

Steady as She Goes

Texas Apartment Markets Recovering

Ali Anari and Harold D. Hunt
September 5, 2018

Publication 2208



A new Real Estate Center study finds apartment markets in Austin, Dallas-Fort Worth, and San Antonio are in the final stages of a recovery that began in the aftermath of the Great Recession (GR) of 2007–09. Houston’s apartment market is in the early stages of a new cycle that began in early 2017.

In the absence of a major shock to the U.S. and Texas economies, apartment markets in Austin, DFW, and San Antonio are projected to move toward their long-term, steady-state average growth rates. Meanwhile, Houston’s apartment market is expected to complete a cycle recovering from the oil price collapse of 2014 and Hurricane Harvey in 2017.

The study uses time series of vacancy rates and rent-growth rates for apartment markets in the four metros. The data run from third quarter 2005 to first quarter 2018.

Figures 1 to 4 present time series of vacancy rates, filtered vacancy rates, average vacancy rates, and projections

The Takeaway

Center research shows apartment markets in Austin, Dallas-Fort Worth, and San Antonio are moving toward their long-term, steady-state average growth rates. Meanwhile, Houston’s market is expected to complete a cycle recovering from the oil price collapse of 2014 and Hurricane Harvey in 2017.

of vacancy rates for the four metropolitan areas. Figures 5 to 8 show time series of rent-growth rates, filtered rent-growth rates, average rent-growth rates, and projections of rent-growth rates for the areas.

In these figures, the blue lines are actual vacancy or rent-growth rates, the red lines are filtered rates, and the green lines are average rates. The vacancy and rent-growth rates data are filtered to purge short-run fluctuations and reveal longer-term trends.

Apartment Market Vacancy Cycles

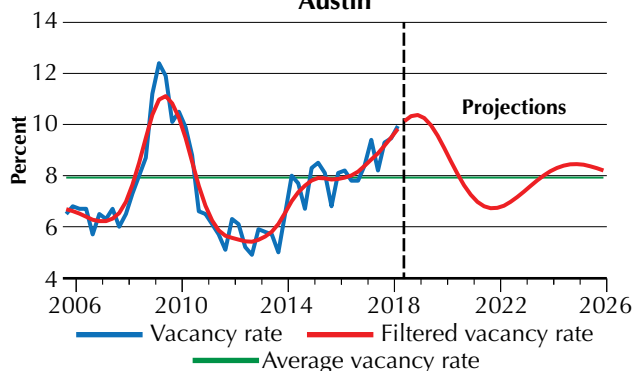
Austin’s vacancy rate cycles show a peak of more than 12 percent during the GR followed by a post-GR recovery when the area’s vacancy rate trended downward to a trough of 5.4 percent in third quarter 2012. Absorption exceeded new space deliveries from 2010 to 2012. Since then, the vacancy rate moved upward to 9.8 percent in first quarter 2018 (Figure 1). The projected vacancy rate shows a continued upward trend until the end of 2018, then trends downward, reverting toward its long-term average vacancy rate of 7.9 percent.

DFW’s vacancy rate reached a GR peak of more than 13.3 percent in fourth quarter 2009, followed by a downward trend to a trough of 6.8 percent in first quarter 2016. Absorption exceeded unit deliveries in five of the six years between 2010 and 2015. Vacancy rates trended upward to 9.4 percent in first quarter 2018 (Figure 2). The projected vacancy rate shows a continued upward trend until third quarter 2019, then trends downward and reverts toward its long-term average vacancy rate of 8.9 percent.

Houston experienced a GR peak vacancy rate of 15 percent in fourth quarter 2009 (Figure 3). The metro area’s post-GR recovery reduced the area’s apartment vacancy rate to a trough of 7.7 percent in second quarter 2014. The area’s apartment market suffered during the oil price collapse of 2014–15, leading to a post-GR peak of 12.2 percent in first quarter 2017. This was followed by the beginning of a new cycle in the aftermath of Hurricane Harvey. That cycle is projected to continue well into 2022, eventually reverting to a long-term average of 10.1 percent.

