



SILICON PRAIRIE

How High Tech Is Redefining Texas' Economy

THE HISTORY OF Texas lies in cattle and oil. But increasingly, the future of the state is becoming linked with the ever-evolving high-tech industry. Texas is home to firms such as Dell Computer, Texas Instruments and Compaq Computer, among others. In addition to these homegrown high-tech companies, a number of out-of-state firms that produce high-tech equipment and services have already established themselves in Texas or are planning to do so. For instance, California-based Intel, the country's largest maker of computer chips, recently announced that it will build a \$1.3 billion plant in Fort Worth; Motorola, based in Schaumburg, Illinois, is Austin's largest private employer; and Nortel, based in Toronto, employs 6,500 workers in Richardson. Why is Texas so attractive to high-tech firms? What does the expansion of high tech mean for the state's economy and future growth?

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The High-Tech Wave Is a National Trend

Nationally, high tech has become an important segment of the economy, employing 9.1 million workers.¹ In 1994, the production of computers and electronic and telecommunications equipment

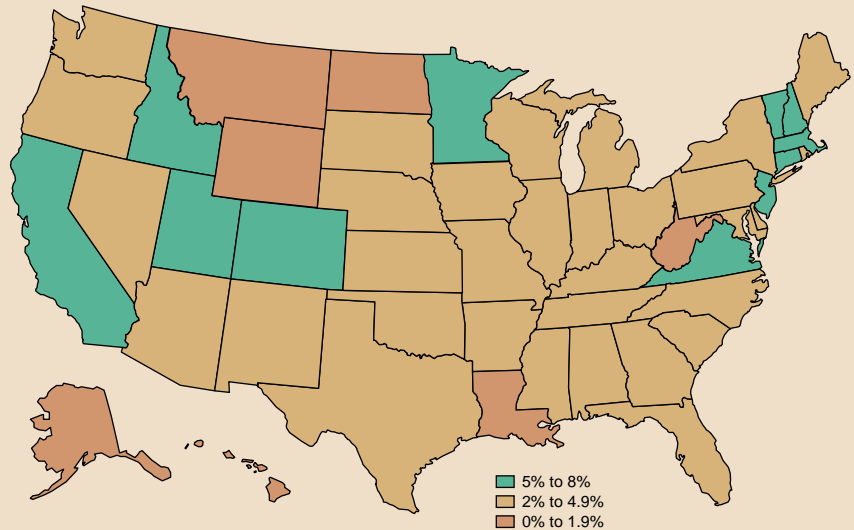
accounted for roughly 6.2 percent of the country's total output (measured in gross domestic product), up from 4.8 percent in 1990. By comparison, motor vehicle output accounted for only 1.1 percent of U.S. output in 1994. Moreover, during the current expansion, the high-tech sector has increasingly contributed to the growth of the national economy. For instance, business spending on computers contributed roughly 36 percent to growth in gross domestic product last year. By comparison, contributions from the housing and automobile industries, traditional drivers of the economy, were -1 and 9 percent, respectively. The high-tech sector is expected to continue expanding into the next century. In-Stat, a company that provides information to the electronics industry, forecasts 5.6 percent growth in worldwide semiconductor sales this year and 31 percent growth by 2001. The forecast is based on expectations of strong growth in demand from end-use markets, including consumer products, communications products and computers.

Texas Has Been a Major Player (And Beneficiary) In the High-Tech Boom

Historically, Texas has been known for its cowboys, oil barons and real estate tycoons. But in recent years, the state's image has changed. Texas is now regarded as home to computer wizards and technical engineers. Although Texas still has more oil and gas rigs and farmland than any other state, it now ranks second (behind California) in computer- and telecommunications-related high-tech employment, with roughly 290,000 workers.²

While increasing rapidly, the high-tech industry in Texas is still only slightly larger in the state than it is nationwide. Chart 1 shows this by ranking U.S. states in terms of the share of high-tech employment to total state employment. However, Texas has benefited significantly from the high-tech expansion at the expense of some of its northern counterparts. Of the five

Chart 1
High-Tech Employment Shares, 1995



states with the highest number of high-tech jobs in 1995 (California, New York, Texas, Illinois and New Jersey), Texas and Illinois have seen increases in high-tech employment during the 1990s, while high-tech jobs have declined in California, New York and New Jersey. High-tech employment has grown more than twice as fast in Texas as it has in the nation during the 1990s.³

High-Tech Growth— But Also Vulnerability

Much of the expansion of Texas' high-tech sector is due to growth in four specific industries: computers, telecommunications equipment and services, computer chips (or semiconductors) and computer-related services.⁴ As Chart 2 shows, each of these industries has a larger presence (in terms of total employment) in Texas than in the nation as a whole. While many states would be hurt by a downturn in any one of these four industries, Texas could be affected slightly more because of the prominence of these industries in the state's economy.

For example, Texas has a large share of semiconductor employment. Semiconductor firms account for 12 percent of the state's high-tech employment,

compared with 5 percent nationally. Last year, a downturn in the semiconductor industry had a noticeable impact on the Texas economy. The downturn was primarily due to a global oversupply of dynamic random access memory chips (DRAM)—which account for about 33 percent of the total semiconductor market. The oversupply resulted from slower personal computer demand and the stockpiling of memory chips, as firms expected a huge memory upgrade to Windows 95 that never materialized. In addition, a vast amount of new DRAM fabrication capacity came on-line. As a result, from November 1995 to June 1996, the average DRAM sales price fell 60.2 percent and unit shipments fell 7.6 percent, according to In-Stat.

Texas firms responded to the semiconductor industry downturn with layoffs, hiring freezes and plant construction slowdowns. This put a damper on the state's economic growth last year, with high-tech manufacturing employment growing only 3 percent, following 7.8 percent growth in 1995.⁵ Nevertheless, high-tech manufacturing still expanded at a faster pace than non-high-tech manufacturing industries. Had other high-tech sectors suffered a downturn as well, Texas could have fared much worse. But growth in computers, computer services and telecommunications helped keep over-

all high-tech growth positive in Texas in 1996.

This year, the semiconductor industry has turned around and firms are hiring again. Furthermore, the industry will soon play an even larger role in the state's economy. For example, Samsung will begin staffing its \$1.3 billion facility later this year, and Intel expects to eventually employ as many as 5,000 employees at its future plant in Fort Worth, which is slated to start construction this summer.

What's So Special About Texas?

Texas owes its high-tech presence to many factors, one of which is the state's pioneering history in high tech. Texas Instruments has been around since the 1950s, and Electronic Data Systems (EDS) was among the first firms to offer data processing services. In addition, the state's defense giants made innovations in communications technology that are now being used in the private sector, and NASA's presence in Houston spurred the creation of many high-tech companies that provide the space center with services and equipment. Further, Texas has long been a leader in the research- and development-intensive oil and gas, chemicals and petroleum refining industries.

