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The *Austin Index*

Monitoring a City's Progress

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Developed in 2002 by the Bureau of Business Research (BBR), the *Austin Index* began as a pilot project to benchmark the economy of the Austin-San Marcos metropolitan statistical area (MSA). It debuts this month as an online resource, tracking one of the state's most diverse economies. The *Index* (www.utexas.edu/depts/bbr/austindex/) uses twenty indicators (measurements) to illustrate Austin's performance today and compares it to that of other leading U.S. high-tech regions.

In developing the website, our strategy has been to walk before we run. For simplicity, we followed the Brookings Institution's¹ approach and selected high-tech metropolitan areas for comparison based on the frequency with which they are mentioned in both popular and academic literature. Those areas include the two most frequently studied centers of high technology, Silicon Valley, located in the San Jose primary metropolitan statistical area (PMSA), and Route 128 (Boston PMSA), as well as one smaller but fast-growing high-tech center, the Research Triangle (Raleigh-Durham-Chapel Hill MSA). In the latter phases of this project, other high-tech regions will be added to the *Index*.

This issue of *Texas Business Review* (TBR) introduces the *Austin Index*, providing a sampling of the kinds of analysis and information made available by this resource. Sample indicators are used to examine trends, compare eco-

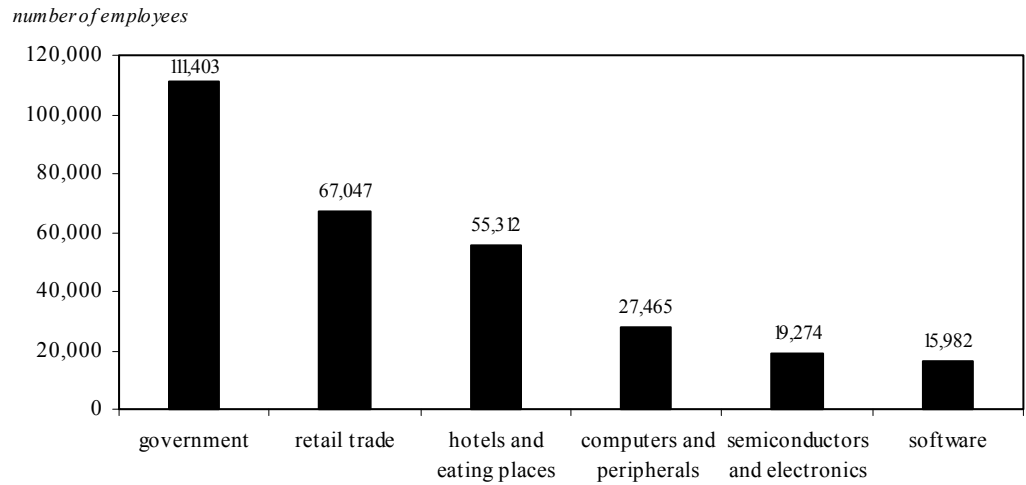
nomic outcomes, and identify future challenges for the Austin economy.

Diversify, Diversify, Diversify

Historically, two primary sectors, state government and the university, have fueled the Austin economy. However, calls for diversification came as early as the 1950s. In a 1957 study conducted for the Austin Chamber of Commerce, for instance, the BBR recommended diversifying the Austin economy by attracting "light" manufacturing, such as electronics and telecommunications. Over the next twenty years, the city's economic base indeed broadened. In an October 1978 TBR article entitled "Austin: Rapid Growth in the Hill Country," Joanne P. Austin and Janet K. Tandy described the changing view of the Austin manufacturing sector. Long considered an economic stepchild, this sector had become a vital contributor to the late 1970s economy of the metropolitan area. Moreover, half of the area's ten largest manufacturing plants—Eagle Signal, Texas Instruments, Tracor (which had been located in Austin since 1955), Motorola, and Westinghouse Electric—were engaged in the production of electronic or high-technology equipment and systems. A later (1982) article, "Centers of Technology in the Southwest" by Edward J. Malecki, ranked Austin among the five urban areas in the Southwest with above-average levels of industrial R&D.

During these years, Austin managed to create a highly diversified economic

Figure 1
Employment in the Largest Non-High-Tech and High-Tech Sectors
Austin-San Marcos MSA
(third quarter, 2002)



Source: Bureau of Business Research, McCombs School of Business, The University of Texas at Austin, <http://www.utexas.edu/depts/bbr/austindex/snapshot/employment/clusters39802.xls>

Measuring the economic, social, and environmental progress of the city—in other words, gauging its progress toward smarter growth—has become a complex task that involves collecting and analyzing a large number of indicators.

base, the new high-technology economy interacting with the “old” economy. Today the high-technology industry in Austin accounts for 15 percent of total employment in the city, and it is highly specialized in three *core* clusters—computers, semiconductors, and software²—and two *emerging* clusters—biosciences and film-music.³ As observed in figure 1, however, three “old” economic sectors—government, retail, and hotels/restaurants—continue to generate most of the employment in the city, accounting for 36 percent of total employment in 2002.

