# Economic & Real Estate Outlook COVID-19 Looms Over Recovery

### Dr. Luis Torres, Research Economist



TEXAS A&M UNIVERSITY Champions School Real Estate Update 2022 Texas Real Estate January 20,2022 Research Center

- 2020 accelerated trends already prevalent before the pandemic
  - ✓ income inequality: low-educated/low-skill hardest hit by the health crisis
  - ✓ working from home
  - $\checkmark$  online purchases of goods and services
  - ✓ automation and digitalization of the economy

Why did the housing market do so well?

- Potential homebuyers weren't affected by the pandemic
  - ✓ medium-high educated/ medium-high skill work in industries that can socially distance
- Increase in the preference of purchasing of home
  - ✓ working from home
  - ✓ low density
- Low mortgage rates (monetary policy by the Federal Reserve)
- Fiscal stimulus did not allow the economy to collapse.

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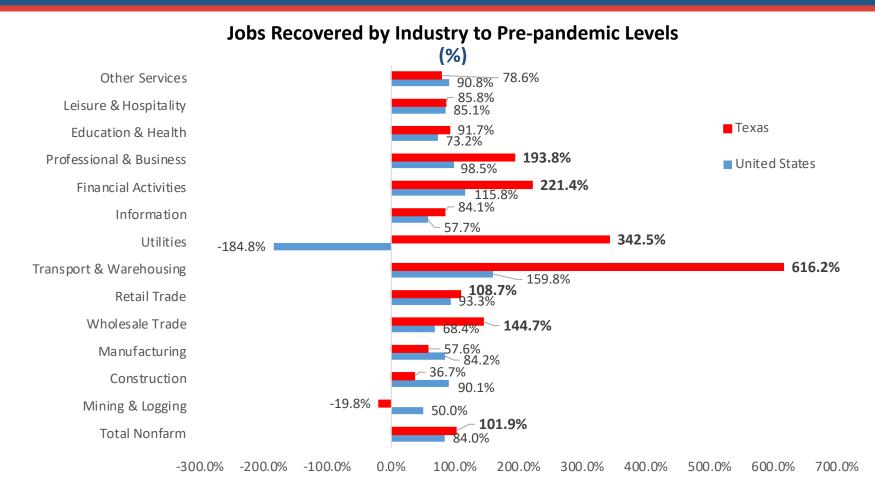
#### Number of jobs (thousand) gained and lost during COVID-19 pandemic

|                          | U.S.*   | Texas  | Austin | DFW    | Houston | San<br>Antonio |
|--------------------------|---------|--------|--------|--------|---------|----------------|
| Mar-Apr 20               | -22,362 | -1,453 | -142   | -451   | -371    | -142           |
| May-Nov 21               | 18,450  | 1,481  | 179    | 476    | 274     | 135            |
| Net gain/lost            | -3,912  | 28     | 37     | 26     | -98     | -7             |
| (%)<br>Recovered<br>jobs | 84.0%   | 101.9% | 126.2% | 105.7% | 73.7%   | 95.2%          |

Note: Seasonally adjusted. \*/ U.S. employment numbers are up to December 2021.

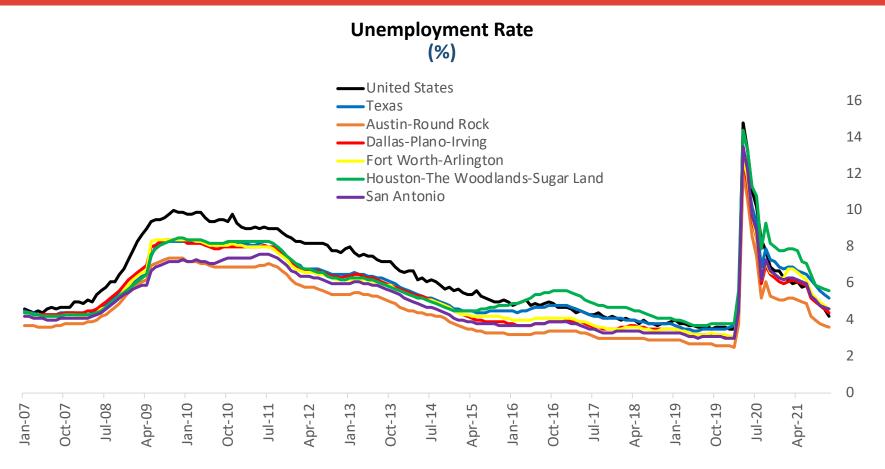
Sources: Bureau of Labor Statistics and Texas Real Estate Research Center at Texas A&M University





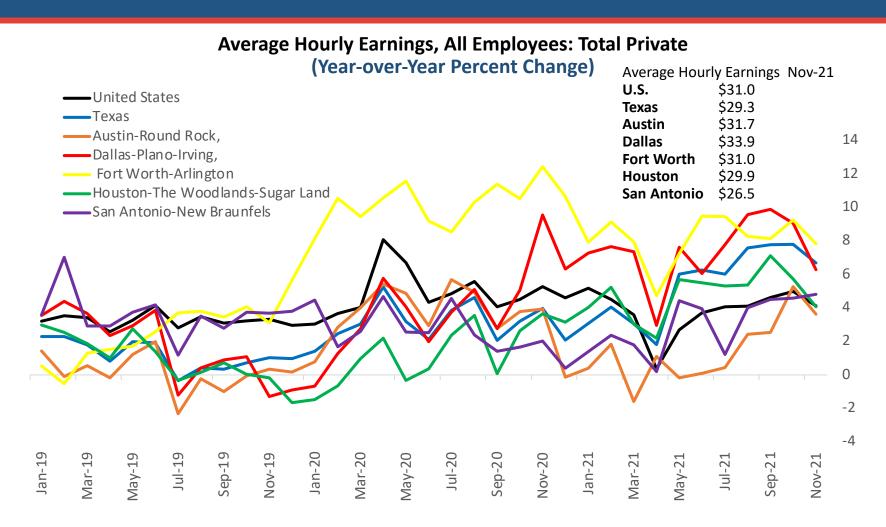
Note: Seasonally adjusted. Compared to Feb-20 job numbers. U.S. employment numbers are up to December 2021. Source: Bureau of Labor Statistics and Texas Real Estate Research Center at Texas A&M University

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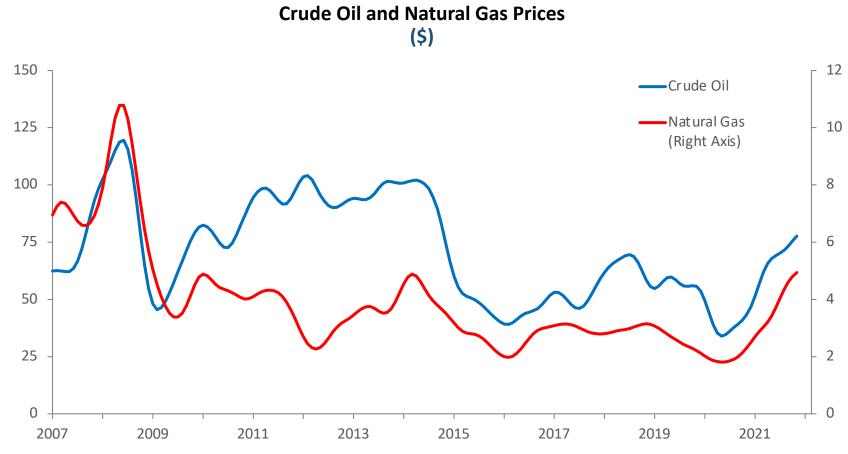


Note: Seasonally adjusted

Source: Bureau of Labor Statistics and Texas Real Estate Research Center at Texas A&M University

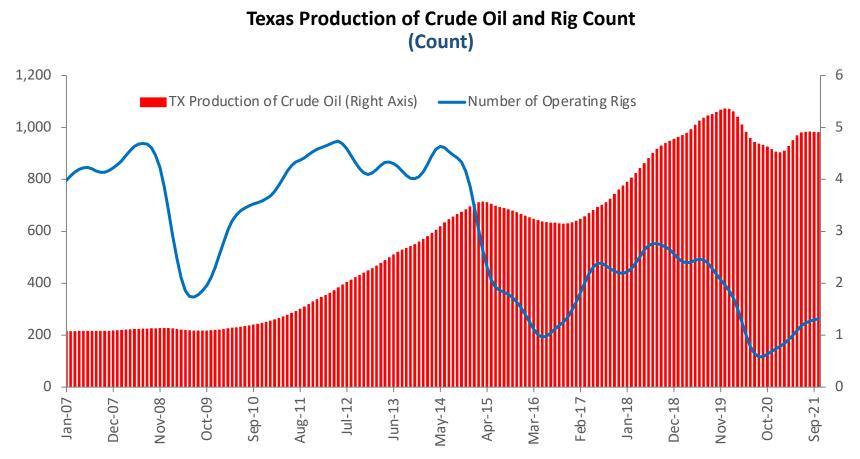


Source: Bureau of Labor Statistics and Texas Real Estate Research Center at Texas A&M University

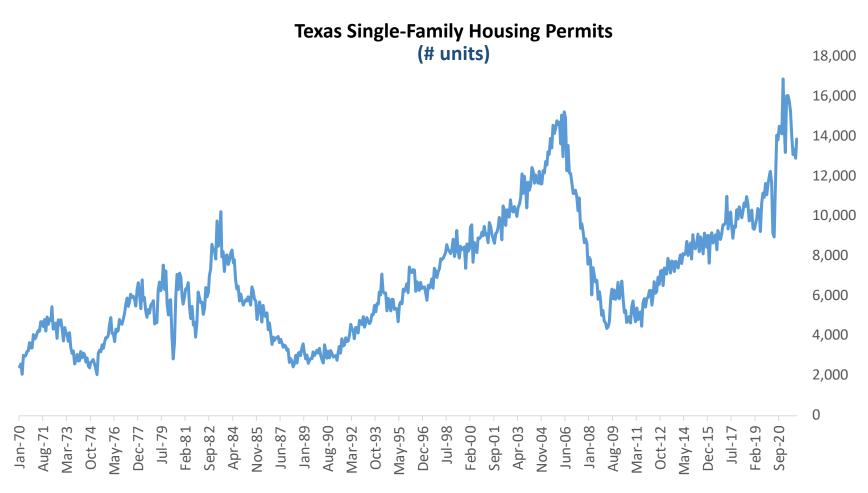


Note: Trend-cycle component.

