these cities is slowing.

### . . . And Where We Work

The recent slowing in District residential construction is mirrored by a deceleration in nonresidential construction. More than 8.5 million square feet were built in the first quarter of 1996, compared with about 6.5 million square feet under construction this year. Louisville is the only metro area to see substantial year-over-year growth—some-what more than 1.75 million square feet was under construction, which is more than double last year's level. The square footage being built in other metro areas is down; in Memphis, for example, it has dropped more than 50 percent from a year

ago to about 1.5 million square feet.

Several explanations could account for this recent decline. One is that the moderate increases in recent interest rates have made financing more expensive and, therefore, projects less profitable. Another, more likely explanation, however, is that large projects, which can dramatically increase the square footage built, have been completed, and new ones are not replacing them. In fact, the number of projects undertaken so far this year is greater than the number last year, implying that 1997 projects are smaller on average than last year's.

### Closing the Deal

Will the first-quarter slowing in District construction continue, or is it just an aberration? The jury is still out, but no one is predicting another record year. Yet, at this writing the District economy is still extremely

#### ENDNOTES

- <sup>1</sup> The numbers that follow were compiled from statewide data, which include information on large and vibrant regions that are outside of the Eighth District. The map on the back cover shows the seven states and the region that makes up the District.
- <sup>2</sup> Nonresidential real estate includes commercial, industrial, educational, hospital, dormitory, religious and public buildings.
- <sup>3</sup> See Zaretsky (1996) and Kliesen (1995) for descriptions of recent economic conditions in the Eighth District.
- <sup>4</sup> According to current Federal National Mortgage Association (Fannie Mae) underwriting guidelines, the monthly mortgage payment can be as much as 28 percent of monthly income. The annual income stated is based on this figure. Other information is also used when lenders underwrite mortgages, though.
- <sup>5</sup> A basis point is one-hundredth of a percentage point, like a penny is one-hundredth of a dollar.

How Affordable Is Housing?						
metro area	HOI*		MEDIAN PRICE		MEDIAN INCOME	
	1996 4th quarter	1995 4th quarter	1996 4th quarter	1995 4th quarter	1996 Annual	1995 Annual
MEM	70.2	64.6	\$84,000	\$92,000	\$39,500	\$37,400
STL	70.2	73.0	104,000	98,000	46,900	44,600
LR	66.7	67.6	95,000	92,000	39,000	38,300
LVL	65.8	69.3	95,000	88,000	39,700	37,800
U.S.	64.1	63.4	120,000	117,000	41,600	40,200

\* Housing Opportunity Index: A measure of the share of homes sold in a market that a household with the median income could afford to buy. For example, a household in Memphis with an annual income of \$39,500 could have afforded to buy 70.2 percent of the homes that were sold in the 4th quarter of 1996.

SOURCE: National Association of Home Builders

healthy, and the national economy is outperforming most expectations. This bodes well for further increases in personal income and people's expectations of economic security, which are both important determinants in home ownership and construction investment. Although moderate increases in long-term interest and mortgage rates will probably dampen some of the exuberance, real estate markets will most likely remain lively and prove 1997 to be a year in which they held their own.

Adam M. Zaretsky is an economist at the Federal Reserve Bank of St. Louis. Eran Segev provided research assistance.

#### REFERENCES

- Kliesen, Kevin L. "District Economy Takes Off in '94," *The Regional Economist*, Federal Reserve Bank of St. Louis (July 1995), pp. 12-13.
- Zaretsky, Adam M. "District Jobs: Have They Been Gearing Up?" *The Regional Economist*, Federal Reserve Bank of St. Louis (October 1996), pp. 12-13.

# Pieces of Eight

News bulletins from  
the Eighth Federal  
Reserve District



## Economic Information at Your Fingertips

Finding out about the workings of the Federal Open Market Committee (FOMC) or the average life of a dollar bill will no longer require a field trip to Washington, D.C., or even your local library, thanks to the St. Louis Fed's new economic education web site.

Launched in late spring, the web site is designed to educate the public on the Federal Reserve System and support teachers in their instruction of money and banking. Along these lines, the site supplies a variety of

information, services and products under four major areas: conferences, videos, tours and frequently asked questions.

