



President's Message: Should the Fed Be Involved in Providing Financial Services?

Thomas C. Melzer

As chairman of a new committee that sets strategic direction for the Federal Reserve's financial services, I've become more aware lately of the dramatically changing landscape of payments services in this country. At the same time, I'm struck by how much we take our smooth-running payments system for granted.

Ensuring that payments are transferred efficiently, reliably and safely is one of the Fed's primary concerns. And it's a responsibility we work very hard at, because of its impact on the nation's economic performance. Although our involvement in financial services is controversial to some, I believe the Federal Reserve contributes significantly to the health of the system. We do this by:

Stabilizing the payments system in an emergency—Today, because of the huge volume of large-dollar transactions and interdependencies among the world's financial institutions, the Fed's role is crucial. When a large bank fails, the Fed can step in to prevent the unsettled obligations of that bank from causing the collapse of other solvent banks. This involves not only the clout to make large loans, but also the expertise to manage a payments crisis. The Fed has this expertise by virtue of its direct participation in financial services.

Fostering efficiency and innovation—Because one of our main concerns is to improve the payments system, we are at times willing to invest in new technology earlier than the private sector, which must await proof of its viability. The magnetic coding on checks, which revolutionized check processing some years ago, is a perfect example of such an innovation. Today, we're focusing on how to move more payments electronically, to reduce the enormous costs of processing paper checks.

Ensuring equal access—The Fed provides its services to all depository institutions. Thus, citizens and corporations in remote locations can benefit from the same banking services that are available in more populated areas, and community banks are not at a competitive disadvantage.

Our critics argue that the Fed can't provide financial services as efficiently as the private sector. Whether the marketplace can adequately foster widespread efficiencies and preserve the integrity of the system without the Fed can, no doubt, be debated into the next century. In any case, the Fed's role in financial services will have to evolve as the payments landscape changes.

With more than 80 percent of our nation's payments, however, still being made by the relatively inefficient method of writing checks—far more than in any other developed country—I think the Fed has an important part to play. If we are to take our safe and reliable payments system for granted in the future, the Fed belongs in the thick of it.



Homebuyers Bear ARMs in the Mortgage Market

Michelle Clark Neely

Just one year ago, the choice between a fixed rate and an adjustable rate mortgage (ARM) was a slam dunk for most homebuyers: With rates on 30-year fixed mortgages hovering around 7 percent, the lowest in 20 years, most homebuyers opted for certainty over risk. Today, the calculus has changed. Increasing numbers of U.S. and Eighth District homebuyers are "ARMing" themselves as long-term interest rates continue to move up. What makes the ARM market tick? To answer that, let's look at the market from the perspective of the lender and the borrower.

Adjusting to Higher Rates

Until recently, prospective homebuyers and home refinancers had little choice in mortgage products. The 30-year fixed rate, fully amortizing mortgage (FRM) had been the standard among lenders since the 1930s. Adjustable rate mortgages—those whose interest costs rise and fall with market interest rates—developed in the early 1980s, largely in response to severe problems in the thrift industry, the traditional extenders of mortgage credit in the United States.

Historically high and volatile interest rates in the late 1970s and early 1980s put thrifts in dire financial straits. The problem was a fundamental mismatch between the industry's assets and liabilities: The bulk of thrifts' assets consisted of 30-year FRMs, but their liabilities were largely shorter-term deposits and purchased funds that paid market interest rates, which were on the way up in response to the lifting of deposit rate ceilings. The combination of more frequent rate adjustments on liabilities than on assets and unanticipated increases in interest rates put thrifts in a pressure cooker.

This type of situation is an example of *interest rate risk*, a risk all financial intermediaries are subject to in some form. At the time, financial institutions and their regulators reasoned that if lenders were allowed to offer mortgages with variable rates, much of this interest rate risk could be mitigated, because these loans could be repriced at frequencies closer to deposit repricing frequencies.¹ And so the ARM was born.

ARMs Equip Lenders and Borrowers

The ARM's benefits for lenders are clear: Some of the interest rate risk inherent in mortgage lending is shifted to the borrower.² But borrowers also benefit from ARMs. First, ARM borrowers are generally compensated for taking on some of that risk by receiving a lower average interest rate than the rate charged on a corresponding FRM. In addition, they are generally protected from large increases in interest rates because most ARMs feature periodic and lifetime caps on rate adjustments (see glossary below for definitions of other ARM terms).

Glossary

ARM Terminology

Adjustment Period—the time between ARM contract rate adjustments. Most ARMs adjust between six months and five years, with a one-year adjustment period the most common.

Cap—A limit on how much the interest rate or the monthly payment can change, either at each adjustment or during the life of the mortgage. Because payment caps do not limit the amount of interest the lender is earning, they can cause negative amortization (see below).

Contract Rate—The interest rate the borrower pays on an ARM. The contract rate is equal to the margin plus the index rate less any discounts.

Discount—In an ARM with an initial rate discount, the lender reduces the starting interest rate, resulting in lower payments for part of the mortgage term (usually one year or less). This lower rate is usually called a teaser rate.

Index Rate—The market-related interest rate (or average of interest rates) or index that the lender uses to adjust the ARM contract rate up and down. Examples are the one-year Treasury bill rate and the 11th District Cost of Funds Index (COFI).

Margin—the fixed, base rate the lender charges the borrower to cover overhead costs and a premium for risks not transferred to the borrower. Margins typically range between 200 and 300 basis points.

Negative Amortization—Can occur when monthly payments do not completely cover the interest costs of the loan. These unpaid interest costs are added to the unpaid principal balance, which could lead to total payments over the life of the loan that exceed the original amount of the loan plus contractual interest.

Second, ARM borrowers can avoid the costs of refinancing mortgages, since monthly payments tend to fall when interest rates fall. Third, and most significant for first-time homebuyers, ARMs allow many people who wouldn't ordinarily qualify for a mortgage to obtain one. Because of the prevalence of low initial, or teaser, rates on ARMs, and because lenders often base their decisions on the ratio of the *initial* mortgage payment to current income, ARMs increase the borrowing power of low and middle-income households. Most households can also qualify for a larger mortgage with an ARM than they can with an FRM.

For borrowers expecting to be in a house for only a short period of time, the savings of an ARM with a teaser rate over an FRM can be substantial. And ARMs are particularly useful for homebuyers who must pay private mortgage insurance (PMI). Because ARMs tend to have lower initial interest rates, ARM borrowers generally pay off principal earlier than borrowers with FRMs. Thus, ARM borrowers reach 20 percent equity sooner, at which point PMI can be dropped. Finally, continued innovations in ARMs, like low or no prepayment penalties, convertibility features and extended adjustment periods (for example, one type of ARM, the 10/1, has a fixed rate for 10 years and then adjusts yearly), continue to enhance ARMs' appeal to homebuyers.

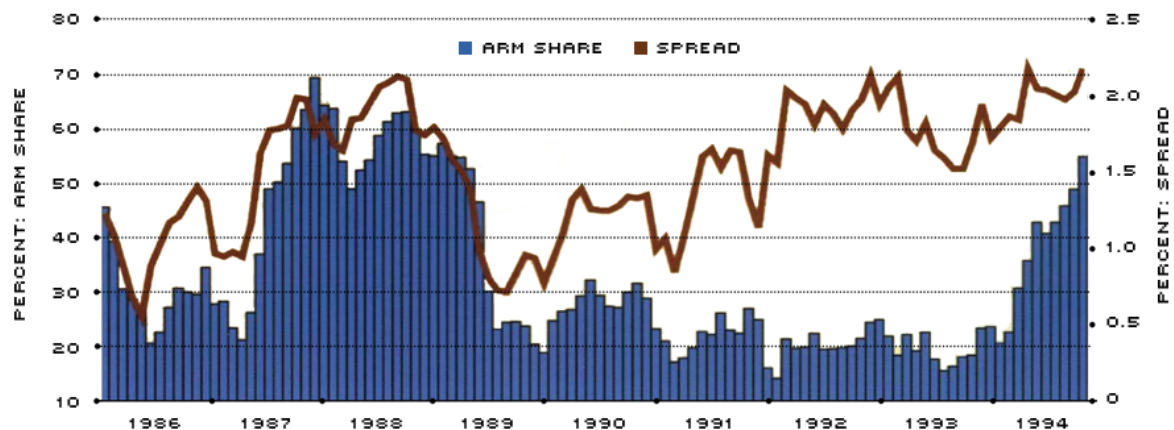
The downside with ARMs, of course, is that large increases in monthly payments may not coincide with increases in income. Caps can limit the extent of these increases, but can lead to a situation in which total borrower payments over the life of the loan are larger than the initial loan plus contractual interest (see negative amortization in glossary). The other major problem with ARMs, as far as consumers are concerned, is their complexity and sheer variety; hundreds of variations—in caps, adjustment periods and discounts—on the basic ARM make comparison shopping daunting.

ARM Trends

Since their inception, ARMs have waxed and waned in popularity with the interest rate cycle and the introduction of new features.³ Since January 1985, the ARM share of monthly conventional mortgage originations has ranged from 15 percent (in February 1992) to 69 percent (in December 1987), according to the Federal Housing Finance Board. Though numerous factors go into a homebuyer's decision to take out an ARM, the level of the 30-year FRM rate and the spread between this rate and the rate on ARMs seem to be the dominant ones. Because the rates charged on ARMs are typically less than those on FRMs, the ARM share of mortgage originations tends to go up when rates on FRMs go up (see figure).