More recently, Texas has gained new players in its high-tech sector. Some of the larger firms with operations or headquarters in Texas include Compaq Computer, Cyrix, DSC Communications, Ericsson, Nokia, MCI, Samsung, PrimeCo and Applied Materials. But in

addition to these high-tech giants, scores of smaller companies have also expanded in Texas or made the state their home. Why are high-tech companies so taken with the Lone Star State?

There are many reasons that high-tech firms, as well as other types of businesses, find Texas an attractive place for relocation, expansion or start up. These factors include the state's central location and proximity to Mexico, easy access to commuter and cargo transportation, a relatively low cost of living and relatively low real estate prices, access to colleges and universities, and the state's business climate.

High-tech firms have also been attracted to Texas because other high-tech firms are already doing business there. Industry concentration, or clustering, benefits firms in several ways. Clustering creates a pooled labor market for workers with industry-specific skills. Both firms and workers benefit from a pooled labor market—the firm finds workers with special skills and the worker benefits from increased job availability and opportunity. Clustering also benefits firms by increasing the availability of industry suppliers and services, which may make an industry more efficient. Finally, because information flows more easily locally than over longer distances, industry clusters generate technological spillovers—or benefits that result from knowledge sharing between nearby firms.⁶ A good example of an industrial cluster at work is the Richardson–Plano “telecom corridor,” which is home to more than 400 high-tech firms, including some of the world's largest telecommuni-

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Chart 2
Components of High-Tech Employment, 1995

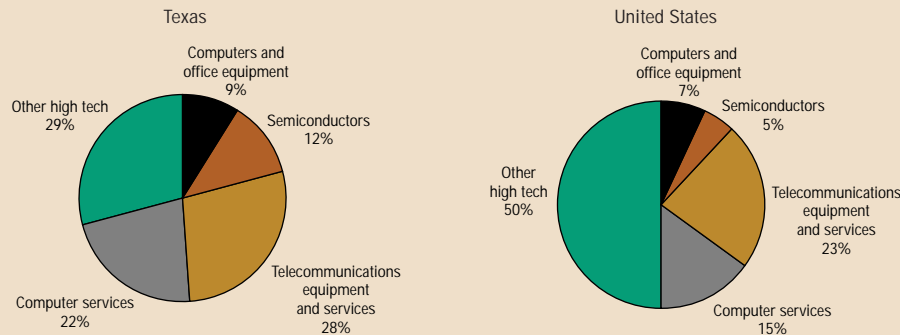


Table 1 Survey Results

Factor in location decision	Average score*
Trained/educated workforce	1.33
Business environment	1.73
Cost of living	1.87
Close proximity to colleges or universities	1.93
Proximity to centers of transportation	2.03
Tax incentives	2.13
Location of suppliers or customers	2.27
Climate	2.93

* Scores are based on the following categories: (1) very important, (2) moderately important, (3) somewhat important, and (4) not important.

cation and electronic equipment manufacturers, as well as many start-up companies that provide computer services and equipment to the industry.

The availability of skilled labor in Texas is also an important factor in high-tech firms' location decisions and one of the reasons high-tech firms have clustered in certain areas of the state. In an informal survey of several high-tech companies with operations in Texas, the skilled labor pool was ranked (on average) as the most important factor in the firms' decisions to operate there (*Table 1*). Because high-tech companies are expanding in Texas, technically skilled workers from other regions are attracted to the state, thereby expanding the state's skilled labor pool. In addition, high-tech companies are attracted to Texas because technical schools are available to train electronic technicians, and universities provide graduate programs in engineering. Synergies between high-tech companies and universities have also fostered growth in the industry and the skilled labor pool. For example, the Austin Technology Incubator at the University of Texas in Austin has helped small start-up companies gain their footing. Rochelle Communications Inc. and Metrowerks Inc. are two nationally recognized graduates of the Austin Technology Incubator.

To continue as a major player in the high-tech expansion, Texas must strive to increase its skilled labor force, either through migration or education. Many high-tech companies have joined forces with technical schools to offer a number of two- and four-year degrees

in high-tech fields.⁷ In addition, employee satisfaction is becoming an important standard for high-tech companies that hope to attract and retain highly skilled workers. For example, Nortel in Richardson allows workers to telecommute from home and has a department that monitors employee and customer satisfaction.

As *Table 1* indicates, other factors that rank near the top in high-tech firms' location decisions include the state's business climate and a relatively low cost of living. A state's business

climate includes tax burdens—a category where Texas ranks relatively low. In addition, utilities, home prices, and office and apartment rents are relatively lower in Texas than in other parts of the country, making workers and companies better off here than in more expensive states. For instance, a house that costs \$500,000 in Palo Alto, California, could be found in Austin for \$150,000.⁸

There was no consensus among survey respondents on specific factors restraining high-tech expansion in Texas, but concerns were voiced about tight labor markets for skilled workers and rising real estate prices. Furthermore, several surveyed firms were concerned about proposed changes to the state's tax structure.⁹ (See the box entitled "Venture Capital in Texas.")

Indirect Effects of the High-Tech Boom

The high-tech expansion has had an indirect impact on the state's economy, by keeping other industries humming. Perhaps one of the best examples of

Venture Capital in Texas

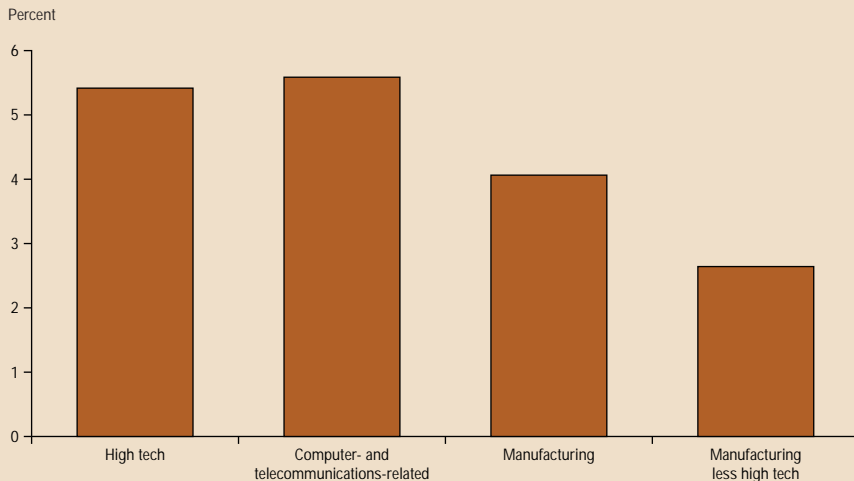
Venture capital is not cited as one of the major reasons companies locate in Texas, yet it is rising in importance. According to a Price Waterhouse survey, which divides the nation into regions, Texas ranked fifth in the amount of venture capital invested in 1996. Texas received 7 percent of the total venture capital invested last year, while Silicon Valley received 24.1 percent and New England 13.4 percent. Nevertheless, Texas' high-tech firms still benefited from growth in venture capital investment in the state. Between 1995 and 1996, the amount of venture capital invested in Texas grew 28.4 percent, slightly faster than the nation's 25.8 percent growth.¹ Of the 1996 venture capital deals in Texas, 57 percent of the deals and 42 percent of the dollars invested were in "high-tech" firms.²

In recent years, Texas, particularly Austin, has been successful in attracting more venture capital companies to locate offices in the state. Since 1992, nine venture capital companies have opened offices in Austin. In 1996, Silicon Valley Bank and Imperial Bank, which both act like venture capital companies in their lending practices to high-tech companies, opened offices in Austin. While these companies lend to all types of firms, their presence in Austin is primarily the result of the growing number of high-tech start-ups in the area.

