Think Today. Thrive Tomorrow.

The State of

The State of Texas

September 2020

A Report Supplement for

Regional Economic Recovery Initiative

Riffat Manasia, M.S.,
Gregory Pogue, Ph.D. and
Jim Jarrett, Ph.D.

IC² Institute @UTAustin

Image: Judy Paul for texashighways.com

Motivation for this Report Supplement

Dear friends of Texas,

We hope that you, your loved ones, and your community are navigating the COVID-19 pandemic and the economic shock that has accompanied it. We know that many people and many communities have been hit hard.

*This is an unprecedented time, especially as we take stock and prepare to rethink , redesign, and recover from the economic and health crises that affect our state, nation and world. The road ahead is full of challenges, but for the prepared, there are also opportunities. Under our **REGIONAL ECONOMIC RECOVERY INITIATIVE**, the IC² Institute at The University of Texas at Austin has responded to this challenge by sending over 95 university students to study over 80 Texas and Louisiana communities this summer. By end of August and despite the constraints, our students conducted over 800 in-depth interviews, gathered over 7,500 community surveys, and delivered 63 completed community asset mapping reports, in addition to other research activities. The goal of this effort has been to understand Texas communities and provide evidence-based recommendations for next steps for community planning.*

To place all of this work in context, our research team compiled an overview of the current state of the economic challenges and opportunities in the state of Texas in order to provide the larger economic context for the specific studies of communities. We distilled key trends which should be considered as responses to the economic, health and lifestyle shocks presented by the pandemic. Initially, this was planned as a supplement to the detailed reports being sent to the communities we studied. As we finalized the compilation, we realized its broader potential and use for all stakeholders, leaders, and citizens, and so, we are sharing it as our public service.

***"WE ARE TEXAS"** reflects our attitude toward Texas communities. The University of Texas at Austin serves and stands with all Texas communities – from North to South and East to West across our great state – as they assess current assets and challenges, plan for the future, and grow vibrant and resilient communities.*

Sincerely,

The IC² Team
The University of Texas at Austin

Think Today. Thrive Tomorrow.

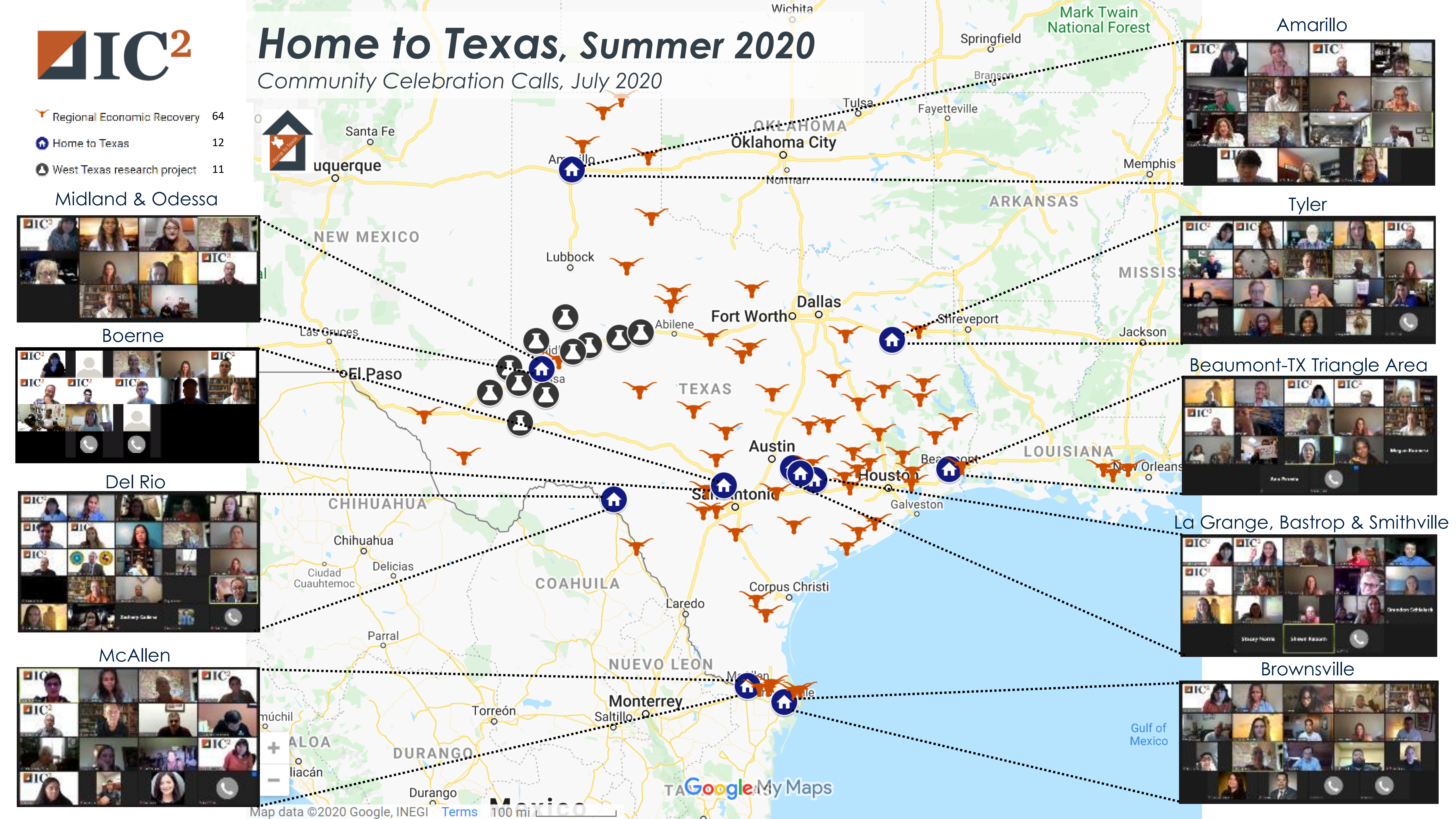
About IC² Institute

The IC² Institute was established at The University of Texas at Austin in 1977, as a think-and-do tank to explore the broad economic, technological, and human factors that drive economic development in regions. Our mission is to better understand and catalyze communities outside major urban corridors to become more collaborative and resilient through a human-centered approach.

Under the **Regional Economic Recovery Initiative**, IC² Institute has launched a series of programs since spring 2020 to help communities rethink and redesign strong, inclusive, resilient communities in the current economic context.

In the U.S. and globally, the institute will continue to implement initiatives that lead to economic transformation for communities and regions.

For more information, please visit: ic2.utexas.edu



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Amarillo
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Beaumont-TX Triangle Area
La Grange, Bastrop & Smithville
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Mark Twain National Forest
Branson
Tulsa
Fayetteville
OKLAHOMA
Oklahoma City
Norman
Memphis
ARKANSAS
Santa Fe
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NEW MEXICO
Lubbock
Abilene
Dallas
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Shreveport
Jackson
MISSIS
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TEXAS
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Ciudad Cuauhtemoc
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Laredo
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REGIONAL XLR8

Act today. Empower tomorrow.

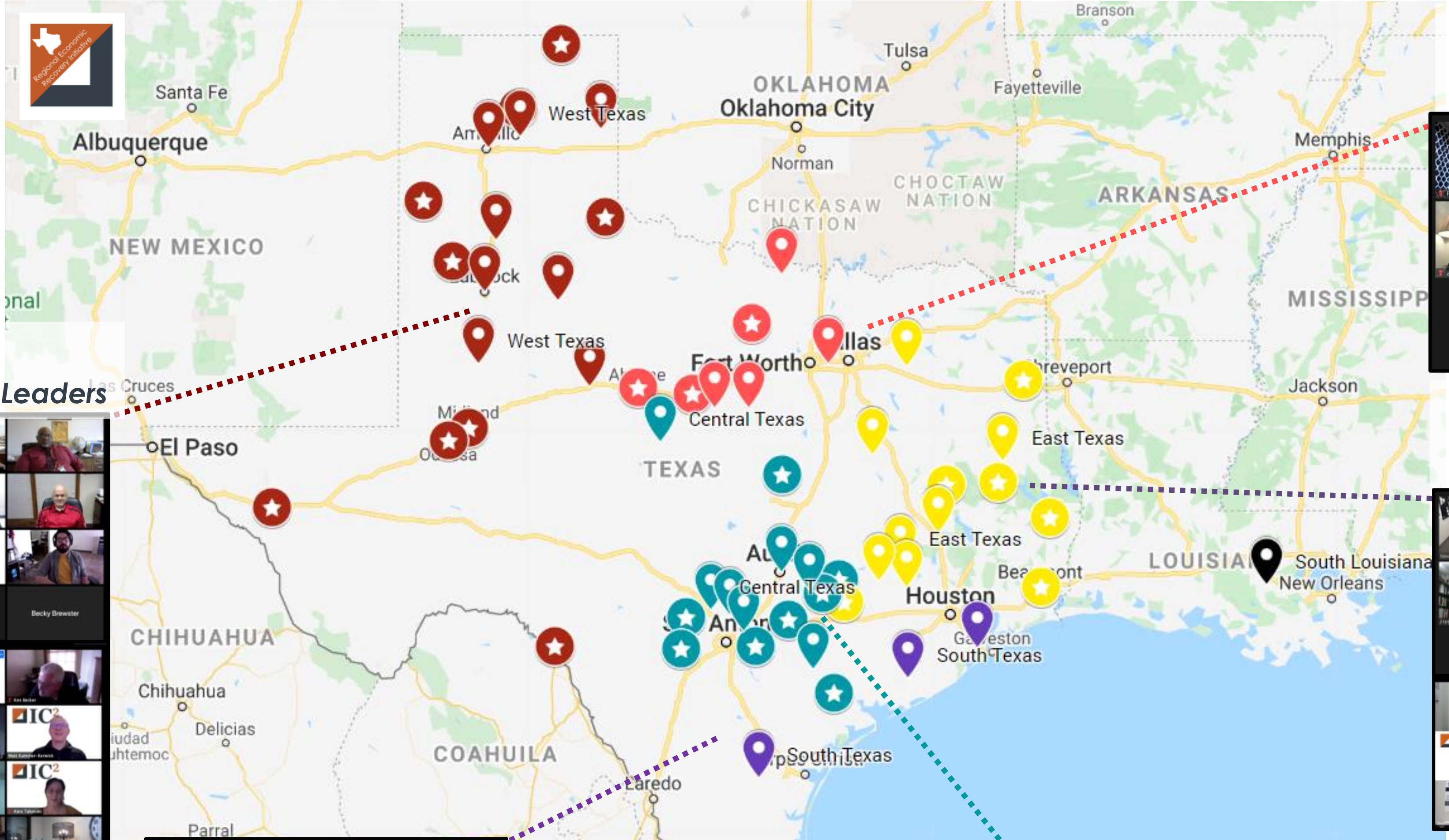
*Convening **140 Leaders** across **58 Communities***

Kick Off Session - Sept 15th, 2020

REGIONS

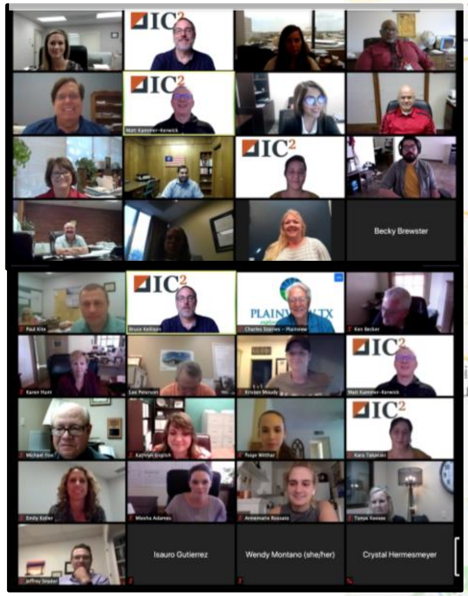
based on TX Gov Office

- West
- Central
- East
- North
- South
- Louisiana



WEST TEXAS

16 Communities, 34 Leaders

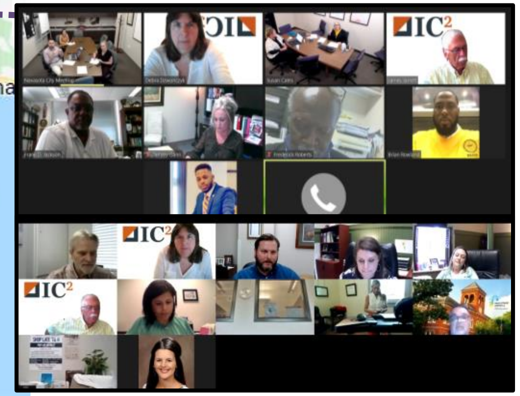


NORTH TEXAS

6 Communities, 14 Leaders

EAST TEXAS & LOUISIANA

14 Communities, 30 Leaders



SOUTH TEXAS

7 Communities, 10 Leaders

CENTRAL TEXAS

45 Leaders, 15 Communities

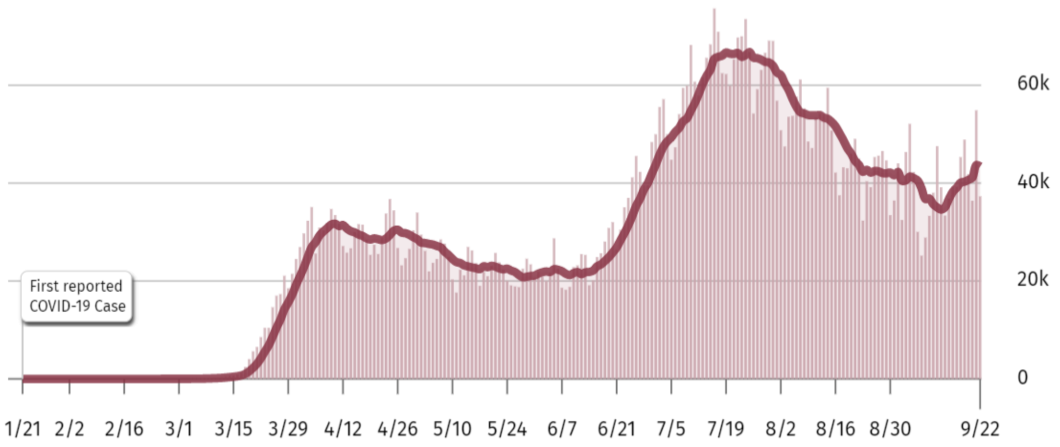
THE PANDEMIC

Pandemic Dynamics

- For US, COVID-19 caseload continues at a higher number, making it difficult to identify a first wave versus second wave
- Significant community spread continues in states due to high burden of virus among population and lack of uniform adoption of social distancing guidelines.
- Current outbreak is presenting more infection in younger populations – lower death rates, but possible latent spread with enhanced hospitalization and fatalities in the future.

Daily new cases in the United States

Line denotes a 7-day average of new cases

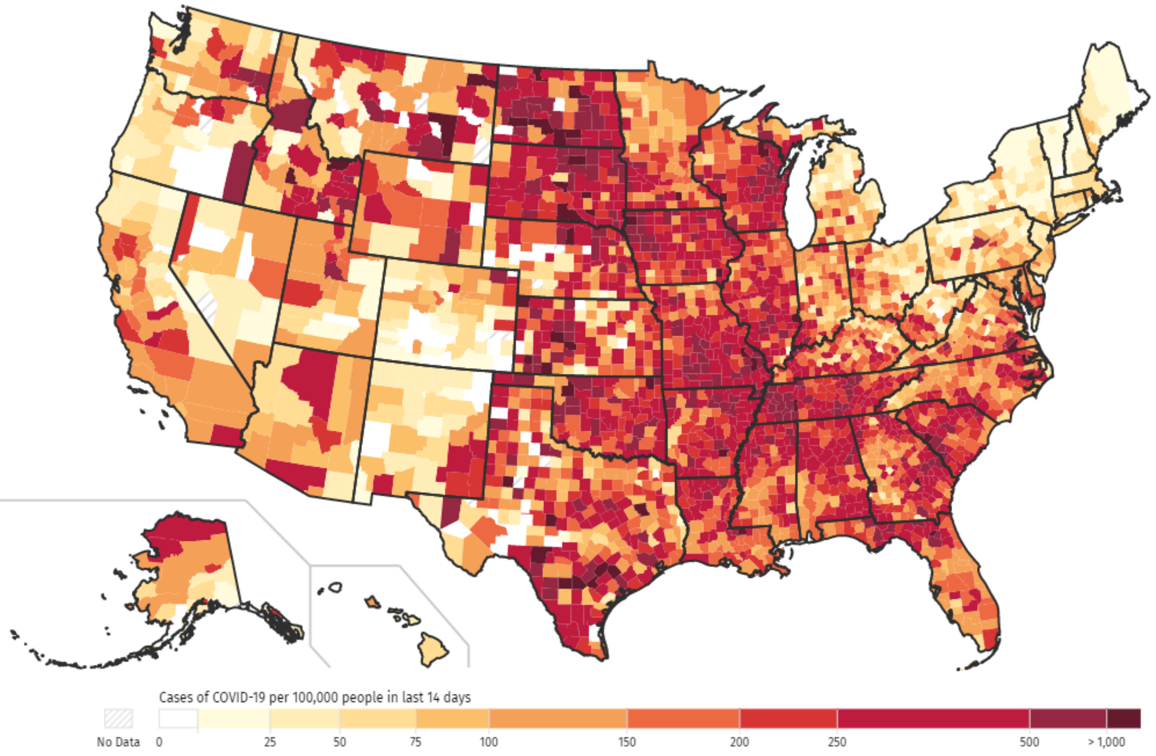


Data last updated 9/23/2020, 12:25:03 PM

CASES in last 14 days | **FATALITIES** in last 14 days

571,291 Cases | 11,194 Fatalities

174.0 per 100,000 | 3.4 per 100,000



Data last updated 9/23/2020, 12:25:03 PM

This site was developed using daily data from The New York Times
Big Local News | Google News Initiative | Pitch Interactive, Inc.

Pandemic Duration (1)

Important variables to consider:

1- Control of community spread – frequency of people with virus in population is directly proportional to disease burden.

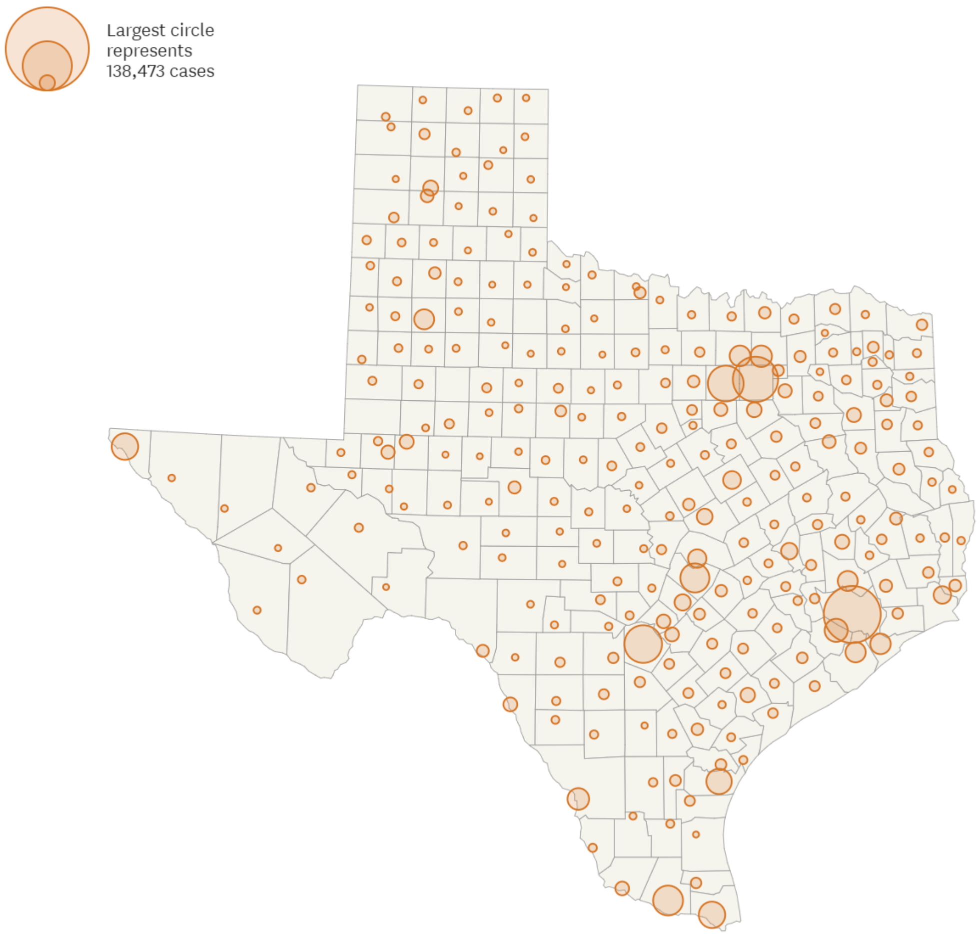
- Currently in Texas urban centers the virus is present at a high frequency
- With travel, spread to rural communities can increase a low frequency to a higher one through non-adherence to social distancing

2- "Herd" immunity – the situation where ~2/3 of the population has been exposed and limit community spread due to existing immunity.

3- Hospitalization and fatality rates

- Hospitalization requirements vary with age – from 2.5-17% of individuals with confirmed infection requiring hospitalization
- Case fatality rates from the US is ~4% - meaning that with each 100 people with disease, 4 will die.

As of Sept 23,2020 - 740,236 confirmed coronavirus cases, 15,220 deaths in Texas.



SOURCE: TX: Texas Department of State Health and Hearst Newspapers reporting

Pandemic Duration (2)

Other important variables to consider:

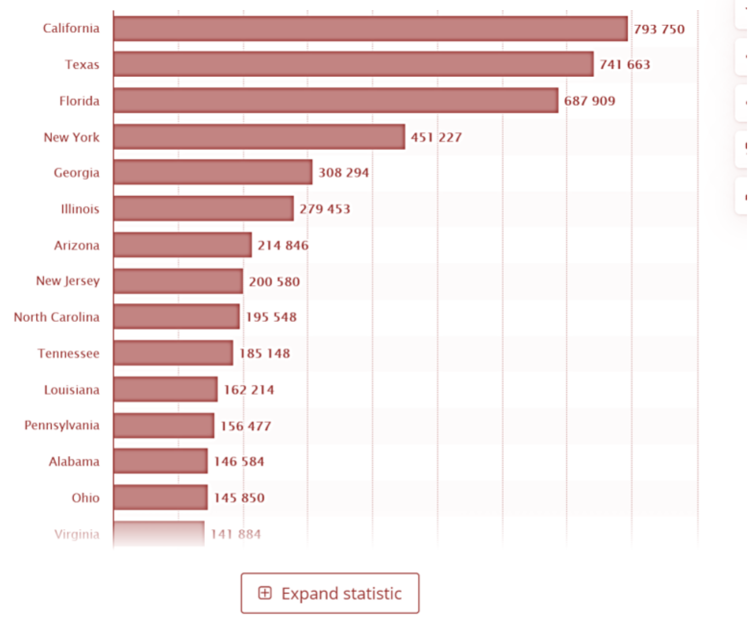
4- Durability of immune protection

- Reports vary but appear to confirm that the greater the symptoms – the higher and longer the immune protection
- Currently unclear how long immune protection lasts in various populations – ages, disease presentation, etc.

5- Vaccine availability

- Complex issue due to need to conduct trials that will confirm protection in clinical trials.
- US FDA will approve vaccines that are safe and protect >50% of vaccinated individuals from infection.
- Current vaccines in testing are unproven and may produce more unwanted side effects.
- Many current vaccines in testing will require complex supply chain and distribution strategies slowing access.
- All vaccines will require two doses at present and ~1 month from first immunization to "protection"
- This suggests it will be 1-1.5 years from broad distribution of a vaccine to rural areas.

Total number of COVID-19 cases in the U.S. *as of September 23, 2020, by state*



Details: United States; Johns Hopkins University; as of September 23, 2020, 3:45 am ET

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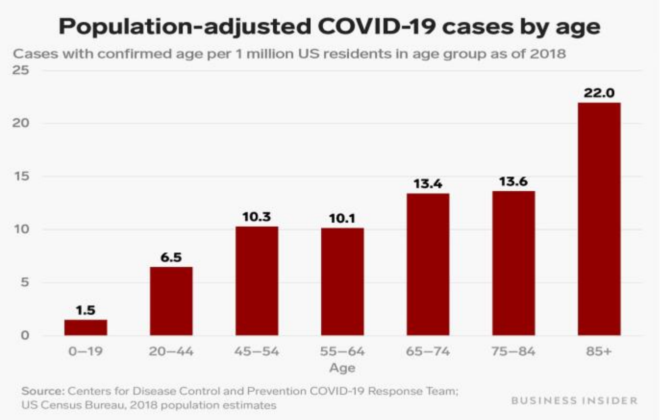


Pandemic Dynamics, Bottom Line

Economic disruption due to:

- Reduced **travel**
- Reduced **business capacity and revenue**
- Reduced **corporate investment**
- Reduced local, state and federal **tax revenues**
- Increased **unemployment**
- Increased **housing issues**
- Increased burden for **social services**
- Impact to workforce due to **school closures** for households with children

KEY TAKE-AWAYS

TEXAS Context: Key Take-aways

- ***SHEER SIZE:*** *If separate, the sheer* ***SIZE ranks TEXAS as 10th largest economy globally****, surpassing Canada & South Korea and just below Brazil & Italy. The State of Texas has consistently grown economically with a diverse GDP base over the past years despite recessions.*
- *Although private sector employees 85%- majority of workforce-* ***public employment accounts for over 15% or 1 out of 6 working Texans****, with* ***local govt at employing nearly 11% of workforce, i.e. 1 out 10 Texans****.*
- *California & Texas have experienced the* ***most public-sector job losses since February****: 229,000 (-9.6%) & 112,100 (-6.3%), respectively which will greatly impact local & state economies.*
- *Trade, Transportation, Utilities (20%), Pro & Biz Services (14%) and Edu & Health (14%)* ***employee nearly half of Texas' workforce****. In contrast, manufacturing, construction, mining/logging (2%, which includes oil & gas) total only 15% of goods produced.*
- *Mining & logging, which includes the oil and gas business, constitutes a small and shrinking percentage of employment even pre-pandemic. 2019 ended with 10% fewer Texans working in that sector. Pre-pandemic losses now amplified.*
- ***TEXAS Leading Index*** *shows the recent drastic decline levels comparable to the Great Recession of 2008 (longer term) but with a flatter recovery & uptick.*
- *Based on data through August 15, 2020, TEXAS Leading Index* ***took a step backward*** *during the week ending August 15, reversing the increasing trend of the previous two weeks (Figures 1 & 2).* ***This signals a slowing in the pace of the economic recovery.***
- *Beyond urban centers and corridors in TEXAS,* ***broadband*** *access is spotty and insufficient.*
- *Despite the fluctuations of the state and national economies, businesses and their employees have continued to* ***migrate to Texas,*** *attracted by its high quality of life, lower cost of living, and business-friendly tax and regulatory structure.*
- *Beyond urban corridors and especially in WEST TEXAS, Texans have* ***limited access to emergency medical care*** *within 30 min driving distance.*
- *Many* ***rural hospitals have closed*** *in the last decade, putting the elderly, rural population at greater risk.*

U.S. Economic Impact: Key Take-aways

- *U.S. economy has entered a* ***new recession****. Current job losses far exceed the worst of the Great Recession.*
- *Total job losses due to COVID-19 near* ***30 million****.*
- *After losing a* ***record 20.8 million jobs in April****, U.S. economy gained 2.7 million jobs in June 2020(BLS) when businesses began to reopen.*
- *U.S. job losses have* ***WIPED OUT 113 straight months of job growth****.*
- *After major decline in March, U.S.* ***Weekly Economic Index still declining*** *after mild recovery in May with re-openings.*

TEXAS Economic Impact: Key Take-aways

- *All economic sectors showed **large contraction** in the 1st and 2nd quarters of 2020, with a rebound experienced in June due to reopening. Employment statistics have trailed this **downward trend**.*
- *Almost all sectors **see less dramatic job losses** due to COVID-19 in **TEXAS** compared to U.S.*
- ***Employment contracted** less severely than other states Feb-April, but has slowed in recovery compared to national average from April-June.*
- ***Construction contracted** dramatically in Q1/Q2 of 2020 – steepest decline since 1975- and continues to be sharply lower than previous quarters.*
- ***Energy Shock** shows differential impact: Producing Counties vs. Processing Counties - Trend appears to highlight higher impact of pandemic-induced energy crisis on producing counties, with less impact on processing counties.*
- ***Texas exports** of energy/mining products, agricultural products and manufactured goods show decrease from previous values. Only agricultural products show a modest increase.*
- *Compared with Great Recession, the pandemic has contracted Texas exports to a much **greater extent**.*
- ***Business ownership** declined by 3.3 million or 22% in first half 2020.*
- ***Black owned businesses** declined by 41% and **Latinx businesses** 32%.*

TEXAS Economic Impact: Key Take-aways

- ***Business closures*** *are widespread geographically with Texas following closely behind California.*
- ***Permanent closures*** *are continuing to rise to ~ 50% as a share of all closed businesses.*
- *Of all business closures on Yelp since March 1, 41% are permanent closures. Hardest hit are Restaurants & Retail.*
- ***Small business revenue****: Downward trends appear to highlight the fragility of hospitality, touristic economies to the pandemic crisis.*
- ***Permanent job losses*** *are on the rise as temporary layoffs decline with millions brought back to work in May & June. Rising permanent job losses are a concerning trend, to be followed closely.*
- *High-income households accounted for most of the* ***reduction in spending****. Small business revenues declined most in affluent areas.*
- *As of July 19-2020, total* ***consumer spending*** *decreased by 6.7% compared to Jan 2020. Certain counties in Texas recorded >45% reductions.*
- ***State-ordered re-openings*** *of economies had small effects on economic activity.*
- *Pandemic is causing disruptions to* ***food and agriculture supply chains*** *around the world, including in Texas.*

TEXAS Economic Sectors: Key Take-aways

Service

- *Shock & decline of Texas Service Sector is multiple times lower than the Great Recession of 2008.*
- *Service Sector Index plunged in July from its reading in June*
- *Service companies have a mixed picture of their future business conditions, with half believing they will be the same as in July, one quarter will have improved and one quarter will have become worse.*

Manufacturing

- *Decline of Texas Manufacturing Sector is significantly lower than the Great Recession of 2008.*
- *Manufacturing sector index improved slightly in July from its reading in June.*
- *Manufacturing companies are also somewhat optimistic about general business conditions in six months.*

TEXAS Migration: Key Take-aways

- *Of Texas' total population growth from 2010 and 2016, **migration accounted for almost exactly half.***
- *The **"Big Four" account for two-thirds of Texas** are a major attractor for out-of-state migrants (Austin-Round Rock, Dallas-Fort Worth-Arlington, Houston-The Woodlands-Sugar Land, and San Antonio-New Braunfels).*
- *Migration favors **urban over rural areas**. Growing population divide between urban and rural areas in Texas due to migration.*
- ***External migration** is shaping Texas' population geography. Today's urban-rural demographic divide is not fueled so much by internal migration as it is by external migration which is **sharpening the demographic differences**.*
- *Patterns suggest a future where the **state's population becomes increasingly urbanized** and regional patterns of population growth become more disparate.*
- *Due to **urban-rural and migration-based divide**, large areas of Texas could be left with more limited access to employment, medical care, educational opportunities, and other goods and services.*
- ***Growth brings its own challenges.** Texas' population is expected to reach nearly 60 million by 2050, bringing with it skyrocketing demand for water, housing, transportation, schools and jobs.*
- *Not all areas of Texas are growing. **Rural counties losing residents** to metropolitan areas face their own challenges, such as access to health care, teacher shortages and inadequate local government revenues.*
- ***High housing costs and availability** pose challenges for households and for the state's economy pre-pandemic and more now for higher density areas.*
- ***Economic growth and population increases** will put continuing upward pressure on the state's home prices and rents. If Texas wants to maintain its overall reputation for a low cost of living, state and local policymakers must consider the factors driving price increases — and act on those they can influence.*

OECD Recommended Opportunities for Rural Areas, Globally: Key Take-aways

Opportunities

- Higher relevance to enhance quality and use of digital tools/broadband in rural regions
- Remote distributed work might increase linkages between rural and urban
- Shift in consuming habits can favor local products and destinations
- Greater awarness to ensure accessibility to quality services (ehealth, e-education)
- Reshoring of strategic industries that were once delocalised (i.e. raw materials)
- Momentum to accelerate a just transition towards a low-carbon economy for rural communities
- Mobilise and strengthen local networks and co-operative structures to face future shocks

DETAILED FINDINGS

NATIONAL & STATE CONTEXT

SECTORS

SIZE

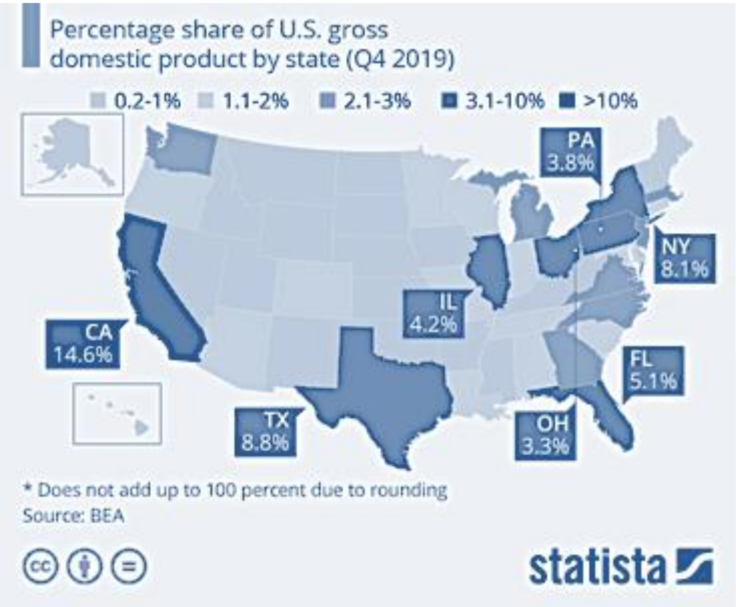
WORKFORCE

GOVERNMENT

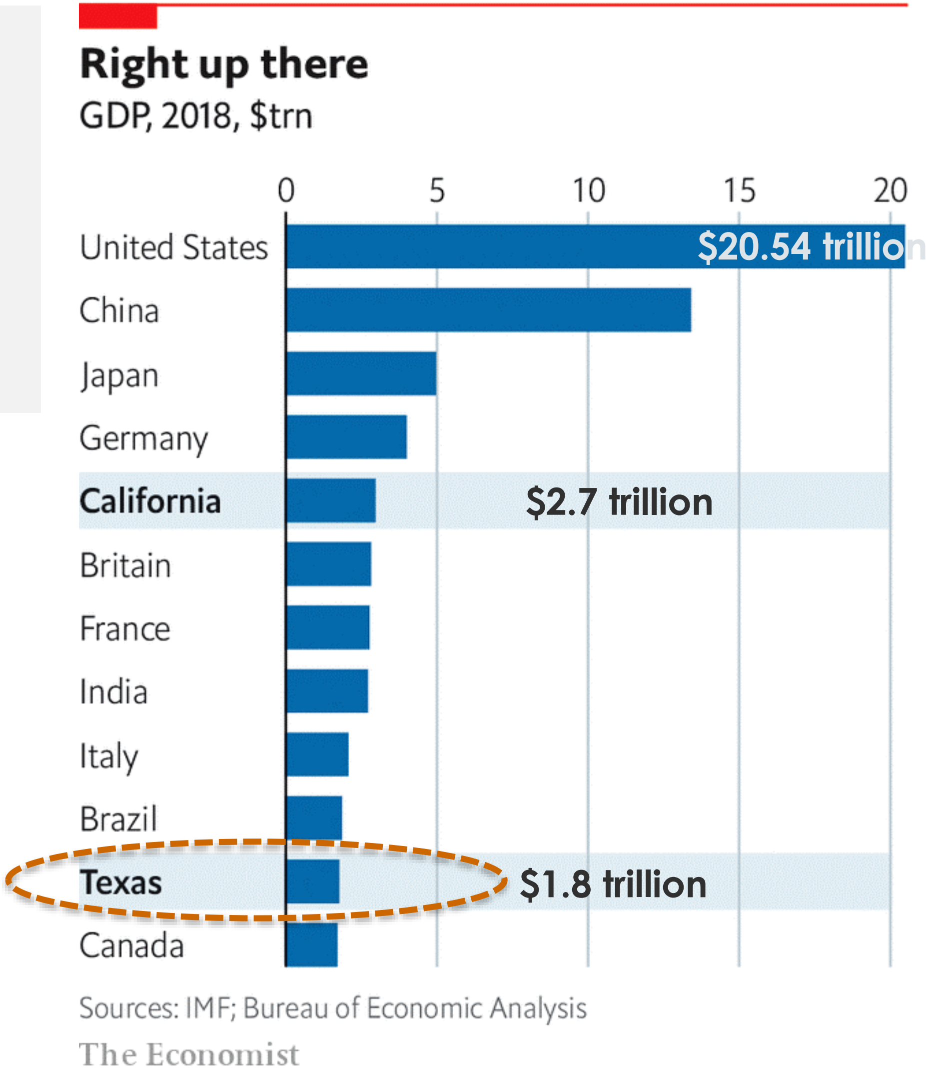

THE GREAT
STATE OF
TEXAS

TEXAS Economy, Size & U.S. Contribution

If separate, the sheer <u>SIZE ranks TEXAS as 10th largest economy globally</u>, surpassing Canada & South Korea and just below Brazil & Italy.
The State of Texas has consistently grown economically with a diverse GDP base over the past years despite recessions.

