Southwest Economy

B2B E-Commerce: Why the New Economy Lives

In an ideal market economy, perfect competition delivers peak performance. For perfect competition to exist, not only are many buyers and sellers needed for each particular good, but perfect information about products (for example, availability, quality and specifications), demand, prices and delivery schedules is also required. As business-to-business (B2B) commerce shifts to the Internet and secure business intranets, better information will move markets closer to the textbook model of perfect competition.

By improving the flow, accuracy and timeliness of information, secure Internet-enabled systems provide greater transparency and efficiency at all points along the supply chain. Simply put, the Internet is a continuation of technological improvements that deliver information faster and cheaper, reduce search and transaction costs in online markets and improve the management of transporting and inventorying products. These savings come from both cheaper information (through lower agency and intermediary costs) and cheaper inputs (through increased supplier competition).

Census Data Show the Economy Matters

The U.S. Census Bureau recently completed the 2000 census. The effort was gargantuan, involving more than 3 million workers, over 20 million maps and almost 100 million questionnaires.[1] The results show dramatic population movements within the United States and equally dramatic international migration into the country.

In terms of national and international affairs, the decennial count has three main effects. First, the federal government distributes about $200 billion each year according to state population, so an accurate census ensures that fast-growing states will have the financial resources to meet burgeoning demand for government services.[2] Second, the census is used to reapportion seats in the House of Representatives, giving increased political clout to fast-growing states and ensuring that all U.S. citizens have equal weight in electing their representatives. Finally, the census gives government officials the infor-

INSIDE:

*Japan's Economy
Still Looks Recessionary*

This article explores how new online marketplaces and supply-chain management practices will change transaction processing and business relationships. As B2B electronic commerce (e-commerce) boosts productivity and reduces costs, the long-run beneficiaries will be consumers.

The Birth of B2B E-Commerce

Although the Internet originated more than 30 years ago, its commercial viability and significant impact on U.S. productivity really began with the creation of the World Wide Web a decade ago. The web enables documents, sound, video, images and other information forms to be instantly viewed and inexpensively accessed from anywhere in the world. The number of web sites has grown from 10,000 in January 1995 to over 29 million today (*Chart 1*). There are currently more than 2.7 billion pages on the web, and the number is rising by 5 million every day.[1]

While e-commerce forecasts vary, researchers agree it is growing fast and that its greatest economic impact will come from B2B e-commerce (which constitutes 90 percent of the total).[2] As defined here, B2B e-commerce includes the creation of Internet-enabled marketplaces for trading goods and services online and business process improvements from transferring information and transactions from the physical world to secure business intranets. Jupiter Communications (2000) estimates that B2B e-commerce in the United States was $336 billion in 2000, representing 3 percent of total B2B

The greatest long-term beneficiaries of B2B e-commerce will be consumers, who will enjoy lower prices and higher living standards.

trade. Jupiter expects the proportion of online B2B trade to grow to 42 percent by 2005. Forecasts by Forrester Research predict $2.7 trillion in B2B e-commerce sales by 2004 (*Table 1*).
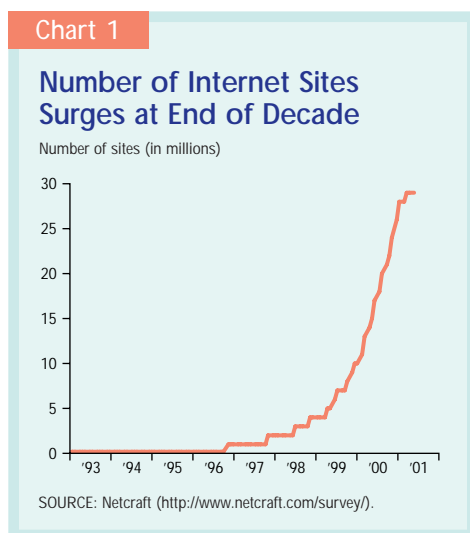
The part of B2B e-commerce expected to grow the fastest is electronic marketplaces (e-marketplaces), which use vast amounts of information and bring together multiple sellers and buyers online. According to Gartner Group, the number of B2B e-marketplaces has grown from about 30 in January 1999 to more than 1,400 today. Forrester Research expects that a consolidation and shakeout in B2B e-marketplaces will reduce the number to fewer than 200 by 2004. Nevertheless, the firm also predicts B2B e-marketplace trade will total $1.4 trillion by 2004, or 53 percent of the value of total B2B e-commerce sales.[3]

Despite the recent dot-com implosion, B2B e-commerce is still growing. Many companies are working together to build secure online B2B exchanges that will allow buyers and sellers to transact business and share information through e-marketplaces and supply chains. B2B e-commerce addresses many of the imperfections found in traditional market structures and moves markets closer to perfect competition. These imperfections include the transaction costs of gathering and analyzing information about buyers, sellers and products, as well as the costs of putting resources to their most productive use.

The Nature of the Firm

Nobel Prize-winning economist Ronald Coase published an article titled "The Nature of the Firm," explaining the basic economics of the business enterprise. Coase (1937) outlined the subtle logic of how firms pursue efficiency in a complicated world. He argued that transaction costs may prevent the free market system's invisible hand from directing resources to their best use.[4]

In Coase's view, the desire to reduce transaction costs led to the emergence of the firm. Firms exist because information (transaction and coordination) costs are too high for each buyer to feasibly employ each production input and then coordinate the production of the desired good or service. But as information costs fall, several things happen. First, more

Chart 1

Number of Internet Sites Surges at End of Decade

Number of sites (in millions)

SOURCE: Netcraft (http://www.netcraft.com/survey/).

transactions are shifted to the market-place. As a result, some consumers now buy online directly from the manufacturer. Second, there is less need for firms to be vertically integrated. This results in more firms with greater specialization and focus. Third, there may be a decreased need for many firms to produce a particular type of good. This could arise from greater economies of scale associated with less need for local sellers, better marketing information about what sells in comparable local markets, better supply chain management and so on.

Chart 2 shows that businesses encounter these information costs all along the supply chain. They incur costs in procuring the resources for production and in moving and storing products in the supply chain that connects suppliers, manufacturers, warehouses and distribution centers, and retail outlets. Like earlier technological advancements such as the telephone and fax machine but perhaps to an even greater extent, the Internet reduces such costs by increasing access to information. Better-informed market participants and supply-chain managers can ensure that resources are allocated to their most productive use.

