It is a great honor to have been appointed president of the Federal Reserve Bank of St. Louis recently. I am keenly aware of all the responsibilities that come with this unique position, and I am eager to begin fulfilling them.

The Bank’s most important responsibility is to exercise its vote at the monetary policy table. There is the literal table—the one in that imposing Board Room at the Board of Governors in Washington. Even more important, however, is the public debate table. The St. Louis Fed has had a major influence on the nation’s monetary policy over the years because of the active role it has taken in both monetary policy and academic debates. The Federal Reserve System has a lot to be proud of, and the superb state of the current economy justifies a little crowing.

But the Fed’s responsibilities are much broader than the policy process that determines the decisions of the Federal Open Market Committee. The central bank has overall responsibility for the smooth functioning of the nation’s banking and payments system. Our aim is not to be noticed; if we are out of the news, you will know that we are doing our job well. The role of the Fed in the examination and supervision of banks, the handling of currency, the clearing of checks and the provision of other such services is vital to ensuring that banks are safe and sound and efficient. The Fed is a regulatory agency, but our aim is certainly not to make life difficult for banks. Rather, our goal is to provide oversight and necessary services so that banks themselves can give their customers what they need and want. We should always remember that, in our vigorously competitive economy, the interests of firms and consumers and regulators are essentially the same: High-quality products and services and enhanced efficiency yields benefits for all.

A Reserve Bank presidency is a highly visible position. That position carries with it special responsibilities in the community. As a new citizen of the Eighth Federal Reserve District, I will contribute wherever I can to improving economic education and promoting economic development throughout the region. I know that economic change often unearths many conflicting interests. Although the Fed has no legal responsibilities for local economic development, I believe it does have a responsibility to act as an honest, impartial broker in bringing people together to resolve policy disputes.

Those in positions of responsibility often talk of things that happen “on our watch.” I will do my best to see that, on my watch as St. Louis Fed president, the Bank will continue to faithfully execute its duties, while acting as a leader by embracing and encouraging the innovation that will carry us into the financial world of the future.

(For a biographical sketch of William Poole, see the related story.)
How Susceptible is the United States to the Asian Flu?
Kevin L. Kliesen

The financial straits that many East Asian countries find themselves in have received an extraordinary amount of attention lately. Because the roots of these developments run deep and intertwine, any explanation will inevitably fail to fully explain what transpired. Still, it appears that a significant part of this situation can be attributed to a flight of financial capital spurred by a crisis of investor confidence in the ability of these nations to implement needed domestic financial and political reforms. Although the situation is still evolving, and in some ways improving, many economists believe that the forces unleashed by these developments will adversely affect the U.S. economy. But is this necessarily so?

Diagnosis

Events in Asia began to make headlines last year when Thailand's currency—called the baht—lost about a quarter of its value against the U.S. dollar between late June and the middle of July.1 Eventually, this loss of confidence—if it may be called that—extended to the currencies of several other East Asian nations, including the Malaysian ringgit, the Philippine peso and the South Korean won. Incredibly, between late July 1997 and early February 1998, the Indonesian rupiah had lost more than 80 percent of its value against the dollar. As the accompanying chart shows, over the last half of 1997, the dollar rose by almost 28 percent against a basket of selected Asian currencies; against a larger basket of 131 currencies, the dollar rose by about a third as much —9.5 percent.
Currency movements of these magnitudes are usually the byproduct of unsound domestic policies. In many Asian countries, several observers have remarked that "crony capitalism" is what lies at the heart of the problem, meaning that a considerable percentage of the foreign financial capital that flowed into Asia was directed at the behest of state bureaucrats, rather than market forces. The situation was further exacerbated by lax oversight of the financial system—oversight that failed to deal promptly with bad loans.2

Because most of these countries are heavily dependent on international trade, a sharp decline in the price of their traded goods ultimately means a loss of purchasing power. In other words, less income (from exports) is available to purchase imported goods, which are now also more expensive because of their depreciating currencies. Thus, many of these countries expect to see their real consumption cut substantially.

There are myriad other avenues through which the Asian currency crisis can affect the U.S. economy. Of these, two effects have received the most attention. The first, not surprisingly, is through international trade; the second is through the U.S. price level. The prevailing view seems to be that the former will be detrimental to the United States, while the latter will be beneficial. Conventional wisdom, however, suggests that the net effect will be negative.

Trade Influenza?

Americans buy a considerable amount of goods from Asia—everything from cars to clothes to computer chips. At the same time, U.S. firms ship a large amount of merchandise to Asia, including airplanes, chemicals, machinery and agricultural products. Altogether, U.S. merchandise trade with Asia accounts for about a third of total U.S. trade (exports plus imports). Japan is the region's largest U.S. trading partner, making up about 13 percent of total trade, with China (at about 5 percent) and South Korea (at 3 percent) farther back in terms of
importance. Clearly, then, economic stresses in Asia have the potential to disrupt economic activity in the United States. But by how much?

The flow of goods and services across countries depends on several factors. The most important of these factors is the price of goods, which is influenced by foreign-exchange movements. To see this, consider how a change in the value of the dollar-won exchange rate would affect the dollar price of a personal computer made in South Korea and sold to a U.S. retailer for 1 million won. If the prevailing exchange rate is 750 won to the dollar—which is about where it was at the beginning of 1996—then the initial price of the computer to the retailer would be about $1,300 (1 million divided by 750). If the dollar appreciates (or the won depreciates) to 1,700 won—which is roughly where it stood in early 1998—then the cost of the computer falls to about $600 (1 million divided by 1,700).

But a change in the dollar's value also affects the prices of U.S. goods that are shipped to South Korea. In this case, U.S.-produced computers sold in Korea would now be roughly twice as expensive as before. In addition, the stronger dollar may result in fewer exports of U.S.-made computers to countries in which both countries' computers are sold—say, in Europe. The expected result of a dollar appreciation is lower U.S. net exports (meaning more imports and fewer exports). In an accounting sense, then, the Asian currency crisis is expected to reduce the growth of real GDP—perhaps by as much as half a percentage point or more this year, according to several forecasts.

This estimate, however, should be viewed cautiously for several reasons. For starters, if the U.S. dollar was depreciating against the Canadian dollar and the Mexican peso at the same time it was appreciating against the won, we would expect to see lower U.S. net exports to South Korea, but increased net exports to Canada and Mexico. Thus, declines in the dollar against the currencies of other important trading partners may potentially offset the dollar's recent strength against Asian currencies. Furthermore, many firms minimize risk through binding trade contracts, which may prevent them from seeking out cheaper alternatives in the short run. In light of all these considerations, it seems reasonable to assume that predicting future trade flows in the face of considerable uncertainty is a risky endeavor.