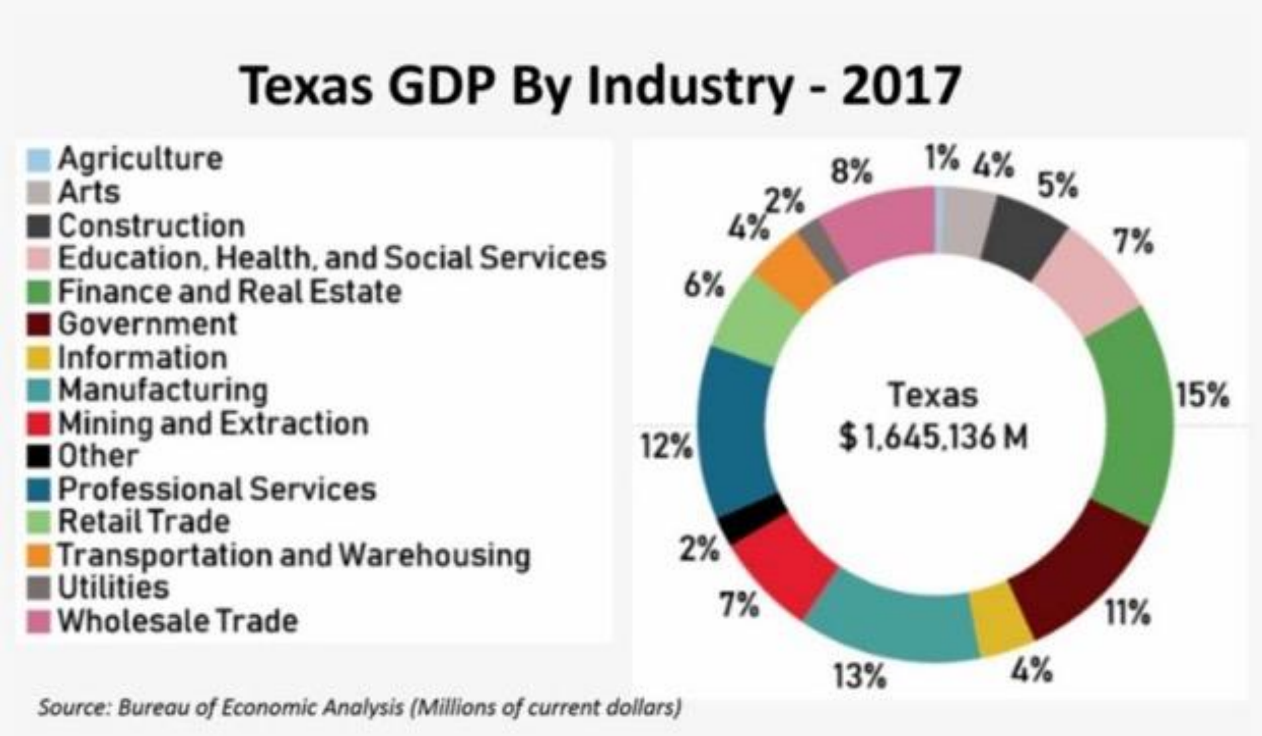


With a population of +29M (8.8% of total U.S.), Texas contributed ~9% to U.S. GDP 2019.



TEXAS Economy by Region, by Sector

Overall, industries leading GDP include Finance & Real Estate, Manufacturing, and professional service. However, economic regional variations is great.



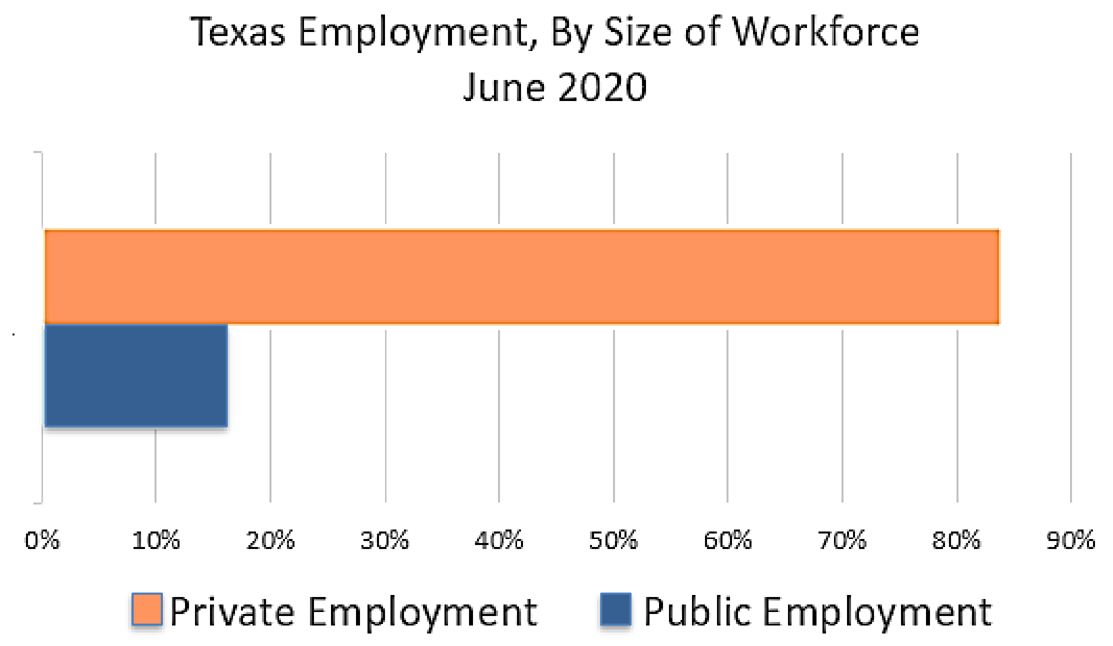
Industries Concentrated Within Texas Economic Regions

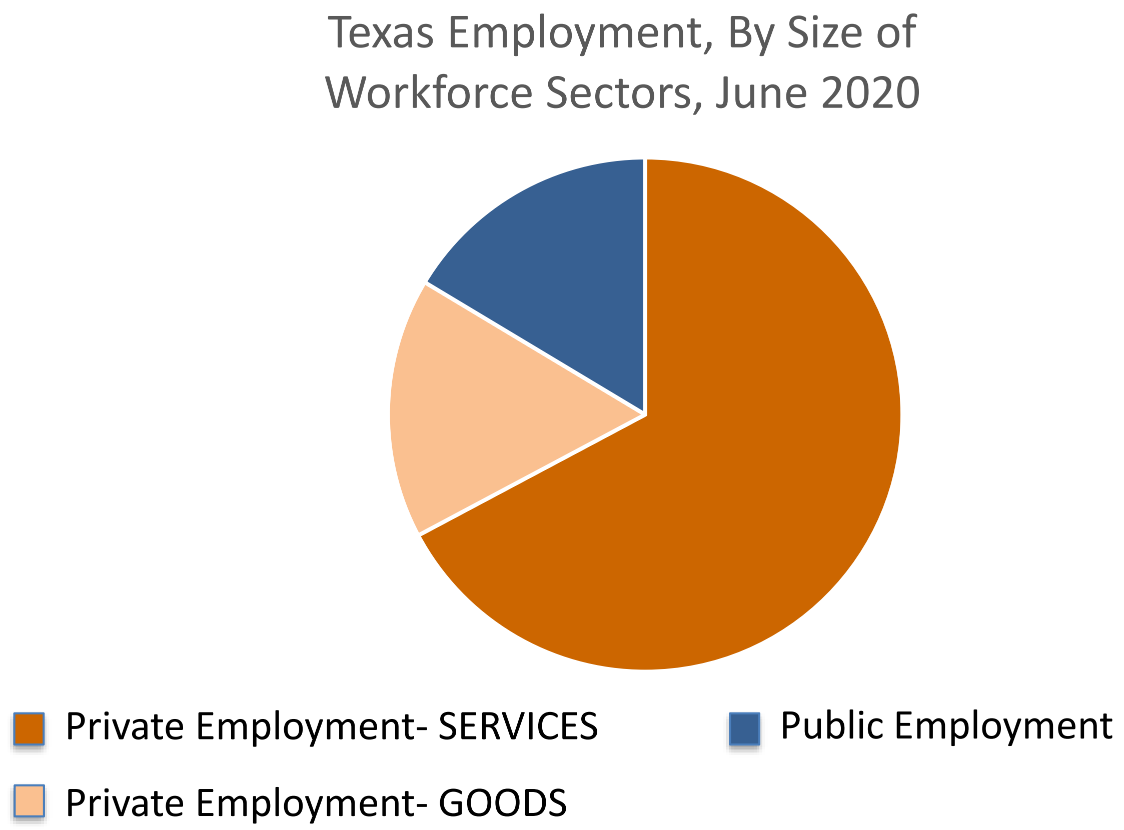
Industry	Region	2013 Jobs in Region	% of State Share
Forestry and Logging	Southeast	1,007	59.0%
Animal Production and Aquaculture	High Plains	7,641	33.6%
Federal Government	Central	66,923	17.0%
Computer and Electronic Product Manufacturing	Capital	25,113	26.2%
Transportation Equipment Manufacturing	Metroplex	52,236	56.9%
Oil and Gas Extraction	Gulf Coast & West Texas	70,482	67.9 %
Pipeline Transportation	Gulf Coast & West Texas	10,629	67.5%
Leather and Allied Product Manufacturing	South Texas & Upper Rio Grande	2,708	61.7%

Source: TX Comptroller Office, 2013.

TEXAS Employment Sectors & Industries, June 2020

Although private sector employees 85%- majority of workforce- public employment accounts for over 15% or 1 out of 6 working Texans.





TEXAS Employment Sectors & Industries, June 2020

Public sector accounts for over 15% or 1 out of 6 working Texans, with local govt at employing nearly 11% of workforce, i.e. 1 out 10 Texans.

California & Texas have experienced the most public-sector job losses since February: 229,000 (-9.6%) & 112,100 (-6.3%), respectively which will greatly impact local & state economies.


Economic Policy Institute

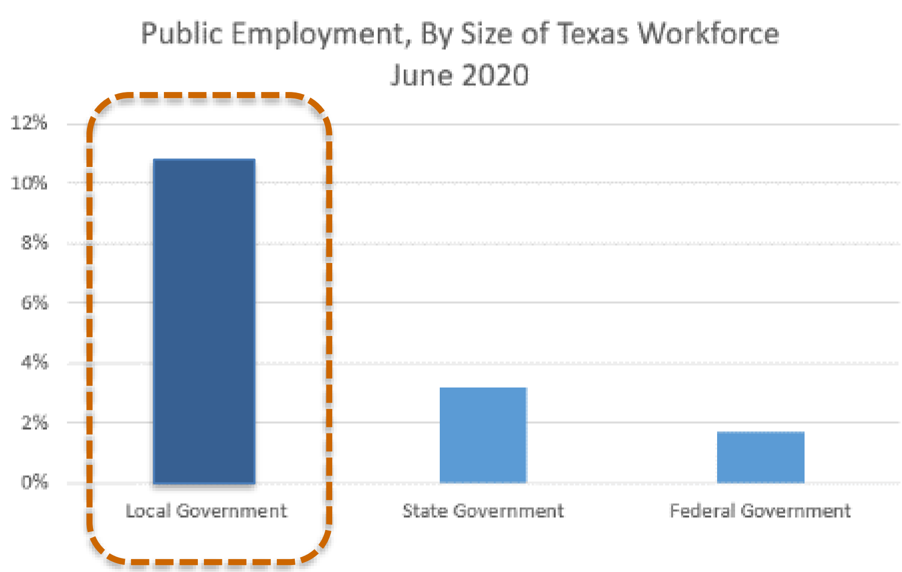
Working Economics Blog

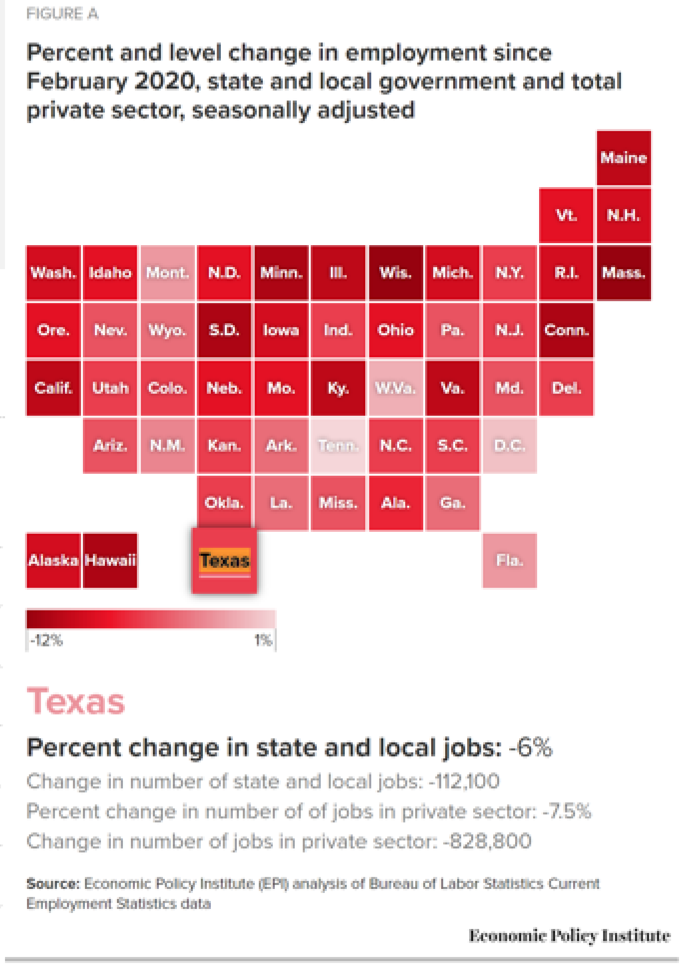
Posted July 29, 2020 at 3:49 pm by Julia Wolfe and Melat Kassa

State and local governments have lost 1.5 million jobs since February

Federal aid to states and localities is necessary for a strong economic recovery

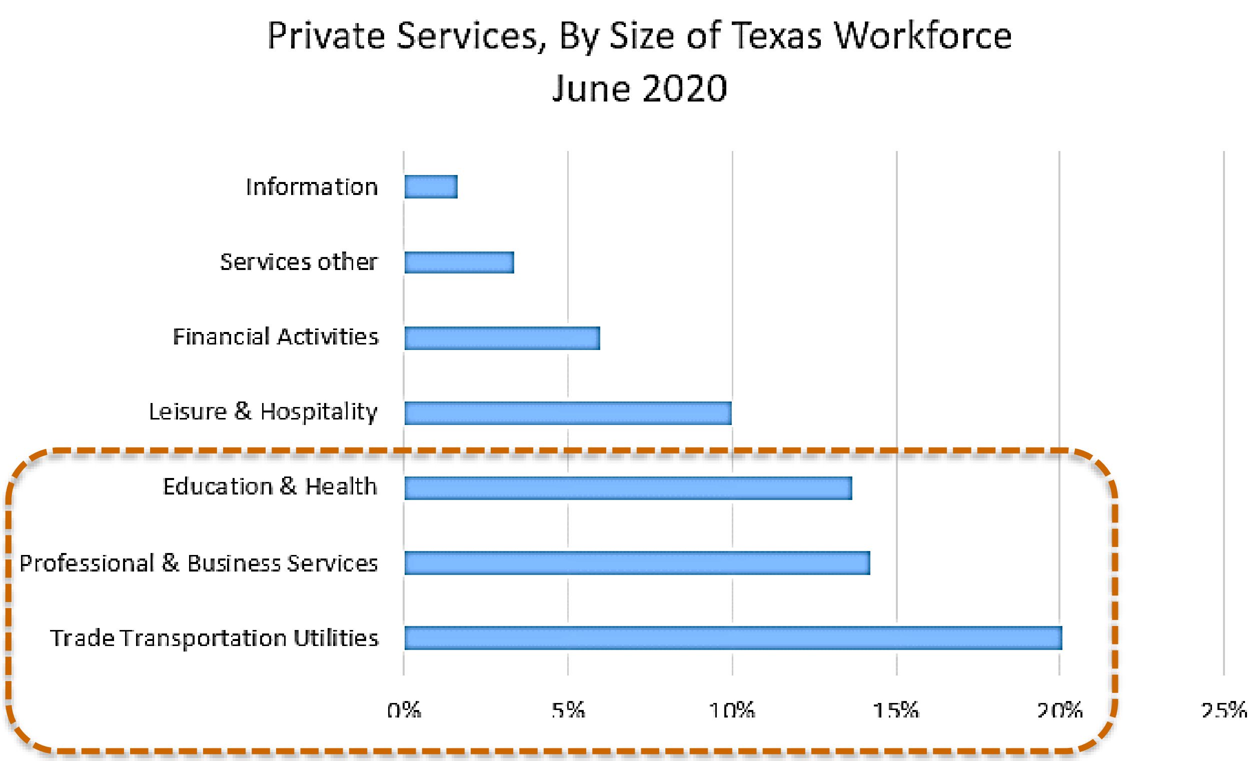
https://www.epi.org/

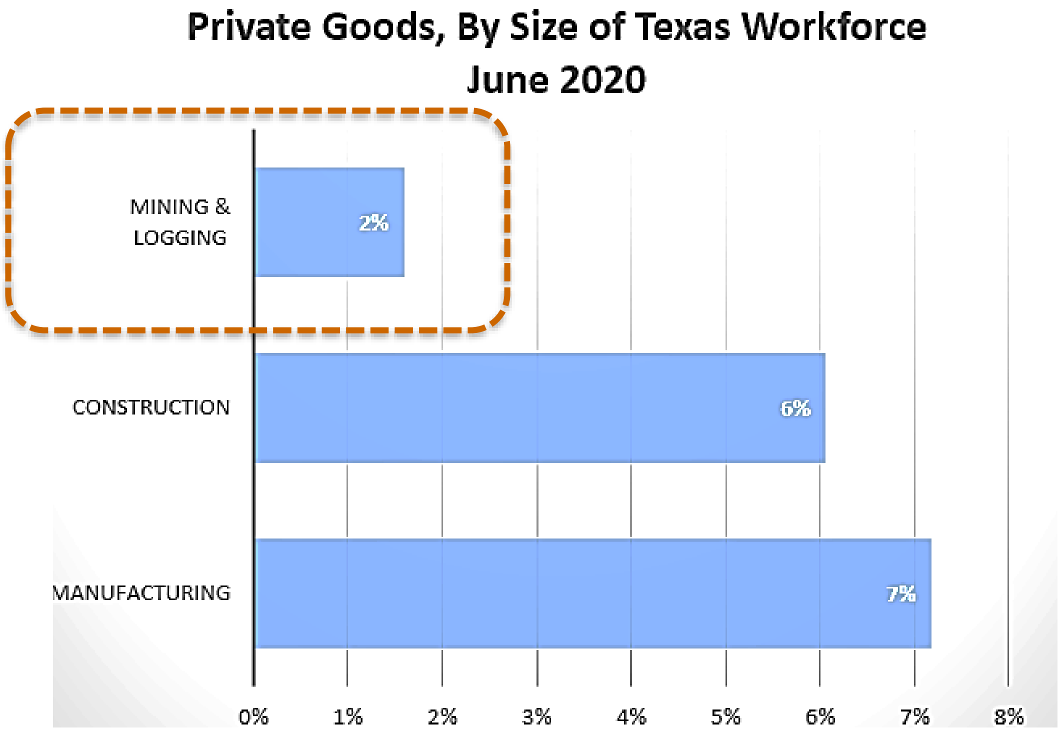




TEXAS Employment Sectors & Industries, June 2020

Trade, Transportation, Utilities (20%), Pro & Biz Services (14%) and Edu & Health (14%) employee nearly half of Texas' workforce.
In contrast, manufacturing, construction, mining/logging (2%, which includes oil & gas) total only 15% of goods produced.





U.S. & TEXAS - Declines in Job Openings

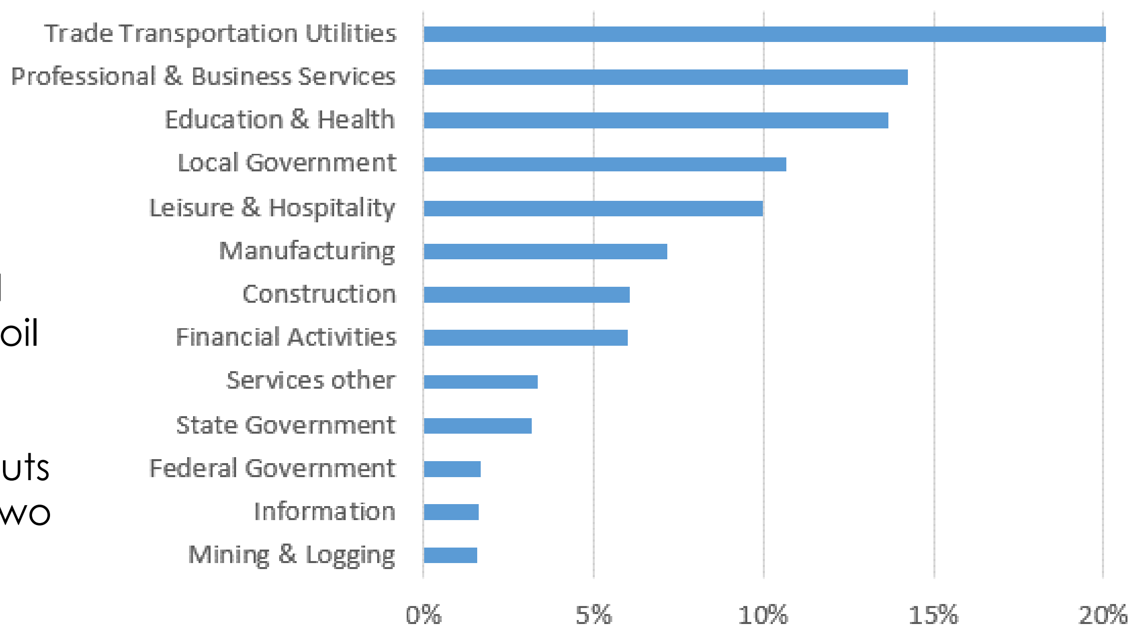
Mining & Logging Sector, pre-Pandemic

Mining & logging, which includes the oil and gas business, constitutes a small and shrinking percentage of employment even pre-pandemic. 2019 ended with 10% fewer Texans working in that sector. Pre-pandemic losses now amplified.

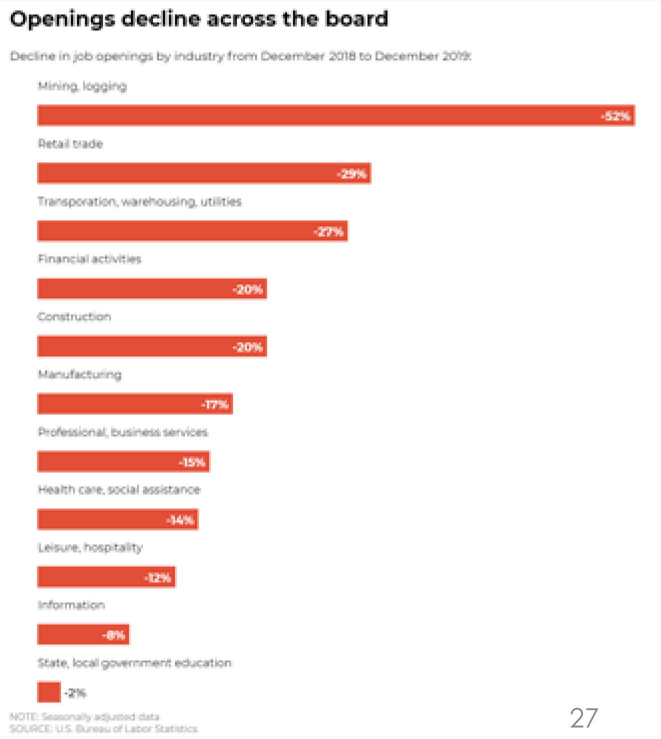
Prior to the pandemic:
Dec 2019, **U.S. job openings** in private sector fell by 1.1 million, (-16%), steepest downturn since 2009, when the country was still reeling from the Great Recession.

Steepest drop in mining and logging, which includes the oil and gas business. It slashed job openings by 52% in December 2019, following cuts of over 30% in the previous two months.

Texas Employment--Major Sectors
By Size of Workforce--June 2020



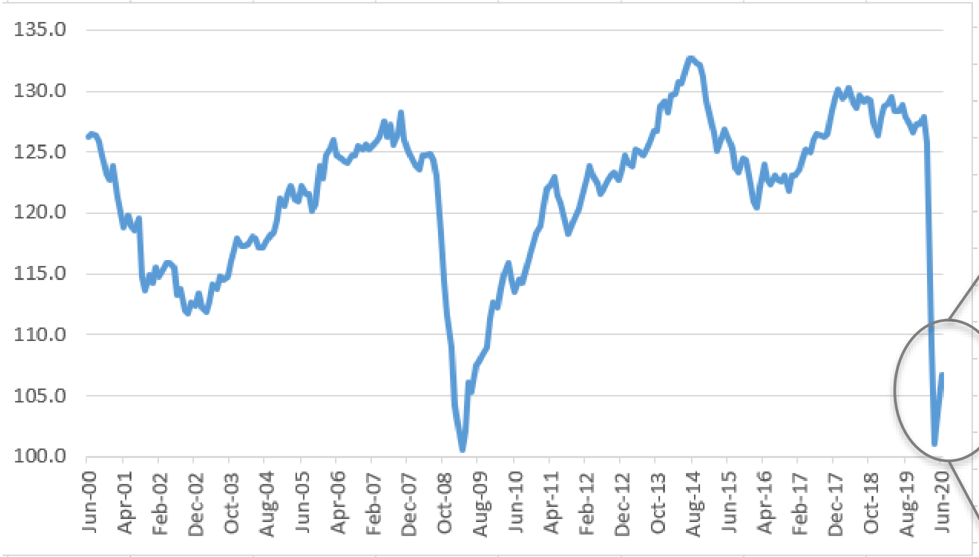
U.S. Job Opening Losses, Dec 2019



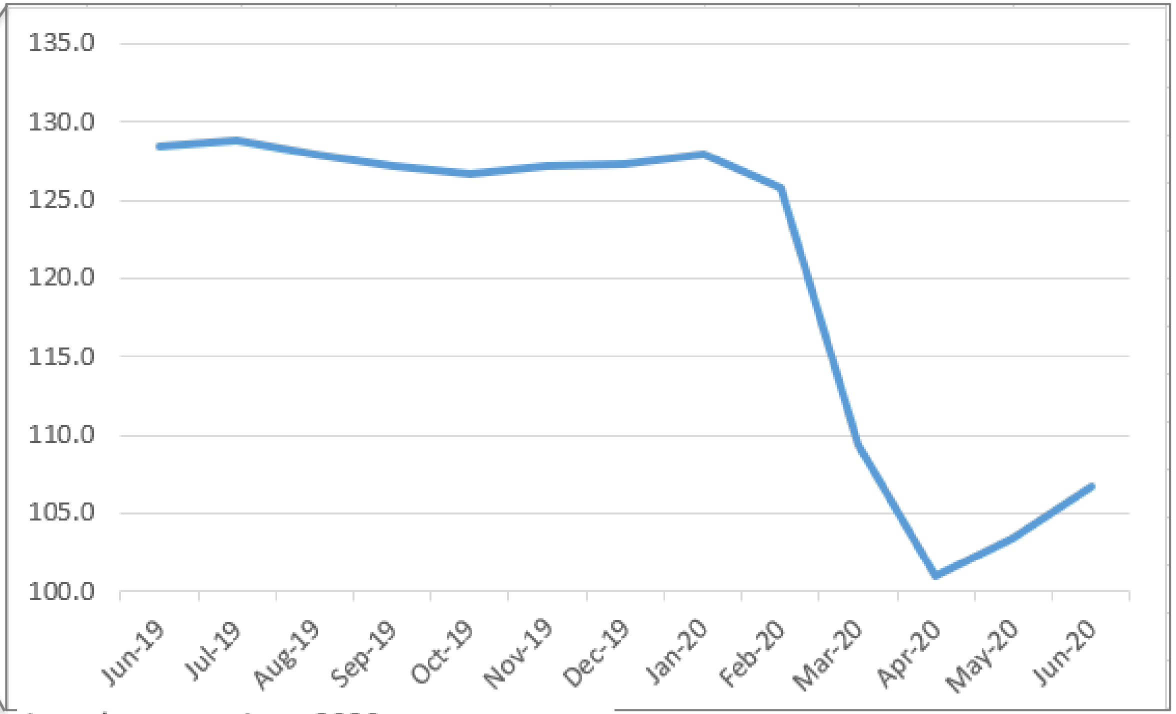
TEXAS Leading Index (1)*

TEXAS Leading Index shows the recent drastic decline levels comparable to the Great Recession of 2008 (longer term) but with a flatter recovery & uptick.

Longer Term (June 2000 - June 2020)



Shorter Term (June 2019 - June 2020)



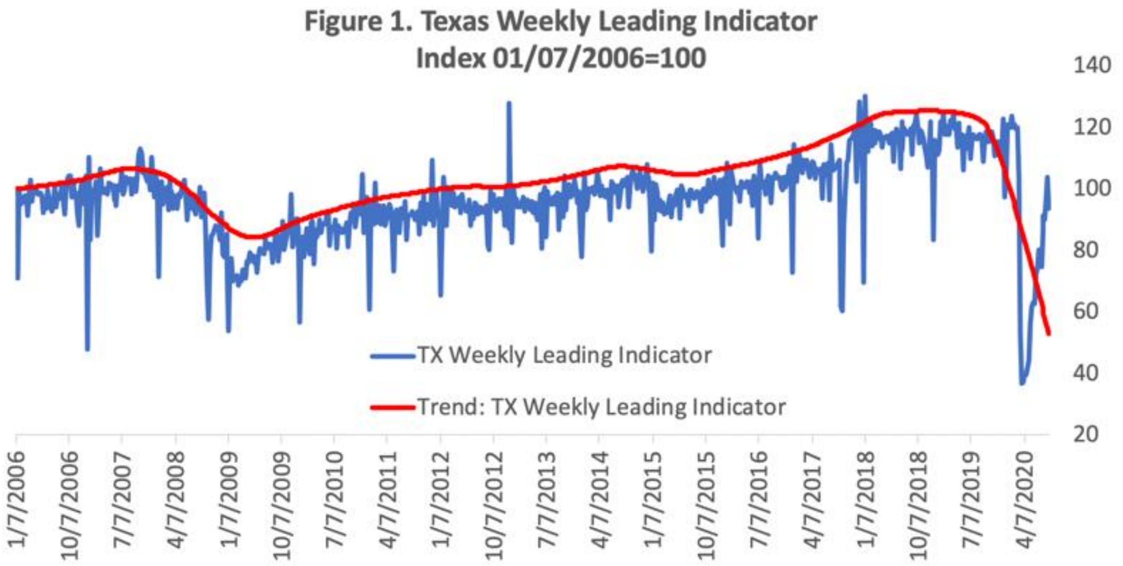
* **Texas Leading Index** is a single summary statistic indicator on the future of TEXAS' economy. Composite of 8 leading indicators which tend to change direction before the overall economy: ***Texas value of the dollar, U.S. leading index, real oil price, well permits, initial claims for unemployment insurance, Texas stock index, help-wanted index and average weekly hours worked in manufacturing.***

Last data entry June 2020.
SOURCE: Federal Reserve Bank of Dallas.

TEXAS Leading Index (2)*

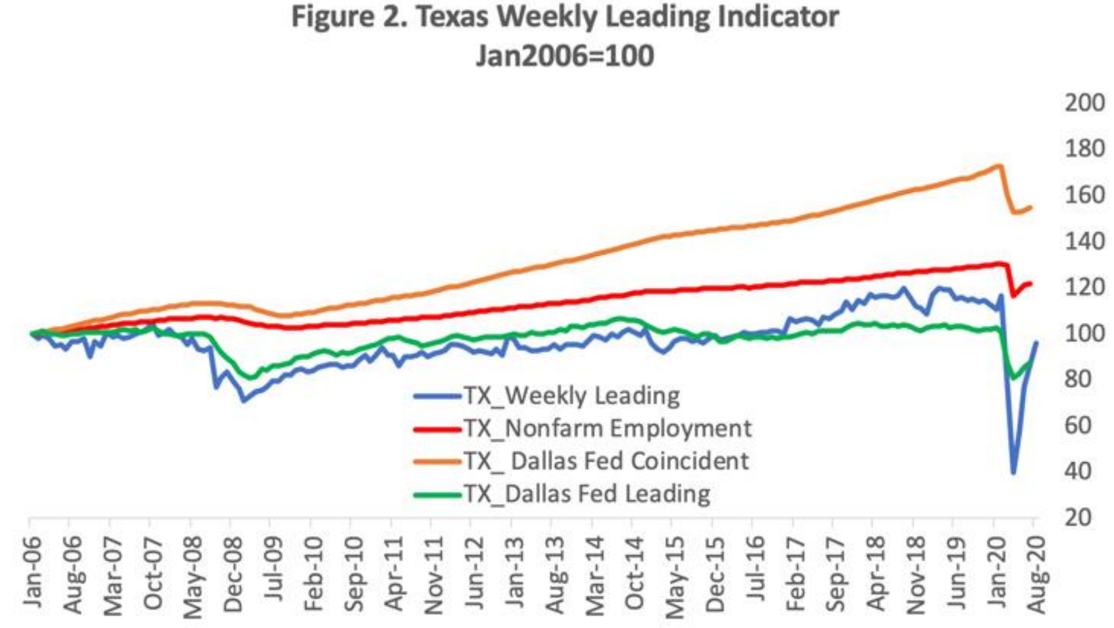
Based on data through August 15, 2020, TEXAS Leading Index <u>took a step backward</u> during the week ending August 15, reversing the increasing trend of the previous two weeks (Figures 1 & 2). <u>This signals a slowing in the pace of the economic recovery.</u>

Longer Term (Jan 2006 - Aug 2020)



Note: Seasonally adjusted.
Source: Real Estate Center at Texas A&M University

Index Comparison



Note: Seasonally adjusted.
Sources: Bureau of Labor Statistics, Dallas Federal Reserve, and Real Estate Center at Texas A&M University

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TEXAS is Good for S/M/L Business…

Texas attracts all sizes of businesses across several sectors due to its relatively cheaper cost of living, tax and other incentives, space and fewer constraints on use and expansion, expansive transportation & intl ports, connection to academic, quality higher education, and vocational training.

- Texas is home to **> 50 Fortune 500 companies**.
- The Tax Foundation ranks Texas as **nation's 5th lowest state and local tax burden**.
- Texas' **corporate franchise tax levies** a low flat rate of 0.75 percent (for most entities) on taxable margins.
- Texas has **no personal income tax**.
- Texas is a **right-to-work state**.
- With over 13 million workers, Texas has the nation's **2nd largest civilian labor force.**
- Committed resources and organizations for economic development, business recruitment, entrepreneurship, and job creation.

