



REGIONAL ECONOMIST | JULY 2001

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## President's Message: Blackouts in California Shouldn't Cause Panic Here

William Poole

That time of the year is here—when it's scary to even think about your air conditioner stopping. But in California, not only are the air conditioners falling silent, but the assembly lines, the smelters, the copiers—anything powered by electricity. Five months after the first blackout, the power crisis has shut down some businesses, scared away others, driven a large utility into bankruptcy and jacked up costs for everyone.

Could the same happen here? Unlikely, say the experts. Still, energy crises played a significant role in most recessions since World War II. And whatever happens in California can ripple across the rest of the country, given the clout of the state's economy.

But the spread of the California crisis is not inevitable. Only because a string of bad decisions and bad luck converged at once—a sort of perfect storm—did this occur. As everybody knows by now, California's style of deregulation—with retail prices capped but wholesale prices not—played a big role in the meltdown. But the Northwest's drought hurt the state, too, because of its reliance on hydro power. The soaring price of natural gas—another major source of fuel for electricity generation there—was also a factor.

Here, in the Eighth Federal Reserve District, no such mix of problems exists, at least to that degree. Only one state in the District—Illinois—has deregulated, and its plan seems to have been successful. Illinois utilities were not forced to sell off their generating capacity, nor were they required to buy power on the spot market only. Illinois also offered incentives to add generating capacity, such as streamlined permitting and faster depreciation. Consequently, power companies are planning enough construction to double Illinois' generating capacity. Other District states are also building plants. In contrast, California hasn't added significant capacity in a decade.

Power providers here also have an advantage because they can heavily use some of the cheaper types of fuel that Californians dislike. Nuclear power is used by some utilities here to generate one-third of their electricity. At others, coal is still king.

One problem shared with California is "traffic jams" on transmission lines. Five years ago, the government ordered utilities to share their lines so that electricity could be traded across the country. This is both a "positive" and "negative" in the center of the country. On the one hand, our utilities have plenty of neighbors to trade with—one company is connected to 28 sources. On the other hand, all these neighbors—and other power companies across the country—need lines in the middle of the country to move their electricity.

This is just one of many problems to be worked out as the inevitable deregulation sweeps the country. In the meantime, California's woes are proving to be an economic opportunity for those in the District with power to spare. Development officials are wooing California businesses to relocate to where the supply can meet the demand.



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## National and District Overview: It's A Wait and See Economy Out There

Adam M. Zaretsky

Oh, what a difference a year makes! Nine months ago, this column asked if the economy had really achieved a soft landing or if, perhaps, it had not even touched down yet. The question was posed on the heels of six hikes in the federal funds target rate from mid-1999. The answer was mixed: Although real GDP data indicated that the economy was still strong, the employment picture was weakening and inflation appeared to be creeping up. "Time will tell," the article concluded, "if the ... corrections already put in place will work to keep the economy on course and inflation at bay."

Three months ago, this column asked if the economy would gain a second wind. By then, GDP growth in the latter half of 2000 had slowed to less than a third of what it had been in the prior six months. However, employment numbers were coming in stronger than expected, sales of homes and vehicles were rebounding, and inflation appeared tamer.

### Output's Ups and Downs

Today, the picture is still confusing, as surprises have occurred on both the upside and downside. As stated three months ago, output grew in the second half of 2000 at a 1.6 percent annual rate, and expectations were that growth would slow further in the first quarter of 2001. Then, the advance data caught the market by surprise. In April, the Bureau of Economic Analysis (BEA) announced that GDP had grown at a 2 percent annual rate in the first quarter—about double what most analysts had expected. Perhaps the economy hadn't slowed as much as was believed. Perhaps the bottom had already been hit in late 2000, and the economy was starting a slow rebound. Perhaps more data were needed.

In May, the BEA released a revised figure for first-quarter GDP growth: 1.3 percent at an annual rate. What happened? The later, more-comprehensive data revealed that decreases in inventories were much greater than had been originally reported—almost three times April's initial data. This change alone knocked about one-half of a percentage point off April's advance growth rate. Revisions to other categories were minor in comparison.

### Jobs' Downs

At the same time that GDP numbers were coming in first high and then low, job growth actually turned negative—that is, the number of workers on payrolls was declining—and the unemployment rate was rising. By April 2001, the unemployment rate had inched up to 4.5 percent after spending more than a year at or below 4.3 percent, although the rate fell to 4.4 percent in May. Keep in mind, though, that by historical standards, this rate is still low: Unemployment did not fall below this even once between early 1970 and 1998.

The striking slowdown in payroll employment is more worrisome than the small rise in the unemployment rate. In May, payroll employment was down by about 19,000 jobs from April, a month that had itself seen a decline of about 182,000 jobs. In the first half of 2001, payroll employment grew by about 17,200 jobs per month. By comparison, it grew by about 66,000 jobs per month in the second half of 2000, after increasing by about 267,000 jobs a month in the first half of the year.

The bulk of the employment slowdown has occurred in the manufacturing sector. In fact, this sector has not seen its total payrolls increase since July 2000. Since then, the sector has lost approximately 675,000 jobs. The service-producing sector, on the other hand, has fared better. Between September 2000 and May 2001, it gained employment every month, adding somewhat more than 1 million jobs.

## **Time Will Tell**

All told, in the first half of this year, the economy continued to slow, with the bulk of the job losses occurring in the manufacturing sector. During the same period, the Federal Open Market Committee cut the federal funds target, not once, not twice, but six times—for a total of 2.75 percentage points—in an attempt to stimulate the economy. Because the effects of these rate cuts have yet to be fully felt, once again, time will tell if the policy changes in place will work to keep the U.S. economy on course.

Abbigail J. Chiodo provided research assistance.



## The Changing Face of the Eighth District

Adam M. Zaretsky

Now that the 2000 census is complete, an updated face can be put on the population in the Eighth Federal Reserve District.

Looking at population breakdowns is important because a region's population growth determines, to a large extent, its labor force growth, which ultimately translates into economic growth. This article represents the first step of a more comprehensive analysis of the demographic and economic attributes of the Eighth District. As more data become available, other articles will expand and broaden on this analysis. This article will take the first cut of the census data and describe changes in the overall population and racial composition of the District to understand how its face has changed since 1990.

### The District<sup>1</sup>

According to the census, the District's population on April 1, 2000, was 13,455,055 people, up 7.5 percent from 1990. By comparison, the nation's population grew by 13.2 percent over the same period. In 2000, the District's population was 4.8 percent of the nation's; in 1990, it was 5 percent.

The District's total population has a somewhat greater percentage of whites and African-Americans than does the population for the nation as a whole. In the District, 80.3 percent of the population is white (only one race marked), while in the nation the share is 75.1 percent. The District's African-American population (only one race marked) accounts for 16.5 percent of the District's total. Nationwide, African-Americans make up 12.3 percent of the total. In other words, almost 97 percent of District residents are either white or African-American, a figure that is about 10 percentage points higher than the national number.<sup>2</sup>

### The District's States

This section examines data on the individual states in the District—but only those portions of the states that lie within the District itself. Many of the major population centers in these states—Chicago, Indianapolis, Kansas City and Nashville, for example—fall outside the boundaries of the District. Including these metro areas in the analysis could easily skew the descriptions.

In 2000, as in 1990, Missouri was the District state with the largest population—about 3.57 million people. This figure was up only 2.4 percent from 1990, though. Arkansas, Kentucky and Tennessee followed Missouri in the 2000 population ranking in the District. Not surprisingly, these four states are also the ones that contain the largest District cities—St. Louis, Little Rock, Louisville and Memphis. States in the southern part of the District—Arkansas, Mississippi and Tennessee—exhibited the strongest population growth rates, at more than 10 percent each over the decade. Illinois and Missouri, on the other hand, exhibited the District's slowest population growth rates, at less than 2.5 percent each. (See chart.)

Illinois and Missouri also experienced declines in shares of their population that are white. Still, white residents made up at least 80 percent of all District states' populations, except in Mississippi and Tennessee. In these two states, the share of the population that is white is less than 60 percent. Mississippi and Tennessee also have the largest shares of African-American residents, slightly less than 40 percent each. Shares of African-American residents in other District states vary—3 percent in Indiana and almost 16 percent in Arkansas, for example. All told, white and African-American residents comprise at least 95 percent of each state's population.

As in the rest of the country, the fastest growing segments of the District population are those groups that represent the smallest shares of total population. Three of these groups are Asians, native Hawaiians and Pacific islanders, and American Indians and Alaskan natives. In many instances, these groups more than doubled in size. Still, combined they currently comprise less than 5 percent of the population in each District state. About 1 percent of District residents classified themselves as being of more than one race, an option not available in the 1990 census.

