THE REGIONAL ECONOMIST
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THE FEDERAL RESERVE BANK OF ST. LOUIS

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Bans Don't Protect Health of Economy

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Please direct your comments to: Michael R. Pakko at 314-444-8564 or by e-mail at pakko@stls.frb.org, or to Howard J. Wall at 314-444-8533 or by e-mail at wall@stls.frb.org. You can also write to either one at the address below. Submission of a letter to the editor gives us the right to post it to our web site and/or publish it in *The Regional Economist* unless the writer states otherwise. We reserve the right to edit letters for clarity and length.

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Co-Editors
Michael R. Pakko, Howard J. Wall

Managing Editor
Al Stamborski

Art Director
Joni Williams

Contributing Artists
Mark Kunzelmann, Becca Marshall

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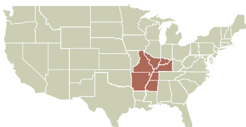

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Bailing Out the Markets Is Not a Goal of Fed Policy

In some circles today, there is talk that the Fed is, once again, bailing out greedy investors. This time, the Fed is supposedly running to the aid of those who bought securities backed by subprime mortgages, which, of course, have plummeted in value as homebuyers have defaulted on the mortgages.

There's some truth to this argument, but it is important to understand the circumstances under which the Fed responds to market distress. Actions by the Fed in the wake of the subprime mess have helped out these investors by buoying flagging prices on securities in general. However, bailing out those with deep pockets, or nearly bankrupt pockets for that matter, has never been the goal of the Fed, nor is it this time around.

First, let's be clear that the Fed never bails out any party—even banks—with capital or any sort of guarantee. Instead, the Fed has only monetary policy tools—mainly raising and lowering interest rate targets, and making sure money is available to lend—to "bail out" the economy.

Those last two words are key: the economy. The Fed's job is to stabilize the economy—"bail out" with its pejorative connotations is altogether the wrong term. Whenever the Fed steps in to deal with financial instability, its intent is to stabilize the overall economy, not just one segment of it, such as Wall Street. I reviewed all stock market declines of at least 10 percent going back to 1950, along with actions by the Federal Open Market Committee over the same span. The data prove that the FOMC has not lowered interest rates in systematic fashion at the time of stock market declines. (See our web site for details.)

To those who say that the parties responsible for this subprime mess need to be taught a lesson, do not worry. The Fed's monetary policy will not shield from loss those who invest in failed strategies. The Fed is less concerned about whether investors can sell their subprime paper at 30 or 70 cents on the dollar than whether they can find a buyer at all. For more than three months, the market in subprime paper has been almost nonexistent. An active financial market is central to economic growth; it is that market process, not prices in financial markets per se, that the Fed cares about.

"Whenever the Fed steps in to deal with financial instability, its intent is to stabilize the overall economy, not just one segment of it, such as Wall Street."

Others are worrying that if subprime investors benefit from Fed monetary policy, then the Fed is creating a moral hazard—encouraging others to take the risks because they think that the Fed will, at some point, step in to stanch the bleeding. But these people don't realize that these "bailouts" are only occurring when the Fed is concerned that a financial upset could turn into an overall economic crisis. Fed policy does not protect imprudent lenders, such as those now holding subprime loans gone bad.

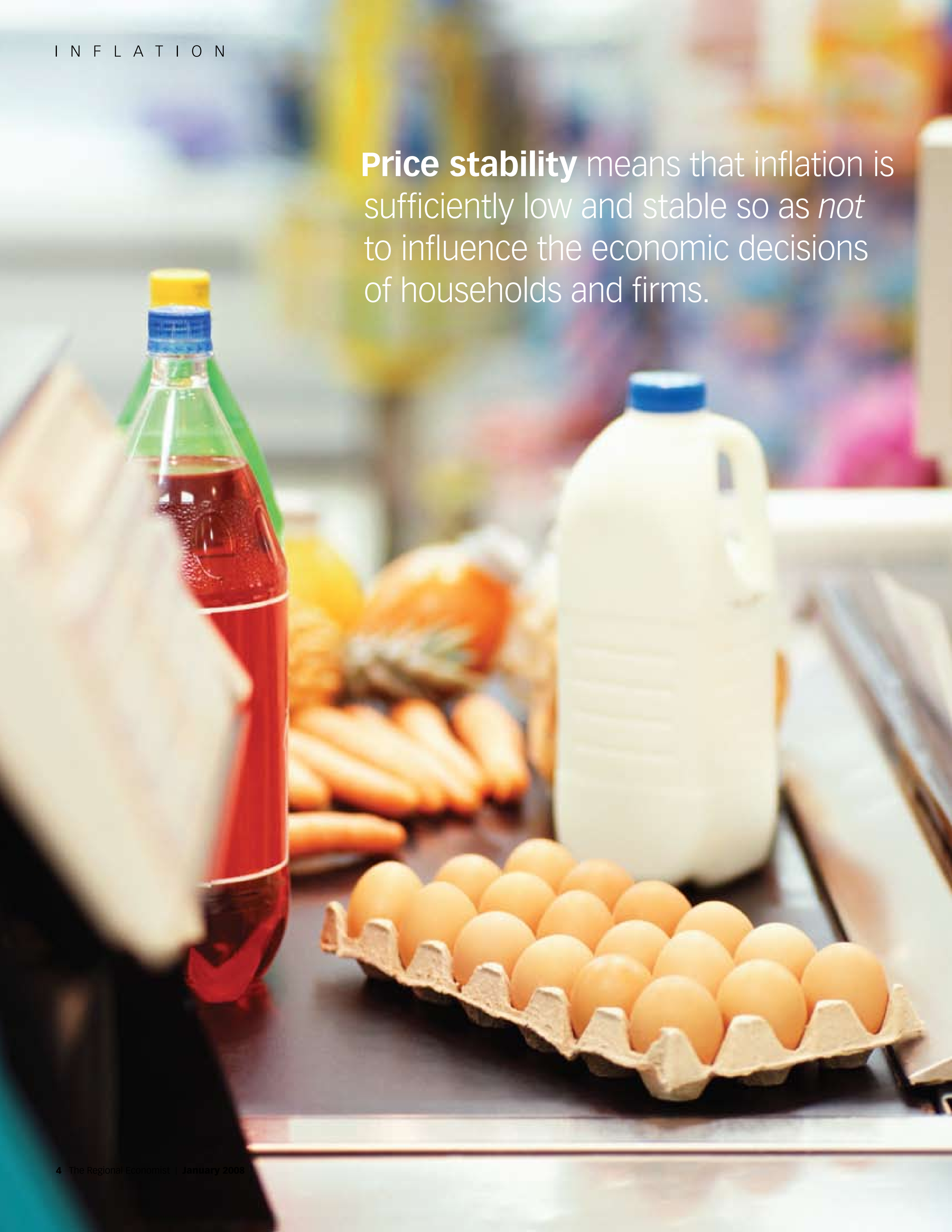
Knowing that the Fed will step in to deal with true financial shocks gives everyone, including investors, the confidence to take risks at the microeconomic level, risks that lead to innovation, which, in turns, leads to growth for the economy as a whole.

For those who still think the Fed should never step in when financial markets decline, consider this extreme case (which I offer as a provocation to promote careful analysis and not as an example directly relevant to today's circumstances):

Fact: The U.S. stock market between its peak in 1929 and its trough in 1932 declined by 85 percent. Question 1: If the Fed had followed a more expansionary policy in 1930-32, sufficient to avoid the Great Depression, would the stock market have declined so much? Question 2: Assuming that a more expansionary monetary policy would have supported the stock market to some degree in 1930-32, would it be accurate to say that the Fed had "bailed out" equity investors and created moral hazard by doing so?

Does anyone doubt that it would have been a good idea to avoid the Great Depression? Ω

William Poole



Price stability means that inflation is sufficiently low and stable so as *not* to influence the economic decisions of households and firms.

Stable Prices, Stable Economy

Keeping Inflation in Check Must Be No. 1 Goal of Monetary Policymakers

By William Poole and David C. Wheelock

The Federal Reserve Act as amended in 1977 directs the Federal Reserve to pursue monetary policy to achieve the goals of "maximum employment, stable prices and moderate long-term interest rates." The Federal Reserve and all central banks have also long been expected to promote financial stability. Specifically, central banks have been expected since the 19th century to serve as lender of last resort to the banking system by providing liquidity to prevent financial crises and disruptions in the payments system.

Are the goals of maximum employment, stable prices, moderate interest rates and financial stability compatible with one another? Many people believe that they are not. Conventional wisdom holds that if monetary policy is too focused on controlling inflation, for example, then employment and output growth will likely fall below their potential, and financial markets will be less stable than they otherwise could be.

The idea of stepping on the monetary gas pedal to boost employment and output growth, or to protect against financial losses, may seem appealing. Indeed, until recently, many economists believed that moderate inflation makes the economy perform better. However, a growing number of economists today believe that monetary authorities can best promote financial stability and economic growth by making a firm commitment to maintaining price stability. There is little evidence that expansionary monetary policy can increase employment or economic growth, except perhaps for brief periods, and there is no evidence that inflation fosters financial stability. On the contrary, history is full of examples of how an unstable price level can wreck a financial system and harm the economy.

This article is based on a speech given by William Poole at the Universidad Adolfo Ibáñez, Santiago, Chile, March 5, 2007, at a conference organized by the Global Interdependence Center. The views expressed do not necessarily reflect official positions of the Federal Reserve System.

Two Views about Inflation

On the subject of inflation, most economists fall into one of two camps. One camp believes that moderate inflation helps promote full employment, economic growth and stable financial markets. Inflation is seen as enabling labor and product markets to function more smoothly in the face of shocks that could otherwise reduce employment or output. Some in this camp believe that central banks can boost employment and output growth more or less permanently by allowing the inflation rate to rise.

The first camp had its heyday in the 1960s. At that time, the data suggested the existence of an exploitable tradeoff between inflation and unemployment—the so-called Phillips Curve, named after the economist A.W. Phillips, who first documented that the unemployment rate and changes in wage rates moved in opposite directions in the United Kingdom.

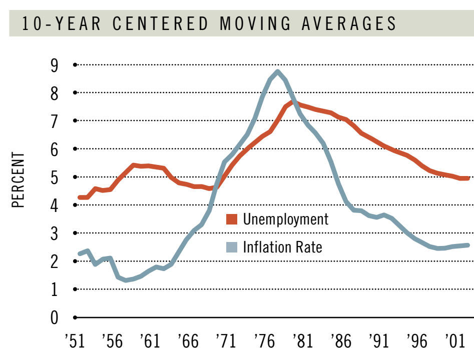
The Phillips Curve made monetary policymaking seem beguilingly simple. Choose a little more inflation, and unemployment would fall; accept somewhat higher unemployment, on the other hand, and inflation would be a bit lower. Policymaking was viewed as simply a matter of selecting from among a menu of inflation and unemployment options.

When inflation is low and reasonably stable, people do not waste resources attempting to protect themselves from inflation. They save and invest with confidence that the value of money will be stable over time.

FIGURE 1

U.S. Inflation and Unemployment Rates

10-YEAR CENTERED MOVING AVERAGES



SOURCE: Bureau of Labor Statistics

At one time, some economists, as well as others, thought that a bit of inflation would be good for the economy, raising employment in particular. The data show the opposite cause and effect, however. The figure plots the civilian unemployment rate and the inflation rate, which is calculated as the annual percentage change in the all-items Consumer Price Index.

Several influential economists argued that this menu could be improved upon if policymakers were willing to discard their old-fashioned obsession with price stability. Allow some inflation, these economists argued, and the labor market would operate more efficiently, employment would rise and the economy would grow faster.

There were some notable dissents from this view. Milton Friedman and Edmund Phelps, both of whom later were awarded the Nobel Prize, argued that inflationary policies do not boost employment or economic growth in the long run. Instead, attempts to use monetary policy to engineer higher employment or faster growth result in ever higher inflation but no more employment or growth than was possible with a stable price level, they said.

Events also put a dent in the arguments of the first camp. Inflation began to rise in the mid-1960s, and it climbed still higher and became more volatile in the 1970s. Higher inflation did not bring about higher employment or faster growth, however. On the contrary, as shown in Figure 1, the unemployment rate was higher on average during the 1970s than it had been during the 1950s and 1960s. The unemployment rate fell in the 1980s and 1990s, albeit slowly, as inflation came down.

The Benefits of Price Stability

Under the weight of persuasive reasoning and empirical evidence, many economists abandoned the first camp and joined a growing second camp of economists, who believe that central banks can best promote high employment and economic growth, as well as financial stability, by focusing on the goal of price stability.

