FEDERAL RESERVE BANK OF DALLAS

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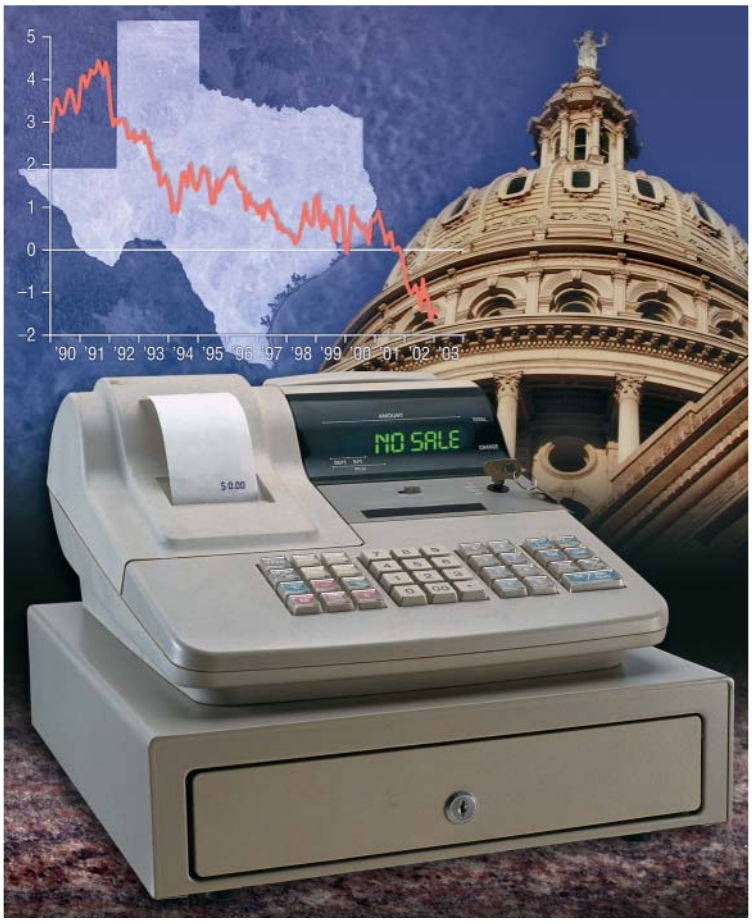
Southwest Economy



The Sales Tax Crunch

Like many others in these turbulent economic times, the state of Texas is short on cash. Changing economic conditions have forced the comptroller to revise downward her revenue estimate for the 2003 fiscal year, which ends August 31, 2003. Where the state once expected to raise $29.5 billion in general revenue funds, it now expects to raise only $27.9 billion.

The revenue shortfall is largely attributable to an unanticipated decline in revenues from the sales tax and its economic twin, the motor vehicle sales tax (*Chart 1*). Over the 2002–03 budget cycle, sales tax receipts are running more than $1.8 billion (6 percent) below original expectations; tax receipts on motor vehicle sales are running almost $0.3 billion (5 percent) below expectations. Between them, these two taxes account for more than $1.5 billion of the state's $1.66 billion revenue shortfall for 2003.

Where Texas once anticipated a 5 percent increase in tax revenue from sales and motor vehicle sales between 2002 and 2003, it now projects a 1 percent decrease. Furthermore, even the revised forecast is proving a tad optimistic. Through the first half of fiscal year 2003, revenues are down 3 percent year-over-year.

(Continued on page 2)

New Economy Myths and Reality

In the late 1990s, some economists announced that the American economy had fundamentally changed. According to this "New Economy" view, technological advances had brought on a higher sustained level of productivity growth, which allowed faster economic growth with less inflation. But given events since 2000—the long, steep stock market downturn, the falloff in business investment and the subsequent recession—many question whether anything in the New Economy view is valid.

Although those who hold this view consider accelerated productivity growth fundamental to the late '90s boom, other forces were also at work. These include the earlier deregulation of key U.S. industries, financial inno-

(Continued on page 5)

INSIDE:

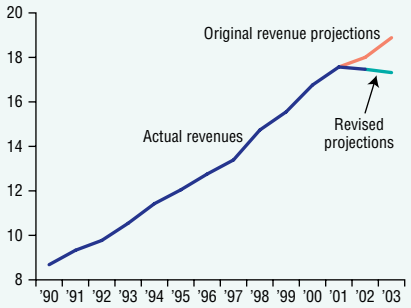
Falling Crime and Rising Border Enforcement: Is There a Connection?

Texas receives more than 70 percent of general fund revenues from general and selective sales taxes.

Chart 1

Sales Tax Revenues Well Short of Projections

Sales and Motor Vehicle Sales



SOURCE: Texas state comptroller.

A number of factors could underlie the shortfall in sales tax receipts. Some of them are clearly transitory. However, others represent long-run trends that are likely to persist well into any economic recovery. Therefore, a closer examination of the sales tax decline can give insight into the prospects for continued fiscal distress in Texas.

Misery Loves Company

Texas is not alone in facing a sales tax revenue shortfall. Revenues have slowed nationwide (*Chart 2*). Nationally, sales tax revenue growth has dropped more than a percentage point since the recession started in the spring of 2001.

Slowing sales tax revenues are typical of recessions. During the 1990–91 recession, the sales tax revenues of state and local governments dropped precipitously before bouncing back. However, this time around the slowdown has been remarkably persistent. Two years after the start of the 1990–91 recession, cumulative sales tax revenues were only 1.3 percent below trend. Today, cumulative sales tax revenues are 2.6 percent below trend. (In each case, the trend presumes tax receipts had continued to grow at the same rate as in the five years prior to the recession.) In other words, despite solid consumer sales during this recession, sales tax revenues have taken twice the hit they did during the 1990–91 recession.

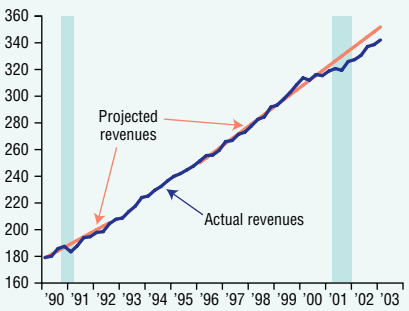
Texas has been hit especially hard by the sales tax slump. Not only are revenues falling in Texas rather than merely growing more slowly, but also Texas is much more dependent on sales taxes than the average state. Only Nevada gets a larger share of its tax revenues from sales taxes, and only three states—Nevada, Florida and Washington—get a larger share of general revenues from sales taxes.[1] As Chart 3 illustrates, Texas receives more than 70 percent of general fund revenues from general and selective sales taxes (such as taxes on the sale of motor vehicles, motor fuels, tobacco and alcoholic beverages, and insurance premiums). The lottery and other nontax revenues provide 15 percent of general revenue-related funds. The corporate franchise tax raises 7 percent of general revenues, and taxes on oil and gas extraction raise 3 percent. Severance taxes (taxes on oil and gas extraction) raise less revenue than sin taxes (sales taxes on tobacco and alcoholic beverages).

