

Southwest Economy



Another Great Texas Boom

The mighty Texas economy is starting to take a breather after a decade of extraordinary growth. Rapid development of high-technology industries contributed directly and helped stimulate a construction boom and expansion of the region's distribution network. By some measures, the economic growth of the 1990s came close to matching that of the oil boom in the early 1980s. Texas employment is likely to expand at a more moderate pace in 2001 than in previous years during the boom.

The New Texas Economy

During the latter half of the 20th century, the Texas economy evolved from resource-based industries toward more knowledge-based industries. This transformation was put on hold during the energy boom, when rising oil prices encouraged the Texas economy to take advantage of the increased value of one of its abundant natural resources. During the past decade, however, the Texas economy accelerated the shift to knowledge-based industries, such as computers, semiconductors and telecommunications as well as equipment and service suppliers of the high-tech industry.

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The Rise of Stock Mutual Funds

Since the early 1990s, U.S. households have increasingly used mutual funds as a way of owning equity, with rising IRA assets responsible for much, but not all, of this growth (*Chart 1*). The percentage of all stock assets held in mutual funds almost tripled, from about 8 percent in 1990 to almost 24 percent in 1998, and the percentage of all non-IRA stock holdings in mutual funds more than doubled, from around 6 percent to roughly 14 percent.

This article reviews several explanations for this trend, including the possible effects of the increasing use of IRA and thrift plans, the aging of the baby boom generation, falling mutual fund costs and rising investor confidence. In addition, the implications of the increased reliance on mutual funds are explored, including effects on labor mobility, consumption and public policy. Finally, the advent of new financial products that may draw some households away from mutual funds is briefly discussed with an eye toward

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While recent output growth was comparable to the levels during the oil boom, job growth was slower.

Chart 1

Gross State Product Growth in Texas

Percent change (fourth-quarter-over-fourth-quarter)



NOTE: 1999 and 2000 are estimates.

SOURCES: Bureau of Economic Analysis; Federal Reserve Bank of Dallas.

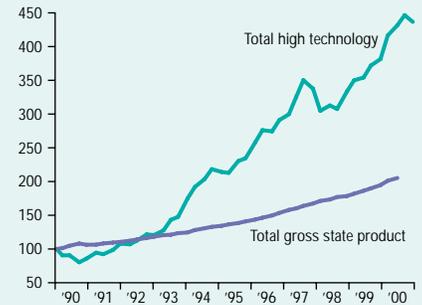
During the most recent expansion, output growth rivaled that of the go-go days of the 1970s and early 1980s. Total Texas output grew at an average of 5.5 percent per year between 1992 and 1998, while output growth between 1972 and 1981, the oil boom years, averaged 5.2 percent per year (*Chart 1*).

High-tech industries contributed significantly to output growth in the 1990s (*Chart 2*). Between 1990 and 1999, total state output increased 41 percent, but high-tech output in Texas grew 281 percent. Telecommunications output rose 68 percent; semiconductor industry output increased 180 percent; and computer industry output jumped a whopping 1,526 percent. High-tech industries now make up roughly one-eighth of Texas manufacturing employment. As in the nation, investment in high-tech equipment by all

Chart 2

High-Tech Output Growth Surges

Index, 1990:1 = 100



SOURCES: Bureau of Economic Analysis; Federal Reserve Bank of Dallas.

types of Texas firms has brought considerable productivity increases. As shown in *Chart 3*, Texas productivity growth accelerated in the 1990s.

Labor Force Growth Limits Current Expansion

While recent output growth was comparable to the levels during the oil boom, job growth was slower. Employment in Texas increased at an average annual rate of 6.7 percent between 1972 and 1981 but grew at a rate of only 3.7 percent between 1992 and 1998. Texas labor markets were tight during both periods, with the unemployment rate dipping close to 4 percent (*Chart 4*).

Slower job growth in Texas during the 1990s boom appears to be the result of slower population growth. Texas' population has grown faster than the

Chart 3

Real Output per Worker

1996 dollars in thousands (chain-weighted)

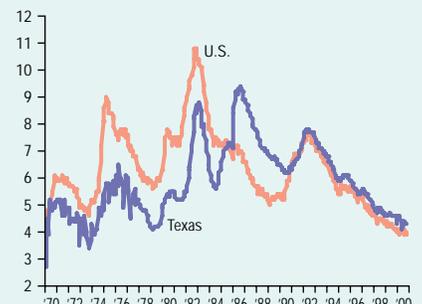


SOURCE: Federal Reserve Bank of Dallas.

Chart 4

Unemployment Rates

Percent (seasonally adjusted)



SOURCE: Bureau of Labor Statistics.

Chart 5

Texas and U.S. Population Growth



national average, rising at a long-run average of roughly 2 percent while the nation's population has increased at about 1 percent. During the current expansion, Texas' population growth has continued to increase faster than the nation's, but the rate has been below the state's long-run average. Between 1992 and 1998 Texas' population increased at an average of 1.8 percent per year, significantly below the 2.5 percent population growth of the 1970s (Chart 5). Not surprisingly, labor force growth also failed to keep pace with the growth rate during the oil boom days.

Texas' population growth surged during the oil boom because of a large influx of people moving to the state. This rapid migration was due, in part, to the strength of the Texas economy compared with the rest of the nation. Texas' output and employment grew significantly faster than that of the United States during the 1970s (Chart 6). However, U.S. economic growth was strong during most of the 1990s, so Texas was competing with the rest of the nation for workers throughout the recent expansion. Slower population growth during the 1990s appears to have restrained employment and output growth.

Another Texas Construction Boom

The real estate collapse that accompanied the oil bust of the mid-1980s left many investors believing the construction crane would become extinct in Texas. In fact, construction activity took many years to revive, but in early 1990

building permits began to increase. While total permits per capita failed to reach the levels of the early 1980s, job growth and the lowest mortgage interest rates in 20 years¹ pushed residential permits close to the levels seen in the early 1980s (Chart 7).

