



HoustonBusiness

A Perspective on the Houston Economy

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Houston in 1900

Part 1. The Rise of the Regional City

This newly designed issue of Houston Business traces the Houston economy's transition from growth powered by cotton and lumber to growth fueled by oil and the opening of Houston's deepwater port. Part 1 covers the years 1836, the year Houston was founded, to 1900.

At the beginning of the 20th century, Houston was riding a wave of economic expansion that would transform the Texas economy. Houston had a population of only 44,600 in 1900, and there were 182,000 residents in what is now the eight-county metro area, including the competing city of Galveston. Between 1875 and 1900, Houston found itself at the center of the state's rapidly maturing rail network, which for the first time afforded access to the inland regions of Texas.

Beginning in 1875, three resource booms—in cattle, cotton and lumber—transformed different parts of the state. Cattle was not a significant Gulf Coast industry, nor did Houston grow much cotton or cut much timber. But the city capitalized on the expansion of Texas cotton and lumber production on a grand scale through its transportation

links, access to capital and growing managerial expertise.

When Houston was founded in 1836, its economic role was that of merchant and trader. It received and marketed agricultural goods from the countryside and sent consumer goods, hardware and other supplies back to the farm. The original market area was centered in seven counties directly west of the city. The railroad would later extend Houston's market area into the Blackland Prairie to the north and the Piney Woods of East Texas.

Houston's merchant and trader role continued as the city's hinterland expanded. But by 1900 Houston had also developed into an important regional capital by offering the best transportation and communications links and administrative and technical skills on the Gulf Coast.

This article documents the Houston economy up to the turn of the 20th century, when the city transitioned from growth powered by cotton and lumber to growth fueled by oil and the opening of Houston's deepwater port.

Early Transportation

Before the arrival of the railroad, much of Texas was isolated and landlocked. A number of Texas rivers run north to south and into the Gulf of Mexico, but none was navigable for long distances.¹ Brothers Augustus C. and John K. Allen arrived in Texas shortly after the battle of San Jacinto in search of the state's most interior point with year-round water transportation to the gulf. They selected the headwaters of Buffalo Bayou as the site for the new city, which they named for Sam Houston, hero of San Jacinto.

The Allen brothers founded Houston to provide an inland market for the produce of the rich agricultural region along the Brazos River bottoms. Houston merchants shipped the produce on to Galveston Bay, where it was loaded on coastal vessels headed to New Orleans or Matamoros. In return for cotton, sugar, wool and hides from the interior, Houston merchants provided consumer goods and hardware for the farms and plantations.

Cutting 50 miles off the trip to Galveston Bay was a significant step forward in 1836. Interior travel in Texas at that time was by stagecoach for passengers, ox- or mule-drawn freighter for goods. Ox carts or Conestoga wagons typically carried about 7 tons of freight. Rates were high, as much as \$1 per 100 pounds per 100 miles. Roads were often quarter-mile-wide ruts that turned to bog when it rained. According to John Stricklin Spratt, "In timbered regions, roads were classified according to the height of the stump, and where none were higher than six inches, the road was [considered] first class."²

At peak market periods in winter, ox-drawn freighters lined Houston streets. But there were few bridges, and winter rains brought mud and high water that could shut down Houston business for a week or more.

The difficulty of getting goods out of the interior before the Civil War can also be illustrated by the inland port of Jefferson on Cypress Bayou in northeast Texas—a distant second to Houston in terms of cargo volume. The bayou was navigable only a few months of the year, but it allowed cotton to move across Caddo Lake to Louisiana and ultimately downriver to New Orleans.

Bad roads persisted in Texas well into the 20th century. Beginning in 1882, downtown Houston experimented with planks, bricks, macadam, gravel, and blocks of limestone, cypress and bois d'arc. But by 1903, the city still had only 26 miles of paved roads. The first all-weather road to Galveston (a necessary precursor for a trucking industry) would not be completed until 1928.³

Railroads and Resources

The agricultural riches and population density surrounding pre-Civil War Houston, along with the high cost of freight, prompted construction of a railroad network radiating from Houston. Texas' first railroad was built by Gen. Sidney Sherman in 1850 in an attempt to revive the town of Harrisburg, seven miles south of Houston. Just as the Buffalo Bayou, Brazos and Colorado Railway reached the Brazos River bottomlands in 1856, the city of Houston built a connecting line, the Tap Railroad, to forestall expansion at Harrisburg. Houston later sold the Tap

Railroad to private interests, which extended it 50 miles to the southeast, to the sugarcane fields of Brazoria County. In 1857 a third line, the Houston and Texas Central, reached 50 miles northwest from Houston to Hempstead.