"Price stability" is usually interpreted to mean a low and stable rate of inflation maintained over an extended period of time. In our view, the ideal rate of inflation is zero, properly measured. Biases in price indexes imply that, in practice, price stability will likely be consistent with a small positive rate of measured inflation, say 0.5 to 1 percent, depending on the specific price index one looks at.[1] Further, price stability does not mean that the price index is constant. Monetary policy could never eliminate every wiggle in the inflation rate; nor should policymakers try to do so.

Price stability means that inflation is sufficiently low and stable so as *not* to influence the economic decisions of households and firms. When inflation is low and reasonably stable, people do not waste resources attempting to protect themselves from inflation. They save and invest with confidence that the value of money will be stable over time.

In a market economy, consumers and firms base their consumption and investment decisions on information derived from prices, including asset prices and returns. Efficient allocation of economic resources depends on the clarity of signals coming from the price system, as well as the clarity of signals from governments and central banks about economic policy.

Uncertainty about the price level makes it difficult for firms and households to determine whether changes in individual prices reflect fundamental shifts in supply and demand or merely changes in the overall rate of inflation. By eliminating this uncertainty, a monetary policy that maintains long-run price stability eliminates a potential drag on the efficient allocation of resources and, hence, on economic growth.

Long-run price stability contributes to financial stability in a similar fashion. An unstable price level can lead to bad forecasts of real returns to investment projects and, hence, to unprofitable borrowing and lending decisions. Unexpected bouts of inflation, for example, tend to encourage optimistic forecasts of real returns. Errors in distinguishing nominal and real returns result in misallocation of resources and eventually to financial distress that would not occur if the price level was stable. Business decisions based on expectations of continuing inflation often turn out badly when inflation falls, resulting in higher default rates and business failures. Outright deflation is particularly notorious because a falling price level increases the real cost of servicing outstanding debt.

Price stability is the most powerful tool the central bank has to promote economic growth, high employment and financial stability. Price stability also enables monetary authorities to pursue secondary objectives, including the reduction of fluctuations in real economic activity and the management of financial and/or liquidity crises. These

Hyperinflations Make the Great Inflation Seem like a Walk in the Park

DESMOND KWANDE/AFP/GETTY IMAGES

Zimbabwe's inflation, the highest in the world, stood at 3,700 percent last spring. The rate has continued to skyrocket—to the point where many say it's impossible to calculate.

Many countries have seen the deleterious effects of price level instability, and some have had far worse experiences than the United States has had. Many lesser developed countries have experienced extreme inflation at one time or another, often with disastrous consequences for financial stability and economic growth. Perhaps the most obvious examples of the destructive force of inflation are hyperinflations, such as those occurring in Germany after World War I, in various eastern European countries after World War II and in Latin America and Africa more recently. In every case, hyperinflation was associated with collapsing financial markets and a wrecked economy.[2]

Countries that have very high rates of inflation typically have weak institutions, including poor enforcement of contracts and property rights, and inefficient tax systems (and consequently large budget deficits). Many countries have made efforts to improve their political and economic institutions, and these countries are now experiencing lower inflation and higher economic growth. Several have made price stability the paramount objective of monetary policy and have adopted formal inflation targets as a way of anchoring inflation expectations.

The advantage of announcing a quantitative target for inflation, especially when coupled with institutional reforms, such as increased operating independence for central banks, is that it reduces uncertainty about the long-term inflation rate. This, in turn, reduces inflation risk premiums in interest rates and promotes long-term contracting and investment. These benefits can be especially important for countries that have had a history of high or unstable inflation, though presumably any country could benefit from announcing and sticking to a specific numeric inflation objective.

are referred to as secondary goals because a central bank is unlikely to succeed at limiting fluctuations in economic activity or containing financial crises unless the price level is stable.

Lessons from U.S. Economic History

Recent experience supports the view that price stability contributes to financial stability and economic growth. Since the mid-1980s, the United States has seen a reduction in the volatility of both output growth and inflation in an environment that closely approximates price stability. As shown in Figure 2, the variability of both real GDP growth and inflation reached postwar lows during the 1990s and first six years of the 2000s. Further, while there have been temporary financial upsets associated with various shocks, such as the Sept. 11, 2001, terrorist attacks and, more recently, increased defaults in the subprime mortgage market, these events have had little impact on the economy as a whole.

With inflation expectations well-anchored, the Fed has been able to provide liquidity in response to financial disruptions without causing uncertainty about the long-run goals of policy. This confidence in the Fed has probably made such interventions more effective than they would otherwise have been.

Conclusion

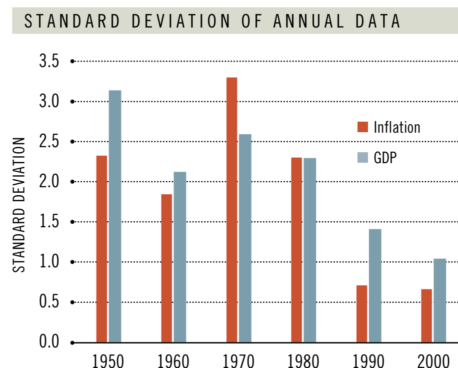
The inflation record of the United States and many other countries over the past 20 years has been far better than it was from the mid-1960s to the early 1980s. The recent period has also had a better record of economic growth and financial stability than the preceding years of high and highly variable inflation. Both logic and history suggest that low and stable inflation has contributed to improved real growth and financial stability.

Low inflation and well-anchored inflation expectations have also likely enhanced the Fed's ability to respond to the declines in output growth and financial upsets that have occurred. The Fed responded aggressively to encourage economic recovery from the 2001 recession. The Fed's interest rate cuts did not trigger widespread fears of higher inflation because the public had confidence in the Fed's commitment to price stability. If expected inflation had risen, long-term interest rates would likely have risen and hampered efforts to encourage economic recovery. Hence, price stability likely made the Fed's easing more effective than it otherwise would have been.

FIGURE 2

Variability of Inflation and GDP Growth

STANDARD DEVIATION OF ANNUAL DATA



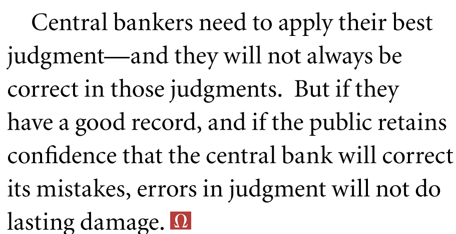
SOURCES: Bureau of Economic Analysis and Bureau of Labor Statistics

Since 1990, inflation and output growth have been only about half as volatile as they were during the preceding postwar decades. The figure plots the standard deviations of real GDP growth and inflation, which is calculated as the annual percentage change in the all-items Consumer Price Index. Data for the 2000s are for 2001-2006.

Financial markets have confronted a number of shocks in recent history, including the Asian financial crisis and Russian government bond default in 1998, the terrorist attacks of 9/11 and, more recently, the increase in subprime mortgage defaults in 2007. Each time, the Fed quickly provided additional liquidity, and the financial disruptions were contained. Again, well-anchored inflation expectations likely made the Fed's job easier and kept these shocks from having a more serious impact on the economy.

Under the Federal Reserve Act, the Fed operates with a dual mandate to encourage maximum employment and price stability, as well as to act as lender of last resort to the banking system. These goals are not incompatible but fundamentally the same goal. Maintaining low and stable inflation is central to achieving maximum employment and the highest possible rate of economic growth. Price stability also tends to promote financial stability and enhance the central bank's ability to respond to financial disruptions that do occur. Maintaining price stability does not require that the central bank come down hard on every uptick in the inflation rate, but a disciplined response is required when the inflation rate threatens to rise in a sustained fashion or to fall into deflation.

Central bankers need to apply their best judgment—and they will not always be correct in those judgments. But if they have a good record, and if the public retains confidence that the central bank will correct its mistakes, errors in judgment will not do lasting damage. Ω



William Poole is president and CEO of the Federal Reserve Bank of St. Louis. David C. Wheelock is an economist there. To see more of Wheelock's work, go to http://research.stlouisfed.org/econ/wheelock/index.html. To read other speeches by Poole, go to www.stlouisfed.org/news/speeches.html.

Price Instability Knocked Economy Off Its Feet in 1930s, 1970s

Whereas the recent record demonstrates the benefits of price stability, there is no shortage of evidence that an unstable price level leads to financial instability and a poorly performing economy.

Sadly, history is full of examples where mismanaged monetary policy resulted in financial instability and serious disruption of economic activity. The experiences of the United States during the Great Depression of the 1930s and the Great Inflation of the 1970s provide two such examples.

The Great Depression is a classic illustration of how financial disruptions can wreak havoc on the economy. Policy mistakes by the Federal Reserve were critical, as Milton Friedman and Anna Schwartz demonstrated in their *A Monetary History of the United States, 1867-1960*. The Fed's principal error was in failing to act as lender of last resort to the banking system as banking panics and other financial shocks swept across the United States. These shocks included the stock market crash in October 1929; banking panics in October 1930, March 1931 and January-February 1933; and a massive withdrawal of gold reserves from U.S. banks when Great Britain left the gold standard in September 1931.

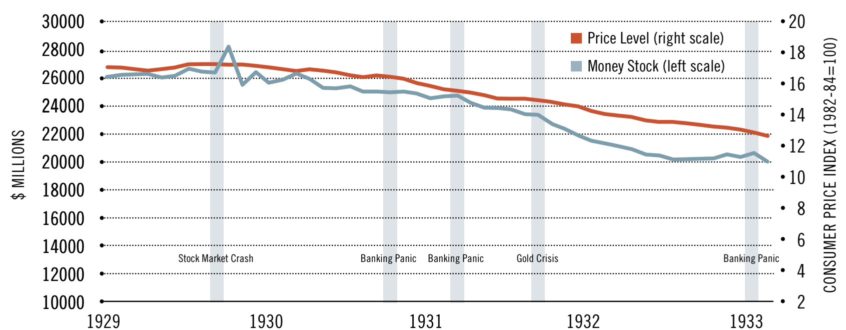
The Federal Reserve responded to the stock market crash by lowering its discount rate and pumping reserves into the banking system. The Fed did not react aggressively to subsequent crises, however. Bank runs and gold outflows bled reserves from the banking system, which reduced the money stock and allowed deflation to take hold, as shown in Figure 3.

Deflation drove up the real cost of servicing debt and led to widespread business failures and unemployment. Falling incomes and increased loan defaults put further strain on banks and other financial firms. More than 1,000 banks were forced to suspend operations each year between 1930 and 1933.

The monetary hemorrhage finally ended when the entire banking system, including the Federal Reserve banks, was shut down by government decree in March 1933. The money stock and price level began to rise once confidence in the banking system had been restored. The real interest rate fell as the price level rose, encouraging business investment and consumer spending, and the economy began to recover.

FIGURE 3

Financial Shocks and Deflation during the Great Depression



SOURCE: Friedman, Milton; and Schwartz, Anna J. *A Monetary History of the United States, 1867-1960.* Table A-1, Col. 8. Princeton, N.J.: Princeton University Press, 1963

The figure plots monthly data on a measure of the money stock consisting of currency and commercial bank deposits.

The 1970s were a time of economic turmoil in this country. Inflation hit double-digit levels. Economic growth slowed and unemployment rose. An energy crisis led to restrictions on sales of gasoline, as seen in this photo taken in Connecticut.

Inflation Is No Better

The Great Depression illustrated how deflation can wreck a financial system and economy.[3] The Great Inflation, by contrast, showed the destructive power of inflation. Inflation began to rise in the mid-1960s. Political pressure for low interest rates, combined with the common view among economists that a moderately inflationary monetary policy would boost economic growth and raise employment, gave policy an inflationary bias.

But subsequent economic performance discredited the notion that higher inflation could produce faster employment or growth. If anything, the data indicated just the opposite. As inflation rose still higher and became more variable, the average growth rate of the U.S. economy slowed, and business cycle fluctuations became more pronounced.

Inflation, and especially inflation instability, proved disruptive for financial markets and firms. Thrift institutions—mutual savings banks and savings and loan associations—were particularly devastated by inflation. After World War II, thrifts became the mainstay of housing finance in the United States. These financial intermediaries borrowed short-term funds to make long-term loans. As inflation premiums became built into market interest rates, short-term interest rates rose much more rapidly than did the return on the thrifts' assets, which were heavily invested in fixed-rate 30-year home mortgages. Evaluated at market prices, the capital of a large portion of the thrift industry was exhausted by 1980.

Although the industry was kept afloat for a time by government-sanctioned accounting gimmicks, many thrifts were walking dead—"zombies," some called them—that had to be closed.[4] Because the deposit liabilities of most thrifts were federally insured, the collapse of the industry was costly for taxpayers, who ended up on the hook for some $150-200 billion.

Inflation declined sharply in the early 1980s, thanks to a change in the course of monetary policy. The decline was largely unanticipated, however, and because few people expected inflation to remain contained, real interest rates soared as savers continued to demand high inflation risk premiums.