Source: U.S. Energy Information Administration received from Thomson Reuters.

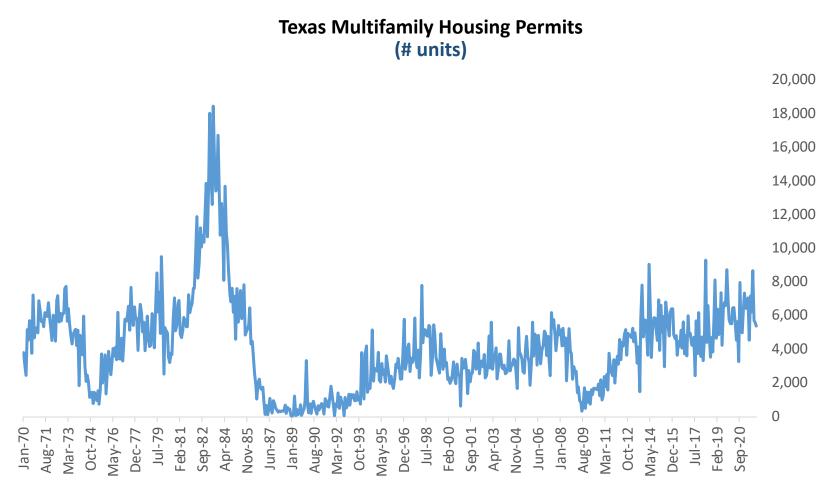


Note: Trend-cycle component. Source: Baker Hughes and U.S. Energy Administration.

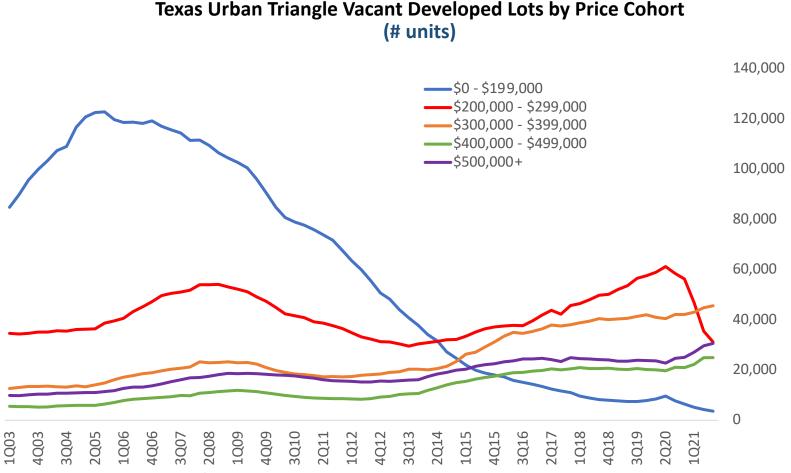


Note: Seasonally adjusted.

Sources: U.S. Census Bureau and Texas Real Estate Research Center at Texas A&M University



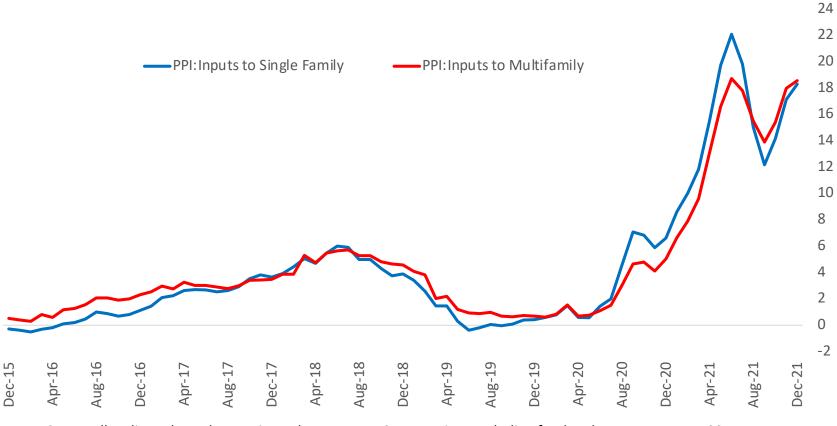
Note: Seasonally adjusted. Sources: U.S. Census Bureau and Texas Real Estate Research Center at Texas A&M University



Note: Seasonally adjusted. The sum of Austin, DFW, Houston and San Antonio. Sources: Zonda and Texas Real Estate Research Center at Texas A&M University

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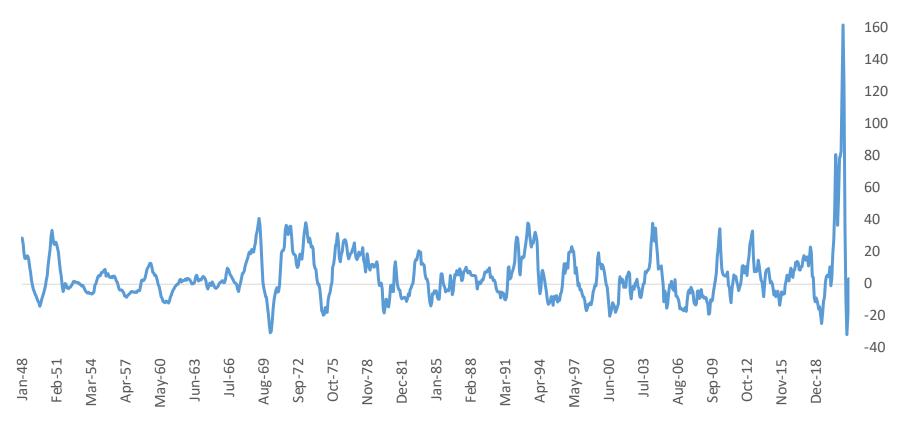
### PPI: Inputs to Single-Family and Multifamily Residential Construction, excluding food and energy (Dec14=100, year-over-year %)



Note: Seasonally adjusted. Producer Price Index Inputs to Construction, excluding food and energy, Dec14=100 Sources: Bureau of Labor Statistics and Texas Real Estate Research Center at Texas A&M University

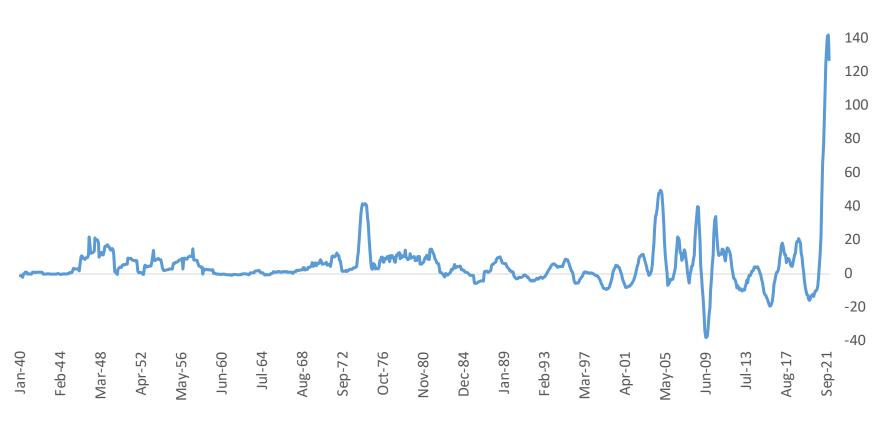
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PPI: Softwood Lumber (year-over-year %)



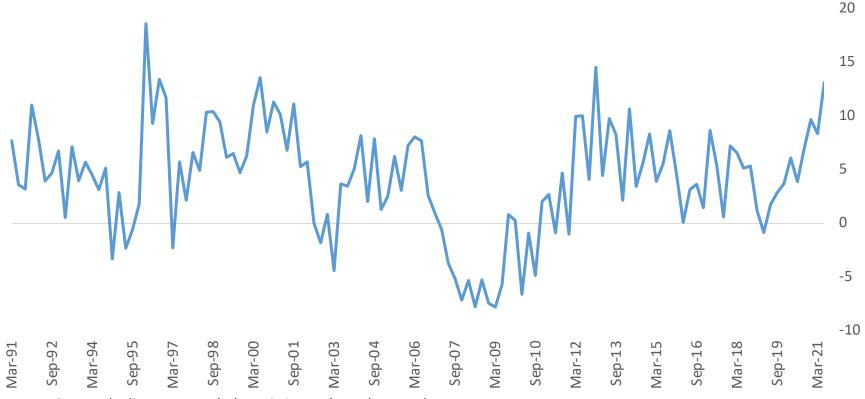
Note: Seasonally adjusted. Producer Price Index for Selected Commodity Groupings of Intermediate Demand, 1982-84=100 Sources: Bureau of Labor Statistics and Texas Real Estate Research Center at Texas A&M University