Texas construction activity began to cool in mid-1999, when rising interest rates and concerns about overbuilding discouraged investment. Long-term mortgage rates dipped in early 2000, leading to a brief pickup in residential activity, but by fall residential permits plateaued at high levels. Nonresidential activity waned throughout 2000, and heavy construction along the Gulf Coast came to a halt. Concerns about overbuilding continue to percolate in some markets, particularly retail, apartment and office, but most real estate markets remained buoyant, with only slight softening in rental rates in some areas.

While the construction boom of the 1990s rivaled that of the 1970s, there is one important difference. In the 1970s, a lot of building stemmed from tax breaks and hefty expectations for future growth, such as "\$85 per barrel oil in 1985." During the 1990s boom, building occurred primarily when properties were mostly preleased. There was little speculative building in the 1990s.

Energy Remains an Asset

Although the recent boom was not driven primarily by expansion of the energy industry, oil price changes continue to affect Texas economic growth.

Chart 6

Texas Competes for Workers in the 1990s

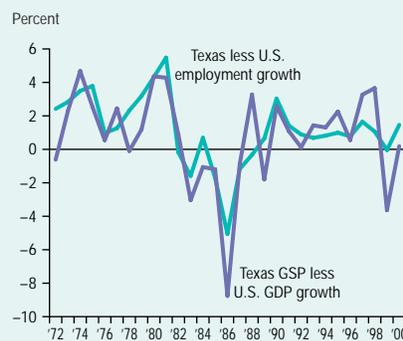
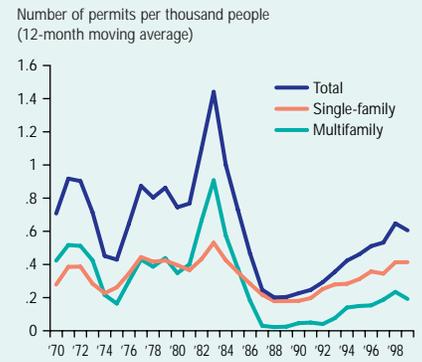


Chart 7

Texas Building Permits



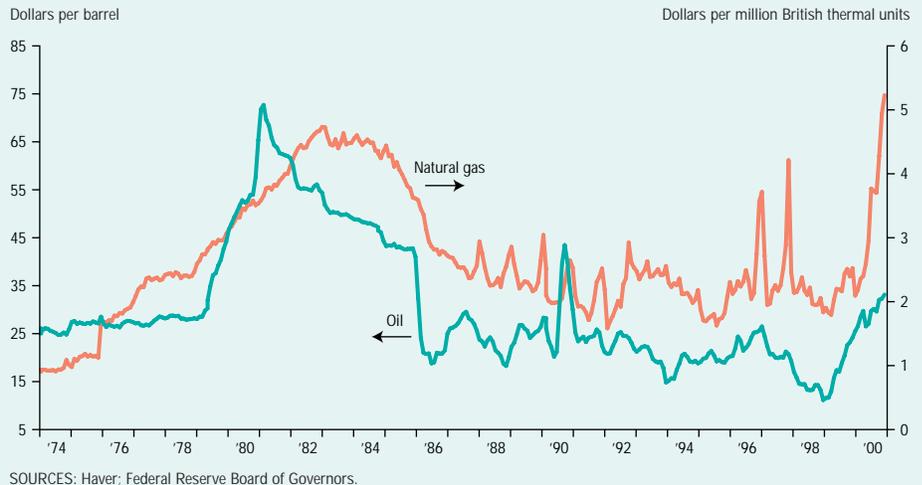
The state has become more diversified, however, and energy price swings have a much smaller effect on economic growth than years ago.² Still, Texas benefits on net from high oil and natural gas prices and suffers when energy prices are low. This continued bond to the energy industry became apparent in mid-1998. Following the Asian crisis, falling demand for energy products led to rising supply, and oil prices plummeted to nearly \$10 per barrel. While the U.S. economy and some Texas industries benefit from low energy prices, the oil price drop muted the growth of the Texas economy overall.

When rebounding global economies and a booming U.S. economy led to a sharp increase in oil prices in 1999, the oil and gas extraction industry was slow to respond. Low prices had left the industry in debt. Companies wanted to clean up their balance sheets and wait to see if the high prices were sustainable before making investments to take advantage of higher prices. By late 1999, oil and gas activity began to increase, stimulating Texas' expansion.

The Texas economy surged in the first half of 2000, propelled by rebounding world economies, strong domestic growth and high oil and gas prices. Low inventories pushed oil prices to above \$35 per barrel in 2000. Natural gas prices more than tripled, breaking new record highs; spot prices reached \$9 per million British thermal units. Adjusted for inflation, natural gas prices are higher than during the oil boom or any other time in history (Chart 8).³

Chart 8

Inflation-Adjusted Natural Gas and Oil Prices



Texas tends to grow more slowly than the nation only when oil prices are low for a prolonged period.

Texas Grows More Strongly Than the Nation

On average, Texas employment growth outpaces that of the nation by slightly more than 1 percentage point annually (*Chart 9*). Many factors encourage faster job growth in Texas than in the rest of the country. Rapid population growth, a central location, a relatively low cost of living and an attractive business climate all contribute to strong growth in the state. The countercyclical nature of the energy industry is also an important contributor to the region's ongoing prosperity.

Texas tends to grow more slowly than the nation only when oil prices are low for a prolonged period. Since 1989 Texas employment has grown faster than in the nation, with the exception of 1999, when low oil prices muted the expansion. During the first 10 months of 2000, employment increased 3.1 percent (annualized) in Texas while rising 1.7 percent in the nation.

