President's Message: What's in a Name? Regional, and Lots of It
William Poole

When The Regional Economist was launched in January of 1993, its intent—as stated by my predecessor, Tom Melzer—was to fill the gap between the economic data and news stories taking place at the national level and those occurring closer to home.

Six years later, the country and the Eighth Federal Reserve District have a new and improved economy, and the St. Louis Fed has a new (I dare not claim improved!) president. What hasn't changed, though, is this publication's commitment to analyzing the regional economy. Beginning with this issue, we have strengthened that commitment, by adding a new section, "Regional Report" [ed: now called "Community Profiles"] and revamping our regional data section.

In the Regional Report section, we'll provide you with some insight and analysis on an Eighth District town or area that has undergone a significant economic change. In this issue, for example, we traveled to Evansville, Ind., to uncover the "secrets" of its recent economic success. The reports won't always be positive—not when plants and military bases are still closing and natural disasters like floods and tornadoes continue to strike. In any case, the goal is to show the impact that a single factor or group of factors can have on the economy of a small region or town, many of which are found in the Eighth Federal Reserve District.

At the back of the publication, you'll find our revised data section. We've redone these pages to make them more appealing, in terms of content and presentation. We've also added a one-page textual analysis of recent economic developments in the Eighth District and the nation as a whole.

Now that I've told you what we're going to do, the question becomes why. Indeed, why, when the rest of the world seems concerned mainly with the globalization of financial markets, would we not only continue, but even expand, our commitment to regional economic news? The answer is simple: Good economics, like good politics, is local.

To make sound economic decisions at the national level, we must have a firm grasp of what is happening at the local level—and why. When the Federal Open Market Committee meets eight times a year to decide what to do (or not do) about interest rates, its members are basing their decisions in large part on information culled from towns all across the country.

The flip side of the coin is equally important. By providing regional news and numbers, we hope to help residents of the Eighth Federal Reserve District understand how the local economy is influenced by national and international economic conditions.

The reasons for "bothering" with regional-level data then are evident to me, and I hope to you, as well. After all, we didn't name this publication The Regional Economist for nothing.
Community Profile: Once Overlooked, Evansville, Ind., Market Gets Noticed
Jeryldine Tully

In 1990, when the city of Evansville formed an economic development agency to breathe life into the area’s economy, it decided to name the organization “Vision 2000.” Back then, the Year 2000 seemed like a long way off, and the vision was a loosely defined one: to attract new business to the southwestern Indiana counties of Vanderburgh, Warrick, Posey and Gibson. “At that time, we were struggling to be somebody,” explains Ken Robinson, Vision 2000’s executive director.

Nine years later, the vision is becoming a reality. In the past three years alone, the Evansville area has seen almost $3 billion in investment from a range of new developments, including:

- Toyota Motor Manufacturing Corp. opened a $1.2 billion plant in Gibson County, 25 miles north of Evansville.
- AK Steel opened a $1.1 billion processing complex in Spencer County, 35 miles east of the city.
- Casino Aztar opened a $120 million 250-room hotel and casino complex downtown on the Ohio riverfront.
- In addition, ConAgra Inc. plans to construct a $225 million soybean processing plant in Posey County that would begin production by the spring of 2000.

The Toyota plant is clearly the feather in the area’s cap. It’s one of only two Toyota vehicle manufacturing sites in the United States (the other is in Georgetown, Ky.). Moreover, the plant is designed to produce two brand-new Toyota vehicles: a full-size pickup truck called the Tundra, which will be available for sale in early June, and a sport utility vehicle, which will begin production in late 2000. At full tilt, the plant will employ 2,300 workers, who will (with a little help from robots) produce 150,000 vehicles a year.

The fact that Toyota—the second-largest automobile manufacturer in the world—picked the Evansville area (specifically Princeton, Ind.) for its new facility begs the question, why?

The Toyota Tale

Mike Goss, public affairs manager at the Princeton site, says that the presence of the Georgetown plant just 200 miles away was a key factor in the company's decision. Particularly influential, Goss says, was the Midwest’s well-developed automotive supply network, which is buoyed by the Georgetown plant.

The remaining reasons for Toyota’s decision are echoed by other area companies:

- a good geographical location—Evansville is roughly 230 miles away from the median center of the U.S. population, making it a logical distribution point;
- a good transportation network—Evansville is accessible by Interstates 64 and 164 and Route 41. It has four major railroads, two ports on the Ohio River and a new airport, which is serviced by five major
carriers;
• a good work force—Residents in the Evansville area are regarded as hard workers by current and prospective employers. Although there is no way to quantify this contention, some attribute it to the agricultural work ethic that prevails.

But if these factors are responsible for Evansville's recent economic success, why didn't they help out in the 1980s, when the area's (then) major employer, Whirlpool Corp., closed one of its two Evansville plants, Bristol-Myers Squibb moved its headquarters from Evansville to Princeton, N.J., and the unemployment rate was almost twice what it is now.

According to Robinson of Vision, it was only a matter of time before companies took notice of Evansville's natural assets. "We had been an overlooked market for some time," he says. "Other markets [nearby] were saturating."

Mike Hinton, president of Old National Bank in Evansville, says the apparent explosion in Evansville's economy of late is actually the result of a long trial and error period. "What appears to be sudden is not so sudden," Hinton says. The city began considering a riverboat casino, he says, only after it was unsuccessful in several other attempts to jumpstart the economy. "It just happened to hit at the same time," he explains.

Gale Blalock, economics professor at the University of Evansville, says that after losing focus for a decade or so, the area appears to have gotten back on track. In the aftermath of the Whirlpool layoffs, Blalock says, residents feared that the area—once an archetypical smokestack economy—would turn into a service-based economy. With the arrival of Toyota and AK Steel, he says, "We're back to making things, and I think we like that."

**Be Careful What You Wish For**

Now that the Evansville area is experiencing solid economic growth, the city's attention is on how to sustain it. Labor market concerns—specifically, the availability of enough workers who are trained in the skilled trades—have become critical. "Work force development is a major issue for this community, and it will bring everything else to a screeching halt if we can't supply it," says Hinton of Old National Bank.

While Robinson admits that Evansville lost a prospective company recently because of work force issues, he believes that people will move to Evansville from less-robust areas like southern Illinois once word about job availability spreads. He also recently hired a consulting firm to uncover the number of under-employed persons in the metro area. According to the firm's report, approximately one-third of the area's labor force is underemployed.

Air quality concerns are just as great, if not greater. Although Vanderburgh County is currently within the federal government's clean air standards for ozone, it is expected to fail the forthcoming July assessment, which is based on a new measuring system. That would put the area under special restrictions, meaning no new emissions and, thus, no new plants. In anticipation, the county is now looking into purchasing air pollution credits from Koch Label, a high-polluting plant that closed last year. The county could then "bank" these credits to help lower the level of air pollutants or sell/give them to another company interested in locating in the area.