#1 - STATE FOR CORPORATE EXPANSIONS AND LOCATIONS
SITE SELECTION 2019

#1- BEST STATE FOR BUSINESS
CHIEF EXECUTIVE 2019

#1- TOP STATE FOR EXPORTS
U.S. CENSUS BUREAU 2019

#1-FASTEST-GROWING STATE ECONOMY
U.S. BUREAU OF ECONOMIC ANALYSIS 2020

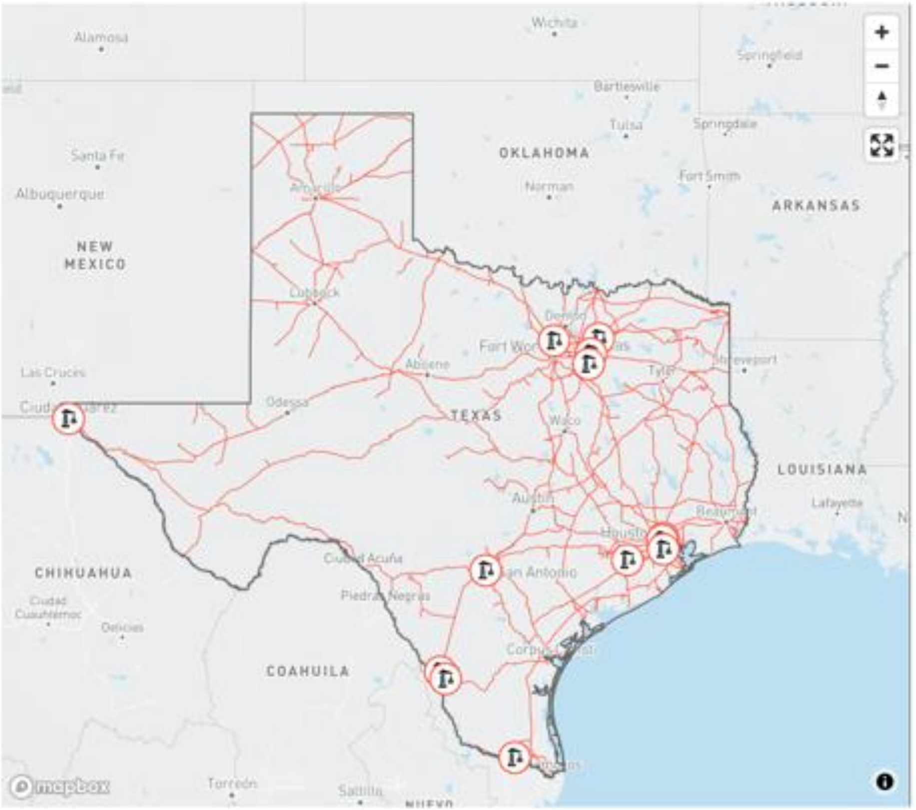
#1- BEST STATE TO START A BUSINESS
WALLETHUB 2019

#1- STATE FOR GROWTH PROSPECTS
FORBES 2019

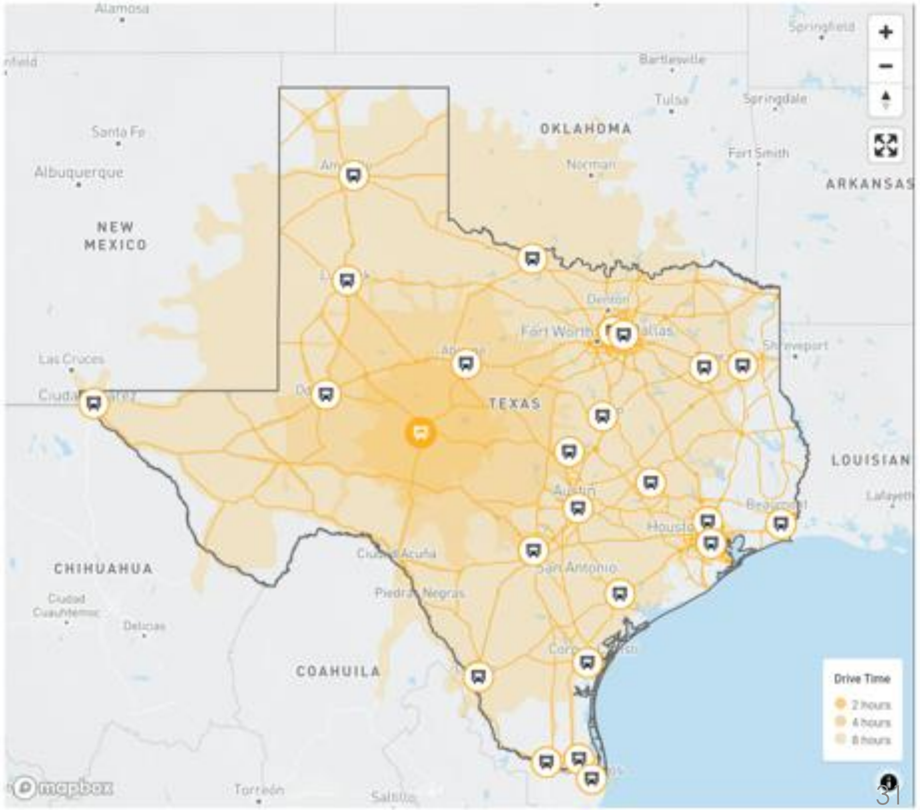
TEXAS Transportation & Accessibility

- *Texas' central location within North America facilitates domestic & intl transportation, plus easy access to markets.*
- *Texas has more miles of public roads (> 313,220) and freight rail (10,425) than any other state.*

RAIL & INTERMODAL NETWORK



INTERSTATE HIGHWAY NETWORK

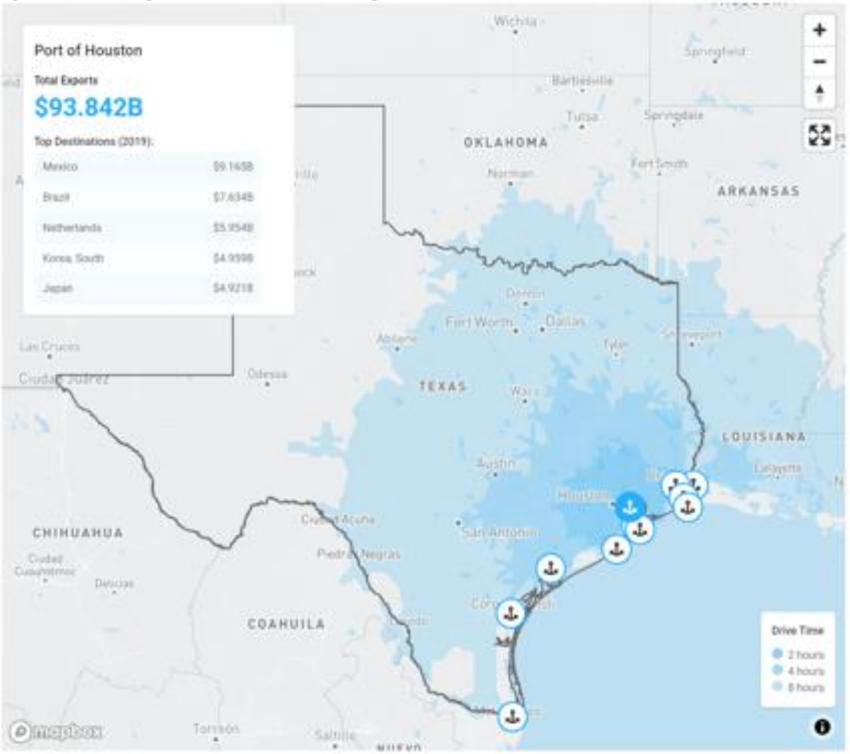


Source: Office of the Governor, Economic Development & Tourism

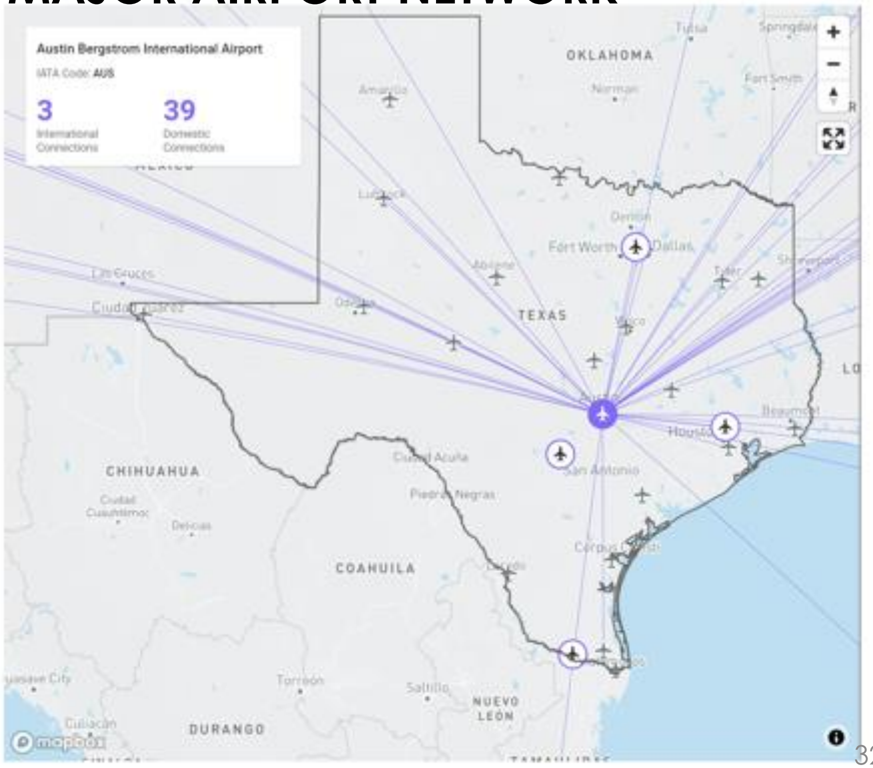
TEXAS Transportation & Accessibility

- *Texas has 11 **deep-water ports**, with channels at least 30 feet deep along the Gulf Coast.*
- *The state's **two largest airports**, Dallas-Fort Worth International (DFW) and George Bush Intercontinental in Houston (IAH), are major domestic and intl hubs.*
- *Texas' **two intermodal facilities**, Fort Worth's Alliance Airport and San Antonio's Port San Antonio, integrate high-capacity industrial airports, Class I rail terminals, and direct interstate highway access.*

SEA PORT NETWORK



MAJOR AIRPORT NETWORK



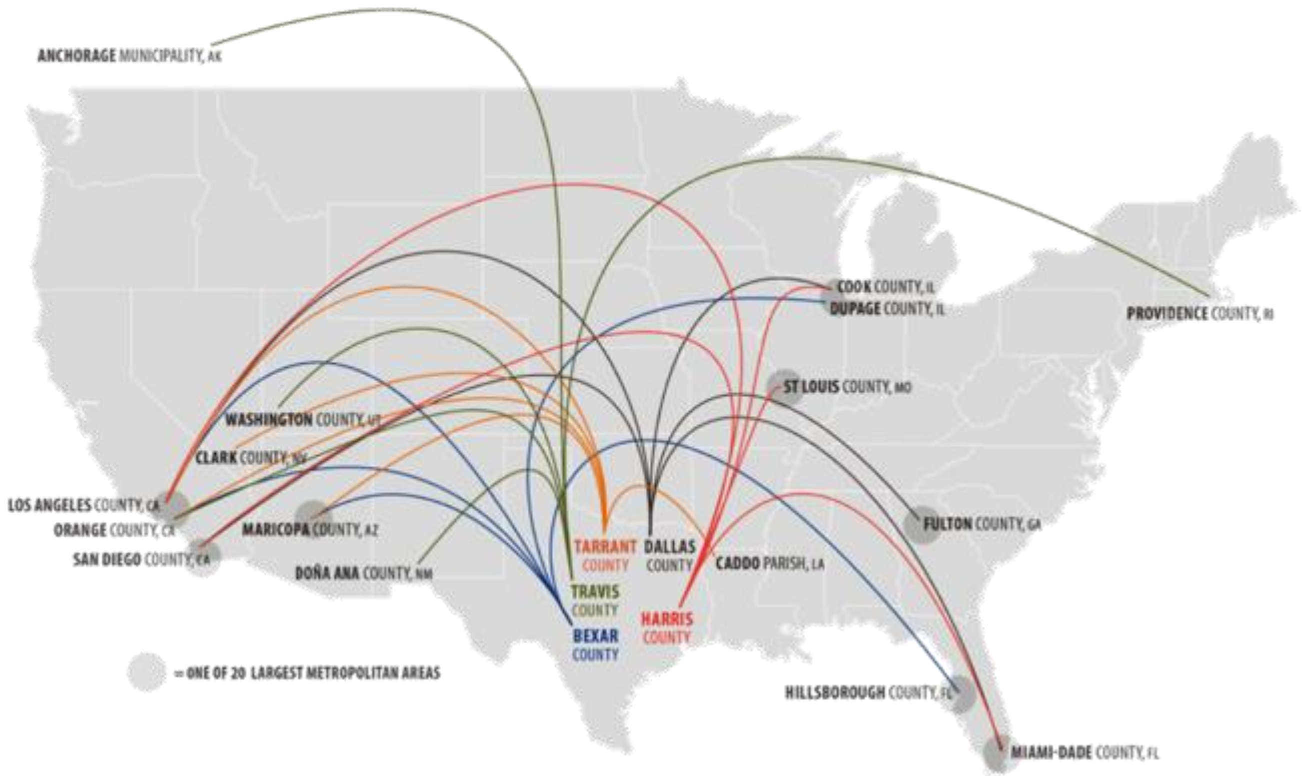
Source: Office of the Governor, Economic Development & Tourism

TEXAS Biz Attraction - And still they come…

Despite the fluctuations of the state and national economies, businesses and their employees have continued to come to Texas, attracted by its high quality of life, lower cost of living, and business-friendly tax and regulatory structure.

- From August 2016 to 2017, Texas added more jobs (~ 299,000) than any other state.
- Recent arrivals include the North American headquarters of Toyota, SpaceX, Charles Schwab, Kubota Tractor.
- Texas was the top destination for corporate moves in 2019 (Allied Vans Annual Report).
- 660 companies incl corporate headquarters, manufacturing facilities, data centers, research hubs, software and engineering centers and a few warehouses moved 765 facilities out of California from Jan 2018 to Dec 2019.

EXHIBIT 7: NET DOMESTIC MIGRATION TO TEXAS' MOST POPULOUS COUNTIES, 2011-2015, TOP FIVE ORIGIN COUNTIES FOR EACH



Source: U.S. Census Bureau, [2011-2015 American Community Survey]

TEXAS Energy Landscape, Conventionals

Texas is the No. 1 state for total energy production (& consumption).

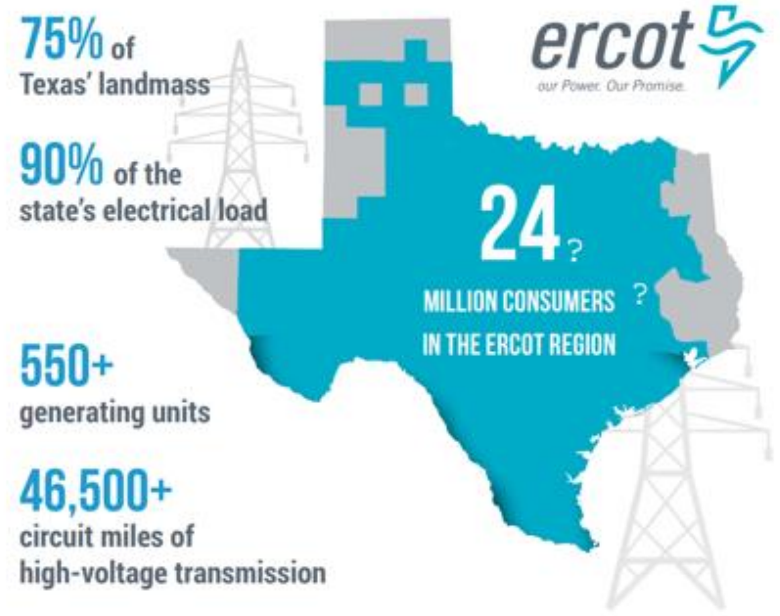
OIL & GAS

- **30 petroleum refineries** with capacity of >5.86 million barrels of crude oil/day, Texas leads the nation in crude oil-refining capacity.
- More than 25% of nation's total refining capacity is located in Texas.

ELECTRICITY

- Texas **produces more electricity than any other state**, generating almost twice as much as the 2nd highest-producing state.
- Electric energy costs are an average of 19 percent less per kWh than the rest of the nation.
- Commercial and industrial markets natural gas costs are 14.3 percent less per kWh on average in Texas.
- The main Texas electricity grid is operated by the **Electricity Reliability Council of Texas (ERCOT).**
- ERCOT grid **serves about 75% of TX landmass** and is largely isolated from the interconnected power systems serving the eastern and western United States.
- Among the contiguous 48 states, **Texas is the only one with a stand-alone electricity grid.**
- This isolation means the ERCOT grid is **not subject to federal oversight and** is mostly dependent on its own resources to meet the state's electricity needs.

https://www.eia.gov/dnav/pet/PET_PNP_CAP1_DCU_STX_A.htm



Key Texas Energy U.S. State Rankings			
No. 1	total energy production	No. 1	biodiesel production
No. 1	crude oil production	No. 1	solar potential
No. 1	natural gas production	No. 2	total renewable energy employment
No. 1	electricity production	No. 4	clean energy-related patents
No. 1	wind energy capacity		

https://businessintexas.com/

TEXAS Energy Landscape, Renewables

IC²

Texas is the #1 state for total energy production (& consumption).

SECO
State Energy Conservation Office

SOLAR

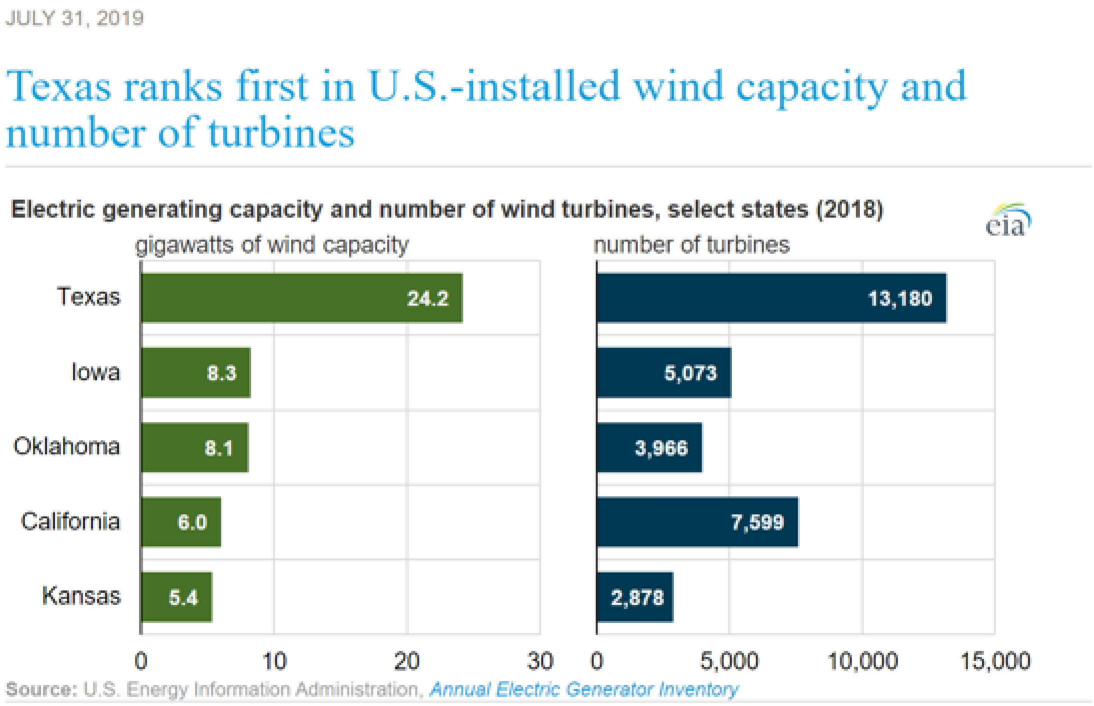
- As of Q1 2020, **527 solar companies** at work throughout Texas, employing >10,000 people.
- 4,606 MW of solar energy installed in Texas to power 530,999 homes with 70,587 installations across the state.
- **5th in national ranking.**

HYDROGEN and GEOTHERMAL

(UT) Texas is supported to develop new alternatives including hydrogen and geo-thermal energy to Texas.

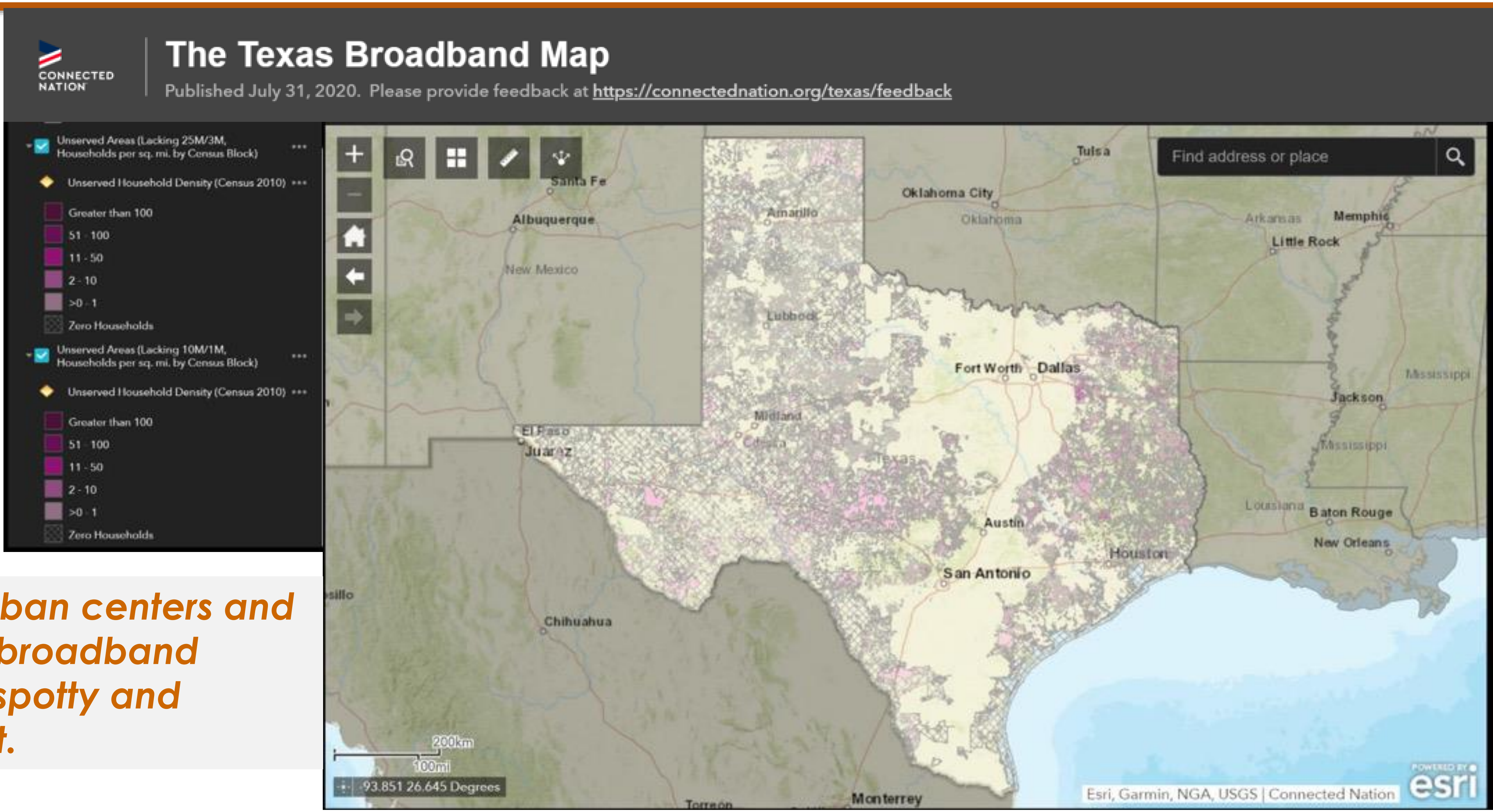
WIND

- At more than 27 gigawatts (2019) of generation, Texas has become the world's 5th biggest generator of wind power, beaten by only four countries: China, U.S., Germany & India.



https://comptroller.texas.gov/programs/seco/

TEXAS Broadband- Connected, Sort of…

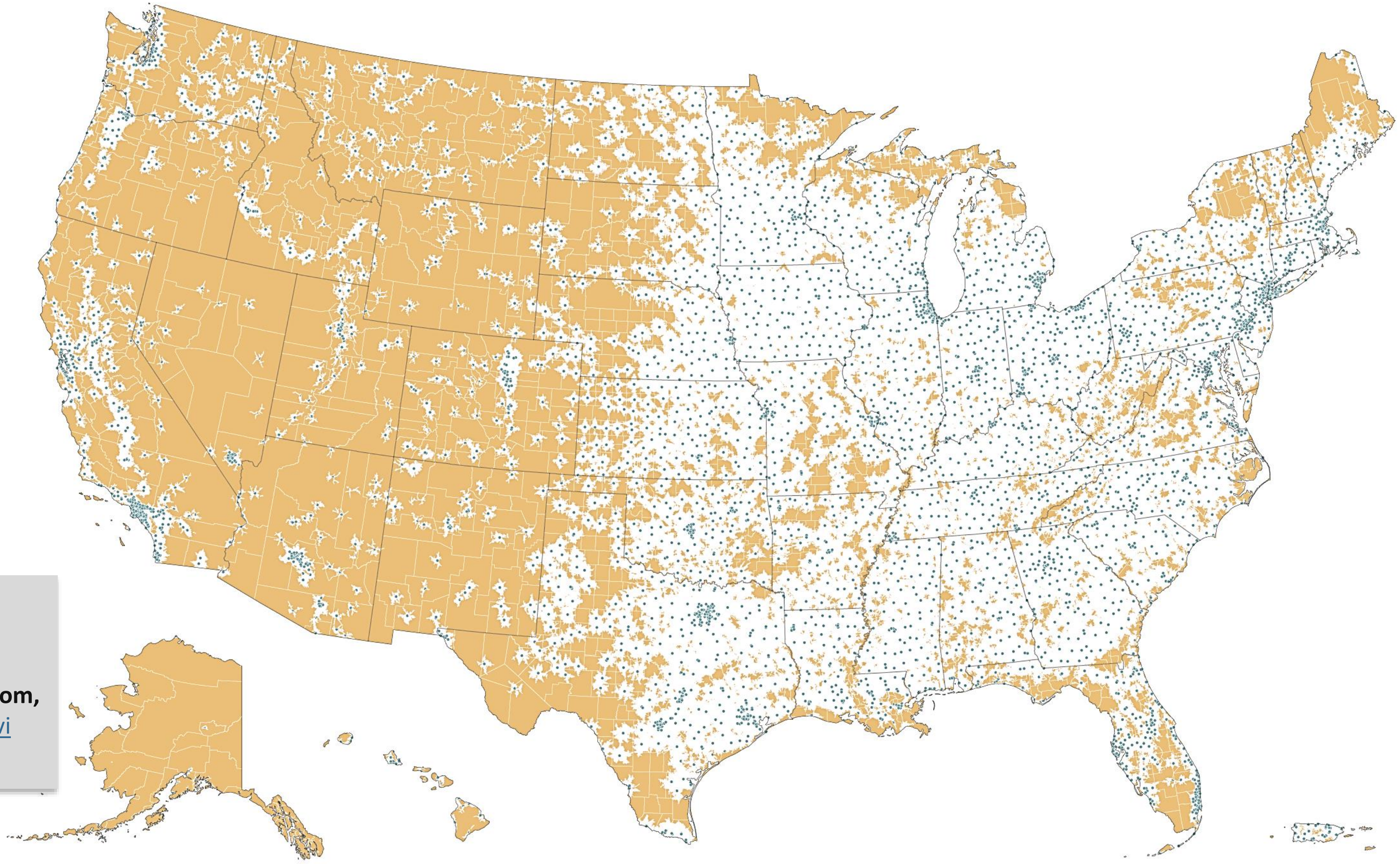


Beyond urban centers and corridors, broadband access is spotty and insufficient.

Where Americans Live Far From the Emergency Room

Even though there are about 5,250 acute care and critical access hospitals in the U.S., in large areas of the country it is hard to reach one.

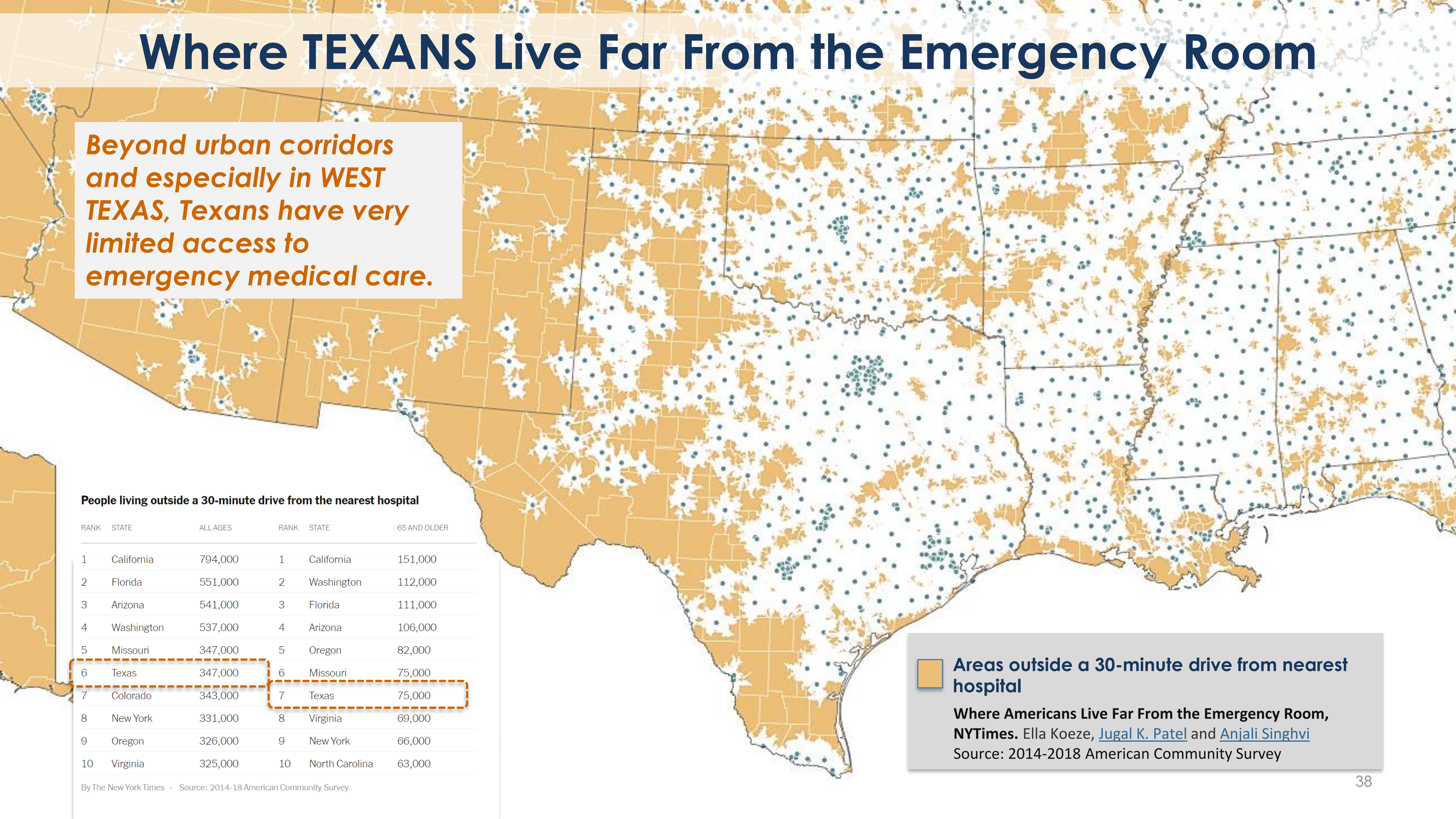
Map shows everywhere **outside a 30-minute drive** from the nearest hospital offering the kind of inpatient medical care needed to treat coronavirus.



Areas outside a 30-minute drive from nearest hospital

Where Americans Live Far From the Emergency Room, NYTimes. Ella Koeze, Jugal K. Patel and Anjali Singhvi
Source: 2014-2018 American Community Survey

Where TEXANS Live Far From the Emergency Room



Beyond urban corridors and especially in WEST TEXAS, Texans have very limited access to emergency medical care.

People living outside a 30-minute drive from the nearest hospital

RANK	STATE	ALL AGES	RANK	STATE	65 AND OLDER
1	California	794,000	1	California	151,000
2	Florida	551,000	2	Washington	112,000
3	Arizona	541,000	3	Florida	111,000
4	Washington	537,000	4	Arizona	106,000
5	Missouri	347,000	5	Oregon	82,000
6	Texas	347,000	6	Missouri	75,000
7	Colorado	343,000	7	Texas	75,000
8	New York	331,000	8	Virginia	69,000
9	Oregon	326,000	9	New York	66,000
10	Virginia	325,000	10	North Carolina	63,000

By The New York Times • Source: 2014-18 American Community Survey

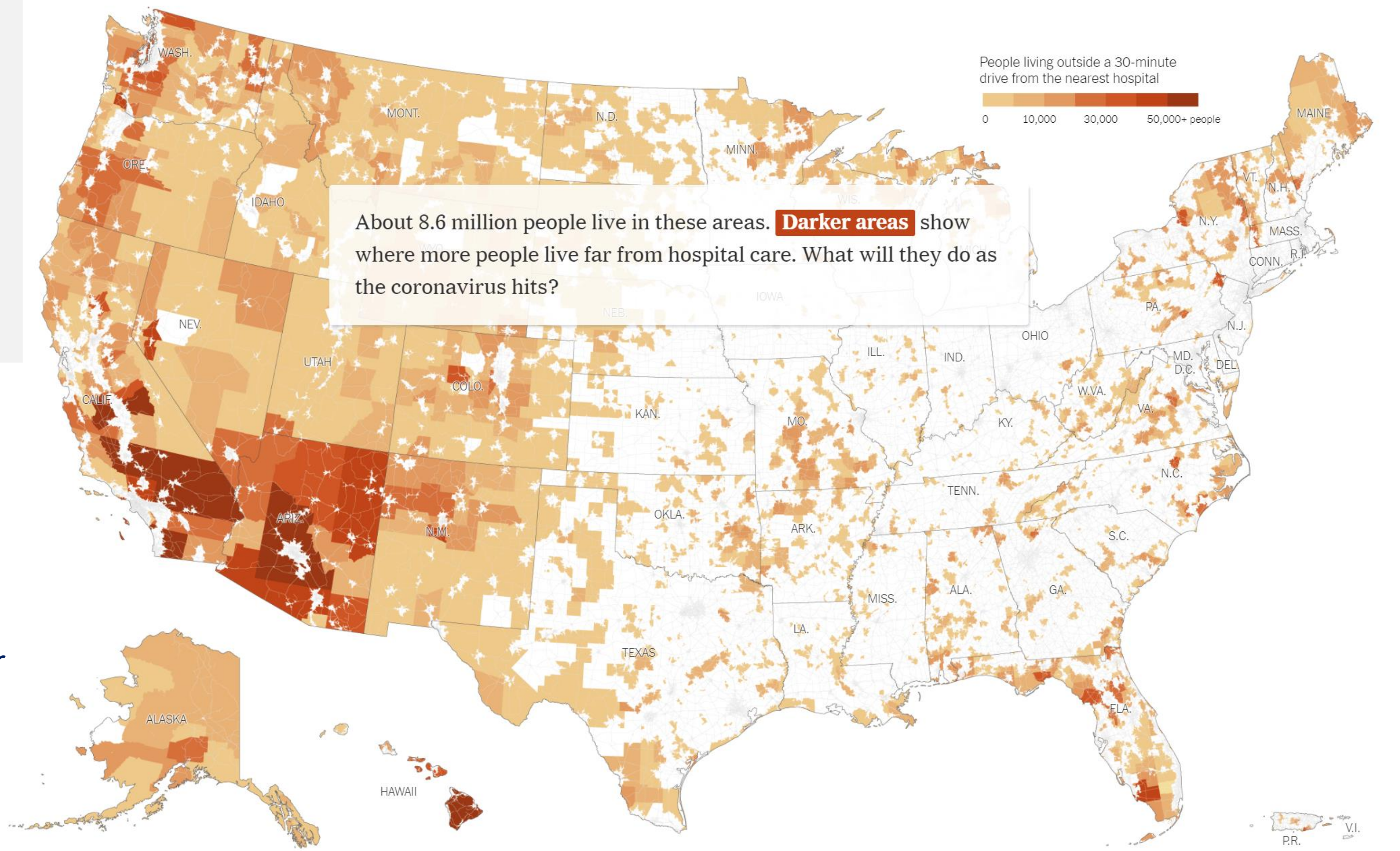
Areas outside a 30-minute drive from nearest hospital

Where Americans Live Far From the Emergency Room, NYTimes. Ella Koeze, Jugal K. Patel and Anjali Singhvi
Source: 2014-2018 American Community Survey

Proximity to Hospitals

Problem of distance is further compounded by demographics. Rural populations generally tend to be older and have higher rates of underlying health conditions, making them most at risk of hospitalization

- **Many rural hospitals have closed in the last decade**
- Hospitals are more dispersed and many are designated "**critical access hospitals**," with 25 or fewer inpatient beds.



Areas outside a 30-minute drive from nearest hospital

Where Americans Live Far From the Emergency Room, NYTimes. Ella Koeze, Jugal K. Patel and Anjali Singhvi
Source: 2014-2018 American Community Survey

U.S. & TEXAS ECONOMIC TRENDS

MACRO
EMPLOYMENT
SMALL BUSINESS
CONSUMPTION
ENERGY PRICES
CONSTRUCTION

Economic Impact- Summary (1)

In U.S.