Although Texas benefits on net from high energy prices, the state also receives a positive stimulus when low energy prices spur global economic activity by lowering costs for firms and

Chart 9

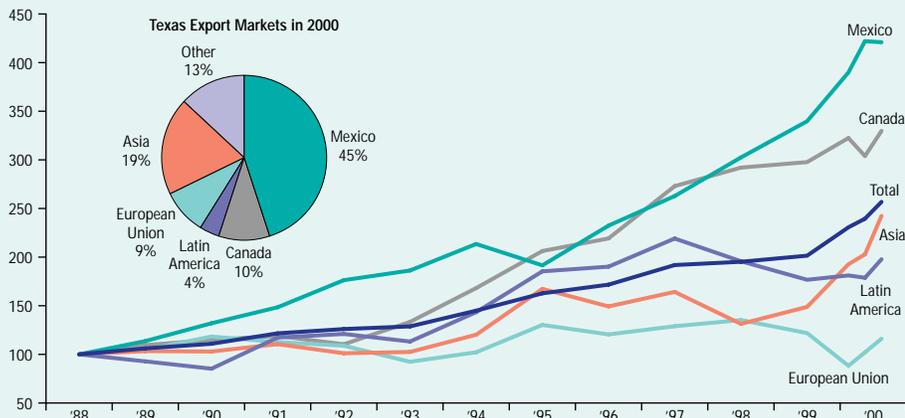
Texas Employment Growth Outperforming United States



Chart 10

Texas Exports to the World

Real index, 1988 = 100



NOTES: EU comprises Denmark, Switzerland, Greece, Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain. Latin America comprises Argentina, Brazil, Colombia and Venezuela. Asia comprises China, Hong Kong, Indonesia, Japan, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand.

SOURCE: Massachusetts Institute for Social and Economic Research.

individuals. This boosts demand for Texas firms because Texas is a global exporter. The Texas economy is increasingly integrated with the global economy, exporting goods to countries in all parts of the world (*Chart 10*).

Slowing Global Economies Provide Headwinds for Texas Expansion

The recent increase in energy prices boosted the Texas energy industry but also led to slower U.S. and global economic growth. By midsummer of 2000 the Texas economy, which had been rebounding from low oil prices, ran into headwinds. Rising interest rates and slowing U.S. and global economies began restraining Texas economic growth.

The high-tech boom began to wind down. Many analysts began to think that there may have been overinvestment in the industry. Weakening sales for computers, semiconductors and telecommunications equipment caused many high-technology companies to lower earnings projections.

Manufacturing employment softened throughout 2000. High oil prices and rising overcapacity led to weakness in the chemical and refining industries. Many construction-related manufacturers also faced growing overcapacity as construction activity slowed.

Important Differences in the Two Great Texas Booms

While output growth during the two great Texas booms was similar, there were important differences. In the 1970s and early 1980s, the Texas economy responded to rising oil prices by undergoing one of the greatest economic booms in the state's history. The subsequent oil price collapse generated an equally great economic bust. While other factors helped stimulate the boom and bust, fundamentally the benefits of cyclical forces, such as high energy prices, are temporary. When oil prices fell, there was little change in the trend rate of economic growth.

The more recent Texas boom has been the result of rapid expansion of new industries—computers, semiconductors, communications and other high-technology firms. The growth of new firms attracts economic activity that increases the state's trend rate of growth. However, cyclical forces such as swings in semiconductor or computer prices will also affect these industries, bringing fluctuations around a higher trend rate of growth.

Growth in 2001 Will Be Softer Than in 2000

When 2000 is finally tabulated, Texas job growth should be about 3 percent. Growth is expected to be more moder-

ate in 2001, as slowing U.S. economic growth will dampen Texas growth. If world economies slow and demand tapers off, oil prices may drift down. Still, strong oil and natural gas prices will continue to be a positive force for the state. Employment growth will likely slip to 1.5 percent to 2 percent, but Texas' growth should remain stronger than the nation's.

— Fiona Sigalla
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Notes

We'd like to thank Charis L. Ward, Daniel Wolk, Keith Phillips, Pia Orrenius and Steve Brown for their assistance and helpful comments.

¹ In October 1993, mortgage rates fell to the lowest level in 20 years.

² Brown, Stephen P. A., and Mine K. Yücel (2000), "Oil Prices and the Economy," Federal Reserve Bank of Dallas. *Southwest Economy*, Issue 4, July/August, 1–6.

³ Brown, Stephen P. A., and Daniel Wolk (2000), "Natural Resource Scarcity and Technological Change," Federal Reserve Bank of Dallas *Economic and Financial Review*, First Quarter, 2–13.

The Rise of Stock Mutual Funds

(Continued from front page)

the future evolution of household portfolio behavior.

The Move to Mutual Funds

The Rise of IRA and Thrift Plans. The liberalization of IRA regulations in 1982 bolstered the use of mutual funds in several ways. Regulatory changes encouraged the use of third parties, such as mutual funds, to manage IRA and thrift plan assets. Coupled with the tax-deferred benefits of these plans, the relaxed regulations encouraged stockholders to shift their assets from directly held stocks to IRA balances invested in mutual funds. Since the mid-1980s, big net purchases of equity mutual funds have been accompanied by households' big net sales of directly held stocks. The tax benefits also encouraged some households that previously didn't own stock to open IRAs and consider investing through mutual funds. For many households with limited wealth, mutual funds were the only feasible way to own a diversified portfolio of stocks.

Another factor boosting mutual fund use has been firms' fiduciary obligation to offer employees investment alternatives in their thrift plans, for which mutual funds are well-suited. In addition to tax law changes, a heightened sense

of long-term job insecurity may have raised the demand for portable pension-type assets like IRAs.¹

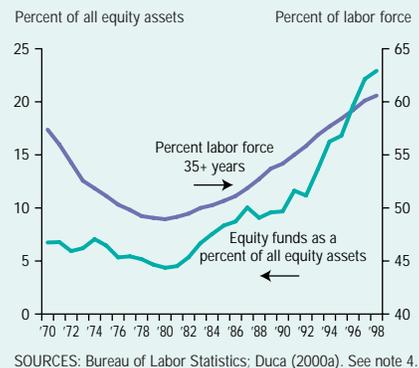
These factors also likely increased the use of mutual funds for non-IRA assets. Incentives to open IRAs prompted many households to incur the one-time cost of learning about investing in stock and bond mutual funds, thereby reducing their reluctance to invest non-IRA funds in such assets. And, because many mutual funds count IRA assets toward minimum balances for avoiding maintenance fees and opening asset-management accounts, IRA balances reduce the cost and minimum-investment barriers to investing non-IRA assets in mutual funds.