To show this, Garicano and Kaplan (2000) use detailed internal data from one B2B e-commerce firm to find that process improvements and marketplace benefits are potentially large.[5] Litan and Rivlin (2001) estimate that the Internet will bring total annual cost savings to the U.S. economy of $100 billion to $230 billion, which over five years translates into an annual contribution to productivity

Table 1

U.S. B2B E-Commerce Forecasts by Industry

Industry	2000	2004
	(billions of dollars)	
Computing and electronics	230	593
Motor vehicles	35	412
Petrochemicals	27	299
Utilities	30	266
Paper and office products	14	235
Consumer goods	13	217
Food and agriculture	23	211
Construction	6	141
Pharmaceutical and medical products	4	124
Industrial equipment and supplies	7	70
Shipping and warehousing	5	68
Aerospace and defense	9	33
Heavy industries	3	27
Total	406	2,696

SOURCE: Forrester Research, February 2000.

growth of 0.2 to 0.4 percent above what it would otherwise have been.

Similarly, Lucking-Reiley and Spulber (2001) argue that B2B e-commerce substitutes capital—in the form of computer data processing and Internet communications—for labor services, thereby increasing the speed and efficiency of economic transactions. They divide potential productivity gains from B2B e-commerce into four areas: automation of transactions, new market intermediaries, consolidation of demand and supply through

organized exchanges, and changes in the extent of vertical integration. They conclude that even small enhancements in the efficiency of transactions will eventually produce large overall savings.
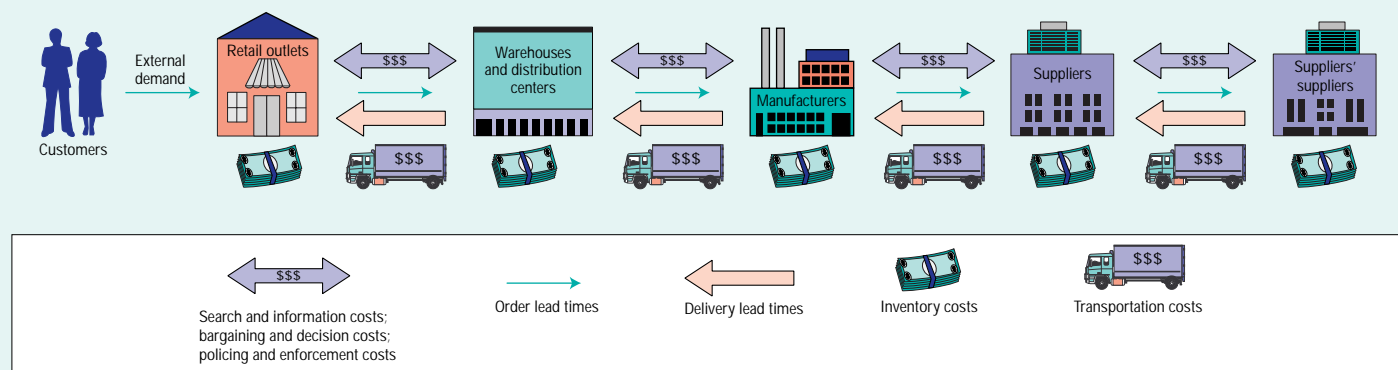
The Old Economy Is Born-Again

While more than 100 B2B e-marketplaces have been shuttered since the Nasdaq stock index peaked in March 2000, it is not the end of the B2B e-commerce story. B2B e-commerce will help companies—most notably the stalwarts of the Old Economy—collaborate with suppliers and better manage industry supply chains.

E-Marketplace Improvements. Probably the most visible area where firms can benefit from B2B e-commerce is through participation in an online exchange to buy or sell goods and services. With the Internet, buyers and sellers connect more efficiently.[6] E-marketplaces provide participants with greater knowledge of prices, availability, supplier capacities and abilities, and alternative products. It is less expensive to search for products and compare prices through e-marketplaces than to hunt through catalogs and make phone calls. British Telecom estimates that moving procurement functions to the Internet has reduced costs from $113 to $8 per transaction.[7] MasterCard estimates that the internal cost of processing its purchase orders has fallen from $125 to $40, with the time cut from four days to 1.25 days.[8]

Brookes and Wahhaj (2000) estimate that moving purchasing activities onto the Internet will provide various indus-

Chart 2

The Supply Chain

Search and information costs; bargaining and decision costs; policing and enforcement costs

Order lead times

Delivery lead times

Inventory costs

Transportation costs

tries with input-cost savings of 2 to 39 percent (*Table 2*). The average initial B2B e-marketplace cost savings in 36 U.S. industries (representing 24 percent of GDP) is 5.4 percent. The greatest savings are expected in the electronic components, computing, forest products, freight transport and life science industries.

The authors use an input–output framework to further determine the aggregate inflation effect. Since most companies produce both inputs and final outputs, less expensive inputs in one industry lead to cheaper inputs for other industries. Brookes and Wahhaj trace the impact of a decline in the price of one input on output prices and on input prices in other industries. They find that shifting procurement onto the Internet could have long-term inflation benefits.

They conclude that the use of B2B e-marketplaces by about one-third of U.S. industries could reduce aggregate prices by 3.4 percent. The long-run economic impact of B2B e-commerce includes higher growth as well as lower prices. The study predicts that B2B e-marketplaces will boost economic growth by an average 0.2 percent in each of the next 10 years, with GDP ultimately 4.4 percent higher than it would otherwise have been.

Improved Supply Chain Management. Companies will also benefit from B2B e-commerce by overhauling their corporate structures and workflow processes to exploit the fast and cheap information-sharing capabilities available through Internet-enabled systems. Both private networks and industry-established online exchanges can help participants better manage production schedules and inventory levels.

Lucking-Reiley and Spulber point out that as market transaction costs fall with the maturation of B2B e-commerce, outsourcing and vertical disintegration will occur and ultimately result in more independent entities along the supply chain. As firms in the supply chain specialize in doing what they do best, more companies will outsource the management of internal activities. The result will be more reliance on coordination through markets and less reliance on vertical integration.

The automobile industry is an excellent example of this shift. In the Old Economy, firms like General Motors

Table 2

Initial B2B Cost Savings by Industry

Industry	Cost savings (percent)
Aerospace	11
Chemicals	10
Coal	2
Communications	5–15
Computing	11–20
Electronic components	29–39
Food ingredients	3–5
Forest products	15–25
Freight transport	15–20
Healthcare	5
Life science	12–19
Metals	22
Media and advertising	10–15
Maintenance, repair and operating supplies	10
Oil and gas	5–15
Paper	10
Steel	11

SOURCE: Martin Brookes and Zaki Wahhaj, "The 'New' Global Economy—Part II: B2B and the Internet," *Global Economic Commentary*, Goldman Sachs, February 9, 2000.

Corp. and Ford Motor Co. developed organizational structures with extensive vertical integration. According to Edmonds (1923), by 1920, General Motors had extended its scope so its units or subsidiaries produced not only all engines used in its cars, but a large proportion of other components—gears, axles, crankshafts, radiators, electrical equipment, roller bearings, warning signals, spark plugs, bodies, plate glass and body hardware.