A final factor that could hamper future economic growth is the lack of available office space. Kevin Eastridge, president of Tucker/Huber Realty Co., says that Evansville has lost good industrial prospects because there were no 50,000 to 200,000 square foot spaces available to house them, and interested companies had no time to build them. These constraints have not reined in Vision 2000's efforts any. The organization just joined a coalition of economic development agencies from eight other Indiana and Kentucky counties located along the Ohio River. The group, which calls itself the Mid-America Alliance (tagline: "From Here, You Can Service The
World”), recently debuted at the annual Society of Automotive Engineers convention in Detroit. The idea behind the coalition is simple, Robinson says: "A rising tide raises all ships."

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**Evansville, Ind., by the numbers**

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>288,735</td>
</tr>
<tr>
<td>Labor Force</td>
<td>156,000</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>3.6%</td>
</tr>
<tr>
<td>Per Capita Personal Income</td>
<td>$23,430</td>
</tr>
</tbody>
</table>

Top Five Employers

- St. Mary's Hospital: 4,000
- EW/Vanderburgh School Corp.: 3,025
- Deaconess Hospital: 2,700
- Whirlpool Corp.: 2,200
- Bristol-Myers Squibb: 2,100

NOTES: The Evansville MSA includes Posey, Vanderburgh and Warrick counties in Indiana and Henderson County in Kentucky. The new Toyota plant is located in Gibson County, Ind., outside of the Evansville MSA. Employment data are from January 1999 and are not seasonally adjusted. Income data are from 1996 and are in current dollars (not adjusted for inflation).

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**Endnotes**

1. According to the 1990 Census, the Evansville metropolitan statistical area includes Posey, Vanderburgh and Warrick counties in Indiana and Henderson County in Kentucky. Those living in the area, though, generally exclude Henderson from the list and include Gibson County, where the new Toyota plant is. Some believe these designations will be made official following the 2000 Census. [back to text]
2. ConAgra’s plans have been stymied somewhat by a controversy over the amount of air pollutants the plant would emit and the impact these pollutants would have on the area’s air quality. [back to text]
3. The company has a joint venture with General Motors in Fremont, Calif. [back to text]
4. The Princeton site was actually on the short list of locations considered when Georgetown was chosen. [back to text]
Is the Bloom off the Rose for Eighth District Farmers?
Kevin L. Kliesen

Sizable declines in crop and livestock prices during 1998 squeezed farmers' profit margins. And even though government projections point to further strains this year, a longer-term view of the farm sector’s prospects looks more upbeat. Indeed, several factors last year helped to cushion—and may continue to help cushion—temporary shortfalls on the income side of the ledger. Farm balance sheets remain solid; the macroeconomic environment is exceptional, with reasonably low and stable inflation; oil and interest expenses remain low; and the economic prospects for Asia—an important customer of U.S. food and fiber producers—appear to be improving, at least outside Japan.

What Goes Around Comes Around

With two very good years under their belts, farmers had little to complain about at the beginning of 1998. All told, U.S. net farm income (NFI) averaged $51.6 billion from 1996 to 1997—nearly 30 percent more than the $39.9 billion average from 1985 to 1995—making 1996–97 one of the most profitable two-year periods in recent memory.1 By the end of 1998, however, it was clear that farm income would fall far short of 1996–97 levels.

Because of lags in data reporting, the books for 1998 are not yet closed. According to the latest projections from the U.S. Department of Agriculture (USDA), however, NFI is expected to total $48 billion in 1998. If realized, this total would be nearly 3 percent below 1997’s income and a little more than 10 percent below the 1996 level. Nevertheless, 1998 NFI still would be more than 20 percent greater than the nearly $40 billion average NFI witnessed from 1985 to 1995.

To a large degree, last year’s downturn was a product of the good times that had prevailed over the previous two years. Specifically, the relatively high crop and livestock prices that existed for much of 1995 and 1996 spurred farmers to increase their production capacity as much as possible. The result, not surprisingly, was a substantial upswing in crop and livestock production that boosted 1998 farm inventories to their highest level in years.

This bulge in farm inventories severely pressured crop and livestock prices. The USDA’s index of crop prices received by farmers declined 11 percent between the fourth quarter of 1997 and the fourth quarter of 1998. Although the agency’s index of livestock prices remained unchanged over the same period—thanks to double-digit increases in dairy and poultry prices—cattle prices were off more than 12 percent, and hog prices declined by more than 50 percent.

To be fair, last year’s plunge in commodity prices was not entirely a supply-side phenomenon. There also was a marked reduction on the demand side. Specifically, recessionary conditions in several East Asian countries—many of which are important buyers of U.S. agricultural products—contributed to a 9 percent drop in U.S.
exports of agricultural commodities in 1998. In fact, agricultural exports were off for the second consecutive year, having fallen 6.3 percent in 1997, when the Asian crisis got under way.

The accompanying table shows pretty clearly why the USDA expects a modest drop in NFI in 1998. An 8.5 percent fall in crop cash receipts, combined with a nearly 4 percent drop in livestock receipts, caused the value of U.S. crop and livestock receipts to fall a little more than 6 percent from their 1997 level. The table also shows the value of 1998 crop and livestock receipts for each of the seven states in the Eighth Federal Reserve District. Although the state-level data generally are consistent with the national numbers, some states have fared worse. In particular, those states that produce abundant quantities of pork, corn and soybeans—commodities that have seen large price declines—experienced the largest drop in cash receipts. States that fall into this category include Arkansas, Illinois, Indiana and Missouri.

Table 1

<table>
<thead>
<tr>
<th>District State</th>
<th>Crops and Livestock</th>
<th>Crops</th>
<th>Livestock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas</td>
<td>$5.42</td>
<td>–7.6%</td>
<td>$2.20</td>
</tr>
<tr>
<td>Illinois</td>
<td>7.64</td>
<td>–17.6</td>
<td>6.23</td>
</tr>
<tr>
<td>Indiana</td>
<td>5.04</td>
<td>–8.4</td>
<td>3.37</td>
</tr>
<tr>
<td>Kentucky</td>
<td>3.62</td>
<td>–0.4</td>
<td>1.82</td>
</tr>
<tr>
<td>Mississippi</td>
<td>3.48</td>
<td>0.2</td>
<td>1.31</td>
</tr>
<tr>
<td>Missouri</td>
<td>4.53</td>
<td>–18.5</td>
<td>2.30</td>
</tr>
<tr>
<td>Tennessee</td>
<td>2.09</td>
<td>–9.0</td>
<td>1.16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$31.82</td>
<td>–10.6%</td>
<td>$18.38</td>
</tr>
<tr>
<td><strong>United States</strong></td>
<td>$195.51</td>
<td>–6.3%</td>
<td>$102.54</td>
</tr>
</tbody>
</table>

NOTE: Numbers may not add correctly because of rounding.