¹ There is no direct comparison among regions because the regional definitions changed from 1995 to 1996 in the survey. "Topline Results Full Year 1996," *Price Waterhouse National Venture Capital Survey*, 1997.

² Price Waterhouse's definition of high tech differs from ours. The firm's includes: biotechnology, communications, computers and peripherals, electronics and instrumentation, environmental, medical instruments and devices, semiconductors and equipment, and software and information.

Chart 3
Texas Average Annual Wage Growth Per Employee, 1990–95



the indirect effects is the impact on the state's construction and real estate industries.

Construction employment has risen strongly during the 1990s, as single-family home, apartment and even non-residential construction began to pick up. According to business contacts, much of the demand for properties has come from expanding high-tech firms and their employees. In addition, demand for office space began to increase, causing office vacancy rates to fall in several areas of the state, most notably in areas with a large concentration of high-tech industries. In Austin, for example, the office vacancy rate is at a 16-year low.¹⁰ The construction industry has also benefited directly from high-tech plant expansions; about 3,000 construction workers will help build the Intel plant this summer.

Service industries, such as retail trade, have also benefited indirectly from the high-tech expansion, mainly due to growth in personal income. On average, wages in the high-tech industry have been growing faster than those in other industries (*Chart 3*), and high-tech workers in Texas earn 36 percent more than workers in non-high-tech manufacturing.¹¹ A study by the North Texas Commission suggests that relatively higher wages in high-tech industries makes these industries extremely important to a region's economic activity. The study reports that

in 1995, the \$6.2 billion in payroll received by Dallas/Fort Worth communications industry workers generated an additional \$1.8 billion in indirect earnings, making the industry's contribution to regional personal income more important than the contribution of the slightly larger health care and tourism industries.¹²

Summary

In recent years, Texas has become a state known not only for oil and gas production and cattle ranching, but also for its concentration of high-tech companies. The high-tech sector has been one of the fastest-growing segments of the Texas economy in the 1990s, and its growth has benefited the state's economy indirectly by keeping other industries humming. The state's unique advantages should help it remain a beneficiary of the high-tech expansion. Synergies created by an already strong base of high-tech companies and access to colleges, universities and transportation should continue to attract firms to the state. In addition, its low cost of doing business should continue to make the state attractive to all types of businesses, including high tech. Because Texas' skilled labor pool seems to be one of the state's most important resources, educational excellence should be an ongoing goal for Texas. An ex-

panding pool of skilled workers will help keep Texas an important player in the knowledge-based economy of the future.

— D'Ann M. Petersen
 Michelle Burchfiel

Notes

The authors thank Mine Yücel, Lori Taylor, Mark Wynne and Harvey Rosenblum for helpful comments and suggestions. The authors also thank Morry Marshall of In-Stat for his forecast of semiconductor sales.

- ¹ Mandel, Michael J., "Just How Big Is High Tech?" *Business Week*, March 31, 1997, p. 68.
- ² Computer- and telecommunications-related employment is comprised of SIC 357, 361, 365, 366, 367, 369, 481 and 737. Based on our definition of high tech (which includes computer- and telecommunications-related employment and pharmaceuticals and drugs; electrical industrial apparatus manufacturing; medical, measuring, and controlling instruments manufacturing; photographic equipment and supplies manufacturing; and research and development employment), Texas ranks third in the number of high-tech jobs, behind California and New York.
- ³ Our employment and wage data were provided by the Bureau of Labor Statistics. The data are establishment-based rather than occupation-based. Thus, the data exclude high-tech workers in non-high-tech industries, such as a computer programmer working at the Dallas Fed. Because of this classification of workers, our data underestimate the "total" number of high-tech jobs.
- ⁴ For more detailed information on the growth of these industries, see D'Ann Petersen and Michelle Thomas (Burchfiel), "From Crude Oil to Computer Chips: How Technology Is Changing the Texas Economy," Federal Reserve Bank of Dallas *Southwest Economy*, Issue 6, 1995.
- ⁵ For further discussion see Sheila Dolmas and Mine Yücel, "The Texas Economy: An Overview of '96 and Outlook for '97," Federal Reserve Bank of Dallas *Southwest Economy*, Issue 1, January/February 1997.
- ⁶ For a thorough explanation of why firms cluster in certain locations, see Paul Krugman (1991) *Geography and Trade*, (Cambridge, Mass.: MIT Press).
- ⁷ See the North Texas Commission's "The Communications/Information Industry in Dallas/Fort Worth," November 1996, for a review of educational programs related to the telecommunications industry in Dallas and Fort Worth.
- ⁸ "A Survey of Silicon Valley," *The Economist*, March 29, 1997.
- ⁹ For examples of how businesses and households would fare under a proposed tax plan, see Michael Totty's article, "Under Tax Plan, Homeowners Get a Break—But Business Takes a Hit," *Wall Street Journal*, March 19, 1997, p. T1.
- ¹⁰ Source: CB Commercial Real Estate Service.
- ¹¹ Our data cover through the year 1995. This is the most recent data available at the level of detail used in our definition of high tech.
- ¹² See "The Communications/Information Industry in Dallas/Fort Worth," North Texas Commission, November 1996.

WHY SOCIAL SECURITY SHOULD BE PRIVATIZED

*A Commentary from Dallas Fed
Research Director Harvey Rosenblum*



FOR MORE THAN a decade, the Social Security system has been the “third rail” of American politics: touch it and you die! Over the last year or so, the conventional wisdom about *not* dealing with the issue of Social Security has shifted dramatically. It is as though someone sneaked into the train yard in the middle of the night and switched the rails when the public was asleep. Now hardly a day goes by without some mention in the media of the problems with the Social Security system, along with numerous proposals to “fix” it.

The reasons for the shift in attitude are simple: the Social Security system is in trouble and everybody knows it. Consequently, a number of reforms are being given serious consideration, including several that would have been considered radical just a few years ago. This article reviews some of the problems with the current Social Security system and discusses a few of the reforms that are worthy of consideration. The conclusion of the article, which might have seemed extreme two years ago, but is mainstream today, is seemingly an oxymoron: we need a *privatized* Social Security system.

Historical Overview

Social Security was created as part of the New Deal in 1935. It was intended to provide social insurance for the elderly and disabled. The program was designed to pay benefits to all households who contributed but was not

intended to replace private savings and employer pensions.