Demographics. In theory, two demographic factors may have boosted the use of equity mutual funds. First, the aging of the baby boom generation may have increased equity investing by raising the share of the population preparing for retirement, especially since stocks have outperformed other investments over the long run. Because of limited wealth and the need to diversify, many new investors may have chosen mutual funds rather than individual stocks. In addition, a longer life expectancy may have boosted mutual fund use by increasing the need to prepare for retirement. However, the impact of increased longevity on saving is theoretically ambiguous because the need to fund a longer retirement could be offset by a longer work life.

In practice, demographics do not appear to have substantially boosted the use of mutual funds. The saving rate has fallen, not risen, with the aging of the baby boomers. This suggests the retirement effect is unimportant or has been offset by other factors, such as larger inheritances or higher stock prices, which may have lowered the need to save. Also, the labor force share of middle-aged people in the mid-1990s was near that of the early 1970s, when equity fund use and stock ownership rates were much lower (*Chart 2*). Moreover, surveys of individual households show that

Chart 2

Demographic Shifts Alone Cannot Track Relative Use of Equity Funds



demographic shifts account for little of the rise in the mutual fund share of household portfolios and that most of this aggregate rise reflects increased mutual fund ownership within each age group.² This implies that the rise of mutual funds stems from some factor common to households, such as falling mutual fund costs.

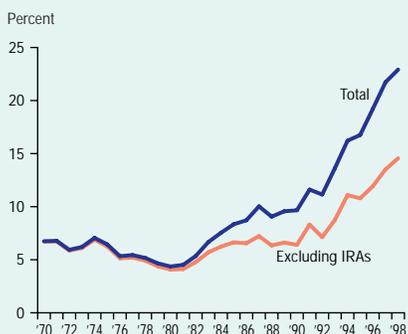
Transaction Costs. Lower mutual fund fees can increase the use of mutual funds by encouraging households that own stocks directly to shift these assets into mutual funds. Lower loads may also expand mutual fund use by spurring more families to invest in stocks. Earlier research examining why many people did not own equity found that the costs of buying stocks, such as mutual fund loads, may have been a barrier to stock ownership for many middle-income families, for whom mutual funds were the only feasible way of owning a diversified stock portfolio.³ Indeed, large increases in overall stock ownership rates have accompanied large declines in the average load on equity mutual funds, with most of the rise occurring in indirect ownership, mainly through mutual funds (*Chart 3*).

To some extent, the rising use of equity funds may lower loads if economies to scale are substantial. However, empirical evidence indicates that the downtrend in mutual fund loads has tended to precede the rising use of equity funds, suggesting that the negative relationship between loads and equity fund use mainly reflects that loads

Chart 1

Reliance on Mutual Funds for Stock Ownership Rises

(Equity fund assets as percent of households' total and non-IRA stock assets)



affect equity fund use.⁴ The higher loads of the 1970s and early 1980s may thus account for the low stock-ownership rates of that era.

Higher Confidence. Another possible reason for the increased use of mutual funds as a means of owning stocks is higher investor confidence, which could have prompted equity purchases by middle-income households, who, in order to diversify, are more apt to buy shares in mutual funds rather than individual stocks. A University of Michigan consumer sentiment survey indicates that confidence in the future has generally risen since the 1970s (*Chart 4*).

The higher range of confidence in recent years is likely correlated with an increased investor willingness to own stock, which could stem from one or more of three factors.⁵ First, a decreased risk of recession and an increased sense of economic stability reduce the downside risks of owning stock. Second, expectations of stronger growth in the economy and in profits may have encouraged stock ownership; however, this factor may have played a substantial role only in the late 1990s, when evidence of faster trend productivity growth became more apparent. Third, a greater willingness to own stock may also reflect an increased tolerance of risk by households. Investors' willingness to tolerate short-run declines in stock prices may have grown during the past two decades, partly in response to the two

long bull markets and economic expansions since 1982.

From a less conventional standpoint, the high returns of the 1990s may have led more people to own stocks out of myopia or fad behavior. However, it is difficult to say how much higher confidence owes to better fundamentals or to fads. It is also difficult to distinguish to what extent greater household confidence is attributable to lower business-cycle risk, more optimistic expectations of profit growth or increased tolerance of risk.

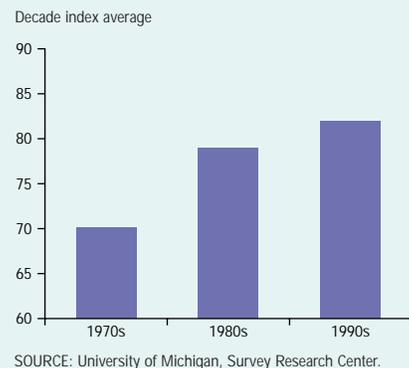
Results from a Recent Study. Despite the ambiguity about the source of increased confidence, a recent study found that the rising use of mutual funds over the past three decades resulted from greater confidence, changes in IRA and 401(k) rules, and declines in mutual fund loads.⁶ This study also found that demographic shifts were not a major factor, consistent with cross-section data on mutual fund use. In contrast to lower loads that are likely to persist due to long-run declines in mutual fund computing costs, higher investor or household confidence could be partially or largely reversed when the next business-cycle downturn occurs, depending on its depth and length.