Is a Strong Dollar Bad Medicine?

Because of its potentially adverse effect on a nation's trade balance—and thus employment in those industries that either produce for the international market or compete with imports—many analysts believe that a stronger dollar bodes ill for the United States. But a strong currency suggests that the monetary and fiscal authorities are following reasonably sound macroeconomic policies, leading to rates of return on investment goods and financial assets that exceed those of other countries. Conversely, a weak currency is usually the byproduct of an anemic economy wracked with high and rising inflation. Moreover, a strong dollar acts as a control on costs, forcing exporting firms to boost sales through efficiency gains and product innovations, rather than simply through lower prices.

The outcome of a strong dollar that has received the most attention, though, is its effect on the prices of goods and services consumed by U.S. residents. Specifically, many analysts assert that the stronger dollar will lower the U.S. inflation rate, thereby enhancing the purchasing power of U.S. citizens. In fact, some analysts go so far as to insist that, with inflation already at fairly low rates, outright deflation is possible. That outcome is exceedingly unlikely.

For several reasons, a flood of cheap imports will probably cut the U.S. inflation rate very little—if at all. First, more than half (about 60 percent) of the consumer price index—the basket of goods and services used to measure the inflation rate—is made up of non-traded items (largely services). This means that, while currency movements will have some effect on the prices of goods like camcorders and automobiles, they will have virtually no effect on housing prices—the largest CPI component—or the prices of medical services, for
example. In any event, with imports of consumer goods and services accounting for only 8 percent or so of total consumption expenditures, the inflation effect is likely to be small.

Second, unless the dollar continually appreciates, these price declines are one-time events. Moreover, if these Asian currencies begin to retrace part of their initial declines as their economies recover and their financial markets stabilize, the effects could begin to work in the opposite direction. Finally, and most important, it's crucial to remember that inflation ultimately is a monetary phenomenon determined by domestic factors. This means that today's inflation rate is largely a function of past money growth rates. It follows, then, that tomorrow's inflation rate will mostly be determined by today's monetary policy; exchange rate movements can have only small, temporary effects on it.

Prognosis

It's not entirely clear to what extent—if any—the evolving situation in Asia will harm prospects for U.S. economic growth this year. Although there will probably be some impact on U.S. trade flows and on the prices of imported goods, the magnitude of that impact is uncertain at this time. Clearly, it is unwise to ignore the effects produced by events that have the potential to inflict some economic harm. That said, judging the effects of events that are still unfolding is difficult to say the least.

Daniel R. Steiner provided research assistance.

Endnotes

1. At the time, Thailand was operating a dollar peg by keeping the value of the baht tied to the U.S. dollar. When the dollar rose to a level that the Thais could no longer feasibly support, they were forced to abandon the peg and thus let their currency "float," meaning the day-to-day value was determined in the foreign exchange markets. [back to text]
2. See Krugman (1997). [back to text]
3. Other factors also come into play, including how sensitive firms and individuals are to changes in the price of the good and what, if any, deterioration in overall economic growth is expected. [back to text]
4. In reality, the change in the price would be more complicated than this because the Korean computer maker might use parts imported from the United States. If so, then the decline in the price of the computer would not be as much because the U.S.-made components would now be more expensive to the Korean producer. [back to text]
5. It is possible that the trade balance will not worsen in the short run because the United States is buying the same goods at a cheaper price in dollars. In other words, the total value (price times quantity) purchased may be less than before the appreciation. [back to text]
6. In the National Income and Product Accounts (NIPA) system, increased exports (U.S. production) increases GDP growth, whereas increased imports (foreign production) reduces GDP growth. [back to text]

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International Monetary Fund. World Economic Outlook: Interim Assessment, World Economic and Financial Surveys (December 1997).

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The Commercial Paper Market: Who's Minding the Shop?
Dusan Stojanovic, Mark D. Vaughan

On Jan. 31, 1997, Mercury Finance Co.—a major player in the automobile lending business—surprised financial markets by defaulting on $17 million in commercial paper. By the end of February, the amount in default had ballooned to $315 million, representing 60 percent of Mercury's outstanding commercial paper and 30 percent of its outstanding debt. As the saga unfolded, some financial market observers expressed concern that Mercury's default would send shock waves throughout financial markets, perhaps on the scale of the $82 million commercial paper default by Penn Central Railroad some 27 years earlier.

Despite the corporate sector's heavy reliance on commercial paper as a funding source, Mercury's default had little impact on the market as a whole. Indeed, only companies involved in used car financing and other low-end lending activities were forced to pay higher default premiums on their commercial paper as a result of the Mercury debacle. In contrast, Penn Central's bankruptcy so spooked commercial paper investors that the Federal Reserve was forced to step in to calm market jitters. Was the Mercury Finance episode a fair test of the resilience of the commercial paper market, or does the Federal Reserve still need to guard against the potential fallout from a major commercial paper default?

Paper Points

Firms finance their assets with a mix of debt (borrowing) and equity (owners' capital). Debt can either have a long or short maturity. A 10-year bond is an example of long-term debt, while commercial paper is an example of short-term debt. More specifically, commercial paper is a short-term, unsecured debt instrument, used mostly to finance current operations. Because it is unsecured, commercial paper is a financing option reserved for only the highest quality firms. The typical issue matures in less than 45 days and is denominated in the millions of dollars. Commercial paper is sold at a discount and pays face value at maturity, with the holder receiving the capital gain in lieu of interest. Firms generally "roll over" outstanding issues; that is, they sell new paper to pay off maturing paper.

From the issuer, or borrowing firm's, perspective, commercial paper is like an IOU. The issuer writes out a promise to pay a sum—say $1,000—in a few weeks in return for an advance of, for example, $995 today. Of course, because no collateral is offered, no one will accept the IOU unless the issuer is very creditworthy. When the IOU comes due, the issuer then writes out another IOU—possibly to a different party—to raise the funds to pay back the first lender.

Financial firms issue 78 percent of all commercial paper—25 percent of which is from finance companies. The largest finance company issuers are subsidiaries of large industrial firms that facilitate purchases of parent company products—sometimes called captive finance companies. As of June 30, 1997, the top three captive finance companies—General Electric Capital Corp., Ford Motor Credit Co. and General Motors Acceptance...
Corp.—collectively boasted outstanding commercial paper of about $110 billion, or nearly 13 percent, of the market.