The first train reached Galveston Island from Houston in 1860, and by 1861 the Texas and New Orleans Railroad had completed 100 miles of track running east from Houston to Beaumont and Port Arthur. This Gulf Coast web of railroads, all centered in Houston, accounted for 90 percent of the state's track on the eve of the Civil War.

The railroads solved the difficult problem of intercity transportation. Reconstruction brought a burst of railroad building in Texas. Half the track built in the 19th century (4,548 miles) was laid between 1875 and 1885, and by 1900 Texas was No. 1 among the states in miles laid.⁴ By 1910, 17 railroads served Houston, and only one more would follow—the Missouri Pacific in 1927. By the turn of the century, the railroads had reached all parts of the state.

The Texas Cattle Industry

Railroads opened the state's resources to intensive and rapid exploitation. Cattle, cotton and lumber boomed. Houston was at the center of this railway expansion from the beginning. Not only did the extent of the hinterland served by Houston's merchants and traders grow rapidly after 1875; economic activity within the region flourished as well.

The rapid but short-lived expansion of the cattle industry across the Great Plains had little impact on the upper Texas

Gulf Coast. As Walter Prescott Webb points out, the birthplace of the Texas cattle industry lay deep in South Texas, within a diamond-shaped area running from San Antonio to Laredo, on to Matamoros, and then along the lower Gulf Coast as far as Old Indianola.⁵ The combination of Mexican cattle, abundant grass, water and horses created a vast agricultural area that served as the foundation of San Antonio's economy well into the 20th century.

With the arrival of the railroads west of the Mississippi in 1866, the cattle industry exploded onto the Great Plains. Removal of Native Americans and decimation of buffalo herds created vast areas of open range. Long cattle drives started in Texas and ended at Missouri and Kansas railheads. But by 1885 overgrazing, homesteading and barbed-wire fences had largely ended the era of the open range. As the railroads moved onto the plains, the cattle industry transformed itself once more by raising improved breeds of cattle in large fenced-in pastures, with water provided by windmills.

While the cattle boom made a lasting impact on Texas folklore, cotton and lumber dwarfed it in economic impact. Houston was well positioned to profit from both Blackland Prairie cotton and East Texas timber.

Cotton and the Blackland Prairie

Commercial cotton planting came to Texas in 1821, when Louisiana planters arrived seeking free land from the Mexican government. Seven counties along the Brazos River just west of Houston (Austin, Brazoria, Colorado, Fayette, Fort Bend, Washington and Wharton) formed the state's first agricul-

tural belt. The planters brought slaves and established Southern-style plantations. Cotton and sugar were both important early cash crops, but especially cotton.

After the Civil War, the Blackland Prairie region to the north of Houston gradually displaced the Brazos Valley as the state's leading cotton-producing area. The end of slavery disrupted the Gulf Coast's plantation-based system. Meanwhile, the prairie regions of northeast Texas opened up to agriculture for reasons similar to the development of the cattle industry in West Texas and the Panhandle: removal of Native American and buffalo populations, arrival of the railroad and the barbed-wire fence. However, the Blackland Prairie had the added advantages of access to national markets via rail and the development of a sod plow to break up the prairie soils.

So the area's population exploded. Thousands of immigrants poured in from the upper Southern states and from Europe. As cotton took hold, a system of small-farm owners, sharecroppers and tenant farmers spread rapidly, replacing slavery. In 1899, according to the Census of Agriculture, 18 Blackland Prairie counties, stretching from the Red River through Dallas and southwest to Austin, produced 972,000 bales of cotton, while the seven Brazos Valley counties produced only 216,000 bales.⁶

Dallas quickly became a major cotton-processing center. By the 1920s it would be the

Table 1
Population of Texas Cities, 1890–1910

| | 1890 | 1900 | 1910 | Growth rate, 1890–1910 (percent) |
|-------------|--------|--------|--------|--|
| Houston | 27,557 | 44,633 | 78,800 | 5.4 |
| Galveston | 29,084 | 37,789 | 36,981 | 1.2 |
| Dallas | 38,067 | 42,638 | 92,104 | 4.5 |
| Fort Worth | 23,076 | 26,668 | 73,312 | 5.9 |
| San Antonio | 37,673 | 53,321 | 96,614 | 4.8 |
| Austin | 14,575 | 22,258 | 29,860 | 3.7 |

