CASE STUDY

GREATER AUSTIN: SIGNIFICANT GROWTH IN ECONOMIC ACTIVITY AND AIR SERVICE

The Greater Austin area includes five counties in the central part of the state anchored by Austin, the capital of Texas. The region has a diverse economy heavily anchored by government activities and education. High-tech firms, particularly related to semiconductors and software, are also important economic pillars. The region is also known for its arts and music. The region is among the faster growing areas of the country. According to the Census Bureau, from 2010 through 2019, the Greater Austin area was the third fastest growing urban area in the country.

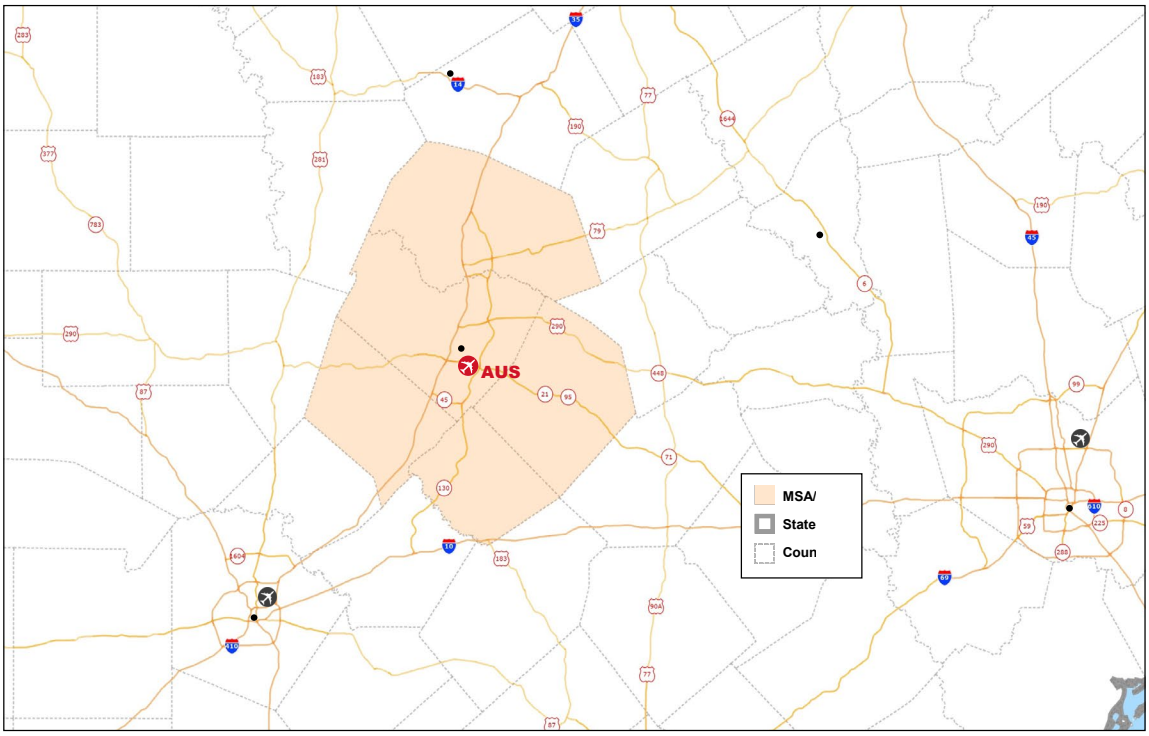
The region is served by Austin-Bergstrom International Airport (AUS or ABIA), which is owned by the City of Austin. Operations and passenger traffic at AUS have grown faster than the region's population. According to FAA enplanement data, passenger traffic at AUS nearly doubled from 2008 to 2019, rising from 4.3 million in 2008 to 8.5 million in 2019.

The Austin region is included as a case study because of its significant growth since 2008.

Introduction to the Region and its Economy

The Austin-Round Rock-San Marcos Metropolitan Statistical Area (MSA or Greater Austin) includes the city of Austin and the counties of Bastrop, Caldwell, Hays, Travis, and Williamson. The region is in central Texas, with the San Antonio metropolitan area immediately to the west. It is roughly 200 miles south of the Dallas-Ft. Worth area and 150 miles west of the Houston area.

Figure 1: The Greater Austin MSA and Nearby Major Cities and Airports



According to the U.S. Bureau of Economic Analysis (BEA), in 2019, the Austin-Round Rock-Georgetown MSA had a 2019 population of 2,227,083, making it the 29th ranked in the nation (out of 384 total). The region produced $159.4 billion in current-dollar total GDP, making it the 26th ranked.[1]

The region has undergone significant growth in population and employment since 2008. Table 1 summarizes the changes in key socio-economic characteristics for the period. As shown, from 2008 through 2019:

a. Total population rose by nearly 600,000 (36 percent). That was a faster increase than realized for the entire state of Texas, which rose by 19 percent.
b. Total employment increased by almost 500,000 (46 percent). By contrast, employment for the state rose by 25 percent.
c. Average per capita income (nominal dollars) rose from $41,500 to $62,000 (49 percent). For all of Texas, the increase was 35 percent.
d. The number of businesses operating in the region increased by over 20,000 (54 percent).[2]

Table 1: Change in Major Socio-Economic Variables, Greater Austin 2008-2019 (data in 1,000s)