- *U.S. economy has entered a **new recession**. Current job losses far exceed the worst of the Great Recession.*
- *Total job losses due to COVID-19 near **30 million**.*
- *After losing a **record 20.8 million jobs in April**, U.S. economy gained 2.7 million jobs in June 2020(BLS) when businesses began to reopen.*
- *U.S. job losses have **WIPED OUT 113 straight months of job growth**.*
- *After major decline in March, U.S. **Weekly Economic Index still declining** after mild recovery in May with re-openings.*

Economic Impact- Summary (2)

In TEXAS:

- *All economic sectors showed large contraction in the 1st and 2nd quarters of 2020, with a rebound experienced in June due to reopening. Employment statistics have trailed this downward trend.*
- *Almost all sectors see less dramatic job losses due to COVID-19 in TEXAS compared to U.S.*
- *Employment contracted less severely than other states Feb-April, but has slowed in recovery compared to national average from April-June.*
- *Construction contracted dramatically in Q1/Q2 of 2020 – steepest decline since 1975- and continues to be sharply lower than previous quarters.*
- *Energy Shock Shows Differential Impact: Producing Counties vs. Processing Counties - Trend appears to highlight higher impact of pandemic-induced energy crisis on producing counties, with less impact on processing counties.*
- *Texas exports of energy/mining products, agricultural products and manufactured goods show decrease from previous values. Only agricultural products show a modest increase.*
- *Compared with Great Recession, the pandemic has contracted Texas exports to a much greater extent.*
- *Business ownership declined by 3.3 million or 22% in first half 2020.*
- *Black owned businesses declined by 41% and Latinx businesses 32%.*

Economic Impact- Summary (3)

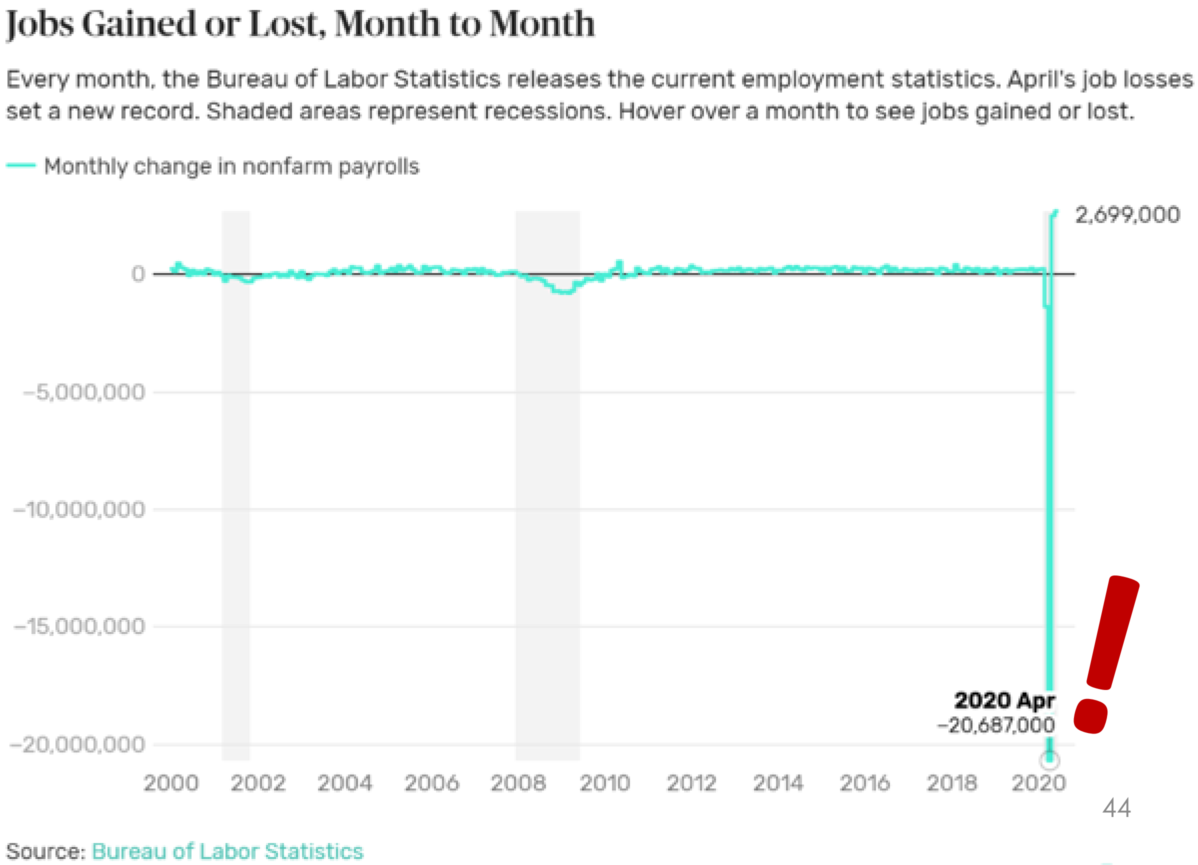
In TEXAS (contd.):

- *Business closures are widespread geographically with Texas following closely behind California.*
- *Permanent closures are continuing to rise to ~ 50% as a share of all closed businesses.*
- *Of all business closures on Yelp since March 1, 41% are permanent closures. Hardest hit are Restaurants & Retail.*
- *Small business revenue: Downward trends appear to highlight the fragility of hospitality, touristic economies to the pandemic crisis.*
- *Permanent job losses are on the rise as temporary layoffs decline with millions brought back to work in May & June. Rising permanent job losses are a concerning trend, to be followed closely.*
- *High-income households accounted for most of the reduction in spending. Small business revenues declined most in affluent areas.*
- *As of July 19-2020, total consumer spending decreased by 6.7% compared to Jan 2020. Certain counties in Texas recorded >45% reductions.*
- *State-ordered re-openings of economies had small effects on economic activity.*
- *Pandemic is causing disruptions to food and agriculture supply chains around the world, including in Texas.*

2020 US Economic Situation

- *U.S. economy has entered a new recession.*
- *Current job losses far exceed the worst of the Great Recession.*
- *After losing a record 20.8 million jobs in April, U.S. economy gained 2.7 million jobs in June 2020(BLS) when businesses began to reopen.*

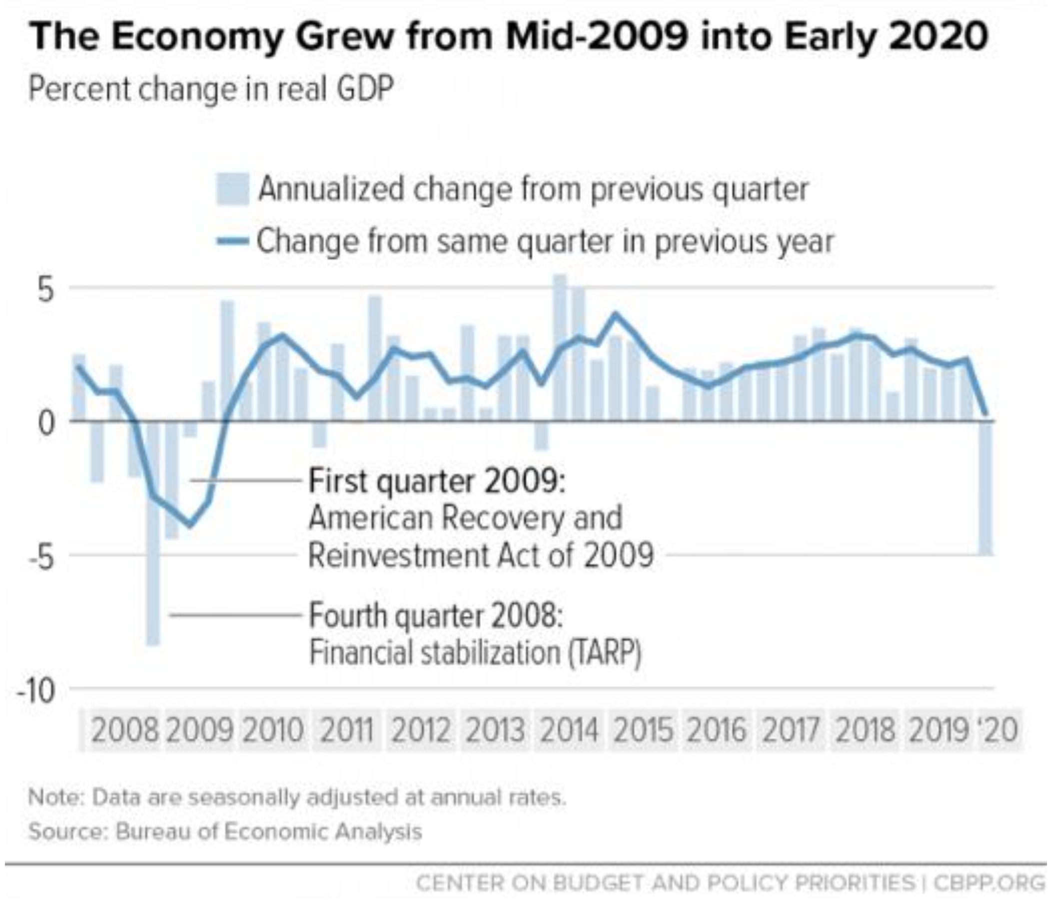
Prior to the pandemic shutdown in March, the economy was adding around 200,000 jobs a month. US Economy needs 150,000 new jobs each month to keep expanding.



U.S. Economic Impact due to Pandemic

Job Losses have <u>WIPED OUT 113 straight months of job growth.</u>

National – U.S. Economy

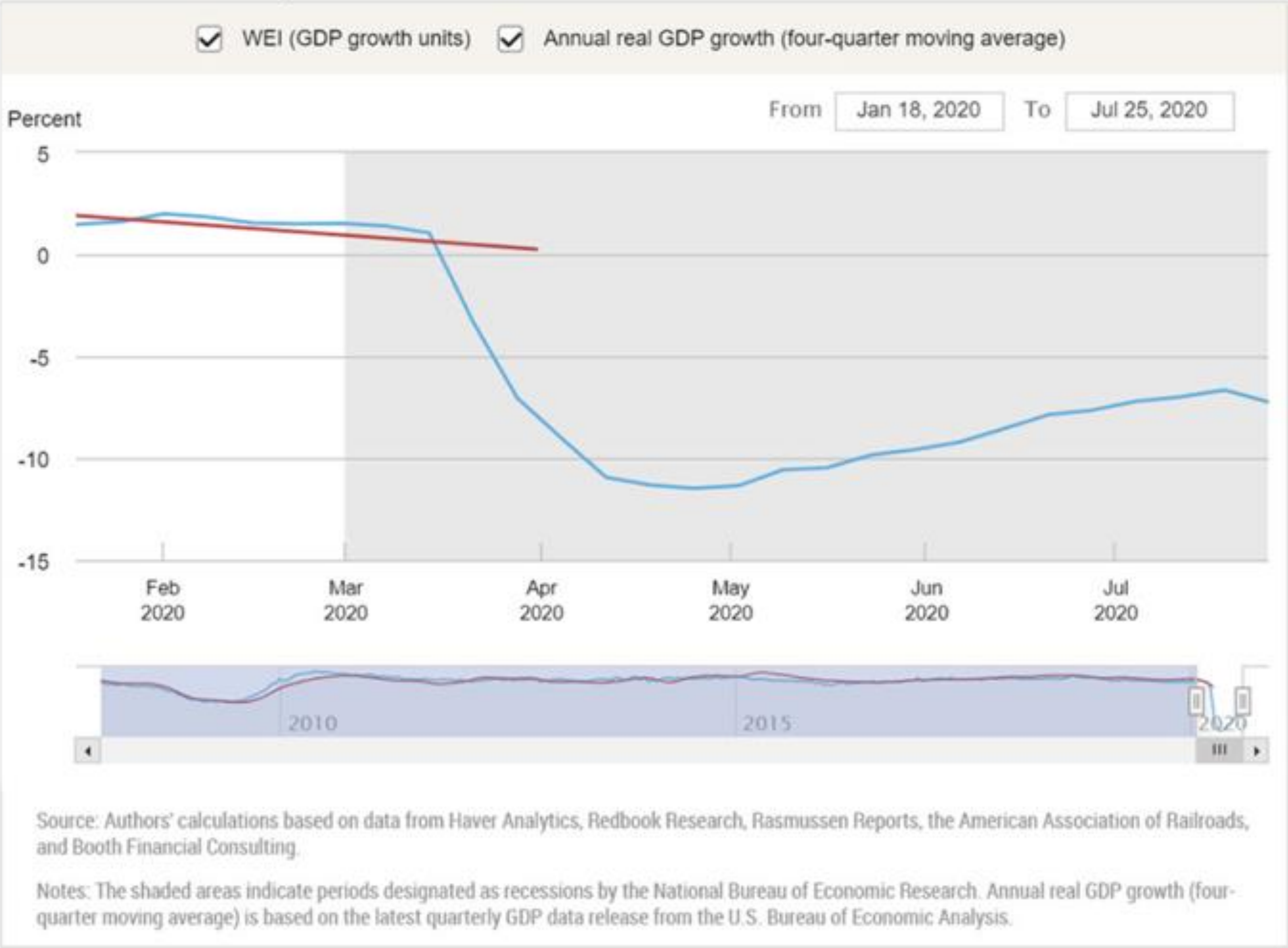


https://www.cbpp.org/research/economy/chart-book-tracking-the-post-great-recession-economy

This Was Not a “Blip” - the Downturn Continues…

After major decline in March, Weekly Economic Index declining after mild recovery in May with re-openings.

U.S. Weekly Economic Index (WEI) - in blue - aligned with the index of ten daily and weekly indicators of real economic activity, with **reported GDP** values - quarterly in red.



Where Jobs Were Added… back after big losses

SECTOR	JOBS Loss & Gain	Notes
Leisure and hospitality	(+) 2.088M jobs in June (-) 7.575M in April	typically adds 20 – 30K jobs/month. Bars and restaurants reopened to limited seating. Restaurants had been restricted to take-out only
Construction	(+) 158,000 jobs in June	real estate market forecasted to soften as people postpone their plans to move. Questions if real estate market will crash.
Health care and social assistance	(+) 474,900 jobs in May (-) 2.1M jobs in April	Halt to elective procedures led to many non-essential health care worker lay offs. Normally, this sector adds over 30,000 jobs a month. It remained a strong performer even during the recession.
Retail industry	(+) 739,800 jobs in May (-) 2.3M jobs in April	Shoppers were told to avoid any stores except essential services, such as groceries and drug stores. Wholesale, which usually trends with retail, added 67,600 jobs. The pandemic has damaged a weakened retail sector. Online sales have cut into bricks-and-mortar store sales, esp in lockdown.
U.S. manufacturing	(+) 356,000 jobs in June (-) 1.3M jobs in April	
Durable goods	(+) 290,000 jobs June	
Auto manufacturing	(+) 195,800 jobs June	
Temporary help services	(+) 148,900 jobs June	Companies adding temp workers in uncertainty, esp during the early stages of a recovery.
Transportation and warehousing	(+) 98,700 jobs June	
Government	(+) 33,000 positions June	
Information services	(+) 9,000 jobs June	Includes broad tech sector critical to US competitiveness.
Financial activities	(+) 32,000 jobs	Banks continue to function with limited number of people in branch offices. Pre-pandemic, banks had been adding fewer positions as the Fed lowered interest rates.

Where Jobs Were Lost and have not returned:

Mining & oil industry

(-) 10,000 jobs in June.

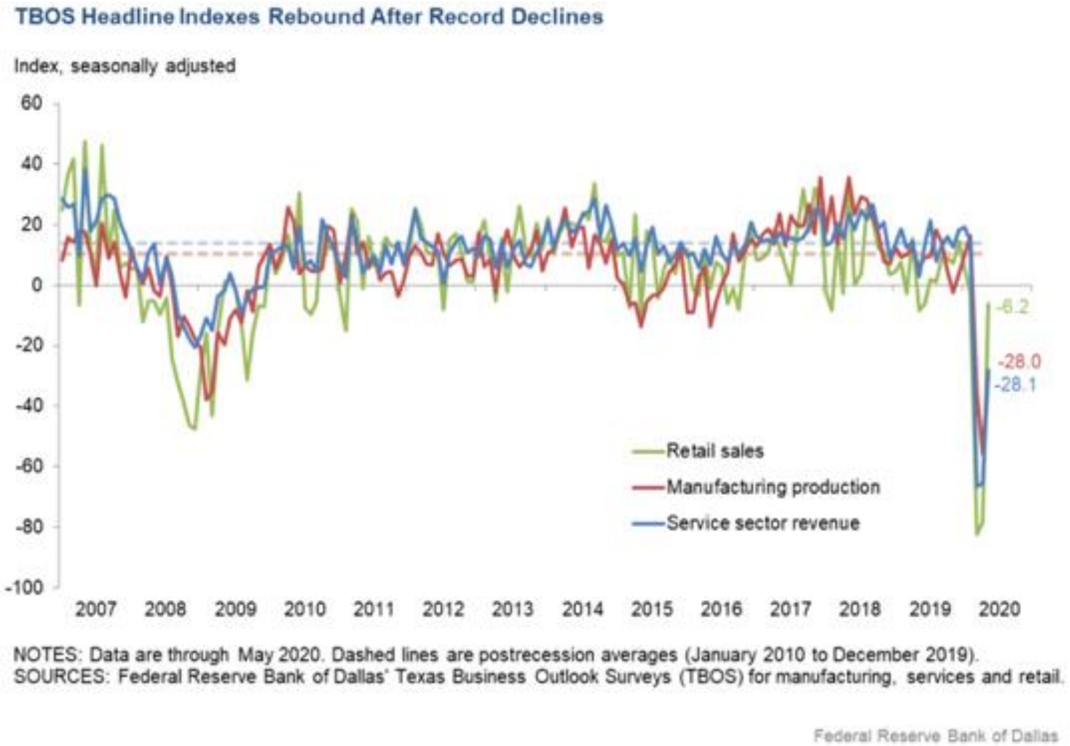
Due to dropping oil prices. Future oil prices are expected to remain subdued due to excess supply from U.S. shale oil producers & limited OPEC output.

Utilities

(-) 3,200 jobs in June.

TEXAS Economic Impact Summary

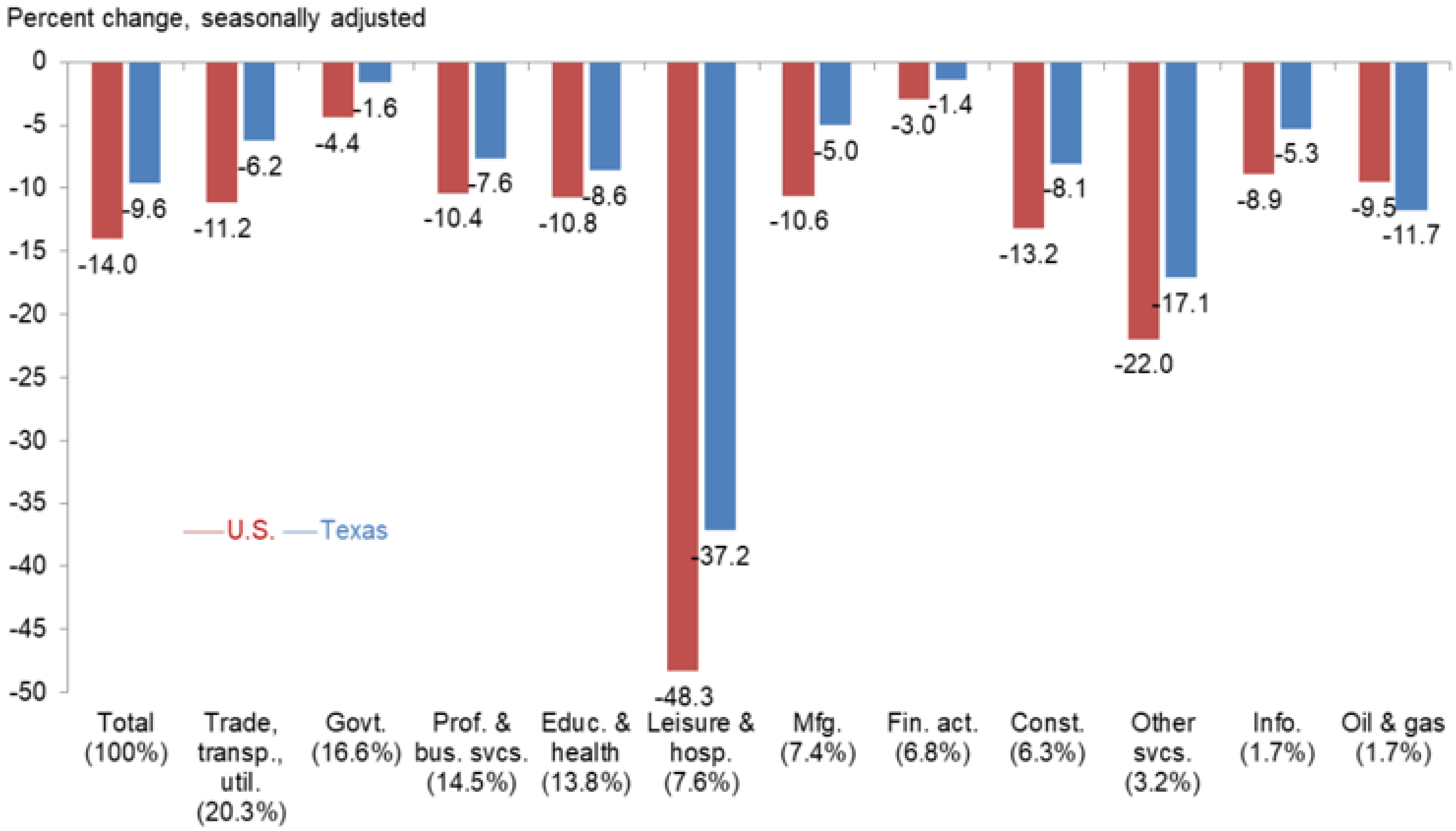
- *All economic sectors showed large contraction in the 1st & 2nd quarters of 2020, with a rebound experienced in June due to reopening.*
- *Employment statistics have trailed this downward trend.*



https://www.dallasfed.org/research/indicators/tei/2020/tei2007

TEXAS Business Impact

Almost all sectors see less dramatic job losses due to COV19 in TEXAS compared to U.S.



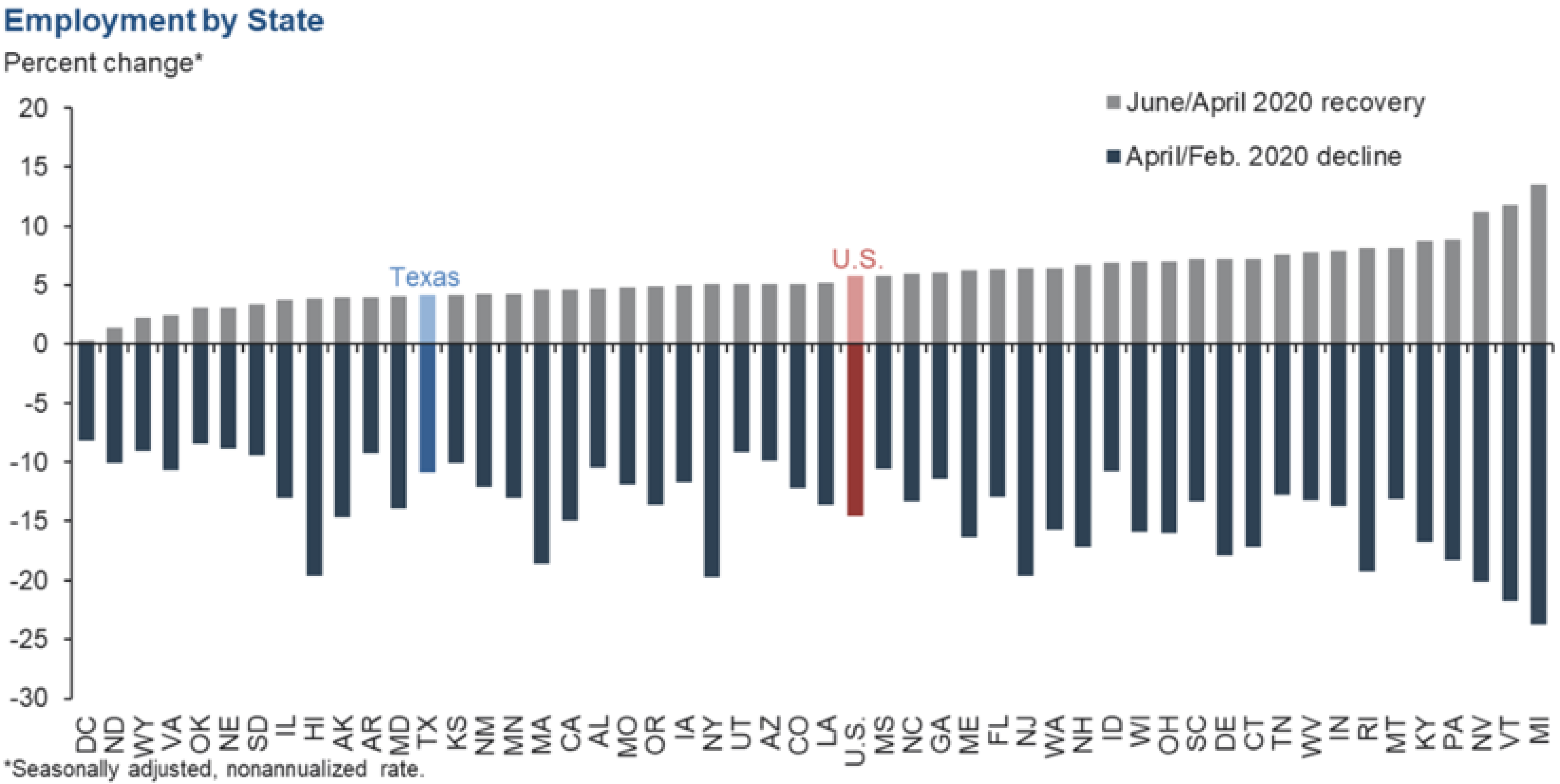
NOTES: Percent change refers to April 2020/February 2020 growth. Numbers in parentheses refer to the share of Texas employment in April 2020.
SOURCES: Bureau of Labor Statistics; Texas Workforce Commission; seasonal and other adjustments by the Dallas Fed.

https://www.dallasfed.org/research/economics/2020/0618

Federal Reserve Bank of Dallas

TEXAS Employment Impact

Texas employment contracted less severely than other states Feb-April, but has slowed in recovery compared to national average from April-June.



*Seasonally adjusted, nonannualized rate.

NOTE: Bar below zero for each state shows employment decline from February to April 2020. Bar above zero shows recovery from April to June 2020. For comparison purposes, the Bureau of Labor Statistics (BLS) Texas data are shown here without the usual adjustments by the Dallas Fed.

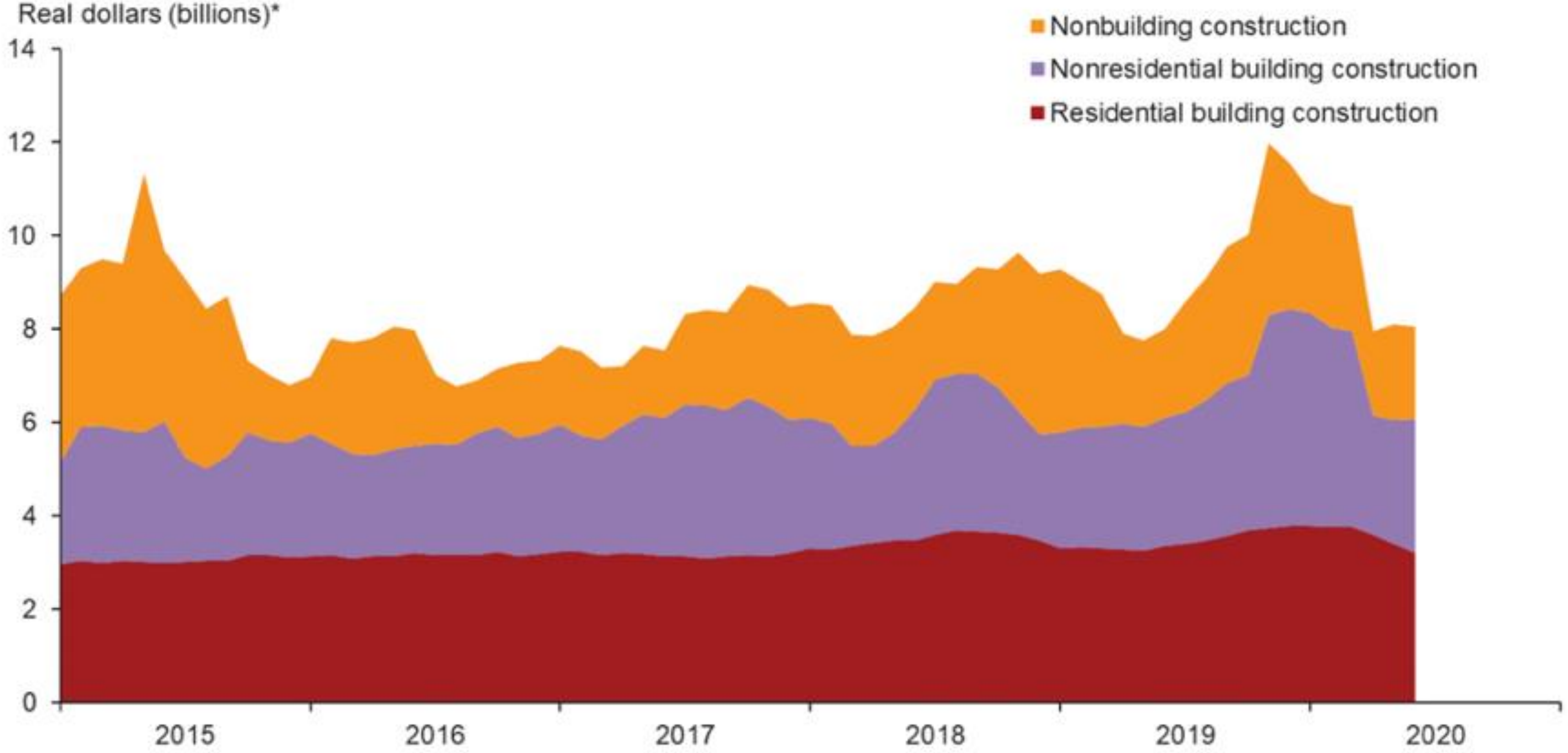
SOURCE: BLS.

https://www.dallasfed.org/research/indicators/tei/2020/tei2007
https://www.dallasfed.org/research/economics/2020/0618

TEXAS Construction Activity

Construction contracted dramatically in Q1/Q2 of 2020 – steepest decline since 1975- and continues to be sharply lower than previous quarters.

Non-residential, non-building construction slowdown continues to keep values low.



*Five-month moving average; seasonally adjusted.
SOURCE: F.W. Dodge.

https://www.dallasfed.org/research/indicators/tei/2020/tei2007

Energy News and Impact

It has been a rocky energy story…

MARCH 27, 2020
Oil market volatility is at an all-time high

Independent Statistics & Analysis
U.S. Energy Information Administration

JULY 29, 2020
U.S. energy consumption in April 2020 fell to its lowest level in more than 30 years

JULY 28, 2020
2019 U.S. coal production falls to its lowest level since 1978

AUGUST 4, 2020
U.S. crude oil production in May has a record monthly decrease

JULY 27, 2020
Early 2020 drop in crude oil prices led to write-downs of U.S. oil producers' assets

AUGUST 7, 2020
COVID-19's impact on commercial jet fuel demand has been significant and uneven

AUGUST 6, 2020
Gasoline and diesel refining margins that diverged in March have moved closer together

https://www.eia.gov/todayinenergy

TEXAS Energy (Oil & Gas) Price Trends

- *Oil prices contracted rapidly after pandemic with decreased demand and over supply compounded by international energy politics but have stabilized since May.*
- *Natural gas prices continue to be stable.*

New exploration has been dramatically slowed due to capital market shift, reduced revenue and energy company cutbacks/ bankruptcies.

NOTE: Data are through the week ending July 17, 2020. Btu is British thermal units. Oil price is for West Texas Intermediate crude oil.
SOURCE: Energy Information Administration; *Wall Street Journal*.

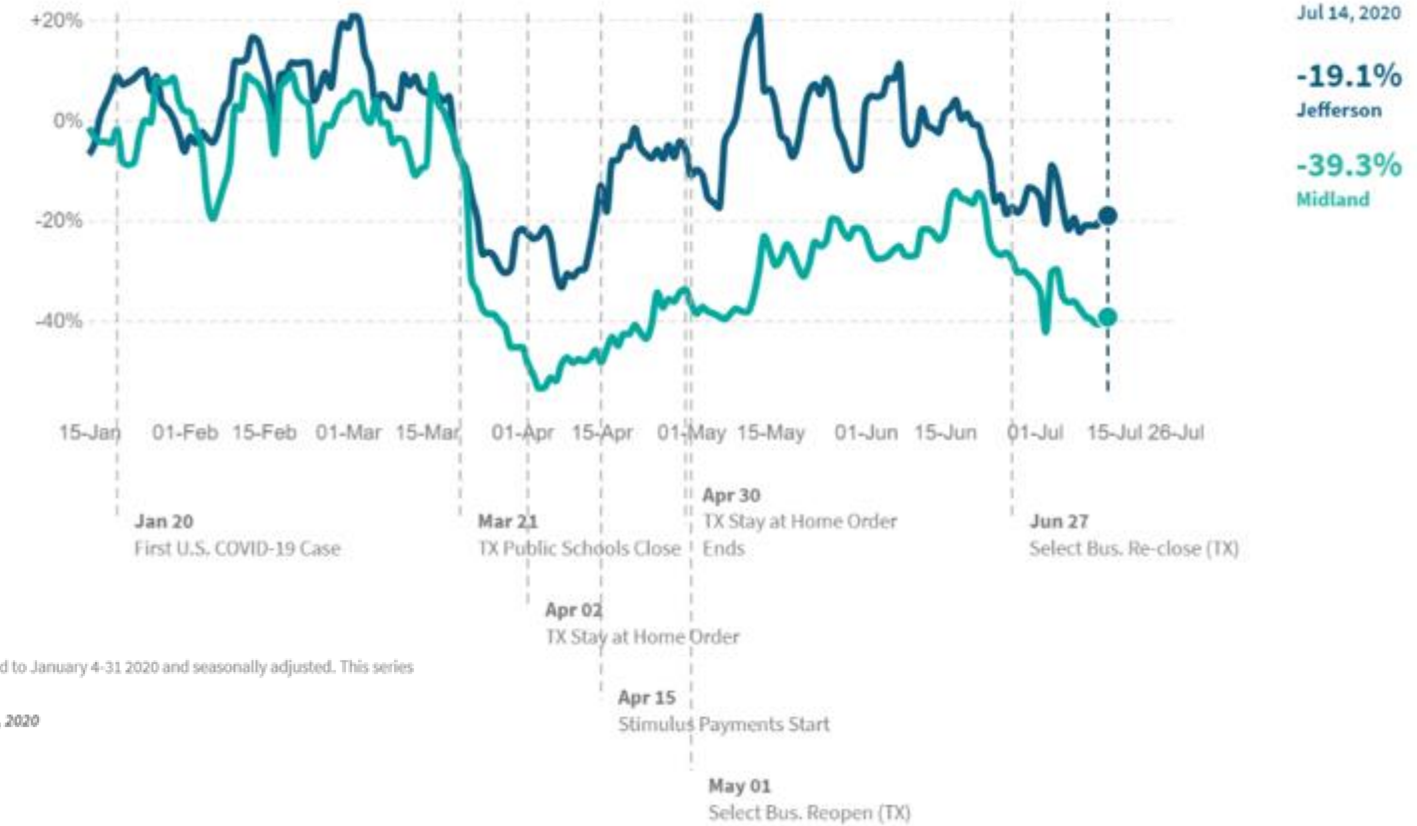
https://www.dallasfed.org/research/indicators/tei/2020/tei2007

TEXAS Energy Shock Shows Differential Impact:

Producing Counties vs. Processing Counties

Trend appears to highlight higher impact of pandemic-induced energy crisis on producing counties, with less impact on processing counties.

Percent Change in Small Business Revenue



Beaumont- Port Arthur

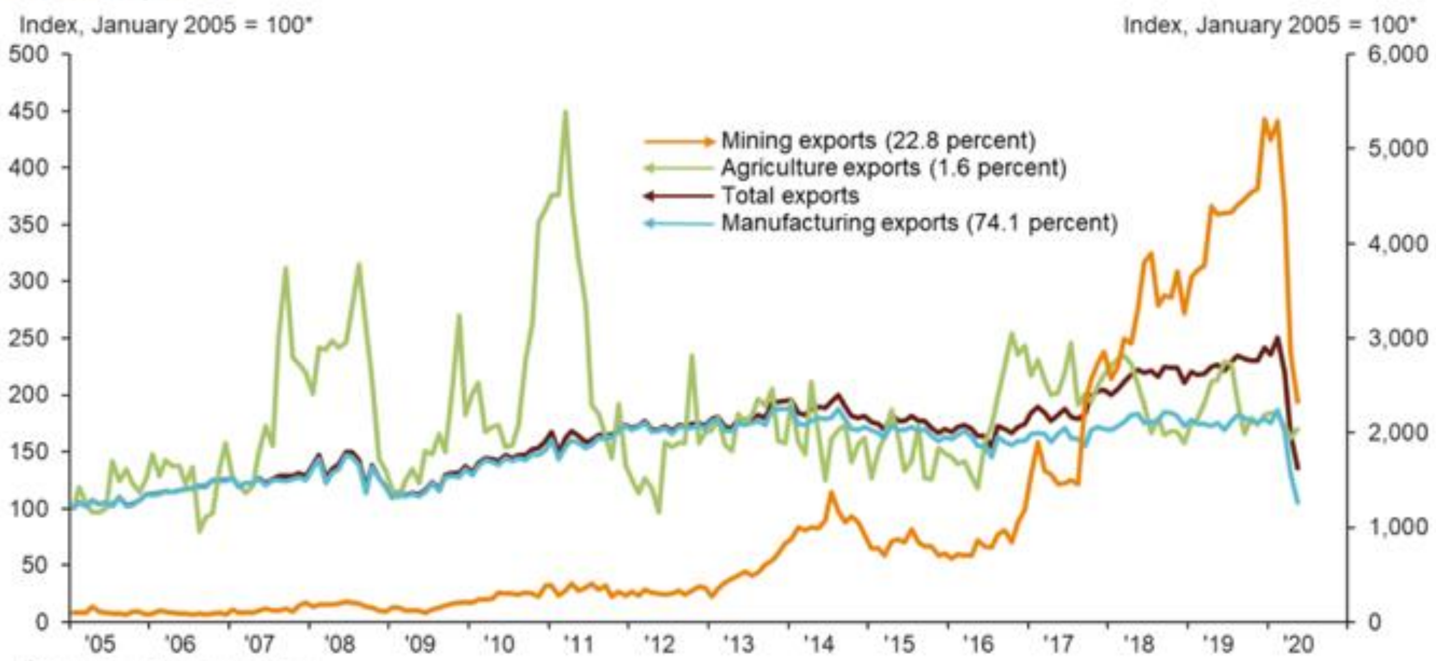
Midland

*Change in net business revenue for small businesses, indexed to January 4-31 2020 and seasonally adjusted. This series is based on data from Womply.

last updated: ***July 24, 2020*** *next update expected:* ***July 28, 2020***

TEXAS Export Trends

- *Texas exports of energy/mining products, agricultural products and manufactured goods show decrease from previous values.*
- *Only agricultural products show a modest increase.*
- *Compared with Great Recession, the pandemic has contracted Texas exports to a much greater extent.*



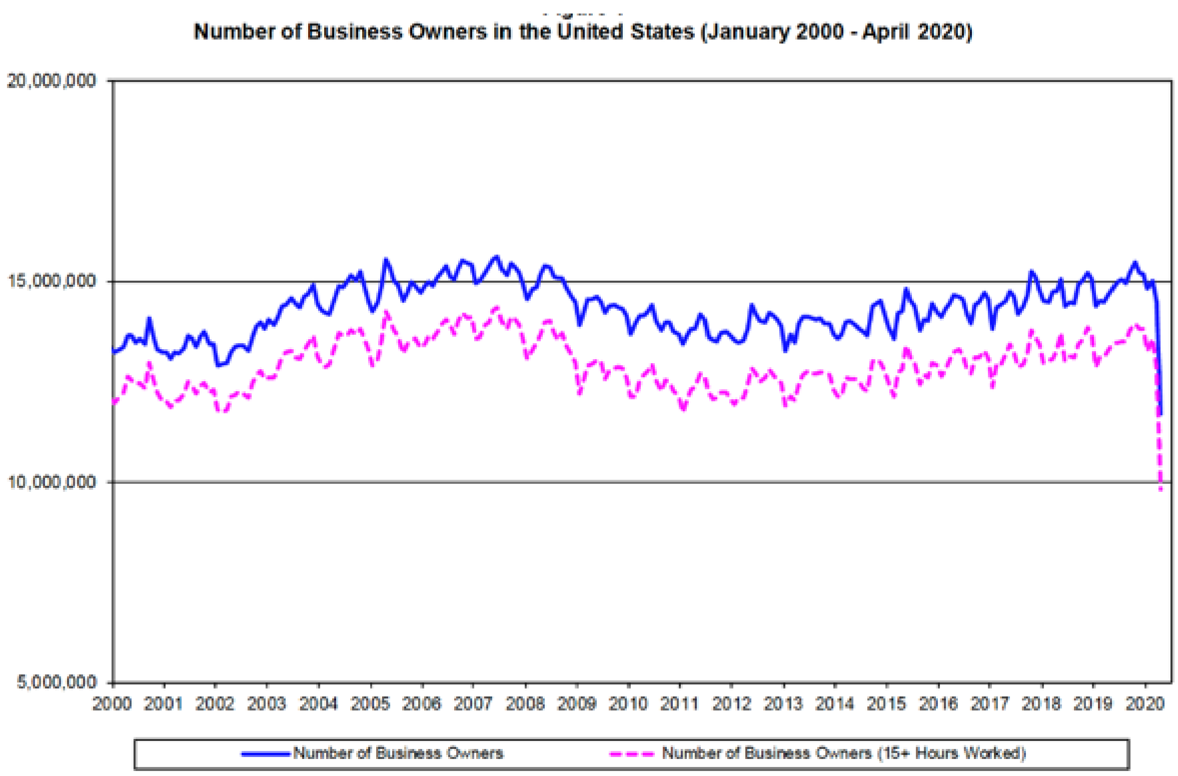
*Seasonally adjusted, real dollars.
NOTE: Numbers in parentheses refer to share of 2019 exports.
SOURCE: Census Bureau; Bureau of Labor Statistics.

