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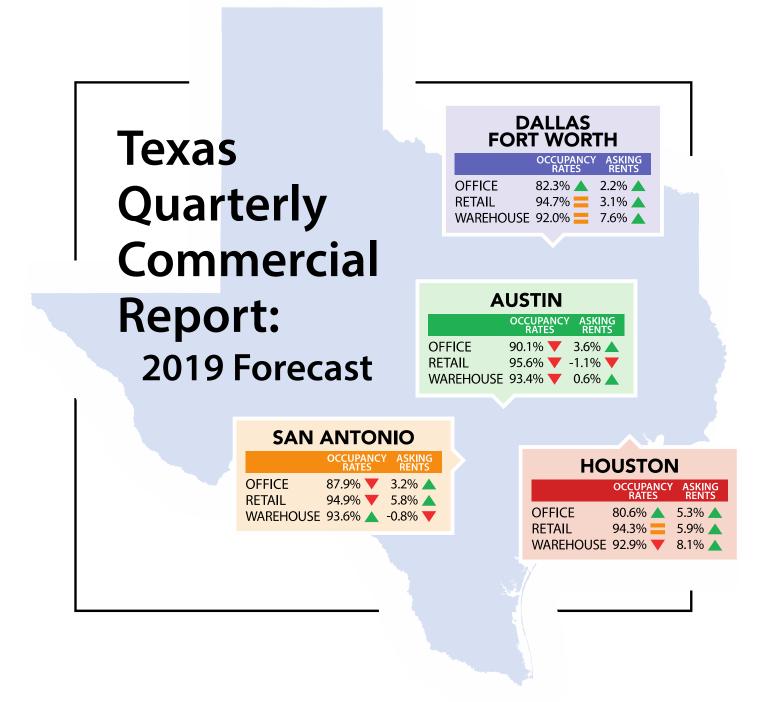
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Trenton Forbes Research Intern Technical Report 2211 FIRST QUARTER 2019





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

# Table of Contents

| bout this Report              | 3  |
|-------------------------------|----|
| efinitions                    | 4  |
| Overview of the Texas Economy | 6  |
| ustin                         | 7  |
| Office                        |    |
| Retail                        |    |
| Warehouse                     |    |
| allas-Fort Worth              | 10 |
| Office                        |    |
| Retail                        |    |
| Warehouse                     |    |
| louston                       | 12 |
| Office                        |    |
| Retail                        |    |
| Warehouse                     |    |
| an Antonio                    | 15 |
| Office                        |    |
| Retail                        |    |
| Warehouse                     |    |
| igures                        | 17 |





Real Estate Center economists continuously monitor multiple facets of the global, national, and Texas economies. The *Texas Quarterly Commercial Report* is a summary of important economic indicators that help discern commercial real estate (CRE) trends in four major Texas Metropolitan Statistical Areas—Austin, Dallas-Fort Worth, Houston, and San Antonio.

All quarterly measurements are calculated using seasonally adjusted and trend-cycled data. Seasonal adjustment smooths the quarterly fluctuations in the data, while trend-cycle adjustment provides a clearer, less volatile view of upward and downward movements. Both enrich our analysis by producing a more accurate depiction of long-term movements and trends in the data.

This report analyzes asking rents, which exclude tenant improvements and concessions, as opposed to effective rents. Rents reflect nominal year-over-year estimates, unless stated otherwise. The analysis uses industry-specific employment growth to reflect the employment most relevant to each industry. For example, the employment data for the office sector includes finance, insurance, and real estate as well as professional and business services (FIRE & PBS) employment to measure the bulk of employees working in the office sector.

This analysis uses CoStar and Dodge Analytics data. The time series varies by sector and geography, depending on the data available. Sectors with shorter time series limit the interpretation of the data. The data reflect nonowner-occupied space. No raw data are published in this report.

This quarterly publication provides data and insights on the Texas commercial real estate markets. We hope you find them useful. Your feedback is always appreciated. Send comments and suggestions to <u>info@recenter.tamu.edu</u>.

Dr. James Gaines, Dr. Luis Torres, Dr. Harold Hunt, Clare Losey, Carter Neill, and Trenton Forbes





**Asking rents.** The dollar amount per square foot the landlord requests from a tenant, excluding tenant improvements and concessions. Leases typically dictate this amount paid annually.

**Construction index.** The construction value in relation to a specified base year.

**Construction values.** The collective dollar value of project starts for a particular sector.

Dodge Analytics tracks commercial construction start figures as soon as a new project kicks off to estimate its total construction "value," which is essentially total construction cost. We realize that some real estate professionals may question whether calling the total dollars to be spent on a project's "construction value" actually equates to its "market value" at completion. However, for consistency, this report will use Dodge's terminology.

**Trend-cycle component.** Removes the effects of accumulating data sets from a trend to show only the absolute changes in values while allowing potential cyclical patterns to be identified.

**FIRE & PBS.** A sector of the economy comprised of finance, insurance, and real estate. PBS employment represents professional and business services.

**Net absorption.** The net change in occupied space, measured in square feet, over a given period. Net absorption reflects the amount of space occupied as well as the amount of space vacated. Net absorption includes direct and sublease space.

Nominal. Value or rate reflecting current prices or rates, without adjusting for inflation.

**Real**. Value or rate reflecting current prices or rates adjusted for inflation.

**Seasonal adjustment.** A statistical method for removing the seasonal patterns in time series data.

SF. Square feet.

**Under construction.** The square footage being built within a particular market; applies to buildings that have not received a certificate of occupancy.

**Vacancy rate.** A measurement expressed as a percentage of the total amount of physically vacant space divided by the total amount of existing inventory.



## Natural and actual vacancy.

The projected vacancy rates and rents for each commercial use in the four major metro areas are made relative to each area's natural vacancy rate for each property type.

The natural vacancy rate is the point at which zero real (inflation-adjusted) rent growth will occur. Natural vacancy reflects the level to which current vacancy rates gravitate over the long term.

The actual vacancy rate is seasonally adjusted and trend cycled to smooth fluctuations in the data and provide a clearer, less volatile view of upward and downward movements.

Natural vacancies used to estimate the possibility of new construction are calculated separately using historical construction data. The calculated natural vacancies were compared with the actual vacancies to estimate whether new development could be expected in the various commercial real estate markets. When actual vacancy in a local market falls below natural vacancy, developers may consider building new space.

When actual vacancy in a local market falls below (rises above) natural vacancy, building managers may consider increasing (decreasing) rents. A comparison of natural vacancy and actual vacancy along with historical vacancy trends allows researchers to anticipate the future direction of CRE rental rates in real terms. However, changes in asking rents in this report reflect nominal changes since real estate professionals typically think in nominal terms.

Aggregate natural vacancy in an overall market may not reflect the vacancy rate an individual CRE professional uses to make decisions affecting a specific property or project. However, these measures indicate the direction of rents and new construction within the broader market.





The Texas economy slowed at the beginning of 2019 in the midst of one of the longest expansionary cycles in recent history. Entering the ninth year of the business-cycle expansion, payroll employment grew at a steady pace, and unemployment remained historically low. Crude oil prices elevated to more than \$60 per barrel and supported record-level crude oil production and export volumes. The Texas economic expansion is poised to continue throughout 2019. The trade war with China looms as a major potential headwind going forward. For additional commentary and statistics, see <u>Outlook for the Texas Economy</u> at recenter.tamu.edu.

The overall strong performance in the Texas economy translates into a positive outlook for the commercial real estate sector. The Texas Nonresidential Coincident Index, which measures current construction activity, indicates growth accelerated as nonresidential construction values increased in 1Q2019. However, the Texas Nonresidential Leading Indicator, which measures potential future construction activity, indicates growth may slow going forward. See Figures 1-5 for the Nonresidential Coincident Index and Leading Indicator for Texas and the four major metros.

Austin's overall economic activity moderated in 1Q2019 even as job growth continued its upward trend and wage growth rose. Employment continued to climb in Dallas-Fort Worth (DFW) with the services sector leading job growth. In Houston, the overall outlook remains positive, supported by higher oil prices and a strong U.S. economy, although at a slower pace than during the oil boom. San Antonio's job growth improved in 1Q2019, after slowing at the end of 2018.

The outlook for the rest of 2019 appears to be positive for the major Texas MSAs due to the strength of the U.S. and Texas economies. As oil prices jumped in 1Q2019, Texas' fundamental economic factors appear to provide a positive tailwind moving forward. Interest rates should continue to remain low as inflation pressure remained subdued. On the negative side, a declining trade environment remains the greatest headwind to the Texas economy, challenging some of the state's most productive industries. Although Mexico, Canada, and the U.S. announced official trade agreements, the agreements need approval from each country's legislative branches. The U.S. economy has shown signs of slowing in 2019 as the effects of the 2018 fiscal stimulus dilute.