The dollar also appreciated sharply in foreign exchange markets. The strong dollar was hard on U.S. exporters and particularly devastating for farmers, as the dollar prices of agricultural commodities fell sharply. Many farmers had borrowed heavily to buy land during the 1970s, when commodity prices were soaring and land values were appreciating rapidly. Falling commodity and land prices in the 1980s left many unable to service their debts. A large number of farmers went bankrupt.

The general principle common to these cases of financial distress is that significant changes in the inflation rate cannot be accurately foreseen. Forecasting errors, and resulting financial losses and bankruptcies, are inevitable when the price level is unstable.

ENDNOTES

[1] These biases arise from the difficulty of capturing improvements in the quality of goods and services, as well as substitutions among products that comprise consumers' total purchases. Differences in how price indexes are put together imply that the specific rate of inflation that is consistent with price stability will likely vary across countries and over time. For the United States, zero true inflation likely translates to an annual rate of increase in the CPI of about 1 percent and in the broader price index for personal consumption expenditures of about 0.5 percent.

[2] See Robert Barro (1996) and Michael Bruno and William Easterly (1996) for cross-country empirical evidence on the impact of high inflation on economic growth.

[3] Although many economists believe that deflation was an important cause of the Great Depression, some remain unconvinced. See Parker (2007) for a survey of research on the causes of the Great Depression.

[4] See Kane (1989).

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Clearing the Haze?

New Evidence on the Economic Impact of Smoking Bans

By Michael R. Pakko

When making decisions about adopting smoke-free laws, advocates often give policymakers a Pollyannaish outlook in which communities can achieve public health benefits with no economic consequences. In particular, the lack of statistically significant economic effects is interpreted as indicating an absence of economic costs. Recent economic research indicates that this is a far too simplistic view of the issue.

A previous article in *The Regional Economist* ("Peering Through the Haze," July 2005) described some early evidence on the economic impact of smoke-free laws and suggested that the findings were far from conclusive.[1]

As more communities have adopted smoke-free laws and more data have been gathered, economists have discovered new, significant findings. As an earlier article suggested, economic costs often focus on specific business categories—those that smokers tend to frequent.

Gambling and Smoking

Several papers have examined the cost of smoke-free laws on the gambling business, using data from slot machine revenue at Delaware racetracks ("racinos").[2] Recent economic research finds conclusive evidence of revenue declines at the racinos after the Delaware Clean Indoor Air Law took effect in December 2002.

In my recent research on the topic, I find statistically significant losses at all three Delaware racinos—ranging from 8.9 percent to 17.8 percent.[3] Overall, the statewide revenue decline was 14.9 percent. Using slightly different methods that estimate demand for casino gambling, economists Richard Thalheimer and Mukhtar Ali estimate the total revenue loss at 15.9 percent.

These revenue estimates may significantly understate profit losses. For example, the racino that suffered the smallest loss in revenues—Dover Downs—also was the only one with a luxury hotel on site. Dover Downs management responded to initial revenue losses by offering more discounts on hotel rooms.[4] Efforts to prop up revenue may have been partly successful, but at a cost to the bottom line.

Evidence on the effect of smoking bans on gaming revenue shows that when analysis can be narrowly focused on data from specific businesses, statistically significant findings emerge. Another approach is to use very large data sets. As smoking bans have spread across the country, the variety and timing of adopting smoke-free laws have generated data that can help identify effects.

Bar and Restaurant Employment

Two papers, one by Ryan Phelps and the other by Scott Adams and Chad Cotti, have used data available from the Bureau of Labor Statistics to examine the employment effects of smoking bans. Using nationwide county-level data, these two studies examine the changes in employment at bars and restaurants after communities adopt smoking bans. Neither study finds significant employment changes at restaurants, on average, but both find statistically significant employment declines at bars, with loss estimates ranging from 4 percent to 16 percent.

Adams and Cotti also examine some additional factors. For communities in states with a higher ratio of smokers to nonsmokers than the national average, employment losses at bars were significantly larger, and the employment changes at restaurants went from a small positive effect to a small negative effect (in neither case, statistically significant). Climate also affected restaurant employment.[5] Restaurants in warm climates fared better than those in cooler climates. The authors suggest that the reason for this might be that restaurants in warmer climates can more easily provide outdoor seating where smoking is not prohibited. (See also the sidebar on Columbia, Mo.) Restaurants that suffered the dual curse of being in regions with colder climates *and* a high prevalence of smokers suffered statistically significant employment losses, on average.

California Dreamin'

Another recent economic study examines taxable sales receipts of bars and restaurants in California, the home of the smoke-free movement. Because California communities passed some of the nation's first smoke-free laws, much of the early evidence on the subject was based on these data on California taxable sales receipts; as time has passed, those data have accumulated. The experience of California also provides a case in which a statewide smoking ban was superimposed on a patchwork of local smoke-free laws, providing useful variation in the coverage and jurisdiction of smoking bans that can be exploited in empirical analysis.

This article is based on a presentation at the Sixth Annual ERIE Conference on Local Government and Economics, Erie Pa., Aug.14, 2007.

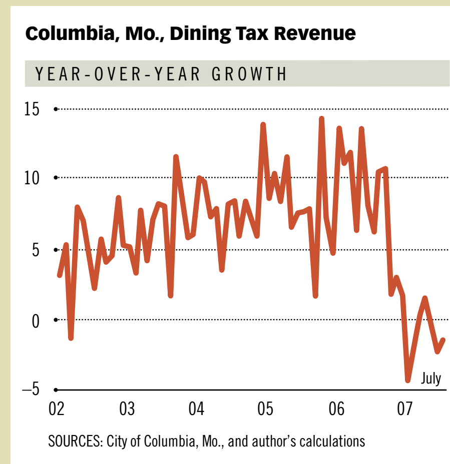
District Focus: Smoking Ban Singes Columbia, Mo.

Since January 2007, all bars and restaurants in Columbia, Mo., have been required to be smoke-free. Only some sections of outdoor patios are exempt from the requirement.

Some local businesses have continued to oppose the Columbia Clean Air Ordinance, circulating petitions to repeal the law by ballot initiative. According to local press reports, owners of at least four establishments have cited the smoking ban as a factor in their decision to close their doors in 2007.

Recent data from the city of Columbia show a distinct decline in sales tax receipts at bars and restaurants. After rising at an average rate of 6.8 percent from 2002 through 2006, tax revenue declined at an annual rate of 1.3 percent over the first seven months of 2007. (See graph.) Although the data are still preliminary, initial analysis suggests a 5 percent decline in overall sales revenue at Columbia dining establishments since the implementation of the smoking ban. This estimate takes into account past trends, seasonal fluctuations in the data and an overall slowdown in sales tax revenue in Columbia.[6]

One interesting feature of the Columbia story is the response of restaurant owners to the patio exemption. According to an article in the *Columbia Missourian*, owners of at least two bars are building or planning outdoor patio expansions. One owner was quoted as saying, "You have to have a patio to survive."[7] The expenses associated with these renovations may help buffer the sales revenue of these establishments, but they also represent profit losses that are above and beyond the measured sales declines.



Economists Robert Fleck and Andrew Hanssen analyzed quarterly restaurant sales data for 267 California cities over 25 years. They find that the measured impact of smoking bans differs between local bans and the statewide ban. In what the authors call their "naïve" specification that treats all smoke-free laws the same, they find a statistically significant 4 percent decline in revenues associated with smoking bans.

When they estimate the effects of the statewide ban and local bans independently, they find that the measured decline in restaurant sales is attributable to the statewide ban on cities without local bans. The measured effect of the statewide ban is nearly 4 percent, and it is statistically significant. The independent effect of local smoking ordinances is estimated to be very small and is not significant. These findings are consistent with the interpretation that locally originated smoking bans have little effect, but smoking bans that are imposed on a community by a higher jurisdiction can have a detrimental economic impact.

Fleck and Hanssen go on to uncover an important specification problem: They find that cities that adopted smoke-free laws were systematically different from those that did not. The authors find that sales growth tends to be a predictor of smoking bans, rather than the other way around. This "reverse causality" calls into question many earlier findings, and it poses problems for using data from California in drawing inferences about the economic impact of smoking bans elsewhere.

The Role of Economic Research

Economic effects of smoke-free laws may be difficult to identify and interpret, but analysis suggests that at least some businesses do suffer costs. When they consider passing smoking bans, policymakers should study evidence both from public health professionals and from economists. Ω

Michael R. Pakko is an economist at the Federal Reserve Bank of St. Louis. To see more of Pakko's work, go to http://research.stlouisfed.org/econ/pakko/index.html.

ENDNOTES

1 Scollo et al. (2003) provide a review of previous literature, much of which has been published in medical and public health journals.
2 Previous studies of the Delaware racino case study have been published—and disputed—in the public health journal *Tobacco Control*.
3 See Pakko (forthcoming).
4 See Dover Downs (2004).
5 Bar employment was not significantly affected by climate differences.
6 See Pakko (2007).
7 See Solberg (2007).

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SPLITSVILLE

The Economics of Unilateral Divorce

By Kristie M. Engemann and Michael T. Owyang

Studies have looked at the impact of easier divorce on a variety of things, including women working outside the home, children's education and spousal violence.

A common perception in the United States is that half of all marriages will end in divorce. While this may be true today, it was not always the case. The chart on Page 14 shows that the number of divorces for every 1,000 people rose steadily from 1960 to the early 1980s and has since somewhat declined. The rise in this divorce rate coincided with the time when many states modified their laws, allowing divorce to be initiated unilaterally.

Divorce laws began to change in 1970 when California adopted no-fault divorce; the rest of the country followed suit over the next 15 years. No-fault divorce allowed the courts to dissolve marriages based on, for example, irreconcilable differences rather than requiring the fault of one spouse (e.g., because of adultery). Additionally, more than half of the states adopted unilateral divorce during this time, meaning a divorce no longer required the mutual consent of both spouses.[1]

Altering the family structure—by making divorce easier to obtain—may have economic implications, as well as social consequences. Several studies have explored the effects of such changes in divorce laws on a variety of economic outcomes, some of which we discuss. Among the findings: The presence of unilateral divorce may have led to an increase in married women's labor supply, to a decline in the average educational attainment of girls and to changes in various rates of spousal violence.

In our discussion of these studies, we focus on the effects of enacting unilateral divorce law rather than instituting no-fault divorce.

The Divorce Rate

Perhaps the most obvious impact of enacting unilateral divorce is its effect on the divorce rate. Economist Leora Friedberg used data spanning 1968 to 1988 to examine such effects. Controlling for the year and state, she found that unilateral divorce laws increased the divorce rate by nearly 10 percent of the average over the entire sample period (which was 4.6 divorces per 1,000 people). She also found that different separation requirements and property settlement rules in states with unilateral divorce affected the rate of dissolution differently. For example, unilateral divorce laws with no requirement of separation before divorcing and no-fault property division were associated with the largest increase in divorce—almost 12 percent of the average divorce rate. On the other hand, laws that required no separation but did have fault property division increased divorces

by 9 percent. Unilateral laws that required a period of separation raised the rate by less than 5 percent. Overall, Friedberg found that unilateral divorce contributed 17 percent of the increase in the overall divorce rate during her data sample.

Economist Justin Wolfers arrived at a different conclusion, arguing that Friedberg's results overstate the effect of the unilateral divorce laws on the divorce rate. Whereas Friedberg estimated the impact of the laws over her entire sample, Wolfers broke up the effect into two-year increments. He reasoned that, by examining two-year increments and extending the sample to 1956 to 1988, he captured *only* trends that existed before the laws were enacted. Using the same model as Friedberg with only the aforementioned change in sample, Wolfers found that, for the first eight years after a state adopted unilateral divorce, the increase in the divorce rate was two-thirds the size of Friedberg's finding. Furthermore, Wolfers showed that after 10 years, unilateral divorce had negligible effects on the divorce rate. This is in direct contrast to Friedberg's assertion that the laws had a permanent effect on the divorce rate. Both studies, however, agree that unilateral divorce caused some increase in divorce rates, at least in the short term.

Married Women's Labor Supply

Unilateral divorce may also have an effect on married women's incentives to enter the work force. Economist Jeffrey Gray argued that a state's marital property law may influence the degree to which unilateral divorce laws affected a woman's labor market decisions. (See the sidebar at right for an overview of the property division rules and their potential effects on bargaining power.) Using data from several sources, Gray compared married women aged 18-55 who lived in states that adopted unilateral divorce between 1970 and 1974 with women living in states that did not.