SOURCE: U.S. Department of Agriculture

Because the declines in cash receipts from crop and livestock production are running well beyond the roughly 3 percent drop in NFI that the USDA is projecting in 1998, there must be some offsetting factors helping to boost farm income. Two can be readily identified. The first is the $5.6 billion emergency aid legislation Congress passed last year. This funding is expected to boost government farm program payments—and thus NFI—to just under $13 billion in 1998. This level of government support is only $500 million less than its 1993 level, when program payments increased substantially following the Midwest flood.

The second factor that helped offset declines in crop and livestock receipts last year was a 2 percent drop in cash expenses. A good chunk of this benefit reflects reduced fuel and fertilizer costs, resulting from last year’s roughly 35 percent drop in crude oil prices. But farmers as a whole also benefited, paradoxically, from declining
crop prices, which lowered the feed costs of livestock producers and the seed costs of crop producers. In all, the USDA’s index of prices paid by farmers fell 4 percent last year.

Onset of a Farm Crisis?

The USDA expects NFI to total $44.6 billion this year, a little more than 7 percent below the 1998 projection, but still well above the 1985-95 average. The agency forecasts modest increases in livestock revenues that will be offset by a similar-size drop in crop receipts. In other words, the USDA projects that the current dollar value of farm cash receipts in 1999 will equal its 1998 level. Cash receipts are expected to decline slightly this year for dairy and poultry producers, as prices retreat from their elevated 1998 levels in response to an expected increase in the production of broilers, eggs and milk. This trend, in fact, is already occurring. At the same time, pork and beef production is expected to fall modestly this year, which will lend some support to prices. All told, cash receipts from red meat production should increase about 11 percent in 1999.

In contrast, crop cash receipts are expected to fall about 2.5 percent this year. Generally speaking, the USDA still anticipates that crop supplies worldwide will exceed demand, thereby keeping prices relatively low. This seems to be the situation in the United States, where stocks (inventories) of corn, soybeans and wheat rose 11 percent, 9 percent and 17 percent, respectively, in 1998. At the other extreme, cotton stocks are projected to fall about 21 percent this year. Reduced foreign demand, however, more than likely will offset most of this benefit. Accordingly, U.S. prices for most major crops are not expected to rebound from the relatively low levels that prevailed during much of 1998. Indeed, corn prices during the 1998/99 marketing year (Sept. 1, 1998, through Oct. 31, 1999) are forecast to fall to their lowest average level in 11 years.

On the demand side, the prospects for continued weak agricultural exports—due in large part to the ongoing difficulties in Asia and Japan, as well as the recent problems in Russia—will pressure U.S. crop prices. Slowing growth in Europe also will put a damper on foreign demand. Although few economists expect a dramatic improvement in the Japanese or Russian economic situations anytime soon—and it is still too early to say whether Europe’s largest economies are headed for recession—it appears that some Asian countries have turned the corner. That said, a return to the growth rates of the early 1990s (6 to 8 percent real GDP growth) probably is unrealistic.

Some factors have helped farmers weather these short-term difficulties. The continued improvement of farm balance sheets is foremost among these. On the asset side, the nominal value of farmland prices is expected to rise about 3 percent in 1999—a modest acceleration from the 2.3 percent gain seen in 1998. Meanwhile, total farm debt should decline about 0.75 percent, which will drop the 1999 debt-to-asset ratio to 14.8 percent—its lowest level since 1962, and well below its 1985 peak of almost 30 percent. From a longer-term perspective, recent technological gains and improved planting practices have led to substantial increases in productivity, which therefore trim per-unit production costs. Those farmers that can best capture these benefits will enjoy the greatest prospects for increased profitability.

When the books are closed, last year probably will turn out to have been a decent one for farmers. Although income prospects for 1999 perhaps are modestly worse, the difficulties currently experienced by the farm sector stem largely from short-term supply/demand imbalances and temporary foreign-based disturbances. These problems, in all likelihood, will reverse themselves in a manner similar with past experiences.

Daniel R. Steiner provided research assistance.

Endnotes

1. Net farm income is the sum of: 1) crop and livestock cash receipts; 2) government farm program payments; 3) farm-related income; and 4) noncash income (such as the value of food grown on the farm for home consumption), less production expenses, depreciation and real estate taxes. NFI also
includes an adjustment for changes in the value of farm inventories. An increase in crop prices, for example, will boost the value of farm inventories and, thus, NFI. Official USDA farm income numbers—both actual and forecast—are expressed in nominal, or current dollar, terms. [back to text]
2. See farm sector indicator charts for further detail on recent U.S. agricultural developments. [back to text]
4. About 90 percent of gross cash income is comprised of crop and livestock receipts. See Endnote 1 above. [back to text]
5. See USDA (1999). [back to text]

References

Kliesen, Kevin L. "How Susceptible is the United States to the Asian Flu?" The Regional Economist, Federal Reserve Bank of St. Louis (April 1998), pp. 11-12.


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National and District Overview: National and District Economies Strong. Will the Trend Continue?

Kevin L. Kliesen

The U.S. economy turned in another remarkable performance last year. Consumer spending registered its largest increase since 1983, business spending on capital goods—particularly computers and other equipment—posted its largest rise since 1984, and housing starts were the highest since 1987. It's little wonder, then, that—despite a sharp drop in U.S. exports—growth of real GDP in 1998 (4.3 percent) was the highest since 1984. Although detailed data on spending and production at the state level will not be available for about two years, it seems reasonable to conclude that growth in the District also remained strong.

On the inflation front, the consumer price index for all urban consumers (CPI-U) increased just 1.6 percent in 1998, roughly the same as in 1997. Certainly, the collapse in crude oil prices helped temper overall price increases both last year and into the first two months of 1999. More impressive, last year's benign increase in the CPI occurred against the backdrop of strong growth in nominal spending, which was fueled by rapid increase in money and credit.

Can the U.S. economy, which is already well into its record-breaking ninth year of expansion, register yet another year of rapid growth and low inflation? It appears so, based on an early reading of 1999 labor market data. U.S. nonfarm payroll employment, for example, rose an average of 246,000 in January and February, outstripping last year's 236,000 average monthly gain. Moreover, February's civilian unemployment rate remained below last year's 4.5 percent average, which was a 29-year low.

Eighth District labor market conditions through the first two months of 1999 also remain strong. On balance, civilian unemployment rates in the seven states dropped a bit farther in February from their year-end levels, which ranged from 2.7 percent in Missouri to 4.7 percent in Arkansas. The seven-state average was 3.9 percent, half a percentage point below the U.S. average. Growth of payroll employment in the District states, however, has been below that for the United States. Through February, year-over-year growth of nonfarm payroll employment in each of the seven states—ranging from 0.8 percent in Mississippi 2.1 percent in Indiana and Kentucky—was below the U.S. growth rate of 2.2 percent. Weaker job growth in the District states may not be an indication of slowing activity, however. With the demand for labor still strong, it may simply reflect the fact that firms face a smaller pool of workers with employable job skills, as evidenced by the lower average unemployment rate in the District states.