Sources: CoStar and the Real Estate Center at Texas A&M University Note: Arrows indicate change from previous quarter with the exception of asking rent growth (change from previous year). Seasonally adjusted data.

# Austin Office (Figures 6 - 10)

Actual vacancy continues to hover between 9 and 10 percent, well below the natural vacancy of 13.0 percent. Actual vacancy is expected to increase slightly in the near term, averaging 10.3 percent for 2019. As actual vacancy has measured lower than natural vacancy, rent growth has faced upward pressure. Rent growth is expected to average 3.1 percent in 2019 vs 1.8 percent in 2018, but may experience more sluggish growth—on average, 1.2 percent—in 2020.

FIRE & PBS employment growth has moderated since 2014 but remained robust at nearly 4 percent in 1Q2019. Despite the downward trend in employment growth, asking rent growth increased quarter over quarter, bolstered by long-term gains in employment. According to the U.S. Census Bureau, the MSA boasted the seventh-highest population increase in 2018.

The significant uptick in construction values since 3Q2017 can primarily be attributed to two new office projects:

- A 35-story office tower being developed by Trammell Crow, fully preleased by Google Inc., and
- The Republic, a recently permitted high-rise being developed by Lincoln Property Company and Phoenix Property Company.

Net absorption was positive for 1Q2019 as demand outpaced the new supply of office space. However, if employment growth continues to decline, positive net absorption may diminish in the near term due to reduced demand for office space.





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

Note: Arrows indicate change from previous quarter with the exception of asking rent growth (change from previous year). Seasonally adjusted data.

## Austin Retail (Figures 11 - 15)

Actual vacancy rose slightly in 1Q2019. However, at just over 4 percent, actual vacancy remains much lower than natural vacancy of 6.0 percent. The vacancy rate is forecasted to average 4.4 percent in 2019. Despite sustained low actual vacancy, asking rent growth has declined since 2018 and entered negative territory in 1Q2019. Rent growth is expected to remain sluggish in the near term, averaging -1.1 percent in 2019 and -1.2 in 2020.

Since 2016, retail employment growth has generally trended downward but remained positive in 1Q2019. Net absorption registered negative in 4Q2018 and 1Q2019, hampered by the continued decline in employment growth.

Construction values showed a significant uptick in 1Q2019, but construction activity remains at post-recessionary lows. Dampening rent and employment growth as well as concerns surrounding Ecommerce may continue to discourage growth in construction activity.



Sources: CoStar and the Real Estate Center at Texas A&M University Note: Arrows indicate change from previous quarter with the exception of asking rent growth (change from previous year). Seasonally adjusted data.

# Austin Warehouse (Figures 16 - 20)

Since the end of the recovery from the GR, actual vacancy has hovered around 6 percent. Actual vacancy is expected to average 6.5 percent in 2019, which, at a level well below the natural vacancy (11.0 percent), should spur new development in the near term. Although asking rent growth dipped into negative territory in 2018, it turned positive in 1Q2019. Rent growth is expected to average 3.8 percent in 2019, indicating a significant gain in the growth rate over the ensuing quarters.

Warehouse employment growth plummeted after peaking at nearly 16 percent in 2017 but remained positive at 2 percent in 1Q2019. Despite the recent slowing in employment growth, net absorption has remained positive.

Construction values continue to remain well above levels observed prior to the end of the recovery from the GR. However, construction activity has weakened significantly over the past year.



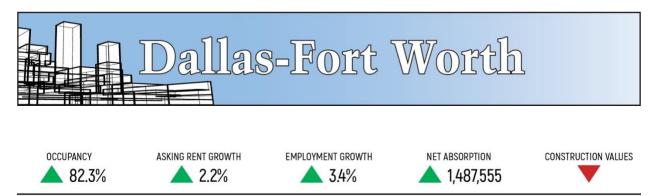
|               |                            | Va   | cancy Rates | (%)  | Asking Rents (y-o-y %) |      |      |  |
|---------------|----------------------------|------|-------------|------|------------------------|------|------|--|
| Property Type | Natural<br>Vacancy<br>Rate | 2018 | 2019        | 2020 | 2018                   | 2019 | 2020 |  |
| Office        | 13.0                       | 9.3  | 10.3        | 11.0 | 1.8                    | 3.1  | 1.2  |  |
| Retail        | 6.0                        | 4.0  | 4.4         | 4.5  | 4.0                    | -1.1 | -1.2 |  |
| Warehouse     | 11.0                       | 5.6  | 6.5         | 6.6  | 0.1                    | 3.8  | 2.5  |  |

#### Table 1. Projected Overall Vacancy Rates and Percent Change in Nominal Asking Rents

Note: Annual numbers represent the four-quarter average of the seasonally adjusted data. Rent growth is nominally estimated from the previous year's average.

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





Sources: CoStar and the Real Estate Center at Texas A&M University Note: Arrows indicate change from previous quarter with the exception of asking rent growth (change from previous year). Seasonally adjusted data.

# Dallas-Fort Worth Office (Figures 21 - 25)

Actual vacancy and asking rent growth remained steady in 1Q2019. Actual vacancy measured only slightly below the natural vacancy of 18.0 percent, suggesting that rent growth may taper. Actual vacancy is expected to average 17.7 percent over 2019, while rent growth is expected to average a modest 1.0 percent in 2019. Rent growth may struggle to meet expectations as the gap between actual and natural vacancy narrows.

FIRE & PBS employment growth, bolstered by the large overall population growth in the MSA, remained steady at roughly 3 percent. Net absorption, buoyed by consistent employment growth and the decreasing supply of new office space, unsurprisingly continued to measure positive in 1Q2019.

Construction values appear to have flattened in 1Q2019 following a sharp decline over the previous three years. Following construction values, construction activity, or square footage under construction, has also declined since 2016.



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

Note: Arrows indicate change from previous quarter with the exception of asking rent growth (change from previous year). Seasonally adjusted data.

# Dallas-Fort Worth Retail (Figures 26 - 30)

Actual vacancy has continued its slow decline—at just over 5 percent, it measures well below the natural vacancy of 9.0 percent. Actual vacancy, which is expected to average 5.3 percent in 2019, should remain relatively unchanged over the ensuing quarters. Asking rent growth, which is expected to average 1.2 percent in 2019, will likely continue to trend downward.

Retail employment growth continues to hover around 1 percent. Despite dampening rent and employment growth, net absorption remains positive, likely buoyed by the historic lows in square footage under construction.



Construction values continued to fall while construction activity remained at a historic low. While the large gap between actual and natural vacancy should dictate an increase in construction, the conditions for development—including land availability, consumer trends, and investor sentiment—may not be optimal.

As anticipated, the decline in new construction follows the continued decline in construction values.



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

Note: Arrows indicate change from previous quarter with the exception of asking rent growth (change from previous year). Seasonally adjusted data.

## Dallas-Fort Worth Warehouse (Figures 31 - 35)

Actual vacancy has continued to hover between 7 and 8 percent since 2014, well below the natural vacancy of 11.0 percent. Asking rent growth peaked in 4Q2108, decreasing only slightly to 8.1 percent in 1Q2019. Rent growth is expected to average 4.8 percent in 2019. Actual vacancy should remain well below natural vacancy in the near term, with expectations for an average vacancy rate of 8.0 percent in 2019.

Employment growth has generally trended downward since 2015, but remained robust at roughly 4 percent in 1Q2019. Net absorption has remained positive since the GR, reflecting strong demand for industrial space in the MSA.

Construction activity has declined since 2016. However, construction values remain high in anticipation of strong future demand.

|               |                            | Vacancy Rates (%) |      |      | Asking Rents (y-o-y %) |      |      |
|---------------|----------------------------|-------------------|------|------|------------------------|------|------|
| Property Type | Natural<br>Vacancy<br>Rate | 2018              | 2019 | 2020 | 2018                   | 2019 | 2020 |
| Office        | 18.0                       | 17.9              | 17.7 | 17.6 | 2.6                    | 1.0  | 1.0  |
| Retail        | 9.0                        | 5.5               | 5.3  | 5.3  | 3.3                    | 1.2  | 0.5  |
| Warehouse     | 11.0                       | 7.6               | 8.0  | 8.1  | 6.0                    | 4.8  | 1.6  |

Table 2. Projected Overall Vacancy Rates and Percent Change in Nominal Asking Rents

Note: Annual numbers represent the four-quarter average of the seasonally adjusted data. Rent growth is nominally estimated from the previous year's average.