Gray found that, after controlling for the type of property law and other variables that may influence a woman's decision to work (e.g., age, education, number of children, husband's income), her bargaining power affected her tendency to work. A married woman in a unilateral divorce state with a community-property law—meaning she would get half of all marital property upon divorce—saw her bargaining power increase and was more likely to work outside the home than a woman in a state without unilateral divorce. In contrast, a woman in a unilateral divorce state that had a common-property law—meaning she would retain only her own property—saw her bargaining power decrease and became less likely to work in the labor market than a married woman not in a unilateral divorce state. These results might indicate women's preferences of working outside the home and men's preferences of having a wife who works in the home.

A variety of other factors, such as whether a couple has children, can also influence whether she enters the labor force. A study by economists Katie Genadek, Wendy Stock and Christiana Stoddard considers which married women increased their labor force participation (LFP) between 1960 and 1990. The authors compared the labor market decisions of married mothers in states that adopted unilateral divorce laws with all other married women. The economists' theory was that the new divorce laws would transfer bargaining power from the mother to the father—regardless of the state's property division law—because wives with children typically have more marriage-specific capital (e.g., from child-rearing) and less labor market capital than their husbands do. This might reduce wives' ability to initiate divorce since it reduces their outside earning opportunities. In order to reclaim some of that bargaining power, wives were more likely to enter the labor force.

After accounting for state, year, demographics and income variables, Genadek, Stock and Stoddard found that married women with young children responded most to a change in divorce laws. For married women with a child under the age of 2, the net effect was an increase in their LFP rate by 2.1 percentage points, relative to nonmothers. When their youngest child was between 2 and 5 years old, women had a participation rate that was 1.6 percentage points higher. The authors found a similar increase in weeks worked the previous year by married mothers of young children.

The type of property law also played a role in women's LFP. Married women with children under the age of 6 increased their participation more for equitable distribution than for other types of property allotment laws. Community property produced the second-highest increase in married women's participation in the labor force.

Hence, in the states with unilateral divorce laws, the increase in the LFP of married women with young children implies that easier divorce would have left them worse off due to the cost of raising children. By entering the labor force, these women were able to increase their bargaining power in the marriage (by raising their threat of leaving).

Dividing Property

Some of the studies also explore the effects of different property division rules subsequent to divorce. The three types of division are community property, common law and equitable distribution.

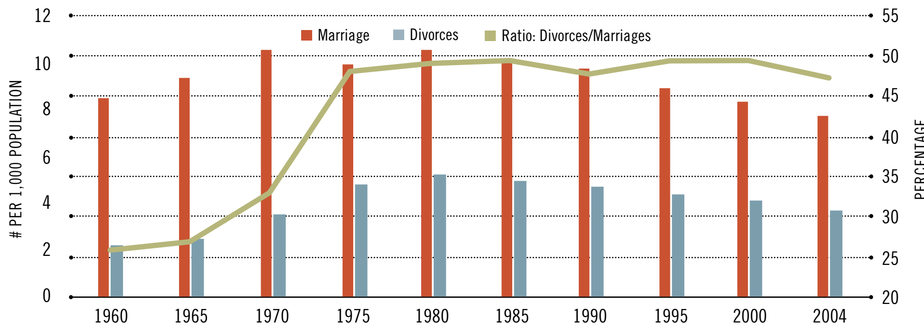
1,2,3

Community property laws distribute equally upon divorce all property acquired during the marriage. Under common law, property is retained by the owner upon divorce; in cases of joint ownership, the property is divided equally between the spouses. Equitable distribution leaves it up to the court to determine fair allotment of the property.

Let's Bargain

Because unilateral divorce made dissolution of marriages easier, people's economic decision-making both prior and subsequent to divorce might depend on which property law prevailed in their state. Bargaining power within a marriage might also be affected. For example, a wife's threat of leaving the marriage might increase if her state has a community-property law because she would get half of everything. In contrast, her threat of leaving might decrease if her state has a common law because, typically, husbands own more property, thus leaving the woman worse off financially. In the first case, the wife's bargaining power increases, and in the second, it decreases.

RATE OF MARRIAGE AND DIVORCE



SOURCE: U.S. National Center for Health Statistics; obtained from various editions of *Statistical Abstract of the United States* (2000, 1995, 1984, 1969) and the U.S. Census Bureau web site: www.census.gov/compendia/statab/tables/07s0119.xls

Marriage-Specific Capital

A change in divorce laws can affect whether a couple decides to invest in marriage-specific capital, which is the subject of a study by Betsey Stevenson. An example of marriage-specific capital occurs when one spouse specializes in household production while the other focuses on market production. Stevenson posited that unilateral divorce leads to, on average, shorter marriage durations and, therefore, reduces the incentive for a couple to make such investments.

To determine what effect unilateral divorce had on several forms of capital, Stevenson examined newlywed couples—those who had been married for two years or less—from the 1970 and 1980 censuses. She compared couples in states that adopted new divorce laws between 1970 and 1980 with those in states that did not. Her study accounted for various factors that might affect marital capital investment, such as the year, state of residence, length of marriage, race, ethnicity, whether the couple lived in a metropolitan area, property division laws that accompanied divorce, and both spouses' age and education. Stevenson found that, in the presence of unilateral divorce laws, the likelihood that one spouse financially supported the other for education during the first two years of marriage was 10 percent lower. The couple was also 8 percent less likely to have children within that time frame. Additionally, both spouses were 8 percent more likely to hold full-time jobs, and the woman was 5 percent more likely to be in the labor force.

Her results suggest that when divorce became easier, couples became less likely to invest in elements related to their marriage. They instead began to focus more on their own careers, perhaps as insurance in the event of marriage dissolution.

Children's Outcomes

A common concern regarding divorce is the potential negative effect it has on children. Economists John Johnson and Christopher Mazingo explored the effects on children's outcomes as adults when they were born in states with unilateral divorce laws. Using data from the 1980 census, Johnson and Mazingo found that, for each additional year a child lived in a state with such laws, his or her parents were 0.6 percentage points more likely to divorce. To determine how this affected children, Johnson and Mazingo examined individuals aged 25-34 during the 1990 census—those who were children at the time unilateral divorce was enacted. The authors compared the outcomes of children born in states that adopted unilateral divorce between 1969 and 1977 and those in states that did not.

Accounting for the number of years exposed to unilateral divorce laws before age 18, Johnson and Mazingo found that educational attainment was negatively affected, more so for women than for men. The largest effect was on women with nine to 12 years of exposure to unilateral divorce, who obtained, on average, 0.12 fewer years of school. Additionally, those same women were less likely to graduate from high school (1.4 percentage points), to obtain an associate's degree (3.2 percentage points) and to obtain a bachelor's degree (2.3 percentage points). For men, the only significant effect was on high school graduation—men with nine to 12 years of exposure were two percentage points less likely to graduate from high school.

Although women's wages were negatively affected by increased exposure to unilateral divorce laws, men's wages were not significantly different. Again, women with nine to 12 years of exposure experienced the largest negative outcomes, earning 3.7 percent less than women who lived in states that did not enact unilateral divorce laws.[2]

Johnson and Mazingo also studied whether exposure to unilateral divorce laws influenced a child's future decisions to marry/divorce and to have children. When analyzing their full sample of data, Johnson and Mazingo found that both men and women

who had been exposed to unilateral divorce as children were significantly more likely to be married and less likely to have never been married at the time of the survey. Although women's divorce rate was not affected, the men were slightly less likely to be divorced. Also, growing up in a unilateral divorce state increased the likelihood that a woman had children. For the disaggregated groups, only women with nine to 12 years of exposure had a significantly higher probability of having children than women with no exposure.

Overall, Johnson and Mazingo's results suggest that girls' educational attainment and wages earned as an adult were more negatively affected than boys' by the adoption of unilateral divorce laws during childhood. However, the fact that both were more likely to marry as adults perhaps suggests that easier divorce laws made marriage seem less risky or like less of a commitment.

Spousal Violence

Another unexpected outcome of the adoption of unilateral divorce laws was a change in the rates of spousal violence. Economist Thomas Dee examined the annual number of spousal homicides across states from 1968 to 1978 in order to capture the effect of new divorce laws. During his sample, the average number of spousal homicides was similar for both spouses—19 husbands killed their wives and 17 wives killed their husbands per state per year. Dee argued that unilateral divorce laws could have had several possible effects. First, women could more easily dissolve an abusive marriage. However, the property division after divorce could leave women worse off financially, which might alter one or both spouses' behavior within the marriage. For example, the husband might increase his level of abuse. Additionally, the wife's incentive to kill her husband might increase, whether or not his level of abuse changes, if her alternative is to be left financially destitute in the wake of divorce.

To determine which, if any, outcome occurred, Dee controlled for the state of residence, year and several other factors that might influence spousal homicide (e.g., state personal income per capita and police officers per capita).[3] He found that the adoption of unilateral divorce did not cause a significant change in the number of husbands who killed their wives. However, he found that the number of wives who killed their husbands increased by 20 to 26 percent. Dee then considered whether the marital property treatment mattered for the number of husbands killed by their wives. He found no effect when the state had community-property division, which generally favored wives. However, when a state had equitable-distribution or common-law property treatment, both of which tended to favor husbands, the number increased by one-fourth to one-third. In light of these results, Dee concluded that spousal homicides—in the form of wives killing their husbands—increased when the possibility of unilateral divorce left wives economically disadvantaged.

Economists Betsey Stevenson and Justin Wolfers also examined the effect of unilateral divorce on spousal homicide. Whereas Dee studied the *number* of spousal homicides, Stevenson and Wolfers considered the *rate* of spousal homicide from 1968 to 1994 and found different results. They also controlled for various economic, demographic and social policy factors, as well as criminal justice indicators. Stevenson and Wolfers, contrary to Dee, found no significant change in the rate of husbands killed by their wives. In contrast, unilateral divorce appeared to reduce the rate at which wives were killed by their husbands by 12.6 percent.

Stevenson and Wolfers also examined how unilateral divorce affected the rates of domestic violence and suicide. Using domestic violence data from the Family Violence Surveys in 1976 and 1985, Stevenson and Wolfers found that the rate of husband-on-wife violence decreased by about 36 percent during their sample, but the rate of wife-on-husband violence did not change significantly.[4]

For suicide rates, they used data from the National Center for Health Statistics for 1964 to 1996. After controlling for the state and year, as well as for economic, demographic and social policy factors, the rate of female suicide decreased by an average of 8.3 percent over the 20 years after the adoption of unilateral divorce laws.[5] The effects were larger as more time passed—the rate had decreased by 16.4 percent 19 or more years after the laws had been passed. Overall—and contrary to

continued on Page 16

ENDNOTES

1. Background information on changing divorce laws and data on which states adopted unilateral divorce (which excludes states that have unilateral divorce but require a separation period first) were obtained from Friedberg (1998).
2. All regressions include a control for state of residence except for the one involving level of education. The results here from the regression involving wages do not include controls for education because it is also affected by the divorce laws.
3. Additional factors are the unemployment rate, welfare aid per recipient, population, whether the state had the death penalty and the homicide rate by strangers.
4. The surveys were conducted by sociologists Murray Straus and Richard Gelles and only in those two years. Stevenson and Wolfers noted that only intact marriages were examined. As a result, the decline in violence could partly reflect an increase in divorce among abusive couples.
5. There was no significant effect on the male suicide rate.

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"I'm having my wedding ring melted down into a bullet."

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continued from Page 15

the study by Dee—Stevenson and Wolfers' study suggests that adults' well-being improved after states adopted unilateral divorce laws.

For Better … or Worse?

These studies demonstrate that unilateral divorce laws may have important economic and social consequences. Combined with laws that determine how property is distributed after divorce, laws that ease the requirements for marriage dissolution can alter marital dynamics by changing incentives and shifting bargaining power between spouses. Some effects of unilateral divorce were positive—e.g., a reduction in the rate of spousal violence—while others were negative—e.g., a reduction in the level of education completed for girls who grew up in unilateral divorce states. Other outcomes, such as an increase in the LFP of mothers with young children, have uncertain ramifications. Ω

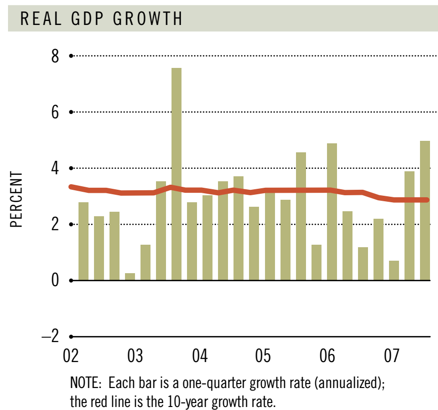
See how the number of divorces in each state changed over a 25-year period. Go to www.stlouisfed.org/publications/re.

Kristie M. Engemann is a research analyst, and Michael T. Owyang is an economist, both at the Federal Reserve Bank of St. Louis. For more on Owyang's work, go to http://research.stlouisfed.org/econ/owyang/index.html.