## **The District's "Big" MSAs—The Economic Engines**

The four major metropolitan statistical areas (MSAs) in the District are the driving forces of the region's economy. As in 1990, St. Louis is the largest MSA in the District, with a 2000 population of slightly more than 2.6 million people.<sup>3</sup> Memphis is still the District's second-largest MSA, with more than 1.1 million people. Continuing to rank third and fourth are the Louisville area (more than 1 million people) and the Little Rock area (about 584,000 people).

Southern District cities—Little Rock and Memphis—grew faster than their northern counterparts—Louisville and St. Louis. Little Rock posted the fastest growth of the four over the decade, increasing its total population by 13.8 percent. Memphis' population grew by 12.7 percent. Louisville's 8.1 percent growth and St. Louis' 4.5 percent growth were significantly lower.

How do District metro areas fare against others in the country? When ranked by total population, St. Louis is No. 18 of the 280 MSAs in the United States. Memphis is No. 44, Louisville is No. 50 and Little Rock, the District's smallest "big" metro area, is No. 74. When ranked by growth in population, however, a different picture appears. Little Rock, the District's fastest growing major metro area, is No. 117 in growth nationwide. Memphis is No. 134, Louisville is No. 182 and St. Louis is No. 220. Looked at another way, the District's metro areas are relatively large in overall size (smallest is 74 out of 280), but relatively slow growing (fastest is 117 out of 280). For comparison, Las Vegas, the MSA that grew the fastest, saw its population increase a whopping 83.3 percent over the decade. By and large, the nation's metro areas that have experienced the fastest population growth are in the Southeast, Southwest and West.

In Little Rock, Louisville and St. Louis, more than 74 percent of each population is white; in Memphis, the share of white residents is 52.9 percent. All of these shares are down from their 1990 levels. The shares of residents in these areas that are African-American are up from their 1990 levels, with Memphis having the largest share—43.4 percent. In the other areas, the African-American population shares range from almost 14 percent in Louisville to almost 22 percent in Little Rock. Thus, as in the states and the District as a whole, white and African-American residents comprise more than 96 percent of the total populations of all of these metropolitan areas. The difference between the metro areas and states, however, is in the distribution—more evenly split in the urban areas than in the states.

Interestingly, the white population total in the St. Louis region was essentially unchanged (up 0.2 percent) between 1990 and 2000. St. Louis is the only District region where this occurred. In other words, the population growth there—though only 4.5 percent—resulted entirely from growth in other racial categories. Which category grew the fastest? In St. Louis, it was a combination of the Asian group and the native

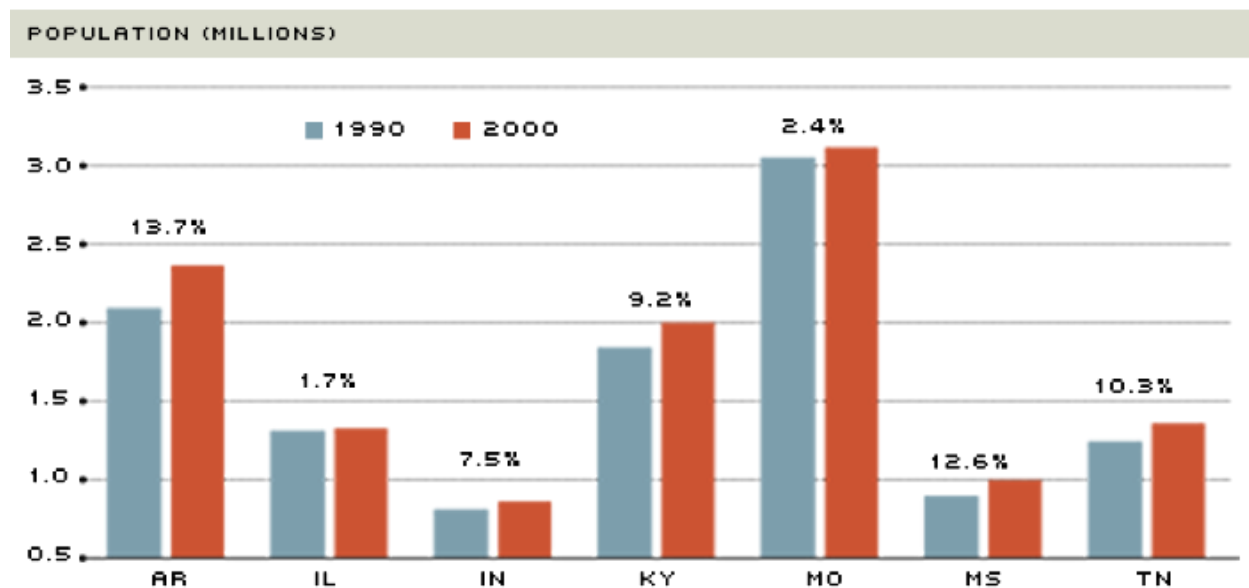
Hawaiians and Pacific islanders group.<sup>4</sup> In fact, this combined category grew the fastest in all of the other MSAs, too, about doubling its population over the past decade.

## The Nutshell Version

The District's population has grown slower than the nation's population over the past decade. This translates into a slower potential growth rate for the region's labor force, which could ultimately end up as a relatively slower rate of economic activity. Compared to the nation as a whole, whites and African-Americans make up a much larger share of the District's population. Other racial categories, however, are the District's fastest-growing.

Chart 1

## Slow Growin' in the Eighth District



Except in Arkansas, population growth rates in District states were below the nation's, which was 13.2 percent. States in the southern part of the District—Arkansas, Mississippi and Tennessee—all grew more than 10 percent. Their northern counterparts—Illinois, Indiana, Kentucky and Missouri—grew less than 10 percent, in a couple of cases, substantially less. Will this affect future economic growth in the region?

NOTE: Only portions of states in the Eighth District are represented.

SOURCE: U.S. Bureau of the Census

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Abbigail J. Chiodo provided research assistance.

## Endnotes

1. See the back cover of this publication for the boundaries of the Eighth Federal Reserve District. This article describes the population only within these boundaries. [back to text]

2. Because of the way the census asked questions and the data that are currently available, those of Hispanic or Latino descent might be included in the white or African-American categories. [back to text]
3. Because the geographic boundaries of MSAs change over time, part of the reported changes in populations can occur because of the addition or subtraction of counties from a region. By and large, though, the counties that are added or subtracted are small relative to the size of the region and have, at best, only a mild effect on the final numbers. [back to text]
4. Actually, the category "other race" was the fastest growing, but because it encompasses a vast array of races and ethnicities, it is extremely difficult to pin down. The Asian group and the native Hawaiians and Pacific islanders group are combined to make a comparison with 1990 data possible; they were one group then. [back to text]

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## The Microchip Flexes Its Muscle: Can It Compete with History's Best?

Kevin L. Kliesen , David C. Wheelock

*"We are witnessing nothing less than the rise of a digital economy and a new global medium that will be the single most important driver of business, economic and social change in the coming century."<sup>1</sup>*

—Louis Gerstner Jr., chairman of IBM

The U.S. economy has experienced more than 18 years of uninterrupted growth since the end of the 1981-82 recession. The lone blemish during this so-called Long Boom was a recession lasting just nine months, from July 1990 to March 1991. But what has so enthralled many economists is not the length of the boom but the acceleration in the economy's rate of productivity growth during the last half of the 1990s. Most economists who have attempted to explain the cause of this productivity boom point to the spate of innovations and technological advances associated with the microchip, which has spurred heavy investment in high-tech information and communications technology equipment and software. Many questions about the productivity boom remain, however:

- Why did it take so long to begin?
- How long will it last?
- Can public policy do anything to encourage productivity booms and lasting increases in economic growth?

Our current boom period appears similar to past eras of rapid technological progress and economic growth. In the late 19th and early 20th centuries, advances in the distribution and usage of electric power, new processes for making steel, development and application of the internal combustion engine, and expansion of the chemical industry and numerous other important sectors delivered impressive gains in manufacturing productivity and the standard of living. Like our current experience, however, a considerable delay occurred between the introduction of new technologies and measurable increases in aggregate productivity growth. Once productivity and economic growth began to accelerate, however, they remained high for several decades.

What can we learn from history that might be relevant for understanding our current productivity boom and for understanding whether public policy can play a constructive role in fostering sustained growth in living standards?