Also included is an electronic version of *Inside the Vault*—the St. Louis Fed's quarterly newsletter for economic educators—and a quiz

so that surfers can test their knowledge of facts such as which president appears on which denomination of currency.

To access the site, go to the St. Louis Fed's home page at [www.stls.frb.org](http://www.stls.frb.org) and click first on the Public Information link, then on the Economic Education link.



## Community Profiles Highlight Investment Opportunities, Resources

The St. Louis Fed's Community Affairs Department has produced a number of community profiles for selected metropolitan and rural regions throughout the Eighth Federal Reserve District. The profiles focus on the lending, investment and service opportunities in the following areas:

- Arkansas: Fayetteville-Springdale-Rogers, Little Rock
- Indiana: Evansville
- Kentucky: Louisville, Owensboro
- Missouri: Columbia, St. Louis, Springfield
- Tennessee: Jackson, Memphis
- Plus: Eight rural areas in the Lower Mississippi Delta Region covering parts of Arkansas, Illinois, Kentucky, Mississippi, Missouri and Tennessee

The profiles go beyond local demographics and lending statistics to include firsthand reports of reinvestment opportunities and regional economic conditions. By combining specifics from these reports with analysis of the latest census and lending data, the profiles give financial institutions and local governments the information they need to identify the community's housing and small business needs.

In addition, the profiles detail many of the local, state and national organizations that are active in community development, as well as opportunities for creating partnerships between financial institutions and these organizations.

For a copy of a community profile, contact Judy Armstrong of the St. Louis Fed's Community Affairs Department at (314) 444-8646.

## On the Road Again . . . and Again Annual Miles Per Vehicle, 1995

District State	Rank Among 50 States	Average Miles Driven
Arkansas	1	16,347
Kentucky	2	15,424
Missouri	6	13,770
Mississippi	7	13,602
Indiana	17	12,490
Illinois	40	10,286
Tennessee	41	10,276
National Average		11,801

NOTE: Mileage includes automobiles, trucks, buses and motorcycles.

SOURCE: U.S. Department of Transportation, Federal Highway Administration

# District Data

Selected economic indicators of banking,  
agricultural and business conditions in  
the Eighth Federal Reserve District

Regional Economist  
July 1997

## Commercial Bank Performance Ratios

U.S., District and State

	All U.S.	U.S. <\$15B <sup>1</sup>	District	AR	IL	IN	KY	MS	MO	TN
<b>Return on Average Assets (Annualized)</b>										
1st quarter 1997	1.27%	1.35%	1.23%	1.28%	1.15%	1.28%	1.22%	1.38%	1.07%	1.46%
4th quarter 1996	1.25	1.35	1.33	1.32	1.06	1.30	1.28	1.46	1.38	1.43
1st quarter 1996	1.12	1.32	1.24	1.25	0.97	1.31	1.13	1.45	1.27	1.38
<b>Return on Average Equity (Annualized)</b>										
1st quarter 1997	15.27%	14.64%	13.15%	12.45%	11.17%	14.24%	14.33%	14.50%	11.26%	17.01%
4th quarter 1996	15.29	15.02	15.06	13.82	10.53	14.42	14.62	15.23	16.77	17.33
1st quarter 1996	13.79	14.68	13.95	13.14	9.47	14.24	13.07	15.22	15.12	16.49
<b>Net Interest Margin (Annualized)</b>										
1st quarter 1997	4.13%	4.73%	4.22%	4.37%	4.17%	4.31%	4.30%	4.79%	3.87%	4.44%
4th quarter 1996	4.37	4.85	4.47	4.51	4.26	4.47	4.50	5.03	4.24	4.80
1st quarter 1996	4.18	4.74	4.27	4.33	4.15	4.36	4.34	4.92	4.08	4.29
<b>Nonperforming Loans<sup>2</sup> ÷ Total Loans</b>										
1st quarter 1997	1.05%	1.08%	1.06%	0.91%	1.19%	0.57%	0.68%	0.60%	0.86%	2.31%
4th quarter 1996	1.04	1.10	1.33*	0.85	1.05	0.62	0.68	0.61	0.73	4.37*
1st quarter 1996	1.17	1.12	0.83	0.80	1.01	0.63	0.88	0.77	0.86	0.72
<b>Net Loan Losses ÷ Average Total Loans (Annualized)</b>										
1st quarter 1997	0.57%	0.75%	0.37%	0.22%	0.38%	0.21%	0.34%	0.22%	0.42%	0.57%
4th quarter 1996	0.59	0.73	0.35	0.24	0.47	0.29	0.37	0.33	0.30	0.50
1st quarter 1996	0.55	0.64	0.30	0.18	0.31	0.15	0.37	0.25	0.32	0.34
<b>Loan Loss Reserve ÷ Total Loans</b>										
1st quarter 1997	1.92%	1.86%	1.49%	1.39%	1.59%	1.31%	1.52%	1.51%	1.56%	1.44%
4th quarter 1996	1.90	1.81	1.48	1.37	1.51	1.30	1.49	1.48	1.57	1.44
1st quarter 1996	2.01	1.92	1.55	1.36	1.65	1.41	1.53	1.62	1.65	1.50