E C O N O M Y   A T   A   G L A N C E

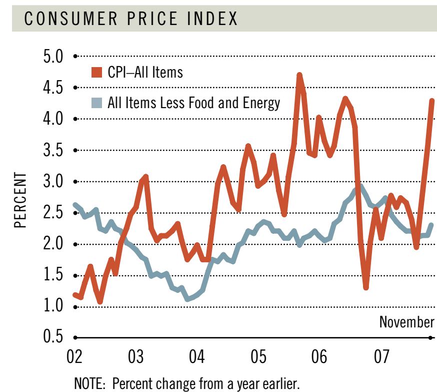
This issue introduces several changes to this Economy at a Glance page. First, we are now plotting market-based measures of long-term inflation expectations. These are spreads between yields on nominal and inflation-adjusted U.S. Treasury securities. Second, to gauge how market expectations of future changes in the federal funds target rate change over time, we are now plotting rates on federal funds futures on selected dates. To make room for these two new charts, we have made the U.S. Crop and Livestock Prices chart a web-only chart. To view this chart and additional web-only charts, go to www.stlouisfed.org/publications/re.

REAL GDP GROWTH



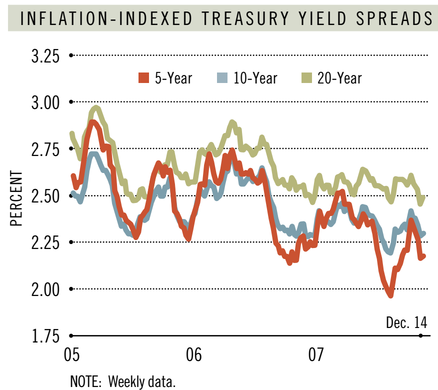
NOTE: Each bar is a one-quarter growth rate (annualized); the red line is the 10-year growth rate.

CONSUMER PRICE INDEX



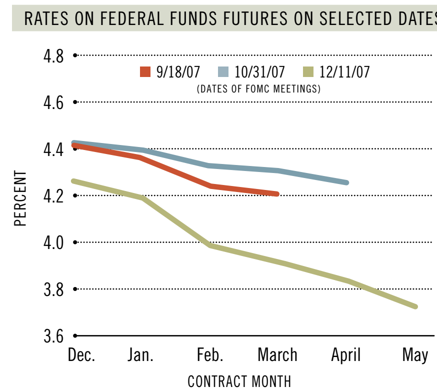
NOTE: Percent change from a year earlier.

INFLATION-INDEXED TREASURY YIELD SPREADS

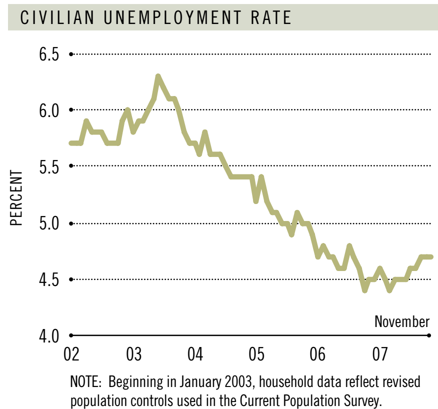


NOTE: Weekly data.

RATES ON FEDERAL FUNDS FUTURES ON SELECTED DATES

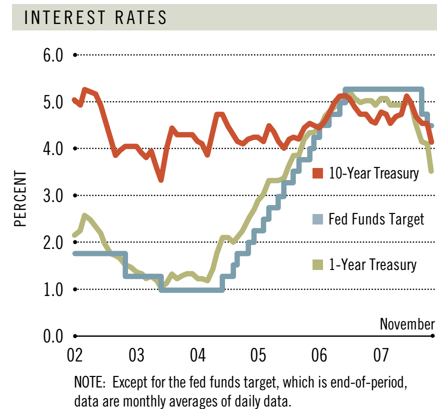


CIVILIAN UNEMPLOYMENT RATE



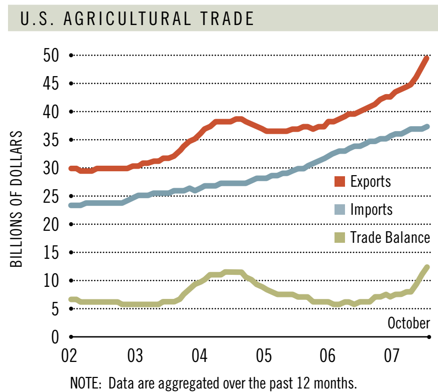
NOTE: Beginning in January 2003, household data reflect revised population controls used in the Current Population Survey.

INTEREST RATES



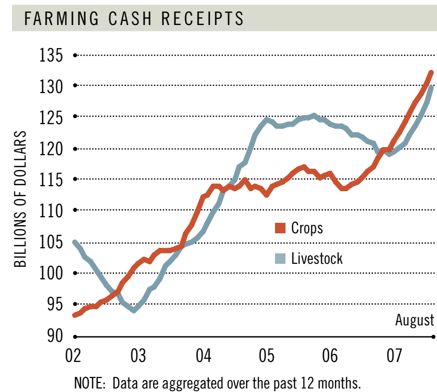
NOTE: Except for the fed funds target, which is end-of-period, data are monthly averages of daily data.

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.

Walking a Tightrope into 2008

By Joshua A. Byrge and Howard J. Wall

The Federal Open Market Committee (FOMC) on Dec. 11 cut its target for the federal funds rate by 25 basis points again to 4.25 percent, citing continued housing-market weakness and tight credit conditions. Though oil and commodity prices remain a threat, incoming price data have indicated a reduction in inflationary pressure, suggesting that growth might once again dominate economic concerns heading into 2008. Despite strong estimates for growth in the second and third quarters of 2007—3.8 and 4.9 percent, respectively—the FOMC foresees growth between 1.8 and 2.5 percent for 2008, with core inflation expected to moderate to about 1.8 percent.

Inflationary Pressure Eases

Though the price of oil continues to be a key threat to the outlook for inflation and growth, spot oil prices fell from near $100 per barrel in mid-November to $92.30 per barrel Dec. 13. Over the same period, the price of regular-grade gas decreased from $3.11 to $3.06. Futures markets suggest that some additional oil-price moderation may be in store. On Dec. 13, the six-month futures contract for crude oil was priced at $91.20 per barrel. Further out, the one-year contract price was $88.80 per barrel. Though the spread between the spot price and 1-year futures price narrowed in mid-December, some additional relief for consumers might be in sight.

Rising productivity and falling labor costs have also helped ease the strain of high oil prices and the falling dollar. The revised estimate of third quarter productivity growth in the nonfarm business sector—an annual rate of 6.3 percent, up from a modest 2.2 percent in the second quarter—was well above expectations. Over the same period, unit labor costs fell by 2 percent. Despite strong gains in payroll employment in the fourth quarter of 2007, labor costs seem unlikely to rebound, as the employment rate held steady at 4.7 percent in November and capacity utilization remained below its average for the first three quarters of 2007. On balance, core consumer prices increased by 2.3 percent in November when compared with the year prior, remaining slightly above the FOMC's perceived comfort zone.

Housing Threatens Consumer Spending

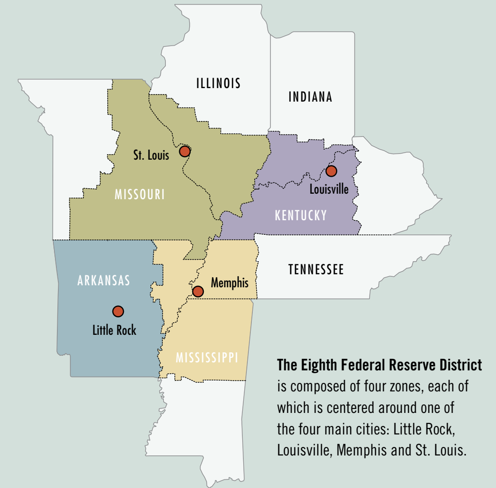
The housing market shows no immediate signs of improvement, posing another key threat to growth for 2008. Over the third quarter of 2007, real residential fixed investment declined at an annual rate of 19.7 percent, compared with 14.1 percent over the first half of the year. As of mid-December, there was a four-month supply of single family houses on the market (that doesn't include homes which may be rented, temporarily occupied or held off the market altogether), and builders were on track to begin building 1.1 million more this year. Despite falling building permits, the continued swell of houses available suggests that residential investment will continue to be a drag on the economy well into 2008.

With house prices decelerating by some measures and falling by others, concerns that declining home equity will cause consumers to reduce spending are on the rise. Real personal consumption expenditure (PCE) accounts for roughly 70 percent of real GDP and has given the single largest boost to growth over the past several quarters. In the third quarter of 2007, PCE contributed 1.9 percentage points to overall real GDP growth of 4.9 percent. However, according to unofficial data based on work by Alan Greenspan and James Kennedy, equity extraction for the purpose of personal consumption may account for as little as 1.5 percent of PCE.[1] Thus, declining equity extraction may be offset by revolving consumer credit (excluding real-estate backed loans), which has increased by more than 12 percent since the beginning of 2006.

Tighter credit standards resulting from the contraction in the subprime mortgage market, along with decreased disposable income resulting from increased mortgage payments, present perhaps the most credible threats to the growth of spending and, thus, real GDP. With PCE expected to moderate in 2008, additional contributions to growth from business fixed investment and net exports might not be enough to offset further decreases in residential investment. With core inflation expected to remain in check and real GDP growth dependent on a strong contribution from consumer spending, the downside risks to growth may again be underscored going into 2008. Ω

Joshua A. Byrge is a research analyst and Howard J. Wall is an economist, both at the Federal Reserve Bank of St. Louis.

[1] Greenspan, Alan; and Kennedy, James. "Estimates of Home Mortgage Originations, Repayments, and Debt On One-to-Four-Family Residences." Federal Reserve Board, Finance and Economics Discussion Series No. 2005-41, September 2005.



The Eighth Federal Reserve District is composed of four zones, each of which is centered around one of the four main cities: Little Rock, Louisville, Memphis and St. Louis.

District Fares Better Than Nation as Housing Market Crumbles

By Michael R. Pakko

One of the top national economic news stories of 2007 was the decline in the housing market. Home prices fell, sales spiraled downward and many mortgage borrowers—particularly those in subprime borrowing categories—were unable to maintain their commitments. With a glut of unsold homes, new construction was at a standstill.

So goes the conventional narrative.

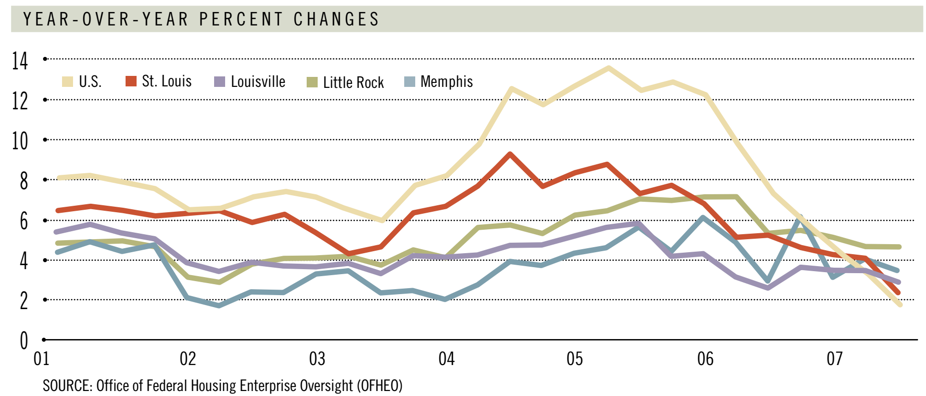
But housing markets are, by their very nature, localized. Many of the characteristics of housing prices, construction and sales are particular to local communities. Data for the Eighth Federal Reserve District show that while some aspects of the overall 2007 housing decline are reflected locally, the District has not suffered some of the most detrimental developments that have affected other parts of the country. Even across regions within the District, experiences differ.

Generally, areas of the country that saw the largest increases in house prices during the boom years of 2004 and 2005 are those that have suffered the largest price declines more recently. For example, according to data from the Office of Federal Housing Enterprise Oversight (OFHEO), house prices in San Diego were rising at an annual rate of over 25 percent in 2004. As of the third quarter of 2007, San Diego house prices were 5.1 percent lower than a year earlier. In contrast, house prices in the St. Louis metro area never accelerated to double-digit rates, rising at an average annual rate of 7.6 percent over 2004 and 2005. Yet house prices in St. Louis continue to increase, albeit at a lower rate: 2.3 percent for the year ending in the third quarter of 2007.