Of the nonfinancial firm issuers—which account for the remaining 22 percent of the market—industrial and service firms use commercial paper as a source of working capital, while public utilities use commercial paper to purchase raw materials (like nuclear fuels) and fund construction. In addition to using commercial paper to finance conventional public works projects, state governments have found unconventional uses, such as backing infrastructure and mass transit projects in New York and providing disaster relief funds after the 1996 Pennsylvania blizzard.1

Why would anyone hold an unsecured corporate IOU like commercial paper? From the lender's, or commercial paperholder's, perspective, commercial paper is a highly liquid, low-risk asset. Commercial paper is considered a liquid asset—one that can be converted to cash easily with little loss of value—because, as noted, the typical issue matures in less than seven weeks. Commercial paper is also a low-risk asset—one that carries little risk of default—because the typical issue has such a short maturity and is the liability of a high-quality firm. Money market mutual funds are the largest investors in commercial paper, holding about 34 percent of all outstanding paper, followed by households (13 percent), retirement and pension funds (8 percent), foreigners (8 percent), and life insurance companies (7 percent).

The commercial paper market has grown by leaps and bounds over the past two decades. Between 1980 and 1996, the total amount of outstanding commercial paper jumped from $124 billion to $775 billion, which translates into an 8.2 percent compound annual growth rate after adjusting for inflation. A look at changes in the share of commercial paper in the money market is even more revealing (see Chart 1). In 1970, Treasury bills accounted for 47 percent of the dollar volume of money market instruments, and commercial paper accounted for just 20 percent. By 1997, however, commercial paper had overtaken Treasury bills to become the largest money market instrument, totaling $959 billion, or 31.5 percent, of the market.
Financial innovation explains a large part of the growth of the commercial paper market. In times past, only the bluest of blue chip companies could issue such unsecured debt. In recent years, however, the information explosion in financial markets, coupled with increased competition in underwriting, has enabled more firms to issue commercial paper. For example, better information about the issuing firms has enabled the market to more accurately assess the default risk of a given issue. Liquidity enhancements, credit enhancements and securitization programs, which are all discussed in greater detail below, have further reduced the risks to commercial paper holders.

The Market for Commercial Paper

Middlemen called dealers play an important role in the commercial paper market. As late as 1980, dealers sold, or "placed," 45 percent of all paper; by 1996, however, that number had climbed to more than 70 percent. The growing importance of dealers can be attributed to financial innovation, which made commercial paper a viable financing option for smaller issuers (who tend to rely on dealers to sell their paper), as well as competition in underwriting, which reduced the transactions costs of selling issues.2

Dealers purchase commercial paper from issuers and immediately resell it to investors. Such underwriting typically earns a spread of 5 to 10 basis points. Three investment banking firms—Goldman Sachs, Merrill Lynch and Lehman Brothers—deal more than two-thirds of all commercial paper. Among bank commercial paper dealers, J.P. Morgan, BankAmerica, Chase Manhattan, Citicorp, First Chicago and Bankers Trust are the most prominent. That said, the amount of commercial paper placed by all six of them combined still lags behind the amount placed by any one of the top three investment bank dealers.
One or more of the rating agencies—Moody's, Standard & Poor's (S&P), Duff and Phelps, or Fitch—rate most of the outstanding commercial paper today. Ratings range from highest quality to paper in default. Almost all commercial paper issues carry either a higher prime rating (S&P: A1+ or A1; Moody's: P1) or a lower prime rating (S&P: A2 or A3; Moody's: P2 or P3). For example, 90.4 percent of all the issues rated by Moody's as of June 30, 1995, held the highest rating (P1), and another 9 percent held the second highest rating (P2).

Just like the market for any other security, supply and demand determine commercial paper yields. The yield of a specific issue depends on the maturity length, the amount financed, the level of other money market rates and the credit rating of the issuer. Because of default risk, however, commercial paper yields are higher than yields on Treasury bills. Since 1991, the average commercial paper/T-bill spread for three-month instruments has been slightly under 40 basis points. On Aug. 29, 1997, for example, the 13-week Treasury bill rate offered, on average, a yield of 5.13 percent, while 90-day commercial paper offered an average yield of 5.55 percent.

**At Banks' Expense?**

Banks have lost a large part of their traditional lending business to the commercial paper market. Large, creditworthy corporate borrowers have increasingly turned to commercial paper because the interest costs are lower than those on bank loans (see Chart 2). At the same time, finance companies have made great strides in certain segments of the consumer loan market, such as automobile lending, by funding loans with commercial paper and passing some of the savings on to customers. Over the last 10 years, commercial and industrial loans have fallen from 32.4 percent of the U.S. bank loan portfolio to 26.6 percent, and—despite explosive growth in credit card lending—consumer loans have remained relatively unchanged at 19 percent.

Chart 2


- **NOTE:** Values are in constant 1997 dollars.

- **SOURCES:** Flow of Funds Section, Board of Governors of the Federal Reserve System; Federal Reserve Bulletin; Economic Report of the President
Ironically, although banks have lost business to the commercial paper market, the market could not operate as it does without them since banks provide supporting liquidity and credit enhancements. In addition, banks have been important behind-the-scenes players in the rise of asset-backed commercial paper programs.

As noted earlier, most maturing commercial paper is rolled over; that is, investors are paid off with proceeds from a new issue, just as some consumers pay off one credit card with an advance from another. Rollovers carry the danger that an unexpected circumstance might interfere with attempts to replace outstanding paper with new paper—just as consumers "rolling over" credit card debt would be in trouble if a card issuer refused to come through with a promised cash advance.

Commercial paper issuers reduce "rollover risk" by securing backup lines of credit from banks. These backup lines, which are also called liquidity enhancements, give paper-issuing firms access to bank credit in exchange for a fee. Usually, commercial paper issuers maintain 100 percent backing, though some large issues have less than full backing. Backup lines usually contain a "material adverse change" clause, which allows cancellation of the line if the financial condition of the issuing firm deteriorates. As a precondition for rating a commercial paper program, credit rating agencies usually require a bank line of credit; hence, almost all issuers have a line in place.

The actual credit rating awarded ultimately depends, however, on the creditworthiness of the issuing firm or, in some cases, on the creditworthiness of a third party willing to act as a guarantor of the issue. In third-party guarantees, a firm with a weak credit rating "leases" the credit rating of a stronger firm by purchasing a credit enhancement. Such credit enhancements are irrevocable and can take a number of forms: standby letters of credit purchased from commercial banks; parent company guarantees of their subsidiaries' commercial paper; and insurance company indemnity bonds purchased by commercial paper issuers. Standby letters of credit are currently the most popular form of credit enhancement, with about 5 percent of all commercial paper outstanding backed by them. Standby letters back only a small percentage of current commercial paper issues because the overwhelming majority of issuers are extremely creditworthy.