Today, auto firms are reevaluating their organizations, hoping to convert internally produced activities into low-cost B2B e-commerce transactions. General Motors' spin-off of Delphi Automotive Systems in May 1999 shows how B2B e-commerce promotes vertical disintegration. Both companies are expected to become stronger and more competitive in their respective businesses.

In February 2000, General Motors, Ford and DaimlerChrysler announced plans to create the world's largest B2B online trading exchange, called Covisint. This new enterprise offers open participation to auto manufacturers around the world, as well as their suppliers, partners and dealers. Covisint is expected to re-

duce overall inventories, develop industry standards and boost productivity for all participants.[9] Eventually, this online exchange could be expanded to other industries. Delphi joined Covisint in June 2000 to build on Delphi's experience in online purchasing, which yielded savings of $70 million in 1999. Delphi has said it expects Covisint to yield much larger savings in the future.

The Internet also improves supply chain efficiency and management by lowering required inventory levels, reducing transportation costs and virtually eliminating order and delivery lead times. Participants throughout the supply chain can share information about forecasted demand, delivery schedules and cargo capacities as well as inventory levels, availability and locations in real time, allowing processes to be redesigned and automated. For example, lower inventory levels result in lower production costs by avoiding storage, insurance and transportation expenses and the opportunity costs of inventory investment. In this sense, inventory is simply a substitute for information.

Dell Computer Corp. has turned traditional manufacturing on its head by saying it will not build anything until it receives an order. Almost 50 percent of Dell's revenues come through its web site, which generates roughly $40 million in sales each day. With perfect information about what customers want, Dell operates with five days' inventory, down from 31 days in 1996, before the company implemented its Internet-based build-to-order system.
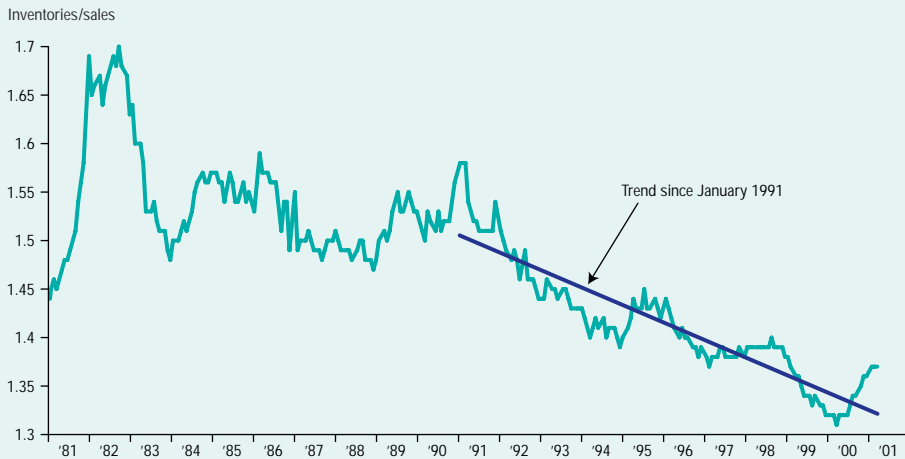
The moral of this story is that accurate information provided in real time through Internet-enabled systems leads to greater production efficiencies. Chart 3 shows that U.S. businesses, as a whole and along a long-term trend, are managing inventories better than in the past. This has likely helped fuel gains in U.S. productivity since 1995. The inventory-to-sales ratio has generally fallen, and the greatest declines have coincided with the rise of the World Wide Web.[10]

Conclusion

Despite the collapse of many dot-coms and the shuttering of many e-marketplaces, the fundamentals behind B2B e-commerce and its impact on the New

Chart 3

Total Business Inventory-to-Sales Ratio Declines

Inventories/sales

Trend since January 1991

SOURCE: Census Bureau (http://www.census.gov/mtis/www/mtis.html).

Economy remain strong. Efficiency improvements and cost savings already achieved through B2B e-commerce have likely led to higher productivity growth, lower costs and reduced pricing power, which should allow the U.S. economy to grow faster without inflationary pressures. While most of these gains will occur between businesses, the greatest long-term beneficiaries of B2B e-commerce will be consumers, who will enjoy lower prices and higher living standards.

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Notes

[1] Laura Carr (2000), "100 Numbers You Need to Know," *The Industry Standard*, November 13, http://www.thestandard.com/article/0,1902, 20128,00.html.

[2] U.S. Department of Commerce (2001), *E-Stats*, March 7, U.S. Census Bureau, Economic and Statistics Administration. Fraumeni (2001) discusses a number of e-commerce measurement challenges, including differences in methodology, coverage and general outlook.

[3] Stacy Lawrence (2000), "Behind the Numbers: The Mystery of B-to-B Forecasts Revealed," *The Industry Standard*, February 21, http://www. thestandard.com/article/0,1902,11300,00.html.

[4] Economist Adam Smith, in *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776; reprint, edited by Edwin Cannan, New York: The Modern Library, 1937, p. 423), argued that private competition free from government regulations allows for the production and distribution of wealth better than government-regulated markets. As he said, private businesses organize the economy most efficiently as if "by an invisible hand."

[5] The authors also find little evidence that informational asymmetries are more important in e-marketplaces than in physical ones.

[6] Nunes, Wilson and Kambil (2000) argue that with the Internet, companies are no longer constrained to sell in one way. This is also discussed in greater detail by Kambil, Nunes and Wilson (1999).

[7] Charles Phillips and Mary Meeker (2000), "The B2B Internet Report: Collaborative Commerce," *Equity Research*, Morgan Stanley Dean Witter, April.

[8] Scott Alaniz and Robin Roberts (1999), "E-Procurement: A Guide to Buy-Side Applications," *Stephens Inc. Internet Research*, December 27.

[9] Some experts warn that such highly efficient and large exchanges could lead to anticompetitive practices, such as collusion among rivals to fix prices and the exclusion of certain industry players from e-marketplaces. They worry that market power could occur without rival firms ever speaking to each other, as market participants see pricing information faster. See Labaton (2000) and *The Economist* (2000). In contrast, others argue that competition between exchanges should create incentives to avoid the exercise of market power as exchanges compete for increased volume by attracting greater numbers of buyers and sellers. In September 2000, the Federal Trade Commission concluded an investigation of Covisint for potential antitrust concerns, opening the way for the automotive industry's planned B2B e-marketplace to become operational.

[10] Baily and Lawrence (2001) argue that fundamental differences in the economy that have taken place in the recent expansion have not disappeared with the dot-com collapse. Supply chain management innovations were already in progress before the Internet's explosive growth, as companies developed their own internal networks (that is, intranets) for sharing information.