FIGURE 1

House Price Indexes for Large Metro Areas

YEAR-OVER-YEAR PERCENT CHANGES



SOURCE: Office of Federal Housing Enterprise Oversight (OFHEO)

As shown in Figure 1, all four major metro areas in the Eighth District show similar patterns. None experienced rates of appreciation over 10 percent during the house-price boom years, and all four show year-over-year growth rates that exceed the national average for the third quarter of 2007. In fact, none of the 18 metro areas within the District has shown a price decline on a year-over-year basis for the period. (See Figure 2.)

An alternative measure of house price changes, the National Association of Realtors' median house price estimate, is available for five of the District's metro areas. (See sidebar.) By this measure, house prices have shown somewhat greater weakness: As of the third quarter of 2007, the median price in St. Louis is down 2.5 percent from the previous year. For Memphis, the median is down 2.8 percent, and for Louisville, it is down 0.4 percent. The median was unchanged from a year earlier for Springfield, Mo., and up 2.1 percent for Little Rock.

New home construction has slowed, but not come to a standstill in the District: Year-to-date building permits are down from the previous year over much of the District, but the declines have been smaller than the national average for most metro areas. (See Figure 2.) Some of the metro areas showing the largest percent changes (both negative and positive) are relatively small; so, a minor change in the number of permits translates into a large percentage change. Summing over all metro areas in the District, nearly 36,000 permits were issued over the first 10 months of 2007, down about 16 percent from the previous year.

Similarly, state-level data suggest that the Eighth District has fared better than the national average. (See Figure 3.) Five of the seven states showed positive house price

appreciation in the third quarter, and price increases in all seven have outpaced the U.S. average over the previous year. Existing home sales are down in each of the seven states, but only for Illinois is the magnitude of the decline greater than the national average. State-level data also show that employment in the construction sector has declined over the past year in only one state, Arkansas. In all other states, construction employment has remained steady or increased—again in contrast to the national average.

Clearly, the downturn in the housing sector has nationwide and local implications. But housing markets in the Eighth Federal Reserve District have fared better than the national average. Ω

Michael R. Pakko is an economist at the Federal Reserve Bank of St. Louis.

FIGURE 2 Housing Market Indicators for Eighth District Metro Areas

	House Price Indexes (OFHEO)		Building Permits, Year-to-Date (Oct.)		
	Percent Change (Annual Rate) 2007:Q3	Percent Change from Previous Year	Total Units	Percent Change from Previous Year	Single Family, Percent Change from Previous Year
Large Metro Areas					
St. Louis, Mo.-Ill.	–0.1	2.3	9339	–12.1	–18.4
Little Rock-North Little Rock, Ark.	1.2	4.6	2588	–20.6	–19.7
Louisville-Jefferson County, Ky.-Ind.	1.1	2.8	5544	10.4	–4.7
Memphis, Tenn.-Miss.-Ark.	–0.3	3.4	6932	–21.8	–28.5
Small and Medium Metro Areas					
Bowling Green, Ky.	5.0	2.5	735	–8.9	–4.4
Columbia, Mo.	–0.3	2.4	1188	–34.8	–5.8
Elizabethtown, Ky.	0.1	4.6	612	4.6	–16.9
Evansville, Ind.-Ky.	–3.0	2.6	915	–6.6	–30.0
Fayetteville-Springdale-Rogers, Ark.-Mo.	–2.2	1.7	2861	–44.1	–44.3
Fort Smith, Ark.-Mo.	5.0	4.4	827	39.7	10.0
Hot Springs, Ark.	0.5	5.3	83	–30.3	–30.3
Jackson, Tenn.	–1.3	2.6	464	–26.0	–32.0
Jefferson City, Mo.	10.2	3.8	160	–49.0	–30.3
Jonesboro, Ark.	–13.1	0.7	450	–18.9	–0.2
Owensboro, Ky.	0.5	3.9	357	23.1	–4.9
Pine Bluff, Ark.	20.5	5.1	56	–58.8	–31.6
Springfield, Mo.	–0.1	3.3	2464	–9.8	–38.5
Texarkana, Texas-Texarkana, Ark.	30.1	8.2	362	94.6	24.8
United States	–1.4	1.8	1216071	–24.5	–28.4

SOURCES: Office of Federal Housing Enterprise Oversight, Bureau of the Census

FIGURE 3

Housing Market Indicators for Eighth District States

	House Price Indexes (OFHEO)			
	Percent Change (Annual Rate) 2007:Q3	Year-over-Year Percent Change	Existing Home Sales, Percent Change from Previous Year (Q3)	Payroll Employment-Construction (Oct.) Percent Change from Previous Year
Arkansas	0.9	4.1	–12.3	–1.6
Illinois	0.1	2.5	–17.6	0.0
Indiana	–0.1	2.0	–9.4	2.7
Kentucky	2.5	3.7	–7.2	0.8
Mississippi	5.4	5.1	–3.3	7.6
Missouri	–0.3	2.7	–11.0	2.9
Tennessee	3.8	6.0	–11.3	5.6
United States	–1.4	1.8	–13.7	–1.6

SOURCES: Office of Federal Housing Enterprise Oversight, National Association of Realtors, Bureau of Labor Statistics

Measuring Housing Prices

There are three commonly cited measures of existing house prices that are available for specific metro areas: The National Association of Realtors (NAR) publishes estimates of median house prices, the Office of Federal Housing Enterprise Oversight (OFHEO) publishes a quarterly weighted-average house price index and Standard & Poors publishes the S&P/Case-Shiller home price index.

The median price is simply the price at which half of the homes sold are more expensive and the other half are less expensive. Therefore, the NAR median price index can change even when prices of particular houses are unchanged: For example, fewer sales of expensive homes compared with relatively cheaper homes moves the median lower. In this sense, it provides information about the distribution of home sales by price. The median price index is calculated only for the largest 156 metro areas in the U.S.; so, it covers only five of the metro areas in the Eighth Federal Reserve District.

The OFHEO index is a weighted-average measure, constructed using a matched "repeat sales method"—meaning that it measures average price changes in repeat sales or refinancings on the same properties. Because the OFHEO index of house prices includes only those that are purchased or securitized by FannieMae and FreddieMac, the index includes only those houses with conventional, conforming mortgages, not "jumbo" mortgages (currently, those over $417,000).

The S&P/Case-Shiller index is also calculated as a repeat-sales index, but it includes jumbo mortgages. However, it is constructed for only 20 of the nation's largest metropolitan areas. Most jumbo mortgages are issued in California, New York, Florida and Washington, D.C. For many of these metro areas, jumbo loans are, indeed, an important segment of the housing market. Nationwide, jumbo loans accounted for 16 percent of mortgage originations in 2006.

The areas most reliant on jumbo loans tend to be those where home prices have suffered the greatest declines. Hence, although the Case-Shiller index may be more accurate for measuring housing prices in those areas, it is not necessarily an accurate reflection of housing prices in other parts of the country. Indeed, none of the 20 cities in the index is in the Eighth District.

As of 2007:Q3, the national totals for these three measures of housing prices showed year-over-year growth rates of –2 percent (NAR median), +1.8 percent (OFHEO) and –4.5 percent (Case-Shiller).

Town and Gown

PHOTO BY DUVALE RILEY

In This Southern Illinois Hub, They Are Now “Tied at the Hip”

SIUC’s sports draw people—and their pocketbooks—from around the area to Carbondale. Cheering on the Salukis women’s basketball team Dec. 8 were (from the left) Bill Erwin of Carterville, Jodi Tamen of West Frankfort and Rollynda Morrow of West Frankfort. Tamen is an alumnus.

By Susan C. Thomson

Carbondale, Ill., runs on three economic cylinders—education, health care and retailing. Education trumps all, most visibly and boisterously when maroon-and-white-clad Salukis fans converge on town for big football and basketball games and book the hotels and motels to capacity.

More than any other enterprise, the Carbondale campus of Southern Illinois University also drives the city’s quieter, workaday life. The university is the city’s largest single employer by far, with 7,200 workers. Its 18,850 students—most of them nonresidents who are not counted in the census—help spur economic activity that is at least double what the permanent population could generate on its own, estimates the city’s development director, Kevin Baity.

Also contributing to the local economy are tens of thousands of other spenders, who travel for miles across the rural surroundings for shopping and medical care because they lack options closer to home.

In medical care, the biggest player is Memorial Hospital, which last year finished a two-story, $14 million addition and a freestanding $7 million cardiology center. George Maroney says the hospital has been in construction mode for the entire 30 years he’s been its administrator. Over the same period, it has gradually added advanced medical specialties, such as open heart surgery, and has extended its geographic reach to the state’s eastern, western and southern borders. Now, some patients come from nearby parts of Kentucky and Indiana, Maroney says.

The hospital’s hometown punch has strengthened accordingly. Maroney recalls there being about 25 physicians on staff 30 years ago, compared with about 150 today.

Carbondale by the numbers

City of Carbondale	24,881 (July 1, 2006)*
Jackson County	58,041 (July 1, 2006)*
City Labor Force	14,001 (2006)**
Unemployment Rate	3.2 percent (2006)**

* *Includes an unknown number of students who are also full-time residents*

** *SOURCE: State of Illinois*

TOP FIVE EMPLOYERS

Southern Illinois University	7,200*
Memorial Hospital of Carbondale	1,150*
University Mall	705**
Center for Comprehensive Services (rehabilitative medicine)	509**
Wal-Mart Super Center	390**

* *Self-reported, October 2007*

** *SOURCE: City of Carbondale, July 2007*

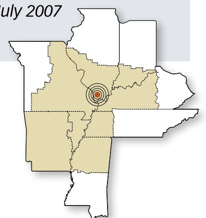


PHOTO BY RYAN RENDLEMAN

Memorial Hospital has been in construction mode for decades, says its administrator. Last year, a $14 million addition and a freestanding $7 million cardiology center were finished. The hospital is the biggest in the area and draws patients from throughout Southern Illinois, as well as nearby parts of Kentucky and Indiana.

Of today's count, he estimates 110 have office practices in Carbondale, with an average of three employees each.

In shopping, too, the city is a regional hub, not limited to obvious standbys like Wal-Mart and Lowe's. University Mall draws customers from 50 miles away, says the general manager, Debra Tindall. The center has been through a series of owners, expansions and tenants since opening in 1974. It now boasts an eight-screen movie theater and 81 stores. The lineup includes anchors J.C. Penney and Macy's and recent additions Bed Bath & Beyond, Gap and Old Navy. Beyond the mall and all new to town within the past five years are Office Depot, Barnes & Noble, Kohl's and Petco. Dick's Sporting Goods opened in September.

City Depends on Sales Taxes

The city banks on these and other retail outlets—literally. Five years ago, the city stopped levying real estate property taxes. It has since been relying on its share of local sales taxes for slightly more than half of its general revenue budget, with the rest provided by the city-owned water utility and various fees. Two years ago, the city annexed the university's 1,133-acre campus, enabling it to start charging city sales tax at the stores there. The move paid off because it didn't require the city to provide the university anything beyond existing fire protection services, Baity says.

The city aggressively pursues not just retail but all development, notably through an enterprise zone stretching along its main commercial arteries. Businesses that expand or build within the zone can qualify for local fee waivers and state and local tax breaks.

The zone includes a tax-increment-financing district of six square blocks—once an eyesore full of ruined buildings—where additional financial sweeteners are available to new businesses.

First Southern Bank, founded in 2002, was forgiven sales taxes on all construction materials and was granted a 23-year, 75-percent reimbursement on real estate taxes for parks and schools for putting its 13,000-square-foot building in the district. If not for those breaks, the bank "probably wouldn't be in downtown Carbondale," says its president, John Dosier.

He offers the project as "an example of how city government and the business community can come together" for community improvement.

University Comes Into Its Own

Ironically, for years now, Carbondale's major economic engine—the university—has not, on the whole, been a factor in the city's growth. That's partly because the university has not yet "optimally developed" its potential as an economic force in its own backyard, says John Koropchak, SIUC's vice chancellor for research and graduate dean.

PHOTO BY DUVALE RILEY

First Southern Bank is an anchor in the downtown tax-increment-financing district, once an eyesore full of down-and-out buildings. If not for the tax breaks, the bank probably would not have built there, says its president. The bank has also invested in and is offering for sale four other lots there.

“We’re tied at the hip,” Trevino says. “What’s good for SIU is good for the city, and vice versa.”

PHOTO BY DUVALE RILEY

City officials worry that as students move out of rental housing and into new dorms, the houses will become neglected and abandoned. To prevent such a slide, the City Council voted last fall to grant $5,000 to any buyer of a rental property who would own and live in it for 10 years. Here, students (from left) Lauren Hickman, Brandy Roe and Ryan Sweikert gather on the front porch of a house on South Forest Street that the two women rent.

But that is changing, he says, with SIUC now subscribing to a Jackson County development plan that pictures the university as applying itself more to local and regional betterment.