Employment data generally give the best indication of the newer-term strength in state-level aggregate demand. At the national level, reasonably timely and accurate expenditure-side data are available as another check. Some of these data point to continued, above-average growth for the United States. For example, real retail sales—paced by purchase of durable goods like automobiles and home furnishings—grew at an 11 percent annual rate over the first two months of 1999.
On the investment side, real residential construction remains on a tear. Total U.S. single-family housing starts averaged 1.8 million units during January/February, up more than 10 percent from the fourth-quarter 1998 rate. State-level housing permit data show similar strength, although nonresidential construction activity is significantly weaker. From November 1998 through January 1999, the current dollar value of nonresidential building contracts in the combined seven-state region averaged 13.2 percent less than the same period a year before. The national average was down 12.4 percent.

Meanwhile, reduced foreign demand has caused some industries to slow dramatically. Manufacturing and agriculture both have been buffeted by the roughly 33 percent increase in the (trade-weighted) value of the U.S. dollar that occurred from mid-1995 to late-1998. Magnifying this price effect is the sharp slowing in world economic growth that began in East Asia in mid-1997. Although the prospects for several Asian countries have improved, the outlook is more clouded for Latin American and continental Europe, where signs of weakness are becoming more prevalent.

Although manufacturing payrolls have been reduced almost 1.5 percent over the past year, other measures—such as those produced by the National Association of Purchasing Managers and the U.S. Census Bureau—suggest the manufacturing sector may have turned the corner at the start of this year. The agricultural sector, though, has the added difficulty of working off substantial inventory increases stemming from last year’s bumper crops and record meat production. (See the article "Is the Bloom Off the Rose for Eighth District Farmers?" in this issue for more analysis of developments in the agricultural sector in 1998 and the prospects for 1999.)

Turning to the near-term outlook, the Federal Reserve Bank of St. Louis (similar to other forecasters) expects real GDP growth of about 3 percent during the first half of 1999, with roughly 2.5 percent annual rate over the first half of the year, before accelerating to almost 3 percent growth over the second half of the year.

In view of this forecast, policy-makers should consider actions to protect the gains that have been achieved in recent years in the pursuit of price stability.

Daniel R. Steiner provided research assistance.

Endnotes

1. Equivalent state-level GDP data are published in the gross state product release issued each year by the Commerce Department’s Bureau of Economic Analysis. The most recent state-level data are from 1996. [back to text]

ABOUT THE AUTHOR

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Bubble, Bubble Toil and Trouble: Asset Prices and Market Speculation

Adam M. Zaretsky

In July of last year, the Dow Jones Industrial Average hit a then all-time high of 9,337. About eight weeks later, it had fallen to a low of 7,615 before again turning around. By the end of 1998, the DJIA had rebounded to 9,181, a 16 percent year-over-year rise that capped eight consecutive years of gains—a phenomenal record. This stretch of gains is the longest in the DJIA's 103-year history. Moreover, these have been strong gains, averaging about 17 percent a year since 1991.

This run-up in the market has left many investors wondering whether the good times will continue. Some can't even remember what a bear market is, believing it to be a myth of generations gone by. Indeed, the DJIA has not posted two consecutive years of annual decline since the late 1970s. In the 1980s, the DJIA declined in only 1981 and 1984. Even the stock market crash of 1987 failed to stop the DJIA from ending the year up more than 2 percent, despite losing almost 25 percent of its value in one day. In fact, the last annual decline was in 1990, and that year involved a military buildup in the Persian Gulf region and a recession. From any perspective, the U.S. stock market has shown amazing resilience over time (see Chart 1).
Chart 1

The Running of the Bulls

GROWTH IN THE DOW JONES INDUSTRIAL AVERAGE

Except for the 1930s (the peak of The Great Depression), the Dow Jones Industrial Average has grown each decade this century, sometimes robustly. The 1980s and 1990s have been exceptionally strong, with three quarters of a year still to go. This recent history has led many to wonder whether the surge will continue and whether the current economy is operating differently than preceding ones.

SOURCE: Dow Jones

The cause of this seemingly unending rise in stock prices is also of keen interest, especially to economists. Although several explanations have been proffered, the underlying controversy basically splits economists into two groups: those who believe the rise is justified by market fundamentals and those who do not. Clearly separating the two groups, though, is easier said than done, as much research has shown. 1 To illustrate the argument, some background is needed.

There Really Is No Free Lunch

The term "assets" encompasses a huge array of tangible items of value that provide current and future economic benefits. When discussing assets, ordinary investors usually are referring to equities (stocks) and real estate. And often, it's the asset's price that is most discussed. Pricing real estate is probably the more straightforward of the two, as anyone who has ever bought or sold a house knows. The price of the house depends on the value of the land it sits on and the cost of building the structure. The price also depends on market conditions at, or near, the time of sale: Real estate agents and appraisers often examine "comps"—recent sales of similar houses in the neighborhood—to help them gauge current market conditions. The same could be said of buying and selling automobiles: People check "book" (resale pricing guides) values and scan newspapers to see what similar vehicles are selling for.

Other economic factors can also influence housing prices, including local amenities, school system caliber and relative proximity to the business district, for example. Improvements in any of these factors will raise real

1Through year-end 1998

SOURCE: Dow Jones
estate prices. Price increases that can be attributed to factors like these are said to be caused by market fundamentals since, according to economic theory, they directly affect market supply and demand.

Pricing equities is more difficult because stocks are really just claims for shares in the equity of the issuing firm. In other words, they entitle their holders to ownership rights in the firm, which allow stockholders to share in the profits (and losses) of the firm. This sharing in the equity of the firm is an important concept because it is the determinant of the stock's value.

Because stockholders know they will share in the firm's current and future profits, and because the profits constitute the firm's income, the stockholders must have expectations about how large (or small) these profits will be. These expectations will greatly shape the stock's price. In fact, the value today of all the current and future profits expected from a share of stock—where future profits are reduced (or discounted) to a current value—is its market price. 2 This manner of calculating the share's price is known as its market fundamental. Any new information that becomes available about the company's current or future prospects for profits (or earnings) will change expectations and, hence, the stock price.

The interest rate used to reduce (or discount) the future profit stream can also affect the fundamental value of a stock. Future profits are discounted to current values because the stockholder has some expectation about how much income she will forfeit by purchasing this asset instead of another. The value of her next best investment alternative is known as her opportunity cost and is represented by the interest rate used to calculate the discounted value of the profit stream. Suppose, for example, that market interest rates increase. The potential income our investor is foregoing has now gone up—that certificate of deposit is paying more now than it was before, for instance. Accordingly, her opportunity cost has increased, implying that the interest rate she uses to discount the future profit stream is higher. This translates into a lower stock price because tomorrow's profits are worth less to her today.

Calculating asset values from market fundamentals is a method that's well-grounded in economic theory. The theory relies on two assumptions: 1) that individual agents act rationally; and 2) that markets operate efficiently. Agents acting rationally implies that stockholders will adjust their expectations in response to new information; markets operating efficiently implies that they will immediately incorporate new information into market prices. Suppose, for instance, that an investor learns a company's quarterly earnings were far below earlier projections. This news would lower her profit expectations, resulting in a lower current stock price. She has acted rationally. The investor would also know that the market would have already incorporated the news into the stock's price; that is, the market operated efficiently.