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Census Data Show the Economy Matters

(Continued from front page)

mation they need to address issues from the fiscal soundness of Social Security to the effectiveness of the Border Patrol.

But the census also affects Americans in a much more down-to-earth manner. State and local governments use census information to decide where to put hospitals, roads and schools. Businesses use it to choose locations for new supermarkets, banks and factories. Charitable organizations use it to decide which regions of the country need help and where they are most likely to find volunteers. Emergency systems rely on it when natural disasters strike and an accurate block-by-block count of residents is needed. Even television is affected by the census because network executives use the data to more accurately gauge the types of programming Americans wish to see.[3]

For all these reasons, it is important to understand how much, where and why America grew during the 1990s. This article examines each of these questions. It concludes that America experienced a demographic renaissance during the 1990s, that there was a general movement of people to the South and West, and that economic forces played an important role in these population shifts.

National Trends

After three decades in which growth slowed both in absolute terms and as a percentage of the total, the U.S. population grew by a robust 13 percent between 1990 and 2000 (*Chart 1*). The 32.7 million people added over the last decade represent the largest 10-year population increase in American history—even larger than the baby boom of the 1950s and the immigration boom of the early 1900s. The sharp increase caught most observers by surprise and was a full 6 million above the Census Bureau's projection.[4]

An understanding of how the increase occurred is impossible without looking at the fastest-growing ethnic group in American society: Hispanics. The number of Hispanics living in the United States grew almost 4.5 times faster than the nation as a whole, rising from 22.3 million in 1990 to 35.3 million in 2000.

Chart 1

U.S. Population Grows Sharply in 1990s

SOURCE: Census Bureau.
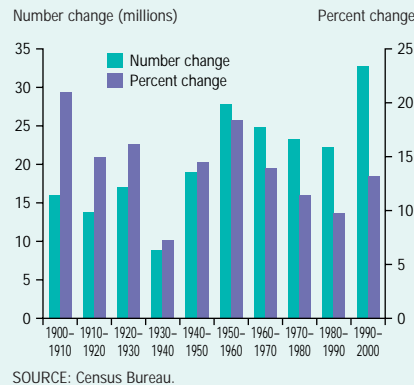
Hispanics accounted for almost 40 percent of U.S. population growth in the 1990s. While Hispanics still form less than 15 percent of the U.S. population, they were primarily responsible for the increased U.S. growth rate. The non-Hispanic growth rate was less than 2 percentage points higher in the 1990s (8 percent) than it was in the 1980s (6.4 percent).

But why did the Hispanic population grow so quickly in the 1990s? Relatively high Hispanic fertility rates account for a portion of this growth, but

Chart 2

United States Continues to Outperform Mexico

SOURCES: Organisation for Economic Co-operation and Development; Bureau of Economic Analysis.

the primary explanation appears to be an influx of immigrants—of both Mexican and Central American origin—to the United States from Mexico. To see why the influx (sometimes called the "Second Great Migration") occurred,[5] it is instructive to examine the relative economic health of the United States and Mexico over the last two decades. As is evident from Chart 2, the gap in per capita GDP (adjusted for purchasing power parity) between the two countries reached an all-time high of $21,000 in the aftermath of Mexico's disastrous 1994 peso devaluation and has continued to widen since. With an ever-growing gap between average economic well-being in the two countries, it is not surprising that a growing number of Mexicans moved north in search of work. Nor is it surprising that many Central Americans who moved to Mexico in search of a better life subsequently migrated north to the United States.

State and Regional Changes

All 50 states grew in population between 1990 and 2000. However, southern and western states grew considerably faster than the rest of the country (*Chart 3*). In fact, all four southern and western regions grew at double-digit rates during the 1990s: the Southeast (16.5 percent), Southwest (23.1 percent), Rocky Mountain (26.4 percent) and Far West (15.8 percent). The remaining regions grew much more slowly, which will ultimately move federal dollars and political power from the Northeast to the Sun Belt.

Chart 3

Big Differences in Regional Growth Rates, 1990–2000

SOURCE: Bureau of Economic Analysis.
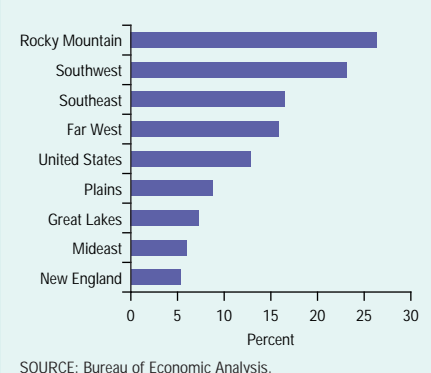
Chart 4

Fastest Growing States Are in West and South
State Population Growth by Quintile, 1990–2000

Quintile by percentage change:
1 2 3 4 5
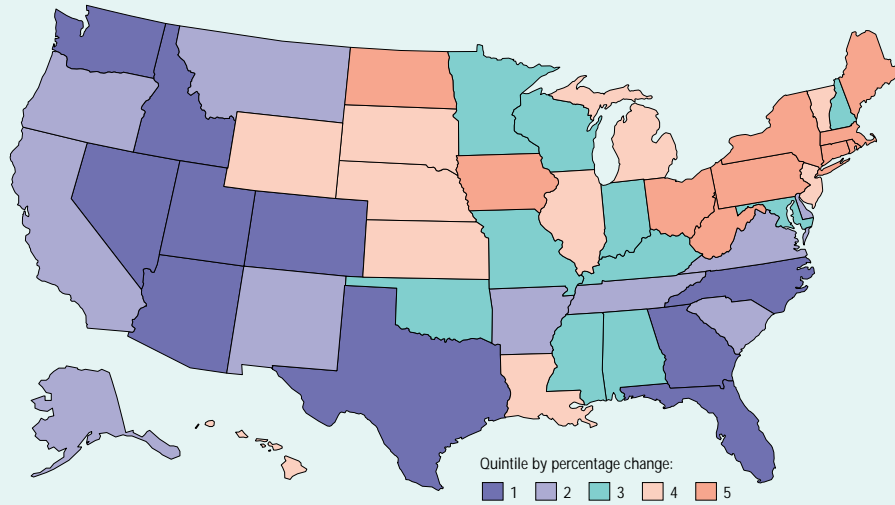
SOURCE: Census Bureau.

The state-by-state numbers clearly reflect this trend. Each of the 10 fastest-growing states is either west of the Mississippi River or south of the Mason-Dixon Line (*Chart 4*). Nevada and Arizona led the nation with growth rates in excess of 3 percent per year, with Colorado, Utah and Idaho close behind. The next four states are all southern and include the megastates of Texas and Florida. Washington rounds out the top 10, due primarily to that state's burgeoning high-tech economy and an unusually large number of immigrants from Asia.