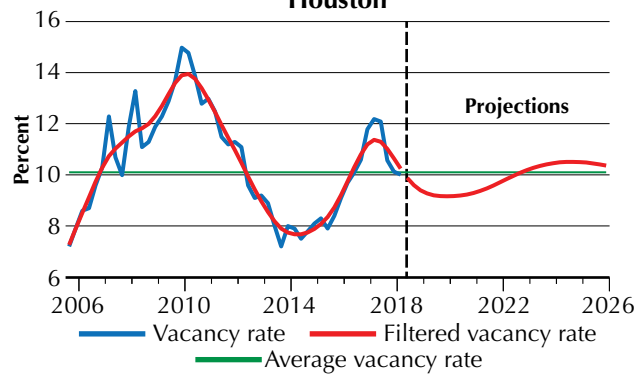
San Antonio’s apartment vacancy cycles are similar to Austin’s (Figure 4). After climbing to more than 12 percent in the GR, San Antonio’s apartment vacancy rate trended downward to a trough of 7.4 percent in third quarter 2012. Absorption exceeded deliveries in both 2010 and 2011. Vacancy then shifted upward to 10.9 percent by first quarter 2018. In the absence of a major shock to the market, the area’s apartment vacancy rate is expected to move toward its long-term average rate of 9.8 percent.

Figure 1. Apartment Vacancy Rate Cycles, Austin



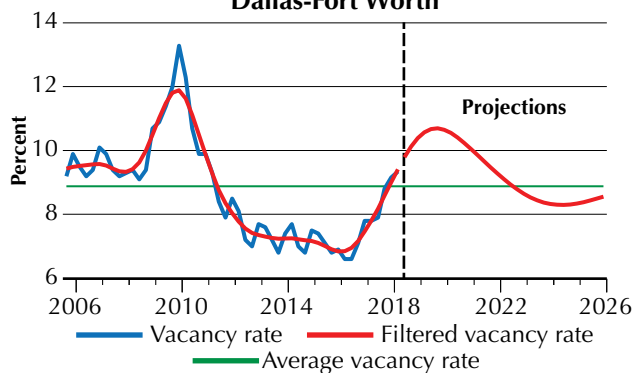
Sources: ALN Apartment Data and Real Estate Center at Texas A&M University

Figure 3. Apartment Vacancy Rate Cycles, Houston



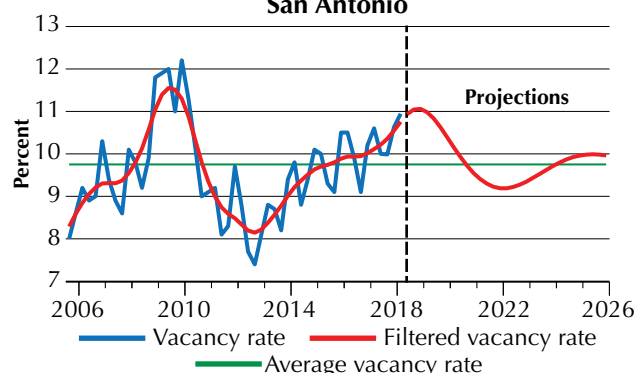
Sources: ALN Apartment Data and Real Estate Center at Texas A&M University

Figure 2. Apartment Vacancy Rate Cycles, Dallas-Fort Worth



Sources: ALN Apartment Data and Real Estate Center at Texas A&M University

Figure 4. Apartment Vacancy Rate Cycles, San Antonio



Sources: ALN Apartment Data and Real Estate Center at Texas A&M University

Rent-Growth Rate Cycles

Historical time series of actual apartment rents generally display an upward trend, although not monotonically, due to growing costs of apartment construction and general inflation over time. However, rent-growth rates are subject to mean reversion over time, usually display cyclical patterns tied to short-run local economic conditions or events, and are inversely related to vacancy rates.

The apartment rent-growth rate cycles for Austin showed a trough of -5.2 percent in the GR followed by a V-shaped post-GR recovery when the area's rent-growth rate trended upward to more than 7 percent in third quarter 2011 (Figure 5). The rate remained high until third quarter 2015, trending downward since then to less than 1 percent in fourth quarter 2017. Projections show rent growth trending upward until 2021 and moving around its long-term average growth rate of 3.8 percent.

DFW's apartment rent-growth rate experienced a similar V-shaped recovery following the GR and a continuous upward trend until 2016 (Figure 6). The growth rate peaked at 8 percent in second quarter 2016, then reverted to its long-term growth rate of 3.6 percent. Strong employment and population growth led to projected rent-growth rates along its long-term average growth rate.