https://www.dallasfed.org/research/indicators/tei/2020/tei2007

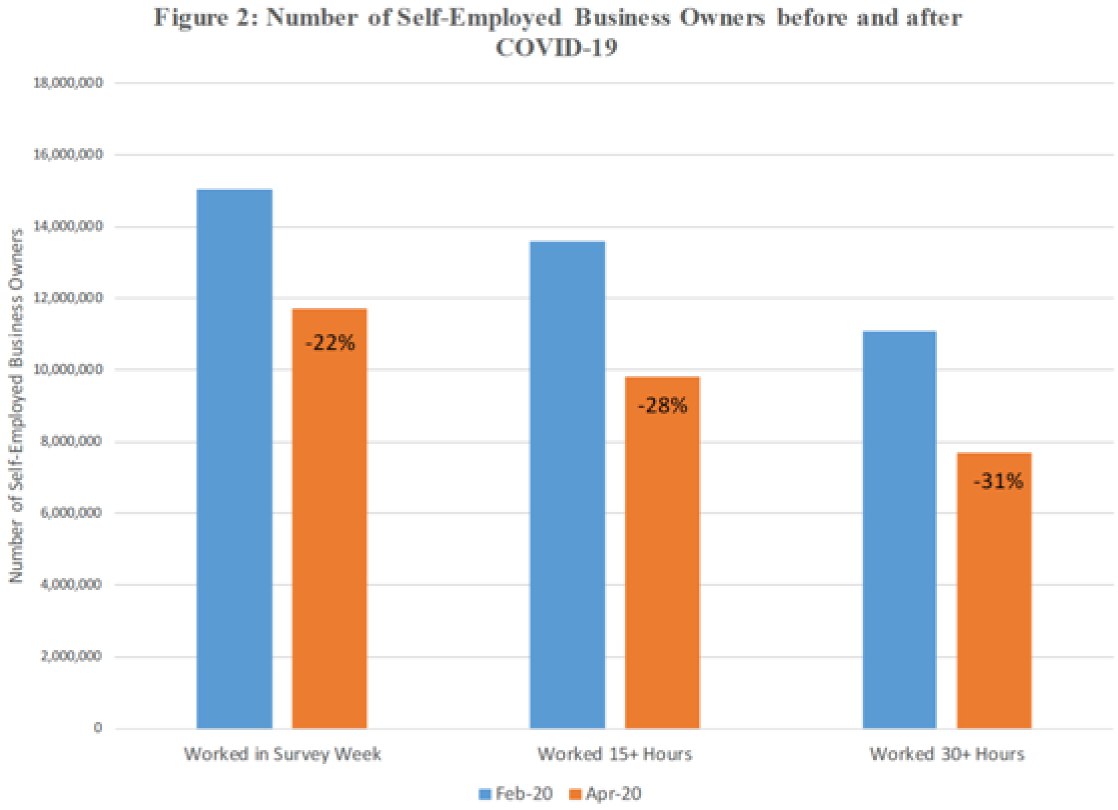
U.S. Trends in Small Business Ownership

- ***Business ownership declined by 3.3 million or 22% in first half 2020.***
- ***Black owned businesses declined by 41% and Latinx businesses 32%.***

Business Ownership Shows Unprecedented Decline in 2020



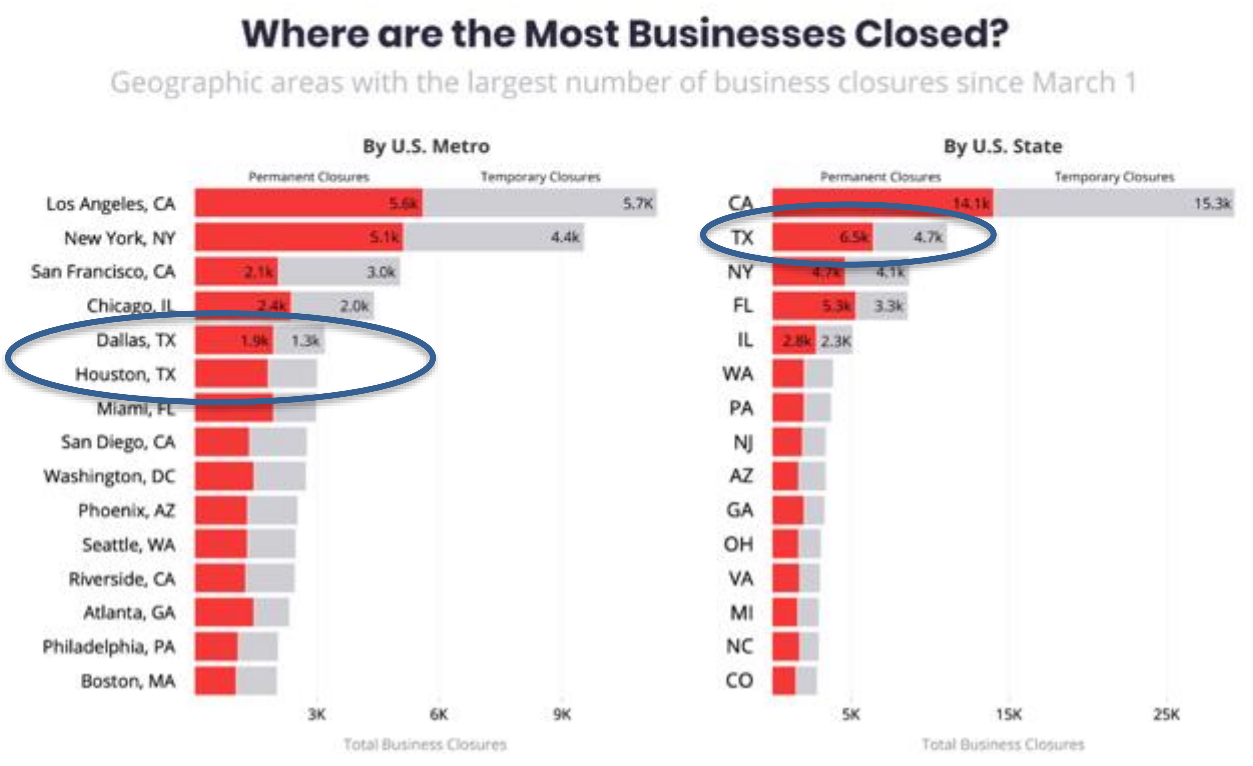
Business Ownership Work Hours Decreased Dramatically in 2020



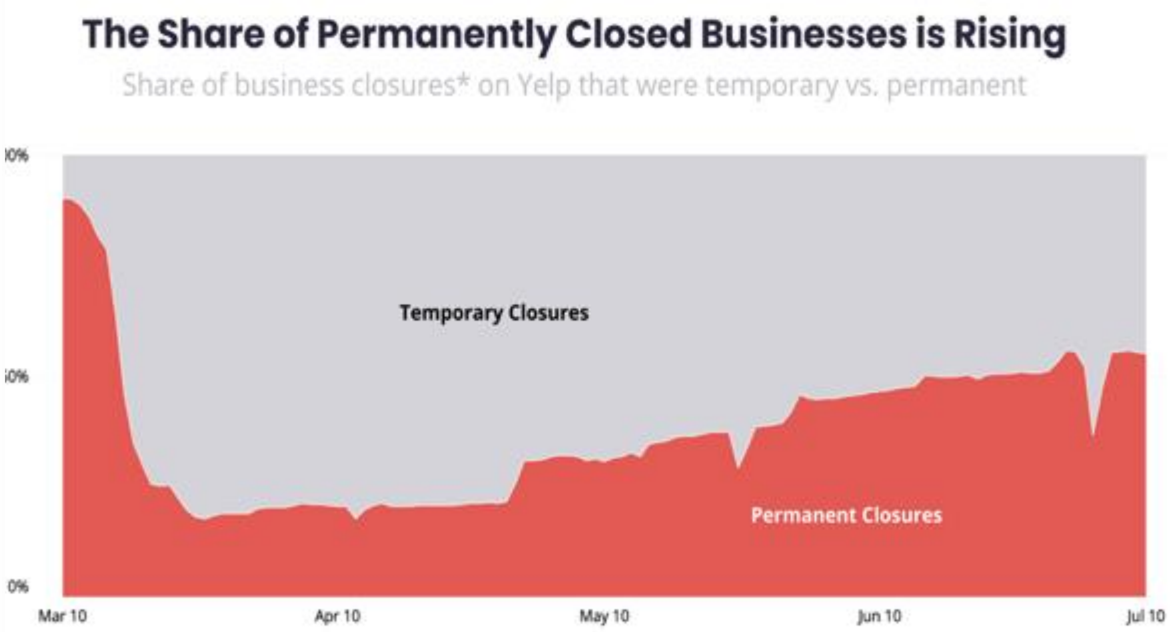
Fairlie, Working Paper 27309. http://www.nber.org/papers/w27309

U.S. Business Closure Trends

- *Business closures are widespread geographically with Texas following closely behind California.*
- *Permanent Closures are continuing to rise to almost 50% as a share of all closed businesses.*



Source: Yelp
Chart: The DataFace



nong U.S. businesses that were open on March 1. A business was counted as closed if it was marked as permanently or temporarily closed, nged its hours to mark itself as closed for entire days, or included the word "closed" in the COVID-19 business updates section of its Yelp page.
sures are updated through July 10. Data may lag actual closures because of time taken to report and verify closures.

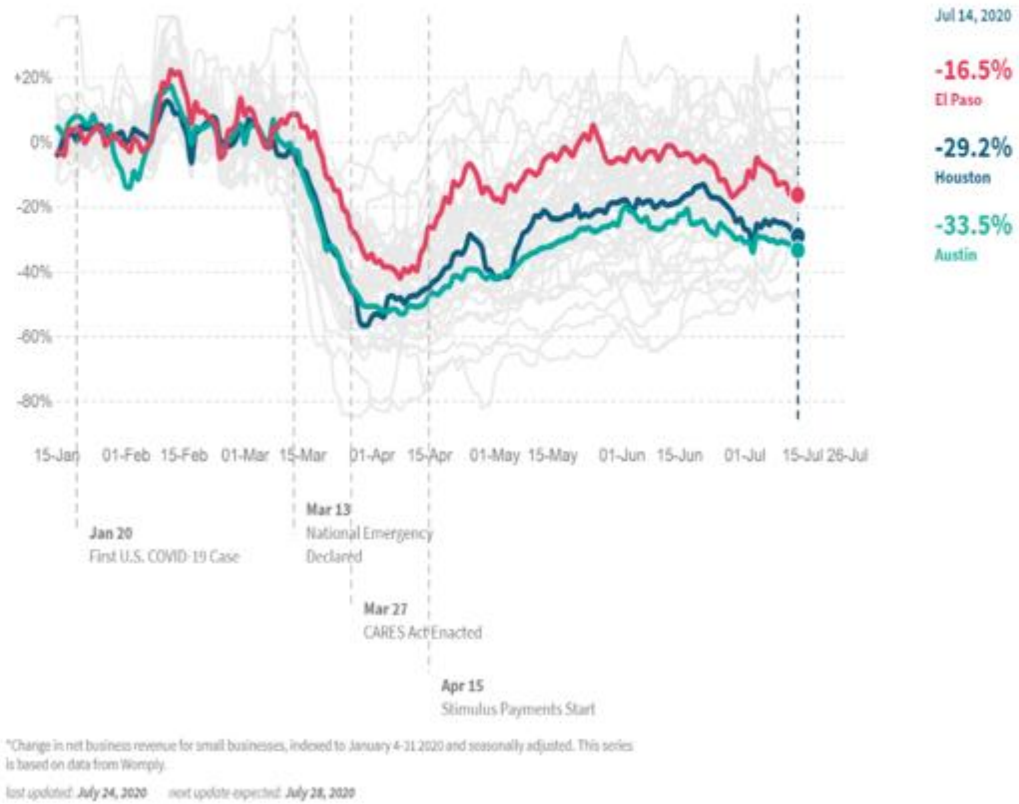
urce: Yelp
art: The DataFace

TEXAS Business Trends: Two Examples

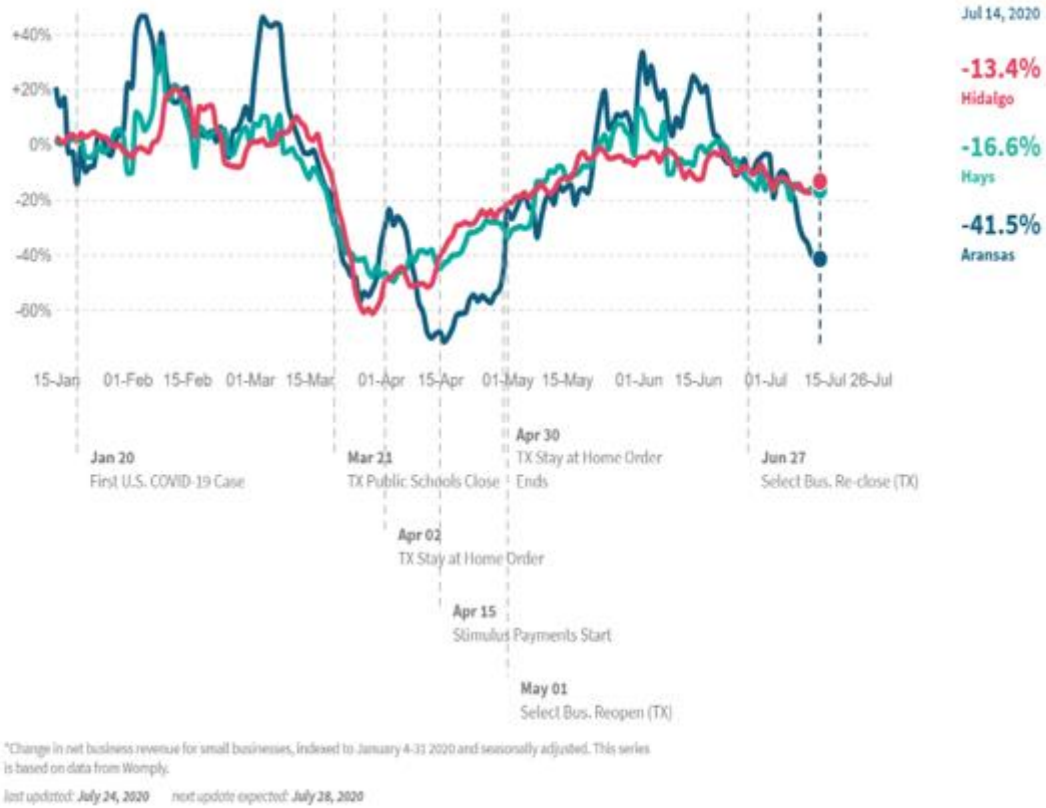
IC²

The trends appear to highlight the fragility of hospitality, touristic economies to the pandemic crisis.

Percent Change in Small Business Revenue: LARGE County Comparison

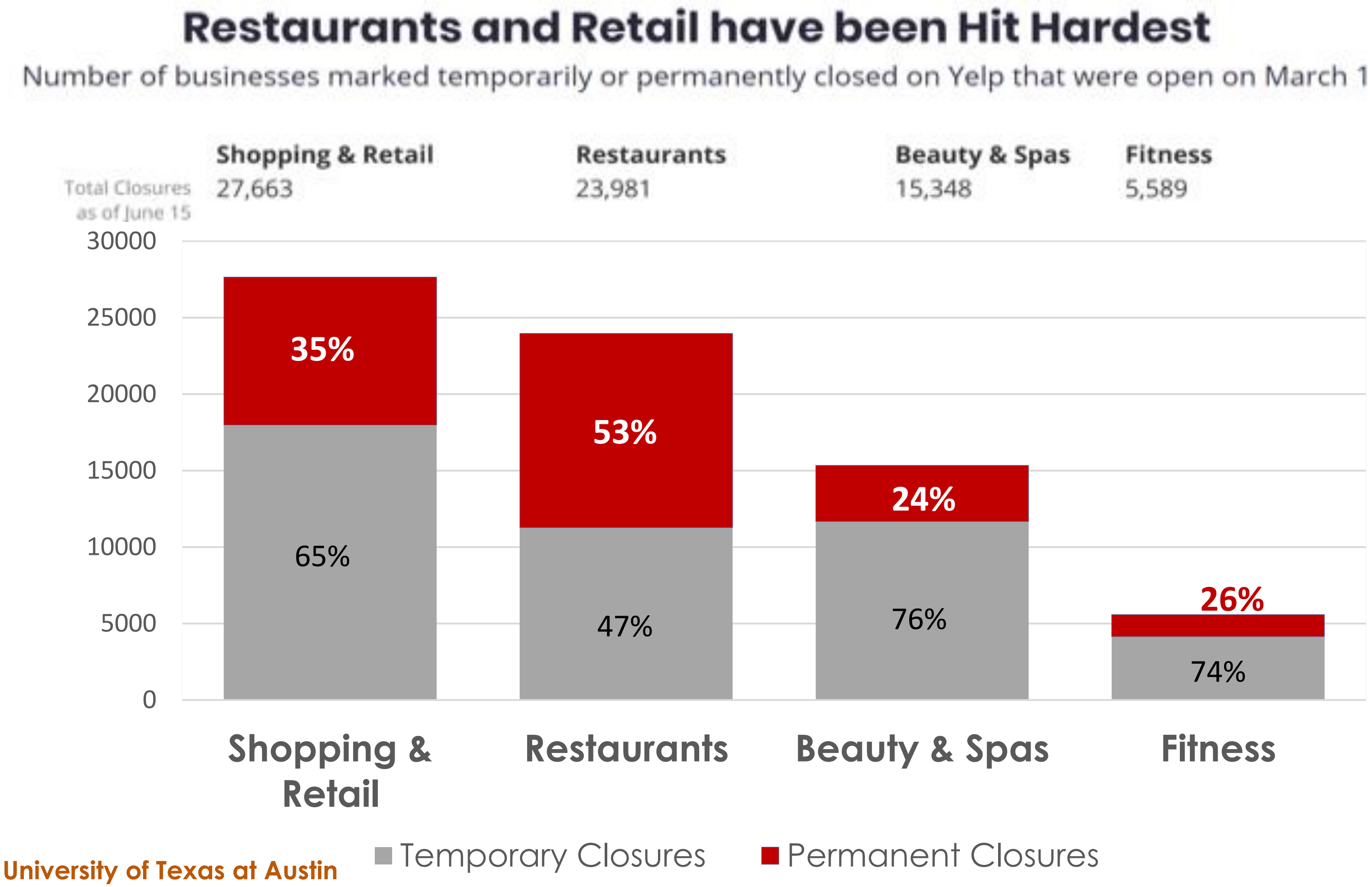


Percent Change in Small Business Revenue: SMALLER County Comparison



Local Business Sectors Showing Largest Impact

- *Of all business closures on Yelp since March 1 to June 15, 41% are permanent.*
- *Hardest hit are Restaurants & Retail.*

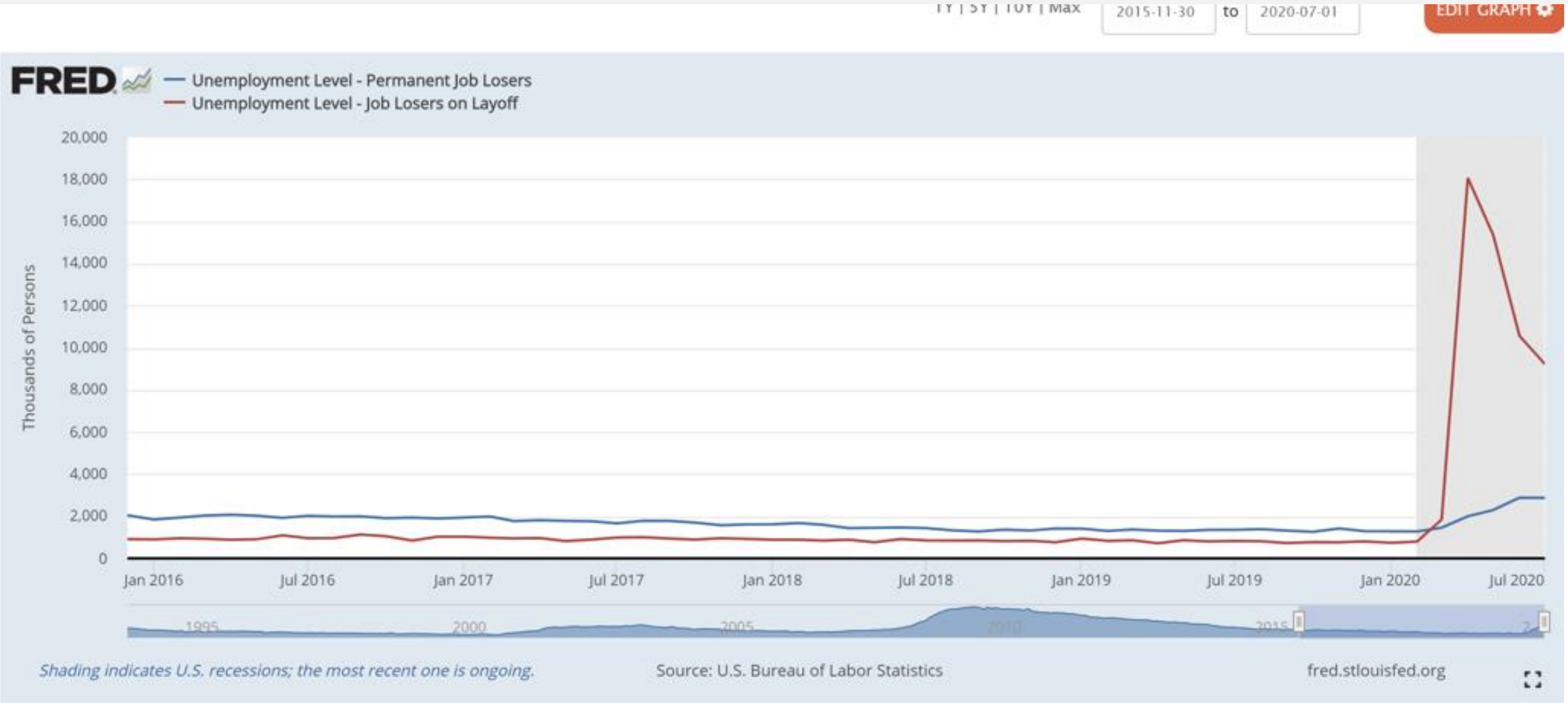


Source: Yelp
https://www.yelpeconomicaverage.com/yelp-coronavirus-economic-impact-report

Updated June 25, 2020

U.S. Permanent Job Losses on the Rise

Permanent job losses are on the rise as temporary layoffs decline with millions brought back to work in May & June. Rising permanent job losses are a concerning trend, to be followed closely.



[Source: FRED, https://fred.stlouisfed.org/series/LNS13026638#0](https://fred.stlouisfed.org/series/LNS13026638#0)

U.S. Employment Reallocation Shock

Huge economic contraction from COVID-19 pandemic combined with a drastic/ abrupt/ major employment reallocation.

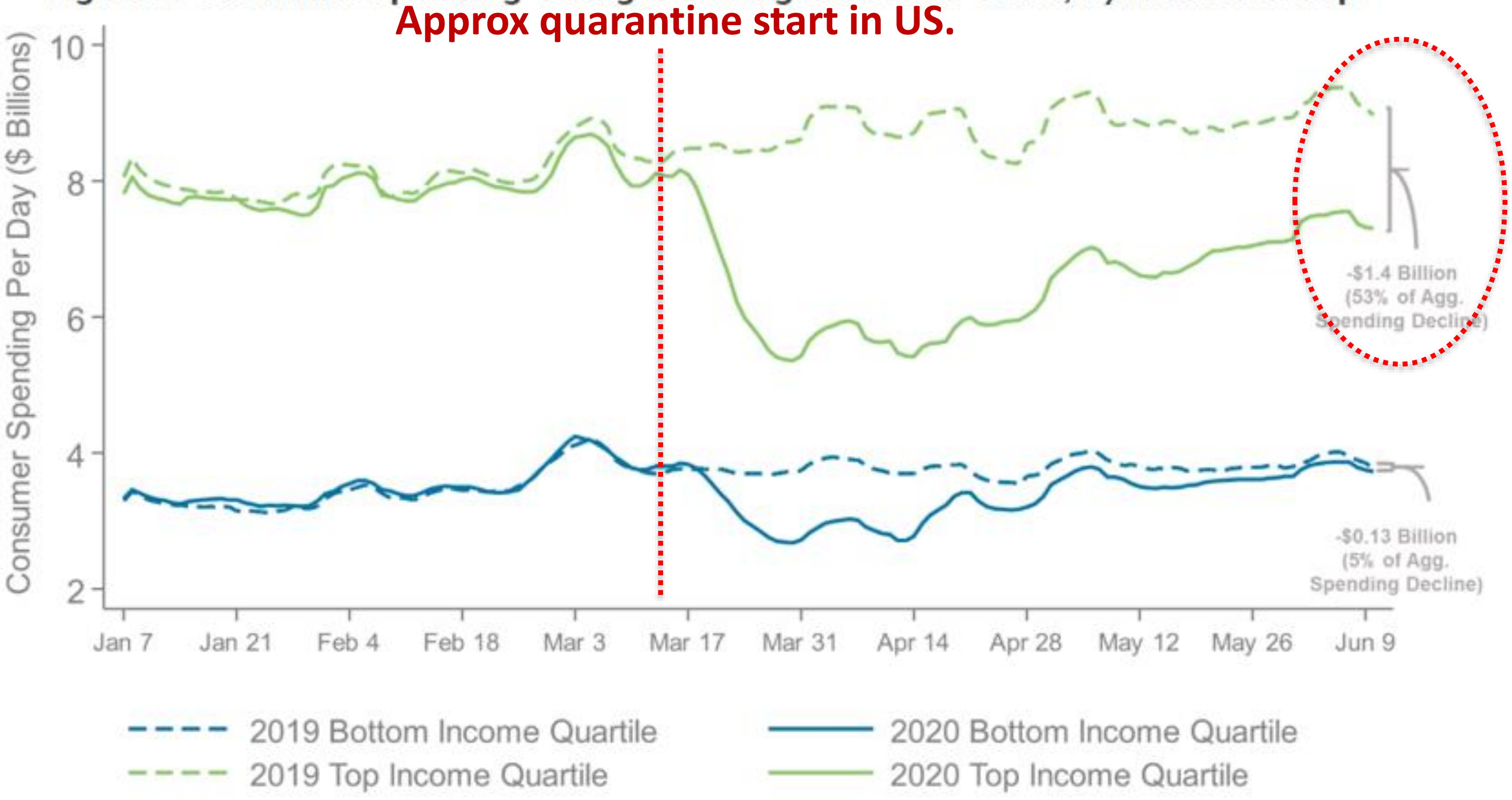
- **For every 10 layoffs** between March 1 and mid-May, American firms hired **3 to 4 new workers**. (Amazon, Wal-Mart, CVS, Lowe's, Domino's Pizza, Instacart …)
- **32-42% of COVID-induced layoffs since March will be permanent** in the sense that job losers won't return to their old jobs.
- **At-home/Remote full-time work will triple** after the pandemic as compared to before the pandemic. About one-fifth of office worker days will shift from business premises to home.

Source: *Reallocation Shock*. Barrero, Brookings, June 2020.

U.S. Spending Decline, Greater in Higher Income Areas

- ***High-income households accounted for most of the reduction in spending.***
- ***Small business revenues declined most in affluent areas.***

Figure 1: Consumer Spending Changes During COVID-19 Crisis, by Income Group



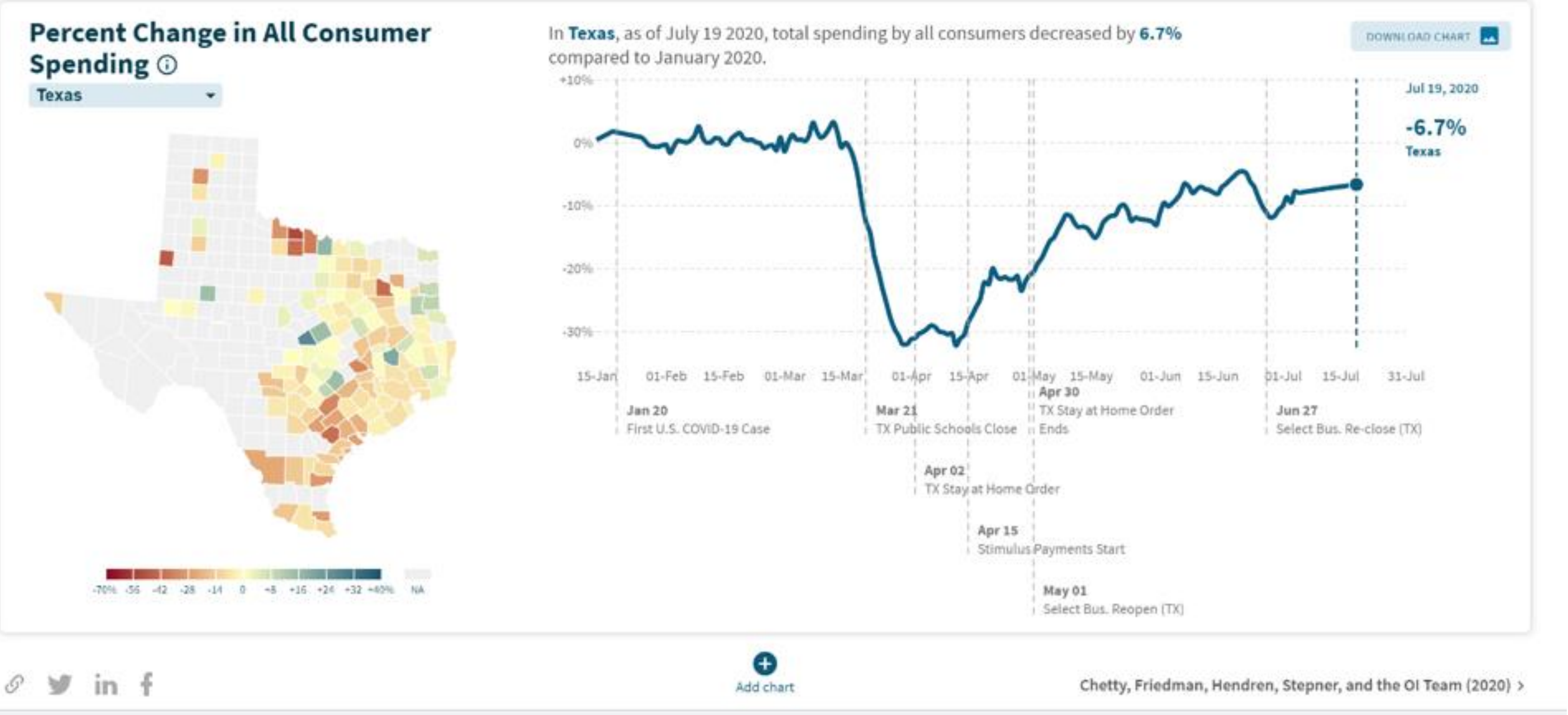
This graph plots spending for households in the top vs. bottom 25 percent of the income distribution in 2019 and 2020. Income is imputed based on the ZIP code where households live.

Data Source: Affinity Solutions. Click here for up-to-date data.

TEXAS Consumer Spending, by County

As of July 19, 2020, total consumer spending decreased by 6.7% compared to January 2020.

Certain counties recorded >45% reductions.



U.S. KEY INSIGHTS - Harvard Opportunity Insights Team

- As COVID-19 infections increased in March, **high-income households sharply reduced their spending**, primarily on services that require in-person interactions.
- Because of this reduction in spending by high-income consumers, businesses in the most affluent neighborhoods in America lost more than 70% of their revenue.
- As these businesses lost revenue, they laid off their employees, particularly low-income workers. Nearly **70% of low-wage workers working in the highest-rent ZIP codes lost their jobs, compared with 30% in the lowest-rent ZIP codes.**
- Policy efforts to date — stimulus payments to households and **Paycheck Protection Program loans to small businesses — have not led to a rebound in spending at the businesses that lost the most revenue**. As a result, they have had a limited impact on the employment rates of low-income workers.
- In the long-term, the only way to drive economic recovery is to **invest in public health efforts that will restore consumer confidence and spending.**
- In the meantime, providing and **extending targeted assistance to low-income workers** impacted by the economic downturn (such as through **unemployment benefits**) is critical for reducing hardship and addressing disparities in COVID's impacts.

Pandemic Impact to US Supply Chains

"Businesses have used global supply chains and just-in-time manufacturing to reduce production costs and keep prices low for consumers."

- **Waco Tribune-Herald**: [Art Markman: Pandemic only highlights America's troubling income inequality]

"Companies have spent much of 2020 racing to shore up supply chains as the coronavirus shut down much of the world, but business leaders say they expect problems to remain even as countries start to reopen their economies."

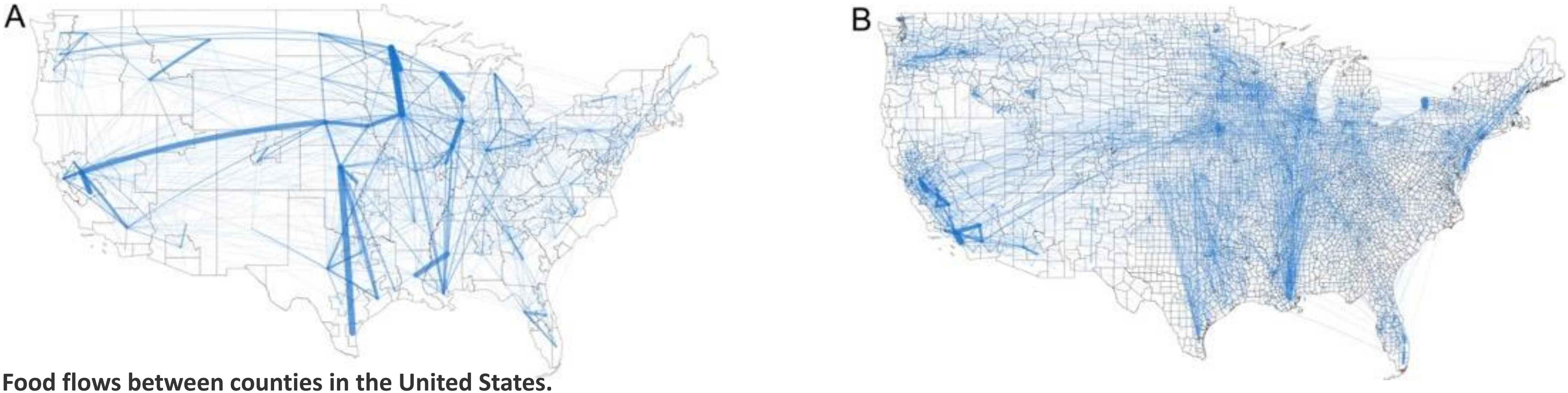
- Wall Street Journal: Fewer Products, Localized Production—Companies Seek Supply-Chain Solutions

"As procurement teams struggle to cope with the Covid-19 global pandemic, most have been trying to keep up with the news about global response measures and have been working diligently to secure raw materials and components and protect supply lines. However, vital information is often not available or accessible across their global teams. As a result, their response to the disruption has been reactive and uncoordinated, and the impact of the crisis is hitting many of their companies full force."

- Harvard Business Review: Coronavirus Is a Wake-Up Call for Supply Chain Management

U.S. Food Supply Chain

The pandemic is causing disruptions to food and agriculture supply chains around the world, including in Texas. Foods that indicate disruption most: beef, milk, eggs, potatoes, leafy greens & other produce.



Food flows between counties in the United States.
Xiaowen Lin, Paul Ruess, Landon Marston and Megan Konar. Published 26 July 2019.

https://afpc.tamu.edu/research/publications/files/698/RR-20-01.pdf

Over 36 million Americans are now unemployed, and food insecurity—which affected one in six Americans before COVID-19—will likely increase. Yet farmers say getting food into the hands of those who need it most is exceptionally difficult and often beyond their control. – National Geographics interviews.

TEXAS BY ECONOMIC SECTOR - PAST, PRESENT, FUTURE

TEXAS Economic Sectors - Summary

Service

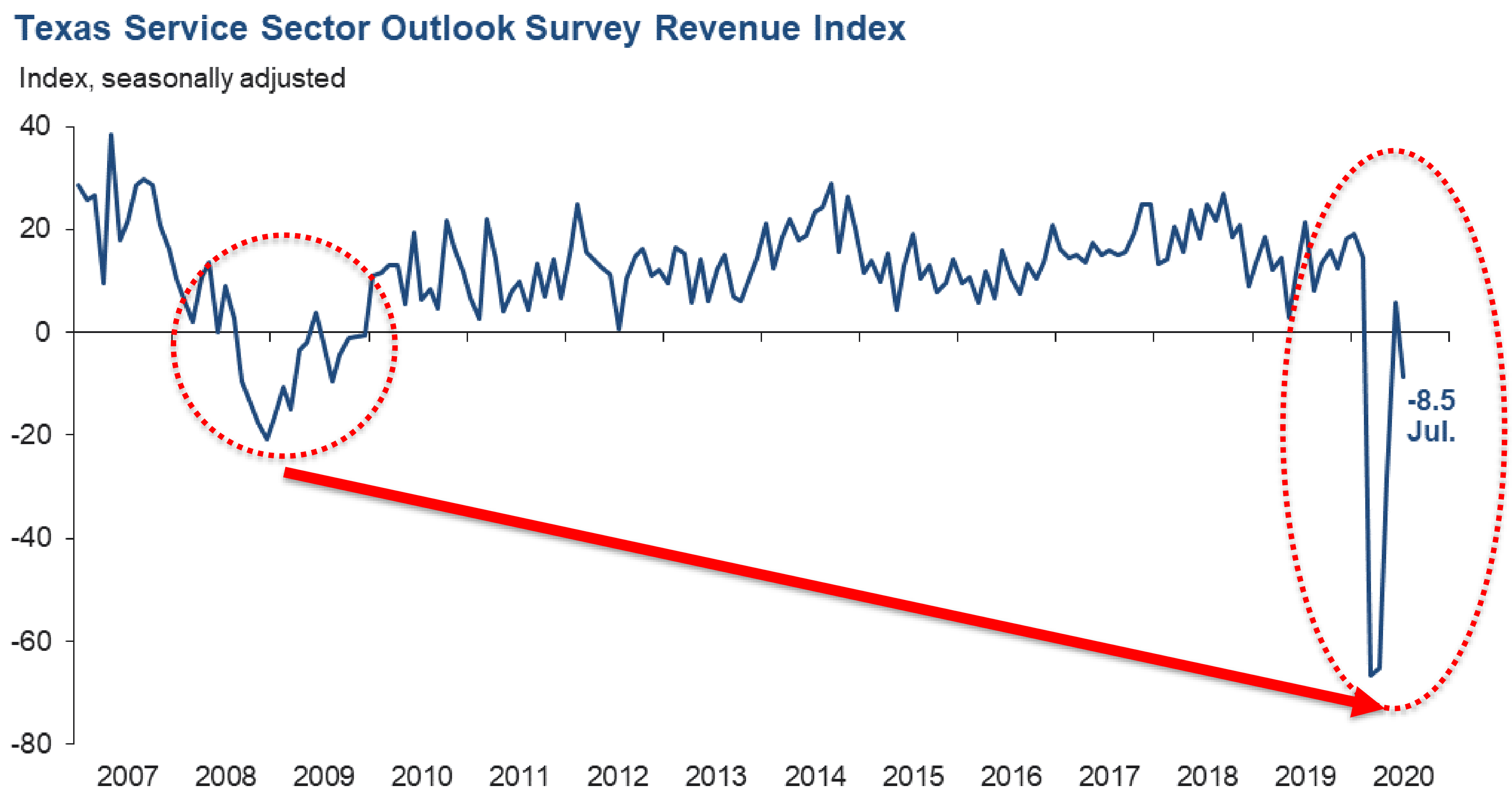
- *Shock & decline of Texas Service Sector is multiple times lower than the Great Recession of 2008.*
- *Service Sector Index plunged in July from its reading in June*
- *Service companies have a mixed picture of their future business conditions, with half believing they will be the same as in July, one quarter will have improved and one quarter will have become worse.*

Manufacturing

- *Decline of Texas Manufacturing Sector is significantly lower than the Great Recession of 2008.*
- *Manufacturing sector index improved slightly in July from its reading in June.*
- *Manufacturing companies are also somewhat optimistic about general business conditions in six months.*

TEXAS Service Sector - 2007 to Current

Shock & decline of Texas Service Sector is multiple times worse than the Great Recession of 2008.