The Significance of the Rising Use of Mutual Funds

Employee Benefits and Labor Mobility. The availability of mutual funds helped foster a shift away from tradi-

Chart 4

Consumer Confidence in the Future Higher in the 1980s and 1990s than in the 1970s

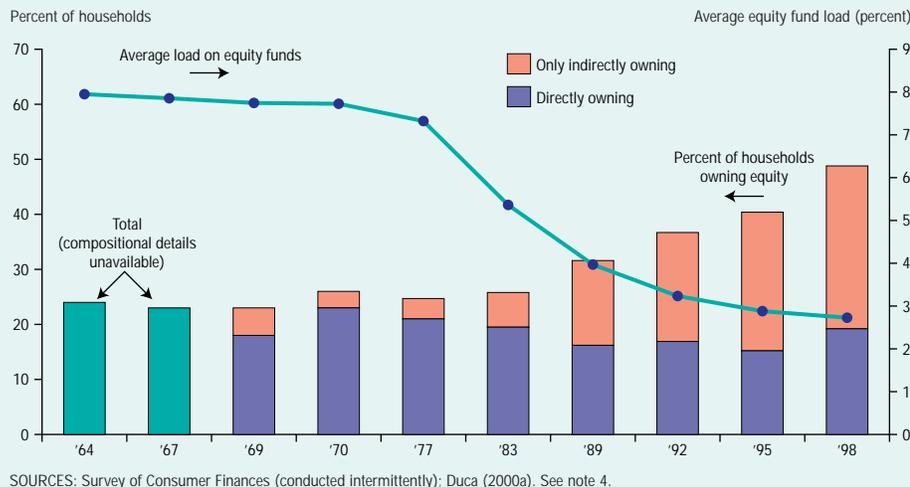


tional defined-benefit pensions to IRA and thrift contribution plans. Soon after regulations permitted the expansion of thrift plans, virtually all assets in defined-contribution—mostly 401(k)—plans were directly held stocks, most of which were likely shares the workers purchased under employee stock-ownership plans. This meant workers depended on one source for both their labor income and the investment returns on much of their retirement assets. Because the size of annual thrift contributions is restricted, the availability of mutual funds allowed firms to offer employees a feasible way of owning a diversified stock portfolio in their thrift plans. This attractive aspect of mutual funds likely accounts for their rise as a percentage of defined-contribution pension assets since the mid-1980s. Under most portable pensions such as thrift and IRA plans, a worker's retirement benefits are less hurt by changing jobs than under most traditional, defined-benefit pensions. The reduced cost of job mobility, in turn, has enabled the U.S. economy to transform itself with less disruption, as capital and labor have shifted away from declining industries to new industries during the long economic expansions of the 1980s and 1990s.

The Effect on Consumption. With the rise of mutual funds, a greater share of households owns equity, which implies that the spending of more families may be affected by swings in stock prices. A recent study found that a huge decline in mutual fund loads since the late 1970s is correlated with rising stock

Chart 3

Equity Fund Loads Fall and Stock Ownership Rates Rise



ownership rates and is linked to a large increase in the sensitivity of consumption to stock market wealth.⁷ In particular, a 100 percent rise in stock market wealth is now associated with a 3 percent rise in consumption, up from about 1.5 percent in the 1960s and 1970s.

The Effect on Public Policy. Greater stock ownership may also affect public policy. For example, the presidential candidates from both major political parties in 2000 supported, to differing degrees, expanding IRAs or other thrift-type plans as a way to supplement or partially replace Social Security. This may partly stem from many people's successful experience with mutual fund investing and increases in stock ownership rates since the early 1980s. In addition, an apparent rise in public support for a low-inflation monetary policy over the past two decades may be linked to a greater share of households having investments that are generally hurt by inflation. (The experience of enduring the rocky economic performance of the high-inflation 1970s probably contributed to this shift as well.)

New Alternatives to Mutual Funds

While mutual funds have been associated with increases in stock ownership rates, new financial products offer people other ways to obtain diversified portfolios. For example, since December 1998, a new type of stock has traded on the American Exchange. Exchange-traded funds (ETFs) are shares in portfolios of stocks that trade continuously like individual stocks, in contrast to mutual funds, which can be bought or sold once a day. Most ETFs have tried to duplicate the composition of well-known stock exchanges or stock indexes. The first ETFs duplicated the S&P 500 and were called Standard & Poor's Depository Receipts, or SPDRs. Mirroring the abbreviation of their technical name, these ETFs are called spiders. Since then, nine other S&P 500-based ETFs (Select Sector SPDRs) have been created that replicate the sectors of the S&P 500.⁸ Other ETFs now include World Equity Benchmark Series (WEBS), which duplicate indexes of foreign stocks, and "diamonds," which mimic the Dow Jones industrial average. ETF assets grew from about \$15.5 billion in 1998 to nearly \$57

billion by September 2000.

How do most ETFs compare with index funds? Like index mutual funds, most ETFs buy and sell securities to match changes in the composition of the stock exchange or stock index they mirror. As a result, like index mutual funds, they have low costs and are arguably a close substitute. Like index mutual funds, ETFs distribute dividends and realize capital gains or losses from selling securities in a rebalancing. However, ETFs offer a slight tax advantage over mutual funds. When enough investors sell shares in an open-ended mutual fund, the redemptions often force the fund to sell securities in its portfolio. This, in turn, incurs a potential capital gains tax for all investors owning shares in that fund on its annual capital gains distribution date. In contrast, because ETFs are independent shares that are bought and sold through exchange trading, an investor in an ETF is not exposed to the tax-related activities of other ETF owners.

While ETFs compete with index funds, a new type of investing service offers a substitute for actively managed mutual funds. Some Internet firms offer investors the ability to customize stock portfolios at costs that, for investments of at least \$30,000, are purportedly below the cost of purchasing actively managed mutual funds. In addition, a major financial firm has recently launched trading on a number of its actively managed non-U.S. mutual funds. Nevertheless, it is unclear when the Securities and Exchange Commission will permit actively managed ETFs to trade in the United States.⁹

The United States is increasingly becoming a nation of stockowners, principally because of the rise of mutual funds. However, we should keep in mind that innovations, such as exchange-traded funds and customized electronic portfolios, will offer substitutes for mutual funds and may further transform household investment and economic behavior.