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





Sources: CoStar and the Real Estate Center at Texas A&M University Note: Arrows indicate change from previous quarter with the exception of asking rent growth (change from previous year). Seasonally adjusted data.

# Houston Office (Figures 36 - 40)

While the oil downturn, which began in mid-2014, has proved troublesome to Houston's office market, 1Q2019 ended on a more positive note. Since mid-2015, actual vacancy has exceeded natural vacancy (15.0 percent), measuring 19 percent in 1Q2019. Little movement is expected in actual vacancy over the ensuing quarters; it is expected to average 19.4 percent in 2019. Rent growth declined steadily in the wake of the oil downturn, dipping into negative territory from 2Q2016 to 3Q2017. Rent growth has since turned upward and climbed steadily through 2018, measuring 5.3 percent in 1Q2019. Moderate FIRE & PBS employment growth of 2.7 percent should buoy continued rent growth; the analysis suggests that rent growth will average 6.1 percent in 2019.

FIRE & PBS employment growth declined in the wake of the oil downturn but picked up steam in 2017, since measuring between 2 and 3 percent. Net absorption reflects improved growth, switching from negative to positive in the second half of 2018. Combined with the historic low levels of square footage under construction, high employment growth suggests net absorption should remain positive as long as demand continues.

Although construction values have proven volatile, employment growth and higher oil prices appear to have enticed new construction in the MSA.



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

Note: Arrows indicate change from previous quarter with the exception of asking rent growth (change from previous year). Seasonally adjusted data.

## Houston Retail (Figures 41 - 45)

Actual vacancy has remained stable between 5 and 6 percent since 2Q2015, measuring below the natural vacancy of 8.0 percent. Actual vacancy is expected to hold constant over 2019, averaging 5.8 percent. After declining in the wake of the oil downturn, asking rent growth has



climbed since the beginning of 2017 and peaked at 6 percent in 1Q2019. Rent growth is expected to average 4.2 percent in 2019 as the Houston economy continues to gain momentum.

Retail employment growth fell to a record low of -1.9 percent in 1Q2019. Despite declining employment growth and decreasing levels of new retail space, net absorption remained positive for the quarter. If employment growth continues its decline, Houston may observe negative net absorption over the ensuing quarters.

Construction activity remains relatively low in Houston's retail market, reflecting the difficulty in finding desirable retail sites in the MSA. Despite large increases in rent growth, poor employment growth is reflected in dampened construction activity.



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

Note: Arrows indicate change from previous quarter with the exception of asking rent growth (change from previous year). Seasonally adjusted data.

## Houston Warehouse (Figures 46 - 50)

Actual vacancy, which has hovered between 6 and 8 percent since mid-2011, measured 7 percent in 1Q2019, slightly below natural vacancy of 8 percent. The significant uptick in rent growth in 2018 will likely moderate in the near term. Rent growth is expected to average 3.9 percent in 2019 while actual vacancy should remain steady, averaging 7.1 percent in 2019.

Since 2016, warehousing and transportation employment growth has trended upward; it continues to remain strong. First quarter 2019 experienced only a minor downtick in employment growth, ending the quarter at just over 4 percent growth. Despite strong employment growth and demand in the warehouse sector, net absorption was slightly negative in 1Q2019, the first time since 2016. Negative net absorption may be explained by the recent spike in deliveries in late-2018.

Robust rent and employment growth should encourage construction activity. The uptick in construction values over the preceding quarters also suggests that construction activity may increase in the near term.

Since the end of 2015, construction activity in the warehouse market has exceeded activity in the office market. A similar pattern has been observed in the Dallas MSA since the second half of 2012. While Dallas has historically been a strong transportation hub, the shift in the Houston market indicates reduced supply of new office space.



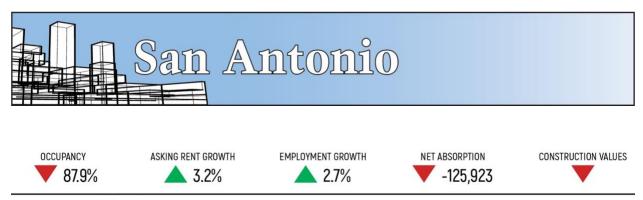
#### Table 3. Projected Overall Vacancy Rates and Percent Change in Nominal Asking Rents

|               |                            | Vacancy Rates (%) |      |      | Asking Rents (y-o-y %) |      |      |  |
|---------------|----------------------------|-------------------|------|------|------------------------|------|------|--|
| Property Type | Natural<br>Vacancy<br>Rate | 2018              | 2019 | 2020 | 2018                   | 2019 | 2020 |  |
| Office        | 15.0                       | 20.0              | 19.4 | 19.1 | 2.8                    | 6.1  | 5.7  |  |
| Retail        | 8.0                        | 5.7               | 5.8  | 5.9  | 3.6                    | 4.2  | 3.1  |  |
| Warehouse     | 8.0                        | 6.7               | 7.1  | 7.2  | 4.0                    | 3.9  | 3.0  |  |

Note: Annual numbers represent the four-quarter average of the seasonally adjusted data. Rent growth is nominally estimated from the previous year's average.

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





Sources: CoStar and the Real Estate Center at Texas A&M University Note: Arrows indicate change from previous quarter with the exception of asking rent growth (change from previous year). Seasonally adjusted data.

# San Antonio Office (Figures 51 - 55)

Actual vacancy (12.2 percent) slightly surpassed natural vacancy (12.0 percent) in 1Q2019. While asking rent growth remained unchanged quarter over quarter, the positive disparity between actual and natural vacancy may dampen asking rent growth in the near term. Indeed, rent growth is expected to moderate through 2019, averaging 2.2 percent in 2019.

FIRE & PBS employment growth rate slowed slightly in 1Q2019. Net absorption registered as negative in both 4Q2018 and 1Q2019, suggesting weakened demand for San Antonio office space. The previously observed positive net absorption, despite the decreasing employment growth rate, may be explained by low construction deliveries.

While construction values have increased significantly since mid-2018, this is largely attributable to the construction of three Microsoft data centers totaling \$400 million.



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

Note: Arrows indicate change from previous quarter with the exception of asking rent growth (change from previous year). Seasonally adjusted data.

# San Antonio Retail (Figures 56 - 60)

Rent growth has largely been negative since the GR but reached a post-recessionary high of approximately 6 percent in 3Q2018. Since this peak, rent growth has experienced a slight decreasing trend. This is due to the spread between actual and natural vacancy becoming increasingly smaller in the past year. First quarter 2019 saw an actual vacancy of 5 percent, 2 percentage points below the natural vacancy. Rent growth is expected to average 2.7 percent over 2019 and actual vacancy, 4.8 percent.

The retail employment growth rate has been declining since 1Q2016. Employment growth had dipped into the negative territory in late-2017 and has since remained just slightly negative through 1Q2019. The decline in employment growth contributed to negative net absorption in



the previous two quarters. The lack of construction deliveries likely kept net absorption positive until recently.

Construction values remain low with only a slight increase in the previous two quarters. A spike in new development is not likely in the near term as demand for retail space in the MSA remains low.



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

Note: Arrows indicate change from previous quarter with the exception of asking rent growth (change from previous year). Seasonally adjusted data.

## San Antonio Warehouse (Figures 61 - 65)

Actual vacancy has consistently remained below the natural vacancy of 8 percent since the end of the recovery from the GR, hovering between 6 and 7 percent. Actual vacancy was 6.4 percent for 1Q2019. Vacancy is expected to remain flat, averaging 6.7 percent in 2019. However, rent growth has declined overall since the end of 2014 with the exception of a small spike in late-2016. Rent growth entered negative territory only a year after the uptick of 2016 and has remained negative through 1Q2019. Rent growth is projected to remain essentially flat over 2019, averaging -0.1 percent for the year.

Warehousing and transportation employment growth has been trending downward since the beginning of 2017 and has registered as negative for the previous three quarters. This trend has likely been the key factor in the decreasing rent growth in San Antonio. Despite negative employment growth, net absorption remained positive in the last three quarters. Low construction deliveries is the likely explanation for positive net absorption.