Securitization—the conversion of assets into marketable securities—has spread to the commercial paper market. In April 1983, Standard & Poor's rated the first commercial paper issue backed by a package of receivables. By the second quarter of 1997, approximately $160 billion, or 18 percent, of all outstanding commercial paper was asset-backed, with Moody's predicting outstandings to reach $225 billion by year end. The most frequent users of asset-backed commercial paper are Fortune 1000 corporations.

Banks sponsor most asset-backed commercial paper programs by forgoing the traditional creditor-lender role and instead establishing separate business entities called special purpose vehicles. These special purpose vehicles pool assets and issue commercial paper that is backed by the cash flows from underlying assets. Assets usually consist of various types of receivables, such as credit card, auto and equipment lease, health care and even small business loan. More recently, movie studios have packaged film receivables for sale as asset-backed commercial paper. News Corp.'s 20th Century Fox helped finance both "Independence Day" and "Romeo & Juliet" this way. Since most of the underlying assets are short-lived, special purpose vehicles are structured as ongoing entities that continue to buy assets and roll over maturing commercial paper.

In bank-sponsored programs, the sponsoring bank evaluates receivables on behalf of the special purpose vehicle and receives a referral fee for the analysis. The sponsoring bank also arranges for liquidity and credit enhancements. Banks sponsor asset-backed commercial paper programs both to generate fee income and to offer customers access to the commercial paper market.

**Stemming Systemic Risk**
Systemic risk is the risk that a shock to a major economic player—such as a large bank—or a major sector of the economy—such as the commercial paper market—could shake the foundations of the financial system, perhaps forcing the Federal Reserve to intervene as "lender of last resort." Such an intervention occurred after Penn Central's paper default in June 1970. The Penn Central default caught the market by surprise, largely because commercial paper ratings were in their infancy at the time. Investors, concerned that other companies might also default, became skittish about holding any commercial paper. As a result, between June 24 and July 15 of 1970, outstanding nonbank paper dropped almost 10 percent.8

The Federal Reserve took four steps to address the Penn Central crisis. First, it announced that it would extend funds, in the form of discount loans, to member banks that were willing to lend to customers with maturing commercial paper. Second, it suspended Regulation Q ceilings on large-denomination certificates of deposit, thereby enabling banks to bid for funds to make commercial paper related loans.9 Third, it stepped up its open market purchases of securities, which is the standard monetary policy tool to increase the amount of funds available to the banking system for lending. Finally, then Fed Chairman Arthur Burns announced that the Federal Reserve would directly or indirectly lend to firms that were unable to retire commercial paper. The first three steps thwarted the crisis, making the fourth step unnecessary.

A meltdown on the scale of Penn Central is not as likely today because the commercial paper market is far more sophisticated. Not only do market participants know the quality of paper issuers from lengthy personal experience, but most commercial paper issues also now carry a rating. Moreover, if a major default were to occur, the market would most likely be able to distinguish between good and bad commercial paper issues. Finally, even if a surprise default—like the Mercury Financial one—spooked investors about segments of the commercial paper market, firms in sound financial condition would be able to exploit bank lines of credit to retire issues that couldn't be rolled over.

The Mercury default illustrates the maturity of the current commercial paper market, compared with the 1970 market. As noted, Mercury Finance Co., which was a major force in the sub-prime auto lending market, defaulted on most of its outstanding commercial paper after its fraudulent accounting practices were disclosed.10 Although Mercury's commercial paper was backed by $500 million in lines of credit, the fraud allegations led participating banks to invoke the "material adverse change" clause and cancel the lines, which prompted further defaults. The company eluded bankruptcy only by obtaining a loan—secured by all of its assets—from Bank of America. Bank of America later renewed and extended the loan through January 1998.

The commercial paper market collectively yawned at the Mercury default; yields in a narrow segment of the market were the only ones that showed pronounced movement. Dealer-placed, third-tier yields on seven-day commercial paper increased 13 basis points on Jan. 29, in apparent anticipation of the Mercury default announcement. Within three days, however, yields on this short-maturity, lowest-quality commercial paper returned to their predefault levels. Yields on paper with higher ratings and longer maturities were consistently unaffected by the default. As a result, the spread between the top tier and lowest tier paper widened by 8 basis points on Jan. 29, but returned to within 3 basis points of the predefault spread in three days.

The Mercury experience, though comforting, does not demonstrate that the commercial paper market is capable of withstanding a Penn Central-type shock, for a couple of reasons. For one, the economic climates in which the two defaults took place were very different. Mercury Finance defaulted during a robust economic expansion; Penn Central went bankrupt just as the economy was entering a recession. A Mercury-style default in a weak economy might very well generate more serious financial market reverberations.

And perhaps more important, the scale of the two defaults was vastly different. The Penn Central default amounted to .25 percent of a $33 billion commercial paper market. The Mercury default, though comparable to Penn Central in inflation-adjusted dollars, represented just .04 percent of a $779 billion market. Put another way, because of the rapid growth of outstanding commercial paper, the Mercury default was only about one-
sixth as large as Penn Central's when viewed relative to the size of the market. It's not clear how the market would have reacted to a comparable .25 percent (nearly $2 billion) default of a $779 billion market.

A Test for the Fed?

Since the early 1970s, the commercial paper market has matured considerably. Commercial paper is now one of the more, if not the most, important instruments in the U.S. money market, thanks in large part to rating systems and backup lines of credit. As a result, the market is well-equipped to deal with small- to moderate-sized defaults.

Still, because no Penn Central-sized crisis has occurred in the past 27 years, the market remains essentially untested. Although the insurance that banks provide against "rollover risk" reduces the probability that a severe liquidity crunch could occur, the insurance also, however, transfers the liquidity risk from commercial paper issuers to the banking system. This guarantees that any potential liquidity crisis would be much more severe. It's this risk of a systemic shockwave that makes it necessary for the Fed to keep an eye on the commercial paper market as it heads toward the $1 trillion mark.

Thomas A. Pollmann provided research assistance.