Figure 1

ARM Originations and the Spread



The chart shows the monthly share of ARM originations since 1986 plotted against the spread between the average effective FRM rate and the average effective ARM rate for the same month. (These rates are "effective" because they contain points and other fees.) In general, when the difference between these two rates widens, the share of homebuyers choosing ARMs rises. Put another way, when the difference between rates on FRMs and ARMs is very small, most buyers opt for the certainty of payments associated with the FRM.

Both of these factors—the level of the FRM rate and the spread—help explain mortgage choice over the last several years, a boom period for housing in the United States. In late 1992 and 1993, when long-term FRM rates were in the 7-to-8.5-percent range and the spread was declining, the ARM share of mortgage originations was relatively small; in 1994, as long-term rates inched toward 10 percent and the spread widened, the ARM share more than doubled. In November 1994, 55 percent of mortgage loans closed carried adjustable rates.

Another influence on ARM purchases is the level of home prices. Because ARMs generally allow borrowers to take out larger mortgages, the share of ARM originations tends to be higher wherever housing is more expensive. For example, the ARM share in metropolitan areas in the Eighth District, where housing is extremely affordable, is usually significantly below the ARM share of higher-priced areas like California and Hawaii.⁴ In the fourth quarter of 1993, when 30-year interest rates hit bottom in this most recent cycle, ARMs accounted for just 10 percent of mortgage originations in Louisville and 11 percent in St. Louis, compared with 48 percent in Los Angeles, 60 percent in San Francisco and 74 percent in Honolulu.⁵

After a decade and a half of existence, ARMs have proved to be legitimate competitors for the long time standard, the 30-year fixed-rate mortgage. Over that period, market forces continually adjusted and fine tuned the ARM, resulting in a product that provides clear benefits to lenders and borrowers. By ARMING themselves, more former renters are realizing the American Dream today than ever before.

Thomas A. Pollmann provided research assistance.

Endnotes

1. See Peek (1990) for more detail on the history of and rationale for ARMs. [back to text]
2. Though lenders' interest rate risk is reduced with ARMs, credit risk often increases. Large increases in monthly payments from rate adjustments make these loans more prone to default than standard FRMs. [back to text]
3. For example, convertible ARMS—which allow borrowers to switch to a FRM at little or no cost—became available on a large scale in mid-1987. [back to text]
4. See Clark (1994) for background on housing affordability in the Eighth District. [back to text]
5. Data are from a monthly survey conducted by the Federal Housing Finance Board. Regional variations in ARM originations exist of various types of financial institutions. For example, ARM shares tend to be relatively larger in California because the state is home to some of the nation's largest thrifts, which are the dominant ARM lenders. See Nothaft and Wang (1992) for a discussion of other determinants. [back to text]

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Are Economic Flexibility and Social Welfare Programs Incompatible?

Adam M. Zaretsky

The 1980s were a decade of economic expansion for both the United States and Western Europe. This expansion, however, did not proceed down the same path or at the same pace on each side of the Atlantic.

Growth rates for real gross domestic product (GDP), for example, were more volatile in the United States than they were in Europe. Europe's unemployment rate, despite healthy output growth, was far higher during the decade than it was in the United States. Conventional wisdom has typically blamed Europe's generous social welfare programs for its unemployment woes.¹ According to recent research, however, this might not be the case.

A Look at the Facts

After declining during the recessions of the early 1980s, U.S. real GDP increased dramatically, reaching a peak of 6.2 percent annual growth in 1984. Growth rates in Europe were more moderate, peaking at about 4.1 percent in 1988.²

Unemployment rates in both the United States and Europe were very similar early in the decade. After 1982, however, U.S. unemployment began to drop, while European unemployment remained at about 10 percent until 1988. The cause of this wedge between the two unemployment rates is usually attributed to a significant increase in Europe's natural rate of unemployment during the period.³ The cause of this increase, though, has been quite controversial.

Typically, Europe's social safety nets—unemployment insurance, child care provisions, health care programs or maternity leave, for example—have been charged with rendering European labor markets inflexible, hampering growth. The United States, of course, has similar policies, but they are fewer in number and more limited in scope.

The Flexibility Issue

What do we mean by flexibility in an economy anyway? Defining flexibility in a labor market is difficult because of the many paths along which economic agents can be flexible. A common usage of the term is "the speed of labor market adjustment in a changing economic environment. The flexible market is one in which firms adjust wages rapidly...alter employment or work hours quickly...and workers move smoothly...across sectors or geographic areas."⁴ Thus, programs that limit short-run wage and employment adjustments in the face of macroeconomic shocks are said to cause inflexibilities in the market and hinder a speedy accommodation of the change. When such programs exist for some period of time, as they have in Europe, they are said to induce people to behave in an economically inefficient manner, leading to long-run patterns of high unemployment and slower growth.⁵

To illustrate, let's look at some programs that might create inflexibility in the labor market and unintentionally promote high unemployment:

1. *Legislation that limits an employer's ability to hire or fire workers in the face of short-run shocks.* Under this type of legislation, firms may limit employment growth during an expansion because it may be too difficult to reduce employment during a recession.
2. *Income protection, such as unemployment insurance payments or welfare programs, that provides workers with monetary support.* Paying support to people when they do not work may reduce the urgency with which people search for a job and may lead to longer durations of unemployment.
3. *A minimum wage or centralized wage-setting system that artificially raises the wages of the less-skilled.* Employers may be less willing to employ less-skilled workers or invest in sectors or technologies that employ them because of their relatively higher wage.⁶
4. *Mandated social security taxes or household leave policies that raise the cost of labor.* Mandating higher compensation costs for employers usually means less demand for labor.
5. *Housing support or employer-based health insurance that ties people to a location or job.* The fear of losing such benefits or subsidies may make workers less responsive to changing market opportunities.

That these programs have adverse effects on labor markets is not a matter of debate. That such programs yield benefits that may outweigh these costs, however, must also be considered. Specifically, social programs are designed to improve social well-being by increasing workers' security in the face of economic change—particularly unemployment, sickness and aging.

Social Protection vs. Economic Flexibility

To evaluate this cost/benefit comparison, the National Bureau of Economic Research (NBER) published a series of articles last year that look at individual social programs and their effects on labor markets across countries. Summarizing the conclusions, the volume's editor, Rebecca Blank, finds that "[while] these studies and related work [show that] the design of social programs affects employer and worker behavior, these programs do not create major inflexibilities in the labor market." Let's take a look at some specific evidence.

Labor Regulations

Countries like France, Germany and Belgium, that have strong job security laws, should exhibit less ups and downs in employment than the United States, which had no advance notice or severance pay requirement laws during this period. Researchers Katharine Abraham and Susan Houseman found that employment levels and hours worked are both highly cyclical in the United States; in Belgium and Germany, on the other hand, hours are more cyclical than employment.⁷ In addition, employment levels adjust faster in the United States than in any of the three European countries. Thus, adjusting worker hours rather employment levels is more important in the European countries than in the United States. This does not imply that European firms are inflexible, only that they are flexible along a different path than U.S. firms.

Social Protection Programs

Laws that increase the well-being of tenants and homeowners—for example, rent-increase caps or tax incentives that encourage homeownership—should reduce worker mobility. As Axel Borsch-Supan notes, historically the United States has offered a strong homeownership incentive, while Germany has only recently expanded its tax advantage for homeownership. He finds that the United States, as expected, has much higher levels of homeownership than Germany, but surprisingly higher levels of mobility.

Similarly, countries that have employer-based health insurance should exhibit lower employee turnover than those that do not because of the fear of termination or interruption of health coverage (commonly known as job-lock). Douglas Holtz-Eakin compares patterns of employee turnover in the United States with those in

Germany, where workers get insurance through funds, some of which are local. About half of German workers must change funds when they change jobs, which can result in different premiums. Holtz-Eakin finds no evidence in the United States of significant job-lock among workers with comparable characteristics. In Germany, he finds slightly fewer job changes for those who have to change insurance funds, but concludes that different types of insurance systems do not appear to have major effects on mobility.

Income Support Programs

Publicly supported pension systems like Social Security were designed primarily to increase the well-being of the elderly and, secondarily, to provide job opportunities for the young. By inducing retirement or extended unemployment during downturns, these programs create market inflexibilities. Although the systems differ in the United States, Japan and Sweden—Marcus Rebick's countries of study—all three witness the percentage of employed older men decreasing as unemployment rises. Because Japanese and Swedish men are more likely to leave the labor force as unemployment rises, these countries usually display a larger response. Rebick also finds that, as Japan and the United States expanded the generosity of their public pension systems in the 1970s, both countries experienced a change in the timing of retirement. He concludes that the primary effect of these expansions occurred in labor force participation and the economic well-being of the elderly, but not in their responsiveness to the business cycle.

Is There A Tradeoff?

In conclusion, Blank acknowledges that "there is clear evidence that these diverse programs influence behavior. Remarkably, however, there is little evidence that labor market flexibility is substantially affected by the presence of these social protection programs, nor is there strong evidence that the speed of labor market adjustment can be increased by limiting these programs."