Over the past 60 years, the program has expanded considerably. It now covers roughly 97 percent of the workforce. During this period, the rate of payroll taxation that funds Social Security has risen dramatically, as shown in Chart 1. Workers and employers are each currently taxed 6.2 percent—a total of 12.4 percent—on the first \$65,400 earned. The employee and employer each pay an additional 1.45 percent tax on all wages that goes to Medicare. Workers’ salaries, in the absence of these two taxes, could be up to 16.6 percent higher.¹ This likely contributes to the perception that middle-class incomes have been stagnating. In contrast, the payroll tax reduced take-home pay by only about 2 percent in 1950.

The growth in the size of the Social Security program relative to GDP has been even more dramatic, having grown from less than one-half of 1 percent of GDP in 1950 to over 4 percent today. By 2020 it is projected to transfer more than 6 percent of GDP from workers to beneficiaries.

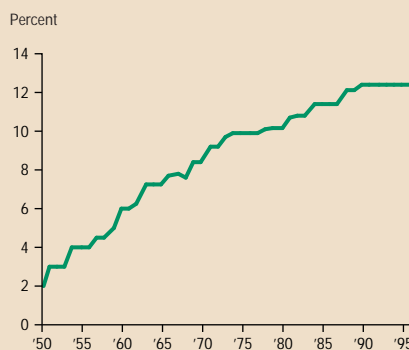
By some measures, the program has been quite successful. For example, the poverty rate among the elderly, which had been twice that of the population as a whole, has been brought down to the same rate as that of other adult age groups.

Is There a Crisis?

Most people currently receiving their monthly Social Security benefits would say, “Crisis. What crisis?” This will be the prevailing view as long as the money keeps rolling in. However, projections indicate that if nothing changes, the program will be bankrupt in 35 years or less.

The current program is a “pay as you go” system in which the bulk of the money we pay in Social Security taxes is immediately paid out to current retirees and other beneficiaries. In recognition of the problems it faces when baby boomers retire, the Social Security Administration has been saving the difference between revenues and payments in a so-called trust fund. However, not only has there been an insufficient amount set aside to fund future payouts, but the funds have been invested in safe Treasury securities that

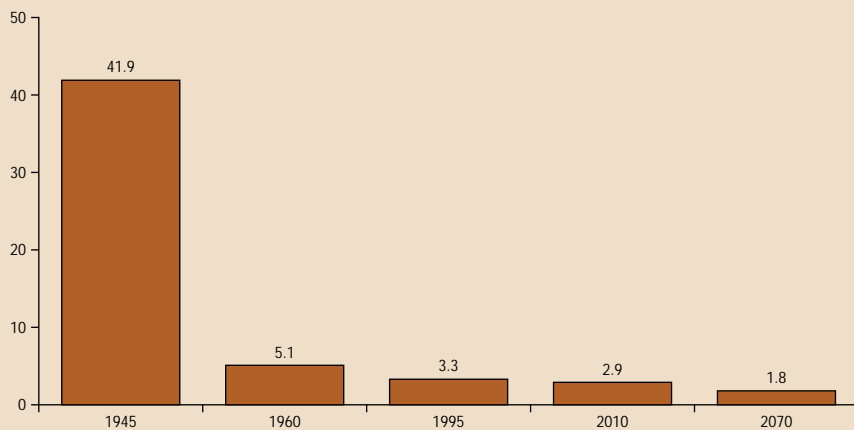
Chart 1
The Social Security Tax Rate Has Risen Six-Fold Since 1950



SOURCE: Social Security Administration.

Chart 2 The Number of Workers Per Beneficiary Has Plummeted

Number of workers



SOURCE: Advisory Council on Social Security, 1994–95.

Due to the increase in life expectancy, more people are receiving Social Security benefits for longer periods of time.

pay very low inflation-adjusted returns. Were it a private-sector pension fund, the federal government would likely label Social Security “an underfunded pension liability.”

Sources of the Crisis

Given the rate at which Social Security taxes have been increasing, it is natural to wonder why we face a crisis. The two root causes are demographics and benefit escalation.

The first problem the program faces is the changing age mix of the population. The number of workers per beneficiary has been falling and will

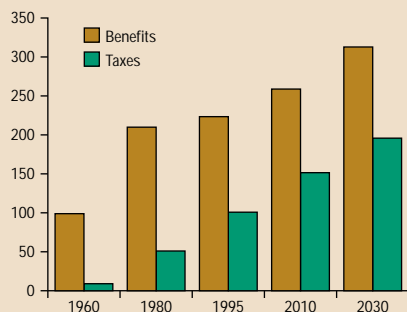
continue to fall for the foreseeable future. There were 42 workers contributing per beneficiary in the early days. The worker-to-beneficiary ratio has dropped to just over 3:1 today and is projected to fall below 2:1 by 2070 (Chart 2). The underlying causes include our declining birth rate, slowing rate of immigration and rising life expectancy.

Due to the increase in life expectancy, more people are receiving Social Security benefits for longer periods of time. Life expectancy has risen steadily, while the average retirement age has fallen. One reason for this trend is that we’ve become a wealthier society. The availability of Social Security benefits,

Chart 3 Benefits Outstrip Taxes

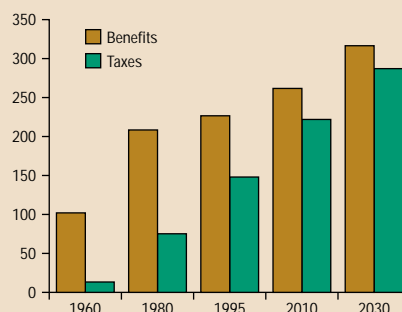
One-earner couples

Thousands of constant 1993 dollars



Two-earner couples

Thousands of constant 1993 dollars



SOURCE: Old Age Survivors and Disability Insurance (OASDI) Board of Trustees report, 1993.

Social Security and Private Savings

Most older households do not have substantial retirement savings, making Social Security benefits the primary source of income for the majority of today's retirees. Median net worth of households aged 65–74 was slightly over \$100,000 in 1995, mostly composed of home equity, according to the Federal Reserve's Survey of Consumer Finances. Only 35 percent of households aged 65–74 and less than one-fifth of households aged 75 and older had any savings in retirement accounts in 1995.¹ The median value of those retirement accounts was less than \$30,000 for both age groups. About 40 percent of retirees have employer-provided pensions.

Of course, the promise of Social Security may be a cause of the low level of retirement savings among today's elderly. Some economists have concluded that the availability of Social Security benefits has reduced or offset private savings, particularly retirement savings.² Harvard economist Martin Feldstein concluded that the existing Social Security wealth reduces total private savings by almost 60 percent. The low level of private savings also slows GDP growth, Feldstein estimated.

Younger generations appear to be saving more for retirement, perhaps because of uncertainty about future Social Security benefits. About one-half of households aged 35–64 have retirement accounts, according to the 1995 Survey of Consumer Finances. Still, personal savings as a fraction of GDP in the United States is well below historical averages and international standards; personal savings were only 3.6 percent of GDP in 1996.