On the other hand, by relying so heavily on sales taxes, Texas has avoided the greater fiscal distress experienced in states that rely heavily on income taxes. Nationwide, state and local government revenues from the individual income tax have fallen 7 percent since peaking in the fourth quarter of 2000. More problematic, cumulative revenues from the individual income tax are 19 percent below the level a trend-based forecaster

Chart 2

Nationally, Sales Tax Shortfall More Persistent than After Last Recession

State and Local Sales Tax Revenues

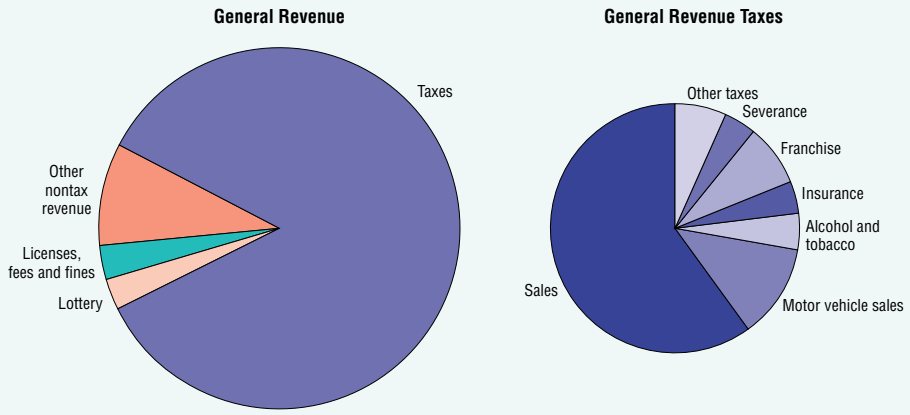


NOTES: Projections assume that receipts continued to grow at the same rate as experienced in the five years prior to the recession. The shaded areas represent national recessions.

SOURCES: National Income and Product Accounts; author's calculations.

Chart 3

Texas General Revenue, Fiscal Year 2002



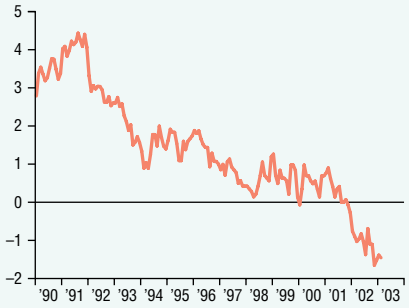
SOURCE: Texas state comptroller.

Chart 4

Goods Prices Have Been Falling

Commodities Less Food and Energy

Percent change, year-over-year



SOURCE: Bureau of Labor Statistics.

would have projected at the start of the recession. (For a discussion of the factors behind the income tax declines, see the box titled "The Income Tax Crunch.")

Possible Explanations

A number of factors could explain the slowdown in sales tax revenues. First, personal income growth slowed during the recession. Low interest rates and mortgage refinancing have kept consumers from cutting back spending as they did during the 1990–91 recession, but growth in real consumption spending has dropped nationally by about a percentage point.

Second, consumers aren't the only ones who pay sales taxes. Taxes on business purchases account for one-third to one-half of the total revenue from sales taxes. The slump in sales tax revenue could reflect well-documented weakness in the business sector.

Third, falling prices for goods may have contributed to the slowdown in sales tax revenues. While consumer prices in general continued to rise, the price increases were driven largely by services. Prices for most consumer goods have been falling (*Chart 4*). Taxable sales tend to be of goods rather than services.

Fourth, a shift in buying habits could drag down sales tax revenues. With mortgage rates the lowest in a generation, many consumers are buying houses rather than taxable items like cars and clothes. Furthermore, consumers spend more on services (which, as noted above, are generally tax-exempt) than they do on goods (which are generally subject to sales taxes), and the services share is rising. Sales tax revenues are lost when consumers treat themselves to a week at the spa rather than a diamond ring.

Finally, consumers could be avoiding sales tax on their purchases altogether. During 2001 and 2002, sales tax revenues nationwide were $16 billion lower than expected, given the prior rate of growth. One estimate puts the tax revenue lost to increased Internet sales during 2001 and 2002 at $14 billion.[2] If this estimate is in the ballpark, then much of the sales tax revenue shortfall could be attributed to rising Internet sales.

Implications for Texas

The drop in sales tax revenues is a symptom of a general economic slump in Texas. The state's unemployment rate has risen 2.5 percentage points since the

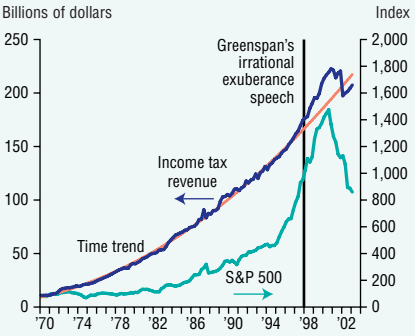
The Income Tax Crunch

State and local government revenues from the individual income tax have fallen sharply since the national recession began. The dramatic decline has at least three causes. The economic downturn is clearly part of the explanation. Personal income growth slowed markedly during the recession. Lower income growth easily translates into lower tax revenue growth.

Another contributor is the popping of the stock market bubble. All that irrational exuberance generated a lot of income tax revenue for states. Based on cumulative deviations from trend, the states received at least a $50 billion income tax windfall between 1997 and 2001 (see chart). Shortly after the stock market bubble burst, so did the tax revenue bubble.

Finally, changes in the federal income tax code took a modest toll on state and local income tax revenues. The Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) increased the standard deduction, changed rules for individual retirement accounts and introduced an above-the-line deduction for higher-education expenses. The National Conference of State Legislatures estimates that EGTRRA reduced state tax revenues by at least $1.5 billion.

Twin Bubbles Bursting?

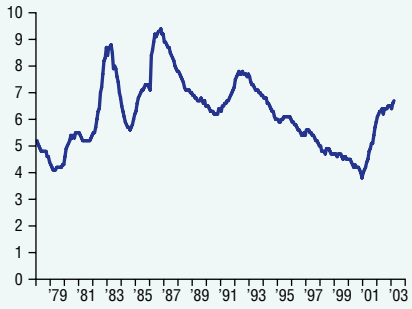


NOTE: Income tax revenue is state and local government revenue from the individual income tax.

SOURCES: National Income and Product Accounts; author's calculations.

