

Multifamily 2018 Mid-Year Outlook

Performance in the multifamily market remained healthy in the first half of 2018, and is expected to continue throughout the second half of 2018 and into 2019, but with continued moderation from the prior few years.

- The multifamily market ended 2017 stronger than anticipated - vacancy rates came in lower than forecasted and rents increased more than expected. That put 2018 in a good position as completions are expected to be higher - albeit only modestly - and absorptions remain strong but will fall short of the high level of new supply.
 - Completions are expected to peak sometime this year, but supply will remain elevated throughout 2019. Demand will remain robust due to demographic and lifestyle preferences, but will continue to come in below new supply levels. As a result, vacancy rates will continue their modest upward climb and rent growth will moderate through 2019.
 - Cap rates remain low with little change over the past several quarters despite higher interest rates during that time. Property prices continue to grow due to solid multifamily fundamentals and strong investor demand for multifamily properties. As a result, multifamily origination volume is expected to grow by 3.3 percent to \$305 billion in 2018.
 - While multifamily supply has been reaching 30-year highs, the economy has remained in an overall housing shortage (both single-family and multifamily) for the past decade.
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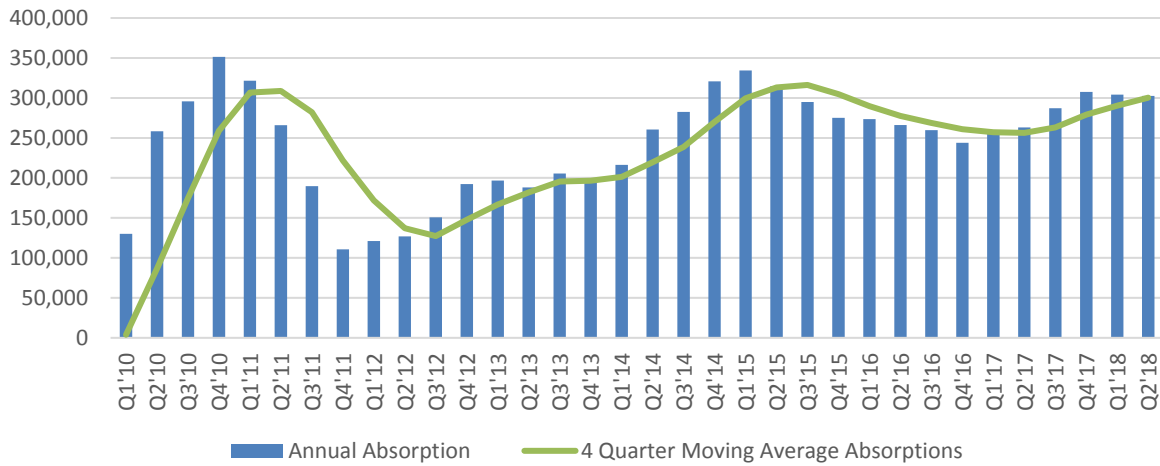
First half of 2018 in Review: Strength Continues

Performance in the multifamily market remained strong in the first half of 2018, despite high levels of new supply entering the market. Vacancy rates at the national level continued to inch up at a steady pace, instead of quick, steep increases feared by market participants. Despite the slightly higher vacancy rates, rent growth remains healthy at the national level and in most major metropolitan areas. These dynamics vary across individual markets, which may see more volatility in multifamily performance, but local market softness is expected to only be temporary as new units enter the market faster than demand can absorb them.

The labor market in the first half of 2018 continued to tighten as the unemployment rate fell to 4 percent as of June 2018, down 30 basis points (bps) from one year earlier, but up 20 bps from the prior month. So far this year, the economy added, on average, 215,000 jobs per month - above the first six-month average in 2017 and 2016. The Employment Cost Index grew 2.7 percent annually over the past year. Healthy gains compared to the past nine years, but slower than anticipated for a labor market this tight.

The strong labor market continues to fuel household formations. As of the second quarter 2018, about one million new households were formed. Owner-occupied households outpaced renter-occupied households formed over the same period, leading to an increase in the homeownership rate of 60 bps to 64.3 percent. Data from the U.S. Census Bureau indicates owner-occupied households increased 1 million over the year, while renter-occupied households remained flat. However, this data does not distinguish between multifamily and single-family rental-occupied units. *RealPage* shows healthy apartment absorptions at the national level, averaging 300,000 units in the past four quarters, as seen in Exhibit 1. Furthermore, absorptions saw a strong boost at the end of 2017 despite earlier concerns that demand slowed at the end of the year.

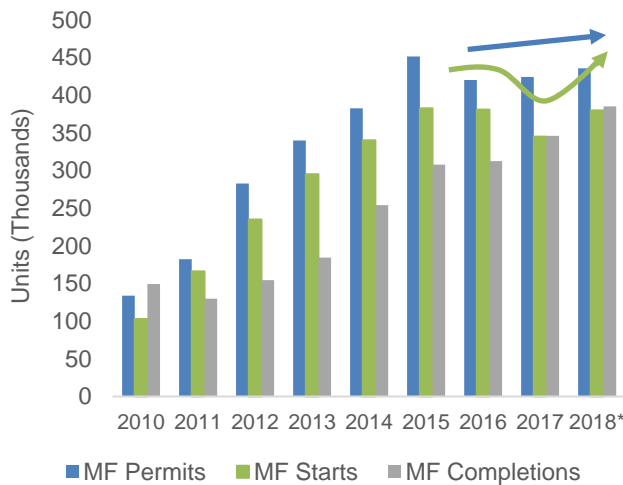
Exhibit 1: Annual Multifamily Absorptions



Sources: RealPage, Freddie Mac

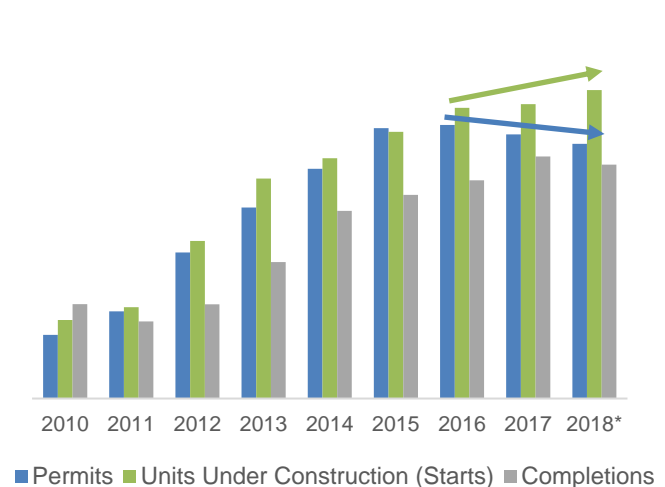
According to the U.S. Census Bureau, multifamily completions in five-plus unit dwellings increased 11 percent in the first half of 2018. While higher completions are expected as we near the peak in deliveries, surprisingly, the U.S. Census Bureau reported a resurgence in multifamily permits and starts in the first six months of 2018. Permits are up 2 percent, while starts are up 10 percent, as seen in Exhibit 2. While data is only available for the first six months of the year, it's a reversal of the trend seen over the past two years of construction moderating. However, *RealPage* shows apartment permits leveled around 350,000 units in the past few years and started to contract slightly in the first half of 2018, shown in Exhibit 3 - decreasing by 4 percent over the past year. While *RealPage* does not report construction starts, they do report on the number of units currently under construction, which saw an increase of 5 percent so far this year compared to last. Overall, the multifamily development pipeline is expected to remain elevated over the next few quarters, despite nuances in reporting, with more completions to come.

Exhibit 2: Census Bureau Multifamily Permits, Starts and Completions (5+ Units)



Sources: Freddie Mac, Census Bureau, Moody's Analytics, * Annualized

Exhibit 3: RealPage Apartment Permits, Units Under Construction (Starts) and Completions



Sources: RealPage, Freddie Mac, * Annualized

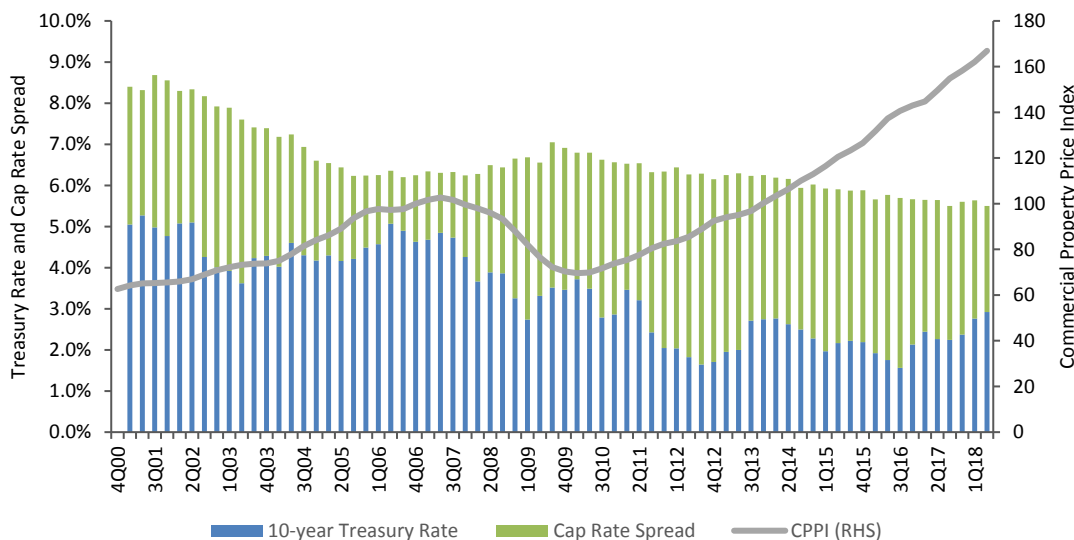
The high level of new supply had many market participants worried that vacancy rates would increase drastically. Instead vacancy rates have slowly inched upwards easing concerns of an abrupt disruption in the market. Vacancy rates ended 2017 lower than anticipated, putting 2018 in a good position to absorb the high levels of new supply. An increase in vacancy rates is expected as new supply slightly outpaces demand. While vendor data differs, they mostly follow the same upward trend. *Yardi Matrix* reported the most severe increase over the past 12 months of 80 bps, to 5.2 percent as of the first quarter 2018. *REIS* reported preliminary second quarter vacancy rates at 4.8 percent, up 50 bps over the year. Meanwhile, *RealPage*, which reported more seasonality in their data, showed a relatively strong second quarter vacancy rate at 4.6 percent, flat over the past year and down 30 bps over the quarter. Regardless, a vacancy rate of around 5 percent indicates a healthy market, and this is where the majority of data providers average out.

Despite lower than anticipated increases in vacancy rates, rent growth continues to moderate from cyclical highs, but not as severely as originally thought. *REIS* shows preliminary asking rent growth of 4.5 percent annually as of the second quarter, down from the annual high of 6.1 percent in 2015. Meanwhile *Yardi Matrix* and *RealPage* show more subdued rent growth of 2.5 percent over the past year, but also reported a lower cyclical high compared to *REIS*, of around 5.5 percent. While growth measures differ among forecasters, rent growth continues to moderate over the past few years but remains above annual inflation target of 2 percent.

The 10-year Treasury rate continues its march upwards, ending the second quarter around 2.9 percent, up around 70 bps over the past year. Meanwhile, cap rates remain relatively flat over the past year, averaging 5.6 percent, despite the increase in Treasury rates. Cap rates have stayed between 5.5 and 5.7 percent over the past eight quarters while Treasury rates have increased close to 140 bps during that time, shown in Exhibit 4. However, the cap rate spread has compressed by about 140 bps over that period, down to 260 bps as of the second quarter 2018 from 410 bps seen in the third quarter 2016. This year is the first time the cap rate spread has dropped below 3 percent since the third quarter 2008, as spreads have been unusually high for a decade.

While cap rates and Treasury rates are correlated and we expect cap rates to increase as Treasury rates increase, cap rates are stickier and take longer to increase. As such, with cap rate spreads below the long-run average of 280 bps going back to 1990, we expect they will start responding to higher interest rates and slowly increase. Meanwhile, property prices continue to experience strong price appreciation despite moderating multifamily fundamentals. Multifamily property prices increased 11.6 percent over the past year. Despite moderating fundamentals, apartment investments continue to provide stable and safe returns for investors compared to other investments, which contributes to continued property price increases.

Exhibit 4: Multifamily Price Index, Cap Rate Spread and Treasury Rate



Sources: Freddie Mac, Moody's/RCA CPPI, Federal Reserve Board, Moody's Analytics

Second Half of 2018 and Beyond: Healthy Growth Continues

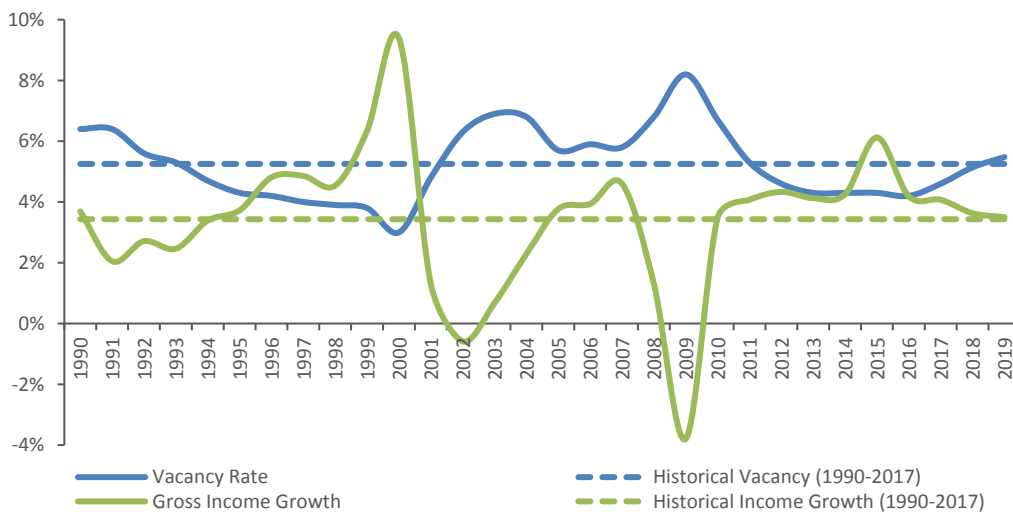
Over the next few quarters, the multifamily market is expected to remain healthy. Current market trajectory indicates there is little on the horizon that would cause a major disruption to the multifamily market, not discounting any extreme macroeconomic variables that would impact the entire economy. The relative strength of the multifamily market in the past several quarters is a testament to its strength that, despite higher levels of new supply, fundamentals remain healthy. Employment growth has outdone expectations so far in 2018, and although wage growth has been less robust, it's moving in the right direction. Job growth is expected to slow due to the low unemployment rate limiting the rate of new jobs added to the economy. But with a tight labor market comes higher wage growth, which will help fuel demand for household formations. Lifestyle preferences and demographics continue to support multifamily household formations, and the new tax bill may also incentivize renter formations over homeownership.

Supply remains a concern for the multifamily market. The drawn-out expectations for the peak in new supply, due in part to construction delays and labor shortages, indicates the peak may not be contained to just one year, but spread out over several years. *RealPage* forecasts annual completions to average 320,000-335,000 units throughout the rest of 2018 and through 2019. This is only slightly higher than the previous six quarters' annual average of 315,000 units.

Absorptions are anticipated to remain strong over the next few quarters, but fall short of new supply. As a result, vacancy rates are expected to increase over the next several quarters. We forecast about a 50 bps increase in 2018, up to 5.1 percent, as seen in Exhibit 5. This is on pace with the roughly 10 bps increase per quarter seen throughout 2017 and the first half of 2018, per *REIS*. Vacancy rates are expected to level out near the long-run average of 5.3 percent in 2019 as new supply levels off.

Despite the vacancy rate increase, rent growth is expected to remain healthy, above the historical average through this year and next, reaching 4.2 percent and 3.9 percent in 2018 and 2019, respectively. Our forecast uses *REIS* data, which continues to report high rent growth when compared to other market forecasters. *RealPage* and *Yardi* project annual rent growth for 2018 to come in around 3 percent – while lower, this still portrays a healthy market and growth above the target inflation rate. Due to higher vacancy rates, we forecast gross income growth of 3.6 percent through 2018 and 3.5 percent in 2019.

Exhibit 5: Vacancy Rate and Gross Income Growth, History and Forecast



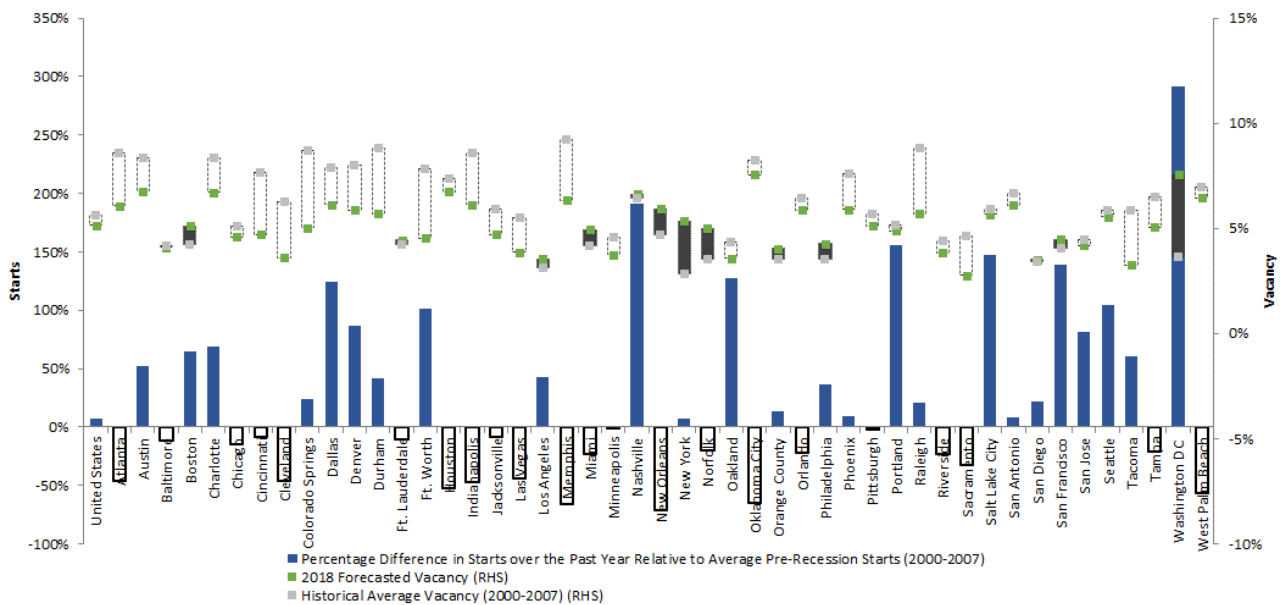
Sources: REIS, Freddie Mac projections for 2018 and 2019

Construction starts have pulled back in most markets compared to one year ago. Areas with the most notable slowdown are Salt Lake City, Oklahoma City, Colorado Springs, Baltimore and Dallas. Those markets that saw

the largest increases in starts compared to the prior year include many West Coast markets – Oakland, San Jose, Portland, Washington D.C. and Tacoma.

High supply does not necessarily signal a slowdown of multifamily performance for that market. When current vacancy rates are compared to the historical average, we can see which metros are better poised to absorb new supply, shown in Exhibit 6. Areas with high levels of multifamily construction, but lower vacancy rates, are more likely to absorb the new supply without much distress. However, areas with high new supply and high vacancy rates may experience more subdued fundamental growth in the near future. Most metros continue to see vacancy rates below their respective historical average. On the flip side, Washington D.C. and New York City continue to see vacancies well above their historical average due to a large number of new deliveries entering the market. New Orleans and Norfolk are also experiencing vacancy rates well above the historical averages, along with Boston, Miami and Philadelphia.

Exhibit 6: Multifamily Starts and 2018 Forecasted Vacancies Relative to History



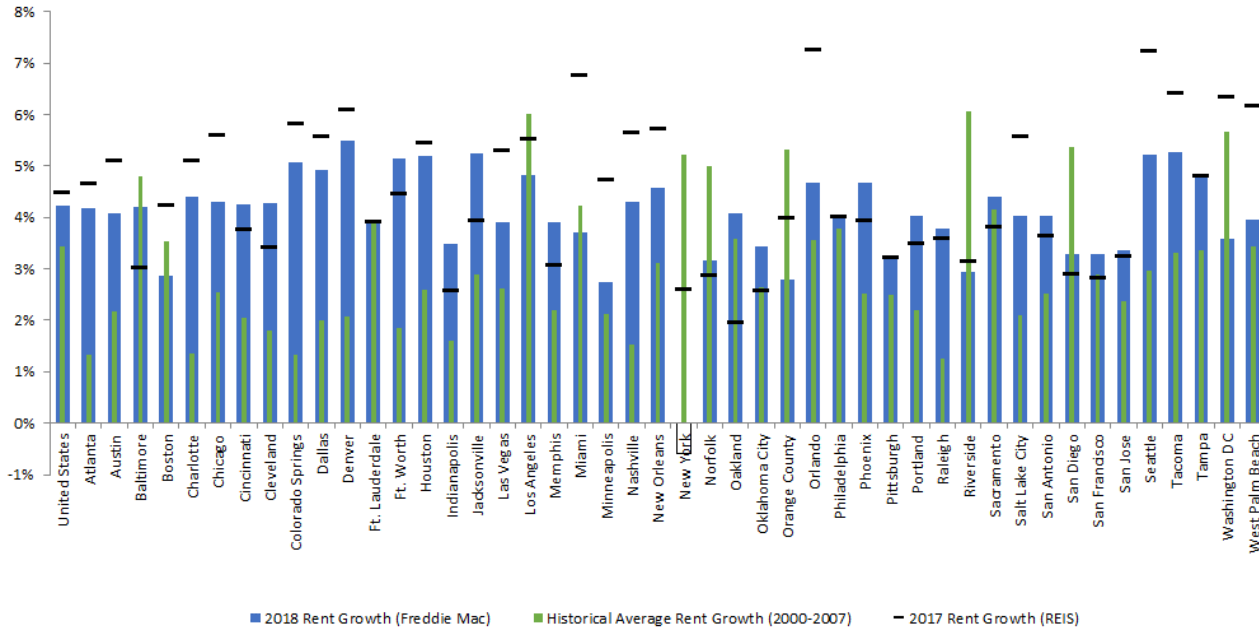
Sources: REIS, Moody's Analytics, Freddie Mac projections

At the metro level, rent growth is expected to remain above historical averages in the majority of the markets, but most will see growth rates moderate in 2018 compared to 2017, shown in Exhibit 7. Close to 70 percent of metros will experience rent growth above their historical average. Colorado Springs, Denver and Fort Worth are expected to see the largest gap between rent growth this year and their historical averages. Meanwhile, markets expected to see rents well below their historical averages include New York City, Orange County, Riverside, San Diego and Washington D.C.

Despite slowing rents, the majority of metros are expected to see rent growth above the target inflation of 2 percent, except for New York City. Our forecast for rent growth in New York City is weak due to a large amount of new supply entering the market and taking time to lease up. New York City, which comprises five boroughs in this analysis, experienced a large amount of construction due to policy changes in multifamily construction, which created a rush for multifamily permits two years ago that have started to enter the market over the past few quarters. The large amount of new supply is causing vacancy rates to increase to some of the highest levels seen in the metro in recent history. REIS reports the average vacancy rate has ranged from 1.1 percent to 4 percent from 1980 to 2016. In 2017, vacancy rates increased to 5.4 percent and are anticipated to continue to increase through 2018. Economic factors remain strong for the area as job growth and wage growth perform in line with

the national average, promoting household formations. We expect the market to experience weakened fundamentals as the area burns through the glut of new supply.

Exhibit 7: Rent Growth in 2018 and 2017 Relative to History



Sources: REIS, 2017 and 2018 are Freddie Mac projections

We expect some shuffling around of the top 10 metros by gross income growth for 2018, shown in Exhibit 8. Sacramento, which has recently held the top spot, has fallen off the list, as rising vacancy rates took a bite out of gross income growth. Tacoma takes over at the top as strong economic growth from Seattle, due to limited new supply, for now, keeping rents up and vacancy rates low. We also see more Florida metros in the top 10 list and some West Coast contenders fall off, such as Portland and Sacramento. Florida continued to experience strength due to high population growth and limited new supply entering the market. These markets are subjected to the overall whims of the economy as they rely more on tourism, which is sensitive to economic conditions. However, with the direction the economy is heading over the next few years, we don't anticipate any drastic slowdown that would hamper this industry.

Another interesting story is Houston's and New Orleans' debut on the list. Houston's strong growth is partially a result of last year's hurricane driving up temporary rental housing from damaged homes, along with new supply ebbing as the metro halted most multifamily development after oil prices dropped. The hurricane's impacts will wear off over time, but with oil prices rebounding and new supply down to manageable levels, we can expect continued growth for Houston in the coming years. New Orleans, which also felt the impacts of the oil price decline several years back, has experienced strong rent growth over the past year due to conversion of damaged office buildings downtown into multifamily family residences, which is helping revive the area. However, the economic outlook in New Orleans does not bode well, as the labor market struggles to add new jobs. The strong gross income growth expected for 2018 is mainly due to development in the downtown area, which is helping boost rents as new supply – which has been lacking in recent years - enters the market. But, growth continues to struggle outside of the urban core.

Exhibit 8: Top 10 Metros by Gross Income Growth for 2018

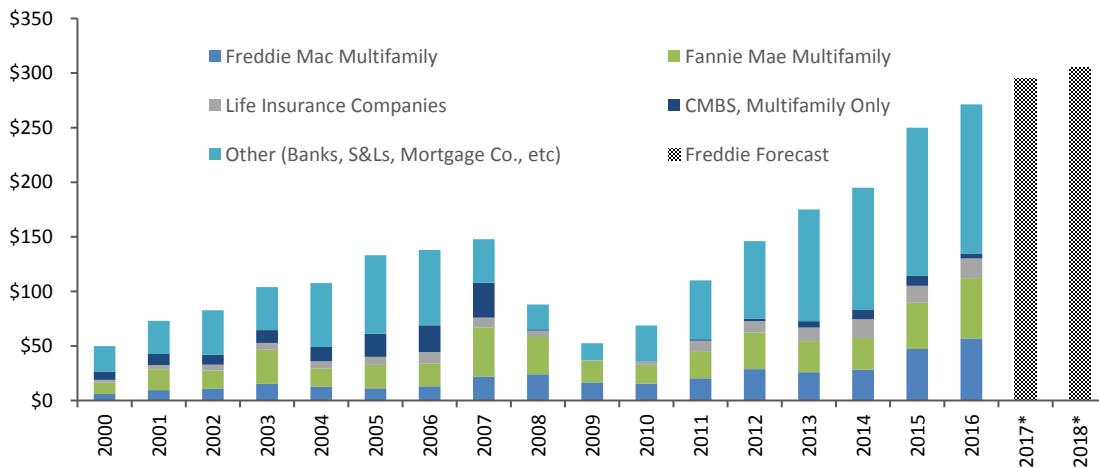
| Metropolitan Area | 2018 Annualized Growth in Gross Income | 2018 Vacancy Rate |
|-------------------------------|--|-------------------|
| Tacoma | 5.0% | 3.3% |
| Houston | 4.8% | 6.7% |
| Seattle | 4.8% | 5.5% |
| Los Angeles | 4.6% | 3.5% |
| Jacksonville | 4.5% | 4.7% |
| Tampa | 4.4% | 5.1% |
| Denver | 4.3% | 5.9% |
| Chicago | 4.2% | 4.6% |
| Ft. Lauderdale | 4.1% | 4.5% |
| New Orleans | 4.1% | 5.9% |
| United States (top 70 metros) | 3.6% | 5.1% |

Source: Freddie Mac projections

Origination Market Forecast

Multifamily origination volume growth is expected to slow this year to 3.3 percent growth over the year to \$305 billion. While 2017 volume has not yet been finalized, we forecast an origination volume growth of around 10 percent in 2017 (\$295 billion) due to strong fundamentals and the continued demand for multifamily investments. In 2018, moderating fundamentals and increasing interest rates is expected to slow origination growth. While property price growth continues to be strong, higher interest rates may cause cap rates to increase slightly, ending the year near 6 percent. This will put downward pressure on property price appreciation, causing volume growth to moderate.

Exhibit 9: Multifamily New Purchase and Guarantee Volume (\$ Billions)



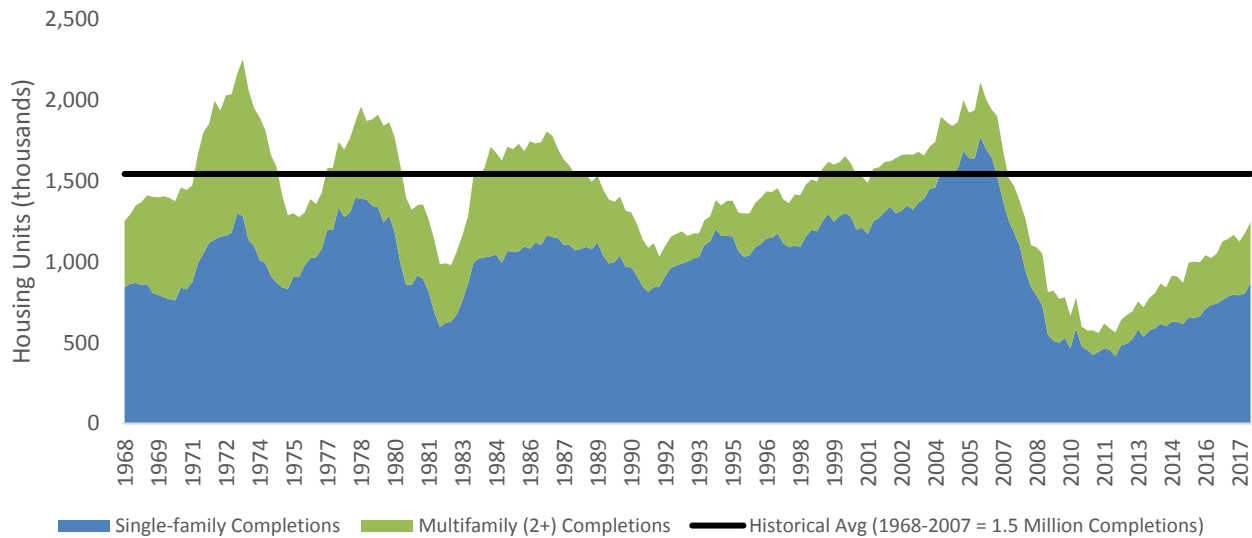
Sources: Mortgage Bankers Association, Freddie Mac projections

Note: 2017 and 2018 results are projections as of July 2018.

Housing Shortage

While new supply of multifamily units remains elevated, when looking at the overall housing supply, we continue to experience a housing shortage. Going back to the 1960s, the nation added 1.5 million total housing units each year¹ on average, comprising of both single-family and multifamily units, shown in Exhibit 10. As of the first quarter 2018, total housing completions came in at 1.2 million, or short 300,000 units. In Exhibit 10 you see we've consistently fallen below the long-run average of total housing completions, even ten years out of the Great Recession. While multifamily construction nears its historical average, single-family continues to lag. This has led to an overall shortage of housing, which helps fuel the strong demand for existing housing, both single-family and multifamily.

Exhibit 10: Shortage of Total Housing Completions