Notes

¹ A. B. Kennickell, M. Starr-McCluer and A. E. Sunden, "Family Finances in the U.S.: Recent Evidence from the Survey of Consumer Finances," *Federal Reserve Bulletin* 83, January 1997, pp. 1–24. Retirement accounts include Keogh accounts, individual retirement accounts and 401(k) accounts.

² E. T. Gullason, B. R. Kolluri and M. J. Panik, "Social Security and Household Wealth Accumulation: Refined Microeconomic Evidence," *Review of Economics and Statistics* 93, August 1995, pp. 548–51. See, in particular, the references therein.

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however, has also driven the decline in the retirement age.

The second major cause of the crisis is the fact that almost all current beneficiaries receive more in benefits than they contributed to the system, even after including the interest earned on their contributions. The first recipient of Social Security, Ida Mae Fuller, paid \$22 in taxes and received \$20,000 in benefits. Benefits are more in line with contributions now, but most current retirees receive more than the present value of their contributions. Chart 3 shows expected total benefits and taxes for the average retired one-earner and two-earner couple. If the worker in a one-earner couple retired in 1980, that couple could expect to receive more than four times the worker's total contributions, including interest.

The right-hand panel of Chart 3 shows benefits and taxes for the average two-earner couple. Again, the couple receives more than they contributed. Over time, benefits are getting closer to contributions, but benefits still exceed contributions.

These two graphs also illustrate one of the big inequities of the current program: it transfers money from single earners and two-earner couples to one-earner couples. The gap between taxes and benefits is much larger for one-earner couples than for two-earner couples.²

The Current Program Distorts Incentives

A discussion of the exact reasons Social Security is underfunded misses the bigger picture: the program distorts the incentives to work and to save. As Social Security coverage has increased, the retirement age has fallen. In addition, the program discourages recipients from continuing to work because benefits are reduced by up to 50 cents for each dollar in earnings. The distorted work incentives extend to younger persons, too. People may work less because the Social Security tax lowers their take-home pay.

The Social Security program may also distort the incentives to save. Some economists believe that having Social Security is one cause of the low savings rate in the United States (see the box entitled “Social Security and Private Savings”). In recent years, Americans have saved less than 4 percent of GDP; the savings rate in Germany is over 8 percent. In Japan, it is over 20 percent. Harvard economist Martin Feldstein believes that Social Security reduces private saving by 60 percent.³

Reform Criteria

Four overarching principles should guide Social Security reform. First, we need a system that motivates people to work and to save. Second, reform should more closely align benefits with contributions. Third, the long-run solvency of the system needs to be guaranteed. And last, we need a Social Security system that, unlike our current one, enhances our ability to achieve our nation’s macroeconomic goals, such as economic growth and rising standards of living.

Band-Aid Proposals To Save Social Security

Several reform proposals, ranging from increasing the tax rate to switching to a privatized program, have been made. Each of these has advantages and disadvantages (see the box entitled “Summary of Proposals from the Advisory Council on Social Security”).

A simple, and perhaps simplistic, way to cover the expected shortfall between benefit payout and Social Security tax collections is to raise the payroll tax. Baseline projections indicate that the tax would have to be raised by 2.2 percentage points to bring the system into balance for the next 75 years. More pessimistic scenarios, which are likely to prove more accurate, suggest that the tax would have to be raised by as much as 6 percentage points. Taxing our way out of this problem would clearly be very costly and, more-

over, is not the correct solution from an economic standpoint anyway.

Another frequently heard recommendation is to revise the consumer price index (CPI). Cost-of-living adjustments to Social Security benefits are based on the CPI. Last December, the Boskin Commission concluded that the CPI was overvalued annually by about 1.1 percentage points. Over the long run, correcting the CPI would better align benefits with contributions and help Social Security remain solvent. Correcting the CPI is an important issue, but it should be done irrespective of Social Security reform.

Some economists and politicians have proposed changing the investment direction of the Social Security trust fund, which invests only in government securities. Investing some of the money in the stock market sounds attractive because stocks have historically outperformed returns on Treasury securities. Stock market returns have exceeded those on Treasury securities by more than 5 percentage points per year over the last few decades. Investing in both stocks and bonds is also good portfolio management. But is this something the *government* should do with Social Security?

Having the government put the trust fund in stocks raises several thorny issues. The year-to-year risk—that is, volatility—of stocks is considerably greater than that of Treasury bills. Although the higher return counterbalances the greater risk in the long run, Social Security might be underfunded in any given year if the market does not perform well over the short or intermediate term. Many of those who advocate investing Social Security contributions in the stock market presume that average past returns will also be realized in the future. Unfortunately, that is not how the stock market works.

There are more subtle disadvantages as well. Federal Reserve Chairman Alan Greenspan recently pointed out that “with the Social Security trust funds no longer investing all of their surplus in U.S. Treasuries, the federal debt held by the public would rise, presumably placing downward pressure on bond prices.” Moving billions of dollars from

We need a Social Security system that, unlike our current one, enhances our ability to achieve our nation’s macroeconomic goals, such as economic growth and rising standards of living.

A system of individual accounts would restore our faith that we can provide for ourselves rather than having to look to government to take care of us.

government securities to the stock market might raise interest rates and thereby depress stock prices.

In addition, the government would become the single largest shareholder in many of the nation's largest companies. The temptation and pressure to use Social Security investments for social engineering by prohibiting investment in particular companies that engage in politically incorrect activities could become irresistible. This is not to deny that society would be better off with at least a sizable portion of its savings invested in high-yield equities, as opposed to 100 percent invested in low-yield government securities. But government, perhaps, should not be the guardian of those investments.

Privatizing Social Security

Another reform proposal would create mandatory personal savings accounts. This reform is often called privatization or partial privatization because it would replace today's pay-as-you-go system with a system of individual retirement accounts. This proposal would do more to satisfy the four reform criteria enumerated previously than would just raising taxes, revising the CPI or investing in the stock market. Before examining the pros and cons of per-

sonal accounts, an explanation of how they might work is necessary.

Individuals would still be taxed on their earnings. However, a portion of those taxes would become privatized as the money would be split between two programs. The first portion would be contributed to the social insurance fund. This fund would help the elderly maintain a minimum standard of living, as was the original intent of our social insurance program. This fund would also provide a small monthly benefit to all contributors. Then, privatization would be implemented as the remainder of an individual's taxes would go into a personal account from which a person could withdraw funds at retirement. Individuals could invest their accounts in "approved" funds, including bank deposits and bond and stock mutual funds. Such a program would have to be phased in over time, and current recipients and those about to retire would likely continue to receive benefits under the existing system.

Creating personal accounts offers several advantages over the current system. First, it better aligns benefits and contributions. For most people, the majority of their retirement funds would come from their individual accounts, not from the social insurance fund. Better aligning benefits and contributions would improve the current pro-

Summary of Proposals from the Advisory Council on Social Security

In January, a federal advisory panel on Social Security put forth three comprehensive proposals for reforming the system. The 13-member council, formed in 1994, was asked to make recommendations to ensure the long-run solvency of Social Security. Members were drawn from academia, labor unions and private industry.