PPI: Steel Mill Products (year-over-year %)

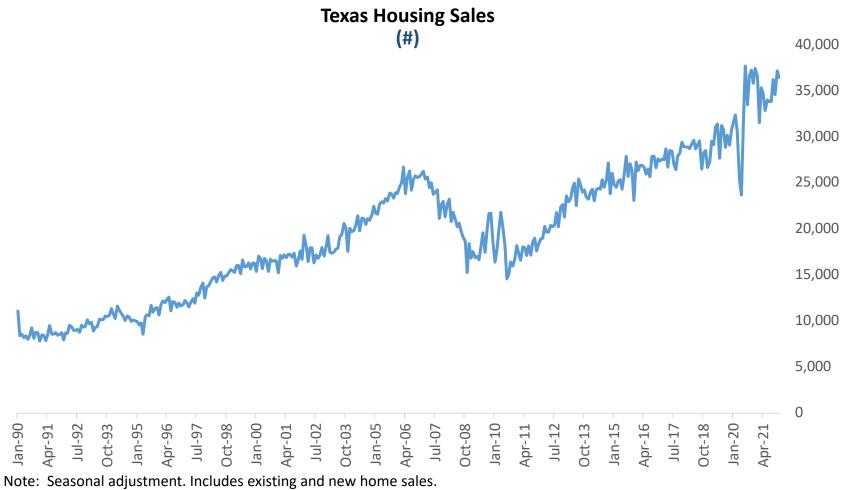


Note: Seasonally adjusted. Producer Price Index for Selected Commodity Groupings of Intermediate Demand, 1982-84=100 Sources: Bureau of Labor Statistics and Texas Real Estate Research Center at Texas A&M University

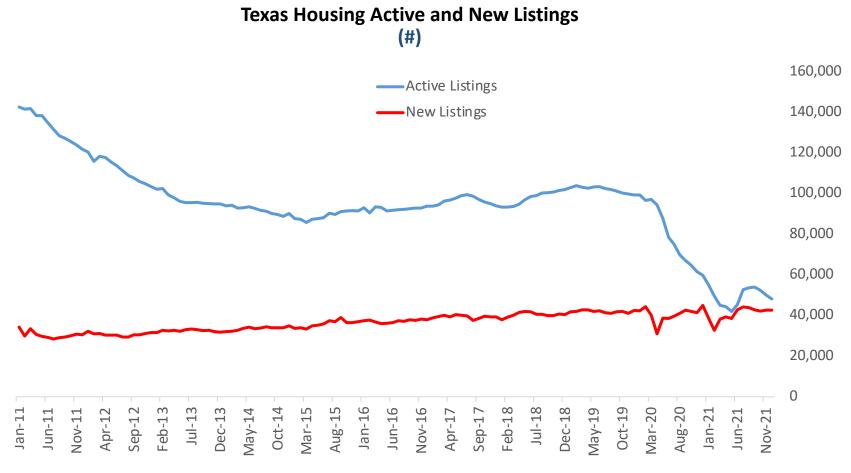
Texas Average Weekly Wage (\$/Week): Residential Building Construction (y-o-y %)



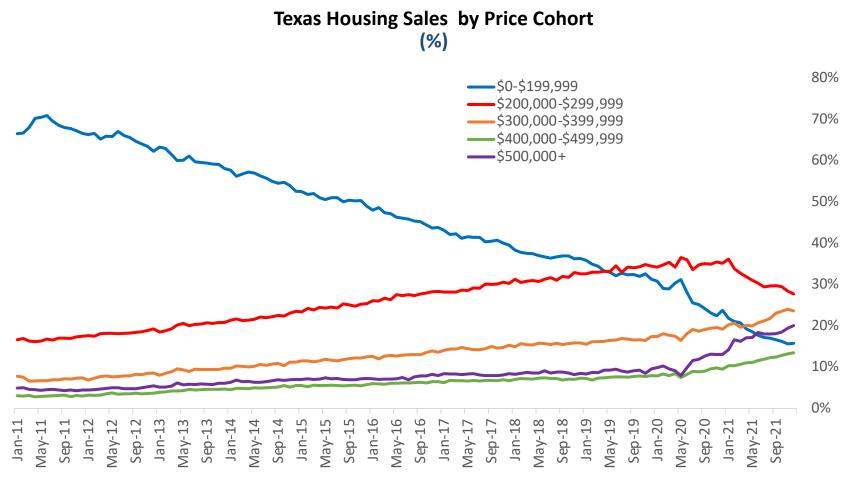
Note: Seasonal adjustment. Includes existing and new home sales. Source: Bureau of Labor Statistics and Texas Real Estate Research Center at Texas A&M University



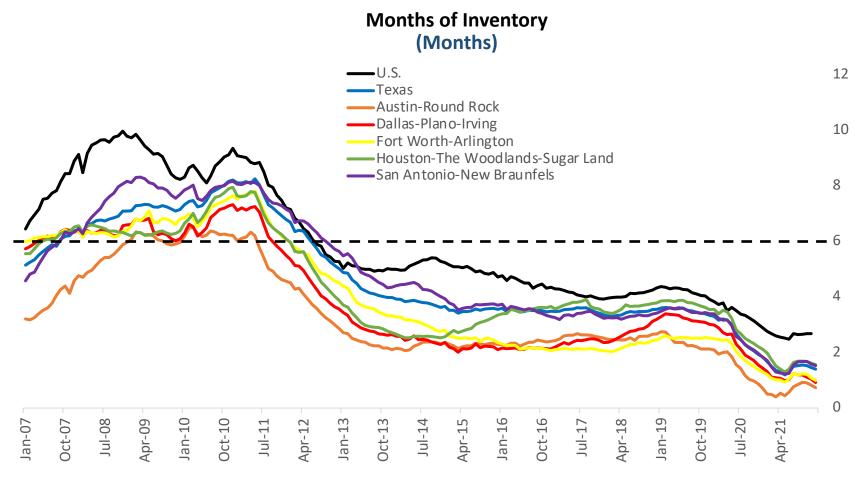
Source: Texas Real Estate Research Center at Texas A&M University



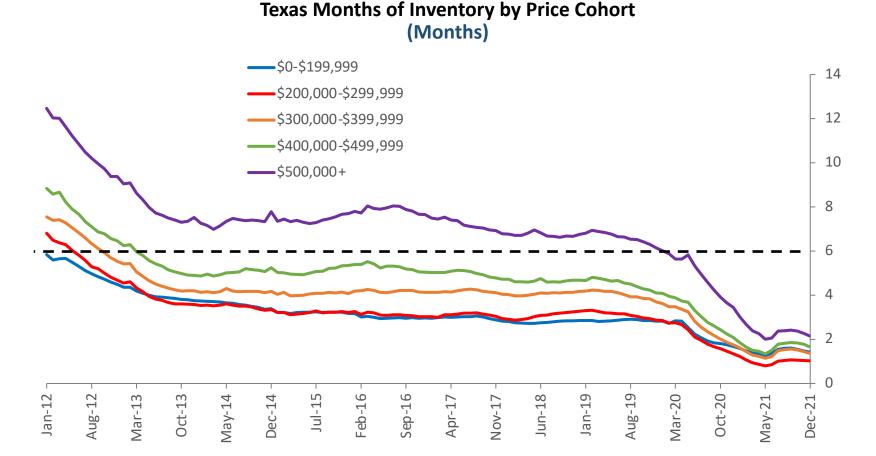
Note: Seasonal adjustment. Includes existing and new home sales. Source: Texas Real Estate Research Center at Texas A&M University



Note: Seasonal adjustment. Includes existing and new homes. Source: Texas Real Estate Research Center at Texas A&M University