Houston's apartment rent-growth rate cycle, like DFW's, had a V-shaped recovery in the GR that lasted until 2015 (Figure 7). It was boosted by the price of West Texas intermediate crude, which rose from \$39.10 per barrel in February 2009 to \$105.70 in June 2014. The metro's apartment rent-growth rate reached a post-GR peak of more than 8 percent in fourth quarter 2014, then trended downward to negative rates in first quarter 2017 due to falling oil prices. Oil price recovery and Hurricane Harvey helped the metro's apartment market, generating a new cycle that began in second quarter 2017 and is

still going on. The rent-growth rate is projected to trend upward until early 2019, then revert to its long-term average rate of 4 percent.

Following its V-shaped recovery from the GR, San Antonio's apartment rent-growth rate exhibited two post-GR peaks, the last one with an annual growth rate of more than 5 percent in second quarter 2015 (Figure 8).

Figure 6. Apartment Rent-Growth Rate Cycles, Dallas-Fort Worth

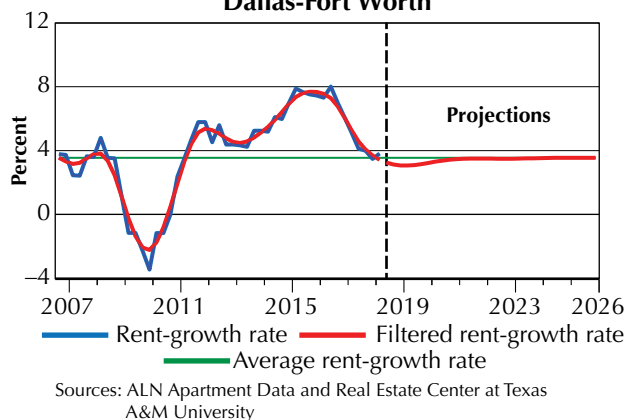


Figure 7. Apartment Rent-Growth Rate Cycles, Houston

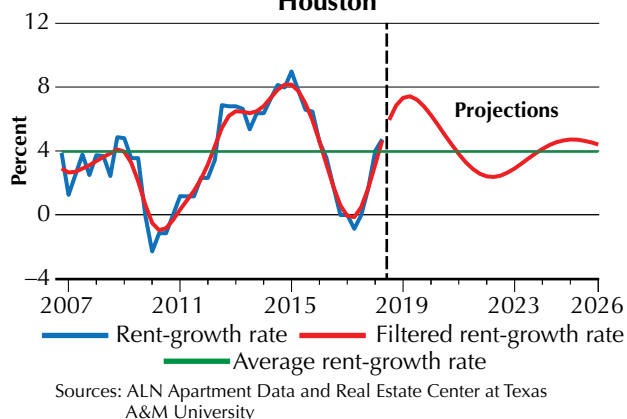


Figure 5. Apartment Rent-Growth Rate Cycles, Austin

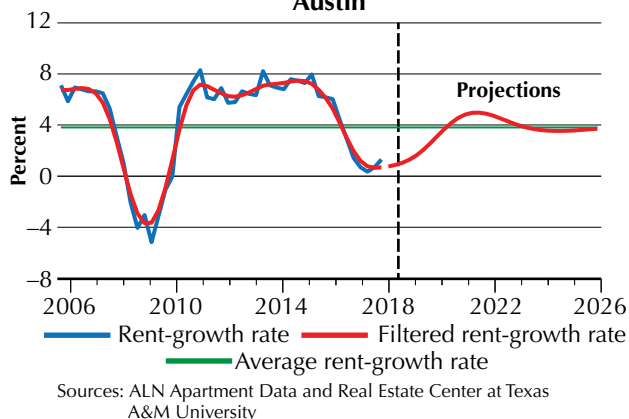
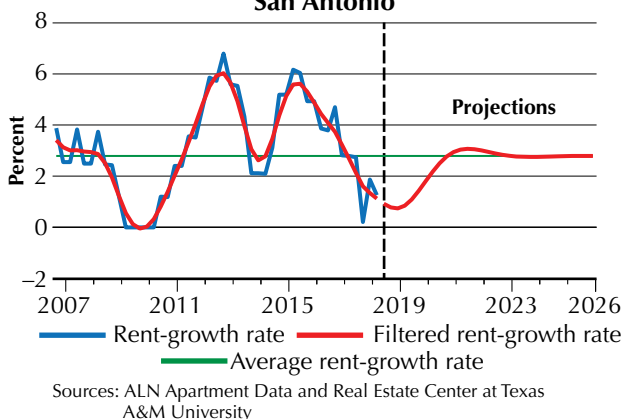