The *maintain benefits* plan recommends several ways to increase Social Security revenues to allow the current program to continue. First, the proposal would increase the payroll tax rate from 12.4 to 14 percent over 50 years. The plan also recommends investing up to 40 percent of the Social Security trust fund in private equities. A politically appointed panel would oversee the selection of index funds; equity investments would remain under government ownership.

The *individual accounts* plan recommends increasing the payroll tax by 1.6 percentage points and allocating the additional revenues to individual accounts. Individual accounts would be converted to annuities when holders retire. Regular Social Security benefits also would be paid. The individual accounts would be maintained by the government, but individuals would choose among several investment options.

Under the *personal security accounts* proposal, the basis of Social Security would shift toward a system of individual accounts. Five percentage points of the current payroll tax would be allocated to individual accounts, which would be supplemented by a flat benefit equivalent to \$410 in 1996. The individual accounts would be maintained by individuals, not the government, and subject to investment restrictions. The program would be phased in over time.

gram's solvency. In addition, by making the accumulated value in one's personal Social Security account bequeathable, personal accounts would likely reduce the incentive to retire too early. A personal account program would be even more efficient if it ended the reduction of benefits for individuals who continue to work while receiving a payout from their account. The program would be self-financing in the long run but would involve transition costs to get to that stage.

Creating personal accounts would motivate people to work and save more, whereas our current system offers disincentives to both. It would also guarantee the long-run solvency of the system because most people would receive only what they had put into the system, plus investment earnings; even so, most future retirees would receive considerably more than they could hope to under the current program.⁴ And last, personal accounts would help achieve our nation's broad macroeconomic goals. The current system depresses saving, capital formation and investment, thereby reducing productivity gains, lowering our standard of living and weakening economic growth. Recent estimates by Martin Feldstein suggest that GDP levels have been reduced yearly by 5 to 6 percent as a result of the disincentives and distortions of Social Security's payroll tax system. Creating personal accounts would boost both the saving rate and GDP.

Setting up personal accounts would increase costs in the short run. Current contributions must cover benefits to today's retirees and be allocated to the individual accounts of future retirees. Even under the existing system, however, Social Security's unfunded promises to current workers are estimated at \$8 trillion to \$12 trillion. Today's benefit levels simply cannot be maintained with today's tax rates. A boost in the payroll tax and/or other taxes, or a reduction in benefits, is required. One estimate is that the payroll tax could be boosted by as little as 1.5 percentage points for 25 years to cover the transition costs to a privatized system, after which, payroll taxes could decline well below current rates.⁵

Social Security Should Be Reformed

The nation has to make important choices about the future of Social Security. Minor modifications to the existing system will not work. The retirement portion of the system should be privatized through the creation of individual accounts that can be invested in a range of approved assets, with individuals maintaining control over their investments. Such a system would link the mandatory contributions of workers to their subsequent benefits. It would increase the nation's capital accumulation and raise future living standards. By reducing the insolvency problem of the current system, a system of individual accounts would restore our faith that we can provide for ourselves rather than having to look to government to take care of us.

Creating personal accounts would motivate people to work and save more, whereas our current system offers disincentives to both.

Notes

The author thanks Carrie L. Kelleher for research assistance in preparing this article.

- ¹ Take the case of a worker whose salary is \$100 per week. After a deduction of \$6.20 for Social Security and \$1.45 for Medicare, the worker takes home \$92.35 before other taxes and deductions. The employer incurs a salary cost of \$107.65—that is, \$100 salary plus \$7.65 employer-paid Social Security and Medicare payroll tax. If the worker received the full \$107.65, it would be like getting a raise of 16.6 percent. This example omits income tax effects.
- ² Social Security also redistributes benefits away from groups with shorter life expectancy, such as black males, to those with comparatively long life expectancy, such as white females.
- ³ See Martin Feldstein, "The Missing Piece in Policy Analysis: Social Security Reform," *American Economic Review Papers and Proceedings* 86, May 1996, pp. 1–14.
- ⁴ Chile began allowing workers to choose individual, privately managed accounts in 1981. Payments into the privatized system are estimated to be about one-third less than under the old system, while benefits are projected to be greater by more than one-third.
- ⁵ See Martin Feldstein and Andrew Samwick, "The Transition Path in Social Security," NBER Working Paper 5761 (September 1996).

The EMU: A Groundbreaking Monetary Experiment

ON JANUARY 1, 1999, the European Union (EU) is scheduled to introduce the euro, a first-of-its-kind currency designed to help blend 15 politically divergent countries into a unified economic area. The euro caps off the economic and monetary union (EMU), which requires that each country give up its national monetary policy and abide by the policies of a common central bank.

Never before have politically independent nations with histories of monetary independence and long-standing central banks given up that independence to form a common central bank and adopt a single currency. If successful, the EMU will be the biggest event in the world financial system since the Bretton Woods system of fixed exchange rates broke down in the early 1970s.

Many analysts remain skeptical about the EMU's potential for success. They believe the euro will be unpopular and the central bank will find it difficult to be tough on inflation without the benefit of a unified fiscal policy.

Although this historic union will not occur for nearly two years, preparations for the EMU are already greatly affecting the European economies. The outlook for the new currency's success and stability has also begun to impact financial markets.

Economic and Monetary Union

The euro will essentially link the currencies of participating countries with permanently fixed exchange rates. To increase the likelihood of the EMU's success, each country must meet strict monetary and fiscal criteria before joining. The economic strain on the EMU will be reduced if all the countries converge to roughly the same inflation and interest rates.¹ The countries also have to meet government debt and

budget deficit criteria.² The hope is that if EMU countries have fairly healthy balance sheets, markets will not expect political pressure to force the central bank to print money to pay down a country's debt.

Of the 15 current members of the European Union, only those that meet

Never before have politically independent nations with histories of monetary independence and long-standing central banks given up that independence to form a common central bank and adopt a single currency.

the monetary and fiscal criteria will be eligible to join the EMU. The decision of which countries qualify, based on 1997 economic data, will take place in early 1998. Most likely, eight countries will be eligible to join in 1999: Germany, France, Belgium, Luxembourg, the Netherlands, Finland, Austria and Ireland. Italy, Greece and Portugal have begun EMU campaigns and may be able to join as well. Although the United

Kingdom and Denmark will likely be eligible to join, it is not clear if those countries will participate in 1999.

The EMU and the Economy

The euro will effectively merge the Deutsche mark, the strongest European currency, with some weaker ones. For most countries, the newly formed European Central Bank will be much less likely to inflate because of political pressures than their current central banks. With a successful monetary union, these countries can achieve lower overall inflation and interest rates through a single coordinated policy. Already, the move to a single currency has motivated European countries to lower their inflation rates and get their fiscal policies in order.