\* Most of the increase in District nonperforming loans is associated with the acquisition by Union Planters National Bank in Tennessee of Leader Federal, a Memphis thrift that specialized in holding high-rate, nonperforming residential mortgages.

<sup>1</sup> U.S. banks with average assets of less than \$15 billion are shown separately to make comparisons with District banks more meaningful, as there are no District banks with average assets greater than \$15 billion.

<sup>2</sup> Includes loans 90 days or more past due and nonaccrual loans

NOTE: Data include only that portion of the state within Eighth District boundaries.

SOURCE: FFIEC Reports of Condition and Income for all Insured U.S. Commercial Banks



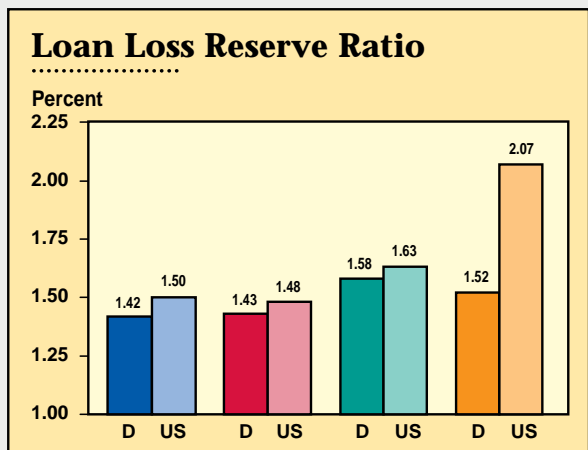
