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A Perspective on the Houston Economy

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The New Metropolitan Area: Welcome to Houston–Baytown–Sugar Land

This article is a look at the new rules used to define metropolitan statistical areas, now more transparent and easier to understand than in the past.

Houston occasionally has been called the blob that ate southeast Texas. This image does not apply to the city of Houston (largely confined to Harris County) but to the spread of population into neighboring counties. Houston and the surrounding web of smaller cities, towns and suburbs have been slowly knit together by urbanization to form what is commonly referred to as a metropolitan area. Houston becomes a common identifying feature for those living in the area, even for those living in the remote suburbs.

This concept of a metropolitan area has been formally defined and redefined by government statisticians since they first tackled the issue in 1949. Major reviews were undertaken in 1959, 1983, 1990 and 2000 to ensure the relevance and usefulness of the metro area concept for government statistical collection. The result has been a changing alphabet soup of MAs, SMAs, MSAs, SMSAs, PMSAs and CMSAs, with the M always standing for metropolitan and the A for area. The latest rules for defining metropolitan areas from the 2000 review were implemented in 2003 by the Office of Management and Budget (OMB), bringing us a newly defined list of "core-based statistical areas." Under these definitions, a substantial departure from past practice, we now have a new Houston–Baytown–Sugar Land (H-B-S) metropolitan area.[1]

Table 1 compares the 2000 population of the city of Houston and the new metropolitan area. In 1970, Houston made up 56.8 percent of the population of the 10 counties in the newly defined H-B-S metro area; this fell below 50 percent in the early 1980s and was only 41.2 percent in 2000. As the growth rates in Table 1 indicate, among the surrounding counties, only Galveston County grew more slowly than the city of Houston from 1970 through 2000. Fort Bend (578.6 percent) and Montgomery (495

Table 1
Population and Growth, City of Houston and Surrounding Counties, 1970 – 2000

	2000 population	Percent growth 1970–2000	Date joined Houston MSA
City of Houston	1,953,631	58.5	—
Houston–Baytown–Sugar Land Metropolitan Area	4,741,677	118.4	—
Austin County	23,590	71.5	2003
Brazoria County	241,767	125.6	1971*
Chambers County	26,301	118.2	1993
Fort Bend County	354,452	578.6	1971
Galveston County	250,158	46.9	1983*
Harris County	3,400,578	99.8	1950
Liberty County	70,154	111.4	1971
Montgomery County	293,768	495.0	1971
San Jacinto County	22,246	233.2	2003
Waller County	32,663	128.3	1973

* Galveston was a separate metropolitan area from Houston from 1950 to 2003 but was made part of the Houston–Galveston–Brazoria Consolidated MSA (CMSA) in a 1983 redefinition of metro areas to match new 1980 standards. Brazoria was part of the Houston metro area from 1971 to 1983, then broken out as a separate metro area from 1983 to 2003. Like Galveston, it was part of the CMSA during 1983–2003.

SOURCES: Census Bureau; Bureau of Economic Analysis.

percent) counties led this growth, and the suburban parts of Harris County lying outside the city of Houston grew 207 percent over the period.

The dates in Table 1 show when the OMB added new counties to the Houston metropolitan area. From 1950 to 1971, the metropolitan area was only Harris County. Brazoria, Fort Bend, Liberty and Montgomery were added in 1971. As the map in Figure 1 illustrates, the process has been one of slowly completing the ring that encircles Harris County, finally including Chambers County in 1993. The latest changes to the Houston metro area include two additions from a second, outer ring of counties that share no border with Harris County—Austin and San Jacinto.

The most recent additions to the new H-B-S metropolitan area also include Brazoria and Galveston counties, previously stand-alone metro areas. Both were primary metropolitan statistical areas under 1983 definitions but were also part of the Houston–Galveston–Brazoria consolidated metropolitan statistical area. Under the 2003 redefinition, Brazoria and Galveston counties lose all status as separate metro areas and are now absorbed into the H-B-S metro area.

The pattern of a slow spread outward from the center of the Houston metro area, based on more rapid growth along an edge that now reaches into the second ring of surrounding counties, indeed raises the image of a countryside overtaken by a spreading blob or stain. Only Hardin, Jefferson and Orange counties, which currently make up the Beaumont–Port Arthur metro area, stand in the way of a complete takeover of deep southeast Texas.