If the move to a single currency is successful, it is expected to spur economic growth and stimulate export demand in Europe. The euro will make it cheaper and easier to transact business across Europe, reducing transactions costs and exchange rate risk. If the single currency generates more income and stability for Europe, it would also stimulate demand for U.S. goods.

On the downside, a lack of exchange rate flexibility and loss of national monetary policy may prolong regional economic downturns. A country cannot lower interest rates when it goes into a recession unless all the other countries agree that this is a good policy, perhaps prolonging a localized recession. For example, the fact that Texas could not lower interest rates when a collapse in oil prices sent its economy into recession in 1986 may have extended Texas' recession.

Several European countries have struggled with recessions during the push for a single currency, making convergence difficult. Their recessions have been blamed on the single-currency

Beyond the Border

push because governments have been tightening fiscal policy and companies have cut costs in anticipation of a more competitive single market.

The Euro and U.S. Financial Markets

The euro could prove a strong alternative to the U.S. dollar. Financial markets will conduct transactions in euros, and central banks will want to hold some of their reserves in this currency. Both transactions will reduce the number of dollars held, but it is unclear how much. How quickly the shift will occur is uncertain.

The EMU will create a broad bond market in which European governments and corporations will issue debt in euros. Roughly the size of the U.S. market, this will be the first alternative widely traded bond market available for issuers of debt. U.S. bond prices and interest rates will likely become more volatile as investors test the new market and then, perhaps, return to the U.S. market.

If the euro takes off as a strong currency, it may affect the dollar's role as a reserve currency for the rest of the world. The European Union represents a big market. It is likely that the world will want to hold more euros and fewer dollars for international transactions. If fewer countries hold dollars, then it will be a loss for the U.S. Treasury because foreign holdings of U.S. dollars are interest-free loans to the United States from the rest of the world. But if the euro is unstable, then the dollar is likely to be seen as a safe haven and international holdings of dollars will grow.

As the birth of the EMU nears, uncertainty about its impact has already sent ripples through financial markets. In recent weeks, France, Germany and Italy have indicated that they may not meet some of the criteria for a single currency. Signs that the introduction of the euro may be delayed have pushed the dollar down against the mark. Many investors would prefer to hold dollars when the union occurs but are choosing to jump back into Deutsche marks on signs of a delay.

Still, the euro may go forward as planned because vagueness in the language of the Maastricht Treaty, which sets forth the parameters for the EMU, suggests that countries failing to meet the criteria can join if they show evidence of "sufficiently diminishing" debt and budget deficits. Essentially, if the EU believes it is advantageous to the EMU for a country to join, it will be allowed in.

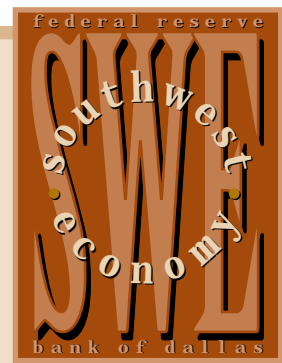
The EMU's impact on the world's financial system could remain uncertain until it becomes clear to investors that the monetary union has either succeeded or failed.

— Fiona Sigalla
David Gould

Notes

¹ To be eligible for convergence, the inflation rate cannot be more than 1.5 percentage points higher than the average of the three lowest-inflation countries, and long-term interest rates cannot be more than 2 percentage points higher than the average interest rate in the three lowest-inflation countries.

² The fiscal criteria require government debt to be less than 60 percent of GDP and the budget deficit to be less than 3 percent of GDP.



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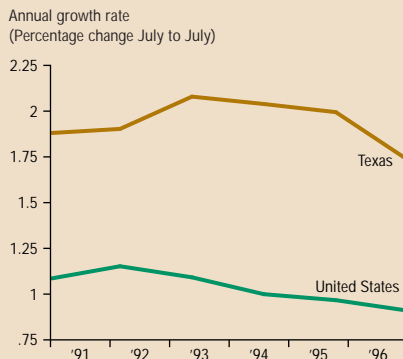
Texas Faces Tight Labor Market

A SHORTAGE OF WORKERS may be hindering economic growth in Texas, and labor constraints are unlikely to ease soon. Employers across much of the state report difficulty in finding qualified workers for both high- and low-skilled positions. With unemployment rates in major Texas cities near 5, or even 4, percent, labor market tightness may soon translate into upward pressure on wages.

Labor force growth in Texas slowed precipitously last year. The state's labor force grew by less than 1.2 percent in 1996, its slowest annual growth rate since 1989. This slowdown underlies much of firms' difficulty finding workers. In the first two months of 1997, however, labor force growth has rebounded (*Chart 1*).

Formerly discouraged workers and individuals facing an end to transfer payments are likely the main sources of this recent surge in labor force growth. Texas mirrors the nation in these trends. As the national economy enters the seventh year of the upswing in the business cycle, workers laid off because of the recession or restructuring are reentering the labor market as the likelihood of finding a job increases. Restrictions

Chart 2
Population Growth
In Texas Outstrips Nation's
But Is Falling



SOURCE: Bureau of the Census.

on food stamp eligibility and requirements that welfare recipients find work have also pushed people into the labor market.

Although the recent numbers suggest that labor market tightness may be easing, employers are unlikely to see a quick turnaround in the number and quality of job applicants. The potential workers entering the labor market may not meet employers' expectations; in particular, their skills are unlikely to match the needs of Texas' growing high-tech industry. In addition, the recent trend in Texas' population growth does not bode well for the size of the labor force.

Slower population growth in Texas last year was another cause of the low labor force growth rate. The Texas population has grown considerably faster than the United States' in the 1990s, but Texas' population growth slowed last year (*Chart 2*).

A fall in the number of people migrating here from other states underlies the recent slowdown in Texas' population growth. Net domestic migration declined by more than 40 percent last year from 1995 (*Chart 3*). Fewer people relocated to Texas as the economy in other parts of the country—particularly

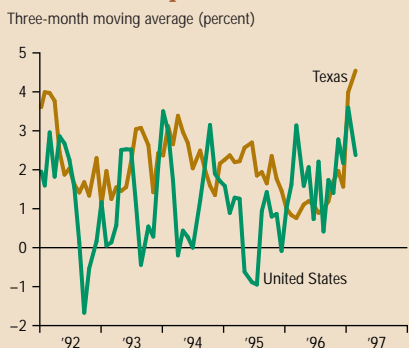
California—improved, and more people left Texas. Net domestic migration is likely to remain relatively low as the Texas and national economies grow at similar rates. International migration to Texas rose slightly in 1996 but has remained fairly constant in recent years.

The short-term outlook for Texas' labor force growth is not optimistic. There are relatively few skilled people who meet the needs of Texas' expanding high-tech firms, and interstate competition for such workers is fierce. In addition, it remains to be seen how well former public assistance recipients will adapt to the labor market. Domestic migration is likely to remain relatively low, and immigration from across the border may slow if Mexico's expansion continues.