### The Importance of Productivity Growth



Economists and policy-makers pay so much attention to productivity growth for a simple reason: The more productive the nation's workforce becomes, the higher will be its citizens' standard of living. In the United States, per capita real gross domestic product rose by 2.2 percent per year on average from 1929 to 1994. (See below.) At this rate, the average American's living standard doubles about every 33 years. But if per capita GDP increases at a 3.4 percent annual rate—its growth from 1995 to 2000—then only 21 years would be needed for living standards to double. (See Figure 1.)

What causes productivity growth rates to speed up or slow down? Clearly, improvements in the quality of labor input, such as a more educated workforce, do. An increase in the quantity of capital per worker—known as capital deepening—also increases average labor productivity over time. In recent years, this phenomenon has been especially important, as sharp declines in the prices of computers, software and other information and communications technology equipment have caused businesses to dramatically ramp up their spending on such things.

Besides changes in measured labor and capital inputs, productivity can increase for other reasons. To capture these reasons, economists use the concept of total, or multi, factor productivity (TFP). In general, labor productivity growth—and, hence, growth of living standards—is a function of capital deepening and TFP growth.

Broadly, TFP growth is a measure of the economy's rate of innovation, or technical progress, over time. Though perhaps a nebulous concept to non-economists, technical progress can be thought of as the myriad improvements to standard of living arising from innovations that allow firms to produce new goods and services or to reduce the cost of existing goods and services. Some examples are:

- Medical advances that improve health care;
- More-powerful computers and improved software;
- Increased efficiencies associated with the Internet, such as e-commerce;
- Satellite- and land-based communications technologies that lower the cost of acquiring and disseminating information;
- Cars and airplanes that use less fuel; and
- More-efficient means of growing and producing food.

Historically, TFP growth has been an important cause of economic growth. To see this, consider the First Industrial Revolution, which occurred in Britain during the 18th and early 19th centuries, and the Second Industrial Revolution, which was centered in the United States at the end of the 19th century. Faster TFP growth explains more than 70 percent of the acceleration in British per capita income during the First Industrial Revolution, according to Northwestern University Professor Joel Mokyr. An examination of the Second Industrial Revolution also shows that aggregate output growth accelerated once the new technologies had become widely adopted in U.S. manufacturing and had precipitated a marked acceleration in TFP growth.

Economists now debate whether the computer revolution measures up to the great industrial revolutions of the past. If so, we may see a sustained acceleration in TFP growth as in past industrial revolutions. That the U.S. economy has stretched the bounds of growth previously thought unattainable a generation ago suggests that the microchip revolution has engendered some economy-wide benefits. Nonetheless, some reputable economists believe that previous episodes of innovation were much more significant and that the strong productivity growth of recent years is but a temporary phenomenon. The jury is still out. But since maintaining this prosperity for future generations is the overarching goal of public policy, policy-makers would like to have some insight into those forces driving the recent acceleration in labor productivity. Maybe something can be learned from the past.

# Productivity Puzzles, Past and Present

Citing technological advances stemming from the microchip, some observers of recent economic developments have concluded that the U.S. economy has entered a new era. Federal Reserve Chairman Alan Greenspan, for example, said, "When historians look back at the latter half of the 1990s a decade or two hence, I suspect that they will conclude we are now living through a pivotal period in American economic history."<sup>2</sup> Nonetheless, the rapid growth of U.S. productivity since 1995 has easily produced more questions than answers:

- Why did the productivity surge come about?
- If information technology is the story, why did productivity not accelerate sooner, when fundamental technological breakthroughs began to occur?
- Can the increase in productivity be sustained, or does the surge reflect temporary factors that will soon ebb?
- Can public policy play a role in promoting or sustaining high rates of productivity growth?

Historically, productivity booms have followed technological breakthroughs that had widespread commercial applications. The industrial revolutions of the 18th and 19th centuries were associated with the introduction of new *general purpose technologies*, such as the steam engine and electric power, which had numerous applications throughout the economy. The computer also appears to be a general purpose technology and an important source of the recent increase in productivity and economic growth.

Still, the computer is not a new technology. The first electronic digital computer was built before World War II, and the first microchips appeared in 1970. The fact that U.S. productivity growth did not begin to accelerate until about 1995 long puzzled economists. This puzzle led economist Robert Solow, a Nobel laureate, to quip that the impact of computer and information technology was observed "everywhere but in the productivity statistics."

Slowly but surely, the productivity puzzle is apparently being solved. A recent summary of economic research published by the International Monetary Fund suggests that approximately 1 percentage point of the increase in U.S. labor productivity growth during the past five years is due to structural—that is, permanent—forces, mainly the diffusion of information and communications technology equipment.<sup>3</sup> More important, the evidence suggests that a significant portion of the faster rates of labor productivity growth stems from an acceleration in TFP growth.

## The Steam Engine, the Dynamo...

In many ways, the absence of immediate productivity improvement with the advent of information processing technology was not unlike earlier experiences with general purpose technologies. As the pattern of growth during past industrial revolutions shows, technological diffusion must reach a critical level before widespread gains in manufacturing productivity occur.

The British Industrial Revolution brought the introduction of the steam engine, mechanization of textile manufacturing, bleaching and other chemical processes, the first locomotive engines and numerous other important inventions with broad commercial applications. The American Industrial Revolution brought important advances in the generation, distribution and application of electric power, the introduction of the internal combustion engine and major advances in chemistry, medicine and engineering. But in neither case did aggregate productivity growth respond immediately to technological progress. For example, at the height of the British Industrial Revolution (1760-1830) output per capita in the United Kingdom grew at less than 0.5 percent

per year on average, about the same rate as during 1700-60, according to recent estimates. By comparison, per capita output increased at an average rate of nearly 2 percent per year from 1830-70.<sup>4</sup>

According to Mokyr, technological breakthroughs often require further developments—or microinventions to use Mokyr's term—to make them broadly applicable. For example, while Thomas Newcomen built the first successful steam engine in 1712, it was not until about 1765 that major improvements in the engine by James Watt made it suitable for factory use. Still-later improvements, which included the addition of a governor and rotary movement, made the steam engine a huge economic success in the 1800s.

A technological innovation from the American Industrial Revolution was the electric dynamo, or generator.<sup>5</sup> The dynamo, like the steam engine, was a general purpose technology. As with the steam engine, decades elapsed between the introduction of reliable electric motors and their widespread use in industry. Some of the delay was accounted for by lags in the development of efficient means of electric power generation and by competition between direct and alternating current. High prices for electrical equipment and the fragmented structure of the electricity industry also contributed to the delay.

By the 1920s, electricity was the dominant source of power in U.S. manufacturing. Electrification enhanced productivity by affording greater flexibility and more efficient use of labor and capital in manufacturing. (See Figure 2.) For example, electrification enabled more use of continuous process techniques, such as the assembly line, which often reduced assembly time and waste. Efficiency was improved also by the wide adoption of "unit drive," i.e., the use of dedicated electric motors to power individual machines and tools, rather than a system of shafts and belts powered by a single engine. Unit drive brought savings through reduced energy usage, less wear and tear, and more flexible and efficient factory design. Electrification also enhanced productivity by improving factory lighting and safety.

### **...the Computer and the Laser**

Some economists, such as Northwestern University Professor Robert Gordon, argue that the effects on society and the nation's standard of living from today's computer technologies pale in comparison to the impact of past innovations. While Gordon may be proved correct, evidence is accumulating that information and communications technologies are being used throughout the economy. Not only are New Economy startups using them to create products and services few conceived of a decade ago, but Old Economy industries are using these technologies to trim costs and boost profit margins. For example, Boeing now uses high-speed, computer-assisted machine tools to manufacture landing gear bulkheads for the C-17 military transport plane. Under the old technology, the bulkhead was made up of 72 parts and required 1,720 fasteners. Using the new technology, the bulkhead is comprised of just two parts and requires only 35 fasteners. The bulkhead can now be assembled 15 times faster than before.<sup>6</sup> (See photo; top, right.)

The commercial application of lasers is also revolutionizing manufacturing, as well as distribution. The use of laser scanning machines in retailing to link the supply chain management process between the retail, wholesale and manufacturing levels, as pioneered by Wal-Mart, is the best-known example. Such developments may have permanently lowered the level of

### **'Old Economy Firms' Tackle Productivity**



*Boeing workers in Long Beach, Calif., build the C-17 military transport plane. Thanks, in part, to computer-assisted machine tools, the landing gear bulkhead of the plane can be assembled 15 times faster than before.*

inventory buffer stocks in the U.S. economy. In the manufacturing process, one innovation that promises to revolutionize tire manufacturing is the hot former. Using a laser-guided machine, Goodyear's hot former will enable a dramatic reduction in the space needed to manufacture tires. Putting tire miniplants next to existing automotive manufacturing facilities will not only reduce the cost of manufacturing tires, but will cut transportation and inventory carrying costs.<sup>7</sup> (See photo; bottom, right.)