Construction activity increased in 1Q2019 following the spike in the construction index in 4Q2018. H-E-B recently initiated construction of a new 1.6 million-sf warehouse.

|               |                            | Va   | cancy Rates | (%)  | Asking Rents (y-o-y %) |      |      |
|---------------|----------------------------|------|-------------|------|------------------------|------|------|
| Property Type | Natural<br>Vacancy<br>Rate | 2018 | 2019        | 2020 | 2018                   | 2019 | 2020 |
| Office        | 12.0                       | 11.9 | 12.1        | 12.1 | 2.7                    | 2.2  | 2.0  |
| Retail        | 7.0                        | 4.5  | 4.8         | 5.1  | 4.6                    | 2.7  | 1.3  |
| Warehouse     | 8.0                        | 6.6  | 6.7         | 6.8  | -0.9                   | -0.1 | 1.0  |

Table 4. Projected Overall Vacancy Rates and Percent Change in Nominal Asking Rents

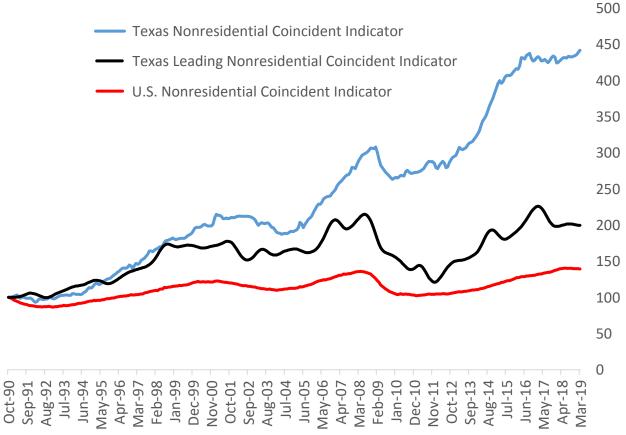
Note: Annual numbers represent the four-quarter average of the seasonally adjusted data. Rent growth is nominally estimated from the previous year's average.

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









Source: Real Estate Center at Texas A&M University



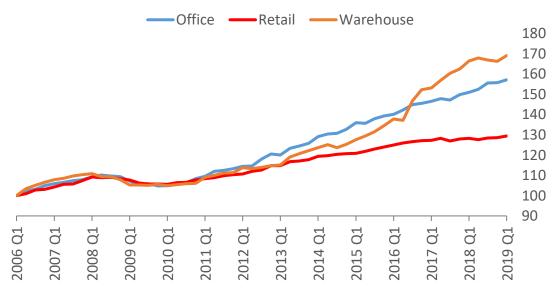
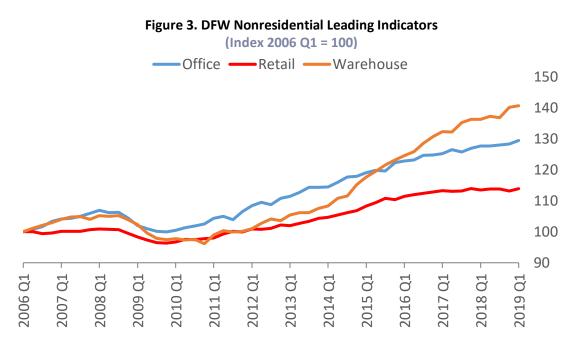


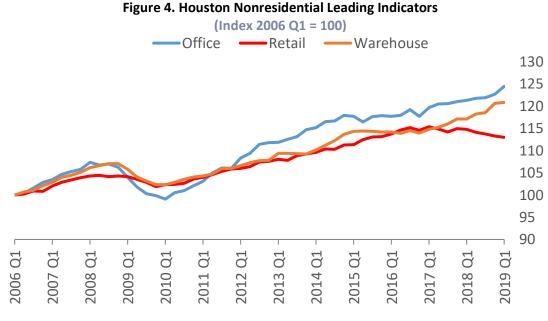
Figure 2. Austin Nonresidential Leading Indicators (Index 2006 Q1 = 100)

Source: Real Estate Center at Texas A&M University

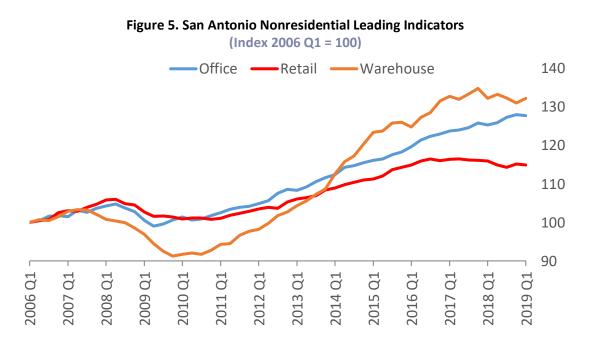


Source: Real Estate Center at Texas A&M University





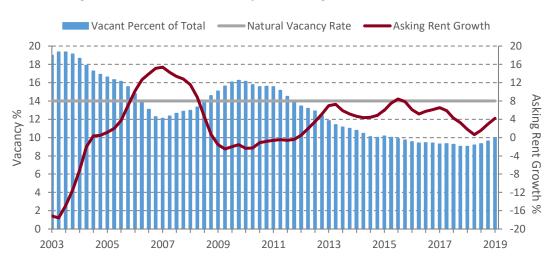
Source: Real Estate Center at Texas A&M University

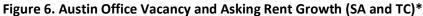


Source: Real Estate Center at Texas A&M University



## Austin





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

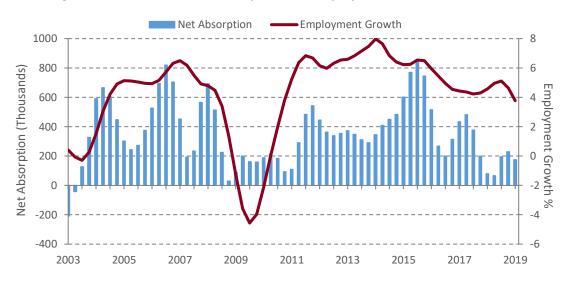
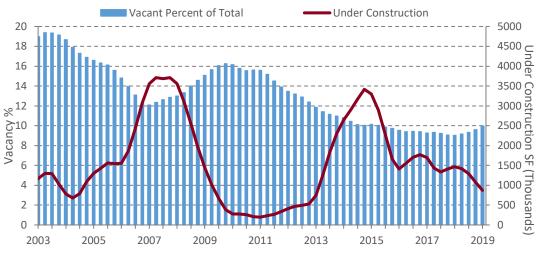


Figure 7. Austin Office Net Absorption and Employment Growth (SA and TC)\*

\*Note: Seasonally adjusted and trend-cycle component.

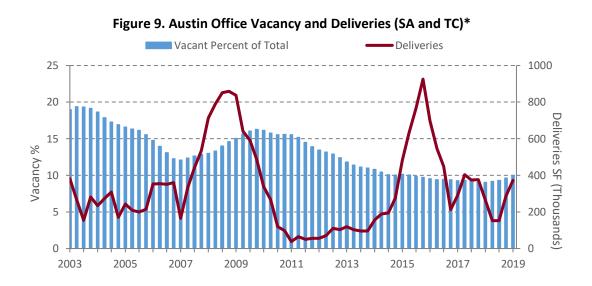
Sources: Bureau of Labor Statistics, CoStar, and Real Estate Center at Texas A&M University







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



\*Note: Four quarter moving average used for deliveries, seasonal adjustment and trend cycling used for vacant percent of total. Sources: CoStar and Real Estate Center at Texas A&M University



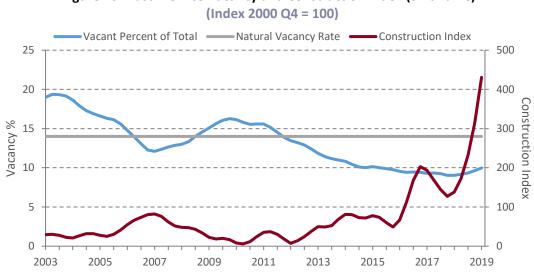


Figure 10. Austin Office Vacancy and Construction Index (SA and TC)\*

\*Note: Inflation adjusted, seasonally adjusted, and trend-cycle component. Sources: CoStar, Dodge Analytics, and Real Estate Center at Texas A&M University



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



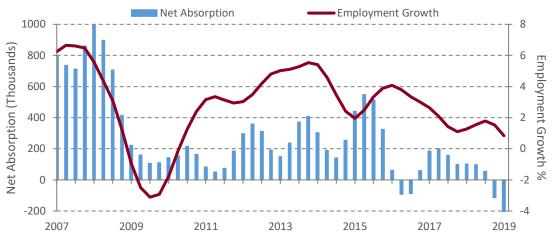
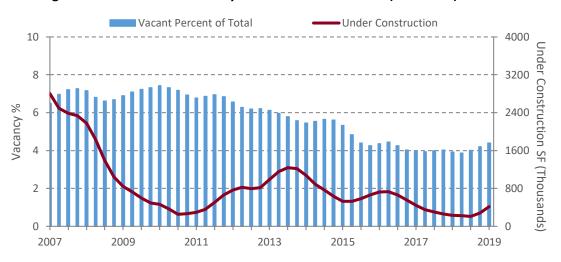