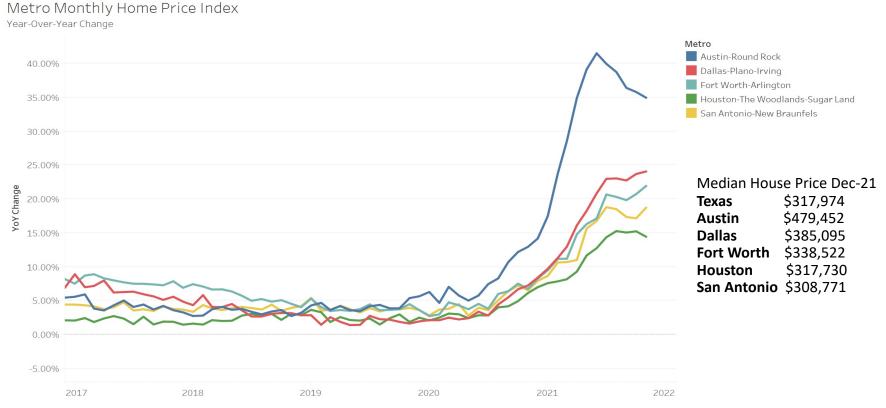


#### Note: Seasonal adjusted. Source: Texas Real Estate Research Center at Texas A&M University



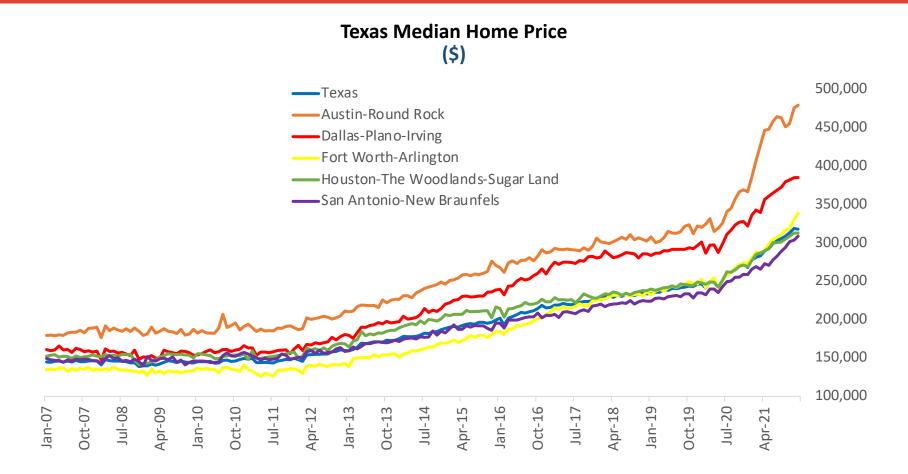
Note: Seasonal adjustment. Includes existing and new homes. Source: Texas Real Estate Research Center at Texas A&M University

**Repeat Sales Housing Price Index** (Year-over-Year Percentage Change)



Note: Seasonally adjusted. Monthly House Price Index. Source: Texas Real Estate Research Center at Texas A&M University

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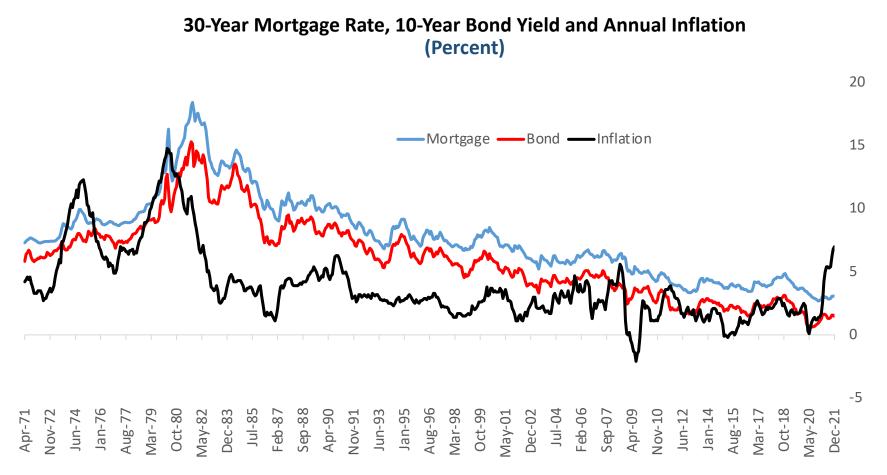
Note: Seasonally adjusted.

Source: Texas Real Estate Research Center at Texas A&M University

#### Rent Price Single-Family Housing Price Index (Year-over-Year Percentage Change)

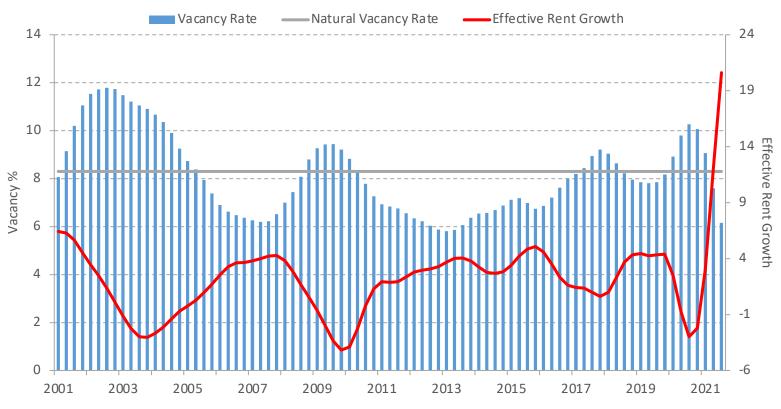


Note: Seasonally adjusted. Monthly Rent Single-Family Price Index. Source: Texas Real Estate Research Center at Texas A&M University



Note: Seasonally adjusted. CPI All Urban Consumers 1982-84=100. Inflation estimated Sources: Federal Home Loan Mortgage Corporation, Federal Reserve Board, and Bureau of Labor Statistics

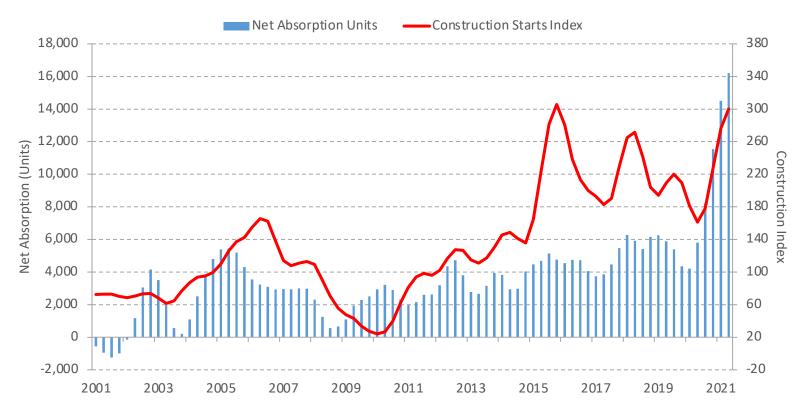
#### Austin Overall Apartment Vacancy and Effective Rent Growth (Percent)



Note: Seasonally adjusted and trend-cycle component Sources: CoStar and Texas Real Estate Research Center at Texas A&M University

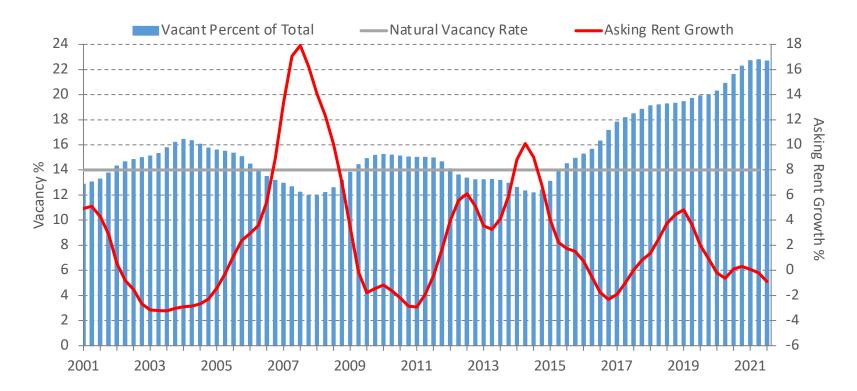
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#### DFW Apartment Net Absorption and Construction Starts (Percent)



Note: Seasonally adjusted and trend-cycle component Sources: CoStar and Texas Real Estate Research Center at Texas A&M University

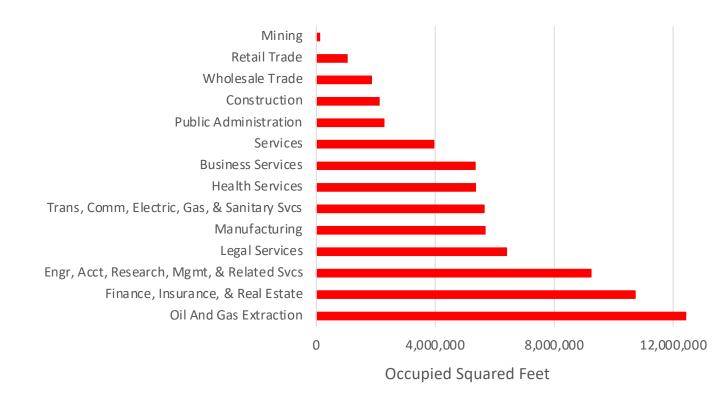
#### Houston Overall Office Vacancy and Asking Rent Growth (Percent)



Note: Seasonally adjusted and trend-cycle component Sources: CoStar and Texas Real Estate Research Center at Texas A&M University

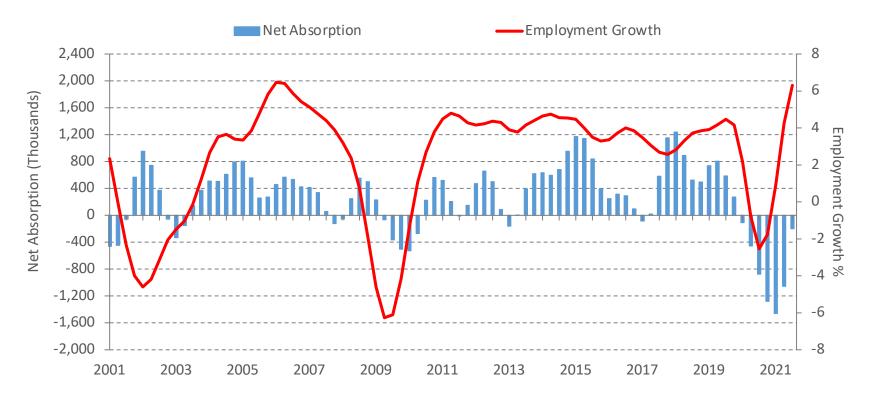
# Houston's concentration of tenants in the oil industry stands out