—John V. Duca

Duca is a vice president and senior economist in the Research Department of the Federal Reserve Bank of Dallas.

Notes

Thanks to Evan Koenig for helpful suggestions and Daniel Wolk for excellent research assistance.

- ¹ Although the average length of stay at a job has changed little, the probability of being dismissed has risen relative to the probability of quitting as a cause for job separations. See Valletta, Robert G. (1999), "Declining Job Security," *Journal of Labor Economics* 17 (October), pp. S170–97.
- ² Laderman, Elizabeth, and Judith Goff (1997), "Deposits and Demographics?" Federal Reserve Bank of San Francisco *FRBSF Economic Letter* 97:19 (June 27).
- ³ Heaton, John, and Deborah Lucas (2000), "Portfolio Choice in the Presence of Background Risk," *The Economic Journal* 110 (January): 1–26.
- ⁴ Duca, John V. (2000a), "Mutual Fund Loads and the Rising Relative Use of Equity Mutual Funds," Federal Reserve Bank of Dallas, unpublished manuscript (June).
- ⁵ Balke, Nathan S., and Mark E. Wohar (2000), "Why Are Stock Prices So High? Dividend Growth or Discount Factor?" Federal Reserve Bank of Dallas Research Paper no. 0001 (Dallas, January).
- ⁶ Duca, John V. (2000a).
- ⁷ Duca John V. (2000b), "Mutual Fund Loads and the Long-Run Stock Wealth Elasticity of Consumption," Federal Reserve Bank of Dallas, unpublished manuscript (June).
- ⁸ "Standard & Poor's Depository Receipts," "SPDRs" and "Select Sector SPDRs" are trademarks of the McGraw-Hill companies.
- ⁹ Lucchetti, Aaron, and Sara Calian (2000), "Deutsche Banks New Actively-Managed ETFs Aren't Likely to Spur Similar U.S. Products Soon," *The Wall Street Journal*, Southwest Edition (November 24), pp. B1, B19.

California Is Giving Electricity Deregulation a Bad Name

Since mid-2000, California has experienced a considerable number of problems with its electricity market, including fluctuating prices and shortages. Many people associate these problems with the restructuring of the California electricity market that took place nearly three years ago, and some have proposed that California return to the rate-based regulation that characterized the market prior to the restructuring. The problems with the California electricity market are the result of several factors—none of which should be associated with free markets.

For years, the state of California slowed the development of new electricity generation facilities within its borders for environmental reasons. Electric utilities, fearing they would be unable to recover their costs as the state moved away from rate-based regulation, stopped trying to build new generation facilities.¹ The imposition of price caps on retail electricity prices under the state's restructuring plan has further deterred the development of new generation facilities. Consequently, the growing demand for electric power in the state has been met through increased imports of electricity delivered through a national grid (*Chart 1*).

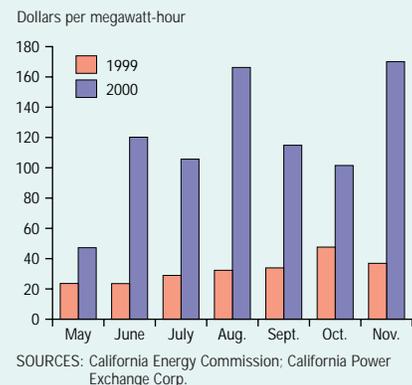
As part of its electricity restructuring plan, the state of California created a nonprofit entity known as an independent system operator.² The California Independent System Operator (Cal-ISO) has the job of operating about 75 percent of the California electricity grid. It is also responsible for making the market for California electricity. Like any market maker, Cal-ISO's job is to ensure that the California market for electricity clears—in many cases buying electricity from independent generators and selling it to utilities and businesses. The restructuring plan discouraged private market-making organizations such as Enron from participating.

Because California imports much of its electricity, Cal-ISO and the state's utilities both turned to traditional sources outside the state for the additional electricity necessary to serve their customers. In 2000, some of these producers refused to sell electricity to Cal-ISO without a letter of credit because the ISO has no assets. Cal-ISO asked some of the local utilities it serves to provide such letters and was turned down because price caps had impaired the creditworthiness of the utilities, which were paying more for some sources of electricity than they were allowed to charge for it.³ In addition, some traditional sources from which California imported electric power lacked the capacity that California sought. Consequently, California's electricity imports fell short of meeting growing demand.

Although the wholesale prices of electricity in California rose sharply in 2000 (*Chart 2*), price caps (imposed as part of the original restructuring plan) prevented allocation of suddenly scarce electricity from being based on price, and a shortage of electric power materialized. In response, the state government established mandatory allocations that curtailed nonessential electricity use, and rolling blackouts were imposed throughout the state. In early December, the state began working toward lifting price caps on electric power.

Chart 2

Average Wholesale Unconstrained Market-Clearing Price for Electricity in California



Although lifting the price caps is a step toward a freer market, doing so does not resolve the basic problems—that the state lacks sufficient generating capacity and the market-making organization at the heart of the California restructuring scheme was created without the economic resources to make a market. The state of California is now finding it necessary to guarantee Cal-ISO's contracts to purchase electricity from outside the state. The experience with restructuring in California provides an example of how not to deregulate electricity markets rather than a reason not to deregulate.

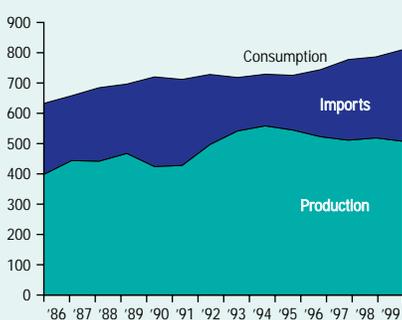
—Stephen Brown

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Chart 1

California Electricity Consumption and Imports Growing

Trillion British thermal units



Notes

- ¹ For more information, see Berenson, Alex (2000), "California on Edge of Failing to Meet Electricity Needs," *The New York Times*, Final ed., August 3, p. A1 (online), and Shlaes, Amity (2000), "A Revolution Fails to Bring Power to the People: California's Experiment in Deregulating Electricity Has Run into Trouble, but the State's Politicians Should Keep the Faith," *Financial Times (London)*, London ed., August 22, p. 17 (online).
- ² For more information, see Hollis, Sheila S. (2000), *Electric Industry Restructuring in Review*, Duane, Morris & Heckscher LLP, Washington, D.C., report.
- ³ See Hollis (2000) and Economic Insight, Inc. (2000), "Excerpts from the Energy Market Report," December 14, online at www.econ.com.