In addition to improving manufacturing and inventory control processes, synergies between the Internet and high-tech equipment and software applications have spawned a burgeoning e-commerce industry. Today, goods and services ranging from airline tickets to CDs, from automobiles to clothes, can be purchased via online transactions. According to the U.S. Department of Commerce, the value of these e-sales increased 24 percent in 2000, from \$20.8 billion in 1999 to \$25.8 billion. (Traditional retail sales totaled \$3.2 trillion in 2000.) Online transactions between firms are also increasing dramatically and comprise about 90 percent of all e-commerce. For example, using business-to-business (B2B) e-commerce applications, Toyota can order up to 11 different automobile frames from the Dana Corp., which can then ship them to Toyota within nine hours. According to the Census Bureau, combined e-commerce trade by manufacturers and wholesalers in 1999 totaled almost \$625 billion, representing, respectively, 12 percent and 5 percent, of total shipments.<sup>8</sup>

These types of innovations, and future ones that might flow from them, hold considerable promise. Whether today's semiconductor-led innovations will result in a sustained increase in productivity comparable to the industrial application of electricity in the early 20th century remains to be seen. But in exploring the causes of past booms, we may shed light on what public policy can do to promote maximum long-term economic growth.

## Old Lessons for New Economy Policy-Makers

During the industrial revolutions of the 18th and 19th centuries, the invention and application of new technologies were carried out by private individuals and firms without government subsidies or direction. Technologies that failed the market test were not saved by government bailouts or contracts. Nonetheless, the histories of the British Industrial Revolution and the American Industrial Revolution suggest that governments can have a powerful effect on a nation's economic growth.

### Institutions Matter

Douglass North, a Nobel laureate economist at Washington University in St. Louis, and his co-author, Barry Weingast, argue that a nation's institutions, including its government, are crucial determinants of economic growth. Among the most important institutions is the rule of law, along with a commitment to enforce existing property rights. Secure property rights provide the freedom and incentive to take economic risks, to invest in new technologies and to look for ways to use economic resources more efficiently. They also reduce the cost of market transactions and limit uncertainties associated with arbitrary confiscation of property or incomplete enforcement of contracts.



*The hot former, such as this one headed for a Goodyear plant in Lawton, Okla., is expected to revolutionize tire manufacturing. The hot former is, in effect, a miniplant for making tires. Eventually, these laser-guided machines are expected to be installed next to auto assembly plants. Transportation and inventory carrying costs will practically be eliminated. Goodyear's Rick Vannan shows off his company's former.*

By 1700, the United Kingdom had a representative parliament, an independent judiciary and a system of patents to protect the rights of inventors. Other countries were far behind. For example, no other European country enacted a patent law until 1791. The U.S. inherited English legal traditions and respect for property rights and, thereby, had similar mechanisms for promoting the invention and application of new technologies that are crucial for productivity growth and rising living standards.

## **Education May Matter**

Educational achievement, particularly in math and science, often is cited as crucial for economic development. Although the United Kingdom did not have a superior educational system on the eve of its industrial revolution, economists who have looked at this issue across countries in modern times have found a positive statistical relationship between educational attainment and per capita income growth.<sup>9</sup>

The United States has a long history of supporting both public and private education. In the 19th century, federal assistance to education was largely in the form of land grants used to finance the establishment of public schools and colleges. The Morrill Act of 1862, for example, provided land grants for the establishment of colleges teaching "agricultural and mechanical arts," including engineering and other technical subjects. Gordon argues that basic and technical education enhanced the productivity of American labor and contributed to the accelerated pace of productivity growth that began in the 1920s.

Many economists also believe that government support of research and development activities can promote technological progress. For example, in a report titled "The Role of Government in a Digital Age," Stanford University Professor Joseph Stiglitz argues that the "proper role of government in today's economy is to serve as a warehouse of information and public data, and to support basic research and development."

## **Industrial Policy May Not Matter**

The governments of all developed countries provide at least some direct support of domestic industry. Numerous countries have adopted formal industrial policies that provide direct subsidies or other means of promoting specific technologies or industries. Even the United States has a small program, the Advanced Technology Program, that subsidizes high-tech research by private companies. The histories of the British and American governments during the First and Second industrial revolutions show, however, that direct government sponsorship of new technologies is not required for technological progress and economic growth to occur. Modern examples of industrial policies in Europe, Asia and especially in post-war communist countries also offer scant evidence that government direction can produce higher sustainable growth of living standards than can free enterprise.

What sets the United States apart? Paul Romer, a leading growth economist at Stanford University, notes that "the United States has maintained a regulatory and financial system that makes it easy to create new companies, raise capital and start new businesses. We also tolerate failure." By contrast, the European approach "has focused on what they call 'national champions,' which they identify as a few big firms whose monopoly positions they try to protect. That really goes in all the wrong directions. What the Europeans really should be doing is thinking about the process that brings new entrants into the market."<sup>10</sup>

## **Is the Past a Prologue?**

A look back at episodes of rapid growth in productivity and in living standards finds that growth stems from the invention, development and application of new technologies that enable the more efficient production of goods and services. Clusters of major technological breakthroughs and countless smaller inventions and innovations characterized the British and American industrial revolutions. These episodes produced rapid, though not immediate, acceleration of productivity and economic growth. Whether the productivity surge of the past five years will continue remains to be seen. But if the so-called computer revolution has permanently altered the

growth path of the U.S. economy, it also appears to have opened up old debates about how government policies can encourage economic growth and rising living standards over time.

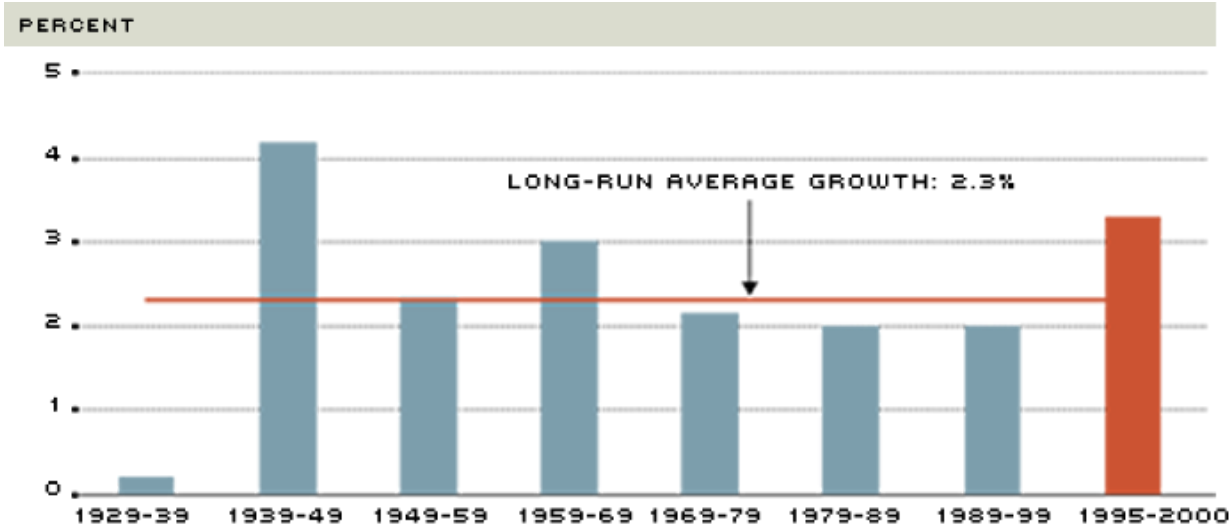
## **Productivity Boom By the Numbers**

Real gross domestic product—the broadest measure of the economy's production of final goods and services—grew by about 4.5 percent a year during the last half of the 1990s. Roughly a percentage point faster than its long-run average, this growth was strong enough to push the civilian unemployment rate down to about 4 percent by the end of 2000, a rate not seen since 1970. Conventional economic theory holds that an economy's capacity for growth largely depends on the productivity of its work force. This is not to say that other factors cannot also influence economic growth. For example, this heartening performance of the late 1990s occurred against the backdrop of low and stable inflation, suggesting that sound monetary policy may have helped. In the end, however, it appears that the key development of the last five years has been an enhanced rate of labor productivity growth. The most commonly used measure of productivity is average labor productivity (output per hour). Since the beginning of 1996, nonfarm business sector productivity has grown at an annual rate of about 3 percent, far above the roughly 1.25 percent average annual rate of increase from 1973 to 1983. Productivity growth during the past five years has even exceeded the exceptional gains of 1950 to 1973, when output per hour grew by almost 2.75 percent per year.