To follow the latest economic data releases, it is increasingly important to understand the new metro area definitions. The Bureau of Economic Analysis is already using the new definitions for its local area personal income series. The Bureau of Labor Statistics will switch to the new definitions in early 2005 for local nonagricultural employment reports and local unemployment releases.

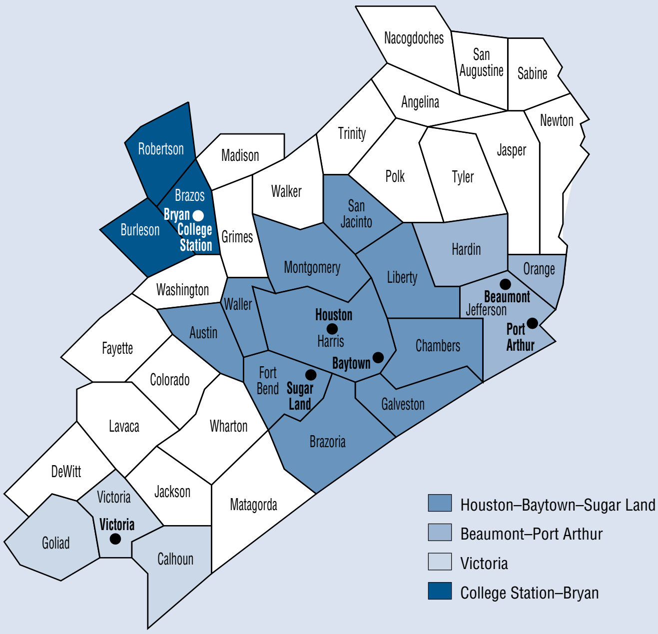
The rest of this article is a look at the OMB's new rules used to define metropolitan statistical areas (MSAs). More transparent than in the past, the rules for choosing central counties and adding outlying counties are now more mechanical and easier to understand. We can also explain why Brazoria and Galveston are absorbed into the H-B-S metro area, while Beaumont–Port Arthur continues to stand alone.[2]

New Rules, Big Changes

The new metropolitan area definition brings substantial change to the list of the nation's largest places. For the United States, about four out of five of the largest 100 metro areas have been redefined. The largest metro area is now New York (18.3 million population), replacing Los Angeles (12.4 million) under the new definition. Chicago (9.1 million), Philadelphia (5.7 million) and Dallas–Fort Worth (5.2 million) follow. Under the previous standards, 848 metro counties in 2000 accounted for 80.4 percent of the U.S. population and about 20 percent of land area. The new definitions contain 1,089 counties, 82.6 percent of the population and 25.3 percent of land area.[3]

Table 2 lists the six largest metropolitan areas in Texas in 2000 and shows their population and rank among the nation's metro areas. Texas has a net reduction of two metro areas. This results from the consolidation of Brazoria and Galveston into the H-B-S metro area, the consolidation of Dallas and Fort Worth and the split of the Odessa–Midland MSA into separate Odessa and Midland metro

Figure 1
Metro Areas of Southeast Texas Under New Definitions



areas. The newly consolidated Dallas–Fort Worth–Arlington metro area ranks number five in the nation, and H-B-S ranks number eight. The smallest MSAs in Texas are Victoria (111,663), San Angelo (110,781) and Sherman–Denison (110,595).

The previous system of metropolitan definitions had three tiers, reflecting a growing recognition of a hierarchy of smaller cities and towns within some large metropolitan areas. Under this system, there were still large stand-alone MSAs, like San Antonio, for example. In other cases, where two or more MSAs were neighbors (primary MSAs) and a million or more residents were involved, the MSAs could be combined into a consolidated MSA or CMSA. The Houston–Galveston–Brazoria CMSA and Dallas–Fort Worth CMSA were the two examples in Texas.

Under the new core-based metro definition, this hierarchy is still recognized, but in a more limited fashion. Now the MSA must have 2.5 million residents for a division to exist, and the division must reflect a significant level of economic independence within the MSA. Only 11 metros in the United States qualify for metropolitan divisions, and the only example in Texas is the Dallas–Fort Worth–Arlington MSA, divided into Dallas–Plano–Irving and Fort Worth–Arlington. H-B-S is the only one of the nation's 10 largest metros without a metropolitan division.