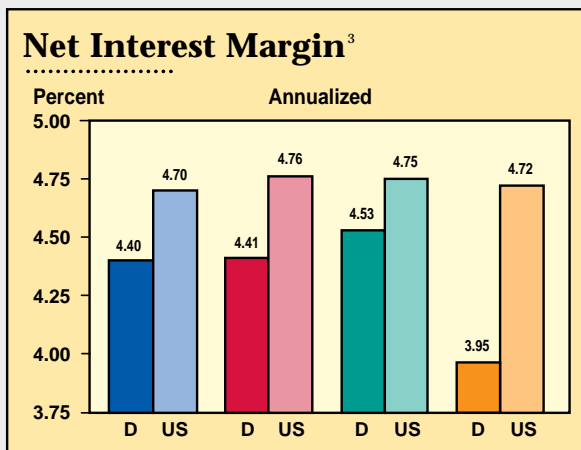
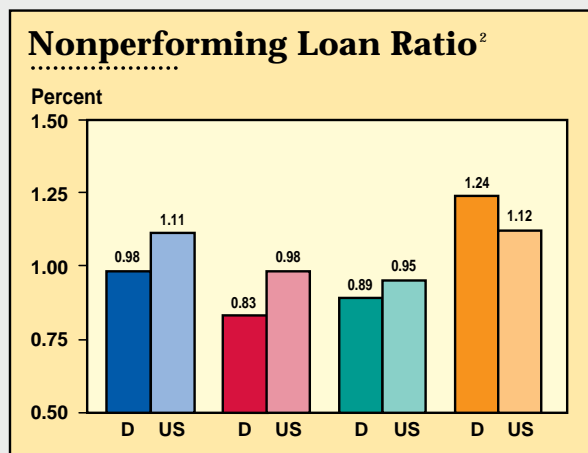
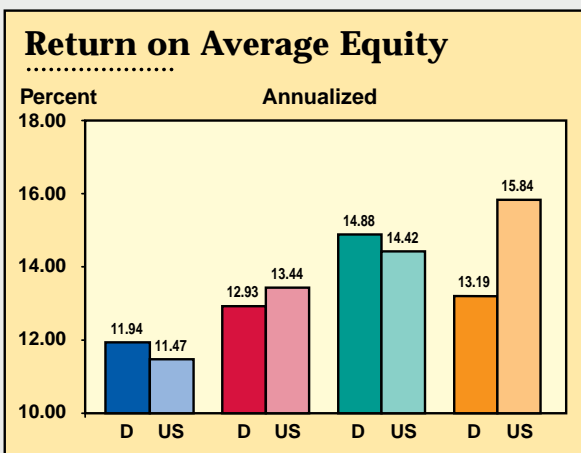
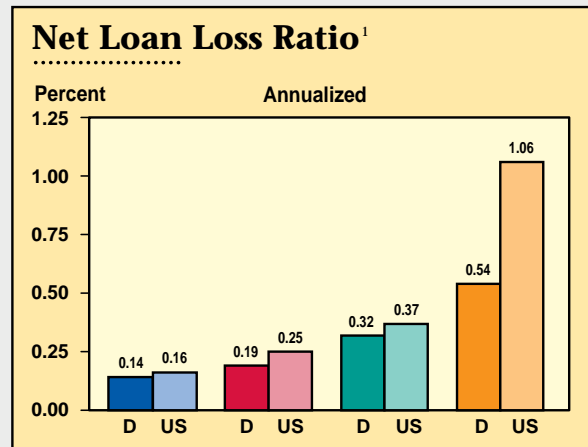
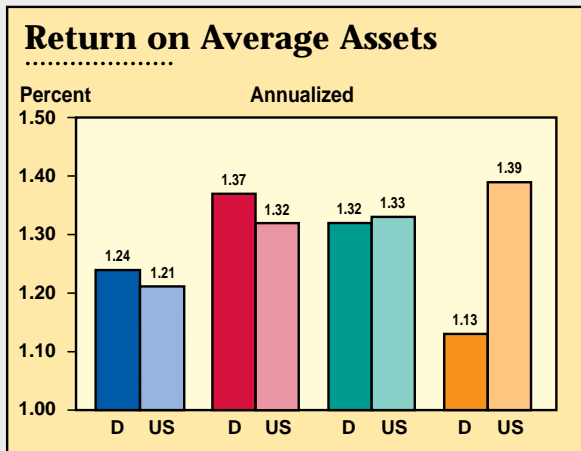
# Commercial Bank Performance Ratios

by Asset Size

1st Quarter 1997

## Earnings

## Asset Quality



D = District  
US = United States

■ < \$100 Million      ■ \$300 Million – \$1 Billion  
■ \$100 Million – \$300 Million      ■ \$1 Billion – \$15 Billion

\* Most of the increase in District nonperforming loans is associated with the acquisition by Union Planters National Bank in Tennessee of Leader Federal, a Memphis thrift that specialized in holding high-rate, nonperforming residential mortgages.

<sup>1</sup> Loan losses are adjusted for recoveries.