Raising Taxes in Mexico

In his inauguration day speech to Mexico's Congress, President Vicente Fox reiterated his administration's commitment to transform "tax collection into an engine of development." The keystone of Fox's ambitious fiscal agenda is a pledge to increase the ratio of total tax revenues to gross domestic product (GDP) from the current 11 percent to as much as 17 percent by 2004. The new Mexican administration hopes to reduce the central government's dependence on oil-related income and to lower real interest rates through fiscal discipline.

Mexico's limited capacity to raise taxes is typical of developing countries but shows marked weakness compared with industrialized economies (*Chart 1*). One of the distinguishing features of developing economies that explains this pattern is the size of the informal sector. The informal sector includes all establishments and self-employed individuals that do not comply with government regulations such as the tax code. Informal employees typically fail to receive government-mandated benefits and may be paid below the minimum wage.

Economists estimate that informal employment accounts for almost half of urban employment in Mexico, while unreported, untaxed economic activities represent over 30 percent of official GDP. As a result, the effective base for income taxation is small. *Chart 1* shows that proceeds from income taxation represent a smaller share of official GDP in Latin American nations than in their industrialized counterparts.

Fox plans to increase the base for income taxation by simplifying and improving the administration of taxes and by giving small firms financial incentives to operate in the formal sector. These policy principles appear sensible in light of two leading explanations economists offer for the documented size of the informal sector in Latin America. First, tax enforcement is lax in most Latin American nations as a result of corruption and the limited resources with which tax authorities must operate. Second, the ad-

vantages firms can expect to enjoy when they decide to operate formally are greatly reduced by the inefficiency of formal institutions such as the judiciary system. For instance, banks are reluctant to write loan contracts in an environment where property rights are not adequately enforced. As a consequence, small firms in Latin America have little access to formal sources of financing, even if they maintain credible accounting practices.

A scheme of credit subsidies or guarantees for those firms that maintain tax records, or tax breaks contingent upon the taxable income reported by firms, could increase tax revenues by expanding the tax base. Fox has announced the creation of the National Program for Microcredit to give "the poorest people... access to financing, training and technical assistance," with the hope of drawing more workers and small businesses to the formal sector. Deeper reforms aimed at improving the efficiency of legal institutions and fighting corruption, two of Fox's campaign themes, could also increase the formal share of economic activity.

Fox's agenda does not represent Mexico's first attempt at raising tax reve-

nues. Several Mexican governments have promised to reform the tax system, but most have failed to face the associated political costs. A notable exception is the 1978 reform that simplified the tax structure, broadened the base for personal income taxation and introduced a value-added tax in Mexico. Fox plans to reform the tax system, but his projections rely largely on improving compliance. Time will tell whether the president's expectations in this respect are reasonable.

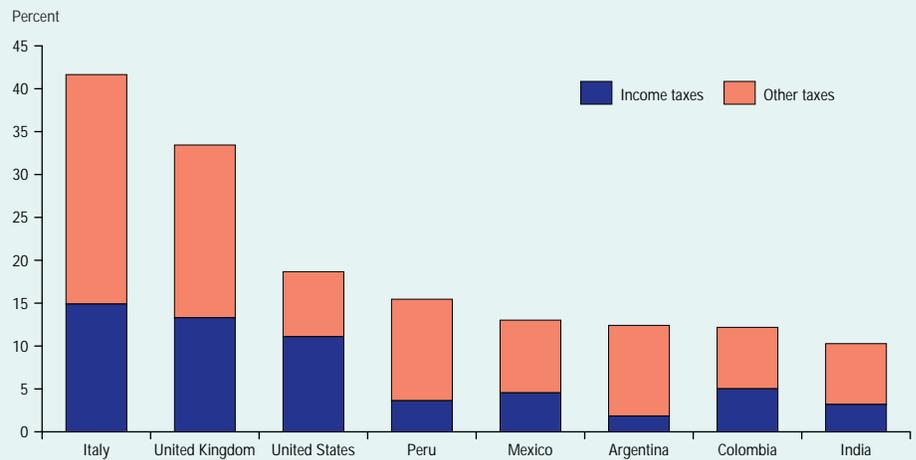
The new administration has delayed spelling out a tax plan until April. The current policy guidelines from the Ministry of Finance contain only vague proposals to "reinforce the administration of the Mexican tax system." To meet his short-term fiscal targets, Fox may have to resort to potentially explosive measures, such as eliminating value-added tax exemptions on food and medicine.

—Erwan Quintin

Quintin is a senior economist in the Research Department of the Federal Reserve Bank of Dallas.

Chart 1

Central Government Tax Revenues as a Proportion of GDP, 1997



SOURCE: Government Finance Statistics Yearbook, International Monetary Fund.

Regional Update

The Texas economy has moderated since the first half of 2000 but continues to expand more rapidly than the nation. Texas started the year strong thanks to rebounding world economies, solid domestic growth, and high oil and gas prices. However, there has been widespread slowing in construction and manufacturing in recent months.

Oil and gas prices have continued at high levels. West Texas Intermediate crude has hovered around \$30 per barrel, and the natural gas wellhead price reached \$8.50 per million British thermal units in December. Texas employment in oil and gas extraction rose an annualized 4 percent from January to November.

Construction employment growth was at a high 7.9 percent (annualized) in the first six months of the year, then slipped to a 2.6 percent growth rate from July to November. Single-family construction picked up earlier in the year in response

to lower mortgage rates, but real estate firms reported declines in November and December.