Chart 5

Texas Unemployment Rate Up Sharply

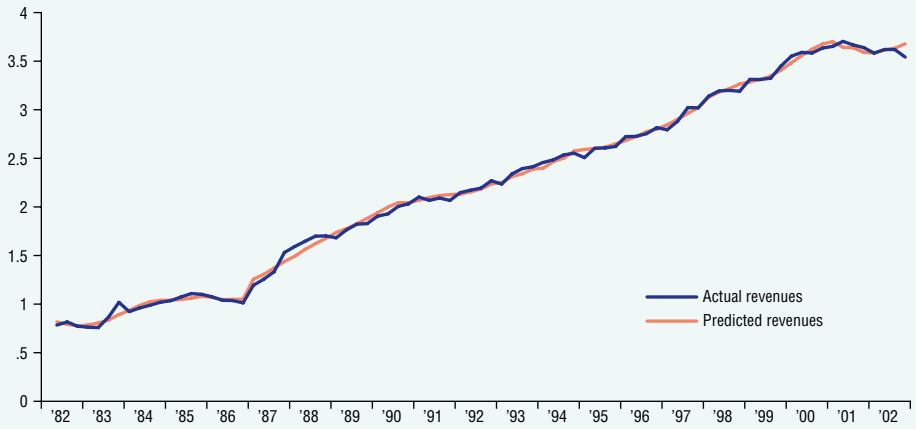


SOURCE: Texas Workforce Commission.

Chart 7

Economic Fundamentals Largely Explain Revenue Decline

Texas Sales Tax Revenues



NOTE: The analysis presented here uses sales tax data for 1982–2000 to estimate the relationship between the log of tax receipts and the log of real personal income, the log of the implicit personal income deflator, the unemployment rate and a nonlinear time trend.

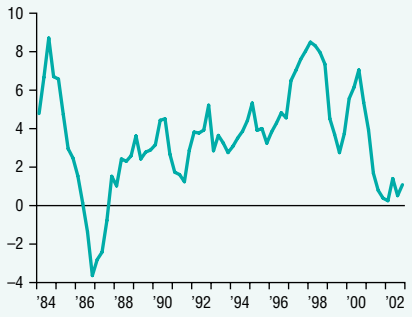
start of the national recession (*Chart 5*). Employment has fallen by 126,000. Texas real personal income, which was growing at a 4 percent annual rate when the national recession began, has slowed to an average annual growth rate of less than 1 percent (*Chart 6*). Only a handful of states have seen a comparable slowdown in economic activity. Most economists attribute the slump to the national recession, weakness in the high-tech sector (on net, Texas has lost more than 100,000 high-tech jobs since March 2001), and travel and tourism declines following September 11, 2001.

Chart 7 compares actual sales tax receipts with the level that would have been expected, given the historical relationship between tax receipts, the unemployment rate, real personal income and prices. Most of the slowdown in Texas sales tax revenues can be attributed to the weak economy. Historical patterns imply sales tax revenues for the first five quarters of the 2002–03 biennium of $18.1 billion; in actuality, they were $18 billion.[3]

Because economic fundamentals can explain so much of the revenue slump, there is little left to be explained by other factors. Consumers are clearly spending an increasing share of their income on services and doing an increasing share of their buying online, but such behaviors have yet to have a significant impact on Texas' tax revenues. There is no evidence that the slowdown in revenues is caused by leakage from the tax system.

Chart 6

Texas Personal Income Growth Slowest Since the Bust



* Year-over-year.

SOURCE: Bureau of Economic Analysis.

Conclusions

Like many other states, Texas is in a revenue squeeze. A decline in sales tax revenues has cut more than $1.5 billion from the current fiscal year budget. However, the loss in revenues is largely attributable to an unusually weak economy. As the economy recovers, revenue growth is also likely to recover.

It would take a powerful economic rebound, however, to put the state back on its prior fiscal trajectory. Had revenues from the sales tax and the motor vehicle sales tax continued to grow at the 6 percent annual rate experienced during the 2000–01 biennium, Texas would have $8 billion more revenue during the 2004–05 biennium than the comptroller now projects. To reach that level, taxable sales would need to grow by more than 27 percent over the next two years (13 percent per year). Few forecasters anticipate such a surge in purchasing. Therefore, the recession's impact on the Texas budget is likely to persist far longer than the recession itself.

—Lori L. Taylor

Taylor is a senior economist and policy advisor in the Research Department of the Federal Reserve Bank of Dallas.

Notes

[1] These estimates come from the Census Bureau's 2000 Survey of Governments. The sales tax category includes both general sales taxes and selective sales taxes.

[2] Author's calculations from "State and Local Sales Tax Revenue Losses from E-Commerce: Updated Estimates" by Donald Bruce and William F. Fox, Center for Business and Economic Research, University of Tennessee, September 2001, and "E-Commerce in the Context of Declining State Sales Tax Bases," part 3, by Donald Bruce and William F. Fox, *National Tax Journal*, vol. 53, no. 4 (December 2000), pp. 1373–88.

[3] The predictions cover the last quarter of 2001 and all of 2002, a period that roughly corresponds to the first five quarters of the 2002–03 biennium. An exact correspondence is impossible because the Texas fiscal year starts in the middle of a calendar quarter and the analysis is based on quarterly data. Also, for purposes of estimation, sales tax receipts are lagged one month so that they are matched to the period in which the sale takes place rather than the period in which the state receives the revenue.

New Economy Myths and Reality

(Continued from front page)

vation and freer trade in many parts of the world. Despite this, the flood of Internet-related businesses and the spectacular rise in their stock valuations led some to see the New Economy as solely an Internet phenomenon.

Is the New Economy view simply Pollyanna economics? Or is it rooted in reality? An analysis of several myths shows that recent advances in information technology have, in fact, helped transform the U.S. economy. While such technology effects are an old story, the evidence suggests that the current situation differs significantly. The New Economy has not produced ever-increasing stock prices or tamed the business cycle. But it has accelerated productivity growth, making the economy more resilient and flexible, with less volatile growth rates and fewer and milder recessions, thereby improving living standards.

What Is the New Economy?

Many use the term *New Economy* to refer to events expected to result in always-rising corporate revenues, higher sustainable corporate valuations and the end of business cycles. We define the New Economy as one that employs technology to substantively alter production or consumption processes or both.[1]

Other periods also experienced new economies. The years 1750 to 1850—the heart of the Industrial Revolution—saw a thirtyfold increase in British textile production. Whereas it took about 500 hours to hand spin a pound of cotton in the mid-18th century, 50 years later technology had reduced that time to about three hours. In the 50 years after harnessing electricity in 1880, U.S. industry increased mechanical horsepower by an estimated 100 times, an annual increase of nearly 10 percent.

These technological transformations ultimately created new economies that changed valuations, production processes, and how and where people worked. They resulted in a general improvement in living standards and a dramatic shift in the organization of production and markets. As economist Joseph Schumpeter noted in the late 1930s, there is nothing new about technology transforming economic outcomes on both the supply and demand sides. Railroads, steam power, illumination, cable lines, electricity, air-conditioning and other innovations had profound consequences for what was produced, where it was produced and the product mix consumers demanded.