Austin-Round Rock-Georgetown, TX MSA	2008	2015	2019	2008-15		2015-19		2008-19	
				Chg	%	Chg	%	Chg	%
Population	1,634	2,002	2,227	368	23%	225	11%	593	36%
Total Employment	1,072	1,325	1,566	253	24%	241	18%	494	46%
Non-farm Employment	1,063	1,316	1,557	252	24%	242	18%	494	46%
Private Non-farm Employ	897	1,145	1,377	248	28%	232	20%	480	53%
Gov't Employment	166	170	180	4	3%	10	6%	14	9%
Income per Capita ($)	$41,509	$51,484	$61,977	$9,975	24%	10,493	20%	20,468	49%
Number of Establishments	40	52	62	12	29%	10	20%	21.8	54%

Source: U.S. Bureau of Economic Analysis (BEA)
Note: All data are in 1,000s except for per capita income, which is shown in nominal dollars

Employment growth in the region is especially noteworthy. According to data from the U.S. Cluster Mapping project, for the period 1998 – 2018, private non-agricultural employment growth in the region averaged 2.92 percent annually – second only to the Miami area for fastest growth in the country. By comparison, the U.S. national average was 0.96 percent.[3]

The region is a major center of higher education. Austin is the home of the University of Texas at Austin (the flagship campus of the University of Texas System, with an enrollment of nearly 52,000)[4] and Texas State University (flagship of the Texas State University System, with over 38,000 enrolled students). Several other colleges and universities are located in the area.

[1] https://apps.bea.gov/regional/bearfacts/action.cfm

[2] The BEA uses data from the U.S. Census Bureau on "establishments," which it defines as "An establishment is a single physical location at which business is conducted or services or industrial operations are performed. It is not necessarily identical with a company or enterprise, which may consist of one or more establishments. … Establishment counts represent the number of locations with paid employees any time during the year." The count excludes government establishments except for certain situations, such as state-operated retail liquor stores, local government-owned/operated hospitals, and federally-chartered credit unions.
https://www.census.gov/programs-surveys/susb/about/glossary.html

[3] https://www.clustermapping.us/data/report/region/scorecard#/msa/12420/1998/2018/jobs

[4] https://www.utexas.edu/about/facts-and-figures

In part due to the presence of those schools, the area has a high percentage of the adult population aged 25 or over with college degrees: 46.2 percent. This makes the Greater Austin area the 6th highest in the U.S. By comparison, the figures for Texas and the entire U.S. are 29.9 percent and 32.1 percent, respectively.[5]

Regional Economic Strengths

The region's economy is anchored by several large employment sectors. As the capital of Texas, the region has a significant public sector presence, including local, state, and federal employees. This also takes into account the large number of staff associated with education, especially because the major universities in the region are public rather than private. The other major sectors are illustrated in Table 2. Outside of accommodations, food service, and retail, the other large sectors (based on total employment in 2019) are professional, scientific, and technological (PST); health care; construction; administrative and support; and information technology. The table also highlights the extraordinary growth in employment in PST, information, and transportation and warehousing.

Table 2: Changes in Employment by Major Sector 2008-2019

Industry	2008	2019	Change	
			#	%
Accommodation and food services	77,869	123,576	45,707	59%
Retail trade	89,474	113,573	24,099	27%
Professional, scientific, and technical services	64,167	111,535	47,368	74%
Health care and social assistance	70,732	110,121	39,389	56%
Construction	46,991	61,740	14,749	31%
Administrative and support and waste management and remediation services	51,901	59,798	7,897	15%
Information	25,837	48,001	22,164	86%
Manufacturing	45,819	43,912	(1,907)	-4%
Other services (except public administration)	33,283	42,233	8,950	27%
Finance and insurance	33,540	41,483	7,943	24%
Wholesale trade	44,213	38,279	(5,934)	-13%
Real estate and rental and leasing	15,976	22,021	6,045	38%
Transportation and warehousing	11,075	21,578	10,503	95%
Educational services	11,887	21,139	9,252	78%
Management of companies and enterprises	19,269	16,657	(2,612)	-14%
Arts, entertainment, and recreation	10,100	15,933	5,833	58%
Mining, quarrying, and oil and gas extraction	1,864	2,544	680	36%
Utilities	1,936	2,488	552	29%
Agriculture, forestry, fishing and hunting	86	120	34	40%
Industries not classified	38	113	75	197%
Total for all sectors	**656,057**	**896,844**	**240,787**	**37%**

Source: BEA

[5] https://www.census.gov/quickfacts/fact/table/TX,US/PST045219

The strength of the regional economy is also reflected in large increases in the number of business establishments.[6] Table 3 summarizes the changes in the number of establishments between 2008 and 2019.