<sup>2</sup> Includes loans 90 days or more past due and nonaccrual loans

<sup>3</sup> Interest income less interest expense as a percent of average earning assets

Note: Asset quality ratios are calculated as a percent of total loans.  
SOURCE: FFIEC Reports of Condition and Income for all Insured U.S. Commercial Banks

## Agricultural Bank Performance Ratios

	U.S.	AR	IL	IN	KY	MS	MO	TN
<b>Return on average assets (annualized)</b>								
1st quarter 1997	1.29%	1.36%	1.31%	1.22%	1.45%	1.41%	1.24%	1.27%
4th quarter 1996	1.22	1.35	1.19	1.11	1.42	1.36	1.23	1.17
1st quarter 1996	1.26	1.35	1.25	1.33	1.46	1.49	1.31	1.42
<b>Return on average equity (annualized)</b>								
1st quarter 1997	12.35%	12.52%	12.19%	12.88%	13.82%	14.43%	11.88%	11.80%
4th quarter 1996	11.92	12.58	10.89	10.91	13.60	13.87	11.83	10.98
1st quarter 1996	12.25	12.48	11.51	13.92	14.11	15.23	12.78	13.46
<b>Net interest margin (annualized)</b>								
1st quarter 1997	4.47%	4.29%	4.16%	4.94%	4.52%	4.95%	4.43%	4.55%
4th quarter 1996	4.54	4.41	4.17	4.54	4.62	5.10	4.57	4.49
1st quarter 1996	4.45	4.23	4.09	4.56	4.53	5.16	4.46	4.44
<b>Ag loan losses ÷ average ag loans (annualized)</b>								
1st quarter 1997	0.12%	0.06%	-0.07%	0.01%	-0.03%	0.52%	0.23%	-0.02%
4th quarter 1996	0.31	0.09	0.12	-0.20	0.26	0.77	0.38	0.25
1st quarter 1996	0.24	0.01	0.14	-0.16	0.14	0.60	0.19	0.68
<b>Ag nonperforming loans<sup>1</sup> ÷ total ag loans</b>								
1st quarter 1997	1.81%	0.77%	1.02%	1.88%	1.76%	2.74%	1.90%	0.34%
4th quarter 1996	1.46	0.85	0.67	1.84	1.75	2.54	1.50	0.00
1st quarter 1996	1.95	0.62	1.14	1.48	1.71	4.86	1.93	1.52

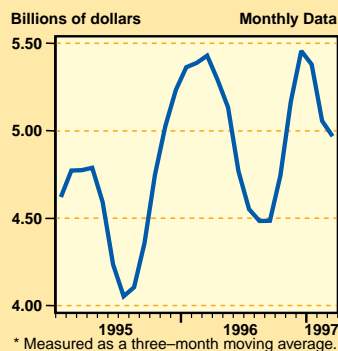
<sup>1</sup> Includes loans 90 days or more past due and nonaccrual loans

Note: Agricultural banks are defined as those banks with a greater than average share of agricultural loans to total loans.

Data include only that portion of the state within Eighth District boundaries.

SOURCE: FFIEC Reports of Condition and Income for all Insured U.S. Commercial Banks

### U.S. Agricultural Exports\*



### U.S. Agricultural Exports by Commodity

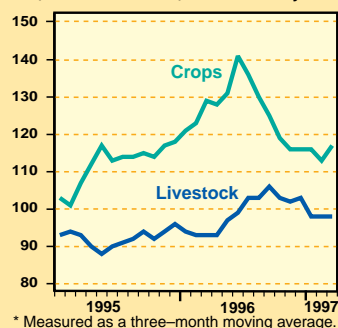
Dollar amounts in billions

Commodity	Jan	Feb	Mar	Year-to-date	Change from year ago
Livestock & products	.82	.86	.89	5.32%	-3.6%
Corn	.59	.50	.55	3.73	-14.4
Cotton	.26	.28	.32	1.55	-33.1
Rice	.10	.10	.07	.58	6.8
Soybeans	.80	.82	.54	4.96	25.1
Tobacco	.13	.15	.19	.89	4.4
Wheat	.29	.27	.25	1.89	-44.1
TOTAL <sup>1</sup>	5.00	4.93	4.98	31.29	-2.6

<sup>1</sup> Includes commodities not listed here

### U.S. Crop and Livestock Prices

(Index 1990-92=100)