Further, these inventions seem to have followed a path similar to that of the computer and its spillovers. An initial boom is followed by saturation and then shakeout. Next comes a period when firms learn how best to utilize the new invention for long-term, stable growth, which is followed by a period of problem solving, social dislocation, and consumer and worker resistance to technological change.

New Economy Benefits

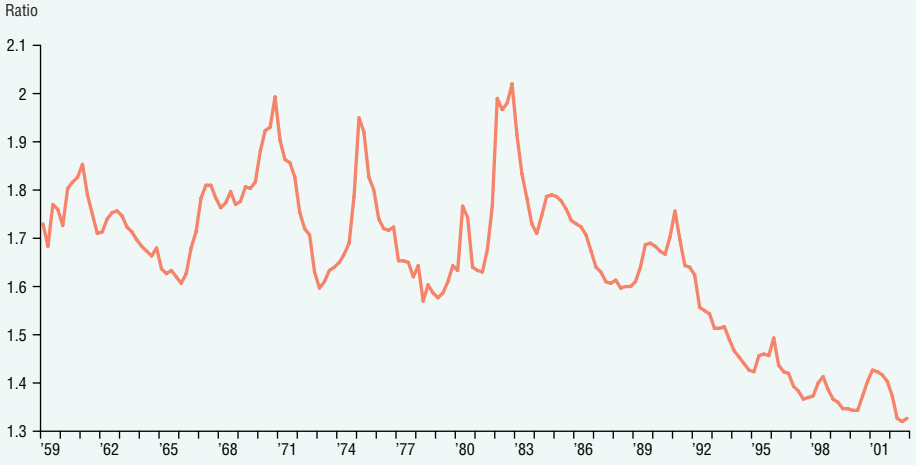
While innovation is always transforming our economy, the current situation appears to differ significantly:

- Technological change has accelerated not only the pace of innovation but also the pace at which new products gain widespread use and produce significant sales.[2]
- Consumer information has exploded, weakening producer pricing power and making markets more closely resemble the perfectly competitive model, in which all participants have complete information.
- Supply chain management, just-in-time inventory, rapid production and delivery systems, and the like are now proven business practices given momentum by new information technology. Inventories have grown increasingly smaller in relation to sales since the early 1990s (*Chart 1*). Evidence at the individual firm level and statistical analysis of GDP components suggest that applying the technology has produced a leaner supply chain that can better match inventories with sales. Better inventory management, in turn, has been largely responsible for the decline in the volatility of GDP growth, say some economists.[3]
- Customer service is often available around the clock. Many companies now deliver and process information and help customers via voice mail, the Internet and call centers. We take for granted service that is far better than that of a decade ago.
- Productivity growth has increased in recent years, with the rate about 1 percentage point higher in the post-1994 period than in 1973–94 (*Chart 2*). Many studies attribute this to the effective use of new information technologies.[4] More-

Chart 1

Inventory/Sales Ratio Falls

All Manufacturing Except Semiconductors



SOURCE: Census Bureau.

over, productivity growth, coupled with falling pricing power, has raised real income across all income groups.

- Information technology has transformed our workplaces, production facilities, homes, schools and hospitals. The microchip has created a world characterized by better, faster and cheaper. Information technologies have changed where we work, how we work and what kind of work we do.

New Economy Costs

These changes, while positive, nonetheless come with costs. Replacement of existing capital is expensive, in terms of both outlays and personnel retraining. Newer equipment tends to be more complex, and technology often moves faster than some people can master it. Time that had been spent on other things is now devoted to maintaining technology-dependent environments, and learning to use the technology may take several hours, days or even weeks.

There are other trade-offs as well. Consumers' desire to stay connected to family, friends and businesses leads to continual hardware and software upgrades and has generated virtual monopolies for some providers. And increased identity theft and credit card and ATM fraud are directly linked to the commercial application of the Internet.

Excitement over new technology's potential for lowering expenses, boosting profits and expanding market share sometimes leads analysts and investors to believe the good times will never end.

The New Economy has also created or exacerbated some medical conditions, such as carpal tunnel syndrome. But medical negatives always accompany change, even as people live longer, healthier lives. The good news is that the negative effects have been few and insignificant compared with those of past changes. And on the benefit side, medical breakthroughs from technological advances have become commonplace.

Dispelling the Myths

The differences between the benefits and costs of technological change, discussed above, have sometimes resulted in confusion over what the New Economy is really about. For example, do declining stock prices and rising corporate shutdowns—particularly among Internet-related firms—mean the New Economy is smoke and mirrors? Here are six New Economy myths, many of them closely linked to the rise of the Internet.

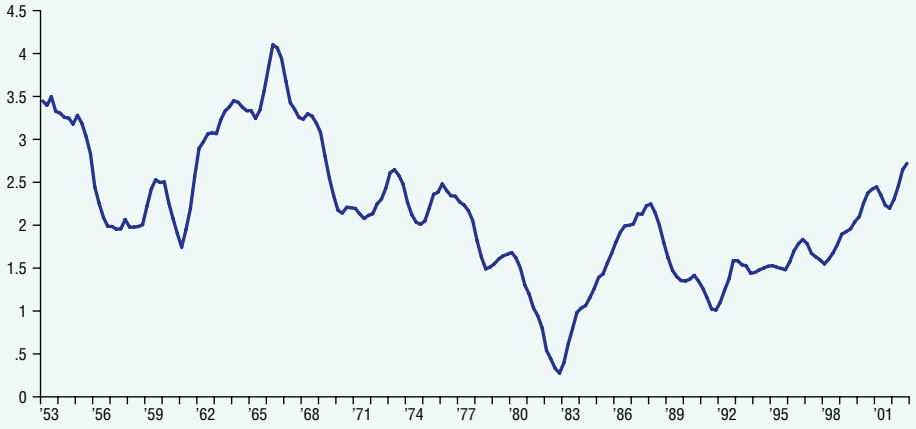
Myth 1: The Business Cycle Is Dead. Unfortunately for investors, this myth often gets dusted off and sold as a new idea. It emerges as a boom matures and is about to end. Excitement over new technology's potential for lowering expenses, boosting profits and expanding market share sometimes leads analysts and investors to believe the good times will never end. In the midst of the 1990s

Chart 2

Productivity Growth Rises

5-Year Moving Average

One quarter percent change, annualized



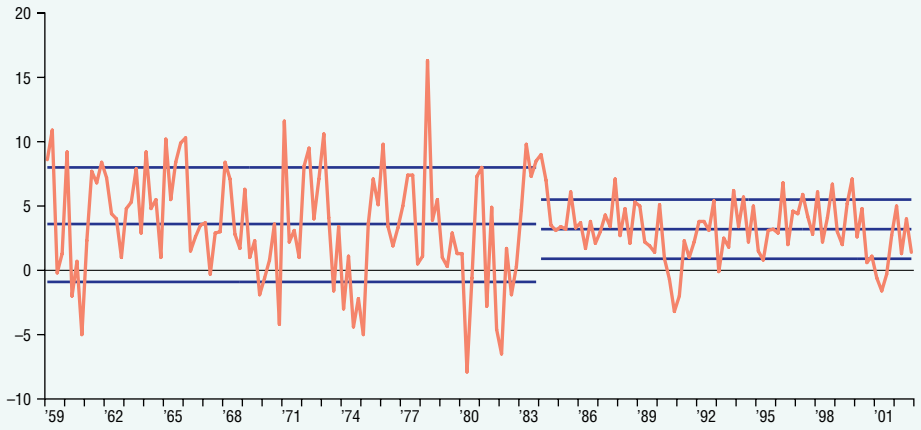
NOTE: Data are output per hour for nonfarm businesses.