Table 3: Change in Establishments 2008-2019

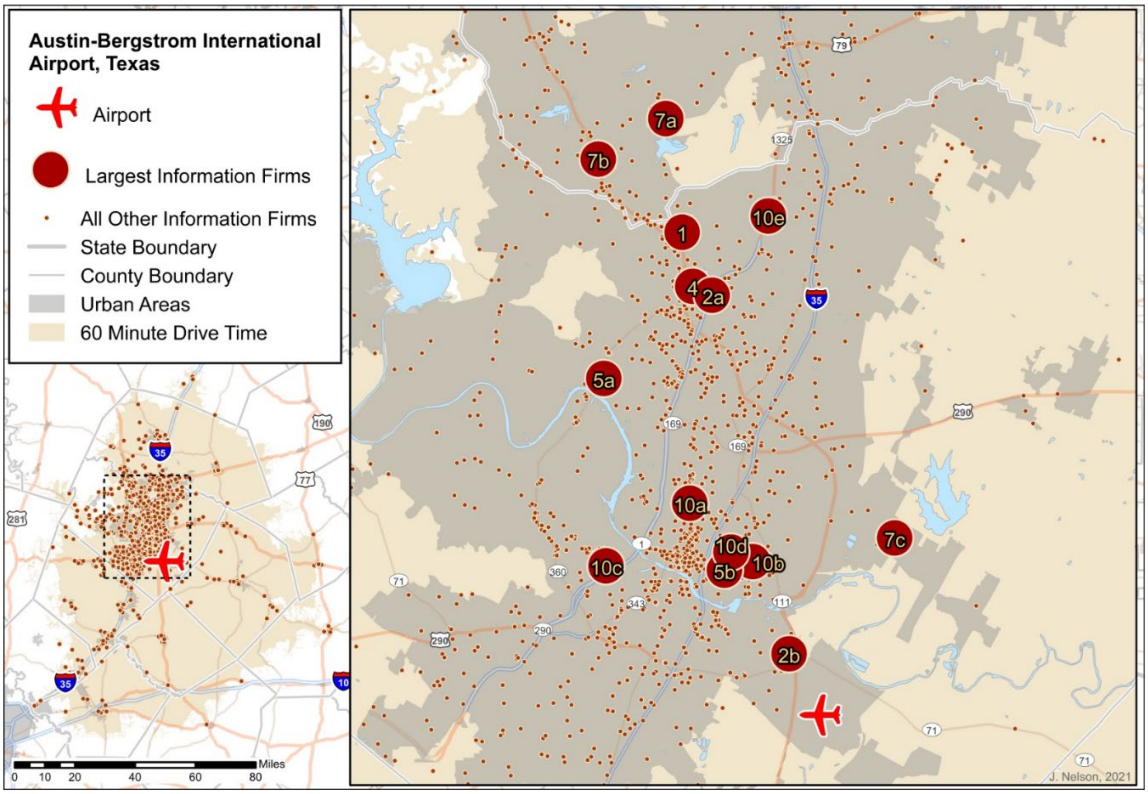
Industry	2008	2019	Change	
			#	%
Accommodation and food services	3,459	5,216	1,757	51%
Retail trade	5,328	6,210	882	17%
Professional, scientific, and technical services	6,293	9,771	3,478	55%
Health care and social assistance	3,793	5,979	2,186	58%
Construction	3,574	4,931	1,357	38%
Administrative and support and waste management and remediation services	2,172	2,889	717	33%
Information	981	1,538	557	57%
Manufacturing	1,266	1,468	202	16%
Other services (except public administration)	3,521	4,885	1,364	39%
Finance and insurance	2,876	3,606	730	25%
Wholesale trade	1,858	2,100	242	13%
Real estate and rental and leasing	2,418	3,637	1,219	50%
Transportation and warehousing	687	959	272	40%
Educational services	656	1,087	431	66%
Management of companies and enterprises	288	373	85	30%
Arts, entertainment, and recreation	615	1,077	462	75%
Mining, quarrying, and oil and gas extraction	180	158	(22)	-12%
Utilities	91	115	24	26%
Agriculture, forestry, fishing and hunting	30	42	12	40%
Industries not classified	48	96	48	100%
Total for all sectors	**40,134**	**56,137**	**16,003**	**40%**

Source: BEA

[6] Need to define and clarify establishments vs. businesses.

Figure illustrates a 60-minute drive time around AUS and the location of IT businesses within that area. The largest are all within the urban area.

Figure 2: Spatial Distribution of Information Firms (NAICS 51) in the AUS Airport One-Hour Drive Time Trade Area



Source: Esri Business Analyst

Economic Clusters

The U.S. Cluster Mapping Project's analysis of the Greater Austin region also highlights its broad economic strength. A cluster is a concentration of related industries in a particular region. Clusters consist of companies, suppliers, and service providers, as well as government agencies and other institutions that provide specialized training and education, information, research, and technical support. *Traded clusters* are groups of related industries that serve markets beyond the region in which they are located and therefore require some form of transport connectivity. Examples include financial service or information technology. By contrast, *local clusters* consist of industries that serve the local market. Examples include local grocery stores or restaurants.[7]