The 10 states whose populations grew most slowly during the 1990s tell the opposite story. Each of the 10 slowest-growing states is either east of the Mississippi River or north of the Mason-Dixon Line, including four of the six New England states, New York and Pennsylvania. Slowest of all was the District of Columbia, whose population actually fell by 5.7 percent between 1990 and 2000.

Many factors affect the decision to live in a particular state, but did the population movements of the 1990s occur in part for economic reasons? Answering this question requires a look at how state economies performed during the past decade. Unfortunately, there is no perfect measure of this phenomenon. The total growth in gross state product (GSP) reveals how much each state's output grew, but it tends to favor states with high population growth because additional people almost always contribute at least a small amount to GSP. On the other hand, GSP growth per capita reflects the output produced by the average person but almost certainly understates the economic attractiveness of high-population-growth areas in the 1990s. This is because the Mexican immigrants who made a disproportionate contribution to U.S. population growth are less skilled than longtime residents and hence may hold down growth in per capita output.

Keeping in mind that per capita GSP almost certainly understates the economic attractiveness of high-population-growth areas, Table 1 presents population and per capita GSP growth for the 10 states whose populations grew fastest in the 1990s. The chart reveals a surprisingly strong relationship between population and per capita GSP: Five of the top six fastest-growing states (in terms of population) are among the top 10 for per capita GSP growth, and only two states are among the bottom 20. This suggests that economic forces played a key role in the population shifts of the 1990s.

A Closer Look at Texas

From 1990 to 2000, the Texas population rose by an all-time high of 3.9 million (*Chart 5*). Texas became the second-

Table 1

High Population Growth vs. High Economic Growth

State	Population growth, 1990–2000 (percent)	Rank	Real GSP per capita growth, 1990–99 (percent)	Rank
Nevada	66.3	1	17.3	41
Arizona	40.0	2	36.6	6
Colorado	30.6	3	37.7	4
Utah	29.6	4	33.5	8
Idaho	28.5	5	37.7	5
Georgia	26.4	6	32.2	9
Florida	23.5	7	19.2	36
Texas	22.8	8	29.3	16
North Carolina	21.4	9	28.8	18
Washington	21.1	10	24.0	29
United States	**12.8**		**23.3**	

SOURCES: Census Bureau; Bureau of Economic Analysis.

Chart 5

Texas Population Continues to Grow

Number change (millions)
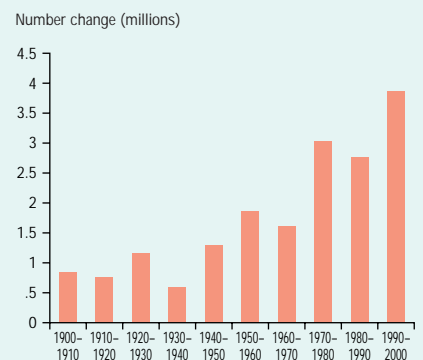
SOURCE: Census Bureau.

Chart 6

Texas Spends Little and Taxes Less

Dollars per capita (in thousands)

State revenue — New York, United States, Texas, Tennessee
State expenditure — New York, United States, Texas, Arkansas

SOURCE: Census Bureau.

Chart 7

Ten-Year Population Growth in Texas by Region

Northwest 7.1%
Northeast 27.3%
Southwest 23.1%
Southeast 22.1%

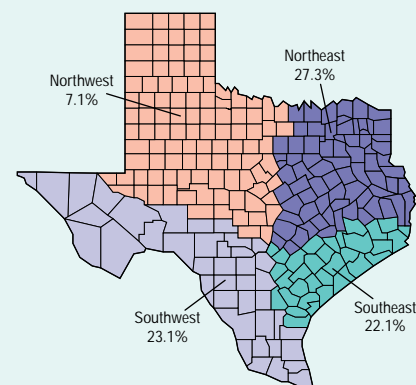SOURCES: USDA Economic Research Service; Texas Comptroller of Public Accounts.

While the higher fertility rate cannot fully explain the fact that Texas grew 70 percent faster than the United States, it certainly contributed to Texas' above-average population growth during the 1990s.

Finally, Texas has a favorable business climate. Texas is widely regarded as one of the nation's most business-friendly states because of the low burden its regulations impose on firms.[7] In fact, the Texas government is one of the least activist in the nation: It spends less per capita than all but eight states and receives less revenue per capita than all but five states (*Chart 6*).[8] While government certainly has an important role to play in some contexts, one recent study[9] found that Texas' business climate was responsible, in 2000 alone, for creating 180,000 jobs.[10] These jobs provided much of the fuel for Texas' economic expansion in the 1990s, attracting domestic and international migrants alike.

Balanced against this encouraging news are some sobering statistics from West Texas. According to Census Bureau data, more than one-quarter of Texas' 254 counties lost population during the 1990s. These 68 counties were almost uniformly rural and dependent on industries such as agriculture and oil whose fortunes declined precipitously during the 1990s and whose production processes increasingly rely on machine rather than

largest state during the 1990s, growing more than 70 percent faster than the nation as a whole, and now has almost 2 million more people than third-place New York. There is virtually no chance that another state will become more populous than Texas during the 21st century, and it is actually possible that Texas could surpass California by 2065.[6]

Much of the state's population growth occurred in suburban counties such as Collin (Dallas), Williamson (Austin) and Montgomery (Houston); all three were among the 100 fastest-growing counties in the nation. Growth was also exceptionally strong along the Mexican border. In order, the five fastest-growing metro areas were McAllen (48.7 percent), Austin (47.7 percent), Laredo (44.9 percent), Dallas (31.5 percent) and Brownsville (28.5 percent).

Texas grew quickly in the 1990s for several reasons. First, it is adjacent to Mexico and hence participated in the influx of Hispanic immigrants. The number of Hispanics in Texas rose from 25.5 percent in 1990 to 32 percent today, and it is estimated that non-Hispanic whites will form a minority of the state population by 2010. In fact, Hispanics could form an absolute majority of the U.S. population as early as 2050 if present trends continue.

Second, Texas has a relatively high birth rate. Of the 50 states and the District of Columbia, Texas' fertility rate is higher than all but three and exceeds the national average by over 16 percent.

A Roll Call of Frontier Counties

Sixty-one Texas counties meet the 19th century definition of frontier—six or fewer people per square mile. Panhandle counties are denoted by **bold** type and other Northwest Texas counties by *italics*.