SOURCE: Bureau of Labor Statistics.

Chart 3

Real GDP Growth Becomes More Stable

One quarter percent change, annualized



NOTE: For 1959–83 and 1984–2002, horizontal lines represent the average (middle line) and plus and minus one standard deviation from the average.

SOURCE: Bureau of Economic Analysis.

boom, well-known MIT macroeconomic theorist Rudi Dornbusch proclaimed, "This expansion will run forever; the U.S. economy will not see a recession for years to come."[5]

Of course, less than three years later the expansion did end. Business cycles are not dead and never will be. The best we can hope for is that new technology will allow firms to better use information, thereby reducing output volatility and the frequency and severity of recessions. As Chart 3 shows, GDP growth since 1984 has been less than half as volatile as in 1959–83, with only two mild recessions.[6]

Myth 2: Faster Productivity Growth Permanently Lowers Unemployment and Inflation Rates. Faster productivity growth is one of the New Economy's defining features. As long as growth rises, the economy can enjoy both low unemployment and low inflation. In other words, rising productivity growth counterbalances the inflationary effects of tight labor markets.

Unfortunately, productivity growth can't rise forever. Once growth stabilizes, even at a high level, the possibility of low unemployment with simultaneous low inflation ends. For inflation, whether the productivity growth rate is changing is more important than its level. As productivity growth levels off, policymakers face a sharper trade-off between inflation and unemployment.[7]

Myth 3: The Internet Changes Everything About Business Valuation. Like many technological innovations—electricity, air transportation and wireless communications, for example—the Internet has, in a sense, "changed everything." But does this make Internet-related firms more valuable than other businesses? Some economists and analysts claimed that productivity growth would boost future profits and that lower and more stable inflation and a more stable economy justified a lower equity premium.

Chart 4 shows the dollars that poured into Internet-related IPOs. The rapid rise during the late 1990s and in 2000 suggests investors thought business valuation rules had changed. Now, many entrepreneurs longingly recall the days of so-called drive-by venture capital, when money was often thrown at those proposing a new use for the Internet, with no regard for how profits might be made.

The fact is, business fundamentals are the bedrock of success. Information technologies allow firms to conduct business faster, cheaper and more accurately while also expanding potential markets. But that's no reason for business enterprises (and investors) to forsake business models designed primarily to generate profits and maximize shareholder wealth.

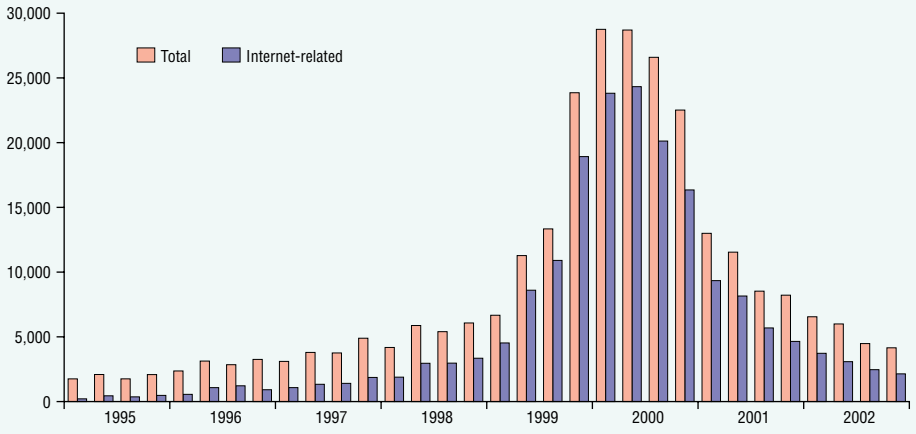
Myth 4: Customers Matter More than Profits. During the late 1990s, Internet start-ups frequently reported large quarterly losses but noted that their web traffic and accounts had increased at an astonishing rate and that further increases were expected. Following such announcements, investors often boosted the firm's share price to astronomical levels.[8]

Nothing in a market economy matters more to stockholders than profits. Without profits, share prices eventually

Chart 4

Initial Public Offerings: Boom and Bust

Millions of dollars



SOURCE: PricewaterhouseCoopers/Venture Economics/National Venture Capital Association MoneyTree Survey.

fall, as subsequently happened to many high-tech stocks.

Looking back, it's easy to see how a speculative bubble could have formed. Investors came to believe Internet-related firms moving into new markets could quickly secure a large and loyal customer base with ever-expanding revenues. But instead, new information technology has likely increased competition and reduced profit margins. In a world of fierce competition, fast-moving information and low barriers to entry, a dominant market position can evaporate quickly.

Myth 5: Internet Traffic Doubles Every 100 Days. Linear extrapolations always make for easy, and wrong, predictions. At first, growth rates in both absolute and percentage terms can be very high, but eventually they decline. Internet traffic never doubled in 100 days, except for perhaps one brief period in 1995–96. This widely circulated myth likely began with a Commerce Department report.[9]

Actual growth rates for Internet traffic are considerably more modest but still high. Some think Internet traffic has probably doubled annually for the last several years.[10] Unfortunately, exaggerated beliefs about growth rates have led to massive overcapacity and poor planning.

Myth 6: Manufacturing Is Old Economy, and It Is Disappearing. Manufacturing remains important and is being reinvented through Internet-enabled supply chain, production and performance management systems. There is no set number of manufacturing jobs needed to ensure good economic growth. As productivity increases in the manufacturing sector, fewer workers are needed to produce goods. More service jobs—such as engineering, design, sales, marketing and logistics—are created. The fact is, Old Economy companies, particularly the largest U.S. manufacturers, may be the biggest users of New Economy information technology. While some manufacturing jobs are disappearing, sector output remains steady.

The Reality

The 1990s stock market boom and record economic expansion led to the view that something fundamental had changed in the U.S. economy. The era featured rapid economic growth and low inflation and unemployment, a combination unseen in decades. This New Economy view was often confused with assertions that the commercial application of the Internet had changed basic business fundamentals and valuations, that the business cycle was dead and that Old Economy firms were doomed.

Many of these myths were dispelled when the stock market decline began in early 2000 and the economy slipped into recession in March 2001. Business cycles are alive and well. Profits matter. And Old Economy firms are not going away anytime soon.