Federal Reserve Bank of Dallas

TEXAS Service Sector - Recently

IC²

Service Sector Index plunged in July from its reading in June.

- Twice as many service companies reported lower revenues than reported higher revenues
- Three times as many companies said general business conditions worsened

General Business Conditions Current (versus previous month)								
Indicator	Jul Index	Jun Index	Change	Series Average	Trend**	% Reporting Improved	% Reporting No Change	% Reporting Worsened
Company Outlook	–15.8	2.2	–18.0	4.8	1(–)	17.2	49.7	33.0
General Business Activity	–26.7	2.1	–28.8	2.5	1(–)	15.6	42.1	42.3

Comments from Service Sector Businesses

- Accommodations business: "*One word describes the outlook: Uncertainty*"
- Building Material and Garden Equipment and Supplies Dealer: "*COVID-19 has everyone scared again; things really picked up about two months ago. Now, the last two weeks are down about 50 percent.*"
- Professional Firm: "*We are braced for a lackluster four quarters and have planned accordingly.*"

TEXAS Service Sector - Expected Business Conditions in Six Months

Service companies have a mixed picture of their future business conditions, with half believing they will be the same as in July, one quarter will have improved and one quarter will have become worse.

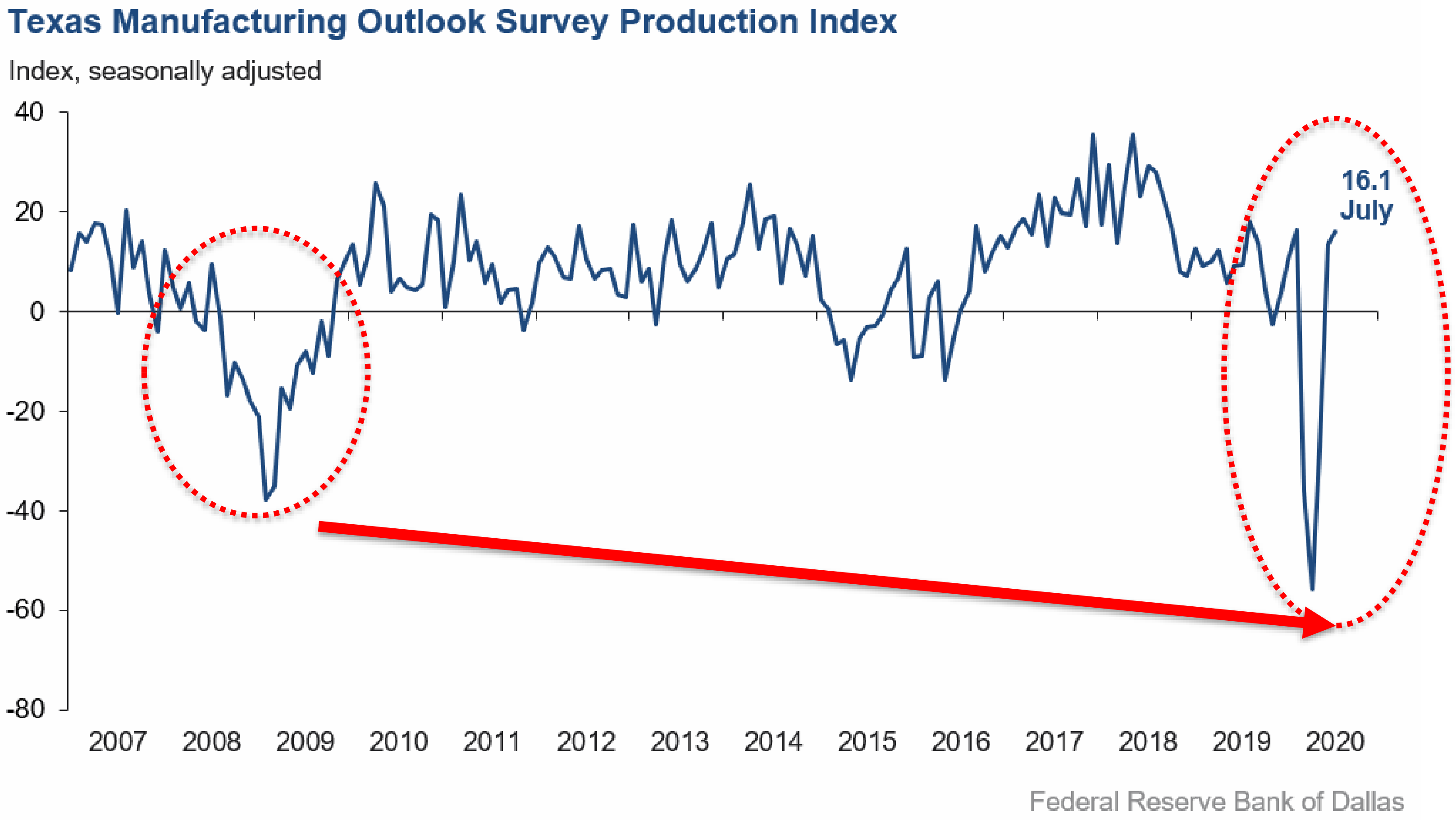
Companies are slightly more negative about general business conditions in six months than they are for their own companies

General Business Conditions
Future (six months ahead)

Indicator	Jul Index	Jun Index	Change	Series Average	Trend**	% Reporting Improved	% Reporting No Change	% Reporting Worsened
Company Outlook	−3.1	6.2	−9.3	15.9	1(–)	26.0	45.0	29.1
General Business Activity	−9.2	6.8	−16.0	12.5	1(–)	24.9	41.0	34.1

TEXAS Manufacturing Sector-2007 to Current

Decline of Texas Manufacturing Sector is significantly worse than the Great Recession of 2008.



TEXAS Manufacturing Sector - Recently

Manufacturing sector index improved slightly in July from its reading in June.

- Three quarters of manufacturing companies said their business improved or remained the same as in June
- Manufacturing companies views about general business conditions changed little from month to month

General Business Conditions
Current (versus previous month)

Indicator	Jul Index	Jun Index	Change	Series Average	Trend**	% Reporting Improved	% Reporting No Change	% Reporting Worsened
Company Outlook	5.9	2.7	+3.2	6.2	2(+)	27.2	51.5	21.3
General Business Activity	−3.0	−6.1	+3.1	1.8	5(−)	26.0	44.9	29.0

Comments from Manufacturing Businesses

- Paper manufacturing company: *"The outlook for the remainder of 2020 has remained the same: A slow July falloff has reinforced the disappearance of a V-shaped recovery."*
- Transportation Equipment: *"While our outlook has improved, the COVID-19 threat continues to be a black cloud that, if not removed, can quickly turn our outlook negative."*
- Chemical manufacturer: *"Orders are slightly increasing week over week, but there's no major shift."*

TEXAS Manufacturing Sector - Expected Business Conditions in Six Months

Manufacturing companies are also somewhat optimistic about general business conditions in six months.

- Manufacturing companies are somewhat optimistic about their future business conditions, with one third believing they will be better than in July and one half thinking they will be the same

General Business Conditions Future (six months ahead)								
Indicator	Jul Index	Jun Index	Change	Series Average	Trend**	% Reporting Increase	% Reporting No Change	% Reporting Worsened
Company Outlook	18.7	16.2	+2.5	20.2	2(+)	34.4	49.9	15.7
General Business Activity	10.6	19.7	−9.1	13.7	2(+)	28.2	54.2	17.6

TEXAS COMPARED WITH OTHER STATES

Total Consumer Spending

Restaurant Spending

Consumer Spending by High Income Residents

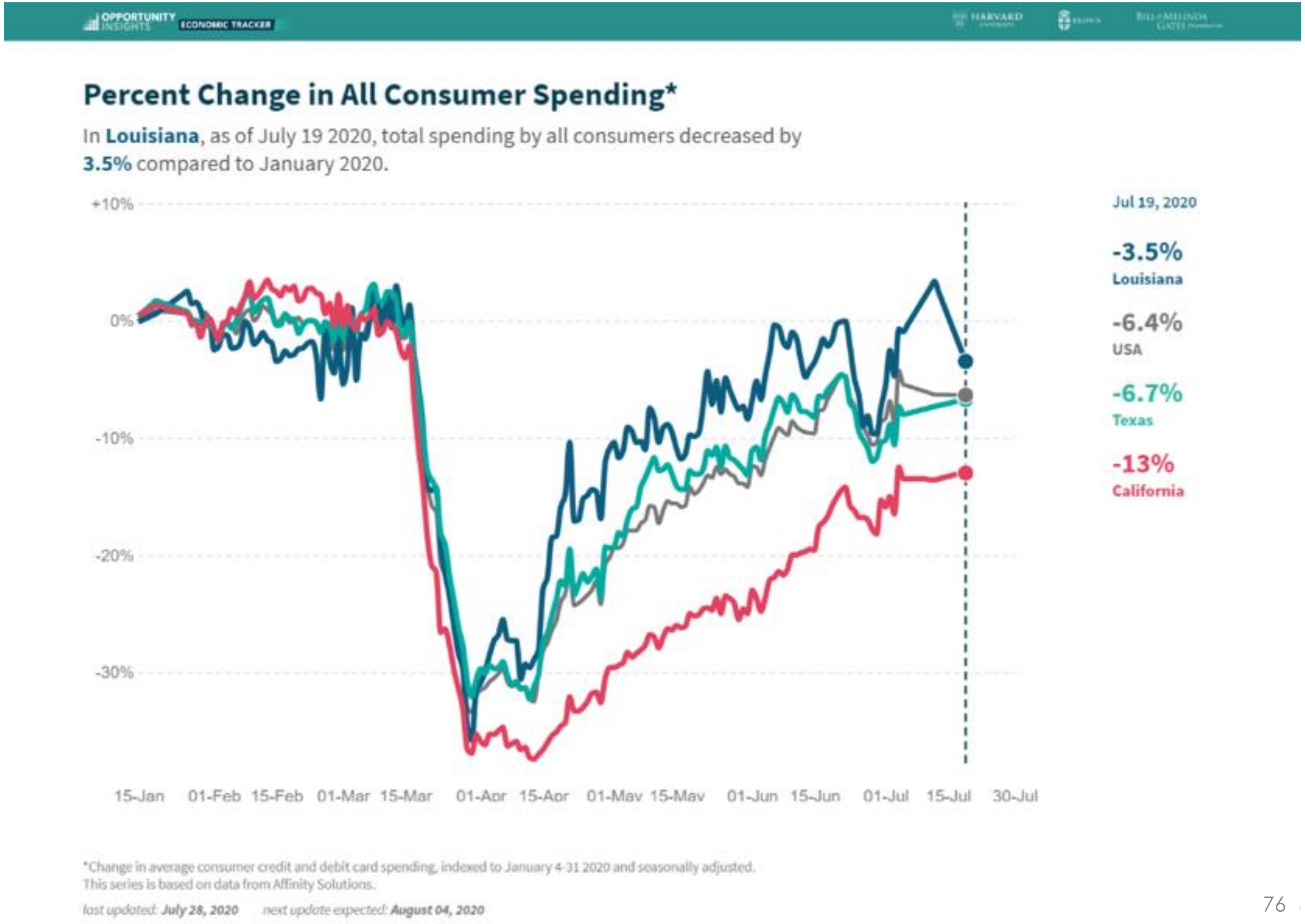
Consumer Spending by Low Income Residents

Unemployment Claims Rate

Small Business Revenues

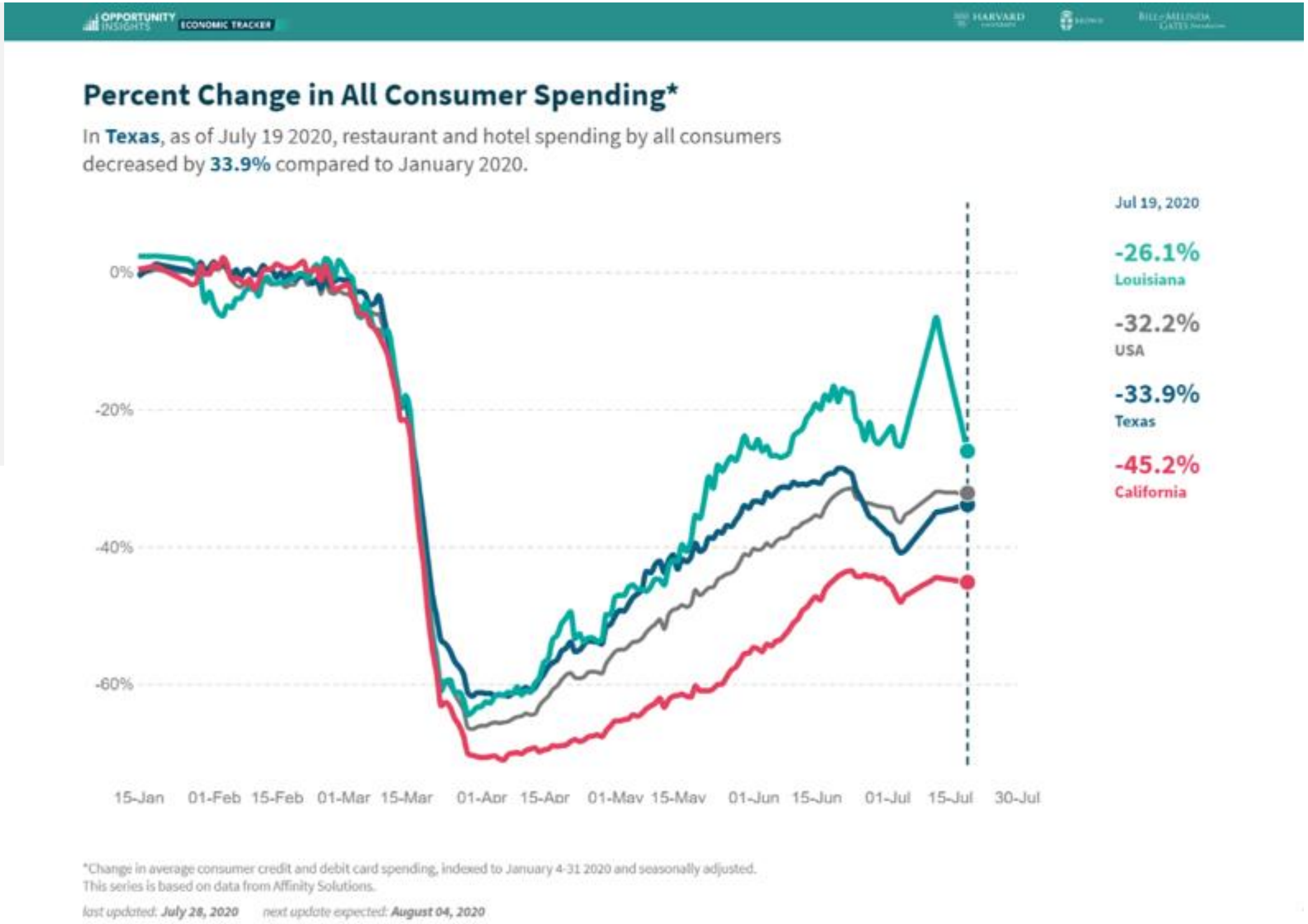
Texas, Louisiana, California, and U.S.- All Consumer Spending

- *Louisiana doing better than the US, Texas, and California*
- *Texas doing much better than California and about the same as the US as a whole*



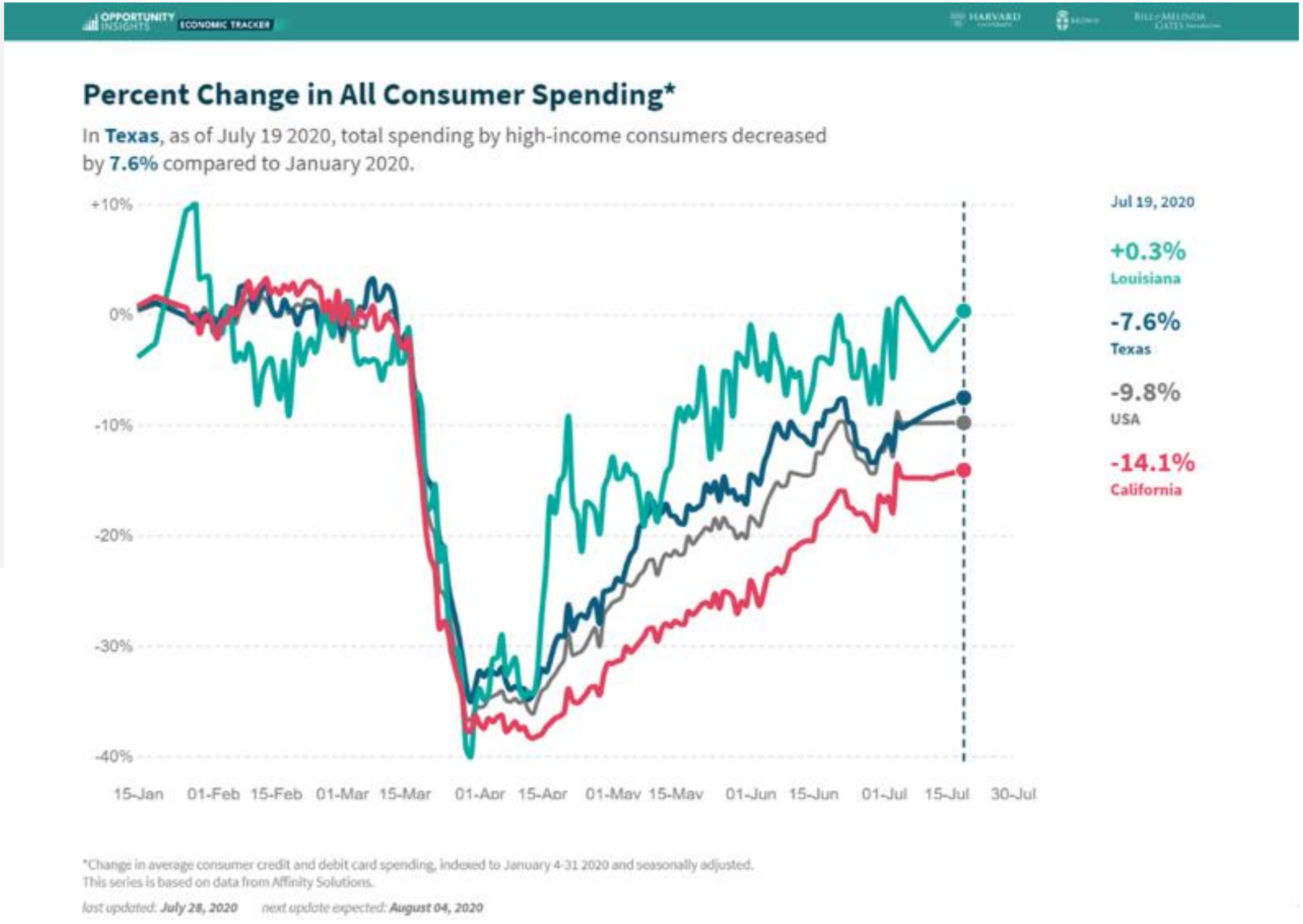
Texas, Louisiana, California, and U.S.- Restaurant Spending

- *Louisiana doing better than the US, Texas, and California*
- *Texas doing much better than California and about the same as the US as a whole*



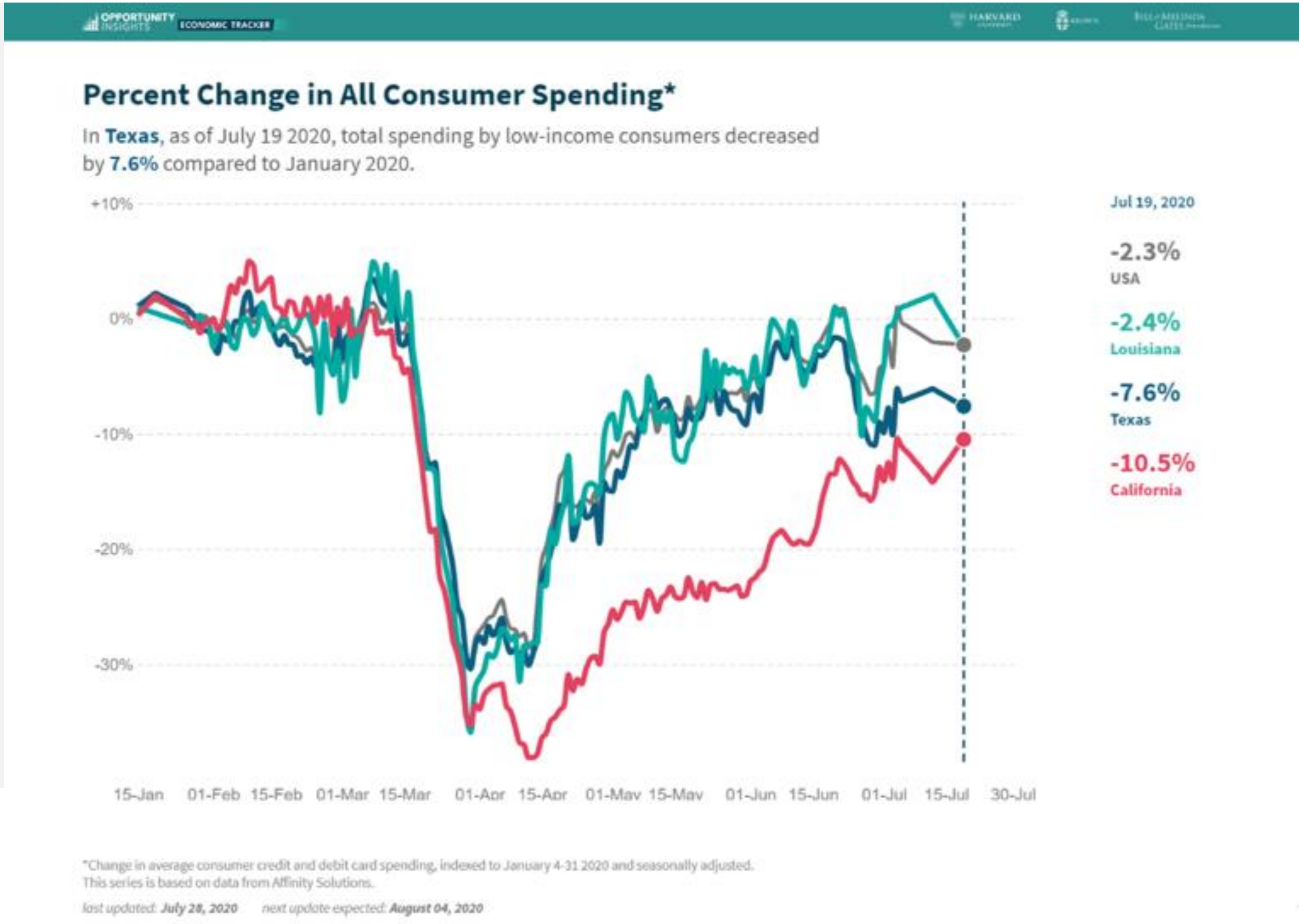
Texas, Louisiana, California, and U.S.- Consumer Spending By High Income Residents

- *High income residents in Louisiana slightly increased their spending*
- *High income residents of Texas reduced their spending less than in California and the U.S. as a whole*



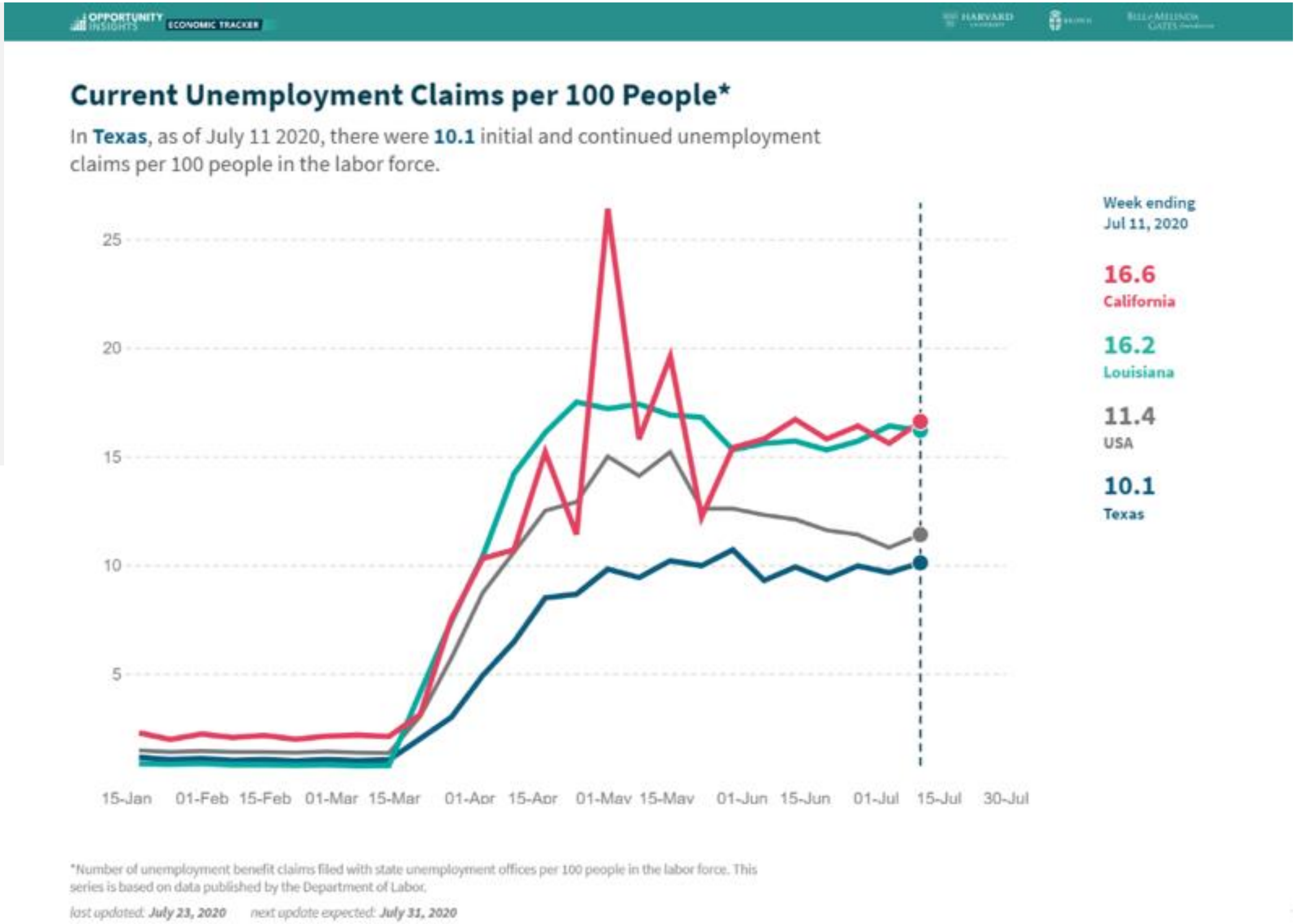
Texas, Louisiana, California, and U.S.- Consumer Spending By Low Income Residents

- *Low income residents in Louisiana reduced their spending the same amount as residents of the U.S.*
- *Low income residents of Texas reduced their spending less than in California but much more than in US as a whole*
- *This chart and previous one show high income residents cut back their consumer spending at greater rate than low income residents*



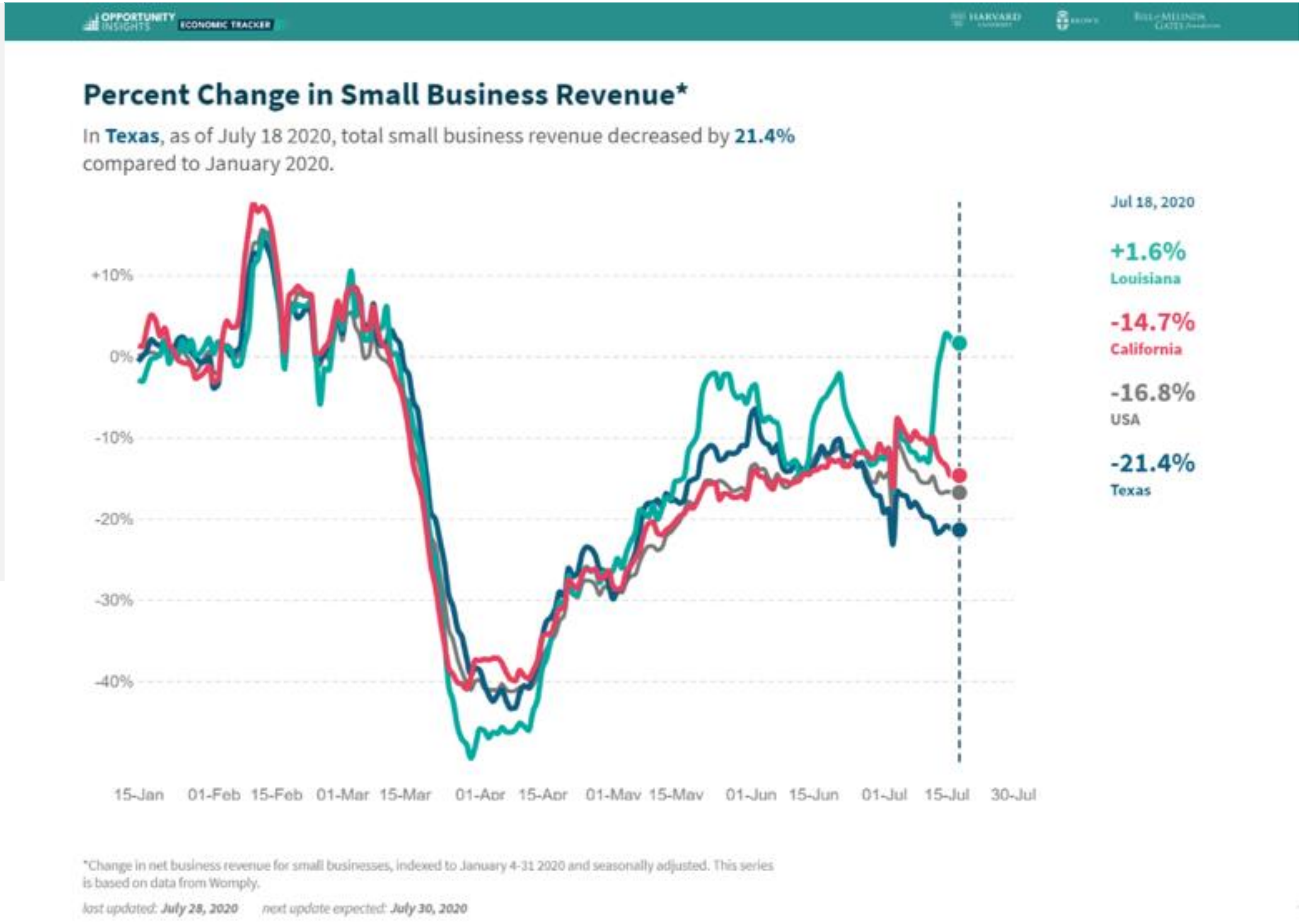
Texas, Louisiana, California, and U.S. - Unemployment Claims Per 100

- *Texas has fewer unemployment claims than U.S. as a whole*
- *Texas unemployment claims rate is significantly better than those of Louisiana and California*



Texas, Louisiana, California, and U.S. – Small Business Revenues

- ***Small business revenues in Louisiana have increased slightly and have been far superior to other states***
- ***Revenues for small businesses in Texas have declined more than in California or the rest of the U.S.***



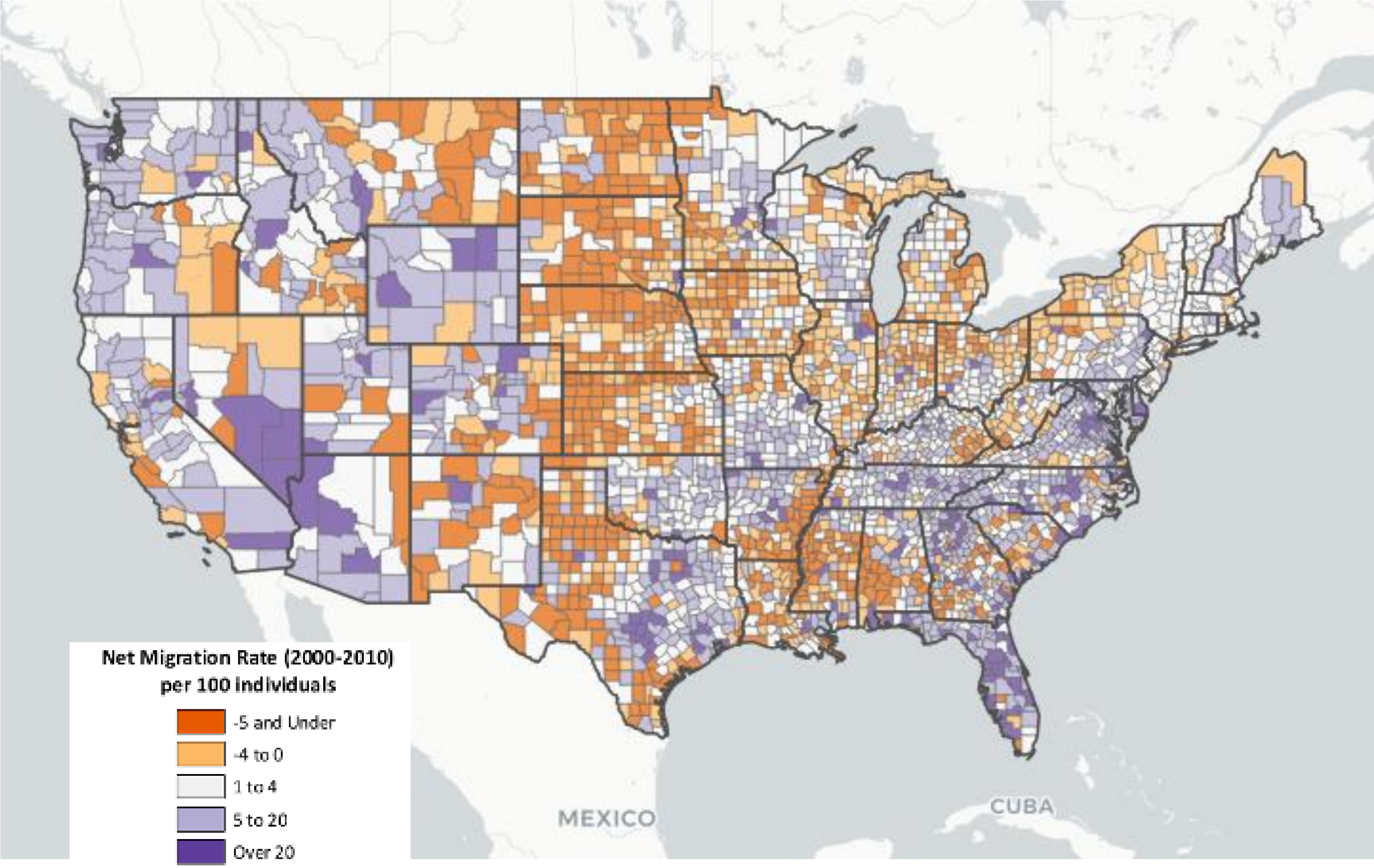
TEXAS MIGRATION: CONTEXT & TRENDS

TEXAS Migration: Context Summary

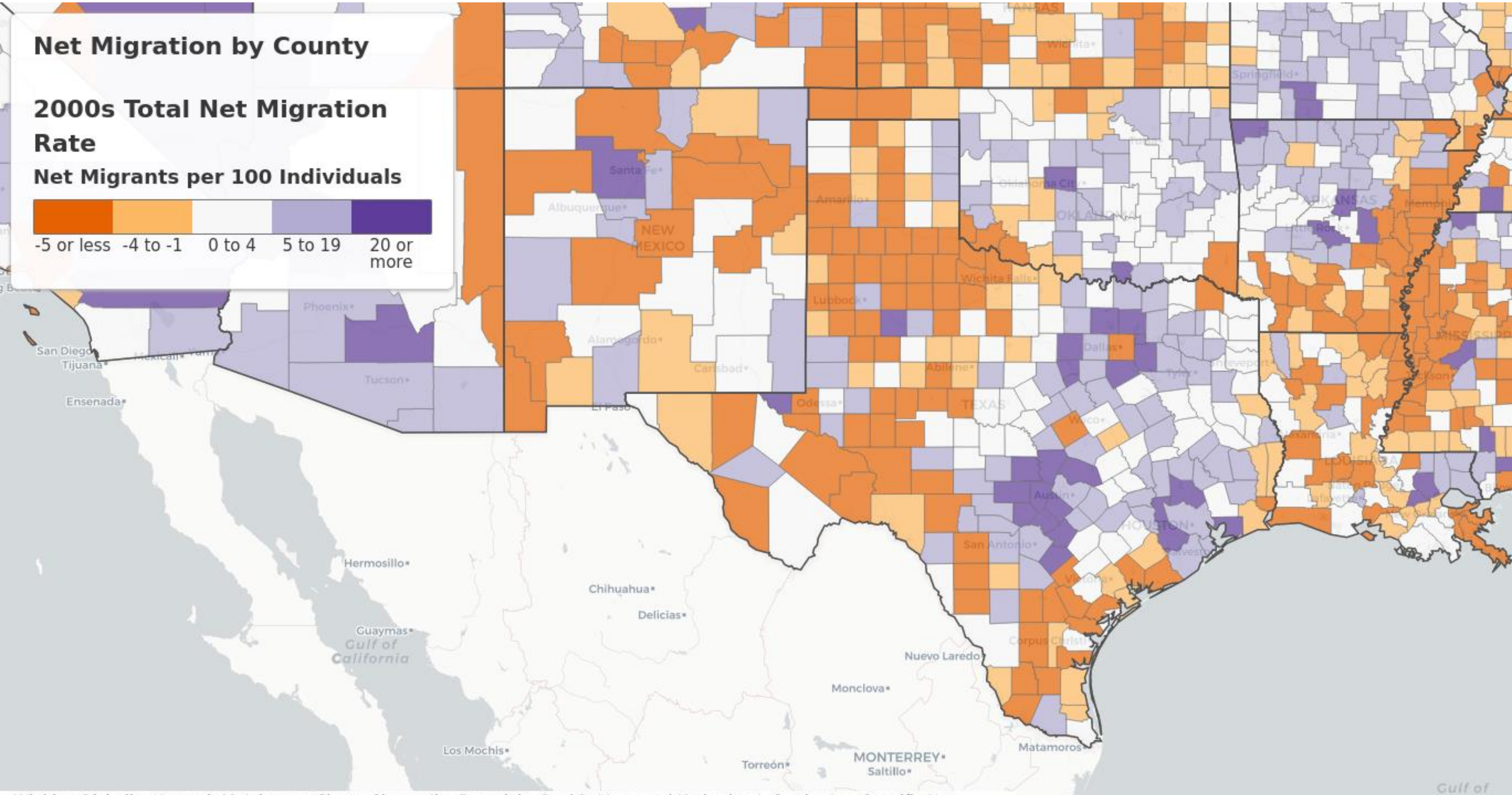
- *Of Texas' total population growth from 2010 and 2016, **migration accounted for almost exactly half.***
- *The **"Big Four" account for two-thirds of Texas** are a major attractor for out-of-state migrants (Austin-Round Rock, Dallas-Fort Worth-Arlington, Houston-The Woodlands-Sugar Land, and San Antonio-New Braunfels).*
- *Migration favors **urban over rural areas**. Growing population divide between urban and rural areas in Texas due to migration.*
- ***External migration** is shaping Texas' population geography. Today's urban-rural demographic divide is not fueled so much by internal migration as it is by external migration which is **sharpening the demographic differences**.*
- *Patterns suggest a future where the **state's population becomes increasingly urbanized** and regional patterns of population growth become more disparate.*
- *Due to **urban-rural and migration-based divide**, large areas of Texas could be left with more limited access to employment, medical care, educational opportunities, and other goods and services.*
- ***Growth brings its own challenges.** Texas' population is expected to reach nearly 60 million by 2050, bringing with it skyrocketing demand for water, housing, transportation, schools and jobs.*
- *Not all areas of Texas are growing. **Rural counties losing residents** to metropolitan areas face their own challenges, such as access to health care, teacher shortages and inadequate local government revenues.*
- ***High housing costs and availability** pose challenges for households and for the state's economy pre-pandemic and more now for higher density areas.*
- ***Economic growth and population increases** will put continuing upward pressure on the state's home prices and rents. If Texas wants to maintain its overall reputation for a low cost of living, state and local policymakers must consider the factors driving price increases — and act on those they can influence.*

U.S. Net Migration- TEXAS v U.S.