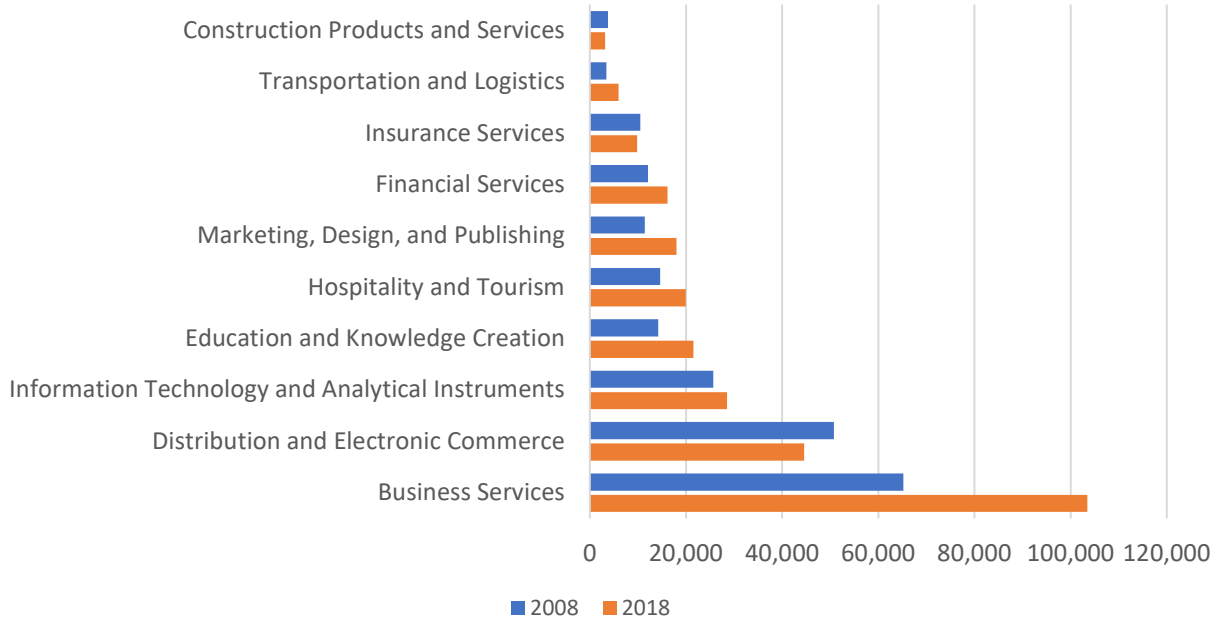
The area's economy features multiple tradeable clusters that are among the top performers in the country, and several are of notable strength. Those include Business Services; Information Technology and Analytical Instruments; and Marketing, Design, and Publishing.

[7] https://www.clustermapping.us/about/clusters-101

- Within the Business Services, the region shows significant economic strength in terms of computer services (data processing, hosting programming, etc.), corporate headquarters, and consulting services. The region's LQ for this sector was 1.25.
- Information Technology and Analytical Instruments (IT) includes software publishing, semiconductor manufacturing and machinery, and computer and peripherals manufacturing. The region's LQ for this sector was 3.52.
- Marketing, Design, and Publishing includes internet publishing and broadcasting; web search portals; information services; marketing consulting services; advertising; and industrial, graphic, interior, and other specialty design services. The region's LQ for this sector was 1.98.

Figure 3 shows the strongest tradeable sectors by total employment in 2018 along with employment in each in 2008. It indicates the changes in employment among these sectors. Not all show the significant growth experienced in Business Services (+38,000, or 59 percent) or Marketing, Design, and Publishing (+6,600 or 58 percent). For example, total employment dropped from 2008 to 2018 in Distribution and Electronic Commerce (-6,200 or 12 percent).

Figure 3: Changes in Employment in Major Industry Sectors 2008-2018



Source: U.S. Cluster Mapping Project (http://clustermapping.us/), Institute for Strategy and Competitiveness, Harvard Business School. Data Sources (http://clustermapping.us/content/data-sources-and-limitations)

Foreign Direct Investment

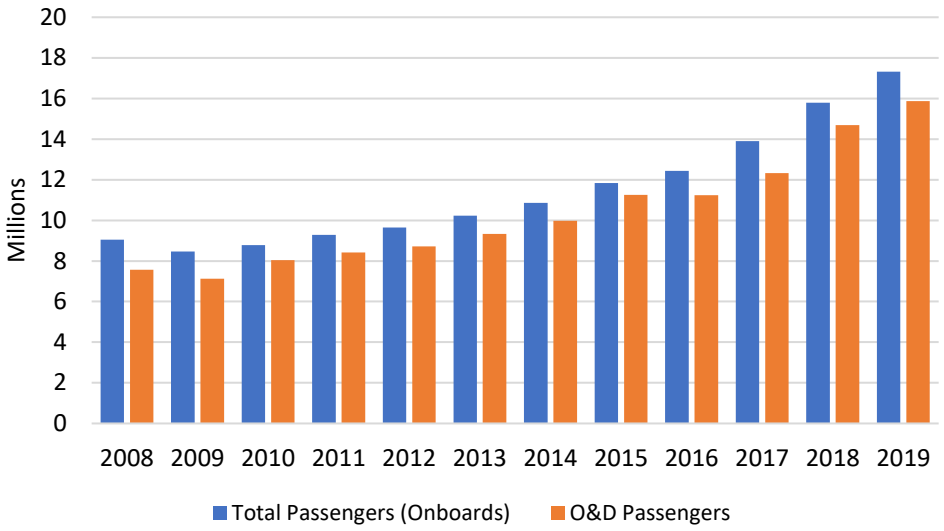
The Greater Austin Chamber of Commerce (Chamber) reports that more than 85 international companies have relocated or expanded in the Austin region since 2004. Market access is certainly one of many factors that firms consider when making site selection decisions. That AUS has established nonstop international service to countries outside of North America must be a significant positive aspect.