Nevertheless, the development and adoption of new information technology appears to have brought on an era characterized by higher sustainable productivity growth. While the stocks of many high-tech firms are gone, many of the productivity benefits remain. Accelerating productivity ultimately leads to higher living standards and fewer and milder periods of declining output, making our economy more resilient and flexible.

That's the reality of the New Economy.

— Robert L. Formaini
Thomas F. Siems

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Notes

The authors thank John Duca, Mark Wynne and Alan Viard for insightful comments and suggestions and Dan Lamendola for excellent research assistance.

1 J. Bradford DeLong and Lawrence H. Summers, "The 'New Economy': Background, Historical Perspective, Questions, and Speculations," Federal Reserve Bank of Kansas City *Economic Review*, Fourth Quarter 2001, pp. 29–59.

2 For example, it took 46 years for a quarter of American homes to be wired for electricity. Getting phones to a fourth of America took 35 years; cars, 55. More recently, the personal computer required only 16 years to penetrate a quarter of American homes, cellular phones took 13 years and the Internet seven. The rapid diffusion might be partly because these innovations built upon earlier ones. See W. Michael Cox and Richard Alm, "The Economy at Light Speed: Technology and Growth in the Information Age—and Beyond," Federal Reserve Bank of Dallas *1996 Annual Report.*

3 Owen Irvine and Scott Schuh, "Inventory Investment and Output Volatility," Federal Reserve Bank of Boston Working Paper no. 02-6, December 2002.

4 Among the studies are those by Stephen Oliner and Daniel E. Sichel, "The Resurgence of Economic Growth in the Late 1990s: Is Information Technology the Story?" *Journal of Economic Perspectives* 14, Fall 2000, pp. 3–22; and Dale W. Jorgenson and Kevin J. Stiroh, "Raising the Speed Limit: U.S. Economic Growth in the Information Age," *Brookings Papers on Economic Activity*, 2000, pp. 125–211. In contrast, Robert J. Gordon questions information technology's importance to the recent productivity rise, concluding that the New Economy's effects are largely confined to durable goods manufacturing in "Does the 'New Economy' Measure Up to the Great Inventions of the Past?" *Journal of Economic Perspectives* 14, Fall 2000, pp. 49–74.

5 "Recession—No, Thank You!" *Wall Street Journal*, July 30, 1998.

6 Margaret M. McConnell and Gabriel Perez-Quiros identify the first quarter of 1984 as a statistically significant break date in the reduction of GDP volatility in "Output Fluctuations in the United States: What Has Changed Since the Early 1980's?" *American Economic Review* 90, December 2000, pp. 1464–76. In addition to new technology, better monetary policy, increased globalization and deregulation of key industries have also likely helped improve the economy's stability.

7 Evan F. Koenig, "Productivity, the Stock Market and Monetary Policy in the New Economy," Federal Reserve Bank of Dallas *Southwest Economy*, January/February 2000, pp. 6–12.

8 For example, on July 21, 1999, Amazon.com reported a substantial second quarter operating loss (roughly five times higher than the same period in 1998) but also announced that customer accounts had increased by more than 220 percent over the past year. Over the next six months—after more operating losses—the company's stock price rose by more than half.

9 Commerce Department, *The Emerging Digital Economy*, April 1998, citing a 1997 white paper by Inktomi Corp.

10 Andrew Odlyzko, "Internet Growth: Myth and Reality, Use and Abuse," *iMP: The Magazine on Information Impacts*, November 2000.

Falling Crime and Rising Border Enforcement: Is There a Connection?

The U.S.–Mexico border has typically been regarded by outside observers as crime ridden. From familiar scenes in cowboy movies where the bad guys make a run for the border to more contemporary images of the border as a staging area for illegal immigrants and drug smugglers, the Southwest border is often characterized as lawless and out of control.

Falling Crime

These stereotypes may be based on what has been true in the past, but they have not kept up well with recent developments. Official crime statistics show a dramatic drop in border crime rates in the 1990s. While the border crime rate was 30 percent higher than the national crime rate in 1990, the difference was only 12 percent in 2000. The bulk of the improvement came in property-related crimes (such as auto theft, larceny and burglary), which dropped 40 percent between 1990 and 2000. Violent crimes (including assault, robbery, rape and homicide), while representing only 12 percent of total crime, also dropped sharply, falling 29 percent over the decade.

Improvements in the crime rate during the 1990s were not restricted to the Southwest border (*Chart 1*). National crime rates declined right along with border rates. This phenomenon has received much attention among researchers trying to understand the reasons underlying these changes. The consensus attributes the downward trend to several factors at the national level: the end of the crack epidemic, a growing prison population, changing demographics and rapid economic growth. Higher imprisonment rates and demographic change reduced the size of the population most at risk for committing crime. Tougher laws kept more criminals in jail for longer sentences, while demographic change resulted in fewer people in the highest-risk group (males ages 14–24).

These factors, especially the pace of economic growth, have likely had a substantial impact on the border as well. Most border areas grew quickly in the 1990s. Job creation outpaced population growth in many border cities, and most areas experienced large drops in the unemployment rate. Research has shown that when faced with more labor market opportunities, individuals are less likely to resort to crime.

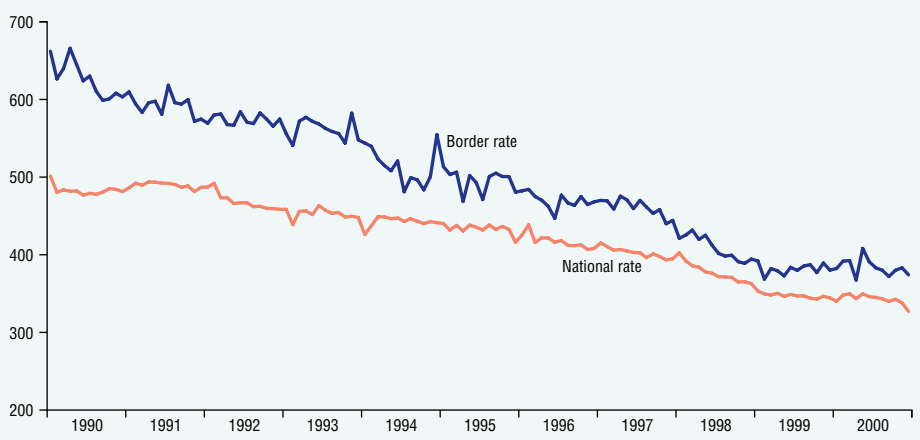
Rising Border Enforcement

Another factor—one unique to the border region—has also played a role in lowering crime rates. In the 1990s, the U.S.–Mexico border experienced a resurgence in illegal immigration and, as a result, an unprecedented buildup of border enforcement. While some might expect illegal immigration to be correlated with higher crime rates, mostly indirectly through the role of smugglers, border enforcement should be working in the opposite direction. In this case the end result, falling aggregate crime rates, suggests that border enforcement and the other factors discussed above won out.