- Every year, ~10 million Americans move from one county to another.
- Migration rates vary by age, race, and ethnicity and with local and national social and economic conditions over time.
- Individual counties' patterns of age-specific migration tend to be consistent over time telling demographic stories about local places.



Winkler, Richelle, Kenneth M. Johnson, Cheng Cheng, Jim Beaudoin, Paul R. Voss, and Katherine J. Curtis. Age-Specific Net Migration Estimates for US Counties, 1950-2010. Applied Population Laboratory, University of Wisconsin - Madison, 2013. Web. [Date of access.] https://netmigration.wisc.edu/.



Winkler, Richelle, Kenneth M. Johnson, Cheng Cheng, Jim Beaudoin, Paul R. Voss, and Katherine J. Curtis. Age-Specific Net Migration Estimates for US Counties, 1950-2010. Applied Population Laboratory, University of Wisconsin - Madison, 2013. Web.

Leaflet | © OpenStreetMap, © CARTO

TEXAS Migration Patterns - Definitions

Migration types affecting growth.

A ***migrant*** is a current resident that lived in a different county or country one year ago. Three types of Texas migration:

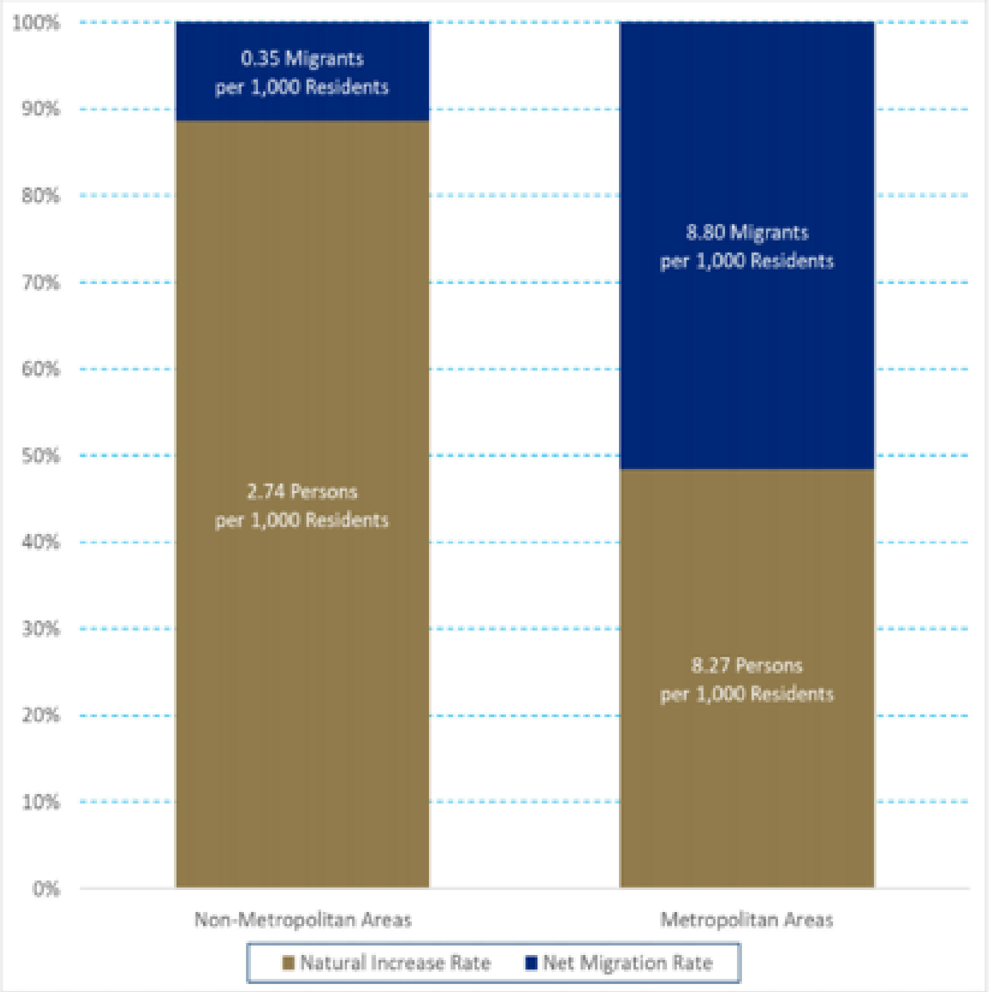
1. **Internal Migration**: Migration from one Texas county to another Texas county.
2. **Domestic Migration**: Migration between a Texas county and a U.S. county outside of Texas.
3. **International Migration (Immigration)**: Migration to a Texas county from outside of the U.S.

The basic measures of migration are:

1. **Net Migration**: In-migrants minus out-migrants. Measures amount of population growth or decline.
2. **Gross Migration**: Immigrants plus out-migrants. Measure of overall population mobility.

Source: Texas Demographic Center, Report on Recent Metropolitan Migration Patterns in Texas. OCT 2017. https://demographics.texas.gov/Resources/publications/2017/2017_10_18_UrbanTexas.pdf

Figure 1. Sources of Population Growth by Metro Status in Texas, 2015-2016



Source: U.S. Census Bureau, 2017a

TEXAS Migration Patterns - Location, Location, Location

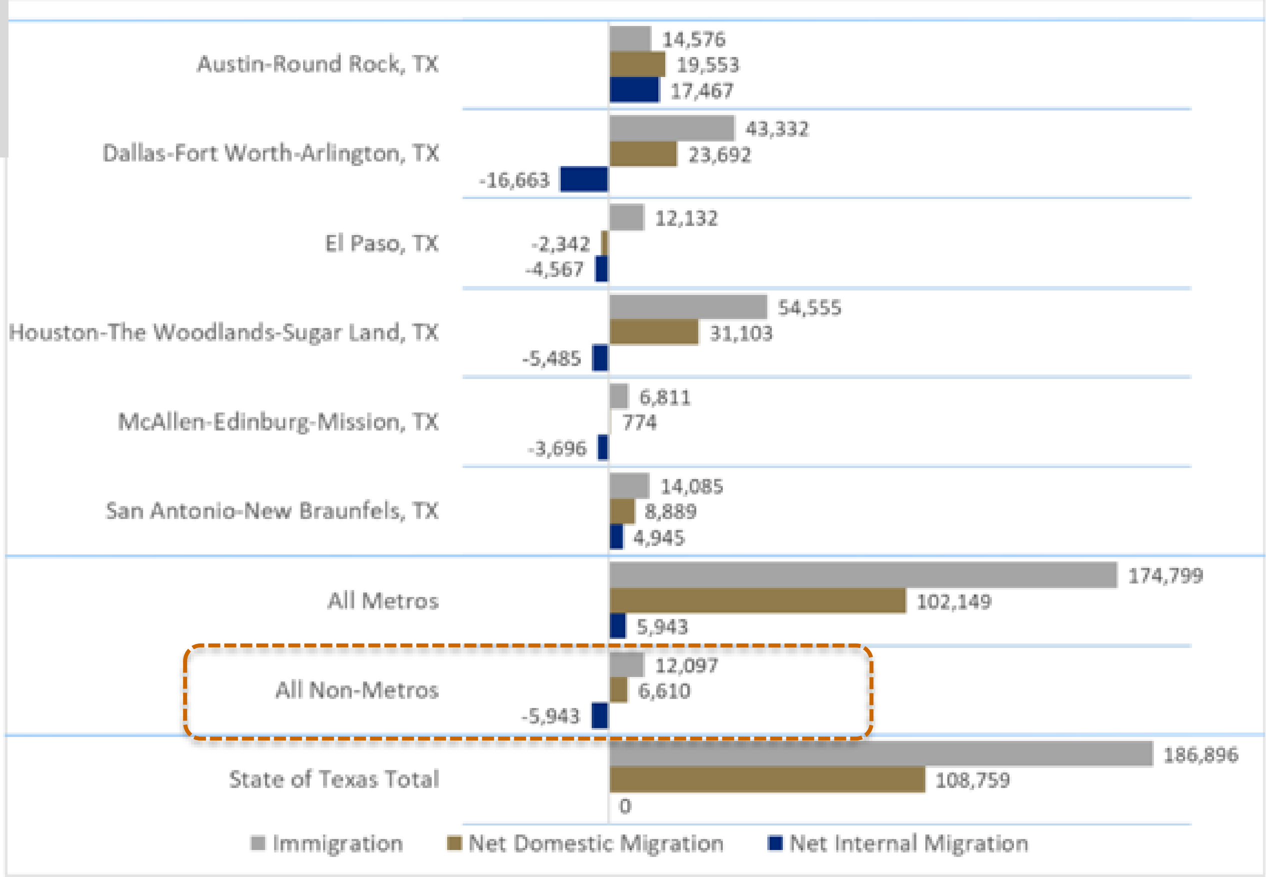
Of Texas' total population growth from 2010 and 2016, migration accounted for almost exactly half.

- **Net domestic migration was about 32%** of the total increase- arrivals to & from other U.S. states.
- **Net international immigration accounting for 19%.** "Natural increase," the population change due to in-state births less in-state deaths, represented 49 percent of the state's net growth.

But the pattern varies with location.

- **Smaller counties** (< 65,000 population) received the majority of their **new residents from other parts of Texas.**
- **Larger counties** received most new residents from **other states.**
- **Border counties**, unsurprisingly, received a majority of new residents from international immigration.

Figure 2. Net Internal and Domestic Migration Flows for Texas MSAs,* 2010-2014



Source: U.S. Census Bureau, 2016. ACS County-to-County Migration Flows, 2010-2014
Note: *MSAs with 2010 populations of 500,000 or more.

Source: Texas Demographic Center, Report on Recent Metropolitan Migration Patterns in Texas. OCT 2017. https://demographics.texas.gov/Resources/publications/2017/2017_10_18_UrbanTexas.pdf

Texas Migration Patterns - Big Urban Centers

The "Big Four" account for two-thirds of Texas and are a major attractor for out-of-state migrants.

- Four MSAs have populations > 1M persons (Austin-Round Rock, Dallas-Fort Worth-Arlington, Houston-The Woodlands-Sugar Land, and San Antonio-New Braunfels).
- In all of the Big Four, net domestic migration rates exceeded net internal migration rates. In other words, **larger shares of migrants moved to the Big Four metros from other states than from other Texas counties.**

Migration favors urban over rural areas.

- **Rural areas as a group have a negative net internal migration rate (-1.99)** compared to the 25 MSAs as a group, the urban areas have a small but positive rate of net internal migration (0.26).
- **Domestic migration-** urban areas have a net migration rate of 4.49, about two times greater than the 2.22 rate for rural areas.
- **Immigration-** urban areas have an overall immigration rate of 7.68, which is almost twice the rural rate of 4.05.

Combining internal migration, domestic migration, and immigration, the ***metropolitan rate of 12.43 is three times greater than the 4.28 rate for non-metropolitan areas.***

This migration differential is a key reason why the state's recent urban growth rate has been 5.5 times larger than the rural growth rate (U.S. Census Bureau, 2017a).

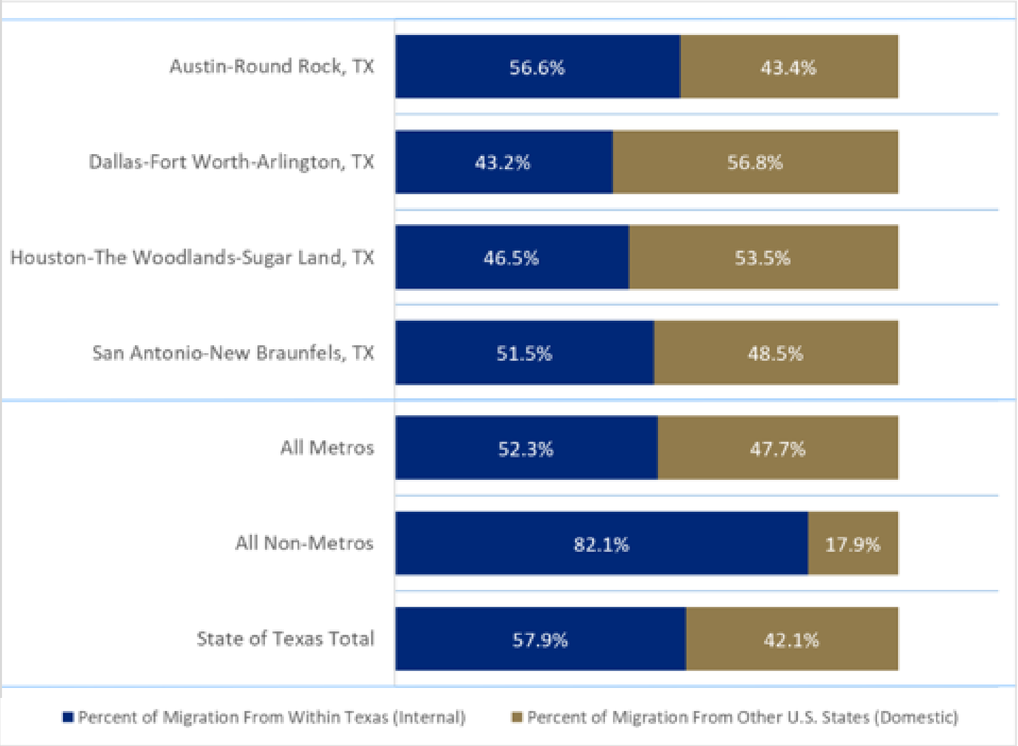
MSAs = population of >500K

https://demographics.texas.gov/Resources/publications/2017/2017_10_18_UrbanTexas.pdf

TEXAS Migration Patterns - Growing Divide

- ***Growing population divide between urban and rural areas in Texas due to migration.***
- ***External migration is shaping Texas' population geography.***
- ***Today's urban-rural demographic divide is not fueled so much by internal migration as it is by external migration which is sharpening the demographic differences.***
- ***Patterns suggest a future where the state's population becomes increasingly urbanized and regional patterns of population growth become more disparate.***
- ***Due to urban-rural and migration-based divide, large areas of Texas could be left with more limited access to employment, medical care, educational opportunities, and other goods and services.***

Figure 3. Shares of Internal and Domestic Gross Migration for the Big Four MSAs in Texas, 2010-2014



Source: U.S. Census Bureau, 2016. ACS County-to-County Migration Flows, 2010-2014

- General pattern of migration, mostly **originating outside of Texas, is adding substantially to the state's largest MSAs.** What was historically from farm to city, today, **migration from outside of Texas is fueling unprecedented urbanization**.
- State's non-metro areas have positive overall migration rates which are much smaller than those for the MSAs.

MSAs = population of >500K

Source: Texas Demographic Center, Report on Recent Metropolitan Migration Patterns in Texas. OCT 2017.
https://demographics.texas.gov/Resources/publications/2017/2017_10_18_UrbanTexas.pdf

TEXAS Migration, County-to-County Efficiency

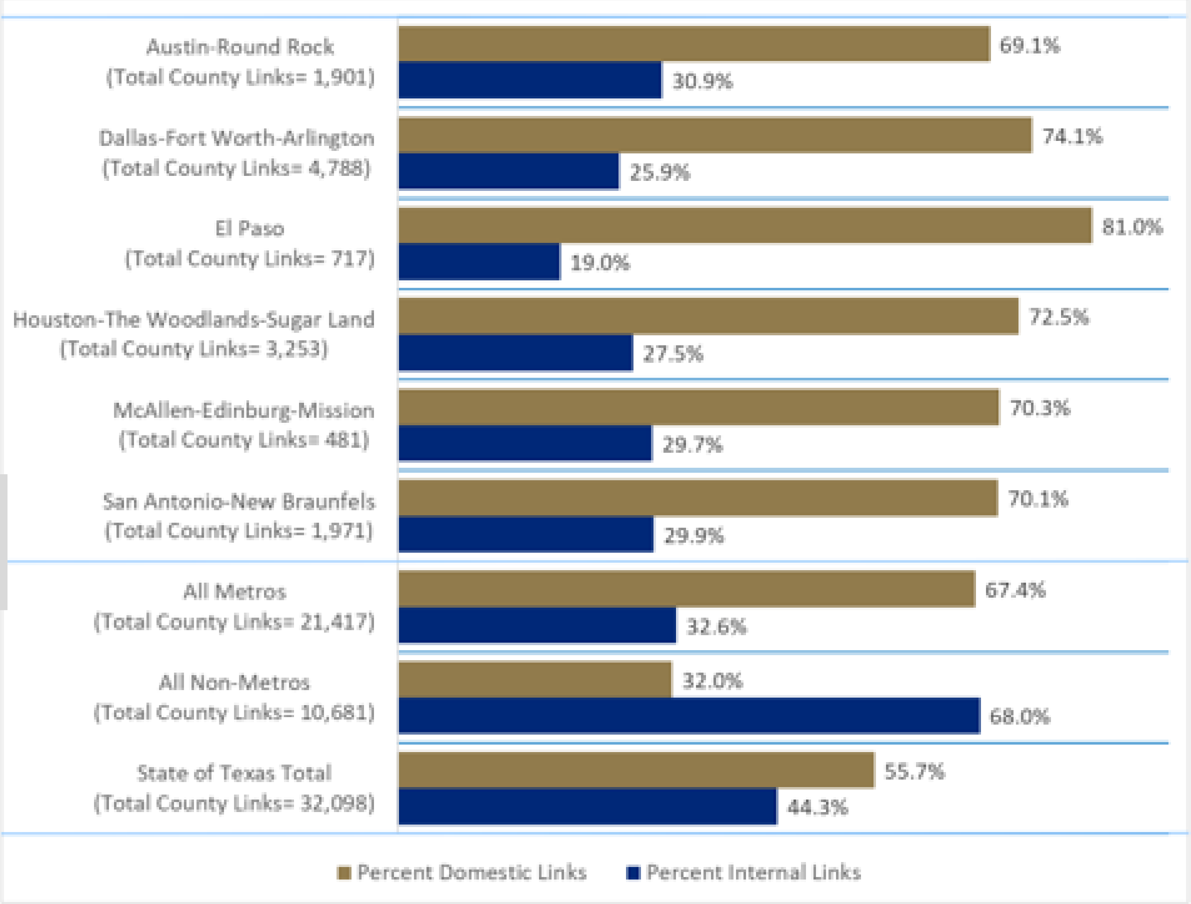
("Growing Divide" contd.)

- Recent trends show MSAs gaining >100,000 residents/year through domestic migration while the gain from internal migration is close to 6,000/year – an external-to-internal ratio of almost 17:1.
- **MSAs also capture 94% of all immigrants.**
- Non-metro areas also have rates of natural increase (births & deaths) much lower than MSAs.

Metro areas have greater migration efficiency and have twice as many migrants per link.

- County-to-county links provide a gauge of migration efficiency, i.e. the more moves per migration link, the more efficient the migration connectivity between the county pairs.
- Combined, metro counties had 84 gross migrants per county-to-county link. For the non-metro counties were 40 gross migrants per county pair.

Figure 4. County-to-County Links by Internal and Domestic Percentages for Texas MSAs,* 2010-2014



Source: U.S. Census Bureau, 2016. ACS County-to-County Migration Flows, 2010-2014
Note: *MSAs with 2010 populations of 500,000 or more.

MSAs = population of >500K

Source: Texas Demographic Center, Report on Recent Metropolitan Migration Patterns in Texas. OCT 2017. https://demographics.texas.gov/Resources/publications/2017/2017_10_18_UrbanTexas.pdf

TEXAS Migration - Internal Links, Metro & non-Metro

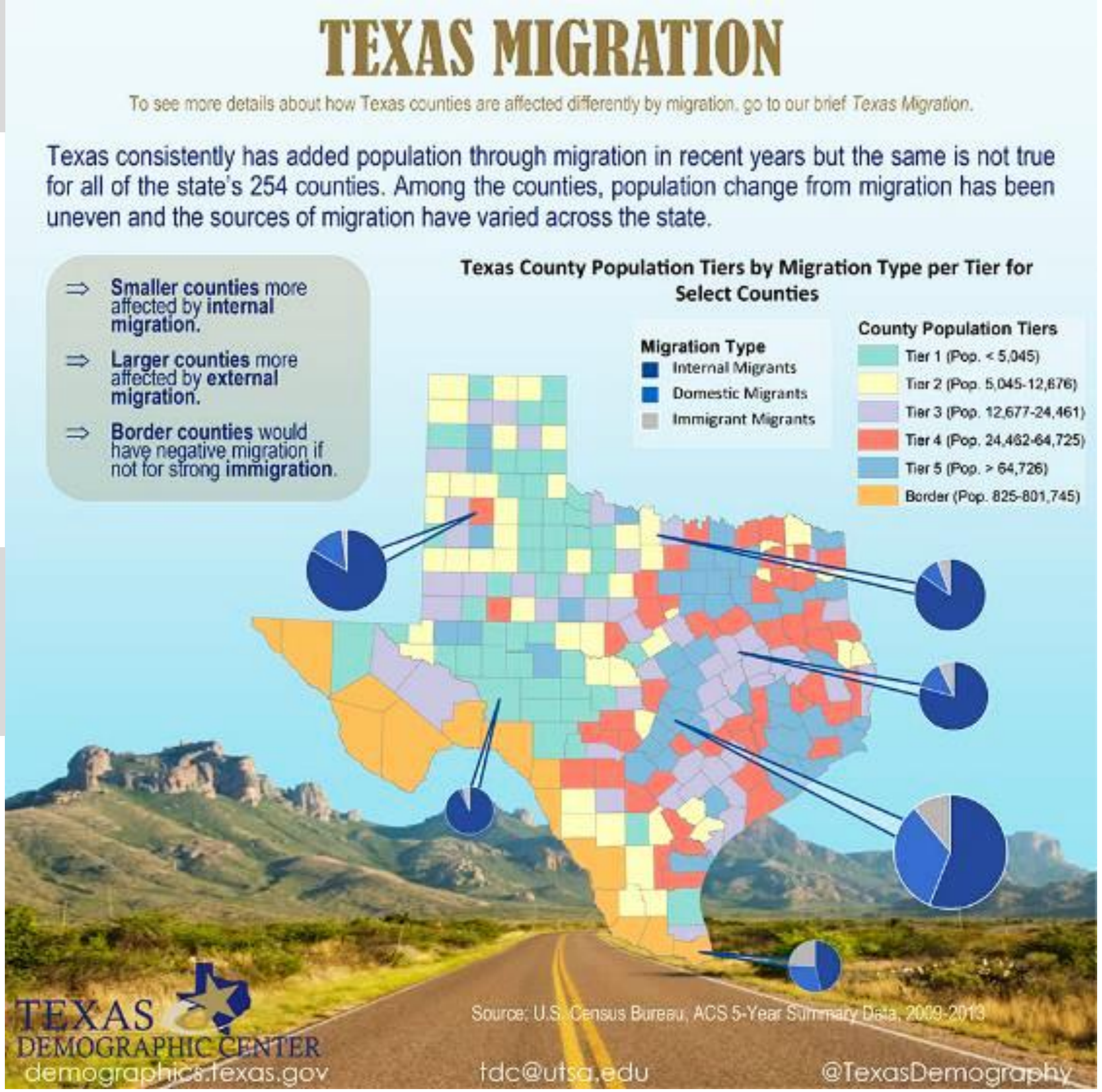
Metro and non-metro areas have distinct migration linkages.

Compared to non-metro areas, metro areas have:

- More county-to-county links
- More external links
- Greater link connectivity
- Greater geographic heterogeneity in the links
- More migrants per link.

Migration streams in metropolitan Texas are more highly developed than are those in nonmetropolitan areas

- **Migration has favored urban population growth over rural population growth.**
- **Migration has facilitated a greater diversity of origin-destination contacts in urban areas.** With this, the migration streams of urban and rural areas differ not only in their numbers of migrants but also in the characteristics of these migrants.



Dangers of Growth, Housing & Transportation

- *Growth brings its own challenges.*
- *Texas' population is expected to reach nearly 60 million by 2050, bringing with it skyrocketing demand for water, housing, transportation, schools and jobs.*
- *Not all areas of Texas are growing. Rural counties losing residents to metropolitan areas face their own challenges, such as access to health care, teacher shortages and inadequate local government revenues.*

- **Housing** in Texas' urban areas is increasingly expensive, due in part to high demand from new residents.
- **Texas home sales and prices** hit record highs in both **2015 & 2016**.*
- Texas' homeownership rate was **61.5% in 2016, 8th lowest** among the 50 states, and it's been falling since 2008, due at least in part to rising housing costs.
- **Transportation** needs will change dramatically. In some areas, highways such as I-35 and I-10 can't keep up with *current* traffic. Of course, remote-working/tele-working, ridesharing and mass transit will change now. As we transition out of the pandemic, Texas cities can expect worsening traffic and deteriorating road conditions.

EXHIBIT 1: MEDIAN PRICES, NEW AND EXISTING SINGLE-FAMILY HOMES, 2017

: Texas A&M Real Estate Center

* Source: Texas Association of Realtors

TEXAS Housing Costs v Income

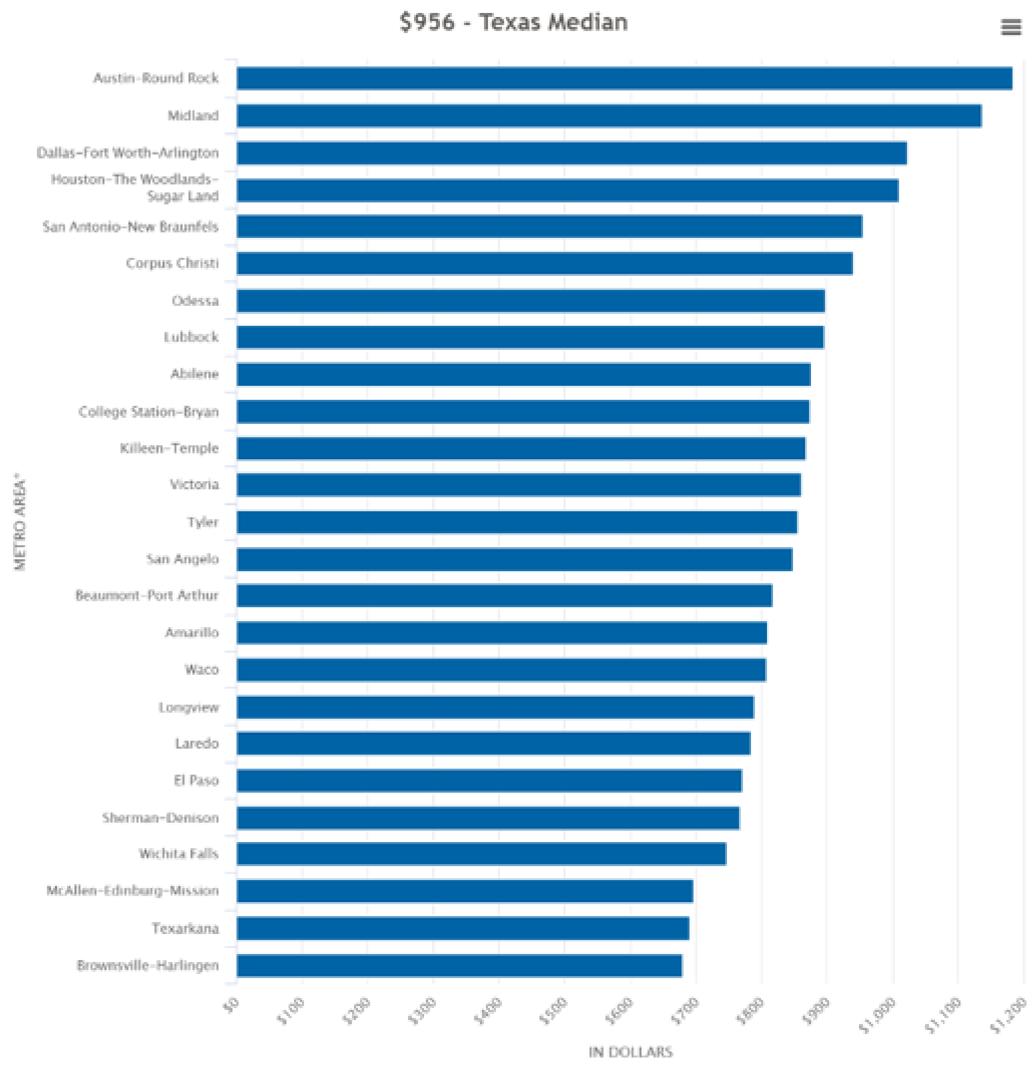
High housing costs and availability pose challenges for households and for the state's economy pre-pandemic and more now for higher density areas.

Cost and availability of affordable housing

- Determines a family's access to work, education, shopping and more.
- Affects employers' ability to hire and retain qualified workers, which in turn can influence where companies choose to locate and expand.

Although **Texas' housing affordability remains favorable compared to other states**, high housing costs in some regions force many households to make serious tradeoffs including commuting farther to work each day, postponing or forgoing homeownership, living in more crowded housing and spending a greater share of income on housing-- trade-offs are particularly challenging for households with low incomes.

EXHIBIT 3: ESTIMATED MEDIAN MONTHLY GROSS RENTS IN TEXAS METRO AREAS, 2016



*Metropolitan Statistical Area as defined by the federal government.
Source: U.S. Census Bureau

TEXAS Housing: Cost-Burdened

Economic growth and population increases will put continuing upward pressure on the state's home prices and rents. If Texas wants to maintain its overall reputation for a low cost of living, state and local policymakers must consider the factors driving price increases — and act on those they can influence.

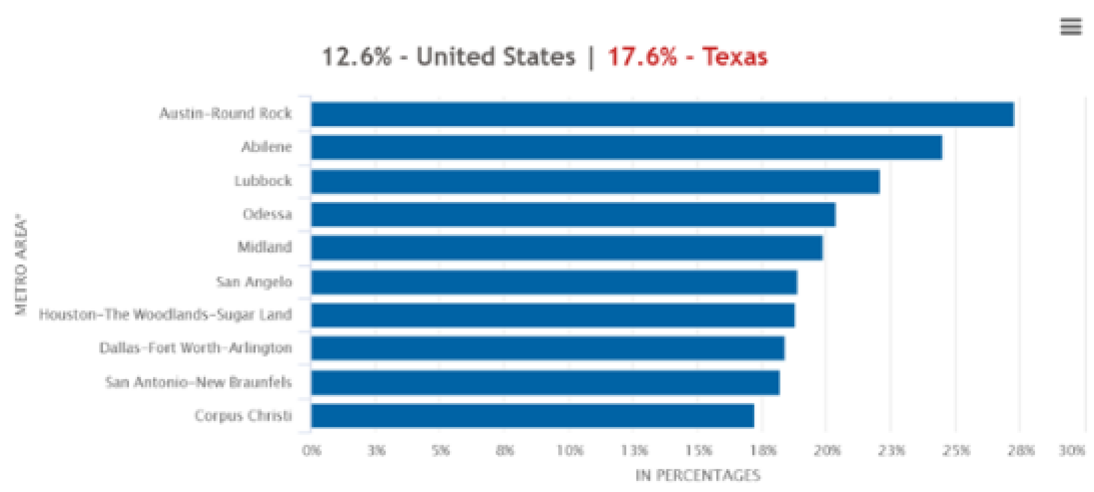
HOME OWNERS

- **26.4% of Texas homeowners with mortgages are "cost-burdened,"** spending >30% of household incomes on house payments, slightly below U.S. level of 28.%.
- In addition to mortgage, **property taxes** also make it more difficult to afford homes. Texas had the nation's **6th highest "effective" property tax rate** (the average amount of residential property taxes paid expressed as a percentage of home value — **in Texas' case, 1.67%.****

RENTERS are even more likely to be cost-burdened

- **44% of Texas renters and** 46.1% of renters in the U.S. spend >30% of household income on rent & utilities.
- A Texan household must earn **$18.38/hr** or $38,234/yr to afford the state's average fair-market rent of $956 for a two-bedroom apartment without being cost-burdened.*** → **avg TX renter earns only $17.89/hr.**

EXHIBIT 4: TEN FASTEST-GROWING MEDIAN MONTHLY GROSS RENTS, 2011-2016



*Metropolitan Statistical Area as defined by the federal government.
Source: U.S. Census Bureau

https://comptroller.texas.gov/economy/fiscal-notes/2018/march/housing.php#article
** Tax Foundation analysis, based on 2014 taxes.
*** Texas State Affordable Housing Corporation.

Trends: COVID19 Impact to Relocation & Housing

COVID-19 Impact:

- Observed **relocations/migration to suburbs and lower density centers.**
- Tightened supply of available (and affordable) housing in urban areas causing **further increases in ownership & rent costs in higher density areas.**
- **Opportunity for lower density communities** to provide affordable and quality housing to attract migration out of city centers

RURAL IMPACT: GLOBAL PERSPECTIVE

OECD Findings

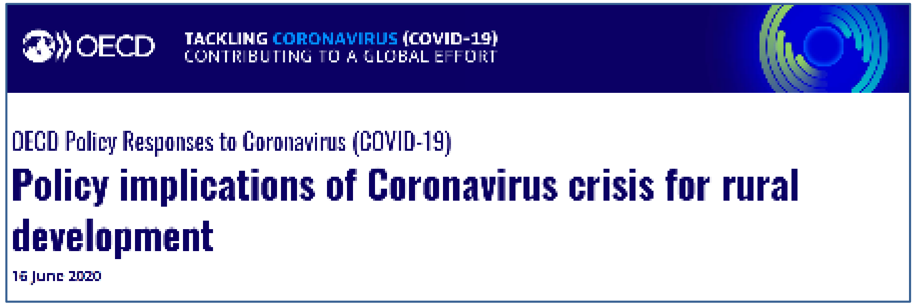
OECD Recommended Opportunities for Rural Areas, Globally

Opportunities

Higher relevance to enhance quality and use of digital tools/broadband in rural regions
Remote distributed work might increase linkages between rural and urban
Shift in consuming habits can favor local products and destinations
Greater awarness to ensure accessibility to quality services (ehealth, e-education)
Reshoring of strategic industries that were once delocalised (i.e. raw materials)
Momentum to accelerate a just transition towards a low-carbon economy for rural communities
Mobilise and strengthen local networks and co-operative structures to face future shocks

Global Rural Pandemic Vulnerabilities (1)

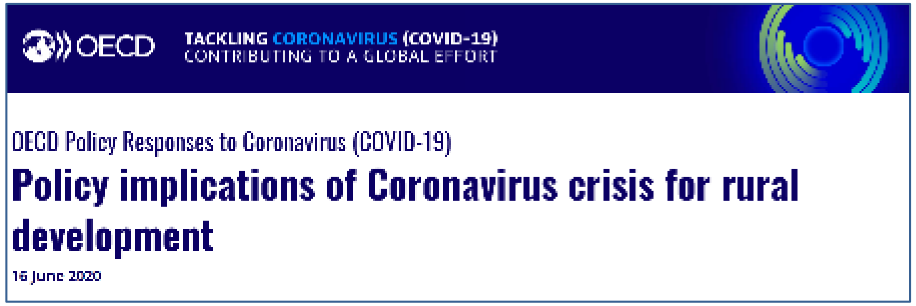
- A large share of population who are at higher risk for severe illness, notably the elderly and the poor.
- A much less diversified economy.