Armstrong, *Baylor*, *Borden*, Brewster, **Briscoe**, **Cochran**, *Coke*, **Collingsworth**, *Concho*, *Cottle*, *Crane*, Crockett, Culberson, **Dallam**, **Dickens**, **Donley**, Edwards, *Fisher*, *Foard*, **Garza**, *Glasscock*, **Hall**, **Hansford**, **Hartley**, **Hemphill**, Hudspeth, *Irion*, Jeff Davis, Jim Hogg, Kenedy, *Kent*, Kimble, **King**, Kinney, *Knox*, La Salle, **Lipscomb**, *Loving*, McMullen, *Martin*, *Mason*, *Menard*, **Motley**, **Oldham**, Pecos, Presidio, *Reagan*, Real, Reeves, **Roberts**, *San Saba*, *Schleicher*, *Shackelford*, **Sherman**, *Sterling*, *Stonewall*, Sutton, Terrell, *Throckmorton*, *Upton*, **Wheeler**.

man. Almost all of these counties (56) are located in the northwestern part of the state, including 26 of the 41 counties that make up the Panhandle. While telecommunications innovations such as the Internet may ultimately help these counties grow, it is clear that these areas did not participate in the population growth experienced by the rest of Texas in the 1990s. In fact, 61 Texas counties now meet the 19th century federal definition of frontier—six or fewer people per square mile (see box titled "A Roll Call of Frontier Counties").

With the income gap between rural and urban areas in Texas rising to an all-time high of $7,800 per person during the 1990s,[11] it is not surprising that the population of predominantly rural Northwest Texas rose by only 7.1 percent (*Chart 7*). Nor is it surprising that the remaining three regions, each anchored by fast-growing cities, grew far more rapidly. Booming Dallas/Fort Worth propelled Northeast Texas to a 27.3 percent growth rate and served notice to the nation that it had arrived as a high-tech center.[12] Southwest Texas (including the border) grew by 23.1 percent as the region's labor markets achieved their lowest unemployment rates in recorded history. And Southeast Texas grew by a slightly lower figure of 22.1 percent as the volatile energy sector alternately pummeled the region and bestowed extraordinary prosperity upon it. On the whole,

Japan's Economy Still Looks Recessionary

Last March, Japan's central bank made a significant qualitative change in monetary policy. It switched the operating target for monetary policy from the overnight call rate to the level of current account balances held by financial institutions, paving the way to inject more money into the nation's worsening economy.

However, this monetary policy adjustment has yet to create the conditions for recovery. Although the Japanese economy has been suffering for a decade from stagnant growth—in which the economy expands at significantly below trend—new evidence suggests an absolute recession in recent months. If a recession is defined as two consecutive quarterly declines in GDP, Japan is already halfway there with its negative first quarter (*Chart 1*).

Moreover, Japanese industrial production and other indicators have fallen so significantly since the first quarter that many observers believe the second quarter will also show negative GDP growth. A quarterly survey of manufacturers' sentiments by the Bank of Japan, taken in mid-June, also suggests more negative conditions than in the first quarter.

This continuing weakness places Japanese policymakers in a quandary. While both monetary and fiscal policy have been thought useful in addressing an economic downturn, attacking the Japanese economy's recessionary impulses by means of fiscal deficits has been tried often in the past decade without success. Because of these efforts, Japan's debt-to-GDP ratio has ballooned to levels considerably higher than those of other developed countries and its Asian neighbors (*Chart 2*).

With Japan's nominal interest rates near zero, the cost of carrying even its current debt load is not overwhelming. But the budgetary implications of potentially higher interest rates in the future have some policymakers nervous about additional deficit financing. And b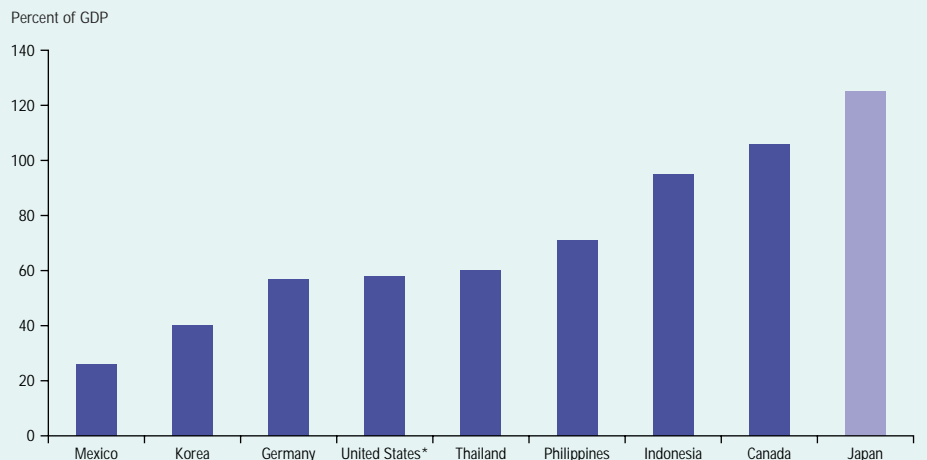ecause past deficit spending was insufficient to kick-start the economy, some policymakers are pessimistic about the effects of such spending as future policy.

Junichiro Koizumi, the new Japanese prime minister, wishes to refocus antirecessionary efforts away from fiscal and monetary policies and toward structural reforms. He wants to resolve Japanese banks' huge inventory of bad debts, much as the Resolution Trust Corp. (RTC) did for U.S. financial institutions in the 1990s. Koizumi also would slow expansion of the government's budget deficit and deregulate and privatize the economy. He believes private industrial reorganization would bring greater long-

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Chart 1

Growth Indicators Looking Down

Quarterly GDP growth (percent)

Monthly production and exports growth (percent)
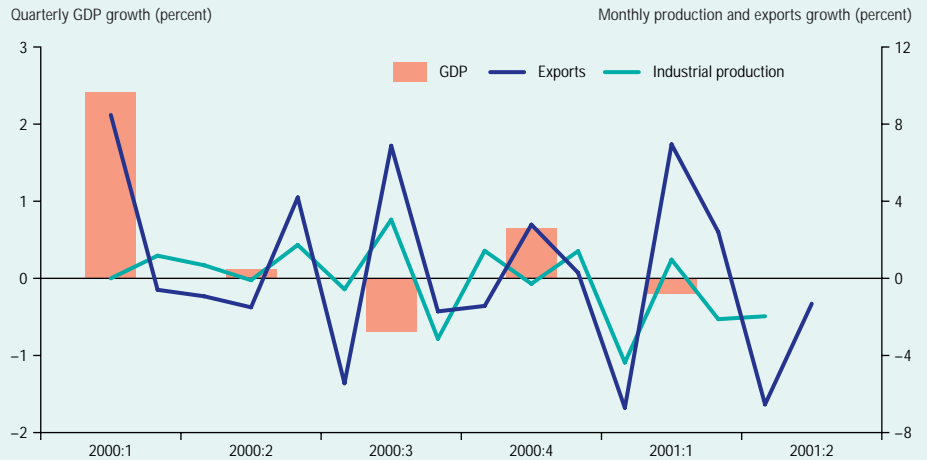
SOURCES: Economic and Social Research Institute (GDP); Ministry of Finance (exports); Ministry of the Economy, Trade, and Industry (industrial production).