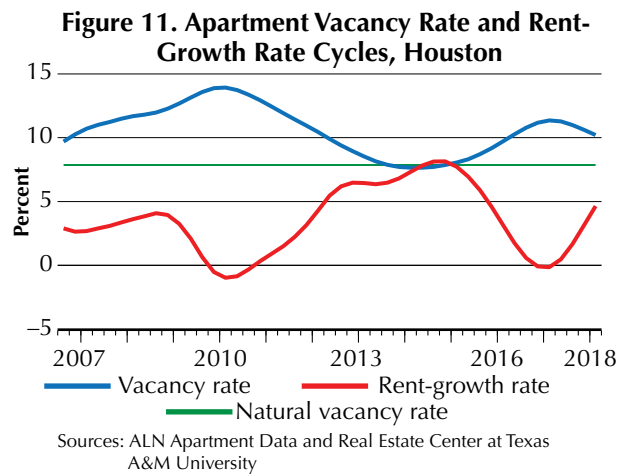
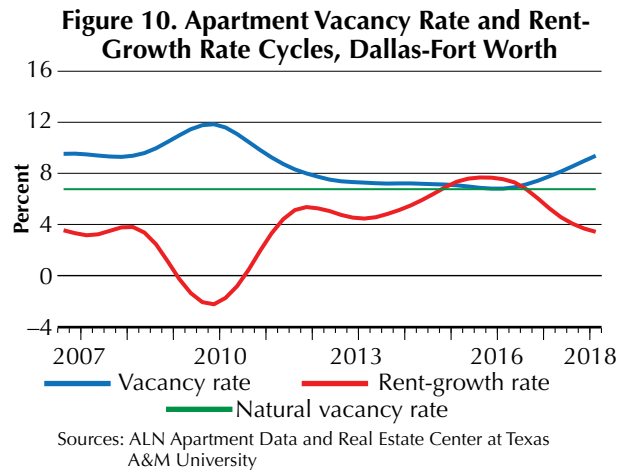
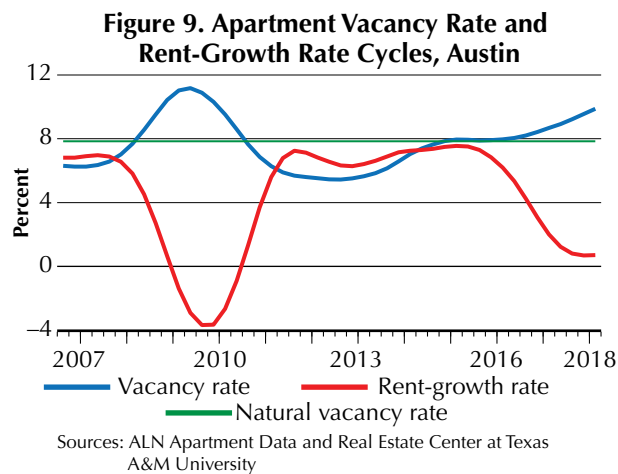
Figure 8. Apartment Rent-Growth Rate Cycles, San Antonio



The double peak may have been the result of a sudden, significant drop in military employment in 2013 and 2014. Since then, the growth rate has trended downward and is currently lower than the long-term average growth rate of 2.8 percent. The rent-growth rate is projected to trend upward, reverting to around 2.8 percent in 2020.

A Negative Relationship

A negative relationship exists between the vacancy rate and the rent-growth rate in apartment markets. That is, higher (lower) rent-growth rates are associated with lower (higher) vacancy rates as shown in Figures 9 to 12 for the four metros' filtered rates. An important metric in apartment markets is the vacancy rate associated with a zero rent-growth rate signaling the end of positive rent-growth rates.



Data and Method of Study

The Real Estate Center used time series of vacancy rates in percentages and effective rents measured in dollars per square foot from ALN Apartment Data Ltd. for its study of apartment markets in Austin, DFW, Houston, and San Antonio. Like many other economic and financial indicators, time series of vacancy rates and rents are combinations of four components that drive the series: secular trend, seasonal variation, cyclical, and random components.