Overview of the Airport and its Air Service

Austin-Bergstrom International Airport is owned and operated by the City of Austin. Due to its proximity to San Antonio (approximately 80 miles away), ABIA's greater catchment area encompasses both the city of Austin and the city of San Antonio. As a result, AUS serves an overlapping catchment area with San Antonio International Airport (SAT).

The airport's website touts it as "the second-fastest growing, mid-sized airport in the United States." That growth accompanies the increases in the region's population and employment. In 2019, the airport set a new annual passenger record: 17.3 million people traveled through the airport-- the tenth record-breaking year in a row. Since opening in 1999, AUS passenger traffic has tripled. Figure 4 summarizes the change in total and Origin & Destination passenger activity. Not surprisingly, while connecting itineraries are possible given the overall volume of aircraft operations, the airport is principally a facility that serves local traffic, so O&D traffic represents the majority of total traffic.

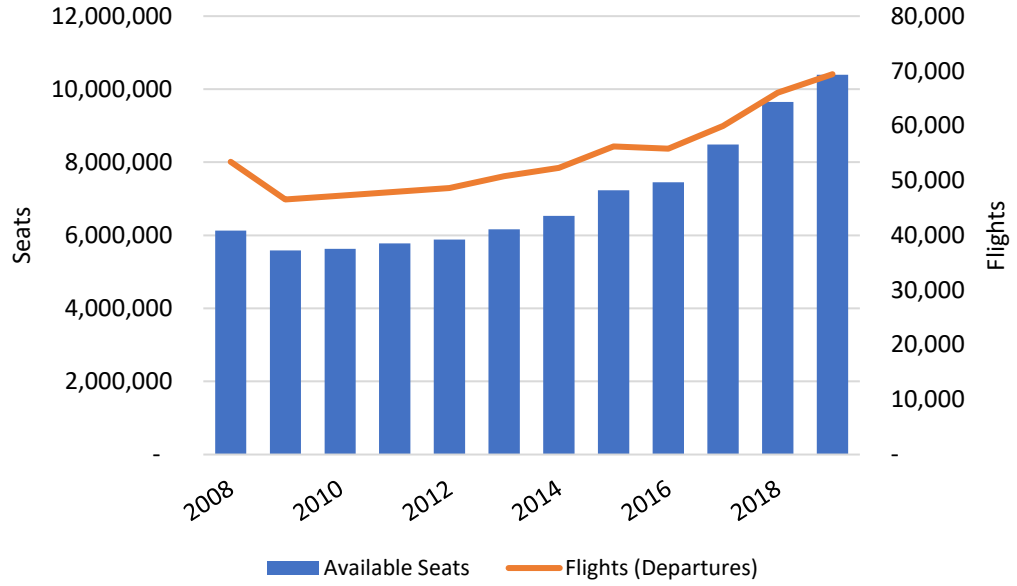
Figure 4: Growth in Total and O&D Passenger Activity 2008-2019 (millions of passengers)



Source: T-100 data from Diio by Cirium

Figure 5 shows the growth in the amount of capacity offered at AUS, in terms of both total flights and seats available for sale. From 2008 to 2019, the number of available seats rose by 4.3 million (70 percent), equivalent to an extra 12,000 seats per day. The number of flights rose by nearly 16,000 (30 percent), or almost 45 additional flights per day. Average aircraft size (seats per departure) rose from 115 to 150.

Figure 5: Changes in Capacity Offered 2008-2019



Source: T-100 data from Diio by Cirium

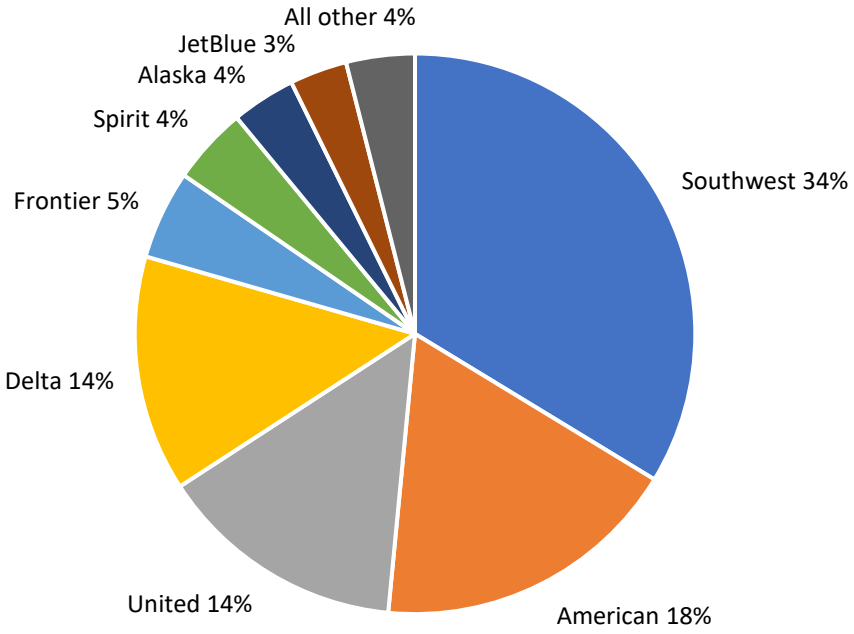
The number of nonstop markets served grew, as did the number of flights to major markets. In 2009, AUS had service (defined as 50 flights in a year or more) to 40 destinations. In 2019, it had service to 60. It gained service Miami (over 1,000 flights) and daily service to Reagan Washington National (DCA) via an exemption to the DCA perimeter rule. In addition, the number of flights to major markets rose significantly from 2009 to 2019:

- Atlanta: +1700
- Boston: +735
- Baltimore-Washington: +520
- Detroit: +950
- New York – Newark Liberty: +800
- Washington Dulles: +590
- Los Angeles International: +2300
- Chicago Midway: +520
- Minneapolis-St. Paul: +330
- Chicago O'Hare: +390
- San Diego: +800
- Seattle: +980
- San Jose, CA: +980
- Salt Lake City: +535

The airport also expanded its international service. AUS had service to Canadian and Mexican airports in 2008, but added new destinations over time, including Calgary and Guadalajara. AUS also added nonstop service to three European airports – London Heathrow, London Gatwick, and Frankfurt. Before the pandemic, carriers had announced plans to add service to Paris and Amsterdam.

Figure 6 highlights the relative balance of the passenger market share among carriers based on 2019 passenger traffic. Southwest is the largest carrier at AUS, with slightly more than one-third of the total. American, United and Delta hold roughly the same share, followed by the other U.S. carriers. As a result, those major U.S. carriers carry almost 80 percent of the AUS market. The international airlines that operated there in 2019 – including British Airlines, Lufthansa, Norwegian, SAS, Air Canada, and WestJet -- carried 2.6 percent of passengers.

Figure 6: Passenger Market Share 2019



Source: AUS

In May 2019, Lufthansa arrived in Austin as the German carrier's only new North American nonstop announced in 2019, connecting the capital of Texas to the airline's main hub in Frankfurt, Germany. Fall brought the announcement of two more transatlantic routes to begin in 2020: nonstop service to Paris aboard Norwegian, and to Amsterdam on KLM. In 2019, international travel increased by 21%.

Cargo and freight operations totaled roughly 150,000 pounds in 2019, with about 130,000 lbs. in the domestic market and the remaining 20,000 lbs. in the international market. The integrated carriers FedEx and UPS carried approximately 85 percent of total cargo and freight tonnage.

Connectivity

High quality transportation – of all modes -- is a prerequisite for sustained economic growth and for maintaining economic competitiveness. *International* competitiveness is driven by productivity growth which is underpinned by trade, foreign investment and innovative activity, all of which are facilitated by connectivity via commercial aviation.

"Connectivity" generally means the ability to reach a wide range of places in a short amount of time. Connectivity creates efficiencies that make firms more productive, which in turn attracts more high-flying businesses that have their choice of locations and starts a virtuous cycle of economic growth.

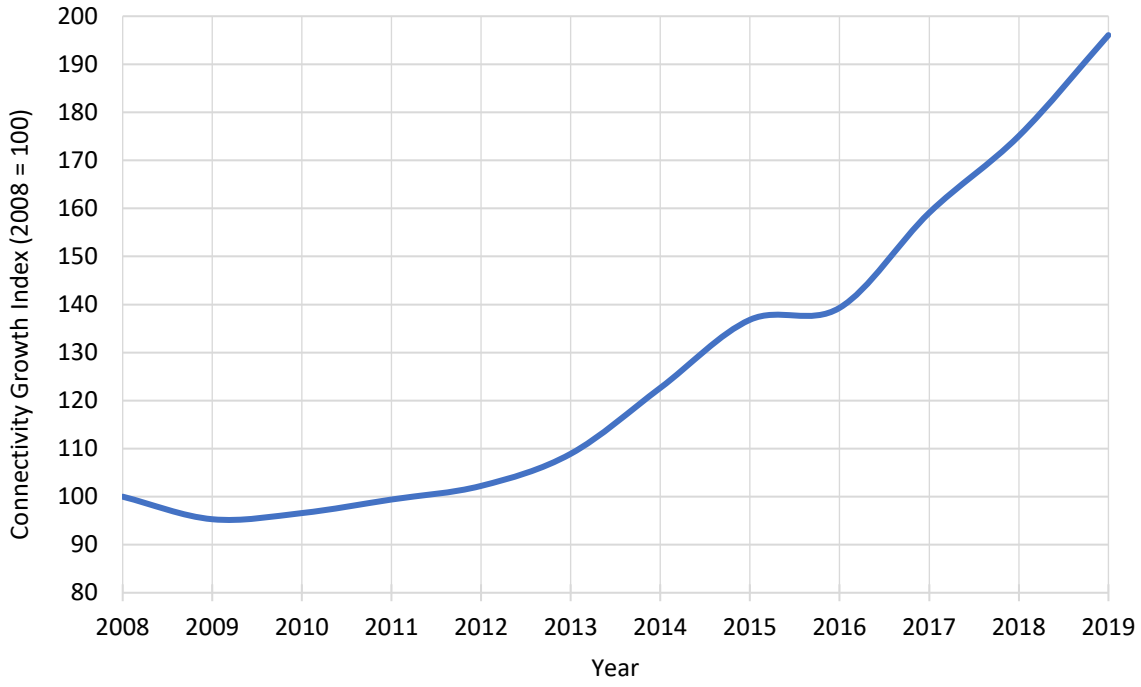
The growth in new destinations as well as increased capacity to major markets have manifested into a robust, continuous improvement in air connectivity provided by AUS to the regional economy over the past decade. Connectivity can be quantitatively measured in a variety of ways; the figure below summarizes the growth in connectivity at AUS between 2008 and 2019 using a method developed by the International Air Transport Association (IATA). The IATA connectivity index estimates the quality of air service at an airport based on the degree of service to other airports with the largest and most diverse route networks, as a proxy for how accessible the local economy is to the rest of the world.[8]