Border enforcement along the U.S.–Mexico border consists predominantly of the Border Patrol. Over 9,000 Border Patrol agents currently man the border with Mexico. At the same time, enforcement has increasingly come to rely on technological advances and other hardware in locating and apprehending undocumented immigrants. Today's Border Patrol uses everything from remote video surveillance, motion detectors, mobile

Chart 1

Border Crime Rates Fell Faster Than National Rates



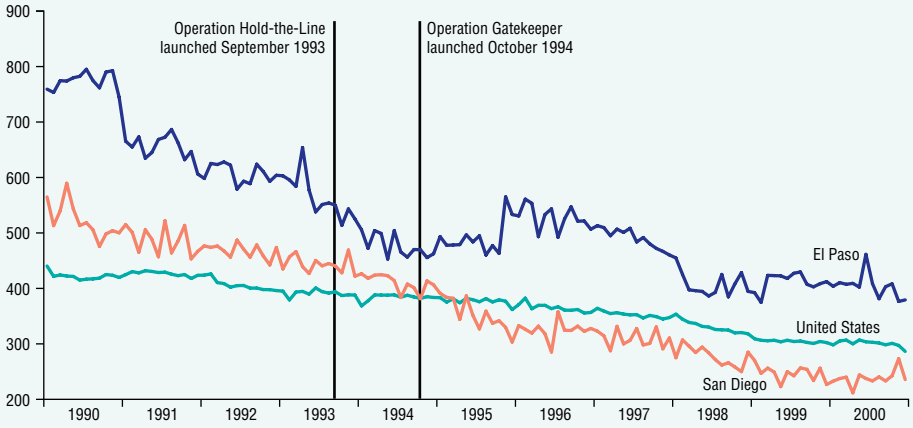
NOTE: Data are seasonally adjusted.

SOURCES: County crime data: Special Request Unit, Criminal Justice Statistics Center, California Department of Justice; Uniform Crime Reporting Program, Access Integrity Unit, Arizona Department of Public Safety; Uniform Crime Reporting, Crime Information Bureau, Texas Department of Public Safety. National monthly crime data: FBI UCR reports. Population estimates: U.S. Census.

Chart 2

Property Crime Rates Fell When Border Enforcement Rose

Offenses per 100,000 people



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SOURCES: County crime data: Special Request Unit, Criminal Justice Statistics Center, California Department of Justice; Uniform Crime Reporting, Crime Information Bureau, Texas Department of Public Safety. National monthly crime data: FBI UCR reports. Population estimates: U.S. Census.

infrared nightscopes and helicopters to old-fashioned barriers such as walls, floodlights and road checkpoints. Although the Border Patrol does not typically apprehend criminals who commit nonimmigration offenses, like the ones we are considering here, the Border Patrol's visibility and the omnipresent monitoring devices and checkpoints throughout the border region deter all forms of crime.

This point is best illustrated by looking at the impact on crime of two major border enforcement offensives in the early to mid-1990s: Operation Hold-the-Line in El Paso in 1993 and Operation Gatekeeper in San Diego in 1994. As Chart 2 shows, in the year following the introduction of Hold-the-Line in El Paso, property crime rates fell 17.6 percent (the national rate declined only 1 percent). In the year after Gatekeeper was introduced, property crime rates in San Diego fell 16 percent (the national rate declined only 2.3 percent).

Given this preliminary evidence of a possible causal relationship between enforcement and crime, we tested this in an econometric model where we controlled for economic conditions, the volume of immigration and other variables. We found that a 10 percent increase in monthly linewatch hours (equivalent to adding about 515 full-time agents) leads to a 0.3 percent fall in the monthly property crime rate (equivalent to about 862 fewer property crimes per year).

Redistributing Crime

Despite this good news about border crime rates and the role of the Border Patrol, a set of second-order effects deserves attention. The overall border crime rate has fallen substantially from its 1990 peak, but the bulk of the improvement has been concentrated, not surprisingly, in the communities targeted for early border enforcement initiatives, namely San Diego and El Paso. Most border counties, albeit much smaller than San Diego and El Paso, did not experience declines as steep as the national drop and thus have become relatively more crime ridden in 2000 compared with the nation.

The lesson in this analysis is that until border enforcement initiatives impact the entire Southwest border, crackdowns in one area may result in fewer crimes in that vicinity but also in a redistribution of crimes to other areas. For example, in the years that Hold-the-Line and Gatekeeper were introduced, the neighboring counties of Hudspeth, Texas, and Imperial, Calif., both experienced relatively large increases in their crime rates. These second-order effects have already been apparent in the changing geographic pattern of illegal immigration. The traditional migrant gateways of Tijuana–San Diego and Juárez–El Paso have been replaced by migrant flows through smaller, less patrolled towns in Arizona and South Texas.

Getting tough on the border has had positive spillovers on border crime rates. The border has realized marked declines in the incidence of crime. However, the crime that is occurring has become more equally distributed across border counties. Less populated counties are contending with a greater share of border crimes, a development that likely stems in part from the launching of the border offensives Gatekeeper and Hold-the-Line. This may not be a significant problem as long as crime rates continue to fall, but that trend may already have been reversed. Since mid-1999, the downward trend in border crime has flattened considerably.

— Pia M. Orrenius
Roberto Coronado

Orrenius is a senior economist in the Research Department of the Federal Reserve Bank of Dallas. Coronado is an economic analyst in the Research Department of the Bank's El Paso Branch.

Regional Update

The Texas economy is sending mixed signals. The Texas Coincident Index, which gauges current economic conditions, suggests that Texas has emerged from recession. Yet the Texas Leading Index declined during the first quarter, implying that near-term gains in economic activity are unlikely.

In comparison with the overall leading index, the components offer a more optimistic outlook. Variables that depend more on a national recovery, such as the U.S. leading index, Texas Stock Index and Texas value of the dollar, weakened, while more Texas-specific components—real oil price, well permits and average weekly hours worked—increased. The boost in the latter component offers strong evidence that a pickup in Texas manufacturing could be in the works.

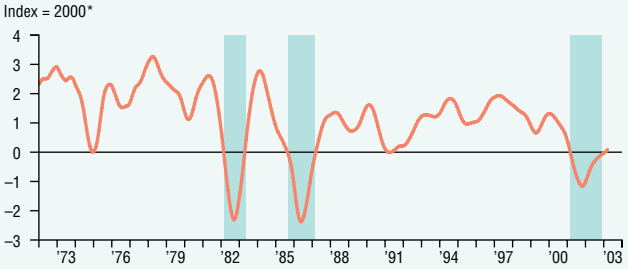
State employment growth provides further evidence that the Texas economy is accelerating. During the first quarter, Texas employment grew at an annualized rate of 0.7 percent, while U.S. employment contracted by 0.8 percent. Service-producing sectors accounted for the mild increase in employment. Goods-producing sectors continued to shed jobs, but at a more moderate pace.