Endnotes

1. See Braverman (1997) for additional discussion. [back to text]
2. See Hahn (1993) for further discussion on the role of dealers in the commercial paper market. [back to text]
4. Of course, this portfolio shift is not due solely to the rise of the commercial paper market. Over the past decade, banks have become increasingly interested in holding mortgage loans for a number of reasons, including the decline of the thrift industry. [back to text]
5. See Vaughan (1996). [back to text]
6. The difference between a standby letter of credit and a bank line of credit is that the standby letter protects the commercial paper holder against default by the issuer, whereas the line of credit protects the issuing firm against market-wide conditions that would prevent a rollover. For more details on standby letters of credit, see Koppenhaver (1992). [back to text]
7. See Post (1992) and Kavanagh and others (1992). [back to text]
8. See Calomiris (1994) for further detail on the Penn Central default and the Federal Reserve's response to it. [back to text]
9. Regulation Q imposed interest rate ceilings on certain types of bank deposits. [back to text]
10. "Sub-prime" generally refers to loans made to borrowers with very poor credit histories. [back to text]

References


With Tailwinds Blowing, The District Economy Sails On
Adam M. Zaretsky

Last year, real gross domestic product (GDP) in this country grew at a 3.8 percent annual rate—the fastest since 1988. This rate is also faster than the nation's average GDP growth over the last five years (2.9 percent), 10 years (2.5 percent) and 20 years (2.7 percent). In addition to strong output growth, almost 2.75 million jobs were created last year in the United States, which is about 425,000 more than were created in 1996. The 2.75 million figure is also greater than the nation's average job growth over the past five, 10 and 20 years. On top of this, the nation's average unemployment rate in 1997 was 5 percent—the lowest since 1970. By all indications, the U.S. economy is performing exceptionally well seven years after the trough of the last recession.

The Eighth District economy has been faring equally well. The District's 1997 unemployment rate, for example, was 4.6 percent—the lowest ever recorded for the region. In addition, slightly more than 225,000 jobs (or roughly 8 percent of all jobs created nationwide) were created in the District's seven states last year. That said, job growth is actually down from the year before, and the year before that. This is not surprising, however, since sustained periods of low unemployment rates often lead to slowing job growth; when few people are available for work, firms can't fill vacancies.

Output from the District states has also been strong. Gross state product (GSP), like GDP, measures the dollar amount of the final goods and services produced in each state. Unlike GDP, though, GSP data are not released with the same frequency, or as timely. In fact, the most recent GSP data released were for 1994. Normally, GSP data have a two-year lag; this release, however, had a longer lag because the data were recalculated using chain weights, rather than the fixed weights that had been used before.

District Output in a Nutshell

In 1994, the seven states of the Eighth District produced more than $871 billion in final goods and services. This amount represented almost 13.5 percent of all U.S. output. Sector by sector, though, the District has strengths and weaknesses. For example, goods produced at District manufacturing firms made up a relatively larger share of national manufacturing output (17.5 percent) than the District's overall contribution to national output (13.5 percent).

To illustrate the relative impact of District sector contributions to national output, a concentration ratio, which is the ratio between each sector's contribution and the District's total contribution, can be calculated. For example, because the District's contribution to national manufacturing output was about 30 percent greater than the District's entire contribution to total national output, the concentration ratio for manufacturing is 130.

The District's transportation and public utilities sector (T PU) followed manufacturing in its contribution to national output. District T PU firms made up about 14.5 percent of national T PU output. The concentration ratio for this industry shows that District firms contributed almost 9 percent more than the District's overall contribution to national output.
Two other District sectors—construction, and wholesale and retail trade—contributed relatively more than the District as a whole. Three of the four sectors (manufacturing, TPU, and wholesale and retail trade) held similarly strong positions in 1990, according to the last GSP data set examined in this publication.

With concentration ratios of less than 100, the remaining District sectors—agriculture and mining, general services, government, and finance, insurance and real estate (FIRE)—contributed relatively less to national output than the District's overall contribution. District firms in the FIRE sector, for example, contributed the smallest relative amount to national output of any sector, making up only 11 percent of national FIRE output—about 20 percent less than the District's overall contribution.

A sector's share of national output, however, doesn't say much about that sector's importance to District output. For instance, although the region's FIRE sector made a relatively small contribution to the sector nationwide, the services provided by these firms were responsible for about 15 percent of District output (see chart). Only the manufacturing sector (at 23 percent), the general services sector (at 17.5 percent), and the trade sector (at 17 percent) contributed more. Thus, relative size in the nation is not necessarily a good indicator of relative size in the District. The agriculture and mining sector brings this point home. Although District agriculture and mining operations made up less than 3 percent of the total District economy, these same operations represented somewhat more than a tenth of the nation's total agriculture and mining output. Construction's influence was similar. It made up only 4 percent of the District's economy, although the sector represented about 14 percent of the nation's construction output.
Chart 1

Real Gross State Product by Industry-1994

DISTRIBUTION ($371 BILLION)

- Manufacturing: 23.4%
- Trade: 16.7%
- Finance, Insurance, and Real Estate: 14.7%
- Services: 17.4%
- Government: 11.2%
- Transportation and Public Utilities: 9.8%
- Agriculture/Mineral: 4.1%
- Construction: 2.8%
District Growth Leads the Way

Examining the District’s contributions and composition, however, provides only a snapshot of the economy in 1994. How did it behave getting there? Actually, rather well. District real output growth outpaced national output growth every year from 1990 to 1994. In 1994 alone, District output grew at a 5.7 percent rate, while the sum of all states’ GSP figures (called national GSP) grew 4.2 percent.5

In fact, one could argue that the District led the rest of the country out of the recession earlier in the decade. In 1991, when the nation had just begun to recover from the economic downturn, the District states increased output 0.4 percent. Although not exactly overwhelming growth, it is noteworthy when compared with the nation’s 1991 performance—a decline of 0.6 percent. The following year, 1992, was the watershed year, though. The District economy took off, logging 4.3 percent real growth, with the national economy trailing behind at 2.4 percent real growth. This District growth spurt, coupled with further gains in the following years, helped push the region’s share of the national economy up more than half a percentage point—to about 13.5 percent—between 1990 and 1994.

But Does Past Growth Predict Future Growth?

Because GSP data are available only through 1994, they can’t help evaluate the current state of the District economy. As noted earlier, recent employment growth in the District hasn’t been as strong as in the rest of the
nation. In fact, not only have District payroll employment growth rates been getting smaller since their peak in 1994, they also have continued to hover below national growth rates. In 1994, for instance, District employment grew 3.3 percent, while U.S. employment grew 3.1 percent. By 1997, District employment growth had slowed to 1.3 percent, while national growth had waned to just 2.3 percent. One might be led to believe, therefore, that this dramatic slowdown in District employment growth bodes poorly for the region's economy, particularly in its importance to the national economy.

As in most economic analyses, however, there is another hand to consider. While employment growth rates have been slowing in the nation and the District, unemployment rates have been falling, which is generally a sign of economic strength. In 1992, when the District unemployment rate peaked at 7 percent, the national unemployment rate peaked at 7.5 percent. By 1997, these rates had fallen to 4.6 percent in the District and 5 percent in the nation, leading one to conclude that the District continues to outperform the nation.