The concept of efficient markets also implies another principle, namely, that arbitrage opportunities do not exist. Arbitrage opportunities occur when assets that are perfect substitutes, or portfolios of assets that are perfect substitutes, are priced differently, which leads to riskless profit opportunities. For example, suppose a sandwich shop sells a bag of potato chips for 50 cents that a vending machine in the building across the street sells for 35 cents. An opportunistic person could buy bags of chips from the vending machine and sell them to sandwich shop patrons for, say, 45 cents each, pocketing the dime difference. This is an arbitrage opportunity.

The same situation can exist in asset markets. If a security has a perfect substitute—perhaps a portfolio of other securities that yields the same return—the two should be priced the same. If not, then an arbitrageur (the opportunistic person) will buy the lower-priced one and sell the higher-priced one (pocketing the profit) until the two prices are equalized. If markets are efficient, however, such opportunities will not exist. As recently stated in *The Economist*, "The deepest insight of financial economics is that markets are fairly 'efficient,' meaning that you can earn high returns only by taking big risks. There really is no free lunch."

**What Goes Up, Must Come Down?**
As many researchers have noted, asset prices are generally too volatile to be guided by fundamentals alone. In a 1981 article, for example, economist Robert Shiller argued that over the past century, U.S. stock prices have been five to 13 times more volatile than could be justified by new information about future dividends. Indeed, many economists believe that asset prices do move away from fundamentals sometimes. When this occurs, asset prices are believed to be driven by speculation, which is thought to cause speculative (or asset price) bubbles.

Examples of speculative bubbles abound in the literature, but two of the most famous are the stock market crashes of 1929 and 1987. Even today, some economists maintain that the strong performance of the U.S. stock market in recent years is being caused by a bubble, rather than changing fundamentals. Federal Reserve Chairman Alan Greenspan is arguably the most prominent of those contributing to the discussion. In a now-famous speech he made in December 1996, Greenspan mused, "But how do we know when irrational exuberance has unduly escalated asset values, which then become subject to unexpected and prolonged contractions...?" Rising markets immediately hesitated on this remark, mulled it over for a week or two, and then promptly disregarded it. The DJIA closed the year up 28 percent in 1996 and 20 percent in 1997.

It was up another 16 percent in 1998, even after Greenspan again suggested in September that the market likely contained a bubble. At that time, he commented that wavering confidence due to uncertainty about the future occasionally leads to "less-disciplined evaluations, which foster price volatility and, in some cases, what we term market bubbles—that is, asset values inflated more on the expectation that others will pay higher prices than on a knowledgeable judgment of true value."

Terminology can be loaded, though. The term "bubble" necessarily implies a negative outcome since it conjures up images of, well, bubbles, which inevitably burst. This image is exactly what some economists want to avoid because it foreshadows ominous consequences. To others, though, it's precisely the image they intend, and probably the reason the term was chosen. Economists Stephen LeRoy and Christian Gilles found that the term "bubble" originally applied to a stock of "unsound commercial undertakings, the shares of which were 'blown up by the air of great words.' The companies typically offered nothing for sale but the prospect of future dividends, sometimes not easily distinguished from hot air."

These words ring as true today as they did more than a hundred years ago, when they were first uttered. Referring to the recent run-up in the stock prices of several Internet-based companies, the Jan. 25, 1999 cover of U.S. News and World Report exclaimed: "The Internet Stock Bubble: When Will It Pop?" One company's stock, for example, which sold for $18 a share in its initial offering in July 1998, soared to $285 a share in mid-January before falling to about $140 a share about a week later. Similar stories for other Internet-based companies abound (see Chart 2). The common denominator is that all but one of the companies has yet to earn a profit. In other words, the fundamentals don't support the stock prices.
As Internet and computer/technology companies have taken off, so have their stock prices. The NASDAQ-100 Index, which includes many such companies, reflects this. This index is now more than five times its level in early 1994 and has recently pulled well ahead of the Dow Jones Industrial Average. Some believe, though, that this growth spurt will be short-lived if it's truly a bubble.

SOURCE: Dow Jones and NASDAQ

A sharp drop in an asset's price, though, doesn't always mean that a bubble burst. Some asset prices might already have a degree of speculation built into them. Today's price of oil, for instance, depends mildly on the chance that a petroleum substitute that would noticeably reduce the scarcity value of oil will be developed. A sharp decline in the price of oil could, therefore, be related to new information about the development of such an alternative. But without any such new information, economist Joseph Stiglitz has argued, it seems reasonable to interpret marked price declines as the breaking of a bubble.

**Smoke and Mirrors?**

In their effort to explain the existence of market bubbles, some economists have proposed that bubbles may, in fact, be rational. Suppose, for example, that investors discern that stock prices are diverging from their fundamentals and are instead being driven by factors unrelated to fundamentals. Investors thus realize that a bubble exists and that it will burst, but don't know when it will burst, only that it could burst today. Accordingly, investors are accepting a higher-than-normal risk by holding the stock another day and, consequently, demand a higher return—a rational response. That said, there is no compelling evidence in the literature that rational bubbles exist. Even if they do, however, there is still an important weakness in the theory: It doesn't explain what circumstances give rise to the bubbles in the first place, or what events lead to their eventual collapse.

More often than not, bubbles seem to form because a group psychology overcomes investors, who start making decisions based on a perceived frenzy, rather than changes in fundamentals. And when people start making investment decisions on "hot" tips or the prognostications of Wall Street gurus, something other than
fundamentals is likely driving the market. Economists Andrei Schleifer and Larry Summers refer to these types of traders as "noise" traders. At times, though, it's not a "hot" tip, but rather a "popular model" that drives these noise traders.

In a 1990 article, Robert Shiller detailed the results of regional surveys he and several colleagues conducted after the stock market crash of 1987, and during the real estate booms of the late 1980s. In almost all cases, respondents reported that they believed the markets were overpriced, and often said that they acted on intuition or gut feelings. When describing their behavior before the stock market crash, respondents said they reacted to what they believed other investors were likely to do. Thus, a "popular model"—doing what others are doing just because they are doing it—was guiding investors. For example, 75 percent of California respondents agreed with the statement: "Housing prices are booming. Unless I buy now, I won’t be able to afford a home later." (Housing prices increased roughly 20 percent between 1987 and 1988 in many California cities.) Only 28 percent of Milwaukee respondents agreed with the same statement. (Housing prices were unchanged there.) What seems to matter, then, is not whether "hot" markets are actually fads, but instead whether investors think they are fads, thus contradicting economists' assumption of rational agents. In such cases, prices are high today only because investors believe that prices will be high tomorrow, not because the fundamentals support these levels.