SOURCE: U.S. Census, various years.

world's largest inland cotton market. Further, the cotton gin machinery industry, which began in the 1880s, would make the city the world's second largest manufacturer of farm equipment by the turn of the century.⁷ At the same time, Dallas began to develop an important banking and life insurance sector, as companies such as Southwestern Life and Southland Life opened in the first decade of the century.

Smaller Blackland Prairie communities also experienced rapid population and economic growth due to cotton. Wilmer and Richardson sprang up on the route of the Houston and Texas Central, the first railroad to reach Dallas from the south in 1872. Grand Prairie and Mesquite were established on the route of the Texas and Pacific, the next railway to arrive in Dallas from the east. Greenville, a connecting point for four railroads by 1899, became a leading cotton-marketing location. Its population nearly tripled, from 3,000 in 1884 to 8,500 by 1900. By 1912, Greenville would have a daily paper, three weeklies, two national banks, two opera houses and an ice factory.⁸ Similar success stories could be told for other North Texas towns, such as Commerce, Denton, McKinney and Waxahachie.

Table 1 shows the population of the state's largest cities from 1890 to 1910, as the

Table 2

**Population of Selected Texas Metro Areas (1890–1910)
Under the Current Definition of MSA, PMSA and CMSA**

| | 1890 | 1900 | 1910 | Growth rate, 1890–1910 (percent) |
|---------------------------|-----------|-----------|-----------|--|
| Texas | 2,235,523 | 3,048,710 | 3,896,542 | 2.8 |
| Houston PMSA | 76,959 | 122,785 | 176,598 | 4.2 |
| Galveston MSA | 31,476 | 44,116 | 44,479 | 1.7 |
| Brazoria MSA | 11,506 | 14,861 | 13,299 | .7 |
| Houston CMSA | 119,941 | 181,762 | 234,376 | 3.4 |
| Dallas PMSA | 228,581 | 320,362 | 381,298 | 2.6 |
| Fort Worth MSA | 92,751 | 121,164 | 179,371 | 3.4 |
| Dallas–Fort Worth CMSA | 321,332 | 441,526 | 560,669 | 2.8 |
| San Antonio MSA | 81,496 | 111,776 | 170,029 | 3.7 |
| Austin MSA | 110,088 | 148,210 | 162,947 | 2.0 |

NOTE: MSA, metropolitan statistical area; PMSA, primary MSA; CMSA, consolidated MSA, consisting of the primary MSA plus any adjacent MSAs.

SOURCE: U.S. Census, various years.

development of the Blackland Prairie reached its zenith. From the Civil War until 1890, San Antonio and Galveston had shared the No. 1 and No. 2 positions in population among the state's cities. But in 1890, Dallas briefly surged into the lead. It would be 1930 before the pattern would be set for the rest of the century, with Houston and Dallas as the state's top two cities.

Using a more modern perspective, however, Table 2 describes the populations of these cities as they reflect current metropolitan statistical areas. The combined Dallas and Fort Worth consolidated metropolitan statistical area (CMSA) in 1900 surges to twice the size of the Houston CMSA, and Austin (also in the Blackland Prairie) pulls close to Houston. Dallas took advantage of the population density in its hinterland to spur its own growth by building four interurban electric railways into the surrounding communities and sponsoring weekly Dallas Chamber of Commerce visits to encourage economic interac-

tion with Dallas.⁹ With more tenuous ties to the Blackland Prairie, Houston assumed its traditional role of merchant, trader and administrator in the cotton industry. The emergence of Anderson, Clayton and Co. illustrates the logistical and business advantages of Houston's location. Monroe D. Anderson opened the Houston office of Anderson, Clayton, then headquartered in Oklahoma City, in 1907. Partners Ben and Will Clayton and Frank Anderson, Monroe's brother, would arrive over the next several years, and the company would be reorganized in Texas in 1920. Anderson, Clayton would become the world's largest cotton-marketing firm after the opening of the Houston Ship Channel.