Table 2
Largest Metropolitan Statistical Areas in Texas, 2000

	Population	National rank
Dallas–Fort Worth–Arlington	5,161,544	5
Houston–Baytown–Sugar Land	4,715,677	8
San Antonio	1,711,703	29
Austin–Round Rock	1,426,763	40
El Paso	679,622	69
McAllen–Edinburg–Pharr	569,463	81

SOURCE: Census Bureau.

Rules-Based Metro Definition

A set of simple rules determines the new core-based metro areas. The basic building block of the metropolitan area is the county. A central county or central group of counties is chosen, and outlying counties are added based on strong economic ties to the central counties. The economic ties are dictated almost exclusively by regional commuting patterns. We can use readily available data to illustrate how the Houston–Baytown–Sugar Land metro area is defined and constructed.

A central county in an MSA must have a population of at least 50,000 and have at least 50 percent of its population living in urban areas of 10,000 or more. An urban area can be a census-defined urbanized area or an urban cluster, and the existence of a large urban area of 50,000 or more is the core around which metropolitan areas are built. Urbanized areas are defined by the Census Bureau as consisting of a central place and an adjacent urban fringe that together have a minimum population of 50,000 and that meet specific population density requirements.[4] Urban clusters are also densely settled areas with a population of 2,500 to 49,999 and meeting the same density requirements as the urbanized area. Table 3 shows the percentage of urban residents in the 10 H-B-S metro counties who are identified as living in urbanized areas and urban clusters.

The division in Table 3 between urbanized areas and clusters (at 2,500) does not match well with the required metropolitan core definition of 50 percent of the population residing in urban areas of 10,000 or above, but it is the only summary data available.

Table 3
Percentage of Urban Residents in Counties of Houston–Baytown–Sugar Land Metropolitan Area, 2000

County	Urbanized area: 50,000+ population	Urban cluster: 2,500–49,999 population
Harris	97.7	0.4
Galveston	91.6	0
Fort Bend	89.3	0.7
Brazoria	66.6	5.0
Montgomery	35.2	28.8
Chambers	14.3	21.5
Waller	2.1	34.4
Austin	0	31.1
Liberty	0	35.9
San Jacinto	0	0

SOURCE: Census Bureau.

However, these data are sufficient to classify nine of 10 counties as either central or not. Harris, Galveston, Fort Bend and Brazoria clearly qualify as central counties with 50 percent or more of their population in urbanized areas of 50,000 or more. Chambers, Waller, Austin, Liberty and San Jacinto do not have 50 percent of their population in all urban areas combined, meaning they do not qualify. Montgomery is the only question mark, with qualification depending on the population of urban clusters over or under 10,000. A careful look at census maps and the list of urban areas in Texas indicates that Montgomery falls short of the 50 percent standard and is not a central county.[5]

The economic interaction among the four central counties in H-B-S is dominated by Harris County. Economic interaction is defined by the employment interchange among central counties, and the interchange between Harris and other central counties is illustrated in Table 4. The top grouping in Table 4 shows the percentage of employment in Brazoria, Fort Bend and Galveston counties accounted for by local residents who commute to Harris County to work. The middle grouping shows the percentage of Brazoria, Fort Bend and Galveston employment held by Harris County residents who commute to each county to work. The sum of these two numbers at the bottom of the table is the employment interchange, and counties must be combined within a metro area anytime the employment interchange exceeds 25 percent.[6] Clearly, all these central counties are combined with Harris County. In particular, Galveston and Brazoria no longer qualify as separate metro areas under this rule and are combined into H-B-S. No other pairing of central counties meets the 25 percent standard.

An outlying county is added to the central counties only if (1) commuters from the outlying county to central metro counties make up 25 percent or more of county employment or (2) commuters from central metro counties account for 25 percent or more of the outlying county employment. Table 5 displays these figures for the six noncentral counties in the H-B-S metro area, showing that they should be added to the Houston metro area based on strong commuter ties. In every case, central counties provide more than 25 percent of the jobs for outlying counties, and Harris County is the dominant commuter destination in every case.