In addition, the comparative studies reveal that different countries have structured their labor markets and income maintenance systems quite differently. Programs that by themselves might appear problematic, may fit coherently into a web of country-specific institutions. Thus, the implication is that single measures of economic flexibility probably say little about the overall adaptability of an economy.

Thomas A. Pollmann provided research assistance.

Endnotes

1. For more on this view, see Kevin Kliesen's article, "The Fixation in International Competitiveness" in this issue. [back to text]
2. In this article, data for Europe are compiled from the 19 countries that make up OECD (Organization for Economic Cooperation and Development) Europe. [back to text]
3. See, for example, Commission of the European Communities (1993), Elmeskov (1993), Krugman (1994), Martin (1994) and OECD (1994). [back to text]
4. Blank (1994a), p. 158. [back to text]
5. See, for example, Elmeskov (1993), OECD (1994), Lawrence and Schultze (1987) or Boyer (1988). [back to text]
6. See Zaretsky (1994) for a discussion of a minimum wage's effect on employment. [back to text]
7. To conserve space, this and the following articles, which will be cited by author, can all be found in Blank (1994b). [back to text]

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The Fixation on International Competitiveness

Kevin L. Kliesen

"To continue our success in the global economy we must remain—and continue to become—increasingly competitive."

— Ronald H. Brown Secretary, U.S. Department of Commerce

"The growing obsession in most advanced nations with international competitiveness should be seen, not as a well-founded concern, but as a view held in the face of overwhelming contrary evidence."

— Paul Krugman, Stanford University

Every four years, the nations of the world engage in a spirited athletic competition known as the Olympics. As with most athletic competition, when the dust settles, there are winners and losers.

Many observers use the same analogy when talking about the global economy and the U.S. position in it. If the Japanese or Europeans sell more cars, computers or financial services than we do, won't we inevitably suffer from higher unemployment, lower wages and a reduced standard of living? Indeed, this idea underpinned much of the debate over the recent passage of the General Agreement on Tariffs and Trade (GATT) treaty. Unfortunately, despite its intuitive appeal, the idea of countries competing with one another on the economic battlefield is a dubious concept.

Competition And Competitiveness: Two Peas In A Pod?

In economics, competition (as opposed to competitiveness) is a well-defined concept, generally referring to a market in which firms may or may not be distinguishable from one another in terms of what they produce. Illinois and Missouri soybean farmers, for example, produce an identical product—soybeans. Processors who buy soybeans to make soy sauce thus do not care where their soybeans come from; they can buy all they want at the prevailing price in the soybean market regardless of who produced the soybeans. But more important, is the Missouri farmer still in direct competition with the Illinois farmer, and if so, how is this measured?

The reality is that, in this particular market, both farmers are competitive only to the extent that they can efficiently transform their land, labor, machinery, seed and other inputs into a reasonable profit. If they can't, they will go out of business. In other words, because both can sell all the soybeans they can produce at the prevailing market price, each farmer's profit is not influenced at all by how well or how poorly the other does. Rather, competitiveness in this market is productivity-driven, meaning that each farmer is in competition only with himself to produce a quality crop at the least possible cost.

In other industries, competition between firms is fierce, and how well a firm's competitor does has a direct bearing on its bottom line. One example is the auto industry, where Ford, General Motors and Chrysler, like the soybean farmer, also have a product to sell. The market structure for autos differs in two important respects from the soybean market, however. First, automakers do not produce a homogeneous product: Their cars and

trucks vary in price, size, style and other features. Second, because they cannot sell all the cars and trucks they want at a given price, each firm uses marketing strategies to influence consumer perception of their product.

But competitiveness in the auto market does not depend solely on slick ads or generous rebates. As before, competitiveness in this industry also depends on the firm's efficiency (productivity) as an auto producer and thus, inevitably, the sustainability of its market share. If GM's workers are not as productive as Ford's or Chrysler's, and its labor, steel and marketing costs are higher than its competitors, then GM will not be as competitive as Ford or Chrysler. We should eventually see GM's profits and market share falling relative to Ford's or Chrysler's.

Competitiveness, then, depends significantly on factors that the firm controls: It does not matter whether the firm is a farm or Ford Motor Company. Does this concept extend to the international arena where hundreds of thousands of different kinds of goods and services are traded among countries?

Competitiveness at the International Level: Rhetoric or Reality?

According to the World Competitiveness Report, issued annually by the International Institute for Management and Development, the U.S. economy was the world's most competitive in 1994, followed closely behind by Singapore, Japan, Hong Kong, Germany and Switzerland. Defining competitiveness as "the ability of a country or a company to, proportionally, generate more wealth than its competitors in world markets," the question for policymakers is whether such studies are relevant in comparing economic performance across countries.

To some people, a country's international competitiveness should be measured in such a manner as if it were a large firm, such as Japan Inc. or U.S. Inc., where losses can be measured in terms of trade deficits and profits translate into trade surpluses.¹ Using this analogy, countries that run trade deficits should be noncompetitive internationally, with declining manufacturing employment and lower real wages; just the opposite should occur in countries that run trade surpluses. Competitiveness, according to this view, thus depends on our ability to export more than we import. Is this true?

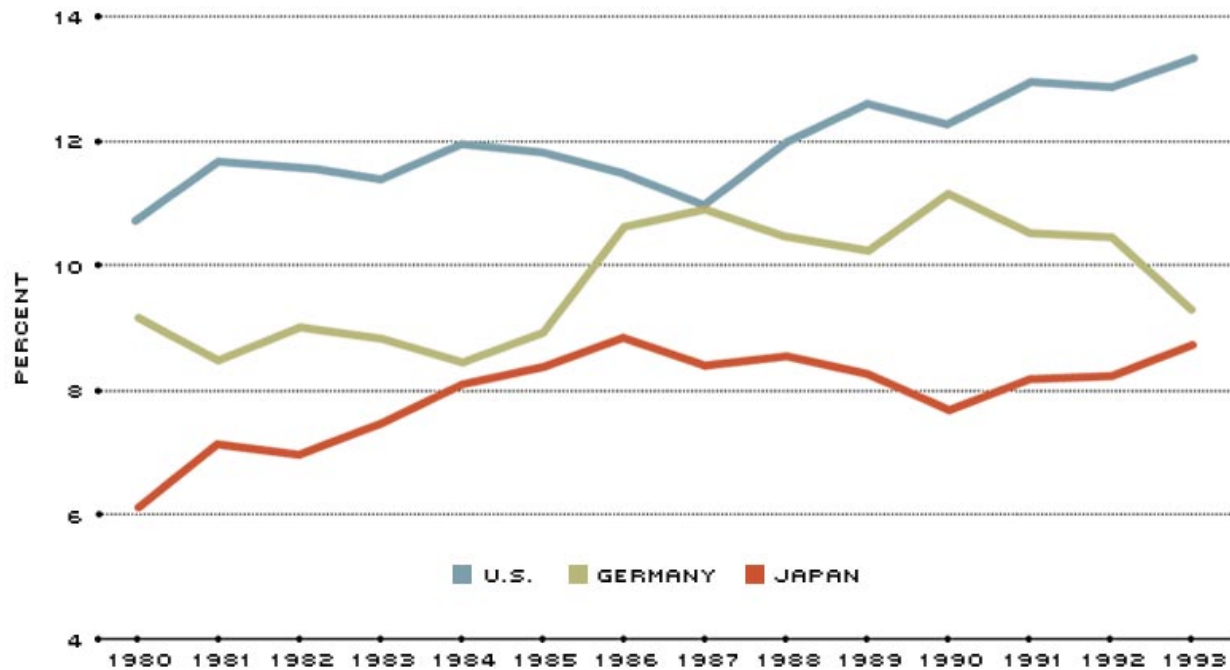
Are Countries Just One Big Company?

Competitiveness enthusiasts believe that the United States competes with Japan or Germany in the same way that Ford competes with Chrysler or General Motors, with presidents and prime ministers playing the role of CEO and profits and losses being measured in terms of trade surpluses and deficits. By this standard, the United States, which has run a real trade deficit in goods and services for 31 of the past 35 years, should be a basket case economically, increasingly unable to sell its goods and services in world markets. Fortunately, the truth is quite the opposite. In 1993, the United States was the world's largest exporter of merchandise goods, with 12.4 percent of total world exports (up from 11.1 percent in 1980).² Germany was the world's second largest exporter in 1993 with a 10.1 percent share, while Japan, further behind in third place, registered 9.7 percent.

Merchandise exports, of course, are only one side of the story. Countries also earn income from the sale of engineering, financial and legal services and the use of communications satellites. When services exports are properly accounted for, the United States, as Chart 1 shows, is still by far the world's largest exporter of goods and services.

Chart 1

Setting the Pace in World Exports



The United States garnered more than 13 percent of the world's goods and services exports in 1993—outstripping Germany (9.3 percent) and Japan (8.7 percent). Moreover, the U.S. share of the world's exports of goods and services over this period has steadily risen, contrary to the conventional wisdom.

The prowess of the American economy is also demonstrated in the value of goods and services (output) produced per person. Measured on a purchasing power parity basis, which values goods and services consistently across countries, per capita U.S. output was \$22,204 in 1991, 2.1 percent higher than Switzerland (\$21,747), 13.9 percent higher than Japan (\$19,107) and 12.2 percent higher than Germany (\$19,500).