According to Will Clayton, "We moved to Houston because Houston was at the little end of the funnel that drained all of Texas and the Oklahoma territory...in other words, we were at the back door and wanted to be at the front door."¹⁰

Anderson, Clayton thrived by integrating its business from field to mill: ginning, compressing, warehousing and transporting. With mills located mostly outside the state, rail and water links through Houston were crucial. Ben Clayton explained the business thus:

[Employees] required skill

in organizing, trading, banking, and not only in dealing with cotton itself, but in carrying on transactions with many foreign countries and the currencies of those countries. In many cases, they had to be organizers or purchasers or operators of warehouses, vegetable oil mills, refineries and cotton gins...Some had to be qualified as diplomats who knew how to deal with government officials and with great bankers in other countries.¹¹

Thus, Houston and Dallas began differentiating their territorial approaches early in the last century. In 1900 Dallas was clearly focused inward, building an economic territory in North Texas; today it serves as an important financial center and distribution point for Texas, Oklahoma and Arkansas. Houston's focus turned outward, and today it is home to the nation's largest foreign port and the state's foreign business community.

East Texas Lumber

The other wave of economic activity brought by the railroads and helping shape the Houston of 1900 was East Texas lumber. The great stands of pine had largely been ignored because of a lack of transportation and access to export markets. Because of its superior access to capital and its communications and transportation linkages, Houston would assume financial and administrative control of much of the industry despite its location at the very edge of the eastern forests.

The first large-scale lumber mills in Texas were established in Beaumont in 1876 and 1878. Logs were originally floated down the Sabine River to Beau-

mont and Orange, but railroads quickly replaced water transport. Before the Civil War, the railroads had only skirted the edge of the East Texas Piney Woods. The Houston East and West Texas Railway was the first to enter the region, crossing the San Jacinto River from Houston to Cleveland, Livingston and Moscow. By the time this railroad reached Cleveland, five lumber mills were operating in its wake. In 1886, when it reached Shreveport, it was the most important railroad in the region. Other railroads followed, reaching into the Tyler and Lufkin areas from the east or west. Dozens of logging railroads developed off each main line to serve the sawmills.

By the turn of the century, lumber had become the state's dominant manufacturing industry measured by either employment or value added. Lumber did not rival cotton as an economic power, however; in 1900, there were 225,000 cotton farms and 22 million acres under cultivation.¹² In 1907, when the lumber industry peaked, 2.25 million board feet was cut; 99 large mills accounted for over half of this production.¹³

In one important sense, Houston's economic role relative to lumber was unchanged from when the city was founded. Houston still operated as merchant and trader, using the new railroads into the Piney Woods to pull lumber out and sell consumer- and farm-related goods in return.

Beaumont remained the center of the region's lumber mill operations, with logs or cut lumber moving to Beaumont by rail and then shipped out of Port Arthur. However, Houston controlled the lumber market through the companies of such

men as John Henry Kirby and Jesse H. Jones. Houston-based operations controlled 40 percent of the 1.1 million board feet cut in 1899.¹⁴ The lumber never entered Houston but went directly from East Texas mills to customers in other parts of Texas (60 percent), in states north of Texas (24 percent), and in Europe and Mexico (16 percent).

Houston's advantages over Beaumont were size, better transportation and communication links, and business sophistication.¹⁵ Houston had become a regional gateway, with 60 years of experience in capitalizing on the development of Texas' natural resources.

The Regional City

The focus of city building before the railroad arrived was to serve the largest and richest surrounding territory possible. Certainly, Houston used the railroads to cement existing ties to the Brazos Valley and to expand its hinterland into East Texas.

However, with completion of the rail network in Texas and connection of the state's cities to the eastern United States, the toolbox for achieving economic growth expanded. Sales of manufactured goods to the hinterland remained important to the city, but sales to other large cities were now possible. For much of the 19th century, sales from Texas to the rest of the nation had been primarily confined to raw or semiprocessed agricultural goods. Cheap, reliable rail transportation opened the door for Houston to specialize in manufactured goods and become a supplier to other Texas or national cities.

Today, it is easy to identify urban economic specialization:

autos in Detroit, financial services in New York, software in San Jose, oil services in Houston. Similarly good data are not available on movement of goods in Texas in 1900; however, we can infer much about specialization in 1900 by determining the pattern of employment and wages paid in specific manufacturing industries and examining how the pattern varies across cities. A high concentration of employment or wages paid in a particular industry and city would suggest urban specialization and local exports of that industry's products from that city.¹⁶ Differences in specialization between cities and the surrounding countryside can tell us about the existence and direction of trade between city and hinterland.