Figure 12. Austin Retail Net Absorption SF and Employment Growth (SA and TC)\*

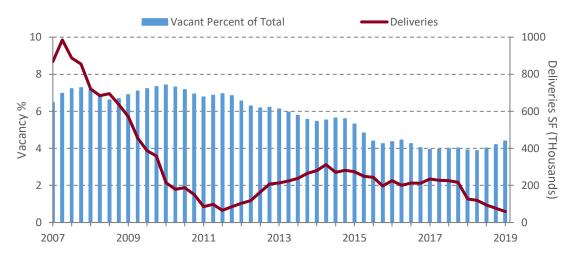


## Figure 13. Austin Retail Vacancy and Under Construction (SA and TC)\*

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

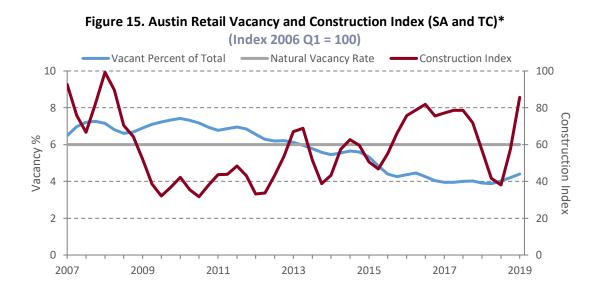


<sup>\*</sup>Note: Seasonally adjusted and trend-cycle component. Sources: Bureau of Labor Statistics, CoStar, and Real Estate Center at Texas A&M University





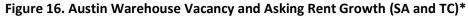
\*Note: Seasonally adjusted and trend-cycle component. Sources: CoStar and Real Estate Center at Texas A&M University



\*Note: Inflation adjusted, seasonally adjusted, and trend-cycle component. Sources: CoStar, Dodge Analytics, and Real Estate Center at Texas A&M University







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

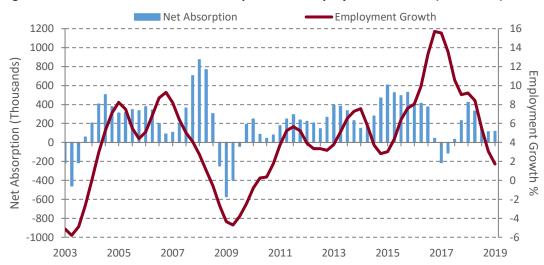


Figure 17. Austin Warehouse Net Absorption and Employment Growth (SA and TC)\*

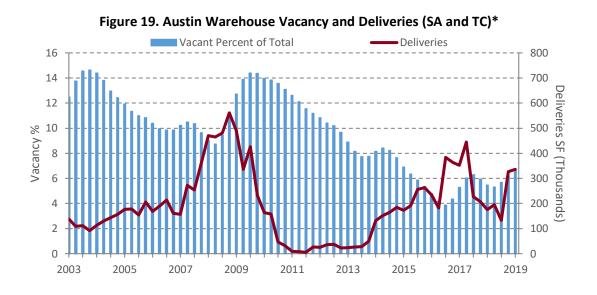
\*Note: Seasonally adjusted and trend-cycle component. Sources: Bureau of Labor Statistics, CoStar, and Real Estate Center at Texas A&M University





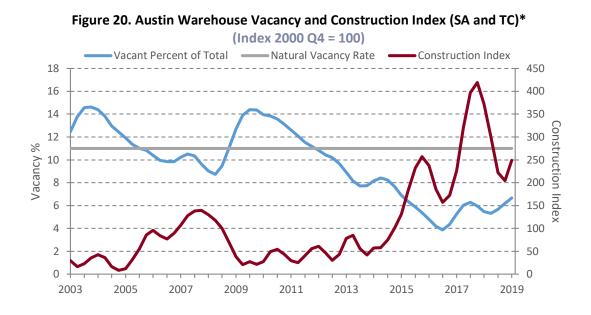
## Figure 18. Austin Warehouse Vacancy and Under Construction (SA and TC)\*

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



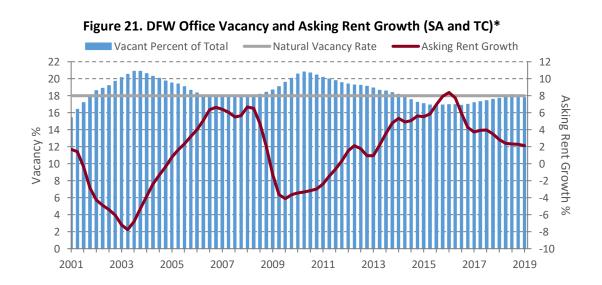
\*Note: Four quarter moving average used for deliveries, seasonal adjustment and trend cycling used for vacant percent of total. Sources: CoStar and Real Estate Center at Texas A&M University





\*Note: Inflation adjusted, seasonally adjusted, and trend-cycle component. Sources: CoStar, Dodge Analytics, and Real Estate Center at Texas A&M University

#### DFW



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



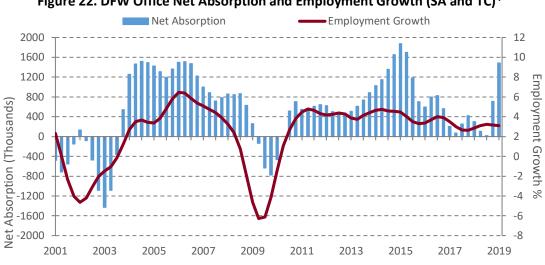


Figure 22. DFW Office Net Absorption and Employment Growth (SA and TC)\*

\*Note: Seasonally adjusted and trend-cycle component. Sources: Bureau of Labor Statistics, CoStar, and Real Estate Center at Texas A&M University

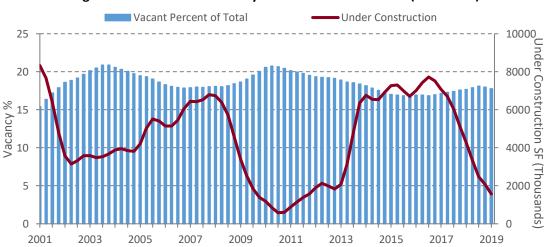


Figure 23. DFW Office Vacancy and Under Construction (SA and TC)\*

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



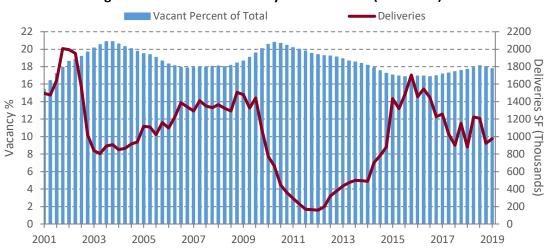
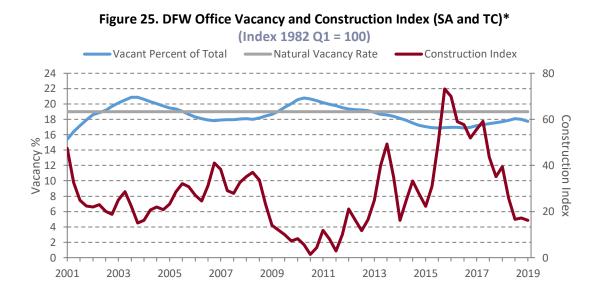


Figure 24. DFW Office Vacancy and Deliveries (SA and TC)\*

\*Note: Four quarter moving average used for deliveries, seasonal adjustment and trend cycling used for vacant percent of total. Sources: CoStar and Real Estate Center at Texas A&M University



\*Note: Inflation adjusted, seasonally adjusted, and trend-cycle component. Sources: CoStar, Dodge Analytics, and Real Estate Center at Texas A&M University