Although Texas employment growth has outperformed the nation's, the state's unemployment rate remains high. The Texas unemployment rate climbed to 6.7 percent in March, while the nation's jobless rate was 5.8 percent in March and 6 percent in April. The Texas unemployment rate has escalated because new job creation is failing to keep up with the continued strong growth of the Texas labor force.

Texas is still waiting for an acceleration of the U.S. economy to bolster some of the state's key industries—air travel, telecommunications services, high-tech products and energy production. Until the U.S. economy improves, the Texas economy is likely to remain sluggish.

—Priscilla Caputo

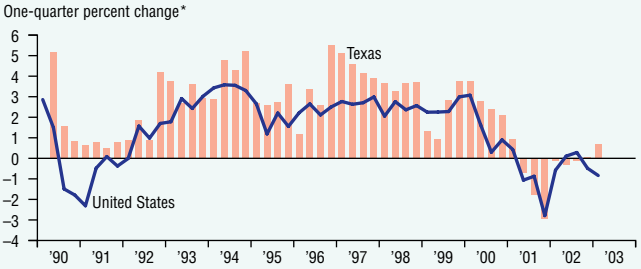
Texas Coincident Index—State Out of Recession



*Seasonally adjusted, annualized rate.

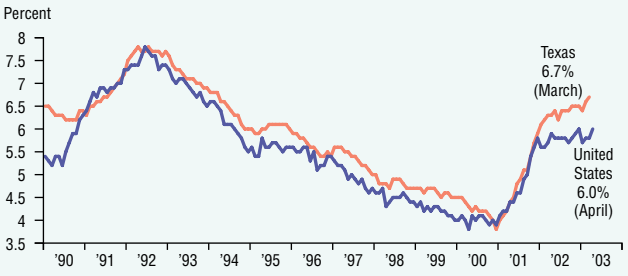
NOTE: Shaded areas indicate Texas recession.

Texas Nonfarm Employment Growth on the Rise

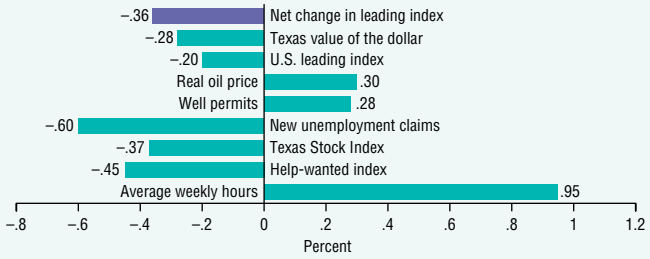


*Seasonally adjusted, annualized rate.

Texas Unemployment Rate Above National Rate



Most Components Contribute to Decline in Texas Leading Index



Regional Economic Indicators

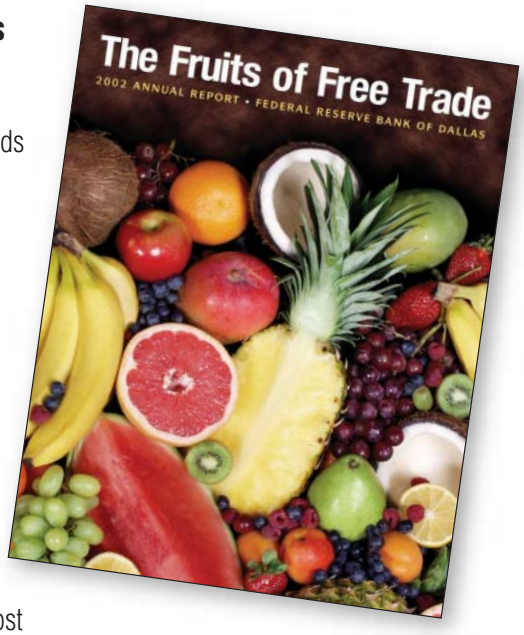
	Texas Leading Index	TIPI† total	TEXAS EMPLOYMENT* Mining	Construction	Manufacturing	Government	Private service-producing	TOTAL NONFARM EMPLOYMENT* Texas	Louisiana	New Mexico
3/03	112.1	125.9	139.7	574.9	928.0	1,646.6	6,145.4	9,436.3	—	—
2/03	112.5	125.8	139.6	573.2	928.7	1,642.3	6,141.4	9,426.4	1,894.8	775.4
1/03	113.5	124.9	140.0	574.2	930.5	1,639.3	6,146.0	9,431.0	1,903.2	773.2
12/02	112.5	124.8	140.4	571.1	929.9	1,637.8	6,137.3	9,420.2	1,898.4	772.0
11/02	112.7	124.2	141.4	569.8	934.7	1,643.3	6,143.7	9,436.3	1,896.9	770.6
10/02	112.0	124.2	142.1	566.8	936.8	1,638.5	6,144.3	9,431.7	1,895.8	766.4
9/02	112.1	125.3	142.1	566.7	940.3	1,628.4	6,138.6	9,419.3	1,899.2	766.4
8/02	113.8	125.1	142.1	568.3	944.1	1,625.0	6,136.4	9,418.8	1,901.1	767.1
7/02	113.3	125.3	142.3	567.8	948.1	1,622.3	6,130.6	9,413.4	1,898.3	767.8
6/02	115.5	124.9	143.7	570.5	950.5	1,623.4	6,131.8	9,421.9	1,899.8	764.3
5/02	115.8	125.0	144.5	572.7	954.7	1,622.2	6,147.4	9,443.1	1,899.7	764.5
4/02	115.9	124.5	144.5	571.1	958.9	1,618.2	6,139.0	9,432.7	1,901.5	763.3

* In thousands. † Texas Industrial Production Index.

For more information on employment data, see "Reassessing Texas Employment Growth" (*Southwest Economy*, July/August 1993). For TIPI, see "The Texas Industrial Production Index" (Dallas Fed *Economic Review*, November 1989). For the Texas Leading Index and its components, see "The Texas Index of Leading Indicators: A Revision and Further Evaluation" (Dallas Fed *Economic Review*, July 1990). Online economic data and articles are available on the Dallas Fed's Internet web site, www.dallasfed.org.

The Fruits of Free Trade

Federal Reserve Bank of Dallas 2002 Annual Report



The key to America's high living standards is specialization and trade, according to the Dallas Fed's 2002 annual report essay. Consumers benefit from foreign trade by having a larger selection of goods to choose from at lower prices. Protectionism harms consumers by restricting competition, raising prices and limiting choice.

Free trade allows countries to specialize in the goods they produce most efficiently: *Do what you do best. Trade for the rest.* The essay points out that nations open to the world economy prosper, while those that hide behind trade barriers do not. International trade and investment are essential components of national prosperity.

You can find the 2002 annual report on the Dallas Fed web site, www.dallasfed.org. To order a copy by phone, call the Dallas Fed's publications service desk at 214-922-5254 or 800-333-4460, ext. 5254.

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