#### Houston Office Class A Tenant Industry (Squared Feet)



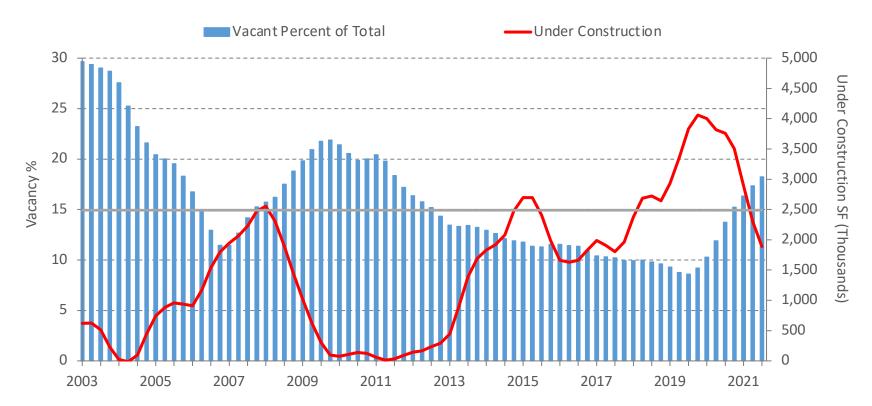
Note: Estimated using July 27,2001 CoStar data with the Standard Industry Classification (SIC). Source: CoStar and Texas Real Estate Research Center at Texas A&M University

#### Dallas Class A Office Net Absorption and Employment Growth (Percent)



Note: Seasonally adjusted and trend-cycle component Sources: CoStar and Texas Real Estate Research Center at Texas A&M University

#### Austin Class A Office Vacancy and Under Construction (Percent)



Note: Seasonally adjusted and trend-cycle component Sources: CoStar and Texas Real Estate Research Center at Texas A&M University

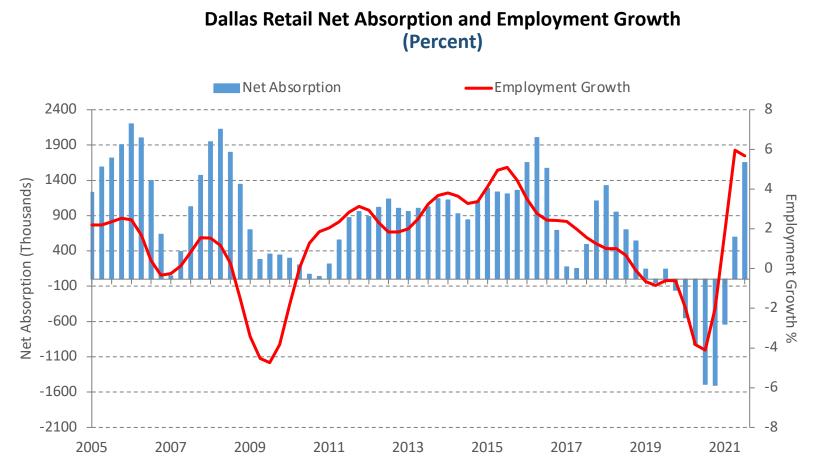
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#### (Percent) Vacant Percent of Total —Natural Vacancy Rate —Asking Rent Growth \_\_\_\_\_ 10 12 \_\_\_\_\_ 9 - 10 8 8 7 6 Asking Rent Growth % 6 Vacancy % 5 4 3 2 4 1 -6 0 2007 2009 2011 2013 2015 2017 2019 2021

**Houston Retail Vacancy and Asking Rent Growth** 

Note: Seasonally adjusted and trend-cycle component Sources: CoStar and Texas Real Estate Research Center at Texas A&M University

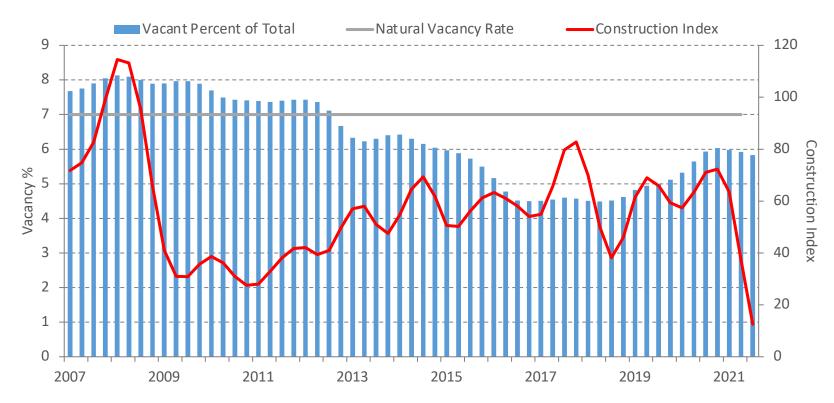
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#### Note: Seasonally adjusted and trend-cycle component Sources: CoStar and Texas Real Estate Research Center at Texas A&M University

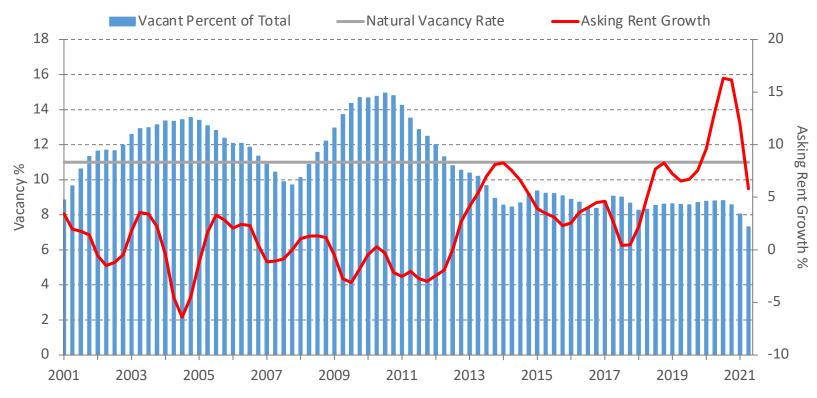
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#### San Antonio Retail Vacancy and Construction Index (Percent)



Note: Seasonally adjusted and trend-cycle component Sources: CoStar and Texas Real Estate Research Center at Texas A&M University

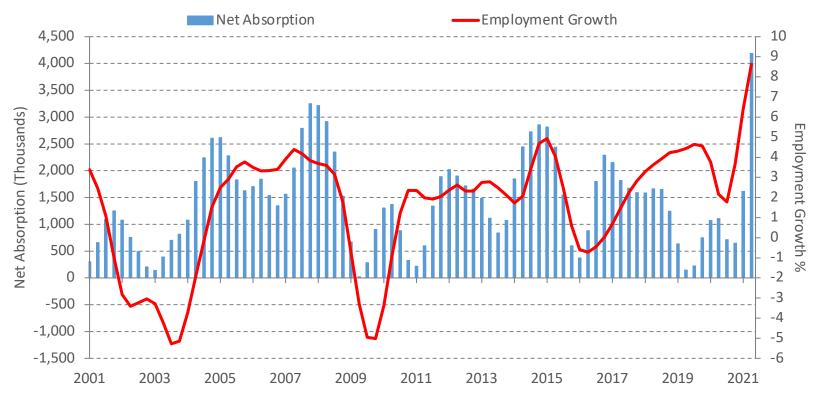
#### Dallas Warehouse Vacancy and Asking Rent Growth (Percent)



Note: Seasonally adjusted and trend-cycle component Sources: CoStar and Texas Real Estate Research Center at Texas A&M University

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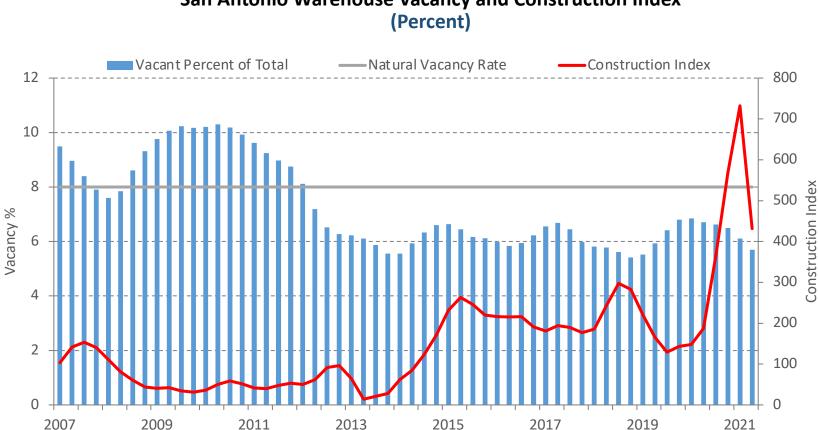
#### Houston Warehouse Net Absorption and Employment Growth (Percent)



Note: Seasonally adjusted and trend-cycle component Sources: CoStar and Texas Real Estate Research Center at Texas A&M University

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### Pandemic's economic impact