The university’s economic impact has also been held back by enrollment that was edging down for several years until last fall when—in a glimmer of hope—the campus enrolled its largest freshman class in 17 years. Fernando Trevino, who became campus chancellor in July, says the university’s challenge has been not in recruiting students but in keeping them. The cost of attending SIUC totals about $13,000 a year, which is beyond the means of many, mostly rural, Southern Illinoisans, he says. “This is not a highly affluent area. It’s a middle-class and working-class population.”

Today’s students appear to be more the homebody type than those of a decade and more ago, when the campus made headlines because of the students’ drunken, destructive Halloween parties on the several blocks of South Illinois Avenue known as The Strip. That stretch is quieter now, thanks in part to enterprise-zone incentives that have served to replace some of the bars there with, for instance, a bookstore and a dog groomer.

Last fall, the university offered students all the more reason to stay on campus when it opened its first new housing in 39 years. The 410 lucky occupants have the sort of accommodations favored on many campuses today—single bedrooms grouped around common areas with kitchens and laundry facilities.

Elsewhere around the city, private developers are at various stages of putting up similar accommodations for about 1,500 occupants at rents generally competitive with the university’s.

For a city where 60 percent of off-campus housing is rented and two-thirds of the renters are SIUC students, the attractive new units pose a problem. Students “are flocking to them,” Baity says. The prospect, then, is many fewer tenants for the city’s oldest houses —properties that students have “lived in pretty hard,” Mayor Brad Cole says. To keep these from falling into neglect and abandonment, the City Council voted in October to grant $5,000 to any buyer of a rental property who would own and live in it for 10 years.

The city has also extended a helping hand to the university by pledging $20 million to the university’s $83 million plan to upgrade its 43-year-old basketball arena and replace the 70-year-old football stadium. The payout schedule calls for $1 million a year for 20 years, with the money coming from the proceeds of a new half-percent increase in sales tax. That increase brings the city’s total to 7 3/4 percent.

The chancellor and the mayor see the arrangement as a case of mutual self-interest. “We’re tied at the hip,” Trevino says. “What’s good for SIU is good for the city, and vice versa.”

Says Cole, “Anything that brings people to Carbondale is a plus for us ... because we’re sales tax-based.”

While predicting that its basic three-ingredient economic recipe won’t change much any time soon, Baity says the city would welcome “knowledge-based, higher-end, smaller industries,” such as the printer, medical biller and water-testing company that have come through the local small business development center or research park, both affiliated with the university.

That park now houses 14 businesses in various stages of development. Of these, eyes are particularly focused on Midwest Energy Group Inc., spun off from the university’s chemistry department in 2006 after one of its professors discovered what might be a new and more efficient way to create biodiesel fuel.

Separately, for a half-century, university investigators have been studying coal—a natural subject for them since Southern Illinois holds some of the nation’s richest deposits and was once best known as mining country. But Illinois’ coal is high-sulfur coal, long spurned as environmentally undesirable, and the area’s mining industry has struggled.

The university’s coal scientists are looking for ways to clean coal and convert it to other fuels, such as diesel and natural gas, and for other uses, such as feedstock and fertilizer. Other university researchers are working on other energy technologies, such as fuel cells and hydrogen generation and storage.

“It’s not inconceivable to think that, with all of the energy resources we have here, this region could become the energy capital of the United States,” says SIUC’s Koropchak. Ω

Susan C. Thomson is a freelance writer.

ASK AN ECONOMIST

William T. Gavin joined the St. Louis Fed in 1994; before that, he worked for the Cleveland Fed. His areas of interest are macroeconomic dynamics and monetary policy rules. He is also the editor of the *Review*, the St. Louis Fed's academic journal. When he wants to have even more fun, he rides his 1999 Excelsior-Henderson motorcycle. For more on his research, see http://research.stlouisfed.org/econ/gavin/index.html.

Why are there so many price indexes?

Various measures of prices and inflation have been constructed for different purposes and, therefore, reflect differing emphases. For example, the Consumer Price Index (CPI) was designed to adjust pensions for WW I veterans. It measures changes in prices for a fixed basket of goods that is intended to reflect the typical urban consumer. Although the market basket is periodically adjusted, the fixed shares make it possible to leave past data unrevised. These properties make the CPI useful for indexing items like Social Security payments, wage contracts and inflation-adjusted bonds.

The Personal Consumption Expenditures Price Index (PCEPI) was designed to measure the real, inflation-adjusted consumption component in the National Income and Product Accounts. Therefore, the PCEPI is a more comprehensive measure than the CPI. The PCEPI also differs from the CPI by using expenditure shares that change over time as consumers adjust their purchases in response to relative price changes—buying more apples when orange prices rise, for example.

Other price indexes are designed to measure prices of specific economic activities. The Producer Price Index (PPI) tracks the prices of materials as they move through the production process toward finished-good status. The Import Price Index, as the name implies, measures changes in the prices of imported goods.

For both the CPI and PCEPI, it is common to consider "core" measures, for which the food and energy components are eliminated. Because these two components tend to be more volatile than others, their omission leaves a measure that is thought to more accurately reflect long-term trends in inflation. A similar motivation lies behind the construction of the "median" and "trimmed mean" measures of the CPI that are published by the Federal Reserve Bank of Cleveland.

The Federal Open Market Committee (FOMC) has, in recent years, cast its inflation forecasts in terms of the core PCEPI. On Nov. 14, 2007, Fed Chairman Ben Bernanke announced that the FOMC would begin making quarterly projections for headline PCEPI inflation (which includes food and energy—important items in the consumer's budget) and for core inflation (because it is a better short-run indicator of where headline inflation is likely to end up in the long run).

Submit your question in a letter to the editor. (See Page 2.)
One question will be answered by the appropriate economist in each issue.

LETTERS TO THE EDITOR

This is in response to October's article titled "Trading Barbs: A Primer on the Globalization Debate." To read the entire letter, as well as other letters, go to www.stlouisfed.org/publications/re.

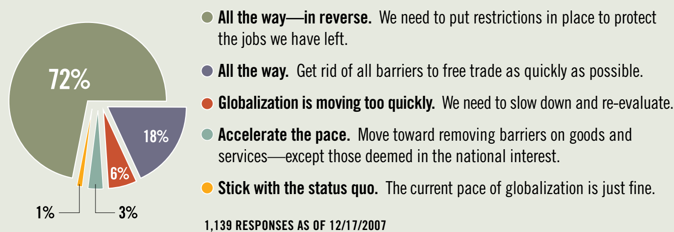
Dear Editor:
I particularly liked this article's noting of the need for labor mobility equal to that of capital but also of the probable impossibility of achieving labor mobility for a variety of reasons. I agree fully that we are unlikely to ever generate the required level of labor mobility, meaning there is a structural and permanent advantage associated with mobile capital that, absent policy fixes, leads to high inequality or a breakdown in globalization that ultimately hurts everyone. ... What is good for the people of the U.S. and the world can be the same only if policy causes a more equitable distribution of the benefits and costs within our own country. Otherwise, I am quite certain the outcome of this globalization episode will be similar in some fashion to the previous one, where a very few got the benefits and most got the costs. The previous globalization episode terminated in World War I.

Steve DeHoff, a staff consultant at the Cincinnati office of Stress Engineering Services Inc.

FED FLASH POLL RESULTS

Whenever a new issue of *The Regional Economist* is published, a new poll is posted on the Bank's home page, www.stlouisfed.org. The poll question is always pegged to an article in that quarter's issue. Here are the results of the poll that went with the October issue. The question stemmed from the article "Trading Barbs: A Primer on the Globalization Debate."

HOW FAR WOULD YOU GO ON GLOBALIZATION?



THIS ISSUE'S POLL QUESTION:

What Should Be the No. 1 Goal of Monetary Policymakers?

1. Price stability.
2. Maximum employment.
3. Moderate long-term interest rates.
4. Stability of the financial system.
5. A strong dollar exchange rate.

To vote, go to www.stlouisfed.org. Anyone can vote, but please do so only once. (This is not a scientific poll.)

HEAR! HEAR!

Periodically, we conduct short interviews with economists on a topic that we think has wide interest. Then, we post these 10-20 minute audiocasts on our web site. Go to www.stlouisfed.org/publications/re and follow the links to hear about:

- Payday lending: Is it predatory?
- Tracking livestock with RFID tags: What's the fuss?
- Wal-Mart's efforts to open banks

NEXT ISSUE

Neighborhoods That Don't Work

In urban areas across the country, neighborhoods that had high unemployment rates in 1980 saw the situation worsen over the next 20 years, while neighborhoods that had little unemployment back then had even less in 2000. The reasons for this polarization may not be surprising, but they are worrisome. In the April issue of *The Regional Economist*, read about the concentration of joblessness and ways in which public policy might deal with it.

New Year Brings New Content and New Look to Publication

Dear Readers,

Welcome to the new *Regional Economist*. As we mark the publication's 15th anniversary, we are introducing a variety of changes: more pages, additional features and a different look. The update was prompted, in part, by your responses to our reader survey almost two years ago: In general, you liked what we were giving you, but you wanted more. Hence, the changes you see today aren't radical.

Regular readers will notice the new design, starting with the size. We've switched to a standard 8.5 x 11 because many of you said this would make for easier filing and photocopying. The nameplate on the cover is different, as well as the typefaces inside. As you page through the publication, you will see fewer illustrations and more photographs—partly to lower costs, partly because the staff craved something different. The presentation of the charts and other data has been simplified.

As for "more," we are adding at least four pages to every issue. (For those of you who worried about the cost of this publication, be aware that we have switched to less-expensive paper.) Sometimes, this additional space will be used for more articles; other times, as in this issue, the space will allow for lengthier explanations of what our economists want to share with you.

At least one of these extra pages will always be devoted to a new feature, which we are calling "Reader Exchange." Here, we will print your letters and give the results of our quarterly online poll, which is always pegged to an article in that quarter's issue of *RE*. We will also list upcoming presentations by our economists (if open to the public) and will alert you to any interviews with them that you can listen to online. In addition, we are starting "Ask an Economist," a column in which one of our economists answers a question posed by readers. (This issue's question: Why are there so many price indexes?) The point of "Reader Exchange" is to give you a chance to share your thinking with us and with other readers; we also want to steer you to our web site so that you can see what else we—the entire St. Louis Fed—have to offer that could prove informative and helpful to you, from journals for scholars to newsletters for nonprofit community developers, from FOMC news to speeches by our leaders, from economics curriculum for teachers to regulatory updates for bankers. Go to www.stlouisfed.org to see what else you can find.

Howard J. Wall and Michael R. Pakko, co-editors of *The Regional Economist.*

In the meantime, feel free to let us know what you think about the new *Regional Economist*. To send an e-mail, go to www.stlouisfed.org/publications/re. You can also mail a letter to either of us at the Federal Reserve Bank of St. Louis, Box 442, St. Louis, MO 63166.

Howard J. Wall and Michael R. Pakko

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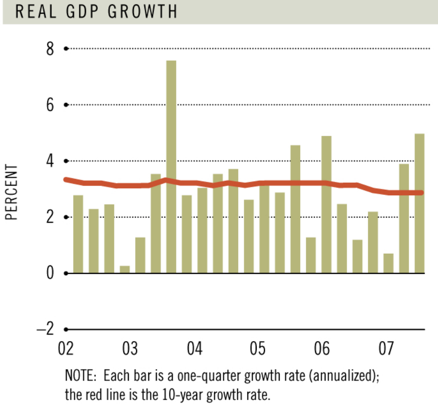
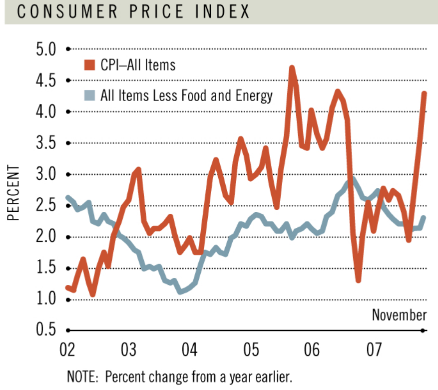
JANUARY 2008 | VOL. 16, NO. 1

REAL GDP GROWTH



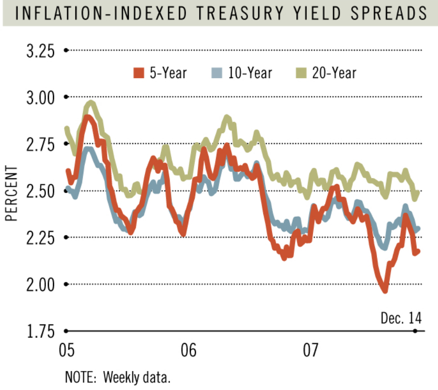
NOTE: Each bar is a one-quarter growth rate (annualized); the red line is the 10-year growth rate.