Which view is correct? In all likelihood, both are. Slowing employment growth probably implies that the District economy will not be able to maintain its current pace of output growth indefinitely, as fewer and fewer workers are available for newly created jobs. Eventually, the output growth rate will be forced to slow as the economy reaches capacity. And shrinking employment growth is one indication that it is approaching—or may have already surpassed—capacity. Falling unemployment rates are another indication of nearing capacity. Thus, both views reflect a strong District economy, with some moderate slowing likely in the offing. And a moderate slowing is not necessarily bad since it would give the economy a chance to catch a second wind and reallocate resources, clearing the way for even more growth in the future.

Gilberto Espinoza provided research assistance.

Endnotes

1. In this article, District figures include state-level data for Arkansas, Illinois, Indiana, Kentucky, Mississippi, Missouri and Tennessee. [back to text]
2. Chain weights attempt to overcome the problem of relative price changes in goods by using a weighting of prices from the previous two years to calculate the dollar value of goods. Fixed weights, on the other hand, use a single price from a designated base year to calculate the dollar value of goods. For a more detailed description, see Kliesen (1996). [back to text]
3. The ratio is calculated by dividing the District sector share by the national sector share and multiplying the result by 100. [back to text]
4. See Kliesen (1994) for an overview of the 1990 GSP data. [back to text]
5. National GSP differs from GDP in that the former is the sum of the individual states' GSP figures, while the latter is a national figure only. Real GDP grew 3.5 percent in 1994.[back to text]

References


St. Louis Fed Gets New President

The Federal Reserve Bank of St. Louis has named William Poole as its new president, effective March 23. He replaces Thomas C. Melzer, who resigned from the bank this past January after more than 12 years as president.

Poole joins the St. Louis Fed after a 24-year career at Brown University in Providence, R.I., where he was the Herbert H. Goldberger Professor of Economics. He has twice served as chairman of the economics department at Brown and was director of the university's Center for the Study of Financial Markets and Institutions for five years. He also was a member of the Shadow Open Market Committee, which is a group of business and academic economists who meet twice a year to discuss current macroeconomic policy issues. The committee presents its analysis to the general public.

Poole began his career in 1964 at the Federal Reserve Board of Governors, where he worked as a senior economist until 1974. He was a member of the Reagan administrations' Council of Economic Advisors from 1982 to 1985. Poole has also served as a member of the Academic Advisory Panels of the Federal Reserve Banks of New York and Boston.

Poole holds Ph.D. and M.B.A. degrees from the University of Chicago and a bachelor of arts degree from Swarthmore College. In 1989, Swarthmore honored Poole with the Doctor of Laws degree.

And the survey says...

At the end of last year, we surveyed a segment of Regional Economist readers to get a better idea as to who you are and what you want out of the publication. Overall, we received a lot of positive feedback about RE, and the vast majority of you are happy with the length of the articles, the writing style employed and the balance between text and art.

Who You Are

More than 50 percent of you have an undergraduate or graduate degree in economics or business. About a third of you are employed in banking or other financial services. Other heavily represented industries include: education/research (20.4 percent) and nonfinancial business (18.6 percent).

What You Want

More than 90 percent of you expressed moderate to strong interest in articles about monetary policy and inflation. Other popular topics include: national public policy issues like social security (88 percent), international economic issues (78.2 percent) and banking and financial markets (76.6 percent).
Fed Funds

Percent of State and Local Government revenue from the Federal Government (1994)

<table>
<thead>
<tr>
<th>District</th>
<th>Rank Among 50 States</th>
<th>% of Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mississippi</td>
<td>4</td>
<td>24.1</td>
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<tr>
<td>Arkansas</td>
<td>8</td>
<td>21.9</td>
</tr>
<tr>
<td>Kentucky</td>
<td>11</td>
<td>19.5</td>
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<tr>
<td>Missouri</td>
<td>14</td>
<td>18.8</td>
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<tr>
<td>Indiana</td>
<td>17</td>
<td>17.6</td>
</tr>
<tr>
<td>Tennessee</td>
<td>23</td>
<td>16.8</td>
</tr>
<tr>
<td>Illinois</td>
<td>38</td>
<td>14.5</td>
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**National Average** 16.2

SOURCES: Morgan Quitno Press and U.S. Bureau of the Census
## Commercial Bank Performance Ratios

### U.S., District and State

<table>
<thead>
<tr>
<th></th>
<th>All U.S.</th>
<th>U.S. &lt;$15B(^1)</th>
<th>District</th>
<th>AR</th>
<th>IL</th>
<th>IN</th>
<th>KY</th>
<th>MS</th>
<th>MO</th>
<th>TN</th>
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<tr>
<td>4th quarter 1997</td>
<td>1.30%</td>
<td>1.40%</td>
<td>1.35%</td>
<td>1.30%</td>
<td>1.27%</td>
<td>1.33%</td>
<td>1.26%</td>
<td>1.41%</td>
<td>1.30%</td>
<td>1.59%</td>
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<td>1.38</td>
<td>1.34</td>
<td>1.32</td>
<td>1.14</td>
<td>1.35</td>
<td>1.29</td>
<td>1.46</td>
<td>1.28</td>
<td>1.60</td>
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<td>1.25</td>
<td>1.35</td>
<td>1.33</td>
<td>1.32</td>
<td>1.06</td>
<td>1.30</td>
<td>1.28</td>
<td>1.46</td>
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<td>1.43</td>
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<td>15.19%</td>
<td>13.67%</td>
<td>14.75%</td>
<td>14.76%</td>
<td>14.65%</td>
<td>14.70%</td>
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<td>15.06</td>
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<td>4.94%</td>
<td>4.53%</td>
<td>4.46%</td>
<td>4.56%</td>
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<td>4.45%</td>
<td>4.97%</td>
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<tr>
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<td>0.99%</td>
<td>0.97%</td>
<td>0.95%</td>
<td>1.09%</td>
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<td>0.65%</td>
<td>0.65%</td>
<td>0.85%</td>
<td>1.71%*</td>
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<td>0.98</td>
<td>1.06</td>
<td>1.00</td>
<td>0.99</td>
<td>1.04</td>
<td>0.60</td>
<td>0.70</td>
<td>0.59</td>
<td>0.83</td>
<td>1.96*</td>
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<td>1.08</td>
<td>1.05</td>
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<td>1.05</td>
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<td>0.68</td>
<td>0.61</td>
<td>0.73</td>
<td>2.62*</td>
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<td><strong>Net Loan Losses (\div)</strong></td>
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<tr>
<td>4th quarter 1997</td>
<td>0.66%</td>
<td>0.84%</td>
<td>0.39%</td>
<td>0.25%</td>
<td>0.50%</td>
<td>0.19%</td>
<td>0.37%</td>
<td>0.31%</td>
<td>0.32%</td>
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<td>3rd quarter 1997</td>
<td>0.64</td>
<td>0.80</td>
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<td>0.36</td>
<td>0.24</td>
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<td>0.29</td>
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<tr>
<td>Total Loans</td>
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<tr>
<td>4th quarter 1997</td>
<td>1.84%</td>
<td>1.83%</td>
<td>1.40%</td>
<td>1.36%</td>
<td>1.30%</td>
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<td>1.51</td>
<td>1.47</td>
<td>1.38</td>
<td>1.43</td>
</tr>
<tr>
<td>4th quarter 1996</td>
<td>1.90</td>
<td>1.82</td>
<td>1.48</td>
<td>1.37</td>
<td>1.51</td>
<td>1.30</td>
<td>1.49</td>
<td>1.48</td>
<td>1.57</td>
<td>1.45</td>
</tr>
</tbody>
</table>