- A high share of workers in essential jobs (agriculture, food processing, etc.) coupled with a limited capability to undertake these jobs from home. This makes telework and social distancing much harder to implement.
- Lower incomes and lower savings may have forced rural people to continue to work and/or not visit the hospital when needed.
- Health centers that are typically not well suited for dealing with COVID-19 (i.e. lack of ICUs and doctors with specialized skills).
- Larger distance to access hospitals, testing centers, etc.
- A large digital divide, with lower accessibility to internet (both in coverage and connection speed) and fewer people with adequate devices and the required skills to use them.

Source: OECD, http://www.oecd.org/coronavirus/policy-responses/policy-implications-of-coronavirus-crisis-for-rural-development-6b9d189a/#endnotea0z3

Global Rural Pandemic Vulnerabilities (2)


OECD TACKLING CORONAVIRUS (COVID-19) CONTRIBUTING TO A GLOBAL EFFORT

OECD Policy Responses to Coronavirus (COVID-19)

Policy implications of Coronavirus crisis for rural development

16 June 2020

Travel Challenges

- Potential shift in buying habits to favor local goods and tourism sites, as well as production from small local businesses and primary producers. Ex. overcrowded destinations might see high reductions in tourism flows, while smaller rural destinations may become more popular.

Supply Chain

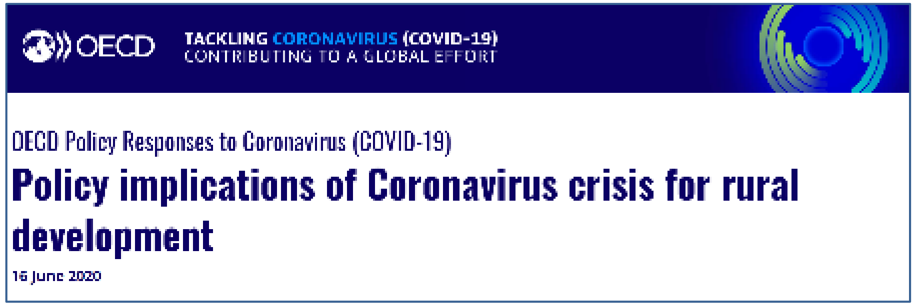
- In some OECD countries, discussions about reshoring and repatriation of strategic industries that were once delocalized (i.e. raw materials) can reactivate rural economies as a host of those industries.

Green trends

- First, rural economic sectors, such as agriculture, mining and forestry, are important emitters of greenhouse gasses. Reducing emissions in these sectors to avoid the worst impacts of climate change and safeguard biodiversity, while remaining economically viable, will be a key priority in the coming years.
- Second, rural areas comprise the vast majority of the land, water and other natural resources, which are fundamental to absorbing CO2, providing eco-system services and safeguarding biodiversity. Supporting countries in developing pathways for climate conscious rural economic development will be key to the recovery of COVID-19.

*OECD (2020), Tourism Policy Responses, https://read.oecd-ilibrary.org/view/?ref=124_124984-7uf8nm95se&title=Covid-19_Tourism_Policy_Responses

Global Rural Pandemic Vulnerabilities (2)


OECD TACKLING CORONAVIRUS (COVID-19) CONTRIBUTING TO A GLOBAL EFFORT

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Digital Connectivity

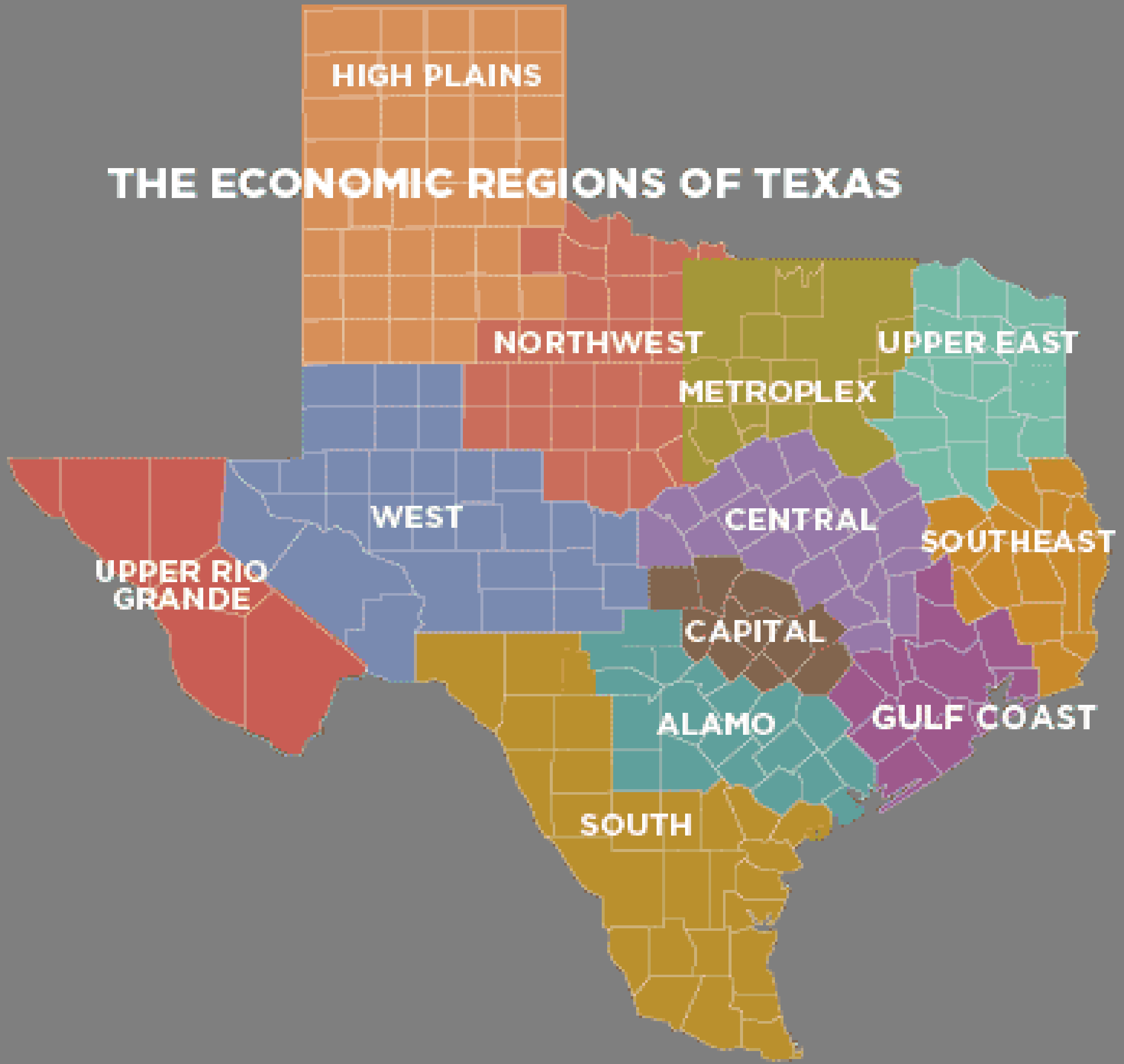
- Confinement measures, aimed at flattening the curve of infection rates through self-isolation and reduced mobility, have halted the delivery of some services, notably schooling. Pockets of workers and children across the OECD are unable to telework or participate in distance-learning due to a lack of digital infrastructure and digital services.
- Gap in digital infrastructure before the current crisis between rural regions and urban was substantial. While 85% of urban households had access to 30 Mbps of broadband, in rural regions only 56% of rural households had access.
- There is a consistent and growing difference between cites and other less densely populated areas.

*OECD (2019), Going Digital: Shaping Policies, Improving Lives, OECD Publishing, Paris, https://doi.org/10.1787/9789264312012-en.

REGIONAL SNAPSHOTS

TEXAS Comptroller

REGIONAL ECONOMIC DATA



12 Comptroller Economic Regions

Texas is both urban and rural, with a dynamic and diverse economy. Its economy has seen a steady upswing in the last 10 years, with the state's economic diversity insulating Texas from the full effect of the 2009 recession and helping to mitigate the results of the oil price plunge in 2014.

Since the 2010 Census, Texas has added more than 3 million people. The state's most populous counties, as well as all MSAs, have median ages on par with or younger than the state's median of 34.2 years.

Unsurprisingly, businesses supporting the oil and gas industry are highly concentrated in the state. But, some of the highest annual wage increases during the last decade were in the air transportation subsector. The Texas economy's strength can be illustrated by the increase in receipts subject to Texas state sales tax – about $170 billion (more than 50 percent) since the 2009. Consistent growth in the Capital and Metroplex regions has led the way. With continued economic vibrancy and diversity, Texas is poised to continue its historic economic success.

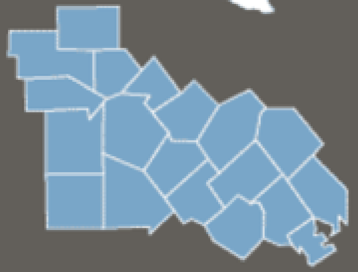
https://comptroller.texas.gov/economy/economic-data/regions/snap-texas.php

TEXAS Comptroller, REGIONAL SUMMARIES

	REGION	Notes
1	**Alamo**	19-county Alamo Region covers about 18,000 square miles in south central Texas, stretching from Fredericksburg and Kerrville in the Hill Country to Port Lavaca on the Gulf Coast.
2	**Capital**	10-county Capital Region covers about 8,600 square miles in central Texas, stretching from Llano to San Marcos and from La Grange to Georgetown.
3	**Central Texas**	20-county Central Texas Region covers about 17,400 square miles in the heart of Texas, stretching from Hillsboro on the north to Interstate 45 on the east to East Yegua Creek on the south to the conjunction of the San Saba and Colorado rivers.
4	**Gulf Coast**	13-county Gulf Coast Region covers about 13,900 square miles in eastern coastal Texas, stretching from Huntsville on the north to Matagorda Bay and Galveston along the Gulf Coast.
5	**High Plains**	41-county High Plains Region covers about 39,500 square miles in north Texas, stretching from the Oklahoma state line on the east and north and the New Mexico state line on the west to the Lubbock metro area on the south.
6	**Metroplex**	19-county Metroplex Region covers about 15,600 square miles in northern Texas, stretching from Oklahoma south to the Brazos River and from the Cedar Creek Reservoir on the east to Possum Kingdom Lake on the west.
7	**Northwest**	30-county Northwest Region covers about 27,600 square miles in northern Texas, stretching from Oklahoma on the north to the Colorado River on the south and abutting Big Spring on the west and the Fort Worth metro on the east.
8	**Southeast**	15-county Southeast Region covers about 12,800 square miles in easternmost Texas, stretching from the Gulf of Mexico to Nacogdoches along the Louisiana border.
9	**South Texas**	28-county South Texas Region covers about 37,800 square miles in southernmost Texas, stretching along the Mexican border from Del Rio to Brownsville and up the Gulf coast past Rockport to Aransas Pass and San Antonio Bay.
10	**Upper East**	23-county Upper East Region encompasses about 16,000 square miles in the northeast corner of Texas, stretching from the Arkansas and Louisiana borders on the east to Cedar Creek Reservoir in the west.
11	**Upper Rio Grande**	6-county Upper Rio Grande Region covers about 21,700 square miles in westernmost Texas. It stretches from the extreme western part of the state, where it meets Mexico and New Mexico, along the Rio Grande past Big Bend and up to the New Mexico border around the area of Guadalupe Mountains National Park.
12	**West Texas**	30-county West Texas Region covers about 39,800 square miles in western Texas, stretching from the cities of Mason and Brady on the east, to the Rio Grande just south of Dryden and north to the city of Seminole.

REGIONAL SNAPSHOT

ALAMO REGION



As the state's chief financial officer, I am charged with monitoring the economic health of our state and its regions. The state of Texas has 12 economic regions including the Alamo Region.

The 19-county Alamo Region covers about 18,000 square miles in south central Texas, stretching from Fredericksburg and Kerrville in the Hill Country to Port Lavaca on the Gulf Coast. Below we examine demographic and economic statistics that influence the region's economy.

Glenn Hegar
Texas Comptroller of Public Accounts

The Alamo Region and its 19 counties have many economic variables and challenges that are unique. The region as a whole is more diverse than the state, and every county in the region is growing. Household income is on par with the state, but a majority of counties outside of Bexar County show a median age significantly older than the state. The region's job growth and wage growth are both slightly higher than the state. The region's high school education attainment is growing, as is the local economy. While the federal government, including the U.S. military, has a large footprint in the region, businesses supporting the oil industry are highly concentrated in the region and continue to make the region's economy robust.

ALAMO REGION COUNTIES:

ATASCOSA	GILLESPIE	KERR
BANDERA	GOLIAD	LAVACA
BEXAR	GONZALES	MEDINA
CALHOUN	GUADALUPE	VICTORIA
COMAL	JACKSON	WILSON
DEWITT	KARNES	
FRIO	KENDALL	

CONCENTRATED INDUSTRIES:

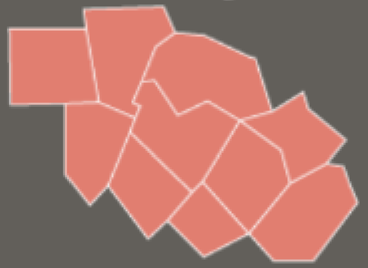
PIPELINE TRANSPORTATION
SUPPORT ACTIVITIES FOR MINING
NATIONAL SECURITY AND INTERNATIONAL AFFAIRS
DATA PROCESSING, HOSTING AND RELATED SERVICES
OIL AND GAS EXTRACTION

FISHING, HUNTING AND TRAPPING
LEATHER AND ALLIED PRODUCT MANUFACTURING
INSURANCE CARRIERS AND RELATED ACTIVITIES
RENTAL AND LEASING SERVICES
CREDIT INTERMEDIATION AND RELATED ACTIVITIES

Source: JobsEQ®
comptroller.texas.gov

REGIONAL SNAPSHOT

CAPITAL REGION



As the state's chief financial officer, I am charged with monitoring the economic health of our state and its regions. The state of Texas has 12 economic regions including the Capital Region.

The 10-county Capital Region covers about 8,600 square miles in central Texas, stretching from Llano to San Marcos and from La Grange to Georgetown. Below we examine demographic and economic statistics that influence the region's economy.

Glenn Hegar
Texas Comptroller of Public Accounts

The Capital Region and its 10 counties have many unique economic variables and challenges. This region touts a highly educated population with high income and low unemployment.
If this region were a state, it would have the second-highest share of population 25 and older with at least a bachelor's degree. The region has had a population growth of 22 percent since 2010, with more than 43 percent of households having incomes over $75,000.
Boasts a large concentration of industries surrounding the technology sector and has maintained a high employment growth rate from 2007 to 2017, combined with high average wages. The U.S. Army's selection of the region for the location of its Futures Command is anticipated to add to economic growth.

CAPITAL REGION COUNTIES:

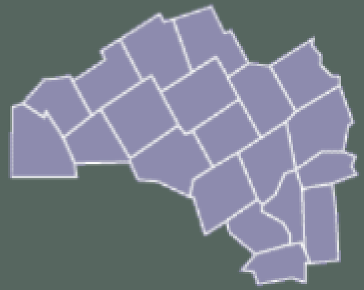
BASTROP	HAYS
BLANCO	LEE
BURNET	LLANO
CALDWELL	TRAVIS
FAYETTE	WILLIAMSON

CONCENTRATED INDUSTRIES:

- COMPUTER AND ELECTRONIC PRODUCT MANUFACTURING
- FUNDS, TRUSTS AND OTHER FINANCIAL VEHICLES
- DATA PROCESSING, HOSTING AND RELATED SERVICES
- MUSEUMS, HISTORICAL SITES AND SIMILAR INSTITUTIONS
- ADMINISTRATION OF HUMAN RESOURCE PROGRAMS
- ADMINISTRATION OF ENVIRONMENTAL QUALITY PROGRAMS
- HEAVY AND CIVIL ENGINEERING CONSTRUCTION
- MERCHANT WHOLESALERS, DURABLE GOODS
- TELECOMMUNICATIONS
- PROFESSIONAL, SCIENTIFIC AND TECHNICAL SERVICES

Source: JobsEQ®

REGIONAL SNAPSHOT CENTRAL TEXAS REGION



As the state's chief financial officer, I am charged with monitoring the economic health of our state and its regions. The state of Texas has 12 economic regions including the Central Texas Region.

The 20-county Central Texas Region covers about 17,400 square miles in the heart of Texas, stretching from Hillsboro on the north to Interstate 45 on the east to East Yegua Creek on the south to the conjunction of the San Saba and Colorado rivers. Below we examine demographic and economic statistics that influence the region's economy.

Glenn Hegar
Texas Comptroller of Public Accounts

The Central Texas Region is unique in that it has three distinct economic centers: the Waco, Killeen-Temple and College Station-Bryan metropolitan statistical areas (MSAs).

The region has had reasonable population growth across the board since 2010, and its median age is significantly younger than Texas as a whole. The region's employment growth rate is slightly below the state's, but its wage growth is almost double that of the state (Killeen-Temple MSA leads the way regionally).

The U.S. Army at fort Hood has had a meaningful impact on the Central Texas Region's local economies. Additionally, 2017 receipts subject to state sales tax indicate an acceleration in the region's slow and steady rise after the 2009 recession. The eight distinct industry subsectors represented in the region's most highly concentrated industries list attest to the region's diverse economy.

CENTRAL REGION COUNTIES:

BELL	FALLS	LAMPASAS	MILAM
BOSQUE	FREESTONE	LEON	MILLS
BRAZOS	GRIMES	LIMESTONE	ROBERTSON
BURLESON	HAMILTON	MADISON	SAN SABA
CORYELL	HILL	MCLENNAN	WASHINGTON

CONCENTRATED INDUSTRIES:

- LESSORS OF NONFINANCIAL INTANGIBLE ASSETS (EXCEPT COPYRIGHTED WORKS)
- ANIMAL PRODUCTION AND AQUACULTURE
- SUPPORT ACTIVITIES FOR MINING
- MINING (EXCEPT OIL AND GAS)
- HEAVY AND CIVIL ENGINEERING CONSTRUCTION
- PIPELINE TRANSPORTATION
- JUSTICE, PUBLIC ORDER, AND SAFETY ACTIVITIES
- EDUCATIONAL SERVICES
- FURNITURE AND RELATED PRODUCT MANUFACTURING
- PAPER MANUFACTURING

Source: JobsEQ®

REGIONAL SNAPSHOT

GULF COAST REGION

As the state's chief financial officer, I am charged with monitoring the economic health of our state and its regions. The state of Texas has 12 economic regions including the Gulf Coast Region.

The 13-county Gulf Coast Region covers about 13,900 square miles in eastern coastal Texas, stretching from Huntsville on the north to Matagorda Bay and Galveston along the Gulf Coast. Below we examine demographic and economic statistics that influence the region's economy.

Glenn Hegar
Texas Comptroller of Public Accounts

The Gulf Coast Region and its 13 counties contain 25 percent of the state's population, growing 16 percent since 2010, and is the most diverse region in Texas. If this region were a state, it would be the 14th most populous. While the region's median age is on par with that of the state, it has the largest percentage of households with income over $125,000.

The region added more than 400,000 jobs from 2007 to 2017, and the average wage is significantly higher than the state average. The local economy is strong, with about 23 percent of the state's overall sales tax revenue coming from the Gulf Coast Region. Industry concentration in the region primarily revolves around the production of chemical and petroleum products, as well as certain transportation sectors, all contributing positively to this unique local economy.

GULF COAST REGION COUNTIES:

AUSTIN	GALVESTON	WALKER
BRAZORIA	HARRIS	WALLER
CHAMBERS	LIBERTY	WHARTON
COLORADO	MATAGORDA	
FORT BEND	MONTGOMERY	

CONCENTRATED INDUSTRIES:

OIL AND GAS EXTRACTION
PIPELINE TRANSPORTATION
SPACE RESEARCH AND TECHNOLOGY
SUPPORT ACTIVITIES FOR MINING
PETROLEUM AND COAL PRODUCTS MANUFACTURING
WATER TRANSPORTATION
CHEMICAL MANUFACTURING
HEAVY AND CIVIL ENGINEERING
CONSTRUCTION
AIR TRANSPORTATION
SUPPORT ACTIVITIES FOR TRANSPORTATION

Source: JobsEQ®

REGIONAL SNAPSHOT

HIGH PLAINS REGION

As the state's chief financial officer, I am charged with monitoring the economic health of our state and its regions. The state of Texas has 12 economic regions including the High Plains Region.

The 41-county High Plains Region covers about 39,500 square miles in north Texas, stretching from the Oklahoma state line on the the east and north, to the New Mexico state line on the west, to the Lubbock metro area on the south. Below we examine demographic and economic statistics that influence the region's economy.

Glenn Hegar
Texas Comptroller of Public Accounts

The High Plains Region's median age is on par with that of Texas; however, Lubbock County – the region's most populous county – is significantly younger than the state as a whole. The high school graduation rate in the region is above the state average, and about 27 percent of the population is under 18 years of age.

Individual wages in the region are below the state average, but wages are increasing at a faster pace than the state average. The region's local economy peaked in 2014, falling off since. However, sales receipts subject to state sales tax in 2017 indicate the local economy is regaining its upward trend. These economic factors, combined with the agriculture industry's large footprint in the region, differentiate the High Plains regional economy.

HIGH PLAINS REGION COUNTIES:

ARMSTRONG	COLLINGSWORTH	GARZA	HOCKLEY	MOORE	ROBERTS
BAILEY	CROSBY	GRAY	HUTCHINSON	MOTLEY	SHERMAN
BRISCOE	DALLAM	HALE	KING	OCHILTREE	SWISHER
CARSON	DEAF SMITH	HALL	LAMB	OLDHAM	TERRY
CASTRO	DICKENS	HANSFORD	LIPSCOMB	PARMER	WHEELER
CHILDRESS	DONLEY	HARTLEY	LUBBOCK	POTTER	YOAKUM
COCHRAN	FLOYD	HEMPHILL	LYNN	RANDALL	

CONCENTRATED INDUSTRIES:

- ANIMAL PRODUCTION AND AQUACULTURE
- OIL AND GAS EXTRACTION
- SUPPORT ACTIVITIES FOR MINING
- LEATHER AND ALLIED PRODUCT MANUFACTURING
- RAIL TRANSPORTATION
- PIPELINE TRANSPORTATION
- FOOD MANUFACTURING
- CROP PRODUCTION
- PETROLEUM AND COAL PRODUCTS MANUFACTURING
- SUPPORT ACTIVITIES FOR AGRICULTURE AND FORESTRY

Source: JobsEQ®

REGIONAL SNAPSHOT

METROPLEX REGION

As the state's chief financial officer, I am charged with monitoring the economic health of our state and its regions. The state of Texas has 12 economic regions including the Metroplex Region.

The 19-county Metroplex Region covers about 15,600 square miles in northern Texas, stretching from Oklahoma south to the Brazos River and from the Cedar Creek Reservoir on the east to Possum Kingdom Lake on the west. Below we examine demographic and economic statistics that influence the region's economy.

Glenn Hegar
Texas Comptroller of Public Accounts

The Metroplex Region is comprised of19 counties. The region has similar racial diversity as Texas and contains 27% of the state's population. All counties in this region are experiencing population growth. If this region were a state, it would be the 13th most populated. The region's high school graduation rate mirrors the state's rates, and there are many options for higher educational achievement.

The local economy is strong and accounts for about 24 percent of the state's overall sales tax revenue collections. The region added more than 550,000 jobs between 2007 and 2017 and had job growth at a higher rate than the state. However, it is the concentration of high-paying, high-growth industries (including air transportation, money and banking and technology) that makes the region's economy distinctive.

METROPLEX REGION COUNTIES:

COLLIN	ELLIS	HOOD	NAVARRO	SOMERVELL
COOKE	ERATH	HUNT	PALO PINTO	TARRANT
DALLAS	FANNIN	JOHNSON	PARKER	WISE
DENTON	GRAYSON	KAUFMAN	ROCKWALL	

CONCENTRATED INDUSTRIES:

- OIL AND GAS EXTRACTION
- AIR TRANSPORTATION
- MONETARY AUTHORITIES - CENTRAL BANK
- TELECOMMUNICATIONS
- DATA PROCESSING, HOSTING AND RELATED SERVICES
- CREDIT INTERMEDIATION AND RELATED ACTIVITIES
- COMPUTER AND ELECTRONIC PRODUCT MANUFACTURING
- WAREHOUSING AND STORAGE
- MUSEUMS, HISTORICAL SITES AND SIMILAR INSTITUTIONS
- SUPPORT ACTIVITIES FOR MINING

Source: JobsEQ®

REGIONAL SNAPSHOT

NORTHWEST REGION

As the state's chief financial officer, I am charged with monitoring the economic health of our state and its regions. The state of Texas has 12 economic regions including the Northwest Region.

The 30-county Northwest Region covers about 27,600 square miles in northern Texas, stretching from Oklahoma on the north to the Colorado River on the south, and abutting Big Spring on the west and the Fort Worth metro on the east. Below we examine demographic and economic statistics that influence the region's economy.

Glenn Hegar
Texas Comptroller of Public Accounts

The Northwest Region, comprised of 30 counties, is significantly older than the state as a whole and is less diverse with the lowest percentage of minority groups. Population growth has been stable since 2010, and there was a loss of jobs in the region from 2007 to 2017. However, individual wages have increased at a rate higher than the state as a whole. The high school graduation rate has increased almost 6.5 percent since 2010, consistently outperforming the rest of the state. The region's receipts subject to state sales tax have had a positive upward trend following the 2009 recession, with a peak in 2014. Sales tax receipts from 2017 indicate this regional economy is regaining momentum.

NORTHWEST REGION COUNTIES:

ARCHER	EASTLAND	KNOX	STONEWALL
BAYLOR	FISHER	MITCHELL	TAYLOR
BROWN	FOARD	MONTAGUE	THROCKMORTON
CALLAHAN	HARDEMAN	NOLAN	WICHITA
CLAY	HASKELL	RUNNELS	WILBARGER
COLEMAN	JACK	SCURRY	YOUNG
COMANCHE	JONES	SHACKELFORD	
COTTLE	KENT	STEPHENS	

CONCENTRATED INDUSTRIES:

- RAIL TRANSPORTATION
- SUPPORT ACTIVITIES FOR MINING
- OIL AND GAS EXTRACTION
- LEATHER AND ALLIED PRODUCT MANUFACTURING
- PIPELINE TRANSPORTATION
- ANIMAL PRODUCTION AND AQUACULTURE
- NONMETALLIC MINERAL PRODUCT MANUFACTURING
- JUSTICE, PUBLIC ORDER AND SAFETY ACTIVITIES
- GASOLINE STATIONS
- NATIONAL SECURITY AND INTER-NATIONAL AFFAIRS

Source: JobsEQ®

REGIONAL SNAPSHOT

SOUTHEAST REGION

As the state's chief financial officer, I am charged with monitoring the economic health of our state and its regions. The state of Texas has 12 economic regions including the Southeast Region.

The 15-county Southeast Region covers about 12,800 square miles in easternmost Texas, stretching from the Gulf of Mexico to Nacogdoches along the Louisiana border. Below we examine demographic and economic statistics that influence the region's economy.

Glenn Hegar
Texas Comptroller of Public Accounts

The Southeast Region took longer than most regions in Texas to recover from the 2009 recession. However, the trend has been upward since then, with receipts subject to state sales tax continuing to grow in 2017. While the region has had slower employment growth than the rest of the state, the average wage increase was double the state average between 2007 and 2017. The most concentrated industries in the region involve chemical and petroleum products production and construction services, which add to the vibrancy of the Southeast Region's economy.

SOUTHEAST REGION COUNTIES:

ANGELINA	NACOGDOCHES	SAN AUGUSTINE
HARDIN	NEWTON	SAN JACINTO
HOUSTON	ORANGE	SHELBY
JASPER	POLK	TRINITY
JEFFERSON	SABINE	TYLER

CONCENTRATED INDUSTRIES:

- PETROLEUM AND COAL PRODUCTS MANUFACTURING
- FORESTRY AND LOGGING
- PIPELINE TRANSPORTATION
- CHEMICAL MANUFACTURING
- WOOD PRODUCT MANUFACTURING
- HEAVY AND CIVIL ENGINEERING CONSTRUCTION
- CONSTRUCTION OF BUILDINGS
- SUPPORT ACTIVITIES FOR MINING
- JUSTICE, PUBLIC ORDER AND SAFETY ACTIVITIES
- PAPER MANUFACTURING

Source: JobsEQ®

REGIONAL SNAPSHOT

SOUTH TEXAS REGION

As the state's chief financial officer, I am charged with monitoring the economic health of our state and its regions. The state of Texas has 12 economic regions including the South Texas Region.

The 28-county South Texas Region covers about 37,800 square miles in southernmost Texas, stretching along the Mexican border from Del Rio to Brownsville and up the Gulf Coast past Rockport to Aransas Pass and San Antonio Bay. Below we examine demographic and economic statistics that influence the region's economy.

Glenn Hegar
Texas Comptroller of Public Accounts

The South Texas Region and its 28 counties have many economic variables and challenges that are unique. The region contains six of the counties with the youngest average populations in the state with more than 30 percent younger than 18 years of age. If this region were a state, it would have the youngest population in the nation.

Household income in the South Texas Region is significantly lower than the state's with 59 percent of households having an income below $50,000. Thirty-five percent of the region's workforce is employed within four industries (justice; public order and safety activities; ambulatory health care services; and educational services and social assistance), helping to differentiate the South Texas Region from other regions.

SOUTH REGION COUNTIES:

ARANSAS	EDWARDS	KLEBERG	REAL	WEBB
BEE	HIDALGO	LA SALLE	REFUGIO	WILLACY
BROOKS	JIM HOGG	LIVE OAK	SAN PATRICIO	ZAPATA
CAMERON	JIM WELLS	MAVERICK	STARR	ZAVALA
DIMMIT	KENEDY	MCMULLEN	UVALDE	
DUVAL	KINNEY	NUECES	VAL VERDE	

CONCENTRATED INDUSTRIES:

- SUPPORT ACTIVITIES FOR MINING
- LEATHER AND ALLIED PRODUCT MANUFACTURING
- PETROLEUM AND COAL PRODUCTS MANUFACTURING
- FISHING, HUNTING AND TRAPPING
- PIPELINE TRANSPORTATION
- SUPPORT ACTIVITIES FOR TRANSPORTATION
- JUSTICE, PUBLIC ORDER AND SAFETY ACTIVITIES
- AMBULATORY HEALTH CARE SERVICES
- RAIL TRANSPORTATION
- OIL AND GAS EXTRACTION

Source: JobsEQ®

REGIONAL SNAPSHOT

UPPER EAST REGION

As the state's chief financial officer, I am charged with monitoring the economic health of our state and its regions. The state of Texas has 12 economic regions including the Upper East Region.

The 23-county Upper East Region encompasses about 16,000 square miles in the northeast corner of Texas, stretching from the Arkansas and Louisiana borders on the east to Cedar Creek Reservoir on the west. Below we examine demographic and economic statistics that influence the region's economy.

Glenn Hegar
Texas Comptroller of Public Accounts

The Upper East Region is comprised of 23 counties. The economic hub is Smith County, the region's most populous county as well as the fastest growing. The region has seen limited population growth since 2010; its median age is significantly older than the state's as a whole; and average household income is less than the statewide average. The U.S. military's presence has had a positive economic impact on the region, however, and most of the top 10 most concentrated industries saw a significant rise in average wages from 2007 to 2017. The region's high school graduation rate has reliably outperformed the state's rate year after year, and the local economy has seen a steady increase in receipts subject to state sales tax since the 2009 recession.

UPPER EAST REGION COUNTIES:

ANDERSON	DELTA	HOPKINS	RAINS	UPSHUR
BOWIE	FRANKLIN	LAMAR	RED RIVER	VAN ZANDT
CAMP	GREGG	MARION	RUSK	WOOD
CASS	HARRISON	MORRIS	SMITH	
CHEROKEE	HENDERSON	PANOLA	TITUS	

CONCENTRATED INDUSTRIES:

SUPPORT ACTIVITIES FOR MINING
PIPELINE TRANSPORTATION
OIL AND GAS EXTRACTION
WOOD PRODUCT MANUFACTURING
FORESTRY AND LOGGING
ANIMAL PRODUCTION AND AQUACULTURE
PAPER MANUFACTURING
PETROLEUM AND COAL PRODUCTS MANUFACTURING
FOOD MANUFACTURING
HEAVY AND CIVIL ENGINEERING CONSTRUCTION

Source: JobsEQ®

REGIONAL SNAPSHOT

UPPER RIO GRANDE REGION

As the state's chief financial officer, I am charged with monitoring the economic health of our state and its regions. The state of Texas has 12 economic regions including the Upper Rio Grande Region.

The six-county Upper Rio Grande Region covers about 21,700 square miles in westernmost Texas. It stretches from the extreme western part of the state, where it meets Mexico and New Mexico, along the Rio Grande past Big Bend and up to the New Mexico border around the area of Guadalupe Mountains National Park. Below we examine demographic economic statistics that influence the region's economy.

Glenn Hegar
Texas Comptroller of Public Accounts

UPPER RIO GRANDE REGION COUNTIES:

BREWSTER	HUDSPETH
CULBERSON	JEFF DAVIS
EL PASO	PRESIDIO

CONCENTRATED INDUSTRIES:

- LEATHER AND ALLIED PRODUCT MANUFACTURING
- APPAREL MANUFACTURING
- JUSTICE, PUBLIC ORDER AND SAFETY ACTIVITIES
- PETROLEUM AND COAL PRODUCTS MANUFACTURING
- TRUCK TRANSPORTATION
- MUSEUMS, HISTORICAL SITES AND SIMILAR INSTITUTIONS
- PRIMARY METAL MANUFACTURING
- ADMINISTRATION OF HOUSING PROGRAMS, URBAN PLANNING AND COMMUNITY DEVELOPMENT
- ELECTRONICS AND APPLIANCE STORES
- CLOTHING AND CLOTHING ACCESSORIES STORES

Source: JobsEQ®

The Upper Rio Grande Region and its six counties are predominantly rural with a strong urban core and a steady, consistent economy. El Paso County is home to 97 percent of the region's population, which is significantly younger than the statewide average age. However, this is offset by the less populated counties, whose populations are all significantly older than the rest of the state. of the region's households, 58 percent have average incomes less than $50,000.

Over the past decade, this region's economy has been the most consistent with a gradual yet continuously positive trajectory. While the region's most highly concentrated industries primarily revolve around manufacturing and public safety, the U.S. military base at fort Bliss has played a key role in keeping the region's economy robust.

REGIONAL SNAPSHOT

WEST TEXAS REGION

As the state's chief financial officer, I am charged with monitoring the economic health of our state and its regions. The state of Texas has 12 economic regions including the West Region.

The 19-county West Region covers about 15,600 square miles in northern Texas, stretching from Oklahoma south to the Brazos River and from the Cedar Creek Reservoir on the east to Possum Kingdom Lake on the west. Below we examine demographic and economic statistics that influence the region's economy.

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Texas Comptroller of Public Accounts

The West Texas Region and its 30 counties have a combined median age of its residents that is slightly younger than the state as a whole. Hispanic and non-Hispanic whites split 93 percent of the region's population almost evenly.

The West Texas Region has had the most volatile local economies during the past 10 years, and there has been significant job growth in the region as well. If the region were a state, it would have the sixth highest per capita income in the nation. The high concentration of industries revolving primarily around the extraction and transportation of natural resources differentiates the West Texas Region from other regions in Texas.

WEST TEXAS REGION COUNTIES:

ANDREWS	CROCKETT	HOWARD	MASON	REAGAN	TERRELL
BORDEN	DAWSON	IRION	MCCULLOCH	REEVES	TOM GREEN
COKE	ECTOR	KIMBLE	MENARD	SCHLEICHER	UPTON
CONCHO	GAINES	LOVING	MIDLAND	STERLING	WARD
CRANE	GLASSCOCK	MARTIN	PECOS	SUTTON	WINKLER

CONCENTRATED INDUSTRIES:

SUPPORT ACTIVITIES FOR MINING
OIL AND GAS EXTRACTION
PIPELINE TRANSPORTATION
HEAVY AND CIVIL ENGINEERING CONSTRUCTION
RENTAL AND LEASING SERVICES
ANIMAL PRODUCTION AND AQUACULTURE
MINING (EXCEPT OIL AND GAS)
TRUCK TRANSPORTATION
GASOLINE STATIONS
FISHING, HUNTING AND TRAPPING

Source: JobsEQ®

@UTAustin

ABOUT IC^2 INSTITUTE

The IC^2 Institute was established at The University of Texas at Austin in 1977, as a think-and-do tank to explore the broad economic, technological, and human factors that drive economic development in regions. Our mission is to better understand and catalyze communities outside major urban corridors to become more collaborative and resilient through a human-centered approach.

IC^2 REGIONAL ECONOMIC RECOVERY INITIATIVE

Launched by in March 2020 in response to the growing global social and economic impact, the goal of this effort has been to understand Texas communities and provide evidence-based recommendations for next steps for community planning. Under this effort, IC^2 completed its **Regional Economic Recovery Research**, studying 80 Texas and Louisiana communities this summer. This fall, 140 community leaders from 58 communities from Texas and Louisiana are taking part in **REGIONAL XLR8** - a new type of "accelerator" that helps communities rethink recovery, take strategic action, and build resilience. In conjunction, IC^2 will hold **its 2nd George Kozmetsky Memorial Student Challenge** where diverse student teams will address community economic development issues linked with the research and community impetus from REGIONAL XLR8.

For more information, please contact:

Dr. Art Markman
Director, IC^2 Institute
amarkman@ic2.utexas.edu

Dr. Gregory P. Pogue
Deputy Director, IC^2 Institute
gpogue@ic2.utexas.edu

Riffat Manasia
Director of Strategy & Community Engagement, IC^2 Institute
rmanasia@ic2.utexas.edu