In the long run, however, its age distribution positions Texas as a favorable labor market for employers. Texas has a young population—only four states have a higher fraction of their population under age 18 or under age 5. In addition, almost 10 percent of Texas' population is between the ages of 18 and 24. In the next few decades, Texas' young workforce is likely to be a magnet to firms, boosting the state's economic growth.

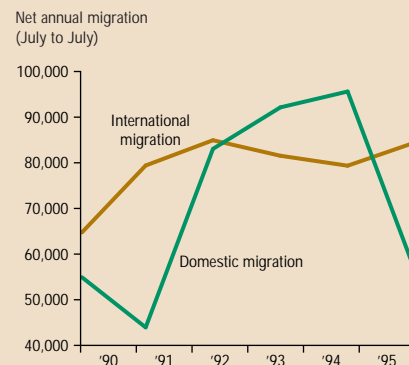
—Madeline Zavodny

Chart 1
Texas Labor Force Growth
Rate Picks Up



SOURCE: Bureau of Labor Statistics, Household Survey.

Chart 3
Domestic Migration
To Texas Slows



SOURCE: Bureau of the Census.

Regional Update

EMPLOYMENT GROWTH IN the Eleventh District rebounded in February after a January lull, and the expansion continued in March. Job growth was broad based, with construction employment surging in February after a January decline and the energy sector maintaining its recent strength. Economic indicators suggest District employment growth will continue at a moderate pace.

The District posted annualized nonfarm job growth of 5.9 percent in February and 2.9 percent in March, after a decline of 2.1 percent in January. The District's first-quarter growth rate was 2.3 percent. Texas accounted for the drop in January and most of the subsequent upswing, while job growth was steady in Louisiana and New Mexico expanded at a faster rate in February than in recent months.

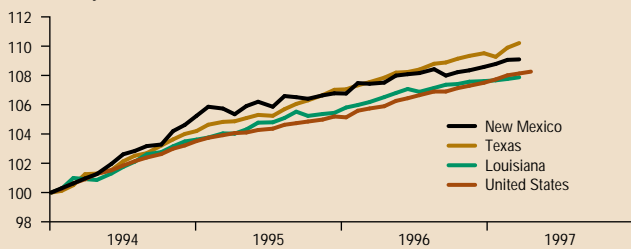
Job growth in Texas was 2.6 percent in the first quarter, with employment growing at 6.8 percent in February and 3.4 percent in March. With job growth at 5.8 percent in February and 0.3 percent in March, New Mexico posted first-quarter employment growth of 1.9 percent. Jobs in Louisiana expanded at a rate of 1 percent in the first quarter, growing 2 percent in February and 1.3 percent in March.

Economic indicators suggest continued moderate growth. After a strong increase in January, the Texas Leading Index rose again in February. The index was boosted by the Texas Stock Index, as well as a drop in new unemployment claims and a rise in the national leading index.

—Madeline Zavodny

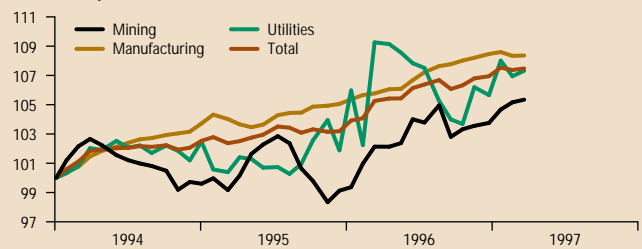
Total Nonfarm Employment

Index, January 1991 = 100



Texas Industrial Production Index (TIPI)

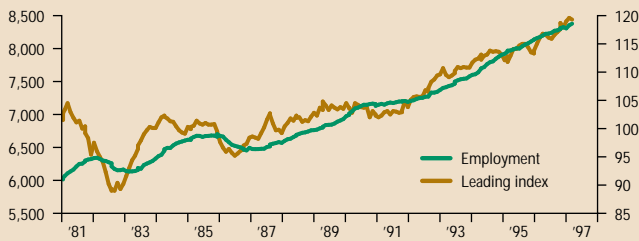
Index, January 1991 = 100



Texas Leading Index and Nonfarm Employment

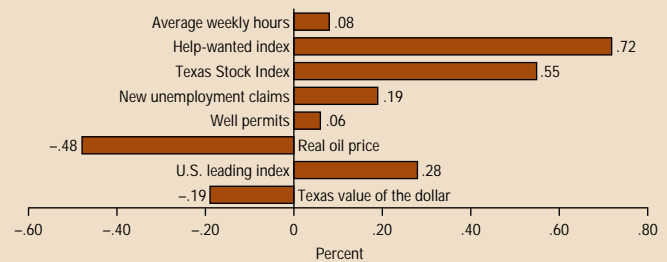
Thousands of persons

Index, 1987 = 100



Net Contributions of Components to Change in Leading Index

January–March 1997



Regional Economic Indicators

Texas employment*

Total nonfarm employment*

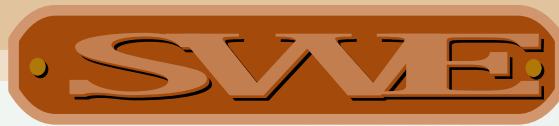
	Texas Leading Index	TIPI total	Texas employment*				Private service-producing	Total nonfarm employment*		
			Mining	Construction	Manufacturing	Government		Texas	Louisiana	New Mexico
3/97	119.3	124.6	160.9	445.4	1,062.7	1,470.5	5,238.8	8,378.3	1,823.8	701.8
2/97	119.6	124.5	160.8	443.5	1,061.6	1,466.6	5,222.4	8,354.9	1,821.9	701.6
1/97	119.0	124.7	158.9	434.0	1,057.2	1,463.7	5,192.5	8,306.3	1,820.3	699.8
12/96	117.9	124.0	157.6	441.1	1,058.9	1,461.8	5,205.6	8,325.0	1,819.4	698.5
11/96	118.8	123.8	157.3	440.2	1,058.1	1,458.1	5,197.4	8,311.1	1,818.7	697.0
10/96	117.6	123.3	156.8	440.0	1,057.5	1,454.1	5,188.0	8,296.4	1,816.0	696.2
9/96	117.1	123.0	156.7	437.4	1,057.6	1,449.2	5,176.0	8,276.9	1,815.2	694.7
8/96	116.6	123.7	156.7	437.9	1,057.0	1,453.7	5,165.1	8,270.4	1,811.5	697.5
7/96	115.9	123.3	156.6	435.8	1,054.8	1,448.3	5,144.9	8,240.4	1,807.0	695.8
6/96	116.1	123.0	156.2	436.0	1,054.6	1,447.8	5,132.9	8,227.5	1,810.3	695.3
5/96	116.6	122.2	156.0	435.1	1,053.3	1,452.5	5,127.4	8,224.3	1,805.7	694.7
4/96	116.8	122.2	155.8	431.4	1,050.6	1,450.8	5,109.3	8,197.9	1,800.9	691.6

* in thousands.

Further Information on the Data

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).

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Headwaters to Economic Growth

Market Solutions to Water Allocation in Texas

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