Chart 2

Japanese Debt Looms
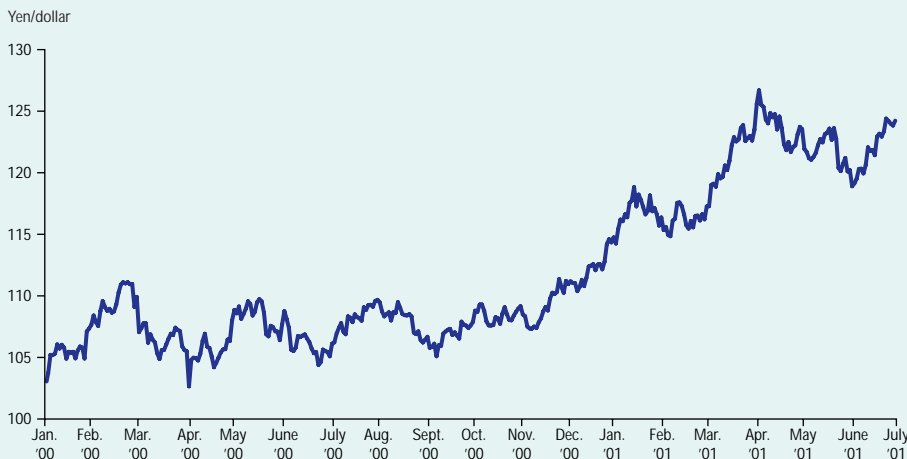
Percent of GDP

* Federal government debt only.

SOURCES: Secretaria de Hacienda y Crédito Público (Mexico); Goldman Sachs (Korea, Thailand, Philippines, Indonesia, Japan); Federal Statistical Office (Germany); Department of the Treasury (United States); Department of Finance and Statistics Canada (Canada).

Chart 3

Yen Depreciates Against the Dollar

Yen/dollar

SOURCE: PACIFIC Exchange Rate Service.

run efficiencies, as has been demonstrated repeatedly over the last decade in Latin America, and ultimately revive the economy.

However, while the RTC's restructuring allowed U.S. financial institutions to resume lending, government critics wonder if the same stimulation can occur in Japan. That is, in an environment where private credit demand is so low, the negative effects of foreclosures and write-downs of bad debt may not be offset by the positive effects of freeing banks to make new loans.

Similarly, some observers who support more deficit spending question whether budget tightening will get Koizumi what he wants. After all, they argue, the United States is cutting taxes to prime the pump in economic circumstances far less serious than Japan's. Nevertheless, Koizumi has shown his determination to pursue structural reform. He has said that his reforms should have positive economic effects in two or three years—a timetable that may require the Japanese to fasten their seat belts.

Despite Koizumi's reformist political image, some analysts claim that his reform agenda lacks a clear action plan. They argue that his pledge to cap new government bond issuance at $246 billion will create more short-term economic and political pressure than his government can endure. Recent data show that outstanding bonds jumped 10 percent from March 2000 to March 2001, to $3 trillion.

Even though deficit spending has not spurred growth, keeping the deficit below $246 billion may allow regional economic conditions to weaken more than they already have. Economics Minister Heizo Takenaka recently estimated that liquidating bad debt could cost 100,000 to 200,000 jobs as banks pull the plug on unprofitable companies.

The unemployment estimate hints at the extent of reform Japanese policymakers have in mind. It is estimated that nonperforming loans in Japan are equivalent to 8 to 30 percent of GDP and that an amount equal to 4 percent of GDP needs to be written off. In such an environment, Takenaka's estimate of 200,000 jobs lost—a 0.3 percent increase in the unemployment rate—may reflect the government's positive expectations concerning the ultimate effects not only of reform, but also of other policies.

In this context, looser monetary policy, including the direct purchase of government bonds by the Bank of Japan, is anticipated. So is the depreciation of the yen, as can be seen by the recent currency market reaction (*Chart 3*). Some U.S. academics feel that the Japanese economy cannot resuscitate without some kind of demand-side policies.

The effects of monetary and fiscal policy in Japan have been small and short-lived for the last decade, mainly because many Japanese companies could not make profits in response to them. Easy monetary policy did not spur in-

vestment because companies did not want to borrow, even at virtually zero nominal interest rates. Nor have consumers increased their consumption. With low expectations of corporate profits, they could not foresee increases in their own incomes and thus remain cautious spenders. The effects of fiscal expenditure evaporated as soon as the government money was gone.

Koizumi's proposals are based on the idea that economic reform should create the conditions necessary for private companies to become profitable through organizational and product innovations. The concern of some Japanese policymakers about employment suggests they are still reluctant to change the legal and institutional structures that have made it difficult in the past for the Japanese labor market to adjust to change. However, the idea of steps toward labor market flexibility and the consistency of these moves with the expressed intentions of the Koizumi administration are said to be gaining ground among Japanese politicians. Such changes in Japan's labor market would not be easy, but similar adjustments in recent years have helped make the difference between recovery and its antithesis in some other Asian economies.

— Willam C. Gruben
Jahyeong Koo

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lowing of the Eleventh District economy intensified in April and May, with job growth falling below 1 percent and unemployment rising to 4.5 percent. The sharp downturn in job growth results from the spread of troubles in the manufacturing and high-tech areas to the larger trade and services sectors—developments consistent with the national economy.

Hardest hit are the high-tech and manufacturing centers, including Austin, Dallas, El Paso and Fort Worth. Because the slowdown is no longer limited to just high-tech and manufacturing firms, however, most major Texas metro areas are also feeling the pain, including Houston, San Antonio and the border cities of Brownsville, McAllen and Laredo.

The broad-based slowing stems from sluggish to negative growth in the three largest job sectors: narrowly defined services, wholesale and retail trade, and manufacturing. This sug-gests current downward trends are now impacting consumer spending as well as production. The four smaller sectors—TCPU (transportation, communications and public utilities), FIRE (finance, insurance and real estate), construction and mining—are holding up.

The flagging economy abroad is also affecting the District. Exports have declined for two consecutive quarters. With housing demand softening and mortgage rates stalled, construction and real estate markets have slackened. Since March, only the energy sector has seen accelerating activity.

The District's slower growth should continue into the third quarter. Labor market uncertainty may be undermining consumer confidence, without which recovery is unlikely. We expect 2001 job growth to fall below 2 percent—the lowest in nine years.