[back to text]

Figure 1

## Changes in U.S. Living Standards Over Time



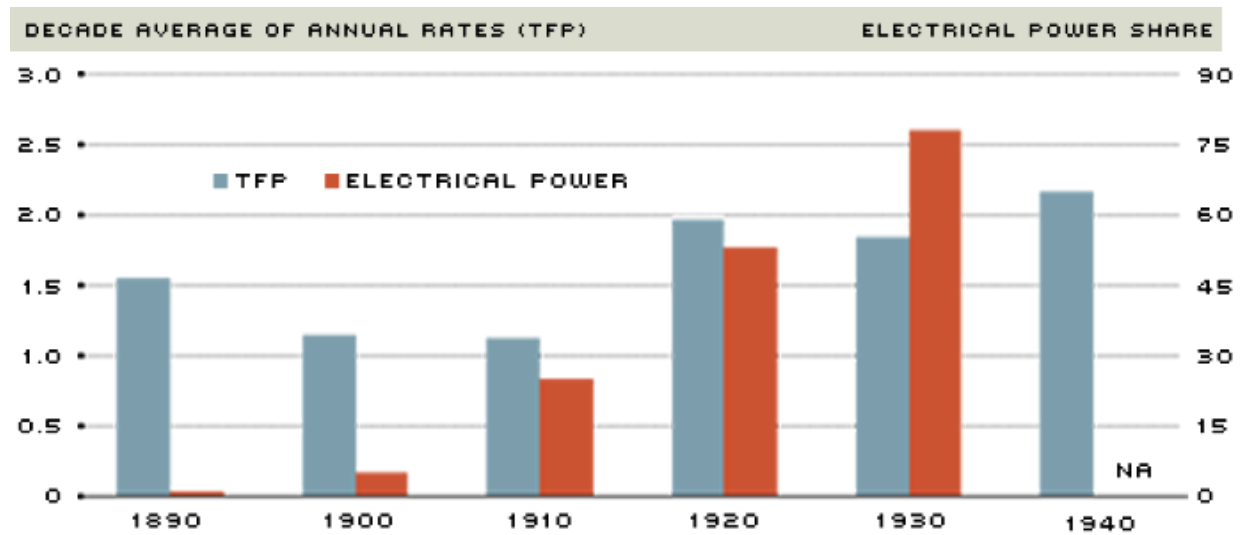
NOTE: 10-Year annualized growth rate of per capita real GDP.

The growth of U.S. living standards during the past five years has been unusually brisk—a percentage point faster than the long-run average.

[back to text]

Figure 2

## Electrification Boosts Productivity



This chart shows the relationship between the share of electrical power used in U.S. industry and average annual TFP (Total Factor Productivity) growth. By the 1920s, electricity provided more than 50 percent of the mechanical power in American industry. The switch to electricity from water and steam power helped bring about a sharp increase in TFP growth, which was interrupted only briefly by the Great Depression of the 1930s.

SOURCE: David (1991)

[back to text]

Heidi L. Beyer and Thomas A. Pollmann provided research assistance. This article is adapted from the Federal Reserve Bank of St. Louis' 2000 Annual Report. See [www.stls.frb.org/legacy\\_assets/publications/ar/2000](http://www.stls.frb.org/legacy_assets/publications/ar/2000).

### Endnotes

1. See [http://www.house.gov/jec\\_democrats/documents/106th/hearings/gerstner61499.htm](http://www.house.gov/jec_democrats/documents/106th/hearings/gerstner61499.htm). [back to text]
2. Greenspan (2000). [back to text]
3. See IMF (2000), Table 2.1. [back to text]
4. N. F. R. Crafts. *British Economic Growth During the Industrial Revolution*. New York: Oxford University Press, 1985. [back to text]
5. See David (1991). [back to text]
6. See Duesterberg (2000). [back to text]
7. See Aepfel (2001). [back to text]
8. See Mesenbourg (2001). [back to text]
9. See Barro and Sala-i-Martin (1995). [back to text]
10. See Romer (1997). [back to text]

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research.



REGIONAL ECONOMIST | JULY 2001

<https://www.stlouisfed.org/publications/regional-economist/july-2001/tupelo-miss-fights-to-keep-furniture-king>

## Community Profile: Tupelo, Miss., Fights to Keep Furniture King

Stephen P. Greene

Mickey Holliman doesn't mince words when discussing the current state of his industry.

"I've been in the furniture business for 41 years, and I have never witnessed conditions as difficult as they are today," says the chairman of Furniture Brands International Inc.

Such a pronouncement is not encouraging news in Tupelo, Miss. Besides being the birthplace of the king of rock 'n' roll, Tupelo is king of the upholstered furniture industry. Within a 50-mile radius, more upholstered furniture is produced here than anywhere else in the world, according to local officials. About 6,700 people in Lee County work in the furniture industry, accounting for 34 percent of all manufacturing jobs. More than 100 furniture companies exist in northeastern Mississippi, but that figure has been slowly dropping in recent years.

Most of the furniture sector's woes have affected case goods (wooden products) rather than the upholstery side because the former can be produced more cheaply in foreign countries. As a result, the Tupelo area so far has been nicked, but not crippled, by the industry's downturn. Tupelo's unemployment rate is still about half that of the entire state. But enough red flags exist for one industry analyst, Stephen East of A.G. Edwards, to warn: "Any area that depends on furniture for its employment base better start working hard to get something else. The reality is that it's just not a business that makes sense in our high-labor-rate country."

### The Impact of Imports

In a cutthroat business climate, more and more furniture companies are taking advantage of cheaper offshore labor in order to survive. The consequence has been domestic downsizing. Even St. Louis-based Furniture Brands, one of the largest manufacturers of residential furniture in the United States with sales of \$2.1 billion last year, has been affected. It has announced that it will close five facilities, resulting in the loss of 1,200 jobs.

"Those numbers are going to grow before the year is over," Holliman says. "They probably will be substantially higher than that."

The closures affect some of the company's case goods plants in North Carolina and Virginia that produce the Thomasville and Broyhill brands. Lane Furniture Industries Inc., a subsidiary of Furniture Brands, is headquartered in Tupelo. In northeastern Mississippi, Lane produces furniture in four plants, three of which are in Lee County. The company is the largest manufacturer in the region with about 4,000 workers making recliners, stationary leather furniture and motion furniture (love seats or sofas with ends that recline).

Holliman, a Mississippi native who still lives in Tupelo, says he expects Furniture Brands' sales from imports to rise from 10 percent last year to as high as 30 percent over the next five years. He adds, however, that the company's Tupelo operations are the strongest in the company because upholstered furniture does not yet face a direct overseas threat. One reason is that foreign workers typically don't have the training to build the

motion mechanisms. In addition, upholstered products, unlike case goods, cannot be flatpacked, a process that makes shipping from foreign markets more economical.

But the buffer Tupelo enjoys may be starting to ebb. Last year, Lane began to import leather covers from the Far East, mainly China. Although Holliman does not expect employment levels in Tupelo to be affected over the next three or four years, he adds, "Longer term, I think there's an excellent chance that we'll see payrolls even in this area be affected." Despite this warning, Holliman says that over the next six months, Lane will gain 150 new jobs in Tupelo because of a recent consolidation within the company.

Companies like Lane aren't as vulnerable to the offshore wage gap as smaller ones, says David Rumbarger, president and CEO of the Community Development Foundation in Tupelo.

"The ones that face the greatest threats are the mom and pop operations," Rumbarger says. "Furniture manufacturers that can diversify themselves and that have state-of-the-art processing facilities have been able to produce at a higher rate and a higher margin in order to compete."

For more than 50 years, the foundation has been working to promote economic development in the area, resulting in Lee becoming the leading manufacturing county in the state. Through a new five-year initiative called Future Focus, the foundation is attempting to further expand the job base, as East recommends. The campaign seeks to raise \$1.6 million to recruit companies and industries, retain and expand existing businesses, develop the area's technology capabilities and provide more education and training for workers.

Luring new industry is even more critical in adjoining counties like Pontotoc and Chickasaw, where furniture makes up more than 70 percent of all manufacturing jobs. Incidents like the recent temporary closure of Kensington Furniture, which idled more than 500 employees in Pontotoc and Itawamba counties, have a more severe effect where furniture manufacturing is so concentrated.