When confronted with such evidence, defenders of the rational agents hypothesis face an intriguing dilemma because they presume investors must be reacting to new revelations for such price movements to occur, even though investors themselves assert they are reacting to gut feelings. The defenders further argue that the revelations, while subtle and not easily discerned by economists or other outside observers, are recognized by market participants. Given the magnitude of price changes that occur in a given day, however, it seems unlikely that they could all be caused by reactions to new information. One is hard-pressed to imagine what news could have caused the stock market crash of 1987, for example.

Another interpretation of rationality has been proposed, however. In a 1993 article, economist David Romer suggested that market agents do not have complete information about fundamentals, but instead have only useful pieces of information. They would have a complete picture collectively, but have trouble reliably informing other investors about one's own tidbits. Romer therefore argues that, at times, the price changes themselves act as the messengers of this information. He writes: "Asset prices can change because initially the market does an imperfect job of revealing the relevant information possessed by different investors and because developments within the market can then somehow cause more of that information to be revealed." Thus, changes in investors' opinions about market conditions are rational to act upon because they, too, reveal objective information previously unknown to other market participants. In a nutshell, Romer's interpretation suggests that, when investors claim to be reacting to "intuition" or a "popular model," they are in fact acquiring important, objective information from others' behavior that is relevant to their own investment decisions.

The All-Elusive Proof

Despite numerous attempts to explain movements of asset prices, economists have had an extremely difficult time proving to a statistical certainty that sudden, sharp drops in asset prices are the upshot of bursting bubbles. Although there appears to be consensus that bubbles have existed, the controversy centers on whether market participants were aware of them at the time. Hindsight is admittedly 20/20, but it's the expectations and perceptions during an episode that ultimately drive investment decisions.

Part of the problem in testing data for evidence of bubbles is that the tests are not always specific enough, forcing researchers to carefully rule out alternative explanations of rapid price changes to prove that a bubble existed. This is exactly what economists Peter Rappoport and Eugene White did to assert that the crash of 1929 resulted from a bubble.6 The two even found evidence suggesting that, prior to the crash, market participants knew a collapse was in the offing. Other economists, like Robert Flood and Peter Garber,
that such evidence is suspect because the statistical tests used cannot distinguish between a bubble and a change in the way market fundamentals might affect asset prices.

The issue is not easily resolved. Perhaps what's most important, though, is that investors are aware of when fundamentals are no longer driving asset prices. Anecdotal evidence seems to suggest that currently they are not—at least in some market sectors. For researchers, though, anecdotes aren't enough. To those economists persuaded of their presence, bubbles challenge the foundations of economic theory because they contradict the underlying assumption of rational agents, upon which economic models are based. To those not persuaded of their presence, market phenomena like the Great Depression, the stock market crash of October 1987, and other apparent bubbles demand and await persuasive explanations.

Gilberto Espinoza provided research assistance.

Endnotes

1. Much of this research is focused on the possible causes of stock and real estate market crashes. The volume edited by Eugene White (1996) contains an excellent collection of articles on this issue. [back to text]
2. Because most people would rather receive a dollar today than tomorrow, tomorrow's dollar is not worth as much to them today. In fact, rather than wait for the dollar tomorrow, they might be willing to accept instead, say, 90 cents today. The 90 cents is known as the current (or discounted) value of tomorrow's dollar; the 10 percent given up is known as the discount rate. [back to text]
3. There is another branch of the literature that argues these crashes and other supposed bubbles were not bubbles at all, but simply the result of investors' rational reactions to news about changes in market fundamentals at the time. The volume edited by Robert Flood and Peter Garber contains several articles supporting this view. [back to text]
4. Shareholders, though, clearly have very high expectations for the firms' profit prospects. [back to text]
5. See Weller (1992) for a more detailed (and technical) explanation of rational bubbles. [back to text]
6. The articles by Rappoport and White can be found in White's edited volume. [back to text]

References


Greenspan, Alan. "Question: Is There a New Economy?" remarks at the University of California, Berkeley (September 4, 1998).


'Voting with Your Feet' and Metro-Area Livability
Howard J. Wall

Most people are familiar with at least one of the publications that rank metro areas according to their livability. The best known of these are the Places Rated Almanac, which comes out with a new ranking every few years, and Money magazine's annual ranking of "The Best Places to Live in America." The rankings never fail to create controversy, eliciting gleeful cheers and breast-beating from residents of high-ranked areas, and cries of bias and ignorance from residents of low-ranked ones.

The Places Rated and Money rankings are based on data for 300 or more metro areas, using variables thought to be important indicators of livability. These variables measure factors which include economic conditions, climate, school quality, health care, cost of living, public transportation, and arts and leisure facilities. The variables are then aggregated to generate a single number for each metro area. The numbers for all the metro areas are then sorted to produce the livability ranking.

Although the Places Rated and Money rankings consider the same general factors, their results are almost entirely uncorrelated. In the 1997 rankings, for example, there was no overlap whatsoever between Money's top 10 and Places Rated's top 10. In fact, only one of Money's top 10 made Places Rated's top 75, and only one of Places Rated's top 10 made Money's top 25. Why are the rankings so uncorrelated when they are based on the same factors?

Can Livability Be Measured?

The fact that the two rankings are so different, despite being based on the same factors, should make one wary. A look at the list of variables used to construct them should make one even more concerned. For example, does the typical American's list of desirable factors include graduate student enrollment at local universities, the number of opera houses and the number of professional sports teams, all of which are included in the Places Rated index? What about factors, such as natural beauty and the "niceness" of residents, which have been excluded from the Places Rated and Money indices because they cannot be quantified?

Even if the variables are acceptable to the typical person, the method used to aggregate them into a livability index is not likely to be useful. This is because any aggregation of the variables requires strong assumptions about their relative value in terms of livability. In other words, the constructor of the index must assume a particular utility function to transform the bundle of goods and services that a person consumes into a measurable level of satisfaction, or utility. This makes the ranking completely subjective because one person might put more weight on the availability of cultural amenities and public parks, whereas another person might care more about the quality of local schools and average commuting time.

The choice of a utility function is crucial, and it is where the two indices fundamentally differ. The constructors of the Places Rated ranking simply aggregate the variables without justifying the utility function they imposed. In contrast, Money uses the results of a readership survey to determine the relative importance of each
variable. Because of these different methods, the two indices will naturally differ. It also means that they are not likely to be accurate reflections of the typical person’s preferences. Instead, they will tend to reflect the preferences of the constructors, or of the particular subset of the population surveyed.

**Voting with Your Feet**

Given the problems inherent in livability indices, does it make sense to rank places according to livability? There is an alternative method based on the principle of *revealed preference* that avoids many of these problems. This principle is based on the notion that people make rational consumption choices in order to attain the highest possible level of satisfaction or utility. Therefore, if two alternative bundles of goods are both affordable, the one chosen must provide the higher level of utility. The actual bundle chosen is *revealed preferred* to all other affordable bundles.

In terms of migration decisions, the principle of revealed preference says that a person’s movement from one metro area to another reveals that she prefers the new metro area to her previous one. When people move from one place to another, they “vote with their feet” about the livability of the two metro areas.