Using commuter patterns as the glue to add outlying counties to central counties, the H-B-S metro area is complete. How close is Washington County, in the second ring around Harris County, to joining the Houston metro area? In 2000, inbound commuters from Washington County to H-B-S central counties accounted for only 5.2 percent of local employment. Commuters from central counties held only 2.1 percent of the jobs in Washington County. The employment interchange rate of 7.3 percent leaves it far short of being added to the metro area at present. That doesn't mean patterns cannot change suddenly. Commuting from Galveston to Harris County, for example, quadrupled between 1990 and 2000.

Both Liberty and Chambers counties share a boundary with Jefferson County, the central county for the Beaumont–Port Arthur metro area. How do we know these counties belong to the Houston metro area instead of Beaumont? The rule says that the outlying county belongs to the metro area with the largest employment interchange rate. Using the same calculations as in Table 4, the Houston metro area wins

Table 4
Interaction Between Harris County and Other Central Counties in the Metro Area

- Percentage of jobs held by commuters from the central county to Harris County
  - Brazoria 31.8%
  - Fort Bend 58.8%
  - Galveston 32.4%
- Percentage of jobs held by commuters from Harris County
  - Brazoria 7.3%
  - Fort Bend 19.3%
  - Galveston 11.5%
- Employment interchange rate between Harris and other central counties
  - Brazoria 39.1%
  - Fort Bend 78.1%
  - Galveston 43.9%

SOURCES: Census Bureau; Bureau of Economic Analysis.

Table 5
Interaction Between Central and Outlying Counties of the Houston Metro Area

- Percentage of employment held by commuters from outlying counties working in central counties (inbound commuters)

Austin	26.5%
Chambers	46.9%
Liberty	40.9%
Montgomery	39.9%
San Jacinto	26.2%
Waller	49.4%

- Percentage of employment held by commuters from Harris County

Austin	22.6%
Chambers	21.2%
Liberty	5.2%
Montgomery	14.1%
San Jacinto	1.2%
Waller	16.9%

SOURCES: Census Bureau; Bureau of Economic Analysis.

hands down, with an interchange rate of 61.1 percent for Chambers County and 54.6 percent for Liberty. This compares with Jefferson County interchange rates of only 4.5 percent for Chambers and 2.2 percent for Liberty.

Why isn't Jefferson County consolidated into the Houston metro area, as were Galveston and Brazoria? Because the employment interchange rate between the central counties of the two metropolitan areas remains very small at only 2.6 percent.

Principal cities in the H-B-S metropolitan area are Houston, Baytown, Sugar Land and Galveston. The name of a metro area includes up to three principal cities, ranked in order of descending size. The new naming convention replaces the single central city used previously and recognizes the spread of metropolitan areas to contain significant places beyond the largest urbanized area.

Conclusion

The most striking element of the change to the Houston metro area definition is the consolidation of 10 counties into one region. The previous six-county metro area now has the Galveston and Brazoria metropolitan areas added, plus two new outlying counties. The entire regional economy is solidly linked together by commuting patterns, with Harris County as the linchpin. Unlike the other top 10 metropolitan areas in the United States, there are no metropolitan divisions to indicate a degree of independence of any one part of the region from another.

Care has to be taken when making any statistical comparisons to past metro definitions because reported data for the Houston metro area will now change substantially. Aggregate data will shift in level, primarily because populous Brazoria and Galveston counties have been added. The inclusion of two prior metropolitan areas can also influence ratios such as growth rates, unemployment rates or the composition of the region by race or ethnic group. The Houston metro area shares this sweeping change in definition and practical measurement with many of the nation's metro areas.

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Notes

1 "Standards for Defining Metropolitan and Micropolitan Statistical Areas," Office of Management and Budget, *Federal Register*, vol. 65, no. 249, December 27, 2000, pp. 82228–38, www.census.gov/population/www/estimates/masrp.html.

2 The OMB also has created a class of micropolitan areas of 10,000–50,000 population, including two associated with the Houston metro area—Bay City in Matagorda County and Huntsville in Walker County. The micropolitan area fills a gap between metro and nonmetropolitan counties. For a nationwide overview, see "Micropolitan America: A Brand New Geography," by Robert E. Lang and Dawn Dhavale, *Census Note* 05:01, Metropolitan Institute at Virginia Tech, May 2004, www.mi.vt.edu/uploads/micropolitan%20census%20note%2005%2001a.pdf.