—Pia Orrenius

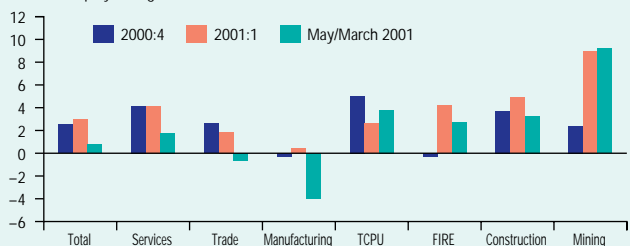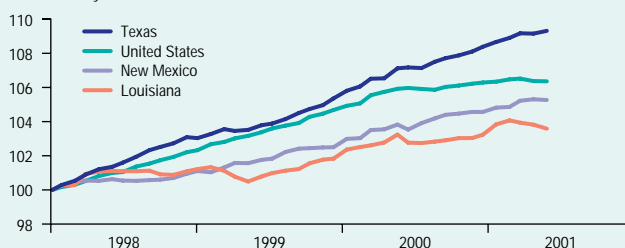### Texas Job Growth Slows in April and May
Percent, total nonfarm*

*Quarter-over-quarter, seasonally adjusted, annualized rate.
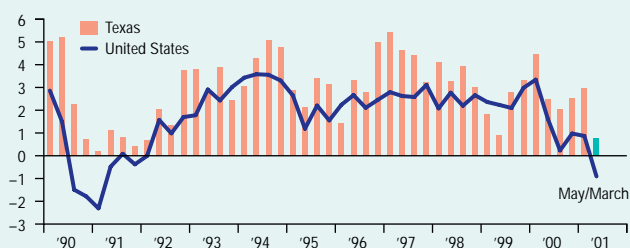
Total Nonfarm Employment
Index, January 1998 = 100

Slowdown Spreads to Trade and Services
Percent, employment growth*

*Quarter-over-quarter, seasonally adjusted, annualized rate.

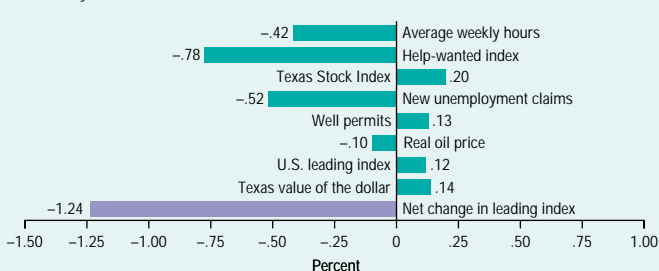### Net Contributions of Components to Change in Leading Index
March–May 2001

Regional Economic Indicators

| | Texas Leading Index | TIPI† total | TEXAS EMPLOYMENT* | | | | | TOTAL NONFARM EMPLOYMENT* | | |
			Mining	Construction	Manufacturing	Government	Private service-producing	Texas	Louisiana	New Mexico
5/01	119.9	131.1	157.7	581.4	1,078.8	1,583.3	6,221.7	9,622.9	1,941.4	753.9
4/01	118.9	131.1	157.6	579.6	1,082.2	1,583.3	6,205.8	9,608.5	1,945.8	754.2
3/01	120.2	131.0	155.4	578.3	1,086.2	1,580.7	6,209.7	9,610.3	1,948.0	753.6
2/01	121.3	131.7	153.4	575.2	1,087.6	1,579.1	6,191.1	9,586.4	1,950.5	751.0
1/01	124.0	131.2	153.0	574.3	1,087.2	1,575.4	6,175.8	9,565.7	1,946.1	750.7
12/00	122.7	131.2	152.1	571.4	1,085.0	1,570.4	6,161.9	9,540.8	1,934.8	748.9
11/00	123.2	131.1	152.0	568.7	1,085.7	1,567.4	6,142.2	9,516.0	1,931.1	748.9
10/00	124.8	131.1	151.6	567.2	1,085.5	1,564.8	6,127.3	9,496.4	1,931.0	748.2
9/00	125.9	131.3	151.2	566.2	1,085.4	1,566.8	6,112.3	9,481.9	1,928.6	747.7
8/00	126.3	131.4	150.7	564.3	1,084.6	1,563.0	6,100.9	9,463.5	1,927.2	746.2
7/00	126.5	131.1	150.1	561.1	1,085.8	1,564.9	6,069.2	9,431.1	1,925.6	744.2
6/00	126.2	130.1	149.9	563.1	1,088.6	1,568.2	6,064.4	9,434.2	1,926.0	741.5

* 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.

Census Data Show
the Economy Matters

(continued from page 8)

though, the 1990s have brought good economic times—and unprecedented population growth—to Texas.

Conclusion

For the United States in general and Texas in particular, the 1990s was a time of change. On the international scene, millions of immigrants from Mexico entered the United States in search of a better life. Domestically, economic growth in the South and West fueled a Sun Belt population surge that will have far-reaching public policy effects in the years to come. And economic factors contributed to astonishing population growth in Texas, with rural weakness offset by the booming border and metro areas.

—Jason L. Saving

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Notes

I would like to thank Steve Brown, Alan Viard, Daniel Wolk, Charis Ward and Lori Taylor for their helpful comments and assistance. Any remaining errors are my own.

[1] See "Census 2000 in a Flash," Bureau of the Census publication no. D-3237 (11-99).

[2] For more information, see *The Department of Commerce Budget in Brief, Fiscal Year 2001*, available online at http://www.osec.doc.gov/bmi/budget/PB2001/browse/BIB_ALL.pdf.

[3] Dianne Sols (2001), "Census to Change TV Ratings," *Dallas Morning News*, June 6, p. 1D.

[4] Charles Ornstein (2001), "U.S. Added More Residents in 1990s Than Ever Before," *Dallas Morning News*, April 3, p. 12A.

[5] See Pia M. Orrenius and Alan D. Viard (2000), "The Second Great Migration: Economic and Policy Implications," *Southwest Economy*, Issue 3, May/June, pp. 1–8.

[6] If current population growth trends continue, Texas would become the most populous state in the year 2065. If current trends (especially Mexican immigration) do not continue, California will retain its position as the nation's most populous state for the foreseeable future.

[7] See Thomas J. Holmes (2000), "The Location of Industry: Do States' Policies Matter?" *Regulation* 23 (1), pp. 47–50.

[8] The data include local as well as state government. Alaska and the District of Columbia are excluded.

[9] *North American Business Cost Review*, 7th ed. (West Chester, Pa., economy.com, 2001).

[10] By contrast, New York lost over 300,000 jobs last year for these reasons.

[11] See Carole Keeton Rylander (2001), *Rural Texas in Transition*, available online at http://www.window.state.tx.us/specialrpt/rural.

[12] See *Cyberstates 2001: A State-by-State Overview of the High-Technology Industry*, American Electronics Association.