Enter the *Austin Index*

The diversification of Austin’s economy and the accelerated pace at which the city accomplished this objective have increased the complexity of monitoring its economic progress. The rapid growth of the Austin economy in the 1980s and 1990s brought not only employment opportunities for both high- and-low skilled labor, but also challenges—traffic congestion, rising housing costs, increased pollution—for economic development. Thus, measuring the economic, social, and environmental

progress of the city—in other words, gauging its progress toward smarter growth—has become a complex task that involves collecting and analyzing a large number of indicators. Unlike other leading high-technology regions, such as Silicon Valley and Boston/Route 128, Austin lacked a regional index to assess the progress of the city’s economy.⁴

The *Austin Index* has emerged as a natural extension of the BBR’s long-established commitment to the economic development of the city. The primary objective of the website is to be the most comprehensive source of information about the progress of the Austin economy in terms of economic, social, and environmental indicators. The criteria guiding the selection of the twenty indicators included: an extensive review of indicators published in the indexes for other high-tech regions, a comprehensive review of the indicators published through the years for the Austin region, feedback from local economic development experts, and suggestions from other bureaus of business research.

Data included in the *Index* presents a comprehensive picture of Austin’s social, economic, and environmental performance. The information must be

Despite the extraordinary growth of the high-tech industry, Austin continues to be the most affordable place to live among leading high-tech cities.

reliable, comparable across time and especially across geographical areas, and useful to a broad audience. The website is designed to serve:

- *Policymakers.* Statistics from the *Austin Index* can help identify challenges and opportunities for Austin's economic progress.
- *Companies.* As a resource for relocation decisions, the *Index* identifies the city's competitive advantages in relation to other high-tech cities.
- *Students.* Researchers can find information on Austin's economic base, environmental health, and social conditions.
- *Journalists.* *Index* data can be used to analyze economic changes in Austin and other high-tech regions.
- *Local business people.* Firms can develop competitive strategies based on the information provided in the *Index*.

A Comparative Glimpse

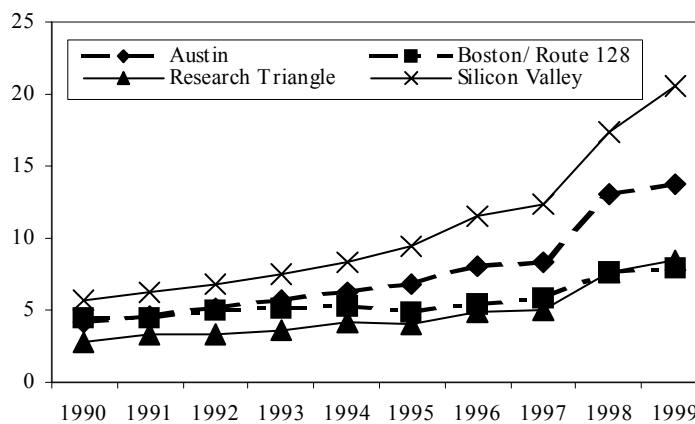
Space limitations prohibit more than just a sampling here of the kinds of analyses that can be performed by using

comparative data from the *Austin Index*. Because we analyze trends from only three indicators, we can only partially examine how Austin has performed among leading high-tech cities in the last ten years. In comparing the performance of Austin with that of other leading U.S. high-tech regions (Silicon Valley, Research Triangle, and Route 128), we highlight two positive trends:

• *Innovation.* A frequently used index of innovations, patents per capita, indicates the city's capacity to attract highly innovative technology firms. As observed in figure 2, the number of patents issued per 10,000 inhabitants in Austin increased 69 percent, from four in 1990 to thirteen in 1999. Boston and the Research Triangle, in contrast, recorded only about five patents per capita for 1999. Silicon Valley, however, registered around 21 patents per 10,000 inhabitants in that year.