To investigate Texas' urban exports to other cities in 1900, we selected Houston, Dallas and San Antonio as well as 18 other cities in the southeastern United States or the Midwest. We then chose 22 manufacturing industries that had both employment and wages reported in 1900 for all three Texas cities. Reporting for these industries was generally good in the other 18 cities as well.

Table 3 lists the 22 industries considered and the flow of trade for each between the three Texas cities and their surrounding areas.¹⁷ In 1900 Texas cities and their hinterlands generally enjoyed a lively trade in these goods and services. In the table, "h to c" indicates a good typically sold from the hinterland to the city (blacksmithing and saddlery, for example); "c to h" indicates the reverse flow (plumbing, foundry and machine shop products); and "local" means no trade occurs (photography, house

Table 3
Relationship of City and Hinterland: Flow of Trade and Its Direction, 1900

| Industry | Dallas | Houston | San Antonio |
|--|--------|---------|-------------|
| Bicycle and tricycle repair | local | local | local |
| Blacksmithing and wheelwrighting | h to c | h to c | h to c |
| Boots and shoes, custom work and repair | h to c | h to c | h to c |
| Bread and bakery products | local | local | c to h |
| Carpentering | local | local | local |
| Clothing, men's custom work and repair | c to h | local | c to h |
| Confectionary | local | h to c | h to c |
| Dyeing and cleaning | c to h | c to h | c to h |
| Foundry and machine shop products | c to h | c to h | c to h |
| Furniture, cabinetmaking, repairing and upholstering | local | local | local |
| Lock- and gunsmithing | local | local | local |
| Lumber, planing mill products | c to h | c to h | local |
| Millinery, custom work | h to c | h to c | h to c |
| Painting, house, sign, etc. | local | local | local |
| Photography | local | local | local |
| Plumbing, gas and steamfitting | c to h | c to h | c to h |
| Printing and publishing, book and job | c to h | c to h | c to h |
| Printing and publishing, newspapers and periodicals | h to c | h to c | h to c |
| Saddlery and harness | h to c | h to c | h to c |
| Tinsmithing, coppersmithing and sheet-iron working | local | h to c | h to c |
| Tobacco, cigars and cigarettes | c to h | local | c to h |
| Watch, clock and jewelry repair | h to c | h to c | h to c |

NOTE: c to h = typical flow of goods is from city to hinterland; c to h = the opposite; and local = no flow between city and hinterland.

SOURCES: *Census of Manufactures, 1900*; authors' calculations from urban wage data.

and sign painting). The results shown here are for wage data, but the results are similar for employment data. While details vary, both analyses indicate extensive intraregional interaction for all Texas cities.

Specialization and Intercity Trade

Initially, isolated cities produce all goods for themselves and their hinterland. For some goods, however, transportation links among cities will allow specialization of production, and only a few cities will see their local industry grow to serve the others. In other words, after specialization occurs and trade emerges, the variance in the concentration of activity among cities should be high.¹⁸ In contrast, if a good is not traded and does not move from city to city, the concentration of activity should be similar in each city and its variance low across cities.

Using the low-variance cri-

terion, the nontraded goods among our 21 cities include custom millinery, plumbing, dyeing and cleaning, men's custom work clothes and their repair, printing and publishing of newspapers and periodicals, photography, metalsmithing, and house and sign painting.

The highest variations displayed among our 21 cities were for the eight industries listed in Table 4. These industries are our best candidates for intercity trade. The questions that arise are whether the three Texas cities participate as specialists in production of these goods and whether they export these goods to other cities.

Table 4 shows concentration ratios, or location quotients, which are the percentage of manufacturing wages or employment in the industry for that city divided by the average percentage for all 21 cities. A ratio of 1 indicates a normal concen-

tration, equal to the average for all cities.

A ratio of 1.2 indicates a concentration of activity 20 percent higher than normal (shown in bold in the table). Because a high level of activity indicates potential exports, we chose 20 percent and above to indicate likely export activity. Location quotients based on both wages and jobs are given.