Connectivity at AUS has nearly doubled between 2008 and 2019. The impact of the Great Recession – which saw industry-wide consolidation of air service and mass reductions in air connectivity – was particularly short-lived at AUS, as it returned to its 2008 level of connectivity within just a few years. The growth in connectivity at AUS totaled 37% between 2008-15, and 43% between 2015-19. Overall, connectivity growth averaged 6.3% per annum between 2008-19, facilitated by both new and growing service to major markets in the U.S. as well as to major international hubs in Europe (London and Frankfurt). The consistent improvement in connectivity at AUS reflects not simply the pure growth in seat capacity and aircraft operations over time but more importantly the development of the airport as an increasingly effective means to reach key markets globally.

[8] The IATA connectivity index measures the number and size of destinations served, as well as the frequency of service to each destination and the number of onward connections available from those destinations. Service to airports with the highest total seat capacity (e.g. ATL) receive the highest weighting. Thus, the index recognises that connections to major global gateways provide greater global connectivity than connections to the same number of spoke ends. The formula for the index is calculated as follows:

$$\frac{[\text{Number of destinations} \times \text{Weekly Frequency} \times \text{Seats per flight}]}{\textit{Weighted by the Size of the Destination Airport}}$$
$$\text{Scalar factor of } 1000$$

Figure 7: AUS Connectivity Growth Index (2008=100)

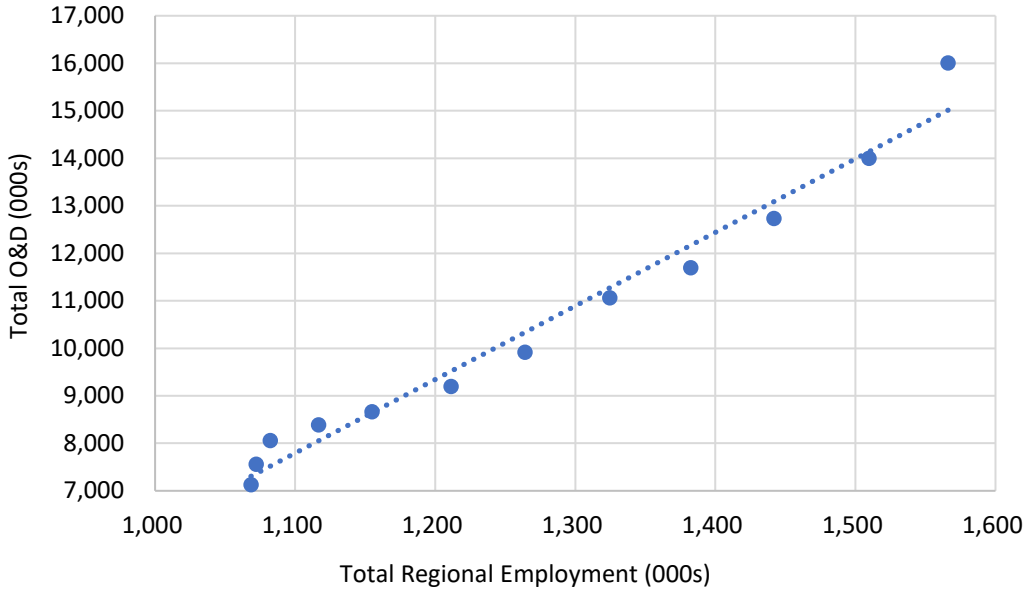


Note: Chart shows the IATA Connectivity Index for AUS, indexed against 2008 (2008 = 100).
Source: InterVISTAS analysis of Innovata schedule data from Diio Mi.

Change in Air Service and Economic Activity

The total amount of O&D traffic at AUS is highly correlated with total local employment. Figure 8 summarizes how changes in total O&D traffic have aligned with changes in regional employment. The line indicates a basic relationship between the two. As total employment increases, total O&D increases. The correlation coefficient between the two is a near-perfect .987. The chart does not demonstrate causation; that is, it is not evident whether rising total employment levels leads to more air traffic, or whether more air traffic leads to more total employment.

Figure 8: Relationship between Total Regional Employment and Total O&D Traffic



Stakeholders Perspectives on Contributions of Air Service to Economic Development

The Greater Austin Chamber of Commerce (Chamber) works with businesses looking to create or expand their presence in the Austin region and help them create more jobs. The Chamber represents businesses in the five-county region anchored by Austin. The Chamber invests in a broad range of programs that build, support, and diversify the Austin region's economy. Its vision is for Austin to have the country's most prosperous business community.