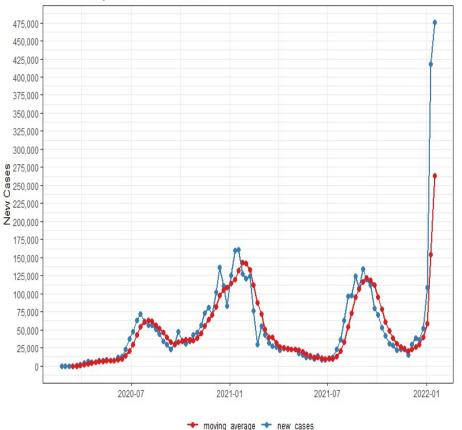
San Antonio Warehouse Vacancy and Construction Index

Note: Seasonally adjusted and trend-cycle component Sources: CoStar and Texas Real Estate Research Center at Texas A&M University

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#### Road to recovery depends on health outcomes

#### Texas Weekly New COVID-19 Cases



| Source: Texas Departn | ent of State Health Services | - as of Jan 16th, 2 | 2022 |
|-----------------------|------------------------------|---------------------|------|
|-----------------------|------------------------------|---------------------|------|

| % of population 12+ with at least 1 dose     |        |        |        |        |        |  |  |  |  |  |
|--|--------|--------|--------|--------|--------|--|--|--|--|--|
| Date Texas Austin DFW Houston San Antonio    |        |        |        |        |        |  |  |  |  |  |
| 1/10/2022                                    | 81.40% | 88.03% | 77.35% | 83.56% | 84.15% |  |  |  |  |  |
| 1/16/2022 81.98% 88.54% 77.82% 84.12% 84.80% |        |        |        |        |        |  |  |  |  |  |

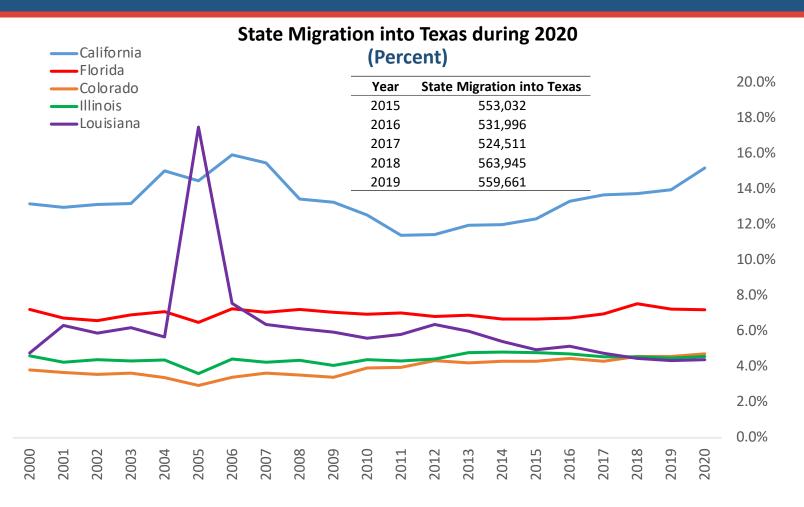
Source: Texas Department of Health Services and Texas Real Estate Research Center at Texas A&M University

| % of population 12+ fully vaccinated      |        |        |        |        |        |  |  |  |  |  |
|---|--------|--------|--------|--------|--------|--|--|--|--|--|
| Date Texas Austin DFW Houston San Antonio |        |        |        |        |        |  |  |  |  |  |
| 1/10/2022                                 | 69.0%  | 76.12% | 67.25% | 72.01% | 71.32% |  |  |  |  |  |
| 1/16/2022                                 | 71.75% |        |        |        |        |  |  |  |  |  |

Source: Texas Department of Health Services and Texas Real Estate Research Center at Texas A&M University



#### Majority moving to Texas from California

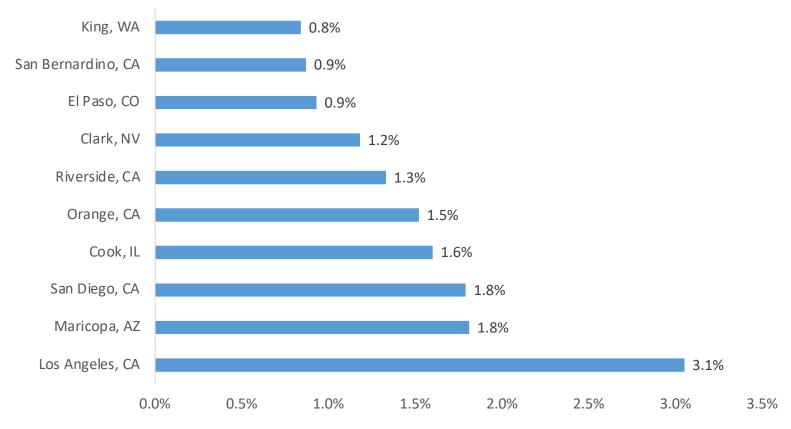


Sources: Census Bureau, Infutor and Texas Real Estate Research Center at Texas A&M University

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#### Southern Californians moving to Texas

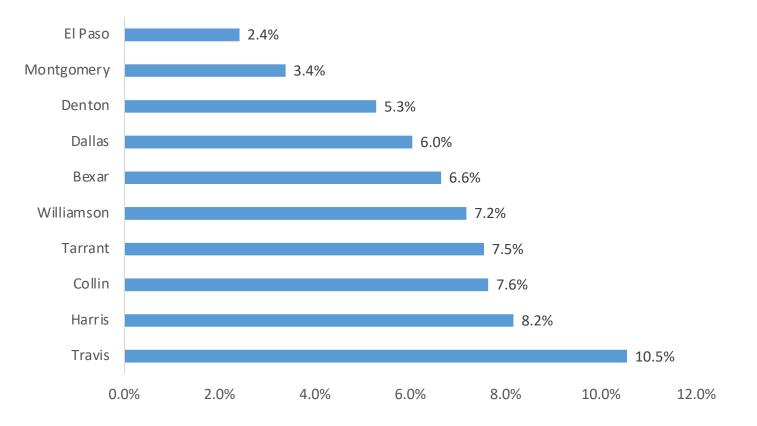
#### Out-of-State County Migration into Texas during 2020 (Percent)



#### Sources: Infutor and Texas Real Estate Research Center at Texas A&M University

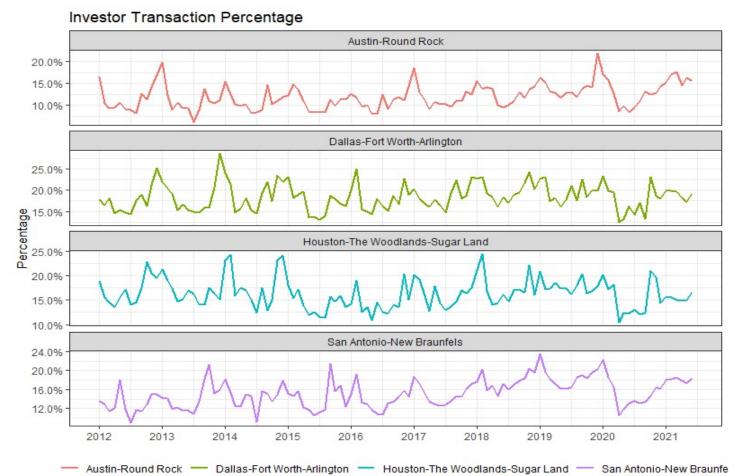
#### Californians moving to Top Texas MSAs

#### California Migration into Texas Counties during 2020 (Percent)



#### Sources: Infutor and Texas Real Estate Research Center at Texas A&M University

#### Investor Transactions Remain Around Past Decade Average

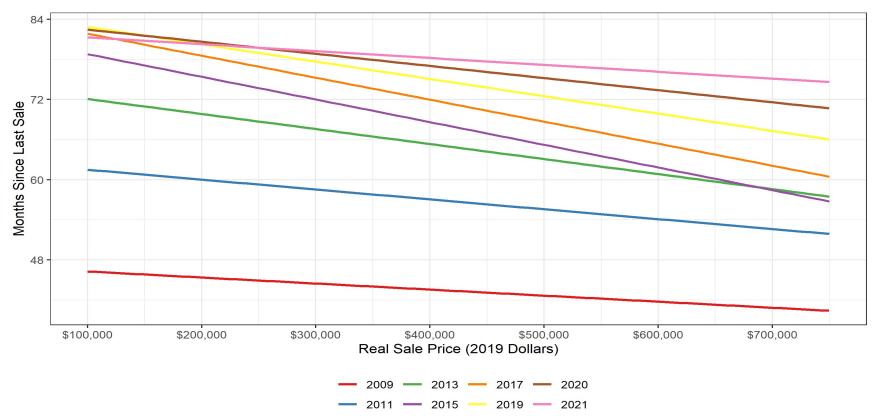


Notes: Corelogic investor transactions are deed transactions with LLC, LTD, LP, etc. in the name. Single-family detached homes. Sources: Texas Deed Transaction Data and Texas Real Estate Research Center at Texas A&M University

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### Holding period increased over time, lately for higher priced homes too