3 For a complete discussion of the effect of new definitions on the U.S. metropolitan hierarchy, see "Tracking Metropolitan America into the 21st Century: A Field Guide to the New Metropolitan and Micropolitan Definitions," by William H. Frey, Jill H. Wilson, Alan Berube and Audrey Singer, Metropolitan Policy Program, Brookings Institution, November 2004, www.brookings.edu/dybdocroot/metro/pubs/20041115_metrodefinitions.pdf.

4 Also counted are groups of at least 5,000 that extend into the county from an urbanized area in an adjacent county, if the entire urban area has at least 10,000 population.

5 The only urbanized area in Montgomery County is The Woodlands (population 89,445), and the only urban clusters are Conroe (41,404) and Willis (5,309). Even allowing for some spillover from the city of Tomball into Montgomery County, it remains well short of the required 50 percent living in urban areas of 10,000 or more.

6 If the employment interchange reaches 15 percent but is less than 25 percent, a combination of core-based statistical areas can occur if public opinion prefers the combination. Public opinion is defined as that opinion expressed to the OMB by the appropriate congressional delegation.

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Houston enters the new year on two years of solid growth. The local purchasing managers index indicates growth for 24 months and very strong growth throughout 2004. Moderate job growth is still the disappointing aspect of the local expansion: 1.5 percent for the Houston metro area over the past 12 months and close to 2 percent for Brazoria and Galveston counties—which both join the Houston metro area with the release of January 2005 data.

Retail Sales

Mixed reports from local retailers indicate sales were flat to slightly down over the holidays, but once all the gift cards are cashed, the holidays may end flat to slightly up. High-end retailers all did well, while department store sales were softer than expected until the week after Christmas. Discounters were slow early in the holiday season but finished strong. For small independents, it was a difficult holiday season.

Real Estate

Existing home sales in November 2004 were 20 percent higher than November 2003, hitting record levels for the year even before December sales were counted. New home sales were not far behind, up 15 percent in the third quarter compared with the prior year.

The rest of the local real estate market is mixed entering the new year. Apartments are looking at lower occupancy and flat rents, with a wave of new products coming onto the market in 2005. The office market is down from a year ago, but a third-quarter turnup in occupancy may indicate it has bottomed out and is ready to improve.

Crude and Oil Products

The price of crude oil fell from $49 per barrel in mid-November and wavered between $41 and $45 through December. U.S. crude inventories recovered, moving above the five-year average in December. In response to rising inventories, OPEC announced a 1 million barrel per day cut in production, beginning Jan. 1.

Heating oil has been the key factor driving oil markets. Imports have been limited by tight markets in Europe, operating problems in Venezuela and high tanker rates that have limited arbitrage opportunities. Low inventories and forecasts of cold weather kept the price of heating oil high and volatile through early December, when continued warm weather began to drag both crude and heating oil prices down.

Refiner profit margins were very good as heating oil prices peaked but have weakened slowly as heating oil and crude prices have fallen together. Refiners on the Gulf Coast operated at high capacity utilization, with post-hurricane oil-supply problems in the Gulf of Mexico largely fixed and the Gulf again providing ample supplies of sweet crude.

Natural Gas

As with heating oil, a lack of winter weather was also the major factor driving natural gas markets. The forecast of a cold winter kept near-term futures prices above $7 per thousand cubic feet in November, but by early January they had slipped under $6 as weather stayed warm.

Chemicals

Chemical producers continued to report very strong domestic and export demand, with record exports for some products helped by the high price of gas relative to crude oil. Ethylene and all the olefin products reported strong demand, good pricing and solid profit margins. A major new polyvinyl chloride and chlor-alkali complex has been announced, the first major petrochemical facility on the Gulf Coast since the late 1990s.

Oil Services and Machinery

Oil services have seen a stable domestic rig count and an increase in drilling in the Gulf of Mexico. The increased Gulf activity is oil-directed, deep-water drilling. Activity is still depressed in shallow waters. Expectations are for a 5 to 10 percent increase in drilling expenditures in 2005, a significant improvement.

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