Improved air service is a critical element of the Chamber's efforts to enhance regional economic development. That broader economic development effort ("Opportunity Austin") is a five-year regional economic development initiative aimed at fostering job-creating investment across the Austin region. Nearly 400 corporate and community partners participate and invest in Opportunity Austin. Its top priorities include boosting economic diversification to proactively strengthen the economy, deepening the talent pool through development and attraction, and keeping the Greater Austin region attractive to entrepreneurs, business leaders and site selectors through advocacy on issues such as a comprehensive regional transportation system and regional collaboration.

Opportunity Austin targets key industries for future economic development, including advanced manufacturing, creative and digital media technology, clean energy and power technology, life sciences, data management, space technology, and corporate headquarters and regional offices. These industries have notable reliance on air service.

Opportunity Austin is noteworthy for purposes of this project in part because of the integration of economic development, air service, and other considerations of sustainable and livable communities. The initiative has three broad themes:

a. Economy (separate teams focus on business expansions, relocations, Global Technology & Innovation);
b. Education and Talent (working with the school districts to implement new college and career readiness and placement initiatives to expand college and career preparation options for Central Texas students); and
c. Place (which includes elements of livability, mobility, and infrastructure).

ABIA coordinates with the Chamber through its Air Service Committee (AS Committee). The AS Committee was created within the Chamber in 2010 after business leaders decided to invest in the community. It includes representatives from many major employers in the region (e.g., Dell). The AS Committee works to improve the service, frequency, and competitive prices for nonstop service. It directly helped to bring transatlantic service to the region, succeeding in 2014 luring British Airways service to London and later in 2019 bringing Lufthansa's flight to Frankfurt.

The AS Committee meets on a bimonthly basis with the airport. These meetings give employers an opportunity to inform the airport staff of current and planned business changes (e.g., new manufacturing plants) that may affect travel needs (e.g., needs for new nonstops). The Committee also develops an annual workplan. A new target for additional European nonstop service is Amsterdam.

Austin Global Gateway (AGG) is another important Chamber program. Through AGG, the Chamber intends to bolster the region's reputation among foreign business leaders. Austin's global reputation has risen alongside events such as SXSW and the Formula 1 automotive race. The AGG executive committee hopes to further the region's international reputation by leveraging its member relationships to demonstrate Austin's comparative advantage to discriminating investors, creative entrepreneurs, and dynamic corporations worldwide.

The Chamber also recognizes the challenge of measuring and reporting the effects of its economic development efforts for different audiences. For internal purposes, because the Board comprises senior business executives, they are familiar with various metrics of economic activity, including technical measures. For public reports, the Chamber posts basic measures on its website:[9]

- Job growth (e.g., "423,600 jobs since 2004")
- Rising wages ("We have helped the median household income increase from $47,182 in 2004 to $73,800 in 2017.")
- Economic diversity ("We strengthen our economy by recruiting businesses across a diverse set of industries.")
- Workforce ("We help train talent to grow our already highly capable and motivated talent pool.")

[9] https://www.austinchamber.com/what-we-do

The Chamber cites specific examples of successful efforts through press releases. For example, in April 2019, it announced that European internet access and networking provider Brodynt opened its US headquarters in Austin.

> "In choosing Austin, Brodynt reinforces our region's standing as an international destination for innovative companies," said Opportunity Austin Senior Vice President of Economic Development Charisse Bodisch. "These additional jobs will give Austinites more opportunities to find work and provide for themselves and their families. This is another win for Opportunity Austin, our region, and our community."

The Chamber also includes information on its website about the airport in its "Greater Austin Profile" that covers key topics of interest to businesses about the region, such as population, employment, workforce, major employers, telecommunications and utilities, climate, cost of living, and quality of life.

In addition to the Chamber, in October 2020 the Austin City Council created the Austin Economic Development Corporation (AEDC) to help local government meet various challenges—from affordability, homelessness, and equity, to sustaining and growing the small businesses, arts and culture. The aim is serve as the City of Austin's economic development agent without duplicating the work of the existing Chamber of Commerce/Opportunity Austin and City of Austin Economic Development Department.

The City of Austin's Economic Development Department supports and recruits business to Austin through. Its mission is to promote a competitive, sustainable and equitable economy. Among other tasks, it works to facilitate international expansion and manage City-issued incentives.

Communicating the Airport's Economic Impact

The latest economic impact assessment for the airport covered airport operations for 2017. As reported on the airport's website,[10] the analysis found that ABIA generated:

- $7.6 billion in total economic impact and
- supported 74,000 jobs in the region.

The report noted the significant growth in passenger traffic since 2010 and the resulting 212% increase in total economic output. The website also noted that "[t]he tastes of Central Texas are growing at Austin-Bergstrom as well. In 2017, passengers enjoyed:

- 61.5 tons of brisket (up 13% from 54.5 tons in first year recorded 2012)
- 684,199 breakfast tacos (up 37% from 498,141 in first year recorded 2012)
- 1,500 live music performances (up 86% from 805 in first year recorded 2012)"

It also noted that the airport is not dependent on support from state or local taxes. "Austin-Bergstrom is entirely self-sustaining, generating revenue to cover airport operating costs and future improvements."

[10] http://www.austintexas.gov/news/76-billion-economic-activity-generated-austin-airport