### Indexes of Food and Agricultural Prices

	Level			Growth <sup>1</sup>	
	I/97	IV/96	I/96	IV/96-I/97	I/96-I/97
<b>Prices received by U.S. farmers<sup>2</sup></b>	107	111	108	-13.7	-0.9
<b>Prices received by District farmers<sup>3</sup></b>					
Arkansas	140	139	134	3.9	4.7
Illinois	116	121	120	-15.5	-3.1
Indiana	117	116	124	2.3	-5.9
Missouri	107	108	104	-1.2	2.9
Tennessee	143	137	136	17.6	5.2
<b>Prices paid by U.S. farmers</b>					
Production items	116	114	113	6.0	2.1
Other items	116	115	113	4.7	2.6
<b>Consumer food prices</b>	156	156	151	0.3	3.6
<b>Consumer nonfood prices</b>	160	159	156	2.5	2.8

<sup>1</sup> Compounded annual rates of change are computed from unrounded data.

<sup>2</sup> Index of prices received for all farm products and prices paid (1990-92=100)

<sup>3</sup> Indexes for Kentucky and Mississippi are unavailable.

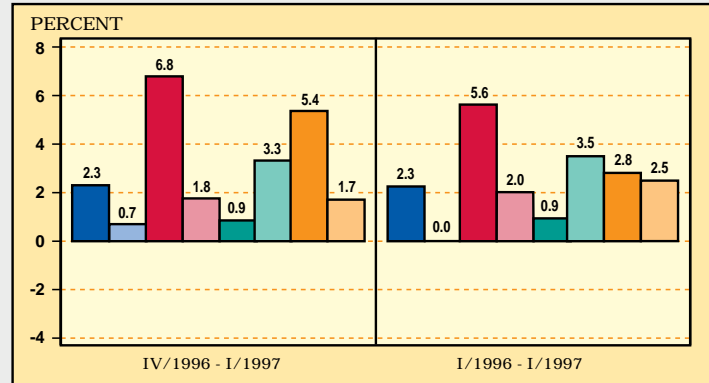
Note: Data are not seasonally adjusted except for consumer food prices and nonfood prices.

# Selected U.S. and State Business Indicators

## Compounded Annual Rates of Change in Nonagricultural Employment

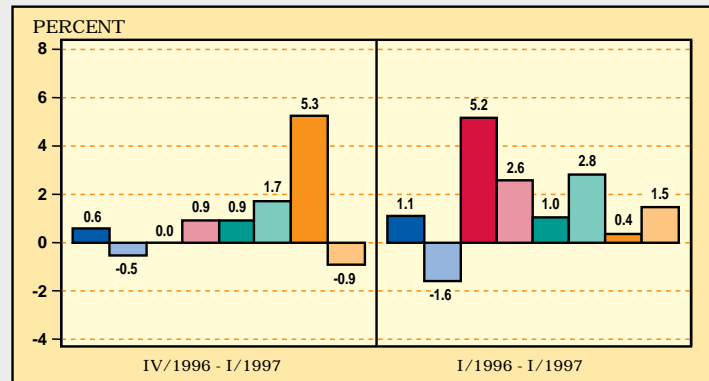
### United States

	I/1997	IV/1996	I/1996
Labor force (in thousands)	135,934	134,830	133,144
Total nonagricultural employment (in thousands)	121,138	120,452	118,471
Unemployment rate	5.3%	5.3%	5.6%
	IV/1996	III/1996	IV/1995
Real personal income* (in billions)	\$4,147.5	\$4,127.2	\$4,049.1



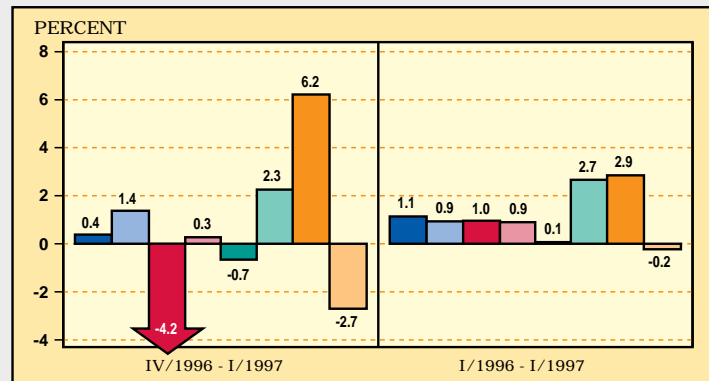
### Arkansas

	I/1997	IV/1996	I/1996
Labor force (in thousands)	1,246.0	1,239.6	1,228.5
Total nonagricultural employment (in thousands)	1,092.4	1,090.8	1,080.4
Unemployment rate	5.4%	5.5%	5.2%
	IV/1996	III/1996	IV/1995
Real personal income* (in billions)	\$30.6	\$30.5	\$29.9