## **A Postponable Purchase**

Diminished consumer confidence and higher energy prices continue to take their toll throughout the economy, including the furniture industry. Those in the industry use the term "postponable purchase" to help explain slumping sales.

"Furniture is obviously a discretionary item," East says. "Consumers can delay the purchase of furniture for as long as they wish, and they do. If you're seeing utilities and automobile gas bills jump up a couple hundred bucks a month, that's a monthly payment for a room of furniture—a very nice room of furniture."

Says Holliman, "Maybe the consumer looks at that old sofa and decides it doesn't look quite as bad as she thought it did at first."

The industry was stung last year when retailers Montgomery Ward and Heileg-Meyers Co. filed for bankruptcy, resulting in massive store closings—302 for Heileg-Meyers, including 19 in Mississippi. Another retailer, Roberds, liquidated all of its stores, too. One of the ramifications of these closings is an inventory backlog, which, in turn, led to Lane's first layoffs ever in Tupelo last year. The company cut about 200 jobs.

Not everything these days is doom and gloom for the industry. Interest rates continue to drop for those looking to finance their purchases, and housing sales have remained relatively strong. On average, there is a lag of between six and 18 months between purchasing a new home and furnishing it.

"As goes housing, so goes furniture," says Jimmy Green, chairman of PeopLoungers Inc. of Nettleton, Miss., a \$55 million company that also specializes in upholstered motion furniture. "Interest rates and housing are two things that definitely drive furniture sales."

## To Market, To Market

Twice a year, you'd have better luck catching Elvis perform one more homecoming concert at the Tupelo Fairgrounds than you would finding an available hotel room in town. Each February and August, Tupelo dishes out Southern hospitality for several days to hundreds of furniture exhibitors and more than 30,000 buyers at the Tupelo Furniture Market.

What began with 35 exhibitors at a Ramada Inn in 1987 has erupted to nearly 1,000 exhibitors from around the world showing their wares throughout 1.5 million square feet of space. The show is the second largest in the country. Only the High Point, N.C., market, established 74 years earlier, is larger.

V.M. Cleveland, Tupelo Furniture Market CEO, says that organizers originally thought of holding the market in the larger, more-accessible city of Memphis.

"But bigger is not always better," Cleveland says. "The manufacturers here had enough confidence that Tupelo could put on a good show."

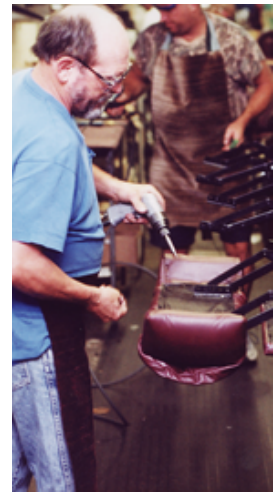
Says the Community Development Foundation's Rumbarger: "I think the manufacturers here at that time wanted people to come see their plants. They wanted buyers to see where their furniture was built so they could see the quality."

Cleveland says plans are in the works to expand the Furniture Market to 2 million square feet. He and his staff of 35 hope to top 1,000 exhibitors for the first time at the August show.

The market is just one aspect of the furniture industry's remarkable growth in the Tupelo area since Ukrainian immigrant Morris Futorian opened his first plant in 1948 in New Albany, Miss. He moved here from Chicago to develop his concept of mass-producing furniture. Local officials like Jim High of the Downtown Tupelo Main Street Association take pride in the town's accomplishments since then.

"We're a little town, not on a major interstate highway, not on a waterway—and over the past 50 years, we have become a dominant factor in the industrial economy of this region," High says.

Staying dominant in furniture will demand a refortified effort as new economic obstacles now appear before Tupelo's main industry.



Foreign competition and a souring economy caused Lane Furniture to lay off 200 employees last year, but the company remains the largest furniture manufacturer in northeastern Mississippi. Here, a Lane worker attaches the footrest to a recliner.

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# Tupelo, Miss., by the numbers

Population		34,211
Labor Force		20,949
Unemployment Rate	2.4%	
Per Capita Personal Income	\$23,486	

## Top Five Employers

North Mississippi Health Services	3,784
Lane Furniture Industries Inc.	2,800
Cooper Tire & Rubber Co.	1,400
Tupelo City Schools	1,100
Tecumseh Products Co.	968

NOTE: Employment figures are for all of Lee County.

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REGIONAL ECONOMIST | JULY 2001

<https://www.stlouisfed.org/publications/regional-economist/july-2001/to-bear-or-not-to-bear>

## To Bear or Not to Bear

Paige M. Skiba , Howard J. Wall

Most people probably think they have a good idea what economics is about. After all, economists are on television a lot, usually talking about the stock and bond markets or trying to parse Alan Greenspan's comments for hints about the Fed's next move.

Many may be surprised to find out, though, that most economic research has little or nothing to do with these topics. In fact, the scope of topics that economists explore is constantly expanding and for several decades now has included many social issues, including fertility. To the casual observer, using the tools of economics to understand the decision to bear children may sound silly, if not immoral. Indeed, some of the phrases economists use—such as the "quality of children" or "the consumption of child services"—can sound downright unnerving.

So what can the dismal science tell us about the decision to bear children and the factors affecting that decision? To answer those questions, this article presents a simple economic model that reveals how the fertility decision is similar in many ways to other decisions more commonly associated with economic analysis. The article then demonstrates how this model can be used as a framework to analyze a variety of public policies.

### Fertility 101

On the demand side, the economic analysis of fertility differs little from the analysis of the market for any consumption good. For example, the demand for children has something to do with prices—if children become more costly to have and raise (that is, if the price of children goes up), fewer will be demanded.

It is not difficult to see how increases in the direct costs of things, like clothing or education, might lead people to have fewer children. But these direct costs are not the only ones that matter. Raising children also requires a great deal of parents' time, which carries with it an *opportunity cost*. This opportunity cost is the amount of money that a parent gives up to spend time providing child care. For example, if a parent earns \$20 an hour and works five fewer hours per week because of a child, the parent is giving up \$100 per week of income. This amount is the opportunity cost of the child.

Although a higher wage means a higher opportunity cost for parents, it usually also means higher income. And, as with the consumption of any good, changes in income can affect the demand for children. To isolate the effect of income on the demand for children, imagine that 100 households win the lottery and split the proceeds so that each receives an additional \$10,000 per year. In this scenario, the opportunity cost of children has not changed—the amount of money a parent would give up to stay home with the child has not changed—so the \$10,000 represents a pure *income effect*. If, as is generally thought, children are *normal goods*, this income effect should result in more children being demanded by these households.

This appears to fly in the face of reality, however, because households with higher incomes actually tend to have fewer children. To reconcile this discrepancy, economists have modified the analysis slightly and, instead, think about the consumption of "child services," a combination of the number of children and average "child quality." Parents can increase child quality by spending more raising a child. So, when a household's income rises, the consumption of child services can rise through increases in the quantity and/or the quality of children.

If a parent's wage rises, two opposing effects on the demand for child services occur. On the one hand, higher wages mean a higher opportunity cost and, thus, a *lower* demand. On the other hand, higher wages also lead to higher household incomes and, thus, to a *higher* demand. Exactly how these opposing factors are balanced, and how the questions of quantity and quality are dealt with, depends on parents' personal preferences, which economic analysis cannot incorporate easily.<sup>1</sup>

## The Economics of the Stork

Of course, the demand for children tells only part of the story, as the supply also plays a role. The supply of children centers on the ability of people to control the number of children they have. To a great extent, this depends on *natural fertility*—the number of children that would be born if no steps were taken to prevent pregnancies or births—and on the costs and effectiveness of steps that people can take to prevent children, such as birth control or abortion.

As contraception or abortion becomes more-readily available, couples should be better able to control fertility, which should reduce the supply of children.<sup>2</sup> Changes in the prices of these fertility controls also matter. If, for example, the cost of birth control pills falls, the cost of preventing children decreases, which could lead to a further reduction in the supply of children.

## Policy Applications

So what good is all of this sometimes-uncomfortable discussion about the quantity and quality of children? For one thing, it provides a simple framework for evaluating the effects of a variety of policies.

### Taxes

The dependent tax deduction, which is a per-person income tax deduction, decreases the net costs of child services and should, therefore, increase the demand for them. Because this tax break is based on the number of dependents, it should have a relatively larger effect on the quantity of children, although the quality of children should also rise. Indeed, some studies have shown that relatively small increases in the value of this deduction can lead to significant increases in fertility.<sup>3</sup> Other types of income-tax breaks—those related to expenditures on children, such as the deduction for child-care expenses—should affect child quality relatively more than the number of children.