\(^1\) Most of the elevation in Tennessee’s nonperforming loan ratios 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.

\(^2\) 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

---

*15*
Commercial Bank Performance Ratios
by Asset Size

4th Quarter 1997

Earnings

Return on Average Assets

Percent

1.50

1.40

1.30

1.20

1.10

1.00

D

US

D

US

D

US

D

US

D

US

Annualized

1.18

1.21

1.34

1.32

1.41

1.39

1.47


Asset Quality

Net Loan Loss Ratio

Percent

1.50

1.25

1.00

0.75

0.50

0.25

0.00

D

US

D

US

D

US

D

US

D

US

Annualized

0.26

0.26

0.24

0.33

0.28

0.42

0.57


Return on Average Equity

Percent

20.00

18.00

16.00

14.00

12.00

10.00

D

US

D

US

D

US

D

US

Annualized

11.18

11.28

13.69

13.56

15.73

15.27

18.73

16.48


Nonperforming Loan Ratio

Percent

1.25

1.00

0.75

0.50

0.25

0.00

D

US

D

US

D

US

D

US

D

US

Annualized

0.67

0.96

0.84

0.89

0.82

0.85

1.13

1.08


Net Interest Margin

Percent

5.25

5.00

4.75

4.50

4.25

4.00

D

US

D

US

D

US

D

US

Annualized

4.47

4.82

4.91

4.99

4.89

5.00


Loan Loss Reserve Ratio

Percent

2.25

2.00

1.75

1.50

1.25

1.00

D

US

D

US

D

US

D

US

D

US

Annualized

1.32

1.43

1.37

1.42

1.49

1.67

1.42

2.08


D = District
US = United States

$ <100 Million

$100 Million - $300 Million

$1 Billion - $15 Billion

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

1 Loan losses are adjusted for recoveries.
2 Includes loans 90 days or more past due and nonaccrual loans
3 Interest income less interest expense as a percent of average earning assets
### Agricultural Bank Performance Ratios

<table>
<thead>
<tr>
<th></th>
<th>U.S.</th>
<th>AR</th>
<th>IL</th>
<th>IN</th>
<th>KY</th>
<th>MS</th>
<th>MO</th>
<th>TN</th>
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</thead>
<tbody>
<tr>
<td>Return on average assets (annualized)</td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th quarter 1997</td>
<td>1.27%</td>
<td>1.31%</td>
<td>1.26%</td>
<td>1.22%</td>
<td>1.36%</td>
<td>1.39%</td>
<td>1.23%</td>
<td>1.14%</td>
</tr>
<tr>
<td>3rd quarter 1997</td>
<td>1.33</td>
<td>1.42</td>
<td>1.31</td>
<td>1.26</td>
<td>1.46</td>
<td>1.55</td>
<td>1.31</td>
<td>1.36</td>
</tr>
<tr>
<td>4th quarter 1996</td>
<td>1.22</td>
<td>1.35</td>
<td>1.19</td>
<td>1.10</td>
<td>1.42</td>
<td>1.36</td>
<td>1.23</td>
<td>1.17</td>
</tr>
</tbody>
</table>

Return on average equity (annualized)

|                         |      |    |    |    |    |    |    |    |
| 4th quarter 1997        | 12.02%| 12.21%| 11.36%| 12.12%| 12.61%| 13.95%| 11.68%| 11.23%|

Net interest margin (annualized)

|                         |      |    |    |    |    |    |    |    |
| 4th quarter 1997        | 4.63%| 4.46%| 4.15%| 4.60%| 4.57%| 5.11%| 4.47%| 4.32%|
| 3rd quarter 1997        | 4.62 | 4.46| 4.16| 4.56| 4.60| 5.08| 4.48| 4.43|
| 4th quarter 1996        | 4.53 | 4.41| 4.16| 4.54| 4.62| 5.10| 4.57| 4.49|

Ag loan losses + average ag loans (annualized)

|                         |      |    |    |    |    |    |    |    |
| 4th quarter 1997        | 0.20%| 0.16%| 0.00%| -0.50%| 0.24%| 0.18%| 0.33%| -0.08%|
| 3rd quarter 1997        | 0.14 | 0.08| -0.05| -0.61| 0.15| 0.24| 0.11| 0.02|
| 4th quarter 1996        | 0.31 | 0.09| 0.12| -0.20| 0.26| 0.77| 0.38| 0.25|

Ag nonperforming loans + total ag loans

|                         |      |    |    |    |    |    |    |    |
| 4th quarter 1997        | 1.19%| 0.67%| 0.65%| 2.63%| 1.27%| 1.26%| 1.29%| 0.01%
| 3rd quarter 1997        | 1.32 | 0.68| 0.71| 3.43| 1.70| 0.89| 1.65| 0.34|
| 4th quarter 1996        | 1.46 | 0.85| 0.69| 1.84| 1.75| 2.54| 1.50| 0.00|

1. 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 Insured U.S. Commercial Banks