#### DFW Holding Period by Real Sales Price (Months)

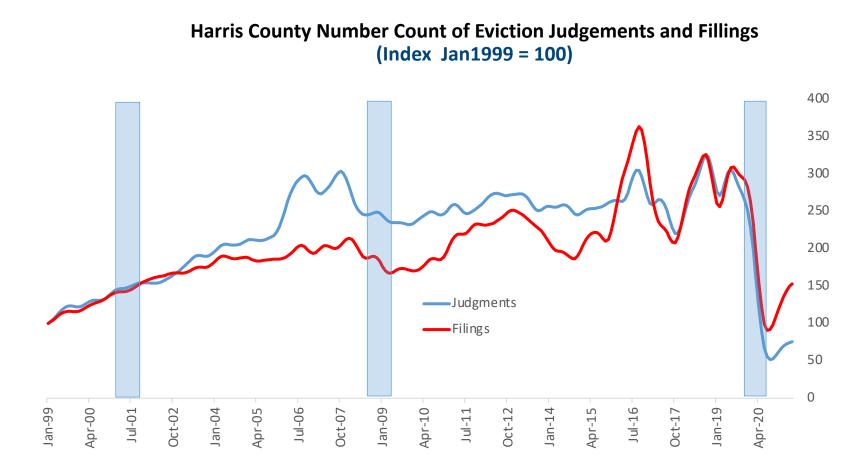


Source: U.S. Bureau of Labor Statistics and Texas Real Estate Research Center

Source: Texas Real Estate Research Center at Texas A&M University

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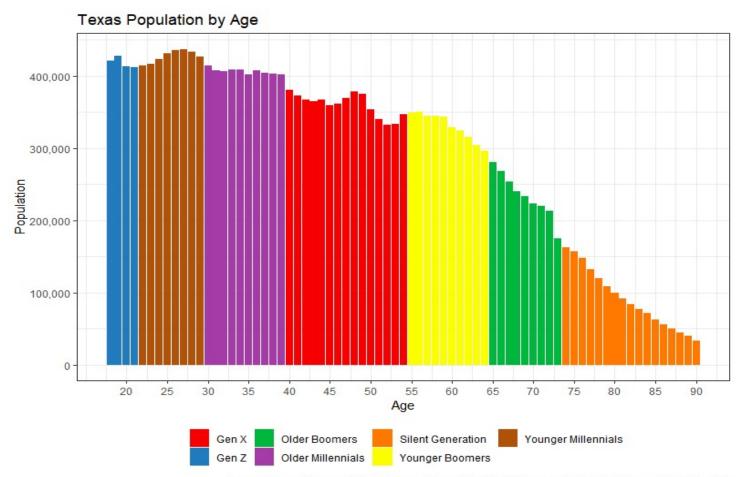
# Number of eviction judgements and fillings seem to have started to increase



Note: Trend-cycle adjusted. Shaded areas refer to U.S. recessions. Judgments refer to judgments in favor of the plaintiff(landlord). Data lags for the entry of new cases. Source: Harris County JP Court and Texas Real Estate Research Center at Texas A&M University

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#### Millennials strong housing demand push



Source: Texas Demographic Center and Texas Real Estate Research Center at Texas A&M University

#### Note: Texas Population by Age, 2019

Sources: U.S. Census Bureau and Texas Real Estate Research Center at Texas A&M University



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- Path to recovery depends on COVID-19 outcomes.
  - Economic recovery could be hindered going forward by possible upsurges in COVID-19 cases.
- Further waves of infections can reverse increased mobility and spending, affecting path to recovery.



Economy will continue to grow during 2022, but at a slower rate than 2021

✓ Returning to long-run structural trend.

- Employment should continue to expand in 2022
   ✓ All industries possible returning to pre-pandemic levels.
- Oil and natural gas demand is expected to continue to recover in 2022 as the global and U.S. economies rebound from the pandemic.
  - current administration's clean energy policy will be a major headwind for the industry.

- Housing market will be characterized by low inventories and strong price growth.
  - ✓ Low inventories will be especially prevalent for homes less than \$300,000, affecting home sales in the price range.
  - ✓ Price growth will be positive due to stable demand.
     ➢ Economic recovery will continue
     ➢ More millennials entering market.
- Lack of housing inventory is major headwind.

- Builders trying to build homes to satisfy demand.
  - ✓ New-home supply will continue to lag.
  - ✓ Building new homes in the suburbs or outer city borders where land costs are lower, especially to build lower-priced homes.
  - ✓ Trend was prevalent prior to pandemic but has accelerated due to COVID-19.

- Mortgage rates expected to increase somewhat due to increasing inflation expectations and tapering by Federal Reserve .
  - ✓ Fed Funds rate are expected to increase possible in 2022
    - $\checkmark$  Inflation worries have changed from temporary ones.
  - Mortgage refinancing will slow as mortgage rates rise and pool of households able to refinance diminishes.

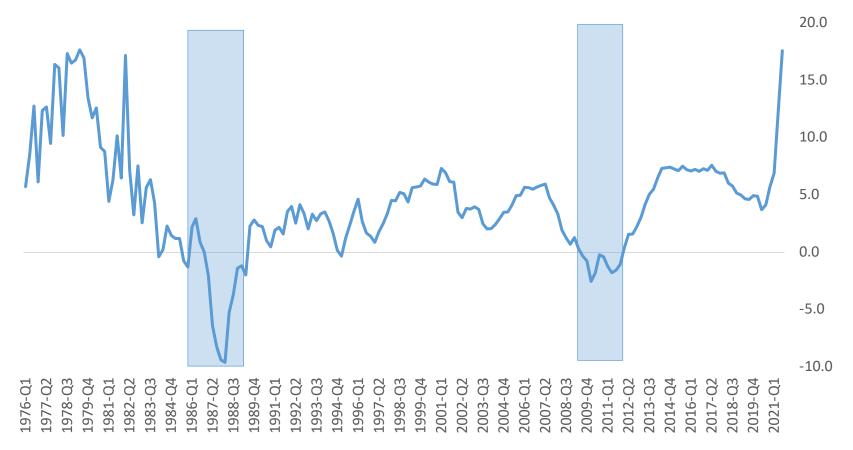


A housing bubble forming?

Characteristics of the 2006-2007 housing bubble

 ✓ Loose lending standards
 ✓ Lax oversight, and
 ✓ Exuberant speculation (investment motive)
 ✓ Not currently prevalent.

FHFA House Price Index Texas (1Q1995=100, y-o-y %)



Sources: Federal Housing Finance Agency and Texas Real Estate Research Center at Texas A&M University

- The office market has been exposed to some pervasive underlying changes in the work environment that will not be fully evident until employees return safely to the office.
  - ✓ The appearance of the Delta and Omicron variants has delayed this return further.

- Occupancy cannot improve significantly until COVID-19 variants are subdued.
- Uncertainty surrounding the future hybrid work landscape will probably cause vacancies to remain high, resulting in subdued rent growth in the coming years.

- The relationship between business employment growth and office demand has changed.
- The pandemic showed firms can hire employees without increasing their demand for office space.
- Office space will still be needed in sectors such as technology, life sciences, professional business, and financial activities.

- The pandemic has accelerated the shift to e-commerce from brick-and-mortar retail.
  - ✓ Still, some purchasing experiences cannot be duplicated online.
- Retailers are increasingly using a hybrid store model that integrates the on-site experience with the online one.
- Both the hybrid model and the preference for physically purchasing some goods and services suggest brick-and-mortar retail will continue for the foreseeable future.

- The following factors aided the retail sector during 2021 and should continue in 2022:
  - ✓ the reopening of the economy due to the vaccines, which has led to strong economic growth and solid consumer demand; and
  - ✓ household preference for social interaction after being locked up during the pandemic.

- Warehouse has benefited greatly from the shift to ecommerce and need for distribution and warehousing centers.
- Industrial space will continue to be aided by the shift to e-commerce, increased inventory requirements and supply chain diversification in the coming years.



- A possible future concern could be overbuilding driven by increasing investor interest in the sector.
  - ✓ This occurred in the Houston warehouse market during the end of 2019 and beginning of 2020, causing vacancy rates to reach double digit levels and moderating rent growth, in some cases severely.



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|-----------------------|----------------|----------|----------|----------|---------------|
|                       | 2020 (%)       | 2021 (%) | 2022 (%) | 2023 (%) | 1991-2020 (%) |
| Texas                 |                |          |          |          |               |
| Housing permits       | 22.9           | 22.5     | 5.4      | 4.2      | 5.9           |
| Sales                 | 10.5           | 5.5      | 4.0      | 4.1      | 4.8           |
| Price per square foot | 6.9            | 16.0     | 5.0      | 4.0      | 4.8           |
| Austin                |                |          |          |          |               |
| Housing permits       | 19.4           | 20.8     | 5.2      | 4.8      | 11.5          |
| Sales                 | 9.4            | 4.8      | 4.5      | 4.2      | 6.3           |
| Price per square foot | 8.3            | 31.4     | 5.2      | 4.6      | 6.3           |
| DFW                   |                |          |          |          |               |
| Housing permits       | 25.2           | 22.5     | 5.3      | 5.7      | 5.2           |
| Sales                 | 9.6            | 2.6      | 3.5      | 4.1      | 5.1           |
| Price per square foot | 6.3            | 17.0     | 4.6      | 4.2      | 4.6           |
| Houston               |                |          |          |          |               |
| Housing permits       | 22.2           | 12.8     | 6.3      | 6.5      | 6.1           |
| Sales                 | 10.9           | 7.4      | 3.3      | 4.5      | 4.2           |
| Price per square foot | 5.0            | 13.3     | 5.0      | 3.7      | 5.2           |
| San Antonio           |                |          |          |          |               |
| Housing permits       | 19.9           | 27.9     | 5.0      | 5.3      | 8.5           |
| Sales                 | 12.3           | 6.1      | 3.9      | 4.0      | 7.0           |
| Price per square foot | 7.0            | 12.8     | 4.7      | 3.9      | 4.7           |

#### Estimated State, MSA Single-Family Housing Forecast

Note: Estimated with May/June 2021 data. Annual numbers represent the 12-month total for single-family sales and housing permits and the average for the price per square foot of the seasonally adjusted data. Price per square foot is nominally estimated from the previous year's average.