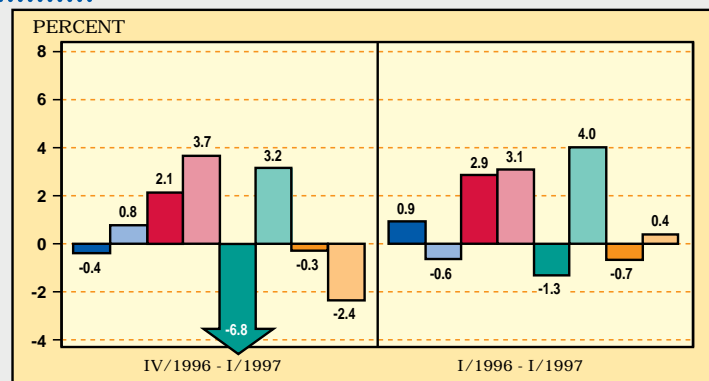
### Illinois

	I/1997	IV/1996	I/1996
Labor force (in thousands)	6,137.2	6,117.1	6,084.4
Total nonagricultural employment (in thousands)	5,710.1	5,704.6	5,645.9
Unemployment rate	5.0%	5.2%	5.3%
	IV/1996	III/1996	IV/1995
Real personal income* (in billions)	\$202.4	\$201.5	\$197.3



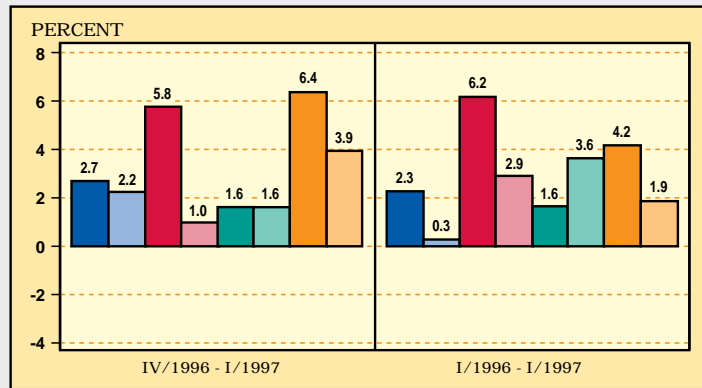
### Indiana

	I/1997	IV/1996	I/1996
Labor force (in thousands)	3,074.4	3,055.0	3,091.5
Total nonagricultural employment (in thousands)	2,824.0	2,826.7	2,797.9
Unemployment rate	3.1%	3.7%	4.5%
	IV/1996	III/1996	IV/1995
Real personal income* (in billions)	\$84.5	\$83.9	\$81.8



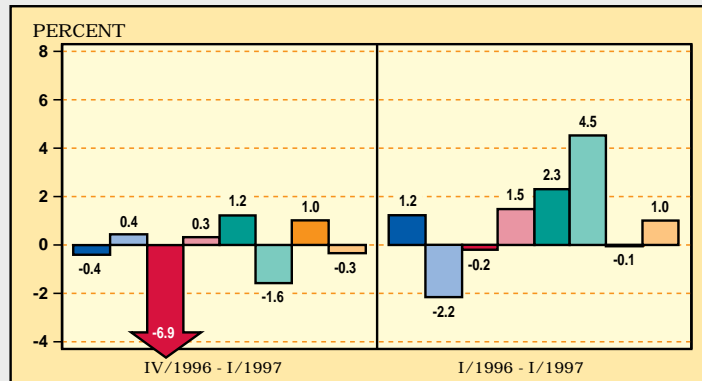
## Kentucky

	I/1997	IV/1996	I/1996
Labor force (in thousands)	1,913.7	1,876.9	1,861.7
Total nonagricultural employment (in thousands)	1,694.2	1,683.0	1,656.7
Unemployment rate	5.5%	5.7%	5.6%
	IV/1996	III/1996	IV/1995
Real personal income* (in billions)	\$49.1	\$49.1	\$48.0