As seen in the table, in 1900 Dallas specialized in printing and publishing, lumber, saddlery and harness, blacksmithing and wheelwrighting, carpentry and tobacco products. Some of these exports are probably indirect—from providing

inputs to other exported goods. Carpentry and blacksmithing, for example, are likely to be inputs to Dallas' large cotton gin and farm implement industry. Similarly, Houston exported carpentry, probably in support of producing and repairing railroad cars. Houston and San Antonio both exported confectionary, and San Antonio exported bread and bakery goods as well as printed material, saddlery and blacksmith services.

Thus, we see the emergence of urban specialization in Texas as early as 1900. Among the 22 selected industries, the eight most likely to be traded all have a presence in Texas, with a high concentration in at least one of Texas' three major cities. The state's gradual shift in focus from farm to factory would become the most important demographic and economic change of the last century.

Table 4
Concentration of Selected Export Industries in Texas Cities, 1900

| | Based on wages | | | Based on jobs | | |
|---------------------------------------|----------------|-------------|-------------|---------------|-------------|-------------|
| | Dallas | Houston | San Antonio | Dallas | Houston | San Antonio |
| Carpentering | 1.00 | 2.62 | .20 | 1.29 | 2.83 | .29 |
| Bread and bakery products | .65 | .84 | 3.78 | .57 | .75 | 1.66 |
| Printing and publishing, book and job | 1.58 | .83 | 2.29 | 1.50 | .87 | 2.42 |
| Tobacco | 1.19 | .16 | .42 | 1.74 | .28 | .62 |
| Lumber and planing mill products | 1.27 | .68 | .27 | 1.04 | .85 | .29 |
| Confectionary | .61 | 2.05 | 7.64 | .59 | 2.47 | 7.13 |
| Saddlery and harness | 9.23 | .44 | 3.64 | 11.06 | .45 | 4.24 |
| Blacksmithing and wheelwrighting | 5.19 | .94 | 1.69 | 2.23 | 1.13 | 2.02 |

NOTE: Values greater than 1.20 (in bold) indicate likely export activity.

SOURCES: *Census of Manufactures, 1900*; authors' calculations.

Conclusion

By the beginning of the 20th century, the resource boom that had driven the Texas economy since 1875 was coming to an end. By 1900, as the state's railroad network neared completion, cattle, lumber and cotton had already reached their peak or were rapidly approaching it. The railroads forever changed the state's cities, providing cheap and easy transportation and giving rise to urban exports and intercity competition.

But a new set of economic forces would have to drive the Texas economy into the next century. The next issue of *Houston Business* will look forward from 1900 at the economic impact of two events that ensured Houston's growth throughout the 20th century—the destruction of rival Galveston by a hurricane in September 1900 and the discovery of oil at Spindletop in January 1901.

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Notes

¹ Background information is from John Stricklin Spratt, *The Road to Spindletop*:

Economic Change in Texas, 1875–1901 (Dallas: Southern Methodist University Press, 1955), pp. 81–84, and Kenneth W. Wheeler, *To Wear a City's Crown: The Beginnings of Urban Growth in Texas, 1836–1865* (Cambridge: Harvard University Press, 1968), pp. 19–25.

² Spratt, pp. 23–24.

³ David G. McComb, *Houston: A History* (Austin: University of Texas Press, 1981), pp. 70 and 73.

⁴ Spratt, pp. 26 and 32.

⁵ Walter Prescott Webb, *The Great Plains* (Boston, Ginn and Co., 1931), p. 208.

⁶ 1900 Census of Agriculture, Part II, "Crops and Irrigation," Table 10. Cotton production is reported in 500-pound bales.

⁷ Herbert Gambrell, "Dallas, Texas," in Walter Prescott Webb, ed., *The Handbook of Texas* (Austin: Texas State Historical Association, 1952), pp. 456–58.

⁸ Brian Hart, "Greenville, Texas," in *The Handbook of Texas Online* (Austin: Texas State Historical Association, 2002), www.tsha.utexas.edu/handbook/online.

⁹ Char Miller and Heywood T. Sanders, eds., *Urban Texas: Politics and Development* (College Station: Texas A&M University Press, 1990), p. 19.

¹⁰ McComb, p. 77.

¹¹ N. Don Macon, *Monroe Dunaway Anderson, His Legacy: A History of the Texas Medical Center* (Houston: Texas Medical Center, 1994), pp. 45–46.

¹² 1900 Census of Agriculture, "General Statistics," Table 10.