### Welfare

The economic model of fertility suggests that welfare policies can also affect childbearing decisions. As with any other form of income, higher welfare payments should increase the demand for children. In addition, if welfare payments are tied to the number of children, the model predicts that these payments should affect the quantity of children relatively more than the quality. In a recent study, economists Jeff Grogger and Stephen Bronars found that higher base levels of welfare have indeed led to small increases in fertility among unwed mothers. However, the authors find no evidence that the extra payment mothers receive for an additional child affects fertility.<sup>4</sup>

### Crime

Recent and extremely controversial research takes the application of the economics of fertility even further by linking the legalization of abortion in the early 1970s to the recent drop in crime rates.<sup>5</sup> In the economic model of fertility, the availability of abortion decreases the potential number of children supplied. If people choose to prevent the births of children they did not plan for (the quantity effect), they will have more resources available to raise the children they do have. Because these children receive more resources, they should be less likely to commit crimes when they get older (the quality effect).

Combining the quantity and quality effects, law professor John Donohue and economics professor Steven Levitt argue that up to half of the recent reduction in violent crimes has been due to the legalization of abortion. Although they caution that their results should not be misinterpreted as "an endorsement of abortion or a call for intervention ... in the fertility decisions of women," their research has caused uproar from all sides. Lost in the uproar, though, is Donohue and Levitt's finding that the main source of the drop in crime has been through the reduced likelihood of a child becoming a criminal—the quality effect. This finding means that policies that improve the economic and social circumstances of children could have had the same or greater effects on crime than what Donohue and Levitt attribute to abortion.<sup>6</sup>

## Conclusions

How does all of this talk about the quality and quantity of children help us? For one thing, it helps economists make sense of the fertility choices parents make, even though we know they don't necessarily use a calculator to balance the costs and benefits of having children. For another, the discussion—although sometimes controversial and uncomfortable—provides a useful framework for looking at a large number of important policies.

## Endnotes

1. Economic analysis of social behavior has often been criticized for its neglect of the roles of preferences, values and cultural influences. The recent book by Gary Becker and Kevin Murphy listed among the references is an attempt to integrate these factors into the analysis. [back to text]
2. See Georgellis and Wall (1992). [back to text]
3. See Whittington, Alm and Peters (1990) and Georgellis and Wall (1992). [back to text]
4. See Grogger and Bronars (2001). [back to text]
5. See Donohue and Levitt (2001) and Barro (1999). [back to text]
6. Countering Donohue and Levitt's work, John Lott and John Whitley argue that the legalization of abortion has meant slightly higher murder rates. In their model of fertility, the legalization of abortion can lead to more out-of-wedlock births. Because single-parent homes have fewer resources to devote to child-raising, this means a negative quality effect, and, therefore, more crimes. [back to text]

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# National and District Data

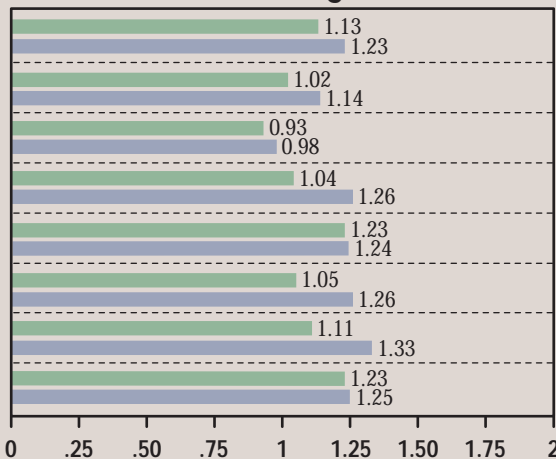
Selected indicators of the national economy and banking, agricultural and business conditions in the Eighth Federal Reserve District

## Commercial Bank Performance Ratios

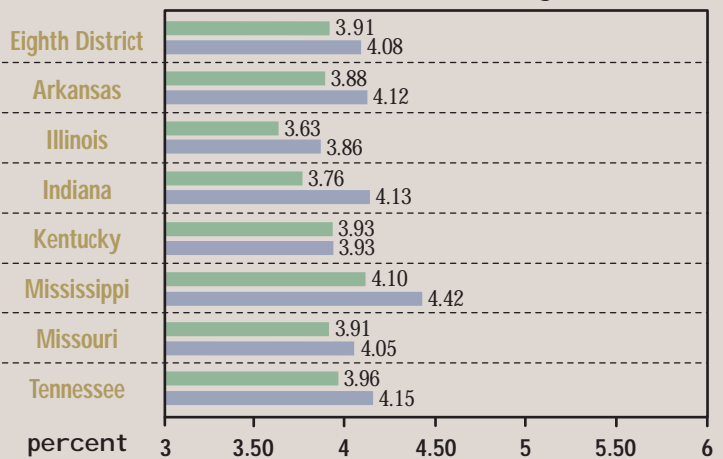
first quarter 2001

U.S. Banks by Asset Size	by Asset Size							
	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*	1.28	1.24	1.15	1.29	1.20	1.43	1.32	1.27
Net Interest Margin*	3.77	4.38	4.37	4.37	4.37	4.34	4.35	3.46
Nonperforming Loan Ratio	1.20	0.88	0.92	0.82	0.88	1.02	0.95	1.34
Loan Loss Reserve Ratio	1.68	1.34	1.36	1.43	1.39	1.84	1.62	1.72

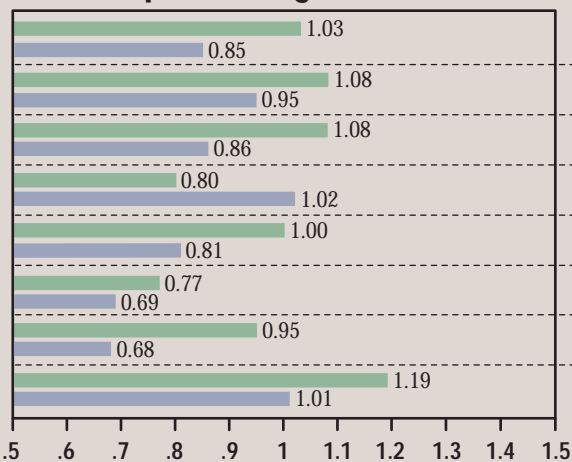
Return on Average Assets \*



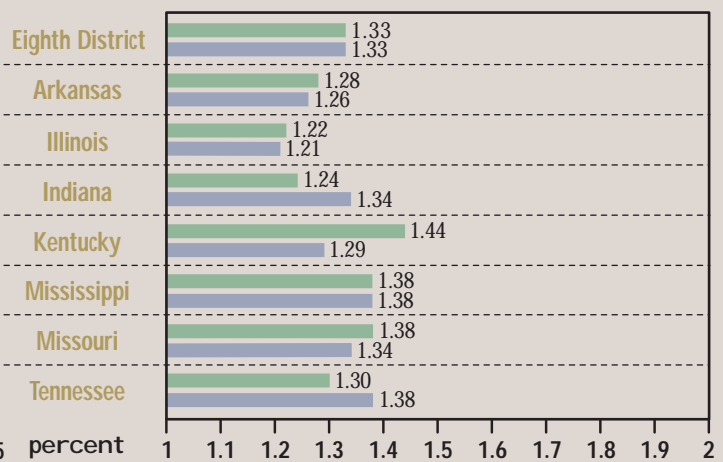
Net Interest Margin \*



Nonperforming Loan Ratio



Loan Loss Reserve Ratio



● First Quarter 2001

● First Quarter 2000

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:  
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# Regional Economic Indicators