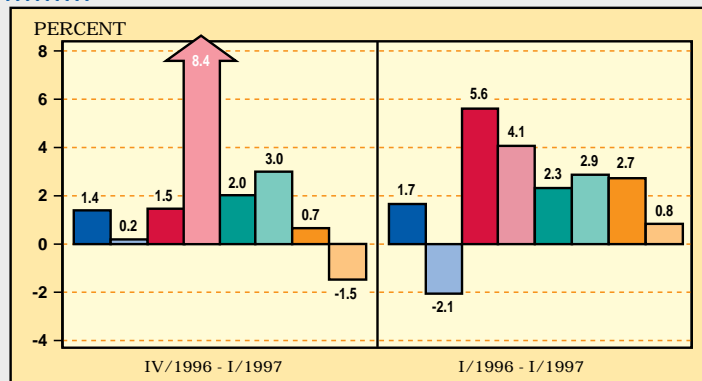
## Mississippi

	I/1997	IV/1996	I/1996
Labor force (in thousands)	1,275.7	1,262.6	1,262.9
Total nonagricultural employment (in thousands)	1,094.7	1,095.8	1,081.5
Unemployment rate	5.6%	5.9%	6.4%
	IV/1996	III/1996	IV/1995
Real personal income* (in billions)	\$30.4	\$30.5	\$29.8



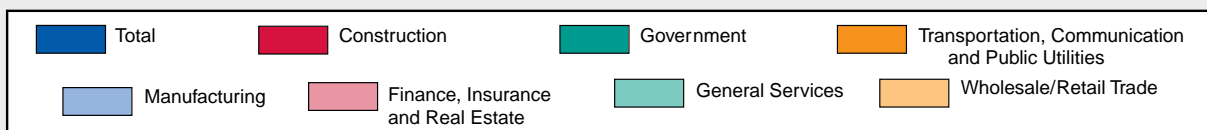
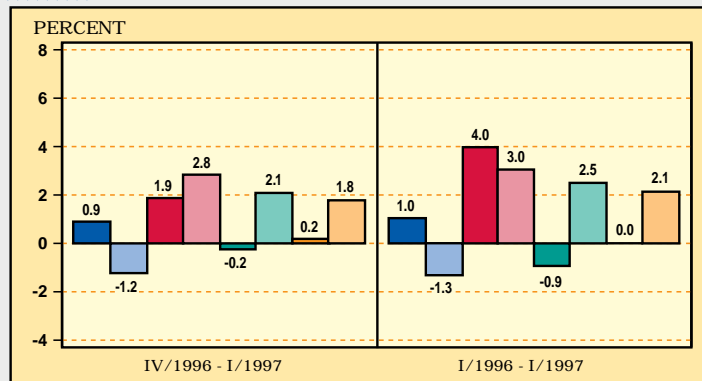
## Missouri

	I/1997	IV/1996	I/1996
Labor force (in thousands)	2,865.5	2,921.9	2,874.0
Total nonagricultural employment (in thousands)	2,594.5	2,585.5	2,552.1
Unemployment rate	4.3%	4.8%	4.4%
	IV/1996	III/1996	IV/1995
Real personal income* (in billions)	\$78.7	\$78.2	\$76.8



## Tennessee

	I/1997	IV/1996	I/1996
Labor force (in thousands)	2,757.8	2,769.3	2,737.3
Total nonagricultural employment (in thousands)	2,555.6	2,549.9	2,529.3
Unemployment rate	5.1%	5.1%	5.4%
	IV/1996	III/1996	IV/1995
Real personal income* (in billions)	\$74.5	\$74.3	\$73.4



Note: All data are seasonally adjusted. The nonagricultural employment data reflect the most current benchmark revision.  
\* Annual rate. Data deflated by CPI, 1982-84=100