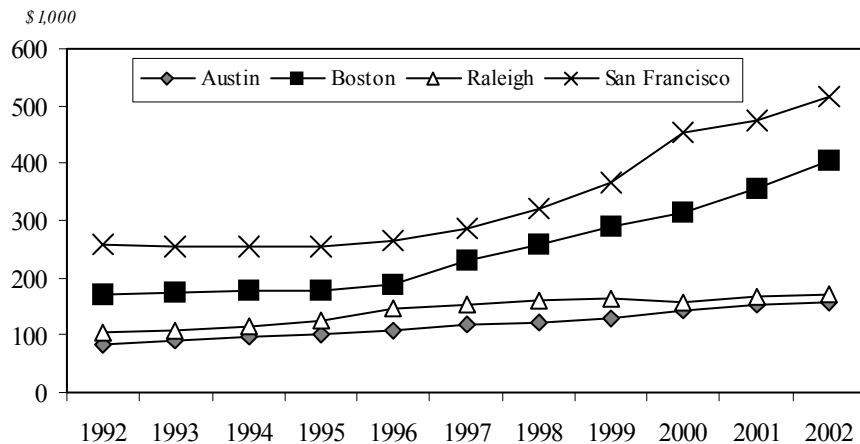
• *Affordability.* Despite the extraordinary growth of the high-tech industry, Austin continues to be the most affordable place to live among leading high-

Figure 2
Number of Patents Issued in Selected U.S. High-Tech Regions, 1990-1999
(per 10,000 population)



Source: U.S. Patent and Trademark Office, *U.S. Patent Grants by State, County, and Metropolitan Area (1990 to the Present)* <http://www.uspto.gov/web/offices/ac/ido/oeip/taf/county.pdf>.

Figure 3
Median Housing Sales Prices in Selected
U.S. High-Tech Metropolitan Areas, 1992-2002



Source: National Association of Realtors, *Median-Sales Price of Existing Single-Family Homes for Metropolitan Areas*.

In 2000, a peak period trip required 27 more minutes than one made at free-flow speed; in 1982, only eight minutes. This represents an increase of 70 percent. Nevertheless, when compared with other high-tech cities, Austin is among the least congested. Peak traffic in Boston and San Jose, for instance, added about 42 minutes to travel time in those areas in 2000.

tech cities. Indeed, figure 3 shows that the median housing price in Austin was \$156,500 in 2002, much lower than those in Silicon Valley and Boston, where median prices were \$517,500 and about \$400,000, respectively, in the same year.

At the same time, the extraordinary growth of Austin's high-tech industry (and population) has also generated new challenges to economic development. Road congestion is one of the most significant of these challenges. The *Travel Time Index* (TTI), published by Texas A&M University, is one of the indicators presented in the *Austin Index* to measure traffic congestion. TTI measures the amount of additional time required to make a trip because of congested conditions on the roadways. The TTI numbers for Austin show that in 2000, a peak period trip required 27 more minutes than one made at free-flow speed; in 1982, a peak period trip added only eight minutes to travel time. This represents an increase of 70 percent. Nevertheless, when compared with other high-tech cities, Austin is among the least congested. Peak traffic in Boston and San Jose, for instance, added about 42 minutes to travel time in those areas in 2000.

A Snapshot of the Austin Economy

The large time lag in the availability of some data is one key limitation of the comparative section of the *Austin Index*. For instance, data on building permits are published with a one-month lag for geographical areas, but three-year lags separate the publication of data such as crime rates and air quality indexes. The *Index* addresses this constraint with "Austin Snapshot." This section presents information on what is happening in the Austin economy today.

In this section, we follow the performance of the Austin economy from 1999 until the present. We use 1999 as the benchmark year in the "Snapshot" section because area high-tech employment peaked that year and then declined in 2000 at the onset of the current recession. One of the main criteria for inclusion in this section is frequency of availability: snapshot indicators must be available at least quarterly. Many local economic development organizations provide *current* data on Austin's economy,⁵ and the *Austin Index* complements information provided by these local policy-oriented organizations. What is unique in *Index* analyses of current trends in the Austin

economy is the reporting of the employment trends by economic clusters.

How is the Austin economy performing *today*? To answer this question, the snapshot section focuses on, for example, employment data and data on sales subject to tax by economic sectors and unemployment claims. As with the above explanation of the *Index* comparative section, however, this paper gives the reader only a sampling of the analyses of the snapshot section. As already indicated, one of the most important contributions of this section is the analysis of the latest employment data for high-tech clusters and non-high-tech sectors in Austin.