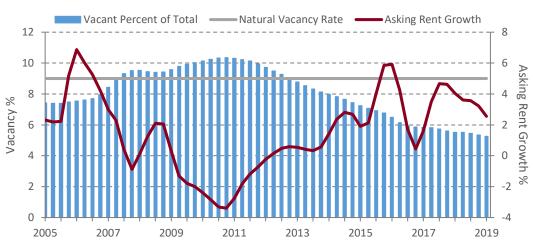
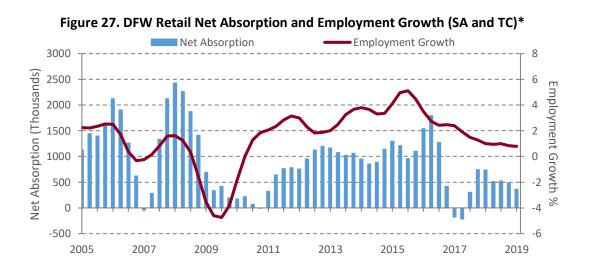


Figure 26. DFW Retail Vacancy and Asking Rent Growth (SA and TC)\*

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



\*Note: Seasonally adjusted and trend-cycle component. Sources: Bureau of Labor Statistics, CoStar, and Real Estate Center at Texas A&M University



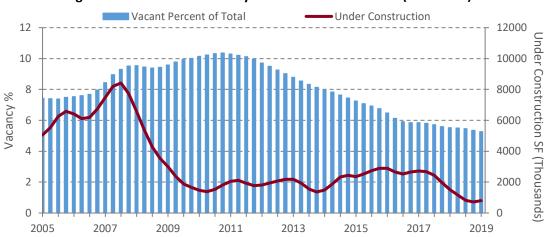
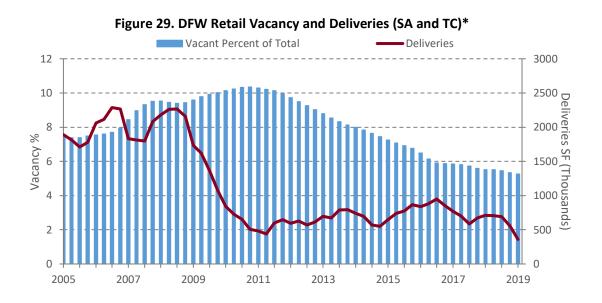


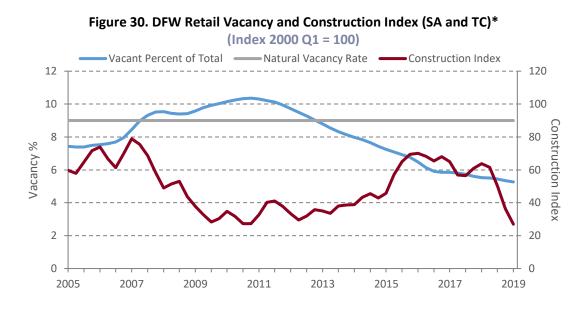
Figure 28. DFW Retail Vacancy and Under Construction (SA and TC)\*

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

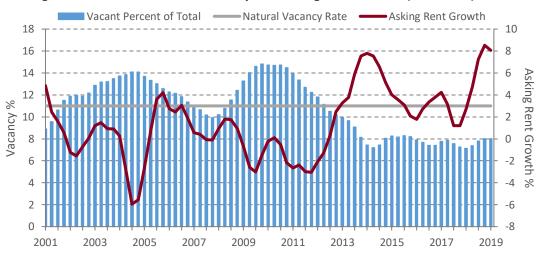


\*Note: Four quarter moving average used for deliveries, seasonal adjustment and trend cycling used for vacant percent of total. Sources: CoStar and Real Estate Center at Texas A&M University





\*Note: Inflation adjusted, seasonally adjusted, and trend-cycle component. Sources: CoStar, Dodge Analytics, and Real Estate Center at Texas A&M University



#### Figure 31. DFW Warehouse Vacancy and Asking Rent Growth (SA and TC)\*

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



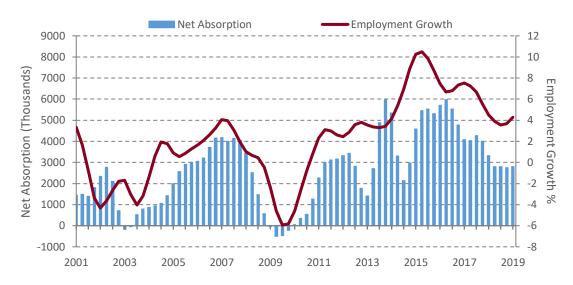


Figure 32. DFW Warehouse Net Absorption and Employment Growth (SA and TC)\*

\*Note: Seasonally adjusted and trend-cycle component.

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

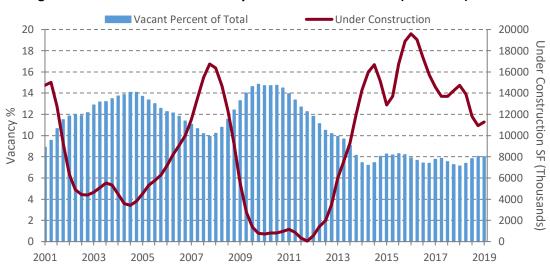
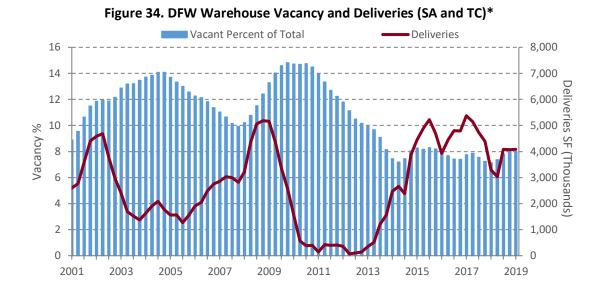


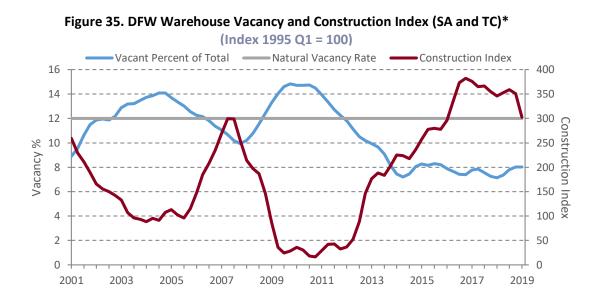
Figure 33. DFW Warehouse Vacancy and Under Construction (SA and TC)\*

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





\*Note: Four quarter moving average used for deliveries, seasonal adjustment and trend cycling used for vacant percent of total. Sources: CoStar and Real Estate Center at Texas A&M University



\*Note: Inflation adjusted, seasonally adjusted, and trend-cycle component. Sources: CoStar, Dodge Analytics, and Real Estate Center at Texas A&M University



### Houston

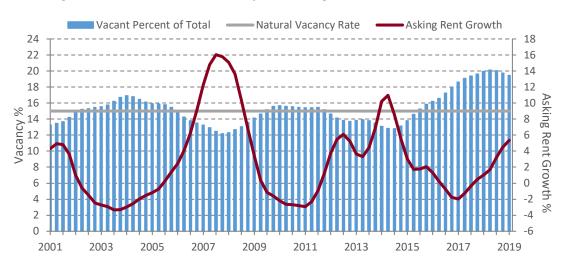


Figure 36. Houston Office Vacancy and Asking Rent Growth (SA and TC)\*

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

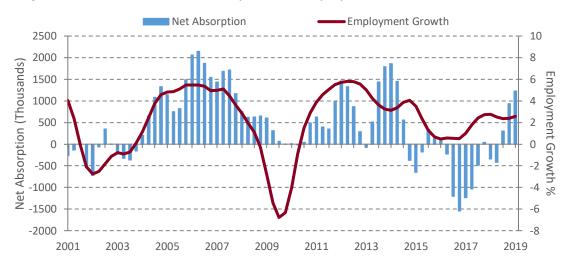
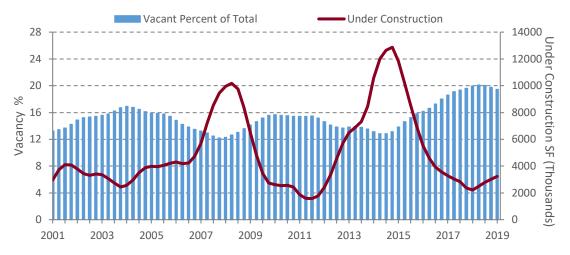
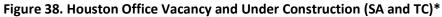


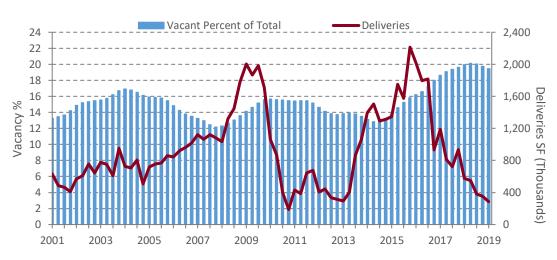
Figure 37. Houston Office Net Absorption and Employment Growth (SA and TC)\*