Some may correctly point out that, although per capita output (income) is highest in the United States, the growth rates of per capita output in many other industrialized countries (that is, the yearly increase in their standard of living) have exceeded that in the United States for several years. This is particularly true for Germany and Japan. This development is not, as some may think, the result of the United States becoming less competitive. It simply means that there is a natural tendency for living standards to equalize across industrialized economies over time. Those economies that start out relatively poor will initially grow faster than those countries that start out relatively well off, but at some point their economic growth will slow from unsustainably high rates. A good example of this is Japan after World War II. In 1950, Japan's per capita income was only one-sixth that of the United States. As Japan rebuilt its war-ravaged economy, its living standards improved so that today its income per capita is nearly 90 percent that of the United States; however, its economy is growing nowhere near the phenomenal rates experienced between 1950 and 1973 (about 9 percent per year).

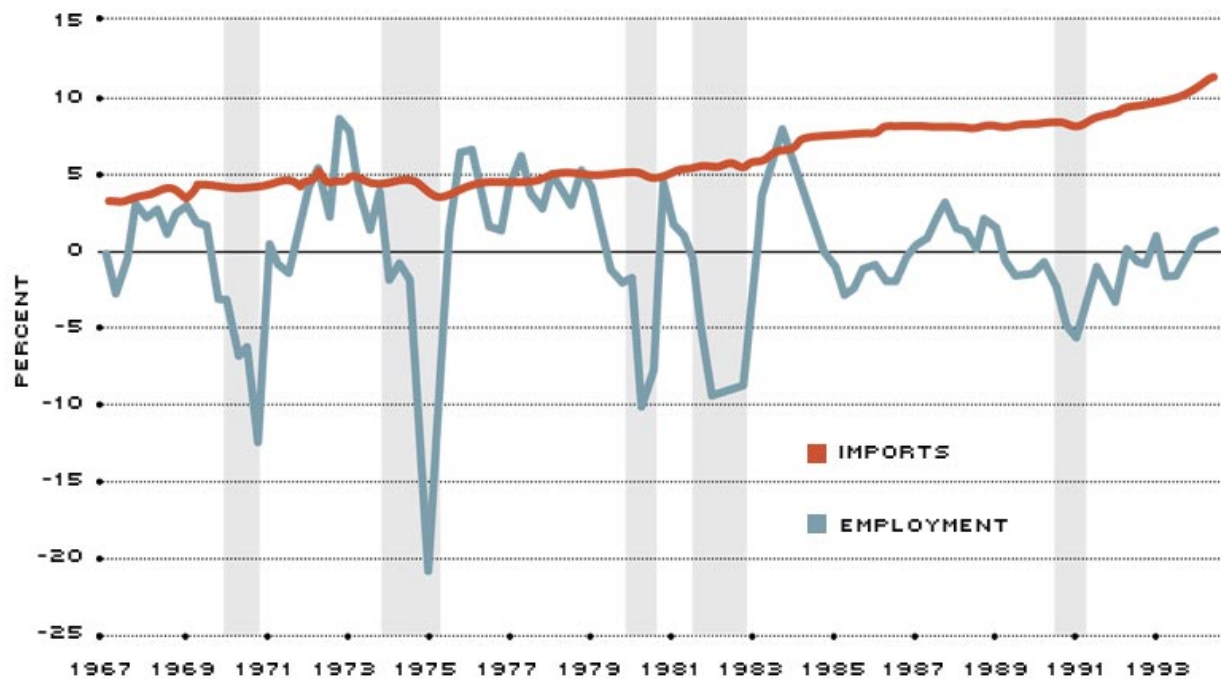
Is the U.S. Deindustrializing?

A second claim made by the competitiveness gurus is that the persistent U.S. trade deficit has deindustrialized the U.S. economy.³ From cars to TV sets, the surge in imported manufactured goods into the United States, they say, has led to a decline in manufacturing employment and real wages.

There is no getting around the fact that imports of manufactured goods have surged in recent years. Currently, the sum of imported capital goods (machinery) and automotive products is about 37 percent of total imports, more than triple the 11 percent share that prevailed in 1965. Has this rising quantity of imported manufactured goods deindustrialized the United States, as some maintain? Not according to the evidence (see Chart 2).

Chart 2

Does Manufacturing Employment Drop as U.S. Imports Rise?



Vertical bars represent periods of business recession.

The chart above, which plots real merchandise nonpetroleum imports as a share of GDP against the percentage change (annualized) in manufacturing employment, indicates that there is little apparent relationship between the modest rise in imports and the growth of manufacturing employment. Manufacturing employment growth is influenced to a large degree by domestic factors such as the business cycle—it tends to fall during recessions and rise during recoveries—with international factors contributing only a minor part.*

*To test this hypothesis, a simple regression was estimated to examine the relationship. The results, not printed here, show an extremely weak causal relationship.

Nevertheless, those who push the deindustrialization hypothesis are entirely correct on one point: The growth of manufacturing employment has been weak in recent years. What few realize is that manufacturing employment as a share of total employment has been declining for decades, reflecting the relatively faster growth of productivity in the goods-producing sector, especially in agriculture and somewhat less so in manufacturing. Currently, the share of the nonfarm workforce engaged in manufacturing is about 16 percent vs. 34 percent before World War II. As a result, employment in the service-producing sector has been steadily

growing in importance—from an estimated 24 percent of total employment in 1870 to its current share of nearly 80 percent.⁴ At the same time, manufacturing output as a share of total output (real GDP), although both cyclical and influenced by wartime build-ups and peacetime reductions, has stayed roughly constant, measuring approximately 20 to 22 percent of GDP.

This development is not unique to the United States. Other industrialized economies have also become more service-oriented over time. In Japan, the share of employment devoted to manufacturing is just under 24 percent, down from 27.6 percent in 1974, while in Germany manufacturing employment is slightly more than 31 percent, down from almost 40 percent in 1970. Larger declines have occurred in Canada, Australia and the United Kingdom, to name a few.

In some European countries, particularly Germany, a concerted effort has been made by the government to remain as manufacturing-intensive as possible—usually to the detriment of the rest of the economy—by imposing onerous regulations on sectors like financial services and retail trade. Given their persistently high unemployment rates, some of these countries are now trying to phase them out, realizing that they are an impediment to economic growth. Accordingly, we should expect to see a continued increase in the share of workers employed in the service industries in these countries.

Many advocates of the competitiveness school buttress their argument by claiming that one way to boost U.S. competitiveness is for the government to take an increasingly active role in allocating society's resources. Among their prescriptions: (1) shifting to a value-added tax system; (2) increasing government funding for education and worker training programs; and (3) increasing cooperation between government and the private sector, such as the Partnership for a New Generation of Vehicles. Many of these recommendations smack of industrial policy, which economists typically view with a jaundiced eye.⁵ Nevertheless, many have become official economic policy of the Clinton administration.⁶

Critiquing The Competitiveness School

In a provocative article, Stanford University professor Paul Krugman summarily dismisses the competitiveness view as both "wrong and dangerous."⁷

Krugman makes two important points. The first, touched on earlier, is that countries are not like firms. If a firm consistently incurs a loss, it will go out of business; if a country persistently runs a goods and services trade deficit—as the United States has recently—it will not go out of business. As Krugman points out, a trade deficit may simply reflect other factors, such as a need to acquire foreign exchange to pay foreign creditors; more important, it may just be the result of a growing economy, reflecting an increase in the demand for all goods, both domestically produced and foreign produced (imports). For example, the United States ran a real balance-of-trade surplus (or slight deficit) when economic growth was slowing or negative (in 1974-75, 1980-82 and 1990-91), and a large trade deficit during periods of rapid growth (the late 1950s and mid-1980s).

The second point—the crux of Krugman's critique—is that domestic considerations largely determine the extent of a country's economic health—especially over a longer horizon. Although foreign considerations can affect a nation's domestic output and employment growth in the short term, its living standards (and thus its economic competitiveness) are largely determined by such factors as productivity growth.

What Causes Economies to Grow and Prosper?

Let's take a closer look at exactly why productivity growth matters so much to a nation's standard of living. Workers generally increase their productivity in two ways. One way is by increasing their knowledge or skills. This comes about primarily through additional education, experience or, perhaps, apprenticeship programs. The second way is through technological advancements, such as more powerful computers, robots, fax machines or machine tools, which allow a worker to produce more output with less effort (input). When a

worker increases his or her productivity, the result is higher real wages (increased living standards); when productivity growth wanes, real wage growth slows or becomes negative (decreased living standards).

Of course, this gain comes with some short-term pain: Those workers with a lower skill level may be forced into other industries. As an industry becomes increasingly computerized or relies more heavily on sophisticated electronics, those who lack the necessary skills will be forced into industries that do not put a premium on such skills.

The main idea is that the factors determining an economy's growth over a longer horizon have little to do with international considerations. Whether a country prospers does not depend on how much it imports or exports, but rather on how well it makes the goods that compete with its imports and with the goods that it exports. According to a recent study, over the past 100 years, Britain's productivity growth rate lagged that in the United States by an average of 1 percentage point per year. While seemingly trivial, it is estimated that this discrepancy, multiplied over time, "was sufficient to transform the United Kingdom from the world's undisputed industrial leader into the third-rate economy that it is today. It was also sufficient to cut real wages in the U.K. from about 1 and 1/2 times that in other leading European economies to about two-thirds of the real wages in those countries today."⁸

Europhoria or Eurosclerosis?