Using the principle of revealed preference, the alternative livability ranking works backwards. It starts from the decisions that people actually make about where to live and uses the information these decisions provide to reveal peoples’ preferences. This *rational index* collects the votes to provide a livability ranking based on the preferences of the population. In contrast to other livability indices, the rational index does not require the constructor to select the set of variables, or to choose a utility function. Because of this, the rational index can be construed as more objective than the others.

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**Table 1**

**The 10 Most-Livable and Least-Livable Large Metro Areas:**

<table>
<thead>
<tr>
<th>Rational Rank</th>
<th>Metro Area</th>
<th>Rational Rank</th>
<th>Metro Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Las Vegas, Nev.</td>
<td>50</td>
<td>Chicago, Ill.</td>
</tr>
<tr>
<td>2</td>
<td>Atlanta, Ga.</td>
<td>51</td>
<td>Bergen-Passaic, N.J.</td>
</tr>
<tr>
<td>3</td>
<td>Phoenix, Ariz.</td>
<td>52</td>
<td>Hartford, Conn.</td>
</tr>
<tr>
<td>4</td>
<td>Austin, Texas</td>
<td>53</td>
<td>San Francisco, Calif.</td>
</tr>
<tr>
<td>5</td>
<td>Raleigh-Durham, N.C.</td>
<td>54</td>
<td>Newark, N.J.</td>
</tr>
<tr>
<td>6</td>
<td>West Palm Beach, Fla.</td>
<td>55</td>
<td>Orange County, Calif.</td>
</tr>
<tr>
<td>7</td>
<td>Orlando, Fla.</td>
<td>56</td>
<td>Miami, Fla.</td>
</tr>
<tr>
<td>8</td>
<td>Fort Lauderdale, Fla.</td>
<td>57</td>
<td>San Jose, Calif.</td>
</tr>
<tr>
<td>9</td>
<td>Portland, Ore.</td>
<td>58</td>
<td>New York, N.Y.</td>
</tr>
<tr>
<td>10</td>
<td>Charlotte, N.C.</td>
<td>59</td>
<td>Los Angeles, Calif.</td>
</tr>
</tbody>
</table>

*NOTE:* The rational index ranks metro areas according to the tendency of Americans to choose to migrate into them.

*SOURCE:* Author’s calculations based on Table B-1, U.S. Census Bureau (1998)
Constructing the most comprehensive version of the rational index requires knowing the number of people that migrated from each metro area to every other metro area. This reveals which of the other areas are more livable and which are less livable. All of these comparisons could then be collected to construct a comprehensive ranking of the metro areas. However, this would require a tremendous amount of data on migration, not to mention a lot of work. Fortunately, though, there is a shortcut that yields a roughly comparable ranking.

If livability is determined by the "vote" of the typical person, it can be constructed using metro area rates of migration. For example, consider two metro areas, A and B. Assume that the net rate of in-migration from the rest of the United States into Metro Area A is higher than that for Metro Area B. This means that, on average, people in the United States prefer Metro Area A to Metro Area B. According to this shortcut rational ranking, metro areas are ranked according to their domestic in-migration rates.

Real World Results

To illustrate the rational livability ranking, consider the 59 U.S. metro areas whose populations exceeded 1 million in 1997. First, take the total population change over the period 1990-97 and account for the parts of the change that are not due to migration from elsewhere in the country. To do this, simply subtract from the total population change the natural population change (births minus deaths) and the net number of international migrants. The net number of domestic migrants is what remains. Divide this number by the initial population to obtain the rate of domestic in-migration.

According to these calculations, the most-livable metro area in the United States for the period 1990-97 was Las Vegas, followed by Atlanta and Phoenix. The net domestic migration rate for Las Vegas was an astounding 38 percent, which is more than double the rates for Atlanta and Phoenix. Except for Portland, all of the 10 most-livable cities are in the Sun Belt. At the other extreme, Los Angeles and New York are ranked as the two least-livable metro areas, as revealed by the large number of people choosing to move elsewhere. Four of the bottom 10 are in California, and three are in the New York/Northern New Jersey combined metro area.

The 1997 Places Rated and Money indices can be used to rank these 59 large metro areas. Only two of Places Rated's top 10 are also in the rational top 10, although four of Money's top 10 are. Interestingly, Las Vegas was ranked dead last by Places Rated. Also, Places Rated's top metro area, Orange County, was fifth from the bottom in the rational ranking.

The rational ranking had slightly more in common with Money's ranking than with Places Rated's. The rational top 10 had an average rank of 31 in Places Rated and 19 in Money. The rational's bottom 10 had an average rank of 33 in Places Rated and 27 in Money.

This illustration shows that even the simplest economic principle can have powerful applications. Here, the principle of revealed preference provided all of the information needed to show which places people think are the most livable. Once the ranking of metro areas is known, the next step is to find out which factors prevail in the high-ranked areas. Hopefully, knowledge of these factors can then guide governments to make informed policy decisions.

Eran Segev provided research assistance.

Endnotes

1. Starting with its 1998 ranking, Money began using a representative sample of the population. Also, its web site ( www.pathfinder.com/money/bestplaces/) allows visitors to produce personalized rankings.
Unfortunately, though, beginning in 1998 the magazine ranks metro areas within regions only, and no longer provides a single national ranking. [back to text]

2. The rational index is outlined in detail in Douglas and Wall (1993) and Douglas (1997). [back to text]

3. The data used to rank the livability of these metro areas from 1990-97 are in Table B-1 of U.S. Census Bureau (1998). [back to text]

4. The ranking of all 59 metro areas is available via The Regional Economist's web site (www.stls.frb.org/publication/re/1999/b/).[back to text]

References


## Commercial Bank Performance Ratios

### U.S., District and State

<table>
<thead>
<tr>
<th></th>
<th>All United States</th>
<th>United States Less Than $15 Billion</th>
<th>District</th>
<th>Arkansas</th>
<th>Illinois</th>
<th>Indiana</th>
<th>Kentucky</th>
<th>Mississippi</th>
<th>Missouri</th>
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<tr>
<td><strong>Return on Average Assets</strong>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th quarter 1998</td>
<td>1.23%</td>
<td>1.49%</td>
<td>1.37%</td>
<td>1.23%</td>
<td>1.08%</td>
<td>1.38%</td>
<td>1.32%</td>
<td>1.29%</td>
<td>1.49%</td>
<td>1.47%</td>
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<tr>
<td>3rd quarter 1998</td>
<td>1.24%</td>
<td>1.49%</td>
<td>1.35%</td>
<td>1.37%</td>
<td>1.20%</td>
<td>1.34%</td>
<td>1.34%</td>
<td>1.32%</td>
<td>1.21%</td>
<td>1.63%</td>
</tr>
<tr>
<td>4th quarter 1997</td>
<td>1.30%</td>
<td>1.40%</td>
<td>1.34%</td>
<td>1.29%</td>
<td>1.27%</td>
<td>1.33%</td>
<td>1.25%</td>
<td>1.41%</td>
<td>1.30%</td>
<td>1.59%</td>
</tr>
</tbody>
</table>