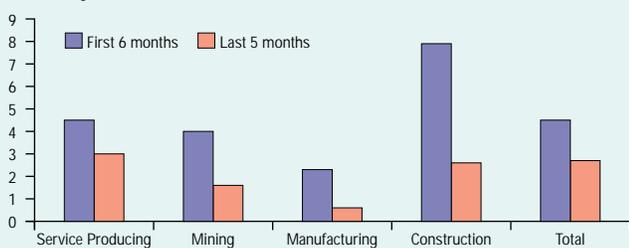
Manufacturing employment softened throughout 2000. Job growth in nondurable manufacturing was particularly lethargic, pinched by declines in the chemical and refining industries. Employment in nondurable manufacturing has increased only 0.3 percent (annualized) in the last three months. Total manufacturing employment for Texas grew 1.5 percent (annualized) through the first 11 months of 2000.

Recent declines in all components of the Texas Leading Index, excluding the real oil price, indicate that a continued cooling of the Texas economy is likely. From October to November the Texas Leading Index fell to 122.7, a decrease of 1.8 percent.

— John Thompson
Charis L. Ward

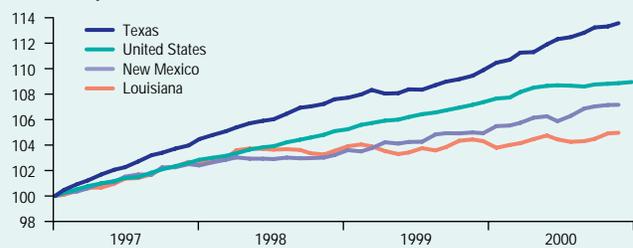
Employment Growth by Industry

Annualized growth



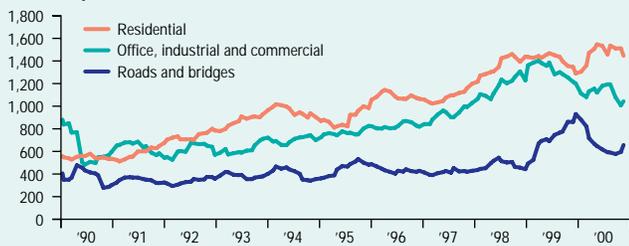
Total Nonfarm Employment

Index, January 1997 = 100



Texas Construction Contract Values

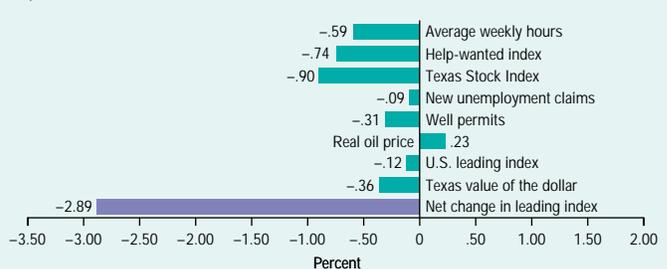
Real January 2000 dollars*



*Seasonally adjusted.

Net Contributions of Components to Change in Leading Index

September–November 2000



Regional Economic Indicators

TEXAS EMPLOYMENT*

TOTAL NONFARM EMPLOYMENT*

	Texas Leading Index	TIPI† total	Mining	Construction	Manufacturing	Government	Private service-producing	Texas	Louisiana	New Mexico
11/00	122.7	130.3	151.0	568.3	1,093.2	1,578.1	6,178.6	9,569.2	1,915.6	749.7
10/00	124.5	130.8	150.7	567.6	1,093.2	1,576.4	6,159.8	9,547.7	1,914.7	749.6
9/00	125.8	131.0	150.3	566.2	1,092.0	1,581.4	6,151.1	9,541.0	1,906.8	748.8
8/00	126.3	131.4	149.2	564.7	1,091.8	1,567.1	6,132.7	9,505.5	1,903.6	747.6
7/00	126.5	131.1	149.1	563.0	1,092.2	1,559.5	6,113.1	9,476.9	1,902.6	743.6
6/00	126.1	130.1	150.0	562.2	1,090.5	1,572.7	6,087.8	9,463.2	1,906.1	740.7
5/00	125.7	129.0	149.5	555.0	1,088.9	1,584.0	6,051.1	9,428.5	1,911.7	743.4
4/00	126.9	128.4	149.2	553.9	1,087.4	1,556.2	6,030.9	9,377.6	1,906.5	742.6
3/00	127.8	128.4	149.0	558.0	1,089.0	1,553.0	6,025.3	9,374.3	1,900.7	739.8
2/00	126.6	128.0	148.2	551.9	1,086.7	1,546.9	5,993.3	9,327.0	1,898.1	738.3
1/00	125.8	128.2	148.1	551.4	1,084.3	1,545.1	5,978.7	9,307.6	1,894.1	738.0
12/99	126.4	128.2	145.7	541.2	1,078.2	1,543.3	5,949.7	9,258.1	1,903.6	734.1

* 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.

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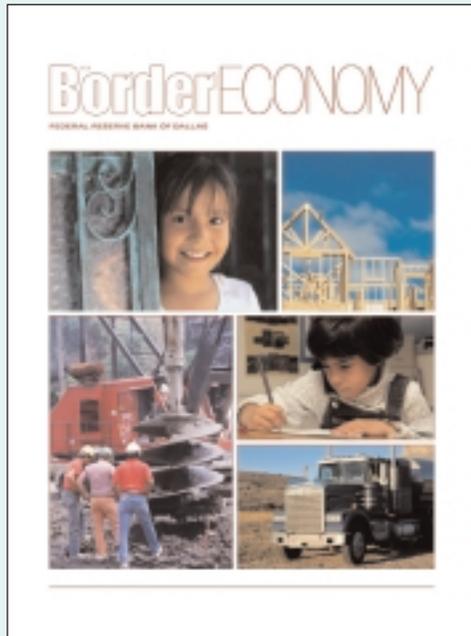
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