Sources: U.S. Census Bureau and Texas Real Estate Research Center at Texas A&M University



|                   | Natural                      |      | Vaca | ncy Rates | s (%) |      | Effective Rents (y-o-y %) |      |      |      |      |
|-------------------|------------------------------|------|------|-----------|-------|------|---------------------------|------|------|------|------|
| MSA               | Apartment<br>Vacancy<br>Rate | 2019 | 2020 | 2021      | 2022  | 2023 | 2019                      | 2020 | 2021 | 2022 | 2023 |
| Austin            | 8.3                          | 8.0  | 9.9  | 8.6       | 8.2   | 7.9  | 4.5                       | -0.9 | 10.5 | 5.8  | 2.1  |
| Dallas-Fort Worth | 8.5                          | 8.2  | 8.6  | 7.8       | 7.6   | 7.8  | 3.2                       | 1.3  | 7.1  | 2.1  | 2.0  |
| Houston           | 9.2                          | 9.3  | 10.2 | 8.6       | 8.3   | 8.4  | 1.9                       | -0.3 | 4.8  | 2.5  | 2.0  |
| San Antonio       | 8.5                          | 9.4  | 9.5  | 8.0       | 7.9   | 8.0  | 3.1                       | 0.7  | 6.3  | 2.2  | 2.0  |

#### Table 1. Forecasted Overall Apartment Vacancy Rates and Effective Rents

Note: Annual numbers are the four-quarter average of the seasonally adjusted data. The rent growth is nominal and estimated from the previous year's average.

Sources: CoStar and Texas Real Estate Research Center at Texas A&M University

|                                  |         |      |      |                           |      | '    |      |      |      |      |     |  |
|----------------------------------|---------|------|------|---------------------------|------|------|------|------|------|------|-----|--|
|                                  | Natural |      | Vaca | Effective Rents (y-o-y %) |      |      |      |      |      |      |     |  |
| Apartment<br>Vacancy<br>MSA Rate | 2019    | 2020 | 2021 | 2022                      | 2023 | 2019 | 2020 | 2021 | 2022 | 2023 |     |  |
| Austin                           | 9.0     | 10.7 | 12.0 | 8.2                       | 7.9  | 7.9  | 4.5  | -1.2 | 11.5 | 3.4  | 2.3 |  |
| Dallas-Fort Worth                | 9.1     | 12.3 | 12.7 | 10.0                      | 9.9  | 9.7  | 2.4  | -0.2 | 9.0  | 2.3  | 2.1 |  |
| Houston                          | 9.7     | 10.2 | 12.9 | 10.1                      | 9.9  | 9.8  | 1.4  | -2.9 | 6.2  | 2.2  | 2.0 |  |
| San Antonio                      | 10.0    | 11.0 | 10.8 | 7.3                       | 7.2  | 7.2  | 2.8  | -1.0 | 9.8  | 2.1  | 2.0 |  |

#### Table 2. Forecasted Class A Apartment Vacancy Rates and Effective Rents

Note: Annual numbers are the four-quarter average of the seasonally adjusted data. The rent growth is nominal and estimated from the previous year's average.

Sources: CoStar and Texas Real Estate Research Center at Texas A&M University

|                               | Natural | 33   | Vacancy | Rates (%) | Asking Rents (y-o-y %) |      |      |      |     |
|-------------------------------|---------|------|---------|-----------|------------------------|------|------|------|-----|
| Office<br>Vacancy<br>MSA Rate | 2020    | 2021 | 2022    | 2023      | 2020                   | 2021 | 2022 | 2023 |     |
| Austin                        | 13.0    | 12.7 | 16.3    | 16.7      | 16.8                   | 4.7  | 2.2  | 2.1  | 2.0 |
| Dallas-Fort Worth             | 18,0    | 19.2 | 21.7    | 22.5      | 22.8                   | 3.2  | 2.0  | 1.6  | 0.5 |
| Houston                       | 14.0    | 21.2 | 22.8    | 23.2      | 23.3                   | 0.2  | -1.0 | 1.6  | 1.5 |
| San Antonio                   | 12.0    | 12.1 | 13.3    | 13.5      | 13.7                   | 4.7  | 1.7  | -0.4 | 0.5 |

#### Table 1A. Forecasted Overall Office Vacancy Rates, Asking Rents

Note: Annual numbers are the four-quarter average of the seasonally adjusted data. The rent growth is nominal and estimated from the previous year's average.

Source: Texas Real Estate Research Center at Texas A&M University

|                   | Natural                   |      | Vacancy | Rates (%) |      | Asking Rents (y-o-y %) |      |      |      |  |
|-------------------|---------------------------|------|---------|-----------|------|------------------------|------|------|------|--|
| MSA               | Office<br>Vacancy<br>Rate | 2020 | 2021    | 2022      | 2023 | 2020                   | 2021 | 2022 | 2023 |  |
| Austin            | 15.0                      | 12.8 | 17.1    | 18.2      | 18.4 | 3.3                    | 2.5  | 2.1  | 3.0  |  |
| Dallas-Fort Worth | 21.0                      | 22.9 | 25.7    | 26.7      | 26.9 | 2.8                    | 1.5  | 0.4  | 0.4  |  |
| Houston           | 16.0                      | 24.5 | 26.6    | 27.3      | 28.3 | -1.4                   | -1.5 | 0.7  | 0.3  |  |
| San Antonio       | 14.5                      | 14.7 | 15.6    | 15.7      | 15.8 | 6.1                    | 0.3  | -0.6 | 0.4  |  |

#### Table 1B. Forecasted Class A Office Vacancy Rates, Asking Rents

Note: Annual numbers are the four-quarter average of the seasonally adjusted data. The rent growth is nominal and estimated from the previous year's average.

Source: Texas Real Estate Research Center at Texas A&M University

| MSA               | Natural<br>Retail<br>Vacancy<br>Rate |      | Vacancy | Rates (%) | X    | Growth Asking Rents (y-o-y %) |      |      |      |  |
|-------------------|--------------------------------------|------|---------|-----------|------|-------------------------------|------|------|------|--|
|                   |                                      | 2020 | 2021    | 2022      | 2023 | 2020                          | 2021 | 2022 | 2023 |  |
| Austin            | 6.0                                  | 4.6  | 4.8     | 4.6       | 4.3  | -0.1                          | 0.6  | 0.8  | 1.0  |  |
| Dallas-Fort Worth | 8.0                                  | 6.5  | 7.0     | 6.9       | 6.8  | -0.5                          | 0.2  | 0.8  | 0.9  |  |
| Houston           | 7.0                                  | 6.8  | 6.8     | 6.5       | 6.2  | 3.7                           | 3.4  | 2.4  | 2.9  |  |
| San Antonio       | 6.0                                  | 5.8  | 6.1     | 6.2       | 6.4  | 1.8                           | 0.3  | 1.1  | 1.0  |  |

#### Table 2. Forecasted Overall Retail Vacancy Rates, Asking Rents

Note: Annual numbers are the four-quarter average of the seasonally adjusted data. The rent growth is nominal and estimated from the previous year's average.

Source: Texas Real Estate Research Center at Texas A&M University

|                                  | Natural | Vacancy Rates (%) |      |      |      | Growth Asking Rents (y-o-y %) |      |      |     |
|----------------------------------|---------|-------------------|------|------|------|-------------------------------|------|------|-----|
| Warehouse<br>Vacancy<br>MSA Rate | 2020    | 2021              | 2022 | 2023 | 2020 | 2021                          | 2022 | 2023 |     |
| Austin                           | 11.0    | 8.5               | 6.3  | 5.9  | 5.7  | 5.4                           | 4.3  | 3.9  | 3.8 |
| Dallas-Fort Worth                | 11.0    | 8.4               | 7.4  | 7.2  | 7.0  | 14.3                          | 4.6  | 4.2  | 3.9 |
| Houston                          | 8.0     | 11.5              | 12.6 | 12.3 | 11.6 | 0.9                           | 1.5  | 1.9  | 2.2 |
| San Antonio                      | 8.0     | 6.8               | 5.8  | 5.6  | 5.7  | 4.3                           | 9.2  | 3.2  | 2.4 |

#### Table 3. Forecasted Overall Warehouse Vacancy Rates, Asking Rents

Note: Annual numbers are the four-quarter average of the seasonally adjusted data. The rent growth is nominal and estimated from the previous year's average.

Source: Texas Real Estate Research Center at Texas A&M University

### The Texas Economy

#### Texas Housing Insight



#### Texas Quarterly Commercial Report



#### Monthly Review of the Texas Economy

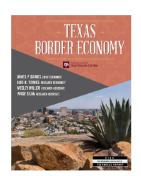
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