\*Note: Seasonally adjusted and trend-cycle component. Sources: Bureau of Labor Statistics, CoStar, and Real Estate Center at Texas A&M University





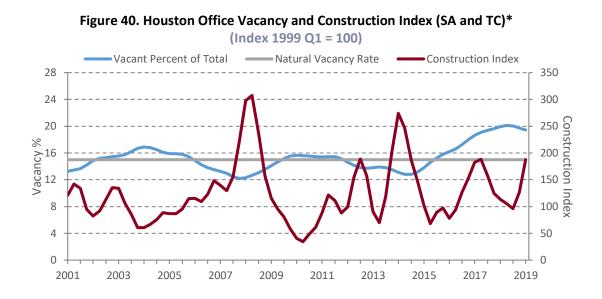




## Figure 39. Houston Office Vacancy and Deliveries (SA and TC)\*

\*Note: Four quarter moving average used for deliveries, seasonal adjustment and trend cycling used for vacant percent of total. Sources: CoStar and Real Estate Center at Texas A&M University





\*Note: Inflation adjusted, seasonally adjusted, and trend-cycle component. Sources: CoStar, Dodge Analytics, and Real Estate Center at Texas A&M University



## Figure 41. Houston Retail Vacancy and Asking Rent Growth (SA and TC)\*



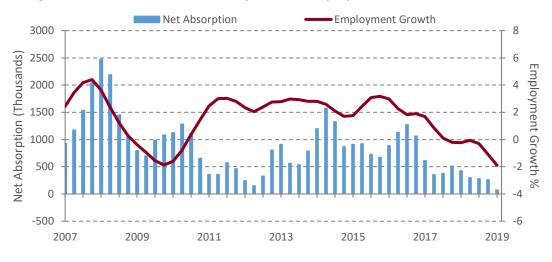
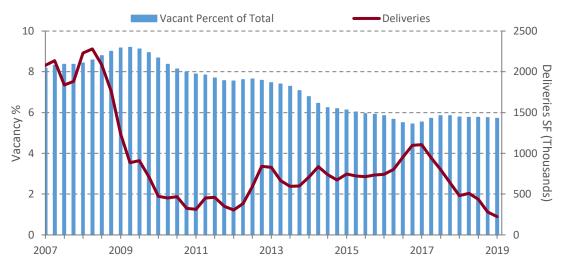


Figure 42. Houston Retail Net Absorption and Employment Growth (SA and TC)\*

\*Note: Seasonally adjusted and trend-cycle component. Sources: Bureau of Labor Statistics, CoStar, and Real Estate Center at Texas A&M University

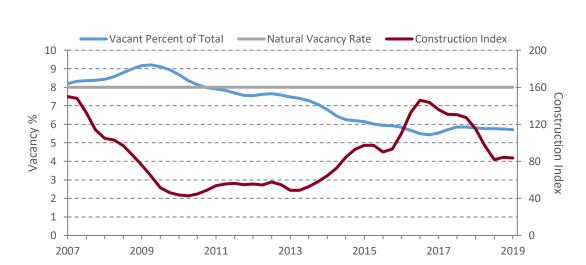






## Figure 44. Houston Retail Vacancy and Deliveries (SA and TC)\*

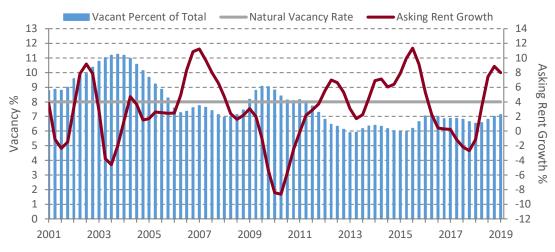
\*Note: Four quarter moving average used for deliveries, seasonal adjustment and trend cycling used for vacant percent of total. Sources: CoStar and Real Estate Center at Texas A&M University



# Figure 45. Houston Retail Vacancy and Construction Index (SA and TC)\* (Index 2006 Q1 = 100)

\*Note: Inflation adjusted, seasonally adjusted, and trend-cycle component. Sources: CoStar, Dodge Analytics, and Real Estate Center at Texas A&M University







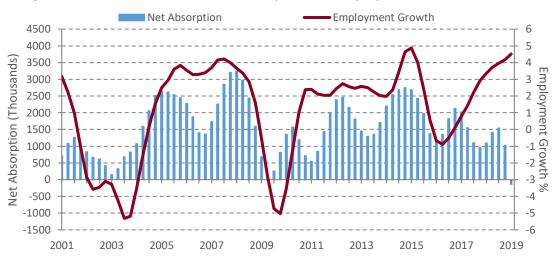
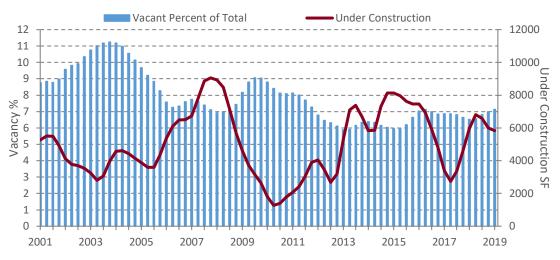


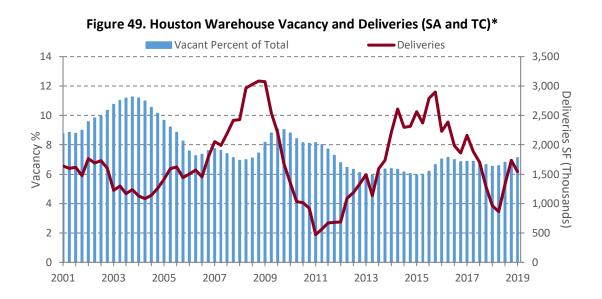
Figure 47. Houston Warehouse Net Absorption and Employment Growth (SA and TC)\*

\*Note: Seasonally adjusted and trend-cycle component. Sources: Bureau of Labor Statistics, CoStar, and Real Estate Center at Texas A&M University









\*Note: Four quarter moving average used for deliveries, seasonal adjustment and trend cycling used for vacant percent of total. Sources: CoStar and Real Estate Center at Texas A&M University



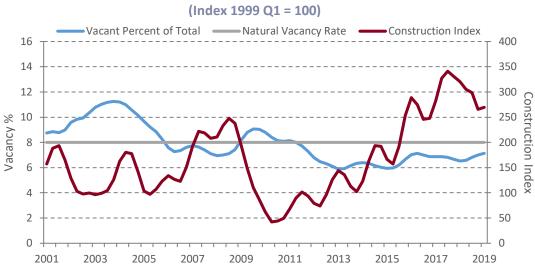
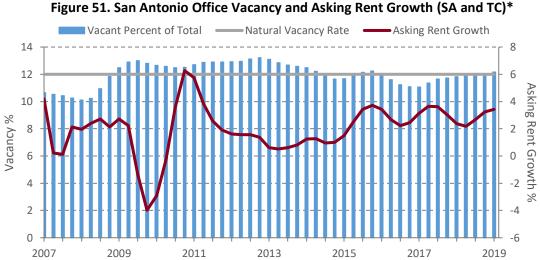


Figure 50. Houston Warehouse Vacancy and Construction Index (SA and TC)\*

\*Note: Inflation adjusted, seasonally adjusted, and trend-cycle component. Sources: CoStar, Dodge Analytics, and Real Estate Center at Texas A&M University

San Antonio





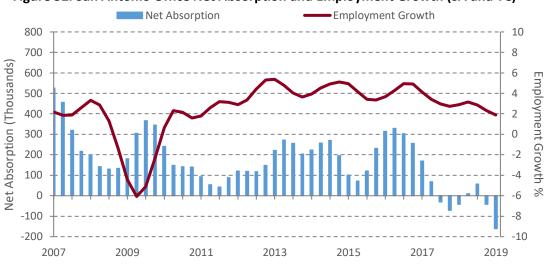
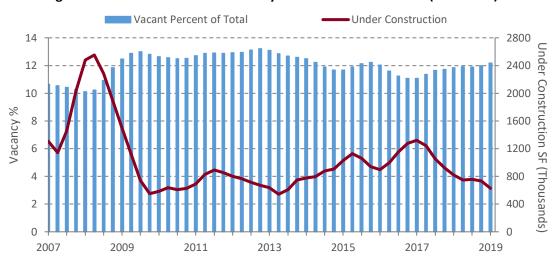