¹³ Robert S. Maxwell and Robert D. Baker, *Sawdust Empire: The Texas Lumber Industry, 1830–1940* (College Station: Texas A&M University Press, 1983), p. 159.

¹⁴ McComb, p. 78, and Joseph A. Pratt, *The Growth of a Refining Region* (Greenwich, Conn.: Jai Press, 1980), p. 27.

¹⁵ For a general discussion, see Pratt, pp. 27–30.

¹⁶ The basic methods used here are described in three sources: Stanley R. Keil and Richard S. Mack, "Identifying Export Potential in the Service Sector," *Growth and Change* 17 (April), 1986, pp. 1–10; Robert W. Gilmer, Stanley R. Keil and Richard S. Mack, "The Service Sector in a Hierarchy of Rural Places: Potential for Export Activity," *Land Economics* 65 (August), 1989, pp. 217–27; and Robert W. Gilmer, "Identifying Service-Sector Exports from Major Texas Cities," Federal Reserve Bank of Dallas *Economic Review*, July 1990, pp. 1–16.

¹⁷ The results here are based on the value of two location quotients, or concentration ratios, as suggested by Keil and Mack. The first location quotient is the share of the local industry in local employment compared with the statewide share of the same industry. The second changes the denominator of the location quotient from the state share to the share of a group of comparably sized cities. The difference between the location quotients indicates the direction of the flow between city and hinterland. In the table, a flow is indicated if the change in the location quotient is ± 20 percent or more.

¹⁸ These results depend on the adjusted location quotients suggested in Note 17—those having a base of comparably sized cities. The adjusted location quotients serve as a better measure of intercity trade. Table 4 shows adjusted location quotients (see Gilmer).

Job losses seem to have ended last fall, when the Houston economy reached bottom at -8,000 jobs, or -0.4 percent. Local employment is still down 3,000 from the April 2001 peak, but the last three months have brought slow gains. An April turnaround in the domestic rig count and a return of the Houston Purchasing Managers Index to the break-even level point to likely expansion through the second half of 2002.

Retail and Auto Sales

Retail sales continue soft, and expectations are for continued weakness through 2002. Retailer pessimism for much of this year has been rewarded. Retailers who planned for weak sales have not been badly hurt by bloated inventories or forced into last-minute promotions.

A strong March was good news for auto dealers. Sales were up 14 percent from the year earlier, but April wiped out these gains with a 20 percent decline. Year-to-date auto sales are off 5 percent compared with the same period last year.

Oil Services

The domestic rig count has picked up sharply, with seven consecutive weeks of increases and a 16 percent gain. The increases have mostly been land-based and gas-directed, but respondents indicate that backlogs are building for offshore work, and day rates offshore are just beginning to rise. Higher oil and natural gas prices, improved cash flows for producers and healthier

balance sheets are driving improved drilling activity.

Refining and Petrochemicals

Refiners hurried to finish the turnaround season so they could take advantage of improving profit margins. Instead they found crude oil prices rising in response to turmoil in the Middle East and wholesale gasoline prices falling slightly due to increased production. The result has been downward pressure on profit margins and cutbacks in production in recent weeks.

Petrochemical producers have experienced strong demand since early spring, partly driven by inventory accumulation. Until this spring, basic petrochemicals had been readily available and their prices had been falling for a year or more—giving customers little incentive to hold inventory.

As rising oil and natural gas prices drove up production costs, however, there was a surge in demand by customers seeking to rebuild inventory in advance of price hikes. This restocking continues, but it is now apparent that the economic recovery is also playing a significant role in increasing demand. Excess capacity is still a problem for most products, and it continues to limit profits. Numerous price increases have been implemented, but most are simply covering the in-

creased cost of production due to higher oil and gas prices.

Real Estate

The Enron effect is taking a toll on the downtown office market and spreading to the Galleria area. Office absorption was negative by nearly 2 million square feet in the second quarter, with the central business district and the Galleria area roughly dividing the losses. It was the worst absorption figure since the early 1990s.

Upscale apartments inside the loop or near downtown have seen a slight increase in vacancy rates, while class B apartments outside the loop have made gains. Citywide, rents are up about 4 percent over the past year. Sales of existing single-family homes continue to register solid improvement, up 10 percent in April from a year earlier. In contrast, new home sales were off about 5 percent through the first quarter.



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