CONSUMER PRICE INDEX



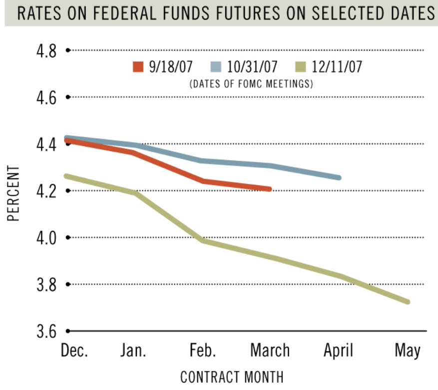
NOTE: Percent change from a year earlier.

INFLATION-INDEXED TREASURY YIELD SPREADS

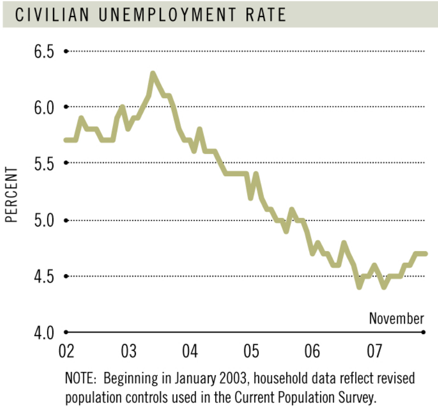


NOTE: Weekly data.

RATES ON FEDERAL FUNDS FUTURES ON SELECTED DATES

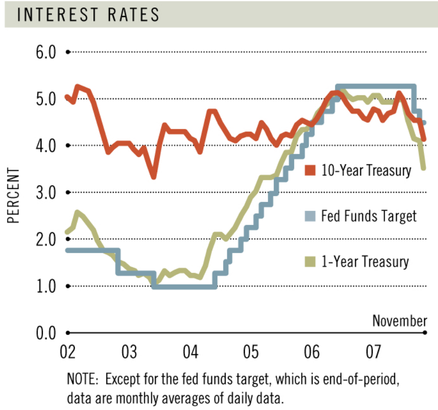


CIVILIAN UNEMPLOYMENT RATE



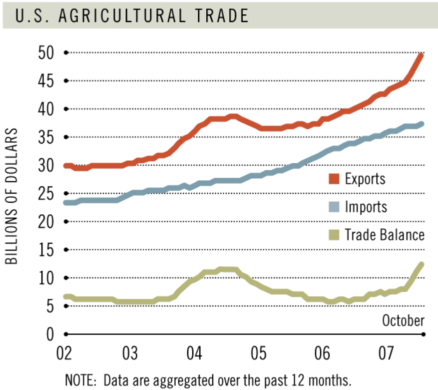
NOTE: Beginning in January 2003, household data reflect revised population controls used in the Current Population Survey.

INTEREST RATES



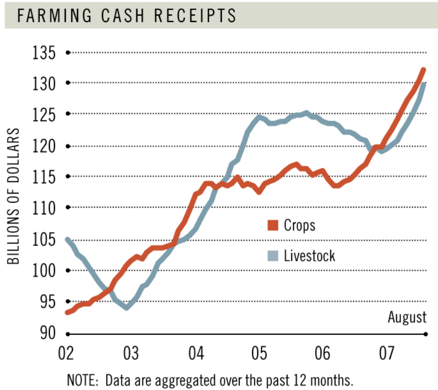
NOTE: Except for the fed funds target, which is end-of-period, data are monthly averages of daily data.

U.S. AGRICULTURAL TRADE



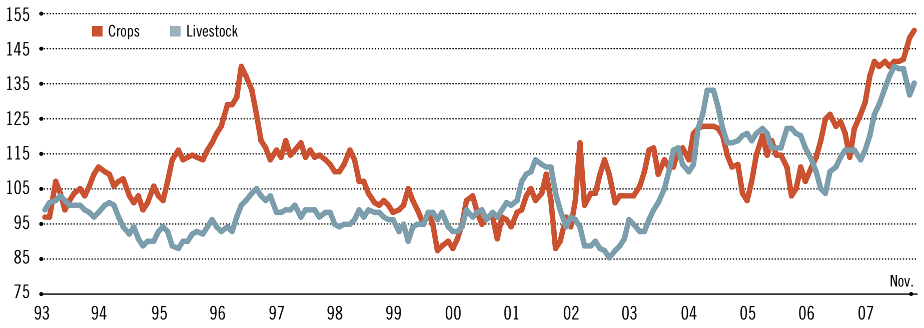
NOTE: Data are aggregated over the past 12 months.

FARMING CASH RECEIPTS



NOTE: Data are aggregated over the past 12 months.

U.S. CROP AND LIVESTOCK PRICES / INDEX 1990-92=100

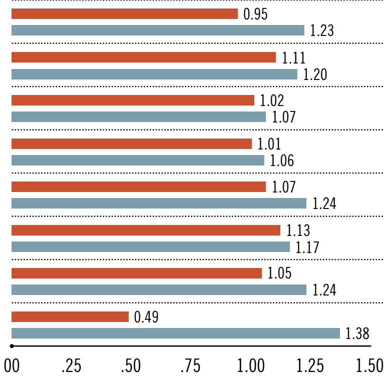


COMMERCIAL BANK PERFORMANCE RATIOS

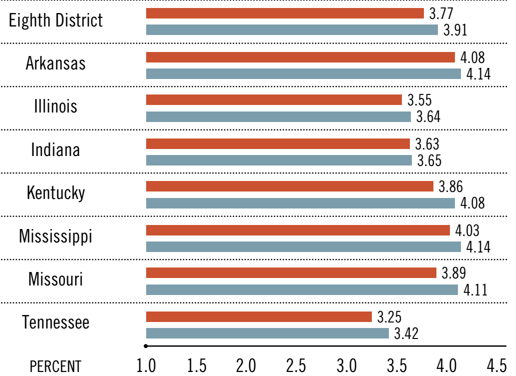
U.S. BANKS BY ASSET SIZE / THIRD QUARTER 2007

	All	\$100 million-\$300 million	less than \$300 million	\$300 million-\$1 billion	Less than \$1 billion	\$1 billion-\$15 billion	Less than \$15 billion	More than \$15 billion
Return on Average Assets*	1.17	1.11	1.02	1.22	1.12	1.23	1.18	1.17
Net Interest Margin*	3.41	4.18	4.20	4.09	4.15	3.92	4.03	3.20
Nonperforming Loan Ratio	1.04	1.04	1.05	1.09	1.07	0.92	0.99	1.05
Loan Loss Reserve Ratio	1.22	1.24	1.27	1.23	1.25	1.24	1.24	1.21

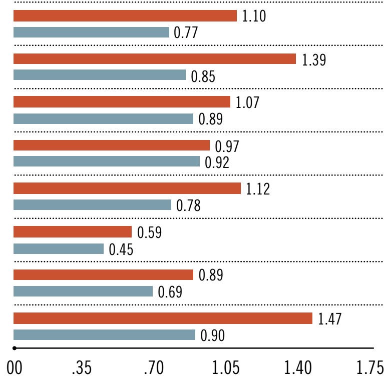
RETURN ON AVERAGE ASSETS*



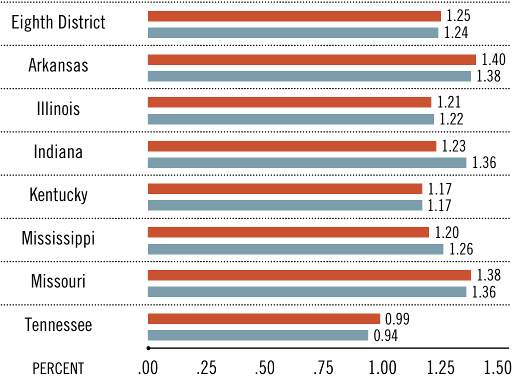
NET INTEREST MARGIN*



NONPERFORMING LOAN RATIO



LOAN LOSS RESERVE RATIO



■ Third Quarter 2007 ■ Third Quarter 2006

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
* Annualized data

For additional banking and regional data, visit our web site at:
www.reserach.stlouis.org/fred/data/regional.html.

REGIONAL ECONOMIC INDICATORS

NONFARM EMPLOYMENT GROWTH* / THIRD QUARTER 2007

YEAR-OVER-YEAR PERCENT CHANGE

	United States	Eighth District	Arkansas	Illinois	Indiana	Kentucky	Mississippi	Missouri	Tennessee
Total Nonagricultural	1.2%	0.8%	0.7%	0.8%	0.6%	0.5%	1.9%	1.0%	0.7%
Natural Resources/Mining	5.1	2.8	16.7	1.3	0.5	2.5	–2.1	0.0	1.6
Construction	–1.1	2.4	0.7	0.5	2.4	2.2	6.5	2.3	5.9
Manufacturing	–1.4	–1.8	–4.2	–0.6	–1.3	–2.0	–1.8	–2.9	–2.5
Trade/Transportation/Utilities	1.0	0.6	0.3	0.2	0.7	0.1	1.2	1.6	0.9
Information	1.2	0.3	3.8	–0.9	0.1	0.8	0.5	–0.7	2.8
Financial Activities	0.9	0.8	2.0	1.0	0.4	2.1	0.5	0.5	0.1
Professional & Business Services	1.7	1.6	2.5	2.3	0.4	2.4	3.7	1.1	–0.3
Educational & Health Services	3.3	1.7	2.6	1.8	0.4	1.2	1.9	2.3	2.0
Leisure & Hospitality	2.9	2.3	2.9	2.5	1.4	0.6	2.9	2.8	2.9
Other Services	0.9	0.4	1.4	–0.4	0.7	0.5	0.5	0.7	0.8
Government	1.0	0.7	1.4	-0.5	2.2	0.4	3.5	0.8	–0.2

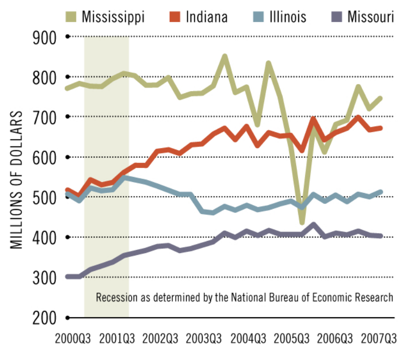
* NOTE: Nonfarm payroll employment series have been converted from the 1987 Standard Classification (SIC) system basis to a 2002 North American Industry Classification (NAICS) basis.

UNEMPLOYMENT RATES

PERCENT

	III/2007	II/2007	III/2006
United States	4.6%	4.5%	4.7%
Arkansas	5.6	5.1	5.4
Illinois	5.2	4.9	4.4
Indiana	4.7	4.7	5.0
Kentucky	5.8	5.4	5.7
Mississippi	6.3	6.3	6.7
Missouri	5.2	4.6	5.0
Tennessee	4.3	4.4	5.2

ADJUSTED GROSS CASINO REVENUE*

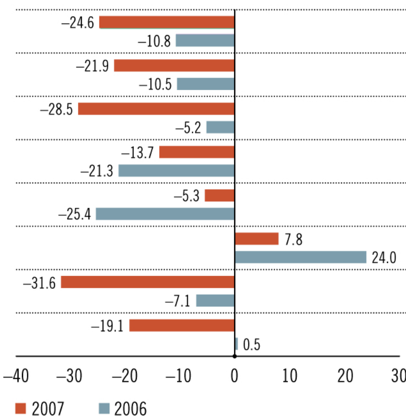


* NOTE: Adjusted Gross Revenue = Total wagers minus players' winnings. Native American casino revenue (Mississippi only) is not included. In 2007 Q3 dollars.

SOURCE: State gambling commissions.

HOUSING PERMITS / THIRD QUARTER

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

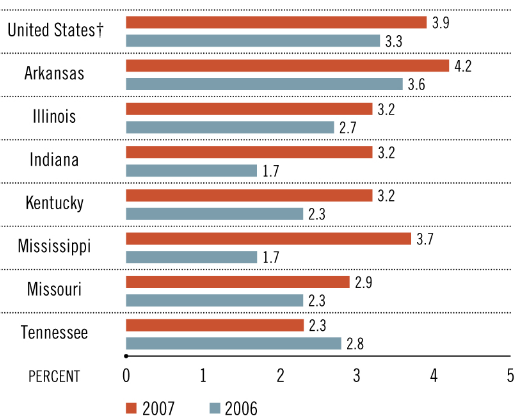


†For the first six months of 2008, this was incorrectly labeled "Eighth District." The data were for the U.S., however.

All data are seasonally adjusted unless otherwise noted.

REAL PERSONAL INCOME* / SECOND QUARTER

YEAR-OVER-YEAR PERCENT CHANGE



*NOTE: Real personal income is personal income divided by the PCE chained price index.