| **Return on Average Equity*** |                |                                     |          |          |          |         |          |            |          |           |
| 4th quarter 1998        | 14.52%           | 15.35%                             | 15.49%   | 12.33%   | 10.04%   | 14.70%  | 15.99%   | 13.24%     | 17.29%   | 18.10%    |
| 3rd quarter 1998        | 14.55%           | 15.34%                             | 15.38%   | 11.61%   | 14.96%   | 16.18%  | 16.32%   | 14.32%     | 14.15%   | 19.68%    |
| 4th quarter 1997        | 15.65%           | 14.92%                             | 15.16%   | 13.65%   | 14.72%   | 14.73%  | 14.61%   | 14.70%     | 14.87%   | 18.52%    |

| **Net Interest Margin*** |                |                                     |          |          |          |         |          |            |          |           |
| 4th quarter 1998        | 4.10%            | 4.90%                               | 4.55%    | 4.28%    | 4.09%    | 4.89%   | 4.15%    | 4.93%      | 4.29%    | 5.32%     |
| 3rd quarter 1998        | 4.05%            | 4.80%                               | 4.29%    | 4.29%    | 4.44%    | 4.29%   | 4.21%    | 4.63%      | 3.88%    | 4.81%     |
| 4th quarter 1997        | 4.34%            | 4.94%                               | 4.53%    | 4.46%    | 4.56%    | 4.34%   | 4.45%    | 4.97%      | 4.59%    | 4.46%     |

| **Nonperforming Loans** | Total Loans |          |          |          |          |         |          |            |          |           |
| 4th quarter 1998        | 0.96%          | 1.00%    | 0.90%    | 1.06%    | 1.07%    | 0.52%   | 0.61%    | 0.60%      | 0.80%    | 1.20%     |
| 3rd quarter 1998        | 0.94%          | 1.02%    | 0.91%    | 1.02%    | 0.96%    | 0.60%   | 0.69%    | 0.59%      | 0.88%    | 1.18%     |
| 4th quarter 1997        | 0.96%          | 1.00%    | 0.97%    | 0.94%    | 1.09%    | 0.55%   | 0.65%    | 0.65%      | 0.85%    | 1.71%     |

| **Net Loan Losses** | Total Loans |          |          |          |          |         |          |            |          |           |
| 4th quarter 1998        | 0.68%          | 0.82%    | 0.39%    | 0.25%    | 0.25%    | 0.28%   | 0.36%    | 0.34%      | 0.16%    | 0.79%     |
| 3rd quarter 1998        | 0.66%          | 0.80%    | 0.33%    | 0.22%    | 0.29%    | 0.21%   | 0.37%    | 0.28%      | 0.22%    | 0.55%     |
| 4th quarter 1997        | 0.66%          | 0.84%    | 0.39%    | 0.25%    | 0.50%    | 0.19%   | 0.37%    | 0.31%      | 0.32%    | 0.62%     |

| **Loan Loss Reserve** | Total Loans |          |          |          |          |         |          |            |          |           |
| 4th quarter 1998        | 1.76%          | 1.79%    | 1.34%    | 1.25%    | 1.32%    | 1.30%   | 1.35%    | 1.43%      | 1.37%    | 1.35%     |
| 3rd quarter 1998        | 1.82%          | 1.85%    | 1.40%    | 1.29%    | 1.37%    | 1.26%   | 1.37%    | 1.42%      | 1.42%    | 1.51%     |
| 4th quarter 1997        | 1.83%          | 1.82%    | 1.36%    | 1.30%    | 1.25%    | 1.41%   | 1.46%    | 1.43%      | 1.51%    |           |

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1 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.
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

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Annualized data
Regional Economic Indicators

Nonfarm Employment Growth

YEAR-OVER-YEAR PERCENT CHANGE

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<thead>
<tr>
<th>Industry</th>
<th>Fourth Quarter 1998</th>
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<tbody>
<tr>
<td></td>
<td>TOTAL</td>
</tr>
<tr>
<td>United States</td>
<td>2.3%</td>
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<tr>
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<tr>
<td>Kentucky</td>
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<tr>
<td>Missouri</td>
<td>1.9%</td>
</tr>
<tr>
<td>Tennessee</td>
<td>1.9%</td>
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</table>

¹ Construction ² Transportation and Public Utilities ³ Finance, Insurance and Real Estate

Unemployment Rates

PERCENT

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
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<td>4.5%</td>
<td>4.7%</td>
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<tr>
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<td>5.0%</td>
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<tr>
<td>Illinois</td>
<td>4.3%</td>
<td>4.4%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Indiana</td>
<td>2.9%</td>
<td>2.8%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Kentucky</td>
<td>4.2%</td>
<td>4.2%</td>
<td>4.9%</td>
</tr>
<tr>
<td>Mississippi</td>
<td>5.3%</td>
<td>5.4%</td>
<td>5.4%</td>
</tr>
<tr>
<td>Missouri</td>
<td>3.5%</td>
<td>4.0%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Tennessee</td>
<td>4.1%</td>
<td>4.0%</td>
<td>5.2%</td>
</tr>
</tbody>
</table>

Eighth District Payroll

Employment by Industry—1998

Unemployment Rates

FOURTH QUARTER

YEAR-OVER-YEAR PERCENT CHANGE IN YEAR-TO-DATE LEVELS

<table>
<thead>
<tr>
<th>Region</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>11.2%</td>
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<tr>
<td>Arkansas</td>
<td>10.6%</td>
</tr>
<tr>
<td>Illinois</td>
<td>12.0%</td>
</tr>
<tr>
<td>Indiana</td>
<td>15.0%</td>
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<tr>
<td>Kentucky</td>
<td>25.3%</td>
</tr>
<tr>
<td>Mississippi</td>
<td>5.1%</td>
</tr>
<tr>
<td>Missouri</td>
<td>0.2%</td>
</tr>
<tr>
<td>Tennessee</td>
<td>-13.5%</td>
</tr>
</tbody>
</table>

THIRD QUARTER

REAL PERSONAL INCOME

YEAR-OVER-YEAR PERCENT CHANGE

All data are seasonally adjusted.
Major Macroeconomic Indicators

Real GDP Growth

NOTE: Each bar is a one-quarter growth rate (annualized); the green line is the 10-year growth rate.

Civilian Unemployment Rate

NOTE: Data are aggregated over the past 12 months.

Consumer Price Inflation

NOTE: Percent change from a year ago

Interest Rates

NOTE: Except for fed funds target, which is end-of-period, data are monthly averages of daily data.

Farm Sector Indicators

U.S. Agricultural Trade

NOTE: Data are aggregated over the past 12 months.

Farming Cash Receipts

NOTE: Data are aggregated over the past 12 months.

U.S. Crop and Livestock Prices

INDEX 1990-92=100