To bolster his case, Krugman discusses the problem of high European unemployment rates. From 1950 to 1974, the unemployment rate in the European Community (EC) averaged less than 5 percent of the work force—about the same as in the United States, although on average the unemployment rate in the United States was higher, particularly during the late 1950s and early 1960s. Since 1974, however, the EC unemployment rate has risen steadily, reaching 10.6 percent in 1993, and is projected to climb to nearly 12 percent by the end of 1995. While the U.S. unemployment rate also began to climb after 1974, it peaked in 1983 at 10.8 percent and has since declined to less than 6 percent. The obvious question is why.

Before attempting to answer this, we should point out that a nation's unemployment rate can be thought of as the sum of its cyclical component, usually a temporary phenomenon, and its structural component (sometimes referred to as the economy's natural unemployment rate). As economic growth slows, the output of goods and services wanes, leading firms to reduce employment. This is called cyclical unemployment (after the business cycle). The second component depends on the various structural impediments that are prevalent in the economy: the changing demographics or government policies that restrict growth—for example, increases in regulations that raise the cost of labor to business, causing firms to try to substitute relatively less expensive machines, restrict their hiring of new employees or make their existing employees work harder. Most mainstream economists and policymakers agree that the persistently high European unemployment rates are not due to cyclical factors or, as adherents of the competitiveness school might suggest, the result of Europe's inability to export its goods and services to the rest of the world. After all, Germany is not only the world's second-largest exporter, but its share of world exports also rose from 9.5 percent in 1980 to 10.1 percent in 1992, as did the world export shares of other European countries. Instead, the crux of Europe's competitiveness problem, as European leaders have termed it, is structural in nature.⁹

Recall that an individual's real wage will depend on how productive the worker is. This should be a positive relationship: The most productive workers in society are usually among the highest paid workers, while workers with a lower level of productivity are paid relatively less. Thus, couldn't it be that European workers have higher wages simply because they are more productive? Not necessarily. From 1977 to 1992, manufacturing productivity in the United States grew by 2 percent per year, slightly less than the 2.2 percent per year growth in Germany. At the same time, however, manufacturers' labor costs—that is, wages and salaries, fringe benefits and other mandated social costs—rose by 3.8 percent per year in the United States, but by 6.3 percent per year in Germany. Clearly, some factor besides productivity is driving wages higher in

Germany relative to the United States. That factor, many economists have concluded, is the rise of the social welfare state. (For a summary of an alternative view, see the article "Are Economic Flexibility and Social Welfare Programs Incompatible?" by Adam Zaretsky in this issue.)

As Figure 1 shows, German employers pay a significantly larger amount on social welfare costs than U.S. employers do. To compensate for such nonlabor costs, European employers have had to increase their productivity—not only by reducing the size of their work force, but also by beginning to move production to the United States, where labor costs are considerably less and just as productive. Construction of manufacturing plants by Mercedes Benz in Alabama and BMW in South Carolina are two prominent examples. A survey conducted by the German Chamber of Industry and Trade found that 24 percent of companies had moved part of their facilities overseas between 1990 and 1993; another 30 percent plan to do so before 1997. The growing divergence between productivity and real wage growth in some European countries, Krugman and others argue, is the real reason why the prospects for U.S. economic growth are considerably brighter—despite our persistent trade deficit in goods and services.

Figure 1

The Higher Price of Employer Compensation Costs in Germany



For every \$100 in wages a German worker earns, the worker's employer must pay another \$84 in social costs such as health care and unemployment insurance, a Christmas bonus, sick leave, vacation, company retirement, workers' compensation and church and public holidays. The average U.S. employer's additional compensation costs are less than half that, totaling about \$41.

SOURCE: Shlaes (1994) and U.S. Department of Labor

Conclusion

The United States is still the world's largest exporter of goods and services and, moreover, has been increasing its share continually since 1980. At the same time, it generally imports even more than it exports, with the resulting trade deficit setting off alarms about our competitiveness and causing angst among the population. What is often lost in this rancor, however, is that a country's long-term prospects depend on a climate that is conducive to job creation and productivity growth—not on the trade deficit. In this regard, the

United States, which has fewer labor market distortions and restrictive regulations than other countries, gives us a distinct advantage.

Heidi L. Beyer provided research assistance.

Endnotes

1. Two well-known advocates of this general approach are Robert Reich (1991) and Lester Thurow (1992). [back to text]
2. World export data expressed in dollar terms come from the GATT organization based in Geneva, Switzerland. Though caution is always in order when using international data because of the differing ways in which countries report or measure imports and exports, this data is probably a good approximation of the reality. [back to text]
3. See, among others, Prestowitz (1994). [back to text]
4. The estimate for 1870 comes from Ott (1987). [back to text]
5. See Clark (1993) for a critique of industrial policy. [back to text]
6. See U.S. Department of Commerce (1994). [back to text]
7. See Krugman (1994), p. 44. [back to text]
8. See Baumol, et al (1989). [back to text]
9. See, for example, several of the papers presented at a recent symposium on the problems of high European unemployment rates (Federal Reserve Bank of Kansas City). [back to text]

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[research.](#)



REGIONAL ECONOMIST | JANUARY 1995

<https://www.stlouisfed.org/publications/regional-economist/january-1995/news-bulletins-from-the-eighth-federal-reserve-district>

Pieces of Eight: News Bulletins from the Eighth Federal Reserve District

Intermediate Materials Prices and the CPI: Cause and Effect?

Do price hikes at the intermediate materials level translate into increases in consumer prices? And if so, when? To find out, St. Louis Fed economist Kevin Kliesen plotted the year-on-year percentage changes in the consumer price index (CPI) and the Producer Price Index (PPI) for intermediate materials from 1948 to 1993.

Kliesen reported in the St. Louis Fed's *National Economic Trends* (NET) that the two price indicators moved similarly over the 45-year period. Kliesen cautions that the apparent relationship should not be relied upon too heavily because intermediate price levels have proven to be unreliable indicators of future inflation in the past.

"It is by no means a done deal," Kliesen says. "For example, we haven't yet seen consumer prices rise to the same degree as the recent acceleration in intermediate materials prices for chemicals, textiles or plastic."

Recent increases in the price of another intermediate material—paper—have had no effect on the price of NET—it's still free. For a copy of the December issue, contact Debbie Dawe of our Public Affairs office at (314) 444-8809.

St. Louis Fed Takes its Show on the Road

Jim Hanna of Hanna Oil & Gas Co. thinks they're a great idea. "It gives us guys—the blue collar so to speak—an idea of what's happening in this area and this region," he says of the St. Louis Fed's Regional Economic Forums. This is especially important for Hanna who, although he describes himself as "not a real banker," must provide solid advice to Merchants National Bank, where he is a board member. Hanna was one of nearly 200 bankers, business and community leaders who attended one of five economic forums hosted by the St. Louis Fed last year. Forum participants listened to presentations from economists and Banking Supervision officers before engaging in a dialogue about national and regional economic issues. If you're interested in taking part in one of this year's forums, call Bernie Berns of our Public Affairs office at (314) 444-8321.

Where Have All the Bank Deposits Gone?

As the spread between returns on bank deposits and mutual funds widened during the 1990s, American households shifted their money to long-term investments like bond and equity mutual funds.

When interest rates started their upward ascent last year, however, the value of existing bonds plunged, leading analysts to predict a rebound in the growth of M2, which includes savings deposits, but not bond and equity mutual funds.

Instead, writes St. Louis Fed economist Richard Anderson in the December issue of *Monetary Trends*, M2 has been stagnant. "It's weaker than we would have expected given market rates and income," he explains.

One reason could be that households are more sophisticated than many analysts had believed, Anderson says, and were fully aware of the short-term fluctuations that long-term assets experience. "Households are not as naive as some economists paint them," he says.

Furthermore, Anderson says, some households may be reluctant to return to their previous investment patterns after they have learned about newer, more sophisticated options. For a copy of the issue in which Anderson's report appears, call Debbie Dawe of our Public Affairs office at (314) 444-8809.

Growth in Per Capita Personal Income: 1991 to 1992

Rank Among 50 States	District State	Percent Increase
2	Arkansas	7.96
3	Tennessee	6.87
4	Kentucky	6.77
5	Mississippi	6.68
7	Indiana	6.46
19	Illinois	5.73
36	Missouri	4.65
National Average:		4.93

SOURCE: Morgan Quitno Corp., from U.S. Department of Commerce Data

District Data

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

The Regional Economist
January 1995

Commercial Bank Performance Ratios

U.S., District and State

	All U.S.	U.S. <\$15B ¹	District	AR	IL	IN	KY	MS	MO	TN
Return on Average Assets (Annualized)										
3rd quarter 1994	1.18%	1.31%	1.26%	1.32%	1.24%	1.10%	1.14%	1.27%	1.31%	1.34%
2nd quarter 1994	1.16	1.28	1.26	1.32	1.24	1.10	1.26	1.24	1.25	1.33
3rd quarter 1993	1.22	1.26	1.27	1.41	1.44	1.20	1.10	1.38	1.21	1.32
Return on Average Equity (Annualized)										
3rd quarter 1994	15.00%	15.24%	14.66%	14.37%	12.88%	11.82%	13.10%	13.73%	16.52%	16.98%
2nd quarter 1994	14.79	14.90	14.69	14.44	12.81	11.72	14.41	13.48	15.77	17.00
3rd quarter 1993	15.79	15.11	14.99	15.63	15.27	12.83	12.98	15.09	15.27	17.29
Net Interest Margin (Annualized)										
3rd quarter 1994	4.33%	4.58%	4.20%	4.12%	4.15%	4.15%	4.25%	4.59%	4.12%	4.27%
2nd quarter 1994	4.19	4.40	4.03	3.96	3.99	4.00	4.11	4.40	3.90	4.19
3rd quarter 1993	4.50	4.85	4.53	4.55	4.89	4.47	4.33	4.97	4.38	4.66
Nonperforming Loans² ÷ Total Loans										
3rd quarter 1994	1.45%	1.27%	0.74%	0.69%	1.03%	0.58%	0.87%	0.66%	0.65%	0.65%
2nd quarter 1994	1.61	1.36	0.78	0.77	1.00	0.58	0.84	0.78	0.72	0.70
3rd quarter 1993	2.39	1.89	0.99	0.91	1.24	0.61	1.04	0.86	0.97	1.05
Net Loan Losses ÷ Average Total Loans (Annualized)										
3rd quarter 1994	0.47%	0.43%	0.18%	0.10%	0.27%	0.12%	0.23%	0.25%	0.11%	0.28%
2nd quarter 1994	0.51	0.45	0.17	0.10	0.28	0.12	0.23	0.11	0.07	0.33
3rd quarter 1993	0.80	0.70	0.35	0.12	0.39	0.16	0.45	0.35	0.35	0.47
Loan Loss Reserve ÷ Total Loans										
3rd quarter 1994	2.28%	2.05%	1.71%	1.46%	1.68%	1.48%	1.73%	1.67%	1.87%	1.72%
2nd quarter 1994	2.34	2.12	1.74	1.52	1.74	1.49	1.68	1.78	1.92	1.79
3rd quarter 1993	2.54	2.29	1.80	1.58	1.83	1.49	1.70	1.69	1.95	2.04

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

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

² Includes loans 90 days or more past due and nonaccrual loans

SOURCE: FFIEC Reports of Condition and Income for Insured Commercial Banks

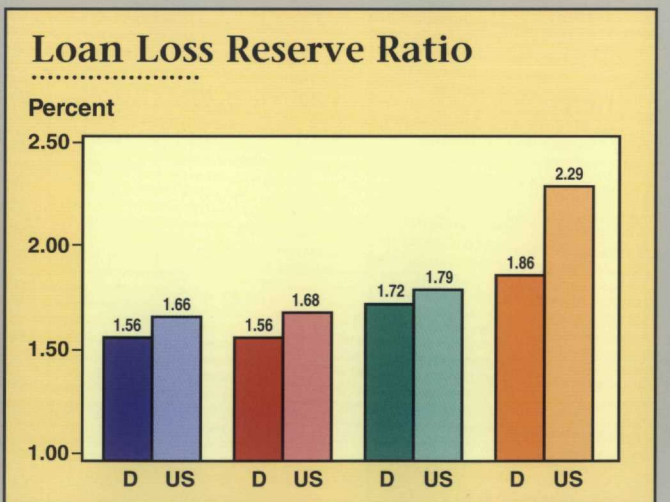
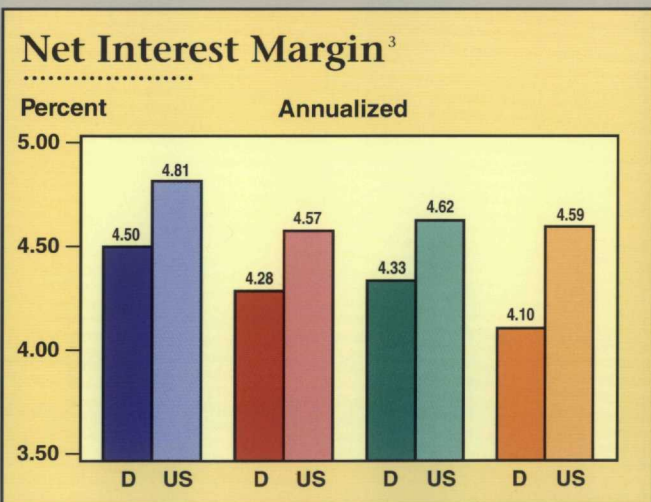
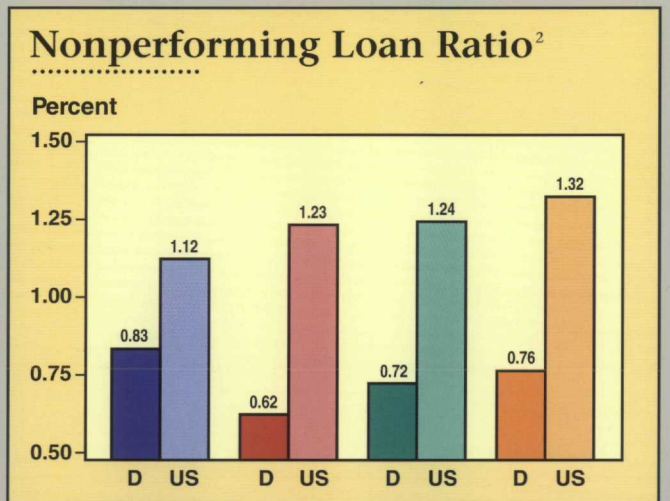
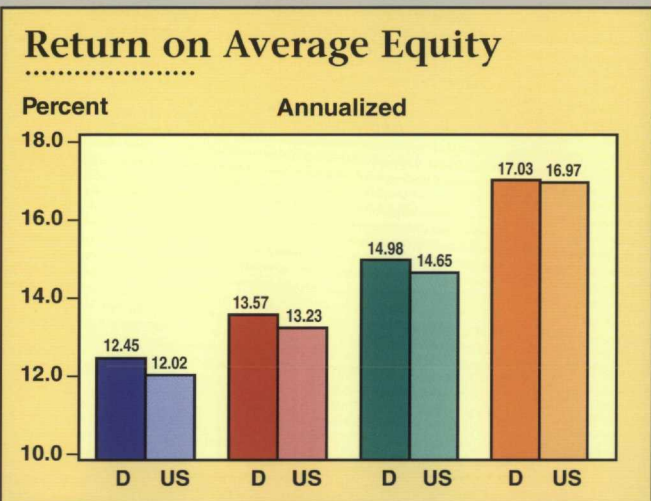
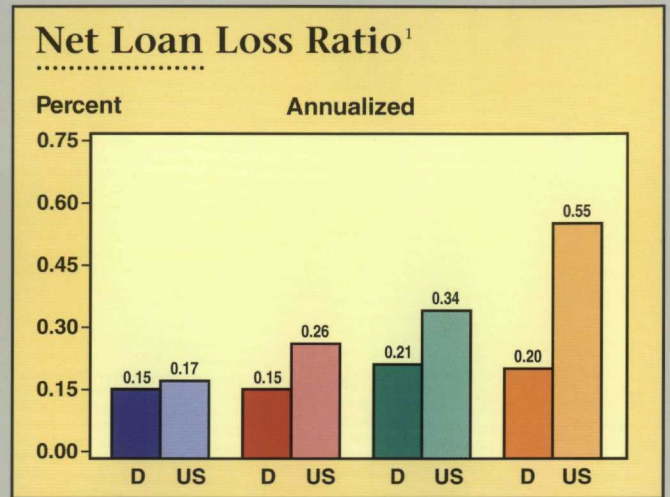
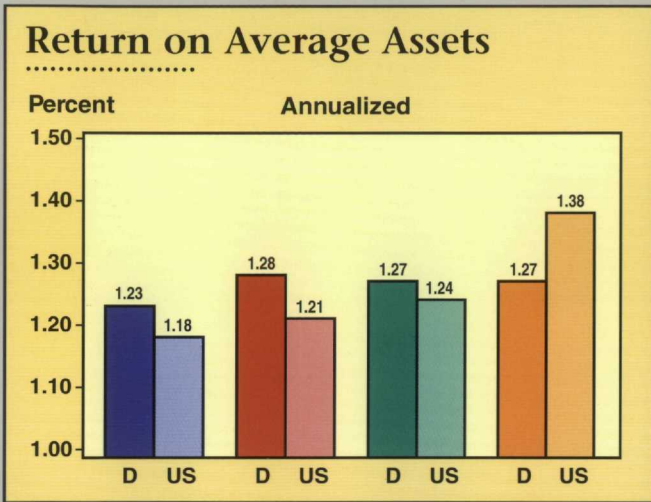
Commercial Bank Performance Ratios

by Asset Size

3rd Quarter 1994

Earnings

Asset Quality



D = District

US = United States

< \$100 Million

\$100 Million - \$300 Million

\$300 Million - \$1 Billion

\$1 Billion - \$15 Billion

NOTE: Asset quality ratios are calculated as a percent of total loans.

¹ Loan losses are adjusted for recoveries

² Includes loans 90 days or more past due and nonaccrual loans

³ Interest income less interest expense as a percent of average earning assets

SOURCE: FFIEC Reports of Condition and Income for Insured Commercial Banks

Agricultural Bank Performance Ratios

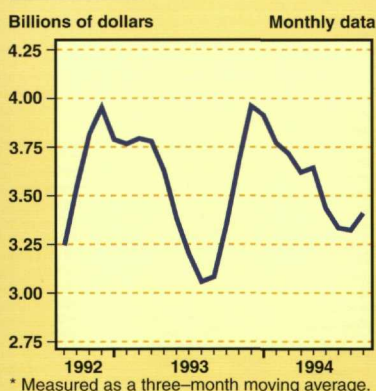
	U.S.	AR	IL	IN	KY	MS	MO	TN
Return on average assets (annualized)								
3rd quarter 1994	1.26%	1.24%	1.20%	1.16%	1.40%	1.52%	1.32%	1.21%
2nd quarter 1994	1.25	1.24	1.19	1.14	1.34	1.48	1.33	1.23
3rd quarter 1993	1.35	1.36	1.30	1.25	1.34	1.63	1.43	1.22
Return on average equity (annualized)								
3rd quarter 1994	12.49%	11.84%	11.57%	11.29%	14.23%	15.42%	13.21%	12.63%
2nd quarter 1994	12.45	11.86	11.48	11.17	13.63	14.28	13.38	12.15
3rd quarter 1993	13.62	13.11	12.67	12.82	13.97	16.41	14.67	12.50
Net interest margin (annualized)								
3rd quarter 1994	4.29%	4.05%	3.91%	4.38%	4.31%	4.70%	4.28%	4.21%
2nd quarter 1994	4.09	3.86	3.70	4.24	4.12	4.58	4.10	3.89
3rd quarter 1993	4.62	4.41	4.23	4.79	4.48	5.20	4.63	4.65
Ag loan losses ÷ average ag loans (annualized)								
3rd quarter 1994	0.12%	0.37%	-0.06%	-0.12%	0.02%	0.21%	0.16%	0.26%
2nd quarter 1994	0.09	0.60	-0.04	-0.04	0.01	0.18	0.21	-0.02
3rd quarter 1993	0.15	0.41	0.13	0.46	0.15	0.79	0.36	-0.06
Ag nonperforming loans¹ ÷ total ag loans								
3rd quarter 1994	1.23%	0.63%	1.17%	1.40%	1.49%	1.69%	0.91%	0.14%
2nd quarter 1994	1.31	0.93	1.33	1.35	2.03	3.07	0.91	0.28
3rd quarter 1993	1.54	0.74	1.98	1.36	1.44	2.44	1.02	0.11

NOTE: Agricultural banks are defined as those banks with a greater than average share of agricultural loans to total loans.
Data include only that portion of the state within Eighth District boundaries.

¹ Includes loans 90 days or more past due and nonaccrual loans

SOURCE: FFIEC Reports of Condition and Income for Insured Commercial Banks

U.S. Agricultural Exports*



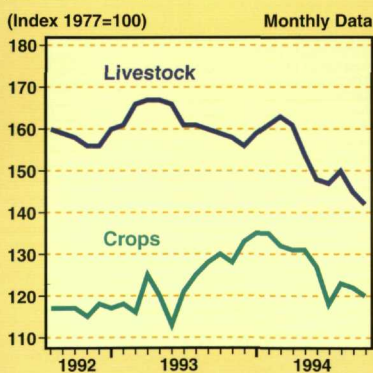
U.S. Agricultural Exports by Commodity

Dollar amounts in billions

Commodity	July	Aug	Sept	Year-to-date	Change from year ago
Livestock & products	.67	.75	.78	8.33	41.2%
Corn	.26	.30	.30	3.82	-10.2
Cotton	.22	.19	.12	2.31	50.0
Rice	.09	.04	.05	.89	16.0
Soybeans	.12	.27	.26	4.16	-9.7
Tobacco	.06	.07	.06	1.26	-12.7
Wheat	.24	.33	.39	4.03	-15.0
TOTAL ¹	3.15	3.51	3.56	43.51	2.2

¹ Includes commodities not listed here

U.S. Crop and Livestock Prices



Indexes of Food and Agricultural Prices

	Level			Growth ¹	
	III/94	II/94	III/93	II/94-III/94	III/93-III/94
Prices received by U.S. farmers	135	142	143	-19.1	-6.0
Prices received by District farmers²					
Arkansas	126	135	123	-24.2	2.2
Illinois ³	90	104	102	-43.1	-11.7
Indiana	104	119	114	-40.9	-8.2
Missouri	135	137	145	-5.7	-6.7
Tennessee	136	146	145	-24.8	-6.4
Prices paid by U.S. farmers					
Production items	181	184	179	-6.4	1.1
Other items ⁴	199	200	195	-2.0	2.1
Consumer food prices	145	143	141	4.8	2.8
Consumer nonfood prices	150	148	145	3.5	2.9

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

¹ Compounded annual rates of change are computed from unrounded data.

² Index of prices received for all farm products (1977=100). Indexes for Kentucky and Mississippi are unavailable.

³ (1987-91=100) for 1993; (1988-92=100) for 1994

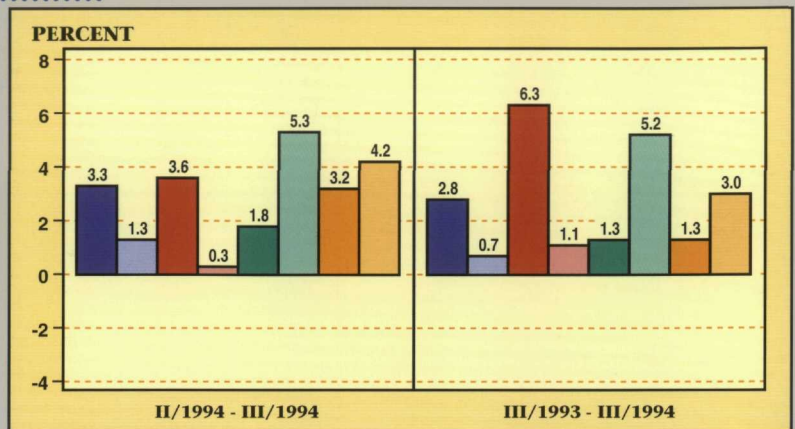
⁴ Other items include commodities, services, interest, taxes and wages.

Selected U.S. and State Business Indicators

United States

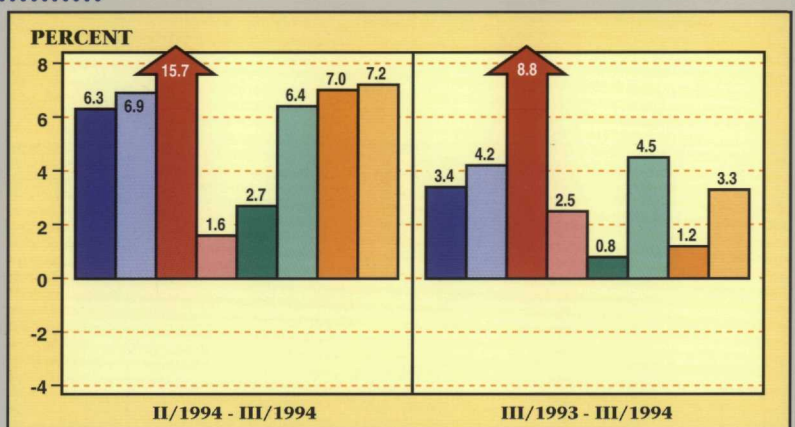
	III/1994	II/1994	III/1993
Labor force (in thousands)	130,996	130,590	128,181
Total nonagricultural employment (in thousands)	113,908	112,995	110,755
Unemployment rate	6.0%	6.1%	6.7%
	II/1994	I/1994	II/1993
Real personal income* (in billions)	\$3,821.6	\$3,776.6	\$3,709.0

Compounded Annual Rates of Change in Nonagricultural Employment



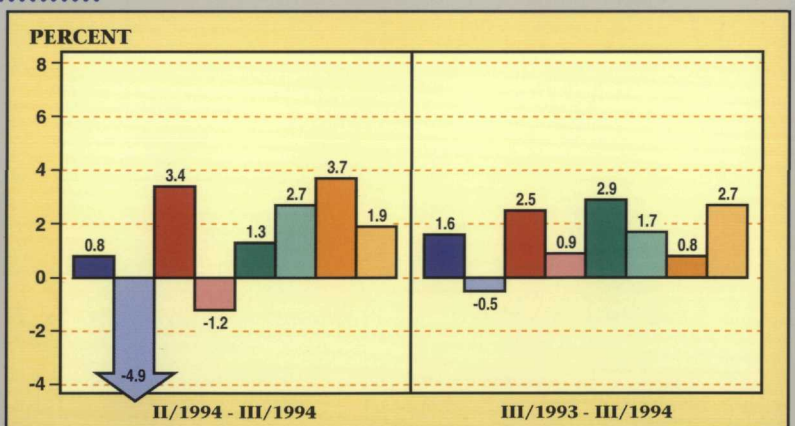
Arkansas

	III/1994	II/1994	III/1993
Labor force (in thousands)	1,213.4	1,206.9	1,164.3
Total nonagricultural employment (in thousands)	1,026.6	1,011.0	992.6
Unemployment rate	5.4%	5.5%	6.1%
	II/1994	I/1994	II/1993
Real personal income* (in billions)	\$27.6	\$27.6	\$26.8



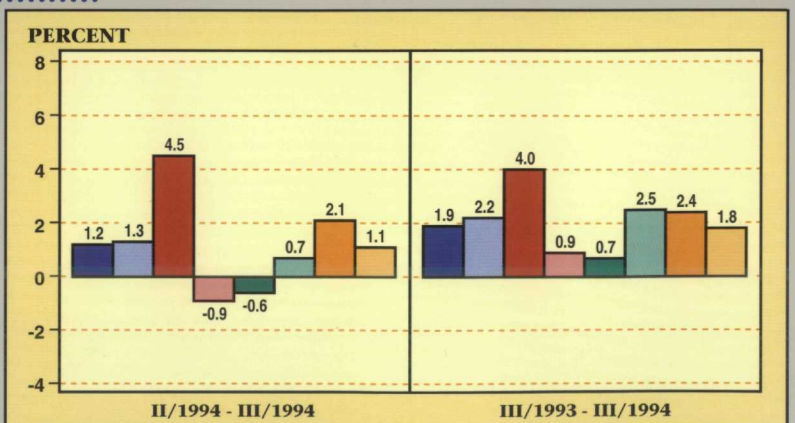
Illinois

	III/1994	II/1994	III/1993
Labor force (in thousands)	5,947.4	6,089.2	5,980.6
Total nonagricultural employment (in thousands)	5,403.3	5,391.9	5,316.5
Unemployment rate	5.8%	5.5%	7.8%
	II/1994	I/1994	II/1993
Real personal income* (in billions)	\$187.5	\$185.8	\$182.3



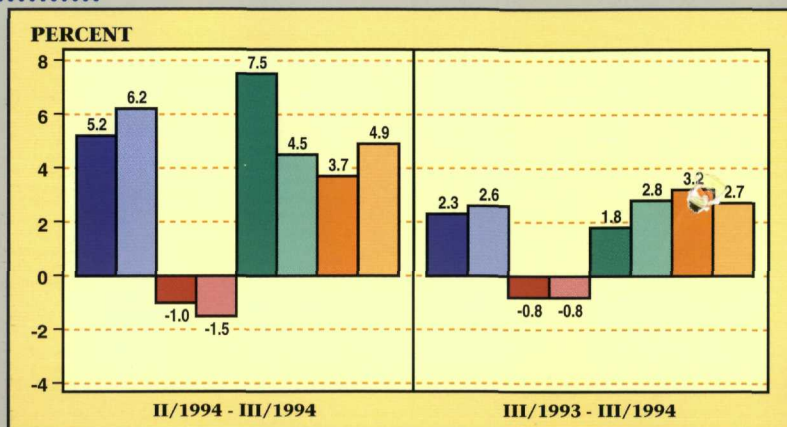
Indiana

	III/1994	II/1994	III/1993
Labor force (in thousands)	2,991.7	3,008.6	2,953.4
Total nonagricultural employment (in thousands)	2,640.6	2,632.8	2,590.4
Unemployment rate	5.0%	4.8%	5.1%
	II/1994	I/1994	II/1993
Real personal income* (in billions)	\$78.4	\$77.6	\$75.6



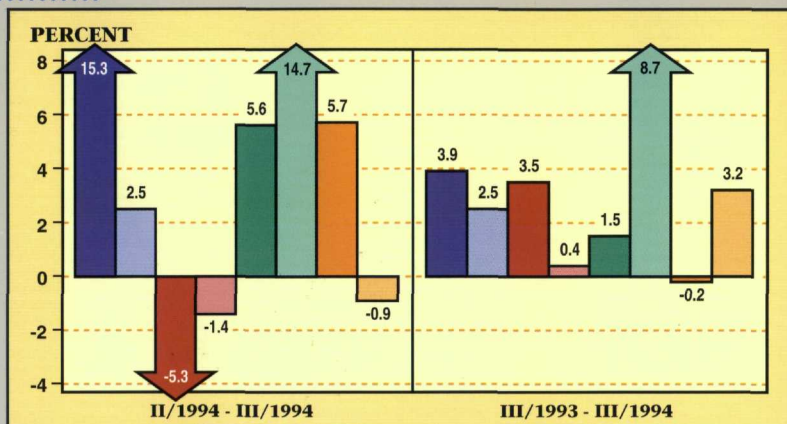
Kentucky

	III/1994	II/1994	III/1993
Labor force (in thousands)	1,821.0	1,794.7	1,795.4
Total nonagricultural employment (in thousands)	1,570.4	1,550.5	1,534.7
Unemployment rate	5.1%	4.8%	6.2%
	II/1994	I/1994	II/1993
Real personal income* (in billions)	\$45.9	\$45.3	\$44.4



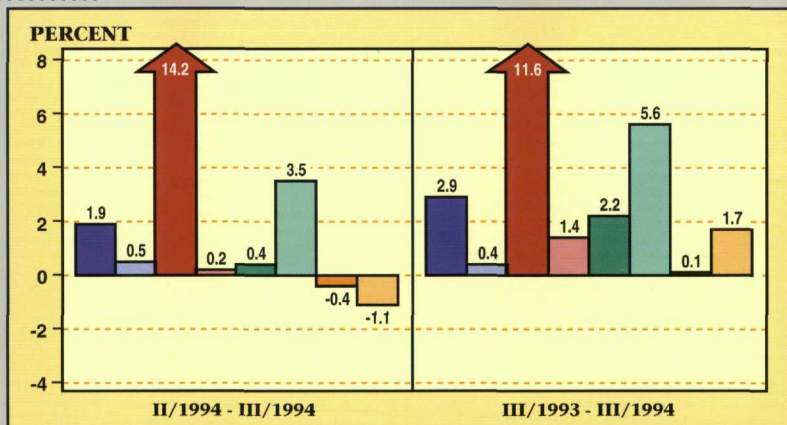
Mississippi

	III/1994	II/1994	III/1993
Labor force (in thousands)	1,249.8	1,239.0	1,215.8
Total nonagricultural employment (in thousands)	1,056.3	1,019.4	1,016.8
Unemployment rate	6.1%	7.0%	6.2%
	II/1994	I/1994	II/1993
Real personal income* (in billions)	\$28.4	\$28.2	\$26.7



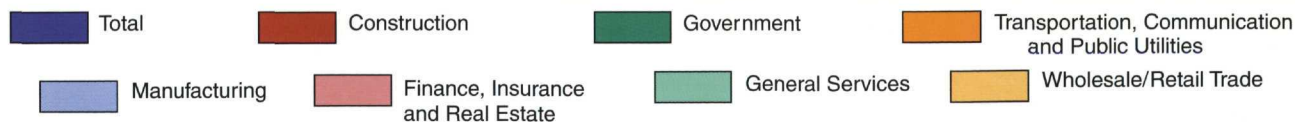
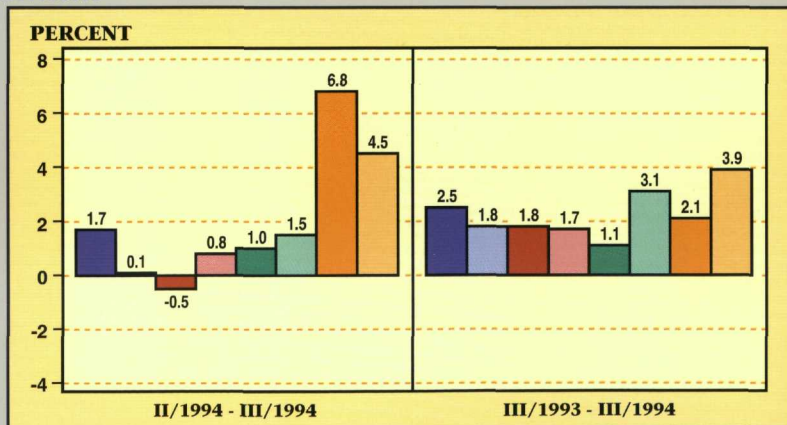
Missouri

	III/1994	II/1994	III/1993
Labor force (in thousands)	2,682.5	2,652.2	2,648.4
Total nonagricultural employment (in thousands)	2,470.5	2,459.1	2,401.3
Unemployment rate	4.4%	4.9%	6.5%
	II/1994	I/1994	II/1993
Real personal income* (in billions)	\$73.4	\$72.5	\$71.1



Tennessee

	III/1994	II/1994	III/1993
Labor force (in thousands)	2,625.3	2,638.6	2,508.9
Total nonagricultural employment (in thousands)	2,396.6	2,386.3	2,337.5
Unemployment rate	4.7%	4.6%	5.7%
	II/1994	I/1994	II/1993
Real personal income* (in billions)	\$67.4	\$66.9	\$64.5



NOTE: All data are seasonally adjusted. The nonagricultural employment data reflect the 1993 benchmark revision.
* Annual rate. Data deflated by CPI, 1982-84=100.