Figure 4 compares data from the third quarter in 1998⁶ to the third quarter in 2002 (with a lag of three quarters, it is the latest data available from the Texas Workforce Commission). The Austin economy added 51,113 new jobs during this period. Interestingly, all the non-high-tech sectors (with the exception of manufacturing) show gains in employment, but two core high-tech clusters, computers and semiconductors, showed large losses in employment. Moreover, in a countercyclical trend to the other high-tech clusters, software development showed a positive employment gain. In sum, when the accelerated growth of the two main high-tech clusters slowed down in 2000, Austin's economic growth benefited from a highly diversified economic base where the "old" economic sectors continued to create new employment opportunities.

Still to Come

Similar to publishers of indexes developed for other high-tech regions, the Bureau of Business Research plans to issue short reports annually, using information from the *Austin Index* to highlight the city's advances in three broad categories: economic development,

the environment, and the well-being of its citizens. The first report, *2004 Index of Austin*, will analyze key indicators in the context of two questions: Why is the indicator important? How does Austin compare to other high-tech areas?

Currently, our analysis is limited to twenty indicators. Eventually, however, we will increase this number. For instance, we hope to measure Austin's success as an exporting city or as a location for start-up companies against that of other high-tech regions. Developing search capability for the *Index* is a short-term goal as well.

The *Austin Index* is a dynamic instrument designed to capture changes in the Austin economy on a continuous basis. Over time, we hope it will become a useful tool for policymakers, journalists, students, and executives.

Notes

1. The Brookings Institution, *High Tech Specialization: A Comparison of High Technology Centers*. Washington, DC: Center on Urban and Metropolitan Policy, 2001.

2. A cluster is defined as a geographical concentration of interdependent firms in related industries. Austin's clusters were identified in an Austin Chamber of Commerce report, *1998 Next Century Economy*, that summarizes findings from a study conducted for the Chamber by ICF Kaiser International.

3. Long billed as the "Live Music Capital of the World," Austin is home to a disproportionately large number of musicians, live music venues, and music support industries. More high-tech sectors such as film and digital entertainment are establishing a growing presence in the local community.

4. *Index of Silicon Valley—Measuring Progress Toward the Goals of Silicon Valley 2010*, published annually by Joint Venture, and *Index of Massachusetts Innovation Economy*, published annually by Massachusetts Technology Collaborative.

5. For example, the City of Austin, Comptroller of Public Accounts, Austin Chamber of Commerce, Capital Area Planning Council, and Texas Economic Development Department.

6. We are in the process of estimating these data for 1999, our benchmark year.

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www.utexas.edu/depts/bbr/austindex/

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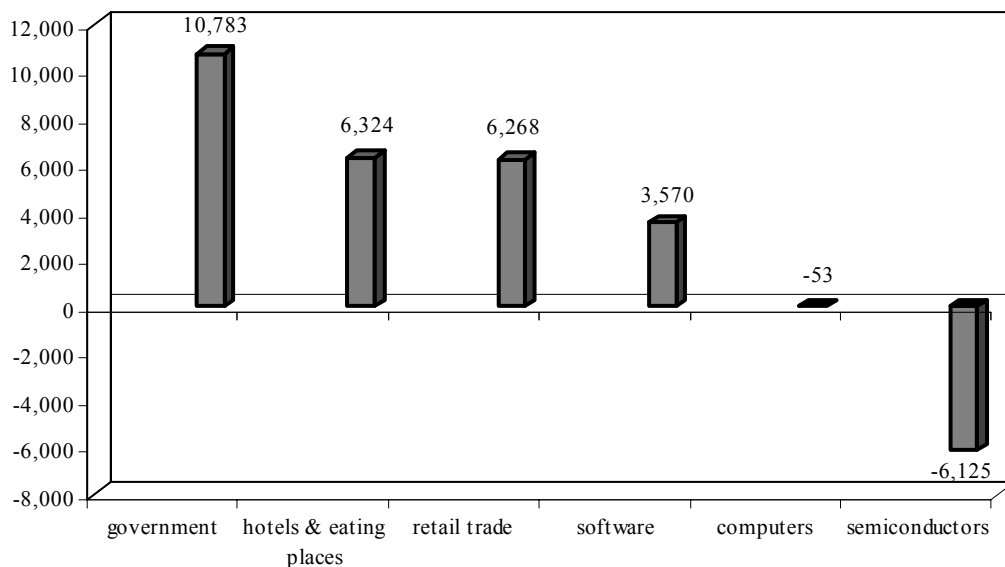


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Figure 4
Absolute Change in Employment in Selected Major Sectors, Austin-San Marcos MSA
(third quarter 1998-2002)



Source: Bureau of Business Research, McCombs School of Business, The University of Texas at Austin, <http://www.utexas.edu/depts/bbr/austindex/snapshot/employment/clusters39802.xls>