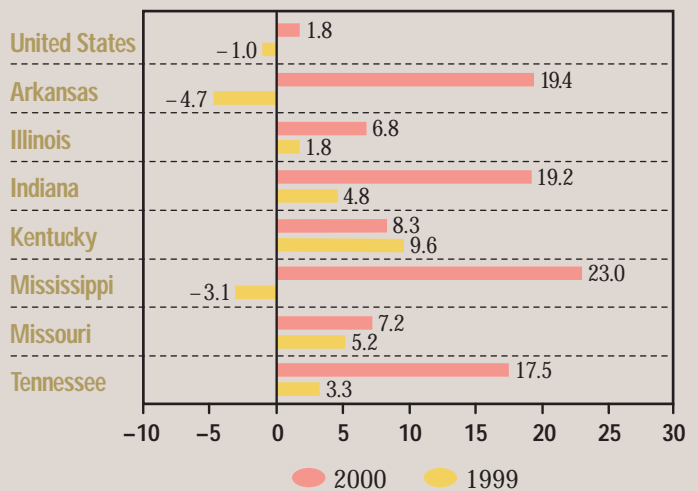
## Nonfarm Employment Growth year-over-year percent change

	first quarter 2001							
	total	Goods Producing		Service Producing				
		mfg	cons <sup>1</sup>	govt	tpu <sup>2</sup>	fire <sup>3</sup>	services	trade
United States	1.2%	-1.7%	3.2%	0.7%	2.2%	0.5%	2.5%	1.1%
Arkansas	0.8	-2.7	4.2	1.5	0.7	-0.1	2.2	1.7
Illinois	0.8	-1.3	5.7	-0.5	2.3	0.1	1.8	0.8
Indiana	-0.3	-3.1	1.5	0.5	0.2	-0.5	1.5	-0.3
Kentucky	0.9	-2.4	-0.4	1.8	1.2	-0.3	2.8	1.4
Mississippi	-1.0	-6.3	-6.2	2.5	-0.6	-1.9	0.3	0.2
Missouri	0.6	-2.9	1.1	0.6	4.3	2.2	1.1	0.6
Tennessee	0.9	-2.7	2.7	0.2	2.9	-0.7	2.2	2.2

## Unemployment Rates percent

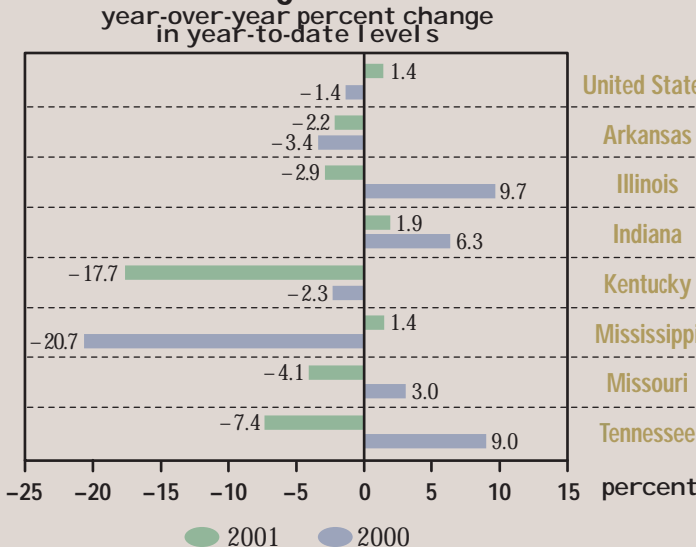
	I/2001	IV/2000	I/2000
United States	4.2%	4.0%	4.0%
Arkansas	4.3	4.1	4.6
Illinois	5.0	4.5	4.3
Indiana	3.1	2.8	3.6
Kentucky	4.1	4.1	4.2
Mississippi	5.0	5.4	5.8
Missouri	3.8	3.5	3.4
Tennessee	4.2	4.2	3.7

## Exports year-over-year percent change



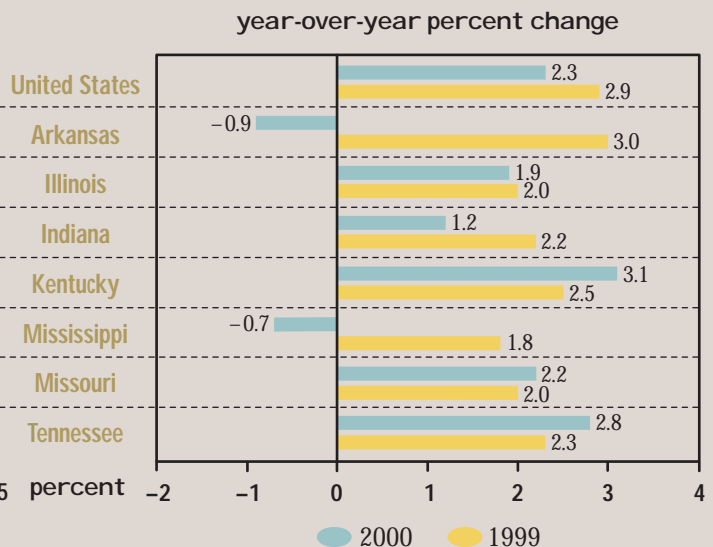
## first quarter

### Housing Permits year-over-year percent change in year-to-date levels



## Fourth quarter

### Real Personal Income year-over-year percent change

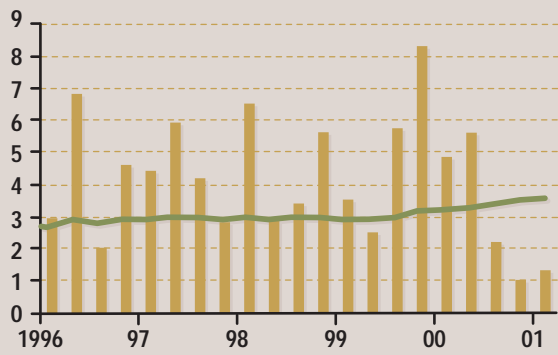


<sup>1</sup> Construction <sup>2</sup> Transportation and Public Utilities <sup>3</sup> Finance, Insurance and Real Estate

All data are seasonally adjusted.

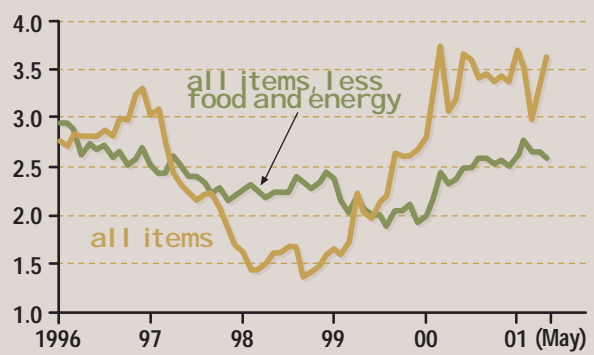
# Major Macroeconomic Indicators

**Real GDP Growth**  
percent



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

**Consumer Price Inflation**  
percent

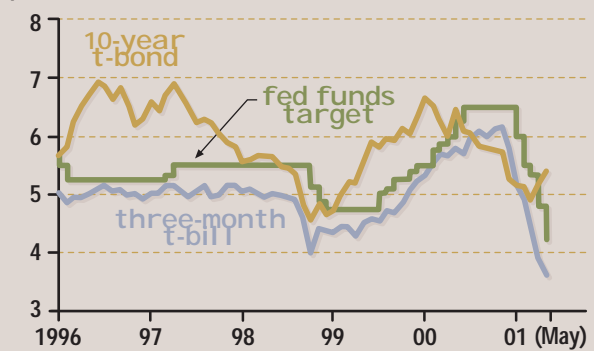


NOTE: Percent change from a year earlier

**Civilian Unemployment Rate**  
percent



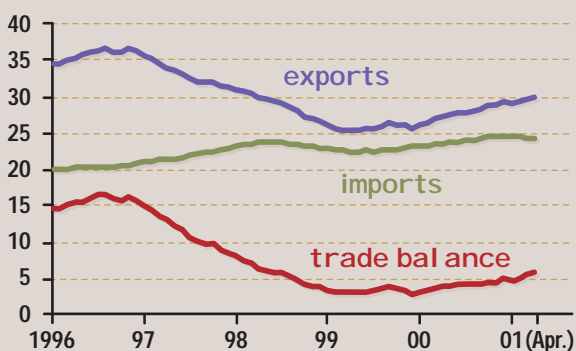
**Interest Rates**  
percent



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

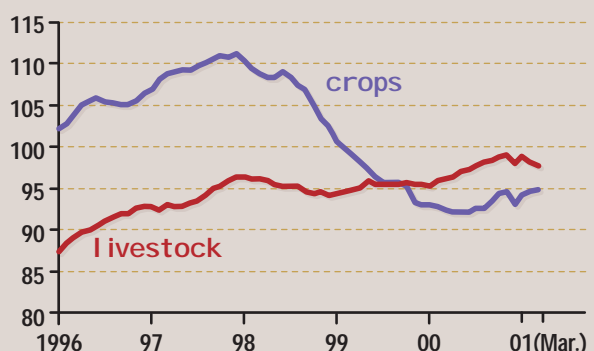
# Farm Sector Indicators

**U.S. Agricultural Trade**  
billions of dollars



NOTE: Data are aggregated over the past 12 months. Beginning with December 1999 data, series are based on the new NAICS product codes.

**Farming Cash Receipts**  
billions of dollars



NOTE: Data are aggregated over the past 12 months.

**U.S. Crop and Livestock Prices**  
index 1990-92=100