### U.S. Agricultural Exports by Commodity

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Year-to-date</th>
<th>Change from year ago</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock &amp; products</td>
<td>1.01</td>
<td>.99</td>
<td>.92</td>
<td>11.06</td>
<td>2.1%</td>
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<tr>
<td>Corn</td>
<td>.35</td>
<td>.37</td>
<td>.44</td>
<td>5.17</td>
<td>-38.0</td>
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<tr>
<td>Cotton</td>
<td>.15</td>
<td>.22</td>
<td>.29</td>
<td>2.71</td>
<td>-1.0</td>
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<tr>
<td>Rice</td>
<td>.09</td>
<td>.09</td>
<td>.09</td>
<td>.93</td>
<td>-9.0</td>
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<td>.89</td>
<td>7.38</td>
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<td>Tobacco</td>
<td>.13</td>
<td>.11</td>
<td>.13</td>
<td>1.55</td>
<td>12.0</td>
</tr>
<tr>
<td>Wheat</td>
<td>.38</td>
<td>.33</td>
<td>.34</td>
<td>4.10</td>
<td>-35.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>5.53</td>
<td>5.48</td>
<td>5.24</td>
<td>57.25</td>
<td>-5.0</td>
</tr>
</tbody>
</table>

1. Includes commodities not listed here

### U.S. Crop and Livestock Prices

<table>
<thead>
<tr>
<th>Commodity</th>
<th>1990-92=100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock</td>
<td>115</td>
</tr>
<tr>
<td>Crops</td>
<td>159</td>
</tr>
</tbody>
</table>

### Indexes of Food and Agricultural Prices

<table>
<thead>
<tr>
<th>Level</th>
<th>Growth1</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV/97</td>
<td>III/97</td>
</tr>
<tr>
<td></td>
<td>IV/96</td>
</tr>
<tr>
<td>Prices received by U.S. farmers2</td>
<td>106</td>
</tr>
<tr>
<td>Prices received by District farmers3</td>
<td>131</td>
</tr>
<tr>
<td>Arkansas</td>
<td>110</td>
</tr>
<tr>
<td>Illinois</td>
<td>108</td>
</tr>
<tr>
<td>Indiana</td>
<td>104</td>
</tr>
<tr>
<td>Missouri</td>
<td>N.A.</td>
</tr>
<tr>
<td>Tennessee</td>
<td>N.A.</td>
</tr>
<tr>
<td>Prices paid by U.S. farmers</td>
<td>115</td>
</tr>
<tr>
<td>Production items</td>
<td>116</td>
</tr>
<tr>
<td>Consumer food prices</td>
<td>159</td>
</tr>
<tr>
<td>Consumer nonfood prices</td>
<td>162</td>
</tr>
</tbody>
</table>

1. Compounded annual rates of change are computed from unrounded data.
2. Index of prices received for all farm products and prices paid (1990-92=100)
3. Indexes for Kentucky and Mississippi are unavailable.
N.A. — Not Available
NOTE: Data not seasonally adjusted except for consumer food prices and nonfood prices
Selected U.S. and State Business Indicators

**United States**

**TV/1997**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor force (in thousands)</td>
<td>136,813</td>
<td>136,379</td>
<td>134,944</td>
</tr>
<tr>
<td>Total nonagricultural employment (in thousands)</td>
<td>123,487</td>
<td>122,575</td>
<td>120,452</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>4.7%</td>
<td>4.9%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Real personal income* (in billions)</td>
<td>$4,291.8</td>
<td>$4,263.7</td>
<td>$4,154.5</td>
</tr>
</tbody>
</table>

**Arkansas**

**TV/1997**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor force (in thousands)</td>
<td>1,237.0</td>
<td>1,246.0</td>
<td>1,239.6</td>
</tr>
<tr>
<td>Total nonagricultural employment (in thousands)</td>
<td>1,109.8</td>
<td>1,105.4</td>
<td>1,091.1</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>5.0%</td>
<td>5.3%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Real personal income* (in billions)</td>
<td>$31.2</td>
<td>$31.3</td>
<td>$30.5</td>
</tr>
</tbody>
</table>

**Illinois**

**TV/1997**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor force (in thousands)</td>
<td>6,150.9</td>
<td>6,141.1</td>
<td>6,117.1</td>
</tr>
<tr>
<td>Total nonagricultural employment (in thousands)</td>
<td>5,824.4</td>
<td>5,787.8</td>
<td>5,724.3</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>4.7%</td>
<td>4.6%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Real personal income* (in billions)</td>
<td>$210.5</td>
<td>$209.0</td>
<td>$203.4</td>
</tr>
</tbody>
</table>

**Indiana**

**TV/1997**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor force (in thousands)</td>
<td>3,116.1</td>
<td>3,121.5</td>
<td>3,055.0</td>
</tr>
<tr>
<td>Total nonagricultural employment (in thousands)</td>
<td>2,875.6</td>
<td>2,863.5</td>
<td>2,834.6</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>3.6%</td>
<td>3.4%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Real personal income* (in billions)</td>
<td>$86.5</td>
<td>$86.1</td>
<td>$84.5</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
<td>----------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Kentucky</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor force (in thousands)</td>
<td>1,936.0</td>
<td>1,926.4</td>
<td>1,876.9</td>
</tr>
<tr>
<td>Total nonagricultural employment (in thousands)</td>
<td>1,726.2</td>
<td>1,719.4</td>
<td>1,687.9</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>4.9%</td>
<td>5.3%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Real personal income* (in billions)</td>
<td>$50.8</td>
<td>$50.5</td>
<td>$49.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mississippi</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor force (in thousands)</td>
<td>1,281.2</td>
<td>1,276.6</td>
<td>1,262.6</td>
</tr>
<tr>
<td>Total nonagricultural employment (in thousands)</td>
<td>1,112.8</td>
<td>1,110.3</td>
<td>1,093.6</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>5.5%</td>
<td>5.5%</td>
<td>5.9%</td>
</tr>
<tr>
<td>Real personal income* (in billions)</td>
<td>$31.4</td>
<td>$31.3</td>
<td>$30.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Missouri</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor force (in thousands)</td>
<td>2,888.6</td>
<td>2,857.4</td>
<td>2,921.9</td>
</tr>
<tr>
<td>Total nonagricultural employment (in thousands)</td>
<td>2,653.5</td>
<td>2,642.0</td>
<td>2,593.2</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>4.0%</td>
<td>3.7%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Real personal income* (in billions)</td>
<td>$81.1</td>
<td>$80.8</td>
<td>$78.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tennessee</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor force (in thousands)</td>
<td>2,762.4</td>
<td>2,764.4</td>
<td>2,769.3</td>
</tr>
<tr>
<td>Total nonagricultural employment (in thousands)</td>
<td>2,601.4</td>
<td>2,589.0</td>
<td>2,546.8</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>5.1%</td>
<td>5.3%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Real personal income* (in billions)</td>
<td>$77.0</td>
<td>$76.6</td>
<td>$74.7</td>
</tr>
</tbody>
</table>

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.