The Center used the Hodrick-Prescott filter, a recognized procedure, to purge short-run fluctuations due to seasonal

or random components and discover longer-term trends in data. The filtered vacancy rates revealed cyclical patterns. Filtered rents displayed generally upward or secular trends due to inflation and growing demand for apartments because of growing population and incomes. As in the case of many other economic time series, the growth rates of rents displayed cyclical patterns.

An important feature of cyclical patterns is mean reversion, which is when growth rates deviate in the short run from their long-term averages but eventually return to averages.

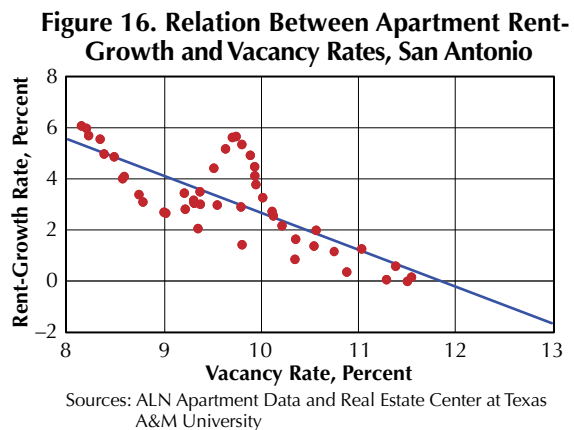
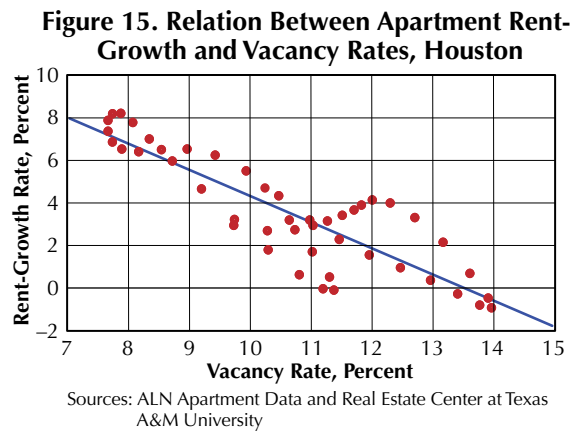
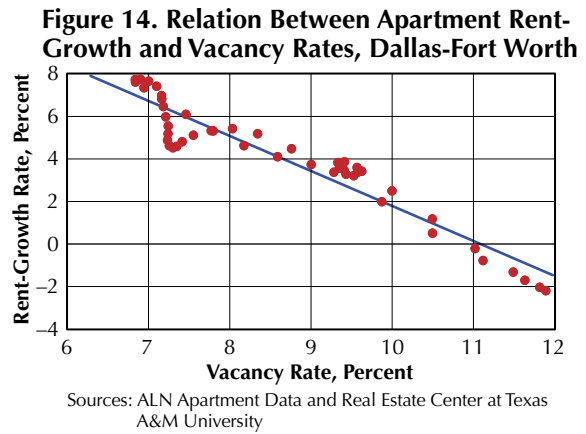
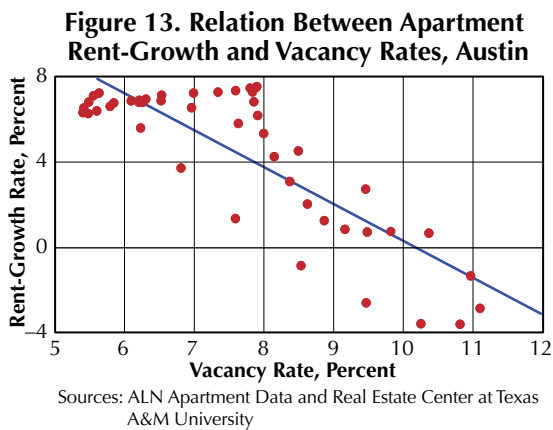
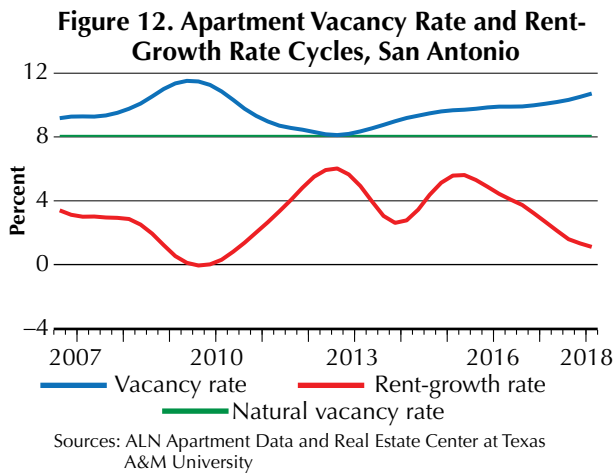
The mean-reversion property can be exploited for forecasting the directions of changes in time series.