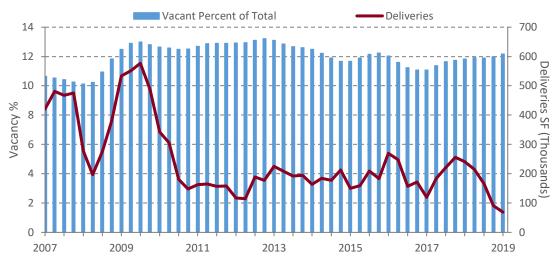
Figure 52. San Antonio Office Net Absorption and Employment Growth (SA and TC)\*

\*Note: Seasonally adjusted and trend-cycle component. Sources: Bureau of Labor Statistics, CoStar, and Real Estate Center at Texas A&M University



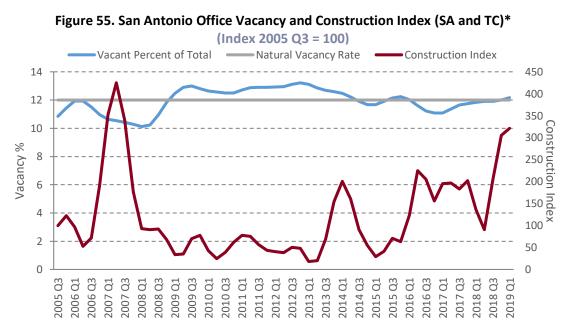
# Figure 53. San Antonio Office Vacancy and Under Construction (SA and TC)\*





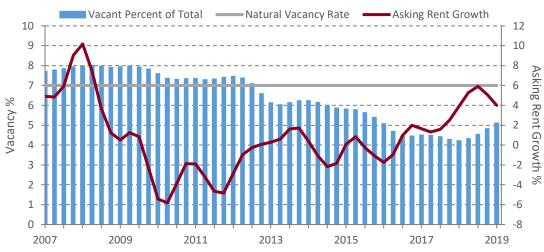
## Figure 54. San Antonio Office Vacancy and Deliveries (SA and TC)\*

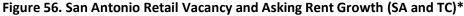
\*Note: Four quarter moving average used for deliveries, seasonal adjustment and trend cycling used for vacant percent of total. Sources: CoStar and Real Estate Center at Texas A&M University



\*Note: Inflation adjusted, seasonally adjusted, and trend-cycle component. Sources: CoStar, Dodge Analytics, and Real Estate Center at Texas A&M University







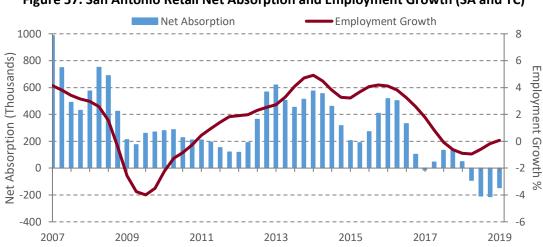
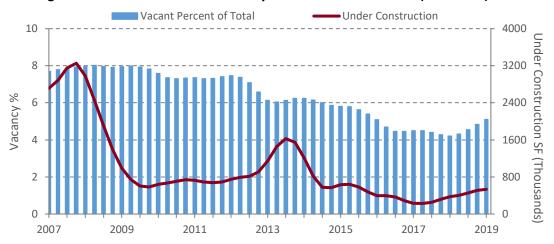
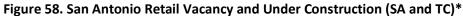


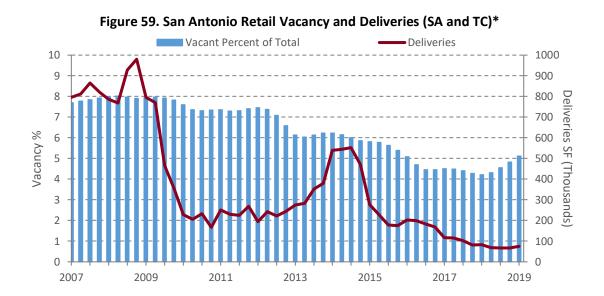
Figure 57. San Antonio Retail Net Absorption and Employment Growth (SA and TC)\*

\*Note: Seasonally adjusted and trend-cycle component. Sources: Bureau of Labor Statistics, CoStar, and Real Estate Center at Texas A&M University



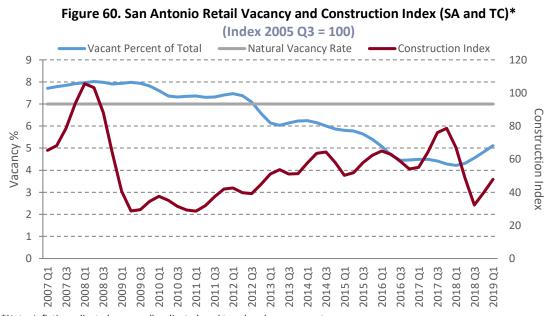




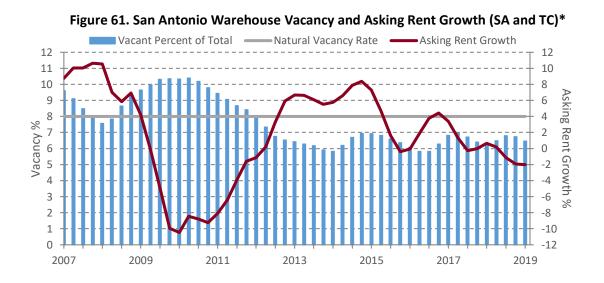


\*Note: Four quarter moving average used for deliveries, seasonal adjustment and trend cycling used for vacant percent of total. Sources: CoStar and Real Estate Center at Texas A&M University

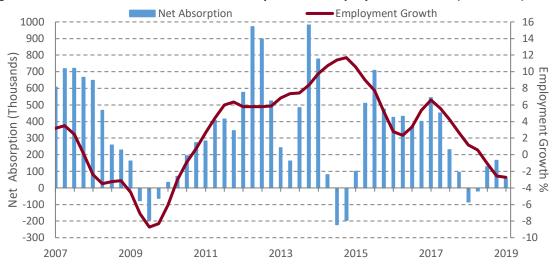




\*Note: Inflation adjusted, seasonally adjusted, and trend-cycle component. Sources: CoStar, Dodge Analytics, and Real Estate Center at Texas A&M University









\*Note: Seasonally adjusted and trend-cycle component. Sources: Bureau of Labor Statistics, CoStar, and Real Estate Center at Texas A&M University

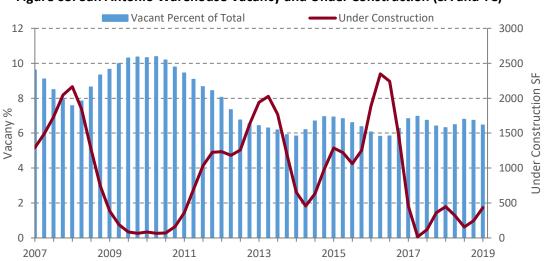
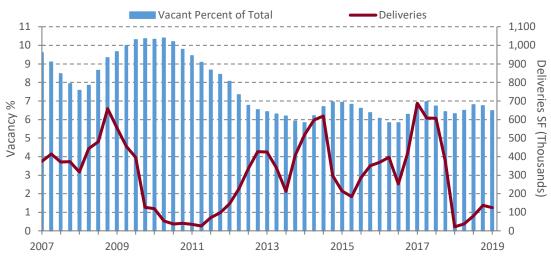


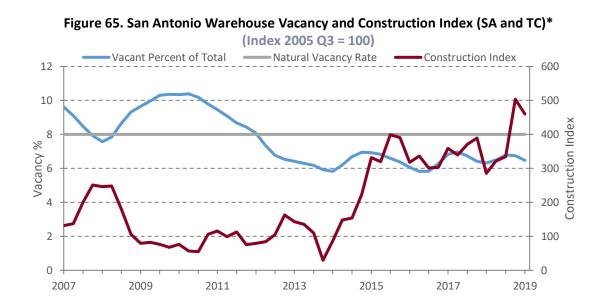
Figure 63. San Antonio Warehouse Vacancy and Under Construction (SA and TC)\*







\*Note: Four quarter moving average used for deliveries, seasonal adjustment and trend cycling used for vacant percent of total. Sources: CoStar and Real Estate Center at Texas A&M University



\*Note: Inflation adjusted, seasonally adjusted, and trend-cycle component. Sources: CoStar, Dodge Analytics, and Real Estate Center at Texas A&M University





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