Eighth Note

Thomas C. Melzer
President

Insecurity about Social Security

Throughout history, the generations have had their differences. And the family dinner table has often been the arena in which these differences surfaced. Today's generations are doing their share to maintain this tradition, but a new topic has emerged to ruin the meal—Social Security.

It's easy to see how this debate could turn rancorous if you take a look at Social Security along generational lines. Current retirees, many of whom lived through the Great Depression, can't imagine how they would have survived without it. Indeed, Social Security has been one of our country's most successful programs, almost single-handedly raising the elderly from poverty. To no one's surprise, retirees don't want the program tinkered with.

One generation down, babyboomers are wondering whether the Social Security trust fund will run dry just as they're ready to retire. Such uncertainty is causing many of them to throw their arms up in confusion: How reliant should they be on Social Security to bolster their retirement savings? Should they be planning to work longer?

Workers just entering the labor force, meanwhile, are wondering whether Social Security will be around at all when they're ready to retire. If not, why should they pay into the system now?

The cause of all this generational discord is the realization that, in the United States and in virtually every industrialized nation of the world, populations are aging rapidly, living longer and leaving the work force earlier. At the same time, new workers are not entering the labor force fast enough, and worker productivity is not rising fast enough, to support the growing legions of retirees.

If we are realistic about such trends, we will arrive at the same conclusion that the U.S. Advisory Council on Social Security recently came to: Without reform, our system will not support us very far into the 21st century.

Most of the reform proposals being debated involve some combination of higher taxes and reduced benefits, with lengthy phase-in periods for each. Whichever proposal one favors, the important thing is that we act relatively soon. We may have enough cash in the Social Security trust fund to last until 2029, but we are headed for a free fall after that.

By taking steps to fix the system now, we will reduce the eventual costs of Social Security reform and provide those currently in the work force with more time to adjust their financial retirement plans. In addition, we will reduce the risk that runaway government deficits might undermine future economic growth and stability.

Who knows? If we do it right, we may also be able to transform the family dinner table into a place where civilized conversation rules. Or maybe not.

Assessing the Generational Gap in Future Living Standards through Generational Accounting

B Y   K E V I N   L .   K L I E S E N

Among the goals of any policymaker are the design of policies that contribute to sustained increases in living standards over time. These increases depend on many inter-related factors, including inflation, labor force growth, capital formation and productivity gains. In this regard, monetary and fiscal policy can play a key role. For monetary policymakers, this means maintaining an environment of stable prices, which enhances the efficiency of a dynamic economy by fostering confidence among the savers and investors who are crucial to its long-term prosperity. For their part, fiscal policymakers can also help out by having the foresight to implement sound tax and expenditure policies.

To most citizens and many policymakers, achieving a balanced federal budget by 2002 would be considered sound fiscal policy. Many economists, however, would instead ask what policies would be put in place to achieve this fiscal balance. Moreover, how would these policies affect both current and *future* generations of taxpayers? Because traditional fiscal policy analysis is not readily equipped to handle the complexity of this question, a new method of analysis, called *generational accounting*, has been developed.

The Incredible Shrinking Deficit

There is no denying, as both the Congressional Budget Office (CBO) and the Office of Management and Budget (OMB) report, that the country's short-term fiscal outlook is as favorable as it has been for quite some time. As shown in the figure on the next page, the federal budget deficit measured $107.3 billion in fiscal year (FY) 1996—the smallest deficit in dollar terms since 1981, and the smallest as a percent of GDP in 22 years.[1] Thus, the political task of crafting a federal budget that achieves balance by FY 2002 is considerably easier than it would have been a few years earlier, when the budget deficit approached $300 billion.

According to the CBO, this improved outlook has occurred for four reasons.[2] First, economic growth has been relatively strong since 1991, with real (inflation-adjusted) GDP growing by about 2.8 percent per year. This is well above the 2.25 percent to 2.5 percent growth that most economists believe the economy is currently capable of producing on a sustained basis (called "potential output growth"). Second, with the end of the Cold War, there have been continued rollbacks in real defense expenditures: Defense spending as a share of GDP measured 3.6 percent in FY 1996—the lowest ratio since 1948.

Third, the 1990 Budget Enforcement Act instituted a ceiling on the amount that discretionary spending—such as defense, income supports for the poor and transportation—could increase each year (spending caps). The act, which also put in place pay-as-you-go procedures, effectively slowed the growth of real government spending dramatically—in fact, to its smallest share of GDP since before World War II.[3] Finally, structural changes in the health care sector have produced significant cost savings, driving medical care inflation rates to their lowest levels since 1965. Going forward, the deficit outlook is expected to worsen somewhat, however, as many of the factors that have contributed to this improved situation begin to play themselves out.

Balancing the budget regularly registers as a high priority with a large percentage of the public and increasingly seems to be one of the top priorities among the nation's policymakers, as well. Despite partisan wrangling over the specifics, both the Clinton administration and Congress have written budgets that—at least on paper—would produce a slight surplus by FY 2002. This effort to balance the budget is being driven in large part by the recognition of most policymakers that, unless current fiscal policy is altered, largely with respect to transfer payments like Social Security, Medicare and

Medicaid, the nation faces an impending economic crisis when the baby boom generation—those born between 1946 and 1964—enters its golden years.

A Meaningful Measure?

Will balancing the federal budget by 2002 put the nation on a sustainable path of fiscal rectitude? More-

Federal Unified Budget Deficit

Annual Fiscal Year Data

$ Billions / Percent

SOURCE: Congressional Budget Office (1997)

over, should we even look at the budget deficit as an accurate gauge of the nation's fiscal condition either now or, more important, in the future? To many economists, the answer to both questions is no.

The unified deficit's inadequacies as a measure of future fiscal solvency become clear when certain demographic trends are pushed to the forefront. For example, in 1950, those 65 and older made up 8 percent of the total population; however, by 2010, when the baby boomers begin retiring, this share is expected to reach 13 percent. When most of the boomers have retired by 2030, those 65 and older are projected to comprise 20 percent of the population, with less than three workers paying taxes to support each retiree's Social Security and health care benefits. The problem, which has been recognized for several years, is that the system was originally constructed under the assumption that the number of workers supporting each retiree would be greater today than it actually is. For example, in the 1950s and 1960s six to seven workers supported each retiree, while today the ratio is about 4.5 to 1.

Although the normal retirement age is slated to begin increasing steadily in

2000—eventually reaching 67 in 2022—the demographic challenge confronting current and future fiscal policymakers is still enormous: Proportionately less revenue will accrue from income and payroll taxes, while outlays to retirees in the form of Social Security pensions and health care benefits (Medicare and Medicaid) will continue to rise rapidly. The CBO estimates that with no change in the existing level of retirement benefits, and with all other expenditures merely growing at the rate of inflation (that is, keeping the spending caps in place), total federal outlays are projected to equal nearly half of GDP by 2030, which is more than double the 21 percent they comprised in FY 1996. Moreover, the debt-to-GDP ratio is projected to approach an unprecedented 230 percent by about 2030—nearly five times what it is today. Ratios of this magnitude raise the specter of the government defaulting or the Federal Reserve (effectively) printing money to pay off the debt.

One would be hard-pressed, however, to discern this looking solely at the deficit projections in the figure at left. Even if the deficit could by itself provide some meaningful measure of this impending crisis, however, it would still provide little sense as to what the future economic effects would be on the individuals and firms that will be forced to bear the burden of such adjustments. In a nutshell, this is why proponents of generational accounting (GA) believe that the unified deficit is an inaccurate gauge of the true stance of fiscal policy over time.
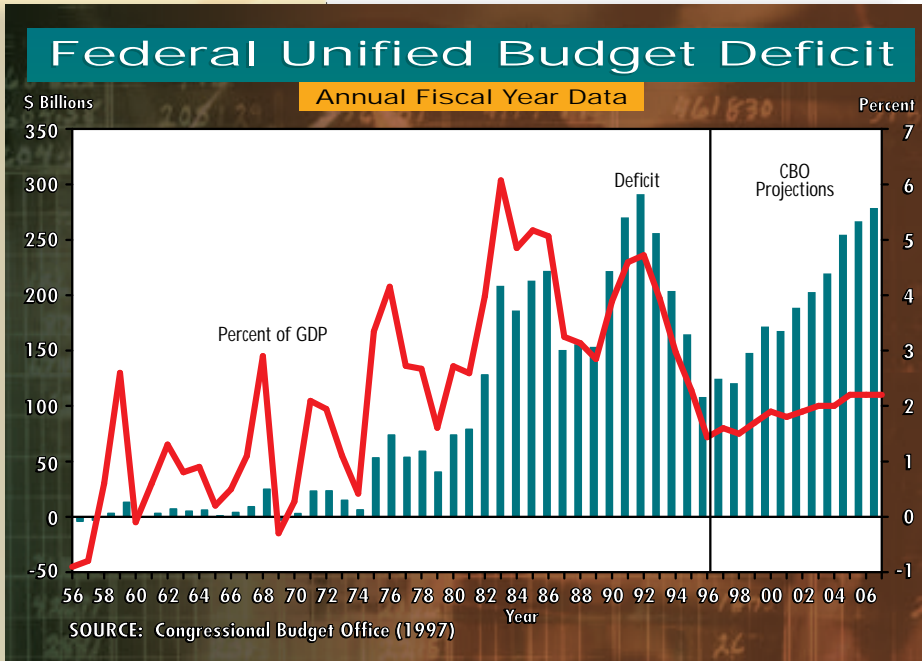
GA proponents believe that the budget deficit is nothing more than an arbitrary number. Specifically, they believe the deficit reflects the decisions by policymakers to label certain items receipts and expenditures, instead of attaching different labels to them. For example, it would be just as correct to view receipts from Social Security contributions, which are currently labeled tax revenues, as loans to the government, and transfers, which are currently labeled expenditures, as repayment of the loan's principle with interest.

GA advocates are not alone in claiming that the deficit is an arbitrary measure. The recent debate over the constitutional amendment to balance the budget reinforced this division. Besides those wanting to keep the cur-

rent definition, many other policy-makers wanted the official deficit to exclude outlays for Social Security (which would have increased the official deficit). Still others pushed for the federal government to enact a capital budget like private corporations do, which would have effectively lowered the official deficit. Recognizing this schism, the CBO regularly reports several deficit measures.

Some economists and public policymakers, while accepting the notion that the near-term deficit outlook masks large future fiscal liabilities, nonetheless believe that there is ample time to deal with this problem. GA advocates beg to differ, believing that unless policies are changed quickly and dramatically, the window of opportunity policymakers have to make the changes that will produce the least disruption to economic activity and future living standards will disappear.

The Generational Accounting Approach

According to the figure at left, fairly sound fiscal policy was practiced for much of the postwar period—at least until the early 1970s. During this time, relatively small deficit-to-GDP ratios were the norm, with even a few surpluses. From a GA standpoint, however, this "balanced-budget" era was a period when large fiscal burdens were placed on future generations through expansions in the Medicare and Medicaid programs and increased Social Security benefits. The so-called unified budget deficit could not measure these burdens properly.[4]
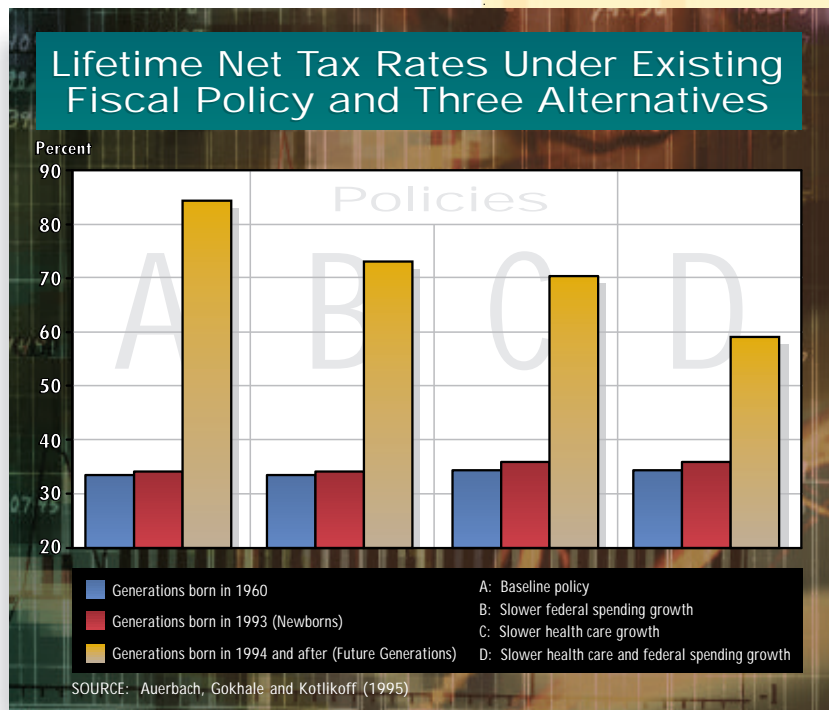
GA advocates stress that this shortcoming is particularly true under the existing pay-as-you-go system, which depends heavily on payroll taxes to bankroll large government transfer programs. For example, a policy that would increase payroll taxes to fully fund expanded Social Security or Medicare benefits would have no effect on the unified deficit, although it would effectively increase the financial burdens of young and future generations, while lessening those of the elderly.

GA—the Basics

Generational accounting is based on the premise that the government must eventually repay, with interest, what it borrows. Or, in the words of economist Milton Friedman, there is no such thing as a free lunch. The basic idea, then, is to compare the fiscal burden of today's newborns with tomorrow's newborns in terms of their lifetime tax liability. If today's

newborns end up paying a smaller share of their income in taxes than tomorrow's newborns, there is a generational imbalance that favors those alive today.

Generational accounts are constructed under the requirement known as the government's *zero sum constraint*, which states that the sum of net tax payments of current and future generations must equal the sum of what the government expects to spend in the future, including the interest payments necessary to service the debt arising from both past deficits and projected future deficits. In other words, the bill for the goods and services provided (or promised) by all levels of government must be paid by someone. If present generations pay less, then future generations must pay more. This does not, however, dictate that the government's debt must be eventually retired; it

Lifetime Net Tax Rates Under Existing Fiscal Policy and Three Alternatives

Generations born in 1960
Generations born in 1993 (Newborns)
Generations born in 1994 and after (Future Generations)
A: Baseline policy
B: Slower federal spending growth
C: Slower health care growth
D: Slower health care and federal spending growth

SOURCE: Auerbach, Gokhale and Kotlikoff (1995)

merely states that servicing it is required to avoid default. In economic terms, this means that the growth of the government's debt cannot forever exceed the growth of GDP. If it did, interest on the debt would eventually exceed the amount of income available to pay for it (see the sidebar for more detail on how these generational accounts are constructed).

The GA View of Fiscal Policy

According to a recent study by economists Alan Auerbach, Jagadeesh Gokhale and Laurence Kotlikoff (AGK), fiscal policy is seriously out of generational balance. In their 1995 study, they calculate that males born in 1994 or after (called future genera-

PUTTING THE NUMBERS together

T he methodology used to construct generational accounts is very similar to that employed by the trustees of the Social Security Administration, who annually issue 75-year projections of population growth and life expectancy to assess the program's long-term viability.[1] An account is constructed for each generation using these projections and Office of Management and Budget (OMB) long-term forecasts for economic growth, taxes and transfer payments.

The account is a dollar value that represents, in present-value terms, the total amount of net taxes that each member of each generation will owe to the government for the rest of his or her life based on existing policy.[2] This amount is the difference between the expected taxes that must be paid, less the expected transfers—such as Social Security or Medicare—that will be received. Each generation's account is thus the amount of money that will be needed to make up the shortfall after future tax payments of current generations are applied to current and projected government spending and debt service payments. Dividing this amount by each generation's expected lifetime labor income produces a net lifetime tax rate.

An important assumption made by the model is that income, taxes and transfer payments of future generations will grow at some fixed rate of economic growth. This essentially means that all future generations would pay the same net tax rates because income and taxes would grow at the same pace.

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[1] See Auerbach, Gokhale and Kotlikoff (1994). For a nontechnical discussion, see Kotlikoff (1992).

[2] Putting the accounts in present-value terms is done so that all generations are on an equal basis. The present-value calculation for any sum of money (X) over any number of years (n) is $X/(1 + i)^n$, where i is the interest rate (called the discount rate).

tions hereafter for the purposes of this article) faced a net lifetime tax payment of $215,500, which is more than double the $107,000 net tax payment faced by males who were 5 years old in 1993. For females born during the same years, these two tax payments were $131,500 and $64,300, respectively.[5] These figures, while illustrative of the difference in tax burdens across generations, are not strictly comparable in dollar value terms. To compare the fiscal burdens across generations, lifetime net tax rates must be calculated (see sidebar).

As the first set of bars in the figure on the previous page shows, under the fiscal policy that prevailed at the time of the 1995 study, Policy A, future generations faced an average net tax rate of 84.4 percent. This is significantly more than both the 33.5 percent rate faced by those who were 30 years old in 1960 and the 34.2 percent rate faced by those born in 1993 (newborns). These figures, which should be interpreted cautiously, indicate that unless current fiscal policy is put on a different path with respect to entitlements, the tax burden faced by future generations will greatly surpass that borne by those alive today. This is because future generations will have to devote a significantly higher percentage of their income to servicing the debt that has been accumulated to pay for the policies that benefit those alive today.

Harsh Medicine

One of the main criticisms of generational accounting estimates is that it is unreasonable to expect that those currently alive will largely escape paying for the accumulating fiscal burdens wrought by existing policies. Most economists and policymakers, however, agree that current generations of taxpayers must eventually bear some of the burden of returning fiscal policy to a more sustainable path. The question is: How much of a burden? To address this issue, AGK conducted two experiments in their 1995 study. First, what would happen to the net tax rates faced by current and future generations if some of the burden of correcting the generational imbalance were to be shifted to current generations (those born in 1993 or before) in the form of reduced government spending or higher taxes? And second, would these policy changes be enough to equalize the generational tax burden, or would additional measures be needed?

In the first experiment, AGK compared the net tax rates of both current and future generations calculated under baseline policy, Policy A, and three alternative policies. Under the first of these alternative policies, Policy B, government spending is allowed to grow only at the rate of inflation after the year 2000. Under the second alternative policy, Policy C, government health care

spending would grow by 2 percent a year less than projected before 2005; after 2005, however, it would resume its projected path. The third policy, Policy D, combines the effects of policies B and C.

If policies B through D—which are all very similar to current proposals being considered to balance the budget by 2002—are sound from a GA standpoint, the net tax rates faced by current and future generations should be approximately equal. As the figure on Page 7 shows, they clearly are not. Although the alternative policies modestly lower the net tax rates faced by future generations, the first experiment shows that the burden these generations face is much higher than current generations. For example, enacting the most restrictive of the three policies, Policy D, reduces the net tax rate of future generations from just over 84 percent to just above 59 percent. Still, the improvement is modest because future generations' net tax bill would be roughly 65 percent higher than those born in 1993 (newborns). Thus, if restoring generational equity is an important concern for policymakers, this experiment suggests that more fiscal restraint is needed than those hypothesized in policies B, C or D.

The second experiment conducted by AGK attempts to determine how much more fiscal restraint is needed to ensure that future generations of taxpayers are made no worse off than current generations. To keep this simple, AGK assumed that policymakers decided to preserve the existing level of retirement benefits for future generations also. If this action were employed in 1996, average income tax rates would have had to increase *immediately and permanently* by nearly 43 percent—from 15.7 percent to 22.3 percent. If, however, policymakers decided to postpone these actions, the 1995 AGK study offered two alternative scenarios: Wait until 2001 or wait until 2016. Waiting until 2001 would mean a permanent 51.5 percent increase; waiting until 2016 would mean a near doubling of current tax rates.

The tradeoff, therefore, amounts to current generations paying higher net lifetime taxes so that future generations could pay less. But what would those tax rates be? If taxes had been raised in 1996 to maintain existing benefits, then current and future generations would have faced (equalized) net lifetime tax rates of almost 43 percent. However, waiting until 2001 to increase taxes would push this rate up to nearly 45 percent, and waiting until 2016 ratchets it up to about 53 percent.

The problem with raising taxes to restore generational balance is that an increase in taxes harms the young, working-age population more than the retired, elderly population. It's worth considering, therefore, what would happen if policymakers instead decided to distribute the fiscal burden more equally by changing the level of health and retirement benefits for both current and future generations.

Rerunning the above experiment according to this scenario indicates that if policymakers decide to wait until 2001, they would need to immediately cut all transfer payments (Social Security, Medicare and Medicaid) by 38 percent. Such a policy change would equalize lifetime net tax rates for current and future generations at about 40 percent. If policymakers were to wait until 2016, they would need to cut benefits by 63 percent, resulting in a net tax burden of 43 percent. These rates would be much lower than the 84 percent assumed under no change whatsoever and those that would occur if taxes alone were raised.

A Better Mousetrap?

As a tool to analyze fiscal policy, generational accounting has found a home mostly among a small, but growing, group of economists. To be sure, fiscal authorities in the United States are not ready to abandon the type of analysis they currently do.[6] The reasons for this reticence seem to be twofold. First, calculating future tax burdens over time depends on what discount rate is used. This is potentially problematic because the true discount rate is not known—and even it was, it would probably not stay constant over time as GA practitioners assume.[7] Second, assuming that future taxes, transfer payments, population and government spending all increase at a fixed rate seems implausible. To a large extent, though, these are shortcomings of any long-term forecasting exercise, rather than specific criticisms of GA. Nevertheless, even critics of GA do not seriously challenge the fundamental point made by its analysis: Maintaining current fiscal policy indefinitely means that future generations will have to shoulder a larger burden than those alive today—even under more optimistic growth assumptions. The question is how much of a burden.

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ENDNOTES

[1] The reported deficit is the unified budget deficit, which includes an "off-budget component" (mostly Social Security) and an "on-budget" component (most everything else). In recent years, the off-budget component has been in surplus ($67 billion in FY 1996) because receipts from Social Security payroll taxes have exceeded the program's outlays.

[2] See Congressional Budget Office (1997).

[3] Pay-as-you-go policy essentially prohibits increased spending or lower taxes without some offset that would leave the unified budget deficit unchanged. Unless extended, this policy is set to expire at the end of FY1998.

[4] See Kotlikoff (1992).

[5] The difference between the net tax payments of males and females reflects such variables as expected lifetime earning differentials, labor force participation (fewer females enter the labor force than males, thus paying fewer taxes) and the fact that females on average live longer, thereby receiving more transfer payments during retirement.

[6] See Congressional Budget Office (1996).

[7] Haveman (1994), p. 96.

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RUSH-HOUR HORRORS:
How Economics Tackles Congestion

by Adam M. Zaretsky

Highways have already been paid for by taxpayers. To toll an interstate is like asking you to pay rent on property you already own.
—Bill Fay, president, American Highway Users Alliance (1997)

The delusion still persists that the primary role of pricing should always be that of financing the service rather than that of promoting economy in its use.
—William Vickrey, economist (1963)

Traffic. Most of us have endured it and maybe even said a few choice words while sitting in it. We've suffered through bottlenecks, gridlock, accidents, rubbernecking, potholes and other annoyances. Rush hours seem to get longer. Generally, they are. Between 1980 and 1990, drivers in St. Louis and Hartford, Conn., spent an average of four more hours a year getting to work. In cities like Los Angeles and San Diego, it took an extra 23 hours a year to get to work.[1]

Longer commutes cost not only time, but money, too. Congestion means reduced fuel efficiency and more wear and tear on vehicles and roads. In a 1994 report the General Accounting Office estimated that traffic conges-tion costs about $40 billion annually. And this figure will likely go up. New roads are built, but they often end up congested too, as more people choose driving over other modes of transportation. New mass transit systems could be built, but getting people to use existing ones is tough enough.[2] What else is there to do?

Old Problem, Forgotten Solution

Economists realize that this dilemma is typical of most economic problems, like determining how much an acre of land is worth, and, thus, has a similar and simple solution—market forces. Like acres of land, roads are a scarce resource, which our market system effectively divvies up through prices. And prices act to clear away market imbalances between supply and demand. For example, if the price of an acre of land is too low, too many buyers will want it, forcing the price up until the number of buyers and available acres is the same. The reverse occurs when the price is too high—too few buyers for too many acres forces the price down until the two are equal.

The same can be said of roads and congestion. Congestion occurs when too many drivers want to use the roads—which have fixed capacity—at the same time because their price is too low. Raising the price, which is now essentially zero, would reduce this demand and better allocate the limited space.

This is not a novel idea. Actually, it was first proposed more than 30 years ago and is already used in similar situations—for instance, landing and take-off slots at airports. Because only a few planes can take off or land at a particular time, airports charge airlines fees to ration these slots. Phone companies also ration when they charge different rates for calls made during different hours of the day. Basically, both are examples of price discrimination, which tends to redirect some business (traffic) from busy periods of the day to slower ones. In most cases, it works. So why do roads and highways seem different to most people? Probably because governments usually provide them through tax dollars, which are used to pay for their construction and maintenance. Hence, drivers believe they are already paying their way for road and highway usage through gas taxes and licensing fees. The story, however, isn't so cut-and-dried.

Private Cost Confronts Social Cost

What drivers are essentially paying for is their *direct* use of roads. They are, in other words, covering their private cost of driving—their share of construction and maintenance costs. However, as soon as a person chooses to drive, he is also imposing a cost on others—an *externality*, in economics lingo—that he does not pay for. One more person driving to work adds an additional car to the traffic flow, which slows down the commute for all drivers. This additional cost, which occurs solely because one extra person chooses to drive, is the social cost of driving and is not usually paid for through taxes or fees.

To illustrate the social cost of driving, economist William Vickrey asserted that a person who bought a $3,000 car in 1963 was effectively asking his community to match this investment with $23,000 in general highway funds—an estimate of the government's cost to provide and

maintain the extra traffic lanes needed so that another person could drive to work alone. In 1996 dollars, the community's $23,000 would have been about $120,000.[3] This is a cost, Vickrey was arguing, that an individual asks society to bear just so he can drive to work each day. But by having to pay a toll during rush hour, drivers would be forced to realize the actual cost their choice imposes on others. Only then could the driver decide if he is willing to pay the price or find an alternative.

How much should this toll be? Economic theory says that the optimal price is the gap between the implied social cost of driving at the time in question and the private cost. Thus, because the additional burden imposed on others is greater during rush hours than, say, late-night hours, tolls would be higher then.

But Will It Work?

In theory, at least, tolls are the best solution to congestion because they would better allocate a scarce resource (road space). In fact, governments already levy tolls when they install parking meters on streets. The meters don't usually charge different rates for different times, but they do ration a limited number of parking spaces.

In practice, though, collecting tolls from moving vehicles is much tougher. Toll plazas are notorious for adding to congestion by forcing traffic to a halt. However, electronic metering devices, which read signals from small, prepaid transponders inside cars, are currently available. These devices not only keep traffic moving, but also can automatically raise or lower tolls at different times of the day.

Imposing tolls on public roads could pose problems for private businesses, too. Firms assume free access to the public roads on which their workers commute and their goods are transported. If workers didn't want to, or couldn't, pay such tolls, they would have to change their work hours, bypass the toll roads or carpool. Firms would then have to adjust schedules to accommodate these workers or pay for their tolls, which they might do, especially if given a tax incentive to do so. This, however, would not help offset the higher transportation costs that firms would incur because of the tolls.
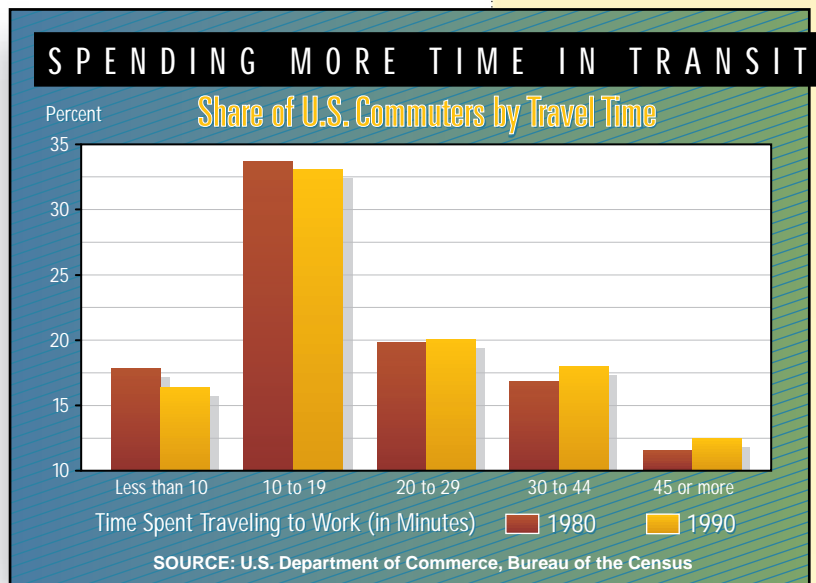
Policy Puzzles

Congestion pricing also raises the question of what to do with the revenues that would be collected. Because the goal of these tolls would not be to raise revenue, but rather to allocate a resource, the price should move as the demand for, and supply of, roads changes. However, since governments are the main providers of roads, perverse pricing incentives could arise. Suppose, for example, that new roads were built to relieve some of the current congestion. Would the tolls on the older roads then be reduced accordingly? Or would the revenues generated by the tolls, which presumably could be used for any government activity, prove too attractive for governments to forego, dissuading them from lowering a toll once it has been imposed?[4] In other cases in which a

natural monopoly exists—and this situation is tantamount to a natural monopoly—a government regulatory agency usually oversees it.[5] Would one be set up to monitor and regulate tolls?

Although these policy issues seem difficult to overcome, they are not insurmountable. And they do not detract from the fact that appropriately pricing congestion will lead to the most efficient outcomes. In response to the tolls, some drivers might carpool or change their schedules to either pay lower tolls or avoid paying them at all; this is exactly the point. These drivers, now aware of the true cost of their commutes, would alter their schedules because this higher cost would be greater than the price they would be willing to pay to drive to work alone. In time, then, the real demand for roads and highways would be revealed, promoting better infrastructure decisions and better use of all resources— pavement, money and time.

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ENDNOTES

[1] See U.S. Department of Transportation (1993).

[2] See Zaretsky (1994) for descriptions of some cities' experiences with light rail systems.

[3] This figure is simply the $23,000 inflated to 1996 dollars using the Consumer Price Index. It is for illustrative purposes only; no new survey was conducted.

[4] See Evans (1992) for a more detailed discussion of this objection to congestion pricing.

[5] A natural monopoly exists when one large firm can produce any level of output at a lower average cost than a group of smaller firms in competition can. See Zaretsky (1995) for a discussion of pricing and regulating natural monopolies.

SPENDING MORE TIME IN TRANSIT

Share of U.S. Commuters by Travel Time

Percent

Time Spent Traveling to Work (in Minutes) ▮ 1980 ▮ 1990

(Categories: Less than 10, 10 to 19, 20 to 29, 30 to 44, 45 or more)

SOURCE: U.S. Department of Commerce, Bureau of the Census

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Are District Banks Losing their Profit Edge?

BY Andrew P. Meyer and Mark D. Vaughan
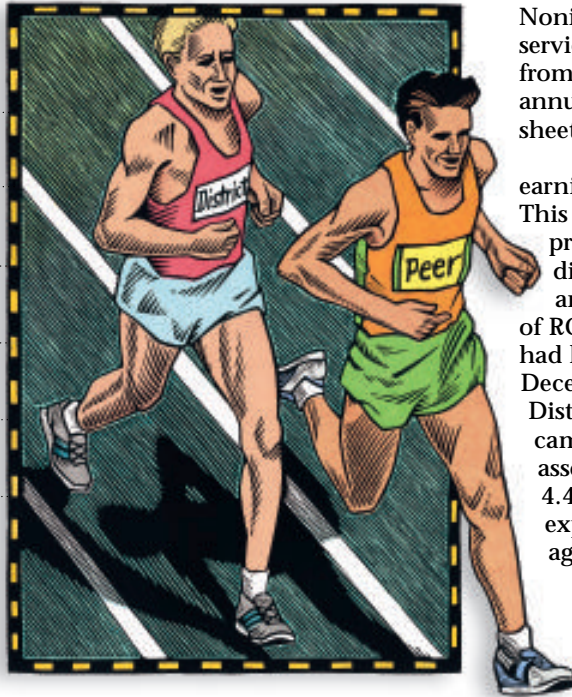
Last year proved to be another banner year for U.S. banks as earnings topped $52.1 billion—an increase of 7.1 percent over 1995. Indeed, for all U.S. banks, return on average assets (ROA), which is a common tool for assessing bank profitability, finished the year at 1.25 percent—the highest figure in more than 25 years. Eighth District banks shared in the good fortune, also posting a record average ROA in 1996.[1]

Although both groups of banks have enjoyed record profits in recent years, U.S. banks have performed relatively better. As a result, they are now recording higher average ROA figures than District banks, reversing a decades-long trend. At year-end 1992, for example, District banks reported an average ROA of 1.13 percent, while U.S. peer banks—commercial banks holding less than $15 billion in average assets—posted an average ROA of 1.05 percent.[2] Four years later, peer banks recorded an average ROA of 1.35 percent, compared with the District average of 1.33 percent. A careful look at the data reveals that overhead expense, in general, and per-sonnel expense, in particular, is the reason for the reversal in the long-standing relationship between peer and District bank ROA.

Breaking Down ROA

To understand the trends in ROA, it is first necessary to look at the measure's three major components: net interest income as a percentage of average earning assets, also known as the net interest margin or margin; net noninterest expense as a percentage of average assets; and the loan and lease loss provision as a percentage of average assets.

The margin—the most important determinant of ROA—is the difference between interest income and interest expense, divided by average earning assets. The margin gauges how well a bank performs the bread-and-butter functions of taking deposits and making loans. Interest income changes over time with fluctuations in loan and security yields and the mix of loans and securities in the earning asset portfolio. Movements in interest expense, meanwhile, reflect changes in deposit and other rates that banks pay on liabilities and the mix of interest- and noninterest-bearing deposits.

The net noninterest expense ratio, which is noninterest expense minus noninterest income, divided by average assets, is the second major determinant of bank profitability.[3] Noninterest expense includes overhead costs, such as personnel and occupancy expenses.[4]

Noninterest income consists mostly of service charges, trust income, income from the sale of mutual funds and annuities, and fees for off-balance sheet services.[5]

Each quarter, banks also set aside earnings for anticipated loan losses. This amount—the loan and lease loss provision (LLP)—is an expense directly charged against profits and is the final major component of ROA. In recent years, the LLP has had little effect on overall profits. In December 1996, for example, the District's aggregate LLP expense came to only 0.25 percent of average assets.[6] In contrast, the margin was 4.47 percent, and net noninterest expense was 1.76 percent of average assets.[7]

ROA Role Reversal

District banks have historically posted higher average ROA figures than U.S. peer banks. Over the last 10 years, for example, peer bank ROA averaged 0.95 percent; at District banks the average was 1.07 percent. According to year-end data from 1992—a representative year before the reversal in peer bank and District bank ROA—the average margin for peer banks was 41 basis points higher than the District average—a huge gap. District banks still recorded higher average ROA because they had a lower net noninterest expense ratio (by 17 basis points) and LLP ratio (by 29 basis points)—differences that more than compensated for the lower margin.

As the accompanying chart shows, the historical relationship between U.S. peer and District bank ROA reversed in 1993. Between 1992 and 1996, peer bank ROA improved 30 basis points to 1.35 percent, while District banks' ROA increased only 20 basis points to 1.33 percent. The 8 basis-point advantage District banks enjoyed in 1992 has dissolved into a 2 basis-point deficit.

A shrinking gap between District and peer bank net noninterest expense explains this swing in ROA. At year-end 1992, District banks posted a net noninterest expense ratio that was 17 basis points below that of peer banks. By December 1996, the gap was only 2 basis points. Changes in overhead expense—rather than noninterest income—were responsible for this shrinking gap. Between 1992 and 1996, peer banks cut noninterest expense from 3.95 percent to 3.83 percent of average assets, while District banks saw overhead rise from 3.19 percent to 3.29 percent of average assets.

Relative fluctuations in noninterest expense reflect changes in personnel

and occupancy expenses.[8] Since 1992, peer banks have reduced personnel expense from 1.58 percent to 1.55 percent of average assets; over the same period, District banks saw personnel expense jump from 1.47 percent to 1.53 percent of average assets. Peer banks also trimmed occupancy expense from 0.49 percent of average assets in 1992 to 0.46 percent in 1996, while occupancy expense at District banks remained unchanged at 0.40 percent of average assets.

Available data suggest several possible explanations for the distinct differences in personnel and occupancy expense trends at U.S. peer and District banks. Robust economic conditions in the Midwest, coupled with an increasing urbanization of banking activity, are the likely cause of the difference in personnel expense trends. The trend in occupancy expense, however, appears to reflect relatively faster consolidation at peer banks.

The robustness of regional economic conditions can be seen in the low unemployment rates in District metropolitan statistical areas (MSAs), which signal tight labor markets and upward pressure on wages, including wages for bank jobs. In 1996, the average unemployment rates for the four largest District MSAs were well below the national rate of 5.4 percent, with Little Rock at 3.6 percent, Louisville at 4.0 percent, Memphis at 4.2 percent, and St. Louis at 4.2 percent.

Wages at District banks have indeed risen faster than the national average. Between 1992 and 1996, average wages and benefits at District institutions rose from $29,177 to $35,449, a 21.5 percent increase. Average wages and benefits at peer banks, meanwhile, grew 14.4 percent—from $33,039 to $37,787— over the same period.

Higher personnel costs could also reflect a shift in banking activity from rural to urban areas in the District. In December 1992, for example, 56.2 percent of District bank employees worked for institutions headquartered in MSAs. By December 1996, that portion had increased to 58.8 percent. During the same period, the percentage of U.S. peer bank employees working in institutions headquartered in MSAs fell slightly. This shift in banking activity could explain part of the rise in District personnel expense since wage and benefit costs tend to be higher in urban areas than in rural regions.

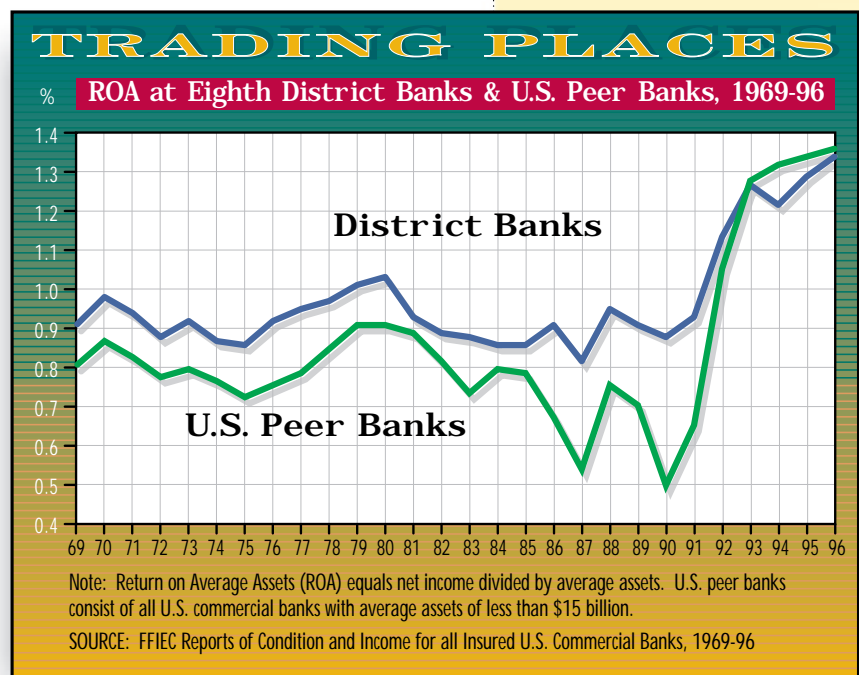The ongoing consolidation in U.S. banking probably explains relative movements in occupancy expense. Throughout the country, banks are merging and closing redundant offices to realize cost savings. As evidence, the number of U.S. peer banks tumbled from 11,290 to 9,402 between December 1992 and December 1996, a 16.7 percent decline. At the same time, the number of District banks fell from 1,194 to 1,036—a 13.2 percent drop. The faster pace of consolidation outside the Eighth District suggests that peer banks have been able to close more brick and mortar offices and, hence, trim occupancy expense by a greater amount than District banks.

A Temporary or Sea Change?

Over the last four years, District banks have seen their historical advantage in profitability slip away because of unfavorable trends in noninterest expense. The strength

TRADING PLACES

ROA at Eighth District Banks & U.S. Peer Banks, 1969-96

District Banks

U.S. Peer Banks

Note: Return on Average Assets (ROA) equals net income divided by average assets. U.S. peer banks consist of all U.S. commercial banks with average assets of less than $15 billion.

SOURCE: FFIEC Reports of Condition and Income for all Insured U.S. Commercial Banks, 1969-96

of the Midwestern economy, the increasingly urban flavor of District banking, and the faster pace of consolidation outside the District all suggest that these unfavorable trends are likely to continue, at least in the short run. If so, the traditional relationship between peer bank and District bank ROA may not re-emerge for some time.

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ENDNOTES

[1] Data are taken from the Federal Financial Institutions Examination Council quarterly reports of condition and income for all insured U.S. commercial banks. ROA is defined as net income divided by average assets.

[2] The Eighth District has no banks with more than $15 billion in average assets. Therefore, the peer group is U.S. banks with less than $15 billion in average assets.

[3] Because noninterest expense always exceeds noninterest income, it is expressed as net noninterest expense.

[4] Noninterest expense also contains a catch-all category, "other" noninterest expense, which includes losses on loan sales and seized collateral, FDIC deposit insurance premiums and fees paid to directors.

[5] Off-balance sheet services are services that do not explicitly appear on the balance sheet, such as issuing standby letters of credit, back-up lines of credit and loan commitments.

[6] The LLP can play a major role in determining ROA. In 1987, for example, large regional and money center banks made huge LLPs to cover anticipated losses on loans to lesser developed countries. As a result, the average ROA for all U.S. banks plummeted from 0.62 percent in 1986 to 0.09 percent in 1987.

[7] The denominator for the net interest margin is average earning assets, rather than average assets. Net interest income as a percentage of average assets was 4.11 percent in December 1996.

[8] Available data are not sufficiently detailed to allow analysis of "other" noninterest expense.

Pieces of Eight

Data At Your Desktop

The St. Louis Fed's weekly statistical publication, *U.S. Financial Data*, is now available free of charge over the Internet via the St. Louis Fed's web site, www.stls.frb.org.

U.S. Financial Data contains charts and tables of weekly monetary and reserve aggregates, selected interest rates, commercial bank loans and other information. The data are updated each Thursday by 5 p.m. Central Time.

Paper copies of *U.S.F.D.* are still available via first-class mail. A one-year subscription—50 issues—is $21. A two-year subscription is $36. For more information on the publication, or to subscribe, call (314) 444-8808.

Fed Focuses on Social Security Reform

Now that Social Security reform has risen to the top of the national agenda, the St. Louis Fed has begun providing a public forum for discussion on the topic through presentations and publications. As evidence, more than 75 economists, educators and business people gathered at the St. Louis Fed April 11 for a symposium titled, "Reforming Social Security in Theory and Practice."

At the symposium, academic experts on social security presented theoretical models and practical plans for moving the U.S. Social Security system away from its pay-as-you-go structure to one that's more fully funded. Privatization of all or parts of the system was also discussed, as were lessons that can be drawn from reform attempts undertaken in Latin America.

To receive copies of the papers presented at the symposium, contact Julie Fletcher in the Research Department at (314) 444-8587. To receive a copy of the St. Louis Fed's 1996 annual report, which also addresses social security reform, contact Debbie Dawe in Public Affairs at (314) 444-8809.

Summer School

Educators interested in integrating money and banking topics into their instruction of social studies, language arts and math are encouraged to attend the St. Louis Fed's second annual "Making Sense of Money and Banking" course. The one-week, for-credit course, which will be held at the Federal Reserve Bank of St. Louis June 23-27, will feature guest speakers from the Fed, as well as tours, hands-on activities and classroom simulations.

Participants must register for the course through either Southern Illinois University at Edwardsville or the University of Missouri-St. Louis. Two hours of graduate credit will be awarded to educators who complete the course. For more information, contact Dawn Griffitts, economic education coordinator, at (314) 444-8421.

A Denser District:
Population per Square Mile

District State	Rank Among 50 States	1996 Density
Illinois	11	213.1
Indiana	16	162.8
Tennessee	19	129.1
Kentucky	23	97.8
Missouri	27	77.8
Mississippi	32	57.9
Arkansas	34	48.2
National Average		75.0

SOURCE: U.S. Bureau of the Census

District Data

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

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)										
4th quarter 1996	1.25%	1.35%	1.33%	1.32%	1.06%	1.30%	1.28%	1.46%	1.38%	1.43%
3rd quarter 1996	1.24	1.33	1.31	1.35	1.03	1.29	1.26	1.50	1.32	1.45
4th quarter 1995	1.20	1.33	1.28	1.23	1.15	1.26	1.15	1.41	1.34	1.48
Return on Average Equity (Annualized)										
4th quarter 1996	15.29%	15.02%	15.06%	13.81%	10.53%	14.42%	14.62%	15.23%	16.77%	17.33%
3rd quarter 1996	15.25	14.69	14.81	14.11	10.22	14.25	14.37	15.64	15.90	17.34
4th quarter 1995	15.00	15.04	14.64	13.12	11.34	13.72	13.24	15.23	16.24	18.07
Net Interest Margin (Annualized)										
4th quarter 1996	4.37%	4.85%	4.47%	4.51%	4.26%	4.47%	4.50%	5.03%	4.24%	4.80%
3rd quarter 1996	4.38	4.81	4.39	4.51	4.23	4.41	4.53	4.97	4.15	4.41
4th quarter 1995	4.25	4.84	4.37	4.22	4.47	4.54	4.25	5.07	4.33	4.35
Nonperforming Loans[2] ÷ Total Loans										
4th quarter 1996	1.04%	1.10%	1.33%*	0.85%	1.05%	0.62%	0.68%	0.61%	0.73%	4.37%*
3rd quarter 1996	1.10	1.11	0.78	0.81	1.15	0.71	0.74	0.73	0.72	0.77
4th quarter 1995	1.16	1.07	0.79	0.75	0.91	0.67	0.81	0.64	0.84	0.73
Net Loan Losses ÷ Average Total Loans (Annualized)										
4th quarter 1996	0.59%	0.73%	0.35%	0.24%	0.47%	0.29%	0.37%	0.33%	0.30%	0.50%
3rd quarter 1996	0.57	0.71	0.31	0.20	0.39	0.23	0.39	0.29	0.27	0.40
4th quarter 1995	0.50	0.59	0.27	0.17	0.43	0.20	0.34	0.32	0.19	0.33
Loan Loss Reserve ÷ Total Loans										
4th quarter 1996	1.90%	1.81%	1.48%	1.37%	1.51%	1.30%	1.49%	1.48%	1.57%	1.44%
3rd quarter 1996	1.96	1.84	1.51	1.34	1.56	1.35	1.51	1.54	1.62	1.50
4th quarter 1995	2.03	1.89	1.54	1.34	1.58	1.40	1.53	1.61	1.66	1.52

* Most of the increase in District nonperforming loans is associated with the acquisition by Union Planters National Bank in Tennessee of Leader Federal, a Memphis thrift that specialized in holding high-rate, nonperforming residential mortgages.

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

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

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

SOURCE: FFIEC Reports of Condition and Income for all Insured U.S. Commercial Banks
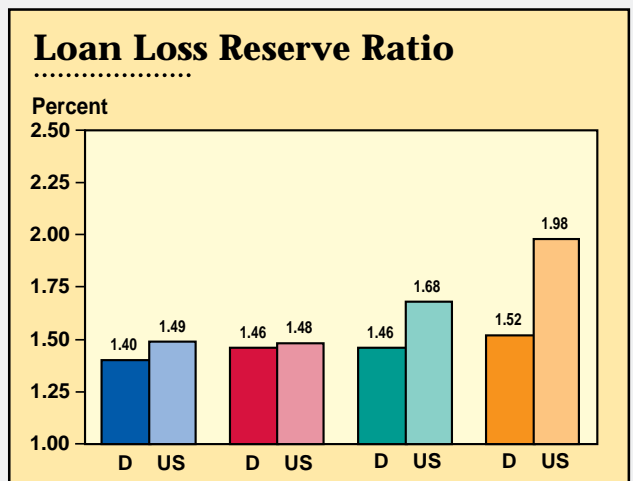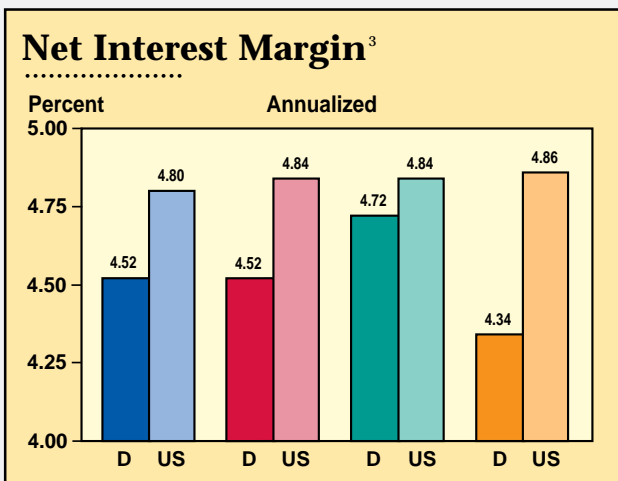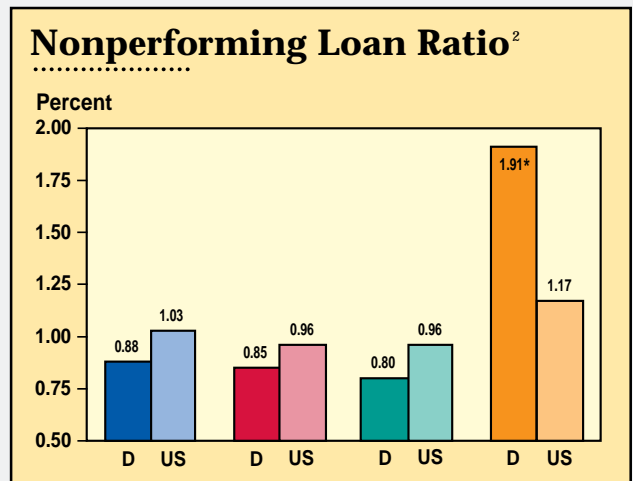
Commercial Bank Performance Ratios
by Asset Size

4th Quarter 1996

Earnings	Asset Quality

Return on Average Assets

Percent — Annualized

	D	US
< $100 Million	1.21	1.19
$100 Million – $300 Million	1.35	1.30
$300 Million – $1 Billion	1.37	1.29
$1 Billion – $15 Billion	1.36	1.42

Net Loan Loss Ratio [1]

Percent — Annualized

	D	US
< $100 Million	0.22	0.26
$100 Million – $300 Million	0.32	0.33
$300 Million – $1 Billion	0.41	0.47
$1 Billion – $15 Billion	0.39	0.97

Return on Average Equity

Percent — Annualized

	D	US
< $100 Million	11.69	11.39
$100 Million – $300 Million	13.36	13.40
$300 Million – $1 Billion	16.04	14.26
$1 Billion – $15 Billion	17.58	16.69

Nonperforming Loan Ratio [2]

Percent

	D	US
< $100 Million	0.88	1.03
$100 Million – $300 Million	0.85	0.96
$300 Million – $1 Billion	0.80	0.96
$1 Billion – $15 Billion	1.91*	1.17

Net Interest Margin [3]

Percent — Annualized

	D	US
< $100 Million	4.52	4.80
$100 Million – $300 Million	4.52	4.84
$300 Million – $1 Billion	4.72	4.84
$1 Billion – $15 Billion	4.34	4.86

Loan Loss Reserve Ratio

Percent

	D	US
< $100 Million	1.40	1.49
$100 Million – $300 Million	1.46	1.48
$300 Million – $1 Billion	1.46	1.68
$1 Billion – $15 Billion	1.52	1.98

D = District
US = United States

■ < $100 Million
■ $100 Million – $300 Million
■ $300 Million – $1 Billion
■ $1 Billion – $15 Billion

* Most of the increase in District nonperforming loans is associated with the acquisition by Union Planters National Bank in Tennessee of Leader Federal, a Memphis thrift that specialized in holding high-rate, nonperforming residential mortgages.

[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

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

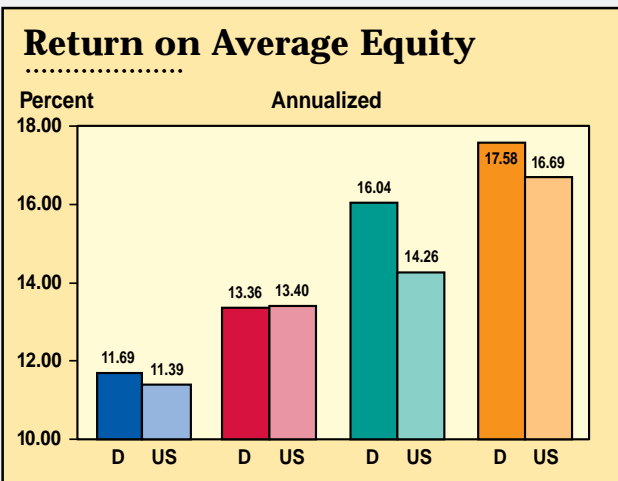SOURCE: FFIEC Reports of Condition and Income for all Insured U.S. Commercial Banks

Agricultural Bank Performance Ratios

|	U.S.	AR	IL	IN	KY	MS	MO	TN
Return on average assets (annualized)								
4th quarter 1996	1.22%	1.35%	1.19%	1.11%	1.42%	1.36%	1.23%	1.17%
3rd quarter 1996	1.30	1.44	1.25	1.31	1.49	1.66	1.33	1.40
4th quarter 1995	1.22	1.25	1.24	1.26	1.45	1.44	1.26	1.13
Return on average equity (annualized)								
4th quarter 1996	11.92%	12.58%	10.88%	10.91%	13.60%	13.87%	11.83%	10.98%
3rd quarter 1996	12.68	13.34	11.43	14.08	14.37	18.06	12.91	13.27
4th quarter 1995	11.78	11.54	11.35	12.91	14.33	15.05	12.10	10.62
Net interest margin (annualized)								
4th quarter 1996	4.54%	4.41%	4.17%	4.54%	4.62%	5.10%	4.57%	4.49%
3rd quarter 1996	4.54	4.40	4.14	4.55	4.62	5.32	4.52	4.55
4th quarter 1995	4.59	4.35	4.32	4.68	4.62	5.33	4.53	4.30
Ag loan losses ÷ average ag loans (annualized)								
4th quarter 1996	0.31%	0.09%	0.12%	-0.20%	0.26%	0.77%	0.38%	0.25%
3rd quarter 1996	0.29	0.07	0.14	0.12	0.24	0.79	0.32	0.23
4th quarter 1995	0.25	0.05	0.01	0.05	0.17	0.50	0.05	0.05
Ag nonperforming loans[1] ÷ total ag loans								
4th quarter 1996	1.46%	0.85%	0.67%	1.84%	1.75%	2.54%	1.50%	0.00%
3rd quarter 1996	1.63	0.54	1.09	2.22	1.26	1.87	0.85	0.04
4th quarter 1995	1.28	0.41	0.74	1.77	1.40	1.53	1.08	0.86

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

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

SOURCE: FFIEC Reports of Condition and Income for all Insured U.S. Commercial Banks

U.S. Agricultural Exports*

Billions of dollars — **Monthly data**

* Measured as a three-month moving average
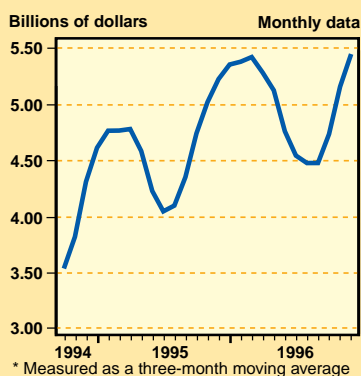
U.S. Agricultural Exports by Commodity — **Dollar amounts in billions**

Commodity	Oct	Nov	Dec	Year-to-date	Change from year ago
Livestock & products	.95	.93	.87	10.83%	3.0%
Corn	.58	.86	.66	8.40	15.1
Cotton	.11	.23	.35	2.74	-26.2
Rice	.09	.09	.13	1.03	3.4
Soybeans	.74	1.15	.91	7.32	35.6
Tobacco	.16	.16	.12	1.39	-0.7
Wheat	.48	.36	.24	6.27	15.1
TOTAL[1]	5.23	5.90	5.25	60.43	8.3

[1] Includes commodities not listed here

U.S. Crop and Livestock Prices

(Index 1990-92=100) — **Monthly Data**
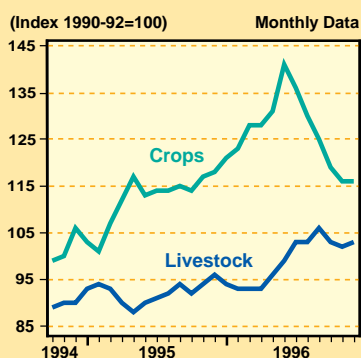
Indexes of Food and Agricultural Prices

	Level			Growth[1]	
	IV/96	III/96	IV/95	III/96-IV/96	IV/95-IV/96
Prices received by U.S. farmers[2]	111	117	106	-19.0	4.4
Prices received by District farmers[3]					
Arkansas	139	143	133	-10.8	4.3
Illinois	122	144	114	-48.0	7.0
Indiana	116	145	115	-58.2	1.5
Missouri	108	119	106	-33.0	1.6
Tennessee	137	143	131	-15.0	4.6
Prices paid by U.S. farmers					
Production items	114	116	111	-6.7	2.7
Other items	115	115	111	0.0	3.3
Consumer food prices	156	154	150	4.7	4.2
Consumer nonfood prices	159	158	154	3.2	3.0

[1] Compounded annual rates of change are computed from unrounded data.
[2] Index of prices received for all farm products and prices paid (1990-92=100)
[3] Indexes for Kentucky and Mississippi are unavailable.

Note: Data are not seasonally adjusted except for consumer food prices and nonfood prices.
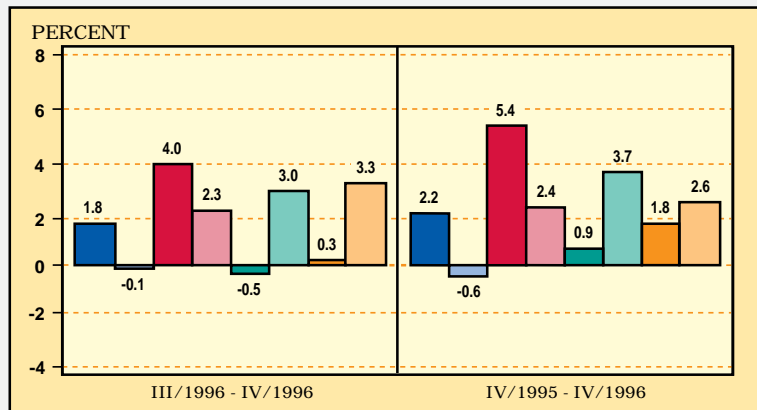
Selected U.S. and State Business Indicators

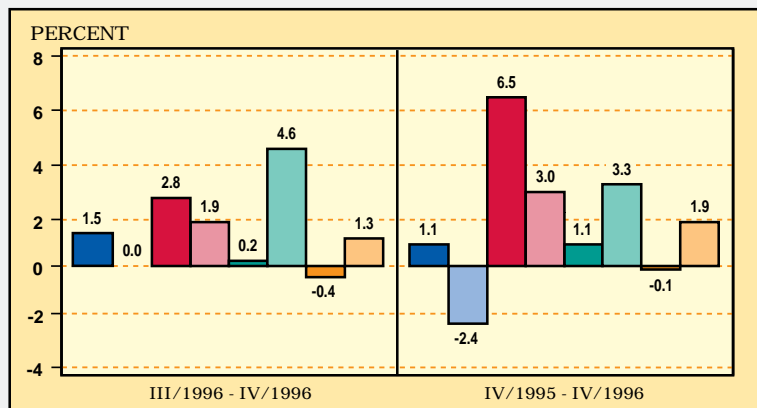### Compounded Annual Rates of Change in Nonagricultural Employment

United States

	IV/1996	III/1996	IV/1995
Labor force (in thousands)	134,830	134,118	132,506
Total nonagricultural employment (in thousands)	120,509	119,958	117,928
Unemployment rate	5.3%	5.3%	5.6%

	III/1996	II/1996	III/1995
Real personal income* (in billions)	$4,115.7	$4,087.7	$4,008.8

PERCENT

III/1996 - IV/1996: 1.8, -0.1, 4.0, 2.3, -0.5, 3.0, 0.3, 3.3

IV/1995 - IV/1996: 2.2, -0.6, 5.4, 2.4, 0.9, 3.7, 1.8, 2.6

Arkansas

	IV/1996	III/1996	IV/1995
Labor force (in thousands)	1,244.1	1,245.9	1,228.2
Total nonagricultural employment (in thousands)	1,090.8	1,086.7	1,078.4
Unemployment rate	5.5%	5.3%	4.8%

	III/1996	II/1996	III/1995
Real personal income* (in billions)	$30.7	$30.5	$29.5

PERCENT

III/1996 - IV/1996: 1.5, 0.0, 2.8, 1.9, 0.2, 4.6, -0.4, 1.3

IV/1995 - IV/1996: 1.1, -2.4, 6.5, 3.0, 1.1, 3.3, -0.1, 1.9

Illinois

	IV/1996	III/1996	IV/1995
Labor force (in thousands)	6,133.7	6,155.2	6,109.8
Total nonagricultural employment (in thousands)	5,704.6	5,697.5	5,630.1
Unemployment rate	5.2%	5.4%	5.2%

	III/1996	II/1996	III/1995
Real personal income* (in billions)	$200.4	$199.2	$195.9

PERCENT

III/1996 - IV/1996: 0.5, 1.0, 0.4, 2.5, -4.6, 1.3, 3.5, 1.1

IV/1995 - IV/1996: 1.3, 1.3, 1.8, 0.7, 0.6, 3.2, 2.0, -0.5
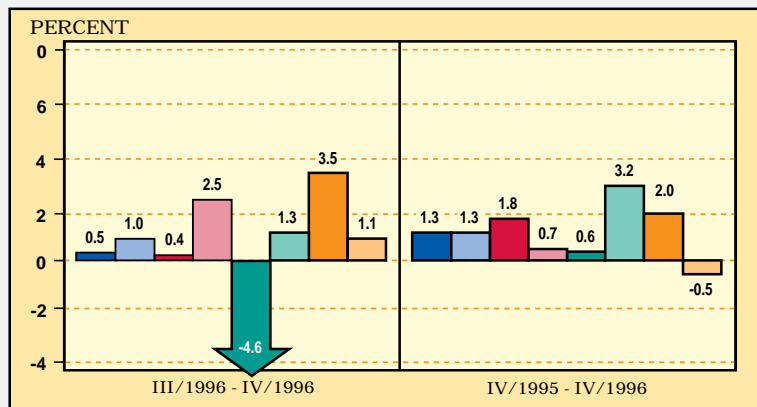
Indiana

	IV/1996	III/1996	IV/1995
Labor force (in thousands)	3,067.6	3,093.1	3,131.2
Total nonagricultural employment (in thousands)	2,826.7	2,815.4	2,801.8
Unemployment rate	3.7%	4.2%	4.6%

	III/1996	II/1996	III/1995
Real personal income* (in billions)	$83.1	$83.0	$81.7

PERCENT

III/1996 - IV/1996: 1.6, 0.4, -2.6, 3.4, 7.6, 1.4, 2.0, 0.0

IV/1995 - IV/1996: 0.9, -1.8, 3.2, 3.3, 0.1, 3.3, -1.5, 1.3
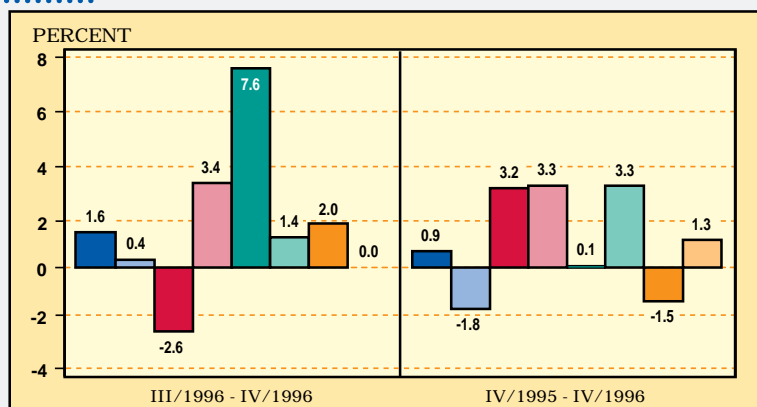
Kentucky

	IV/1996	III/1996	IV/1995
Labor force (in thousands)	1,879.8	1,861.7	1,856.8
Total nonagricultural employment (in thousands)	1,683.0	1,674.9	1,653.3
Unemployment rate	5.4%	4.7%	5.5%

	III/1996	II/1996	III/1995
Real personal income* (in billions)	$49.5	$48.9	$47.7

PERCENT

III/1996 - IV/1996: 2.0, 2.3, 0.5, 3.6, 1.3, 4.3, 3.3, -0.1

IV/1995 - IV/1996: 1.8, -0.7, 5.4, 3.8, 1.3, 3.9, 2.3, 1.3
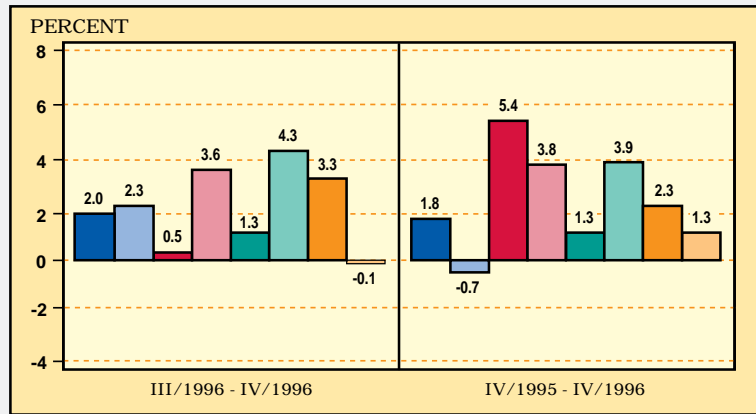
Mississippi

	IV/1996	III/1996	IV/1995
Labor force (in thousands)	1,263.9	1,263.5	1,262.6
Total nonagricultural employment (in thousands)	1,095.8	1,095.8	1,077.2
Unemployment rate	5.8%	5.8%	6.2%

	III/1996	II/1996	III/1995
Real personal income* (in billions)	$30.2	$30.1	$29.6

PERCENT

III/1996 - IV/1996: 0.0, -5.6, 2.8, 0.7, 0.5, 5.6, -2.5, -0.2

IV/1995 - IV/1996: 1.7, -3.9, 6.5, 2.0, 3.0, 6.5, 1.0, 0.9
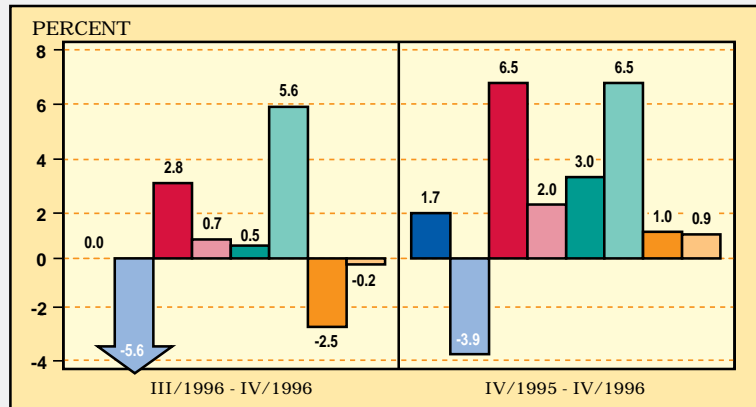
Missouri

	IV/1996	III/1996	IV/1995
Labor force (in thousands)	2,908.6	2,851.5	2,850.4
Total nonagricultural employment (in thousands)	2,585.5	2,559.0	2,536.8
Unemployment rate	4.6%	4.1%	4.2%

	III/1996	II/1996	III/1995
Real personal income* (in billions)	$77.9	$77.7	$76.4

PERCENT

III/1996 - IV/1996: 4.2, 2.6, (off scale), 2.5, 7.7, 3.3, 4.0, 3.8

IV/1995 - IV/1996: 1.9, -2.0, 6.7, 2.8, 2.4, 3.3, 2.2, 1.7
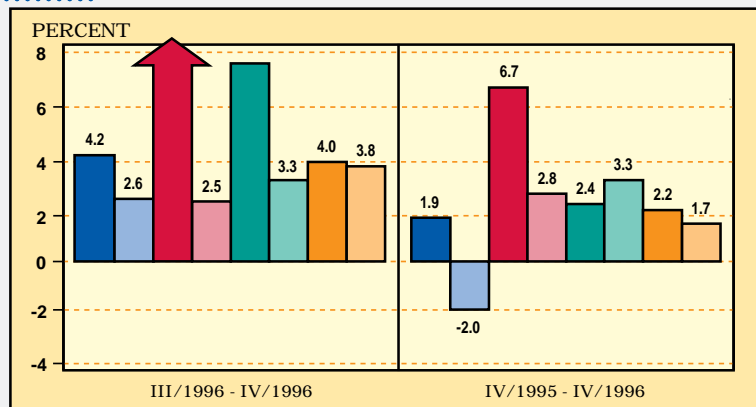
Tennessee

	IV/1996	III/1996	IV/1995
Labor force (in thousands)	2,773.0	2,756.2	2,733.3
Total nonagricultural employment (in thousands)	2,549.9	2,533.5	2,521.2
Unemployment rate	5.1%	4.6%	5.5%

	III/1996	II/1996	III/1995
Real personal income* (in billions)	$74.0	$73.5	$72.7

PERCENT

III/1996 - IV/1996: 2.6, 0.3, 5.2, 2.4, 3.7, 2.5, 0.8, 4.2

IV/1995 - IV/1996: 1.1, -2.0, 3.4, 3.8, 1.6, 1.8, 1.9, 1.9

Legend:
- Total
- Construction
- Government
- Transportation, Communication and Public Utilities
- Manufacturing
- Finance, Insurance and Real Estate
- General Services
- Wholesale/Retail Trade
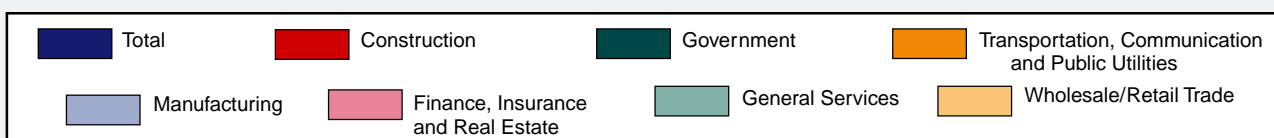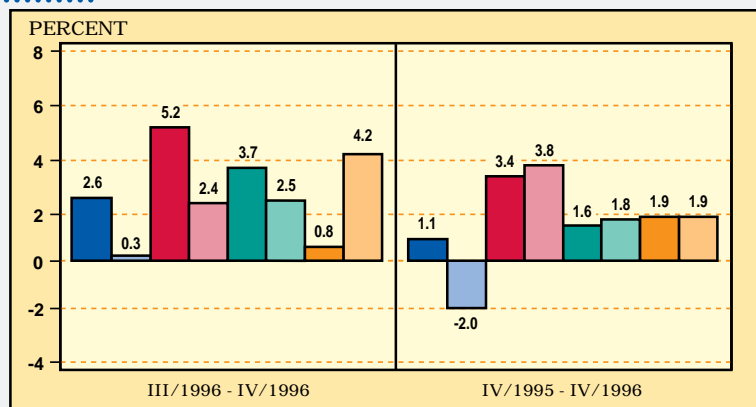
Note: All data are seasonally adjusted. The nonagricultural employment data reflect the 1996 benchmark revision.
* Annual rate. Data deflated by CPI, 1982-84=100