Cyclical movements of vacancy rates and rent-growth rates are due to imbalances and lead-lag relationships between supply and demand sides of goods and services. All market economies proceed in cycles, where several periods of higher growth rates leading to peaks are followed by several periods of lower growth rates ending in troughs. The Center has a research program for detecting and monitoring the most important business cycles in Texas and its major metros.

The scatter diagrams in Figures 13 to 16 bring together pairs of vacancy and rent-growth rates for the four big Texas metros. Figure 13 shows a zero rent-growth rate in Austin’s apartment market when vacancy rate is equal to 10.2 percent. Positive (negative) rent-growth rates are associated with vacancy rates smaller (larger) than 10.2 percent. Zero rent-growth rate vacancy rates for DFW, Houston, and San Antonio are 11.1, 13.5, and 11.8 percent, respectively (Figures 14–16).

Lead-Lag Relationships Among Texas Apartment Markets

Apartment rents in all four metropolitan apartment markets declined in the GR and later had sharp post-GR recoveries, but there were lead-lag relationships among their troughs and peaks expected. Figure 17 brings together the filtered vacancy rates for the four apartment



markets and shows that Austin’s apartment market was the first to reach a peak vacancy rate in the GR, followed by San Antonio, DFW, and Houston. Austin, DFW, and San Antonio currently exhibit growing vacancy rates while Houston is in an early stage of decreasing vacancy rates.

Figure 18 brings together the filtered rent-growth rates for the four apartment markets and shows that apartment markets in Austin and San Antonio were the first to have rent-growth rates decline in the GR followed by DFW and Houston. Austin, DFW, and San Antonio markets are currently experiencing decreasing rent-growth rates

Figure 17. Apartment Vacancy Rate Cycles, Major Texas Metros

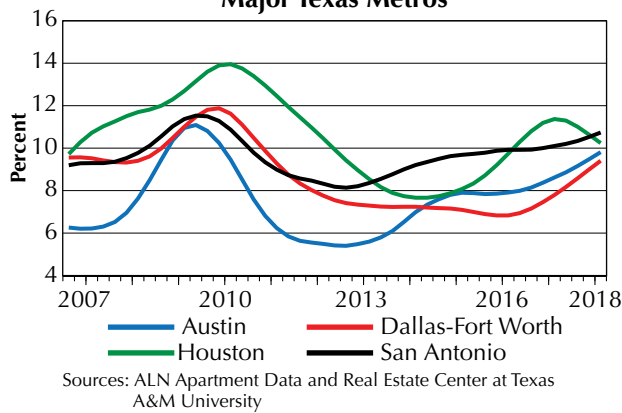
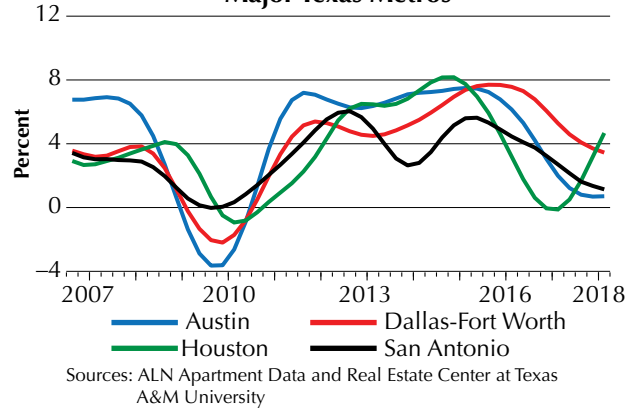


Figure 18. Apartment Rent-Growth Rate Cycles, Major Texas Metros



while Houston is in an early stage of increasing rent-growth rates.

These lead-lag relationships can be used for forecasting purposes using information from one leading metropolitan apartment market for forecasting vacancy rates and rent-growth rates in another lagging metropolitan market. ⬇

Dr. Anari (m-anari@tamu.edu) and Dr. Hunt (hhunt@tamu.edu) are research economists with the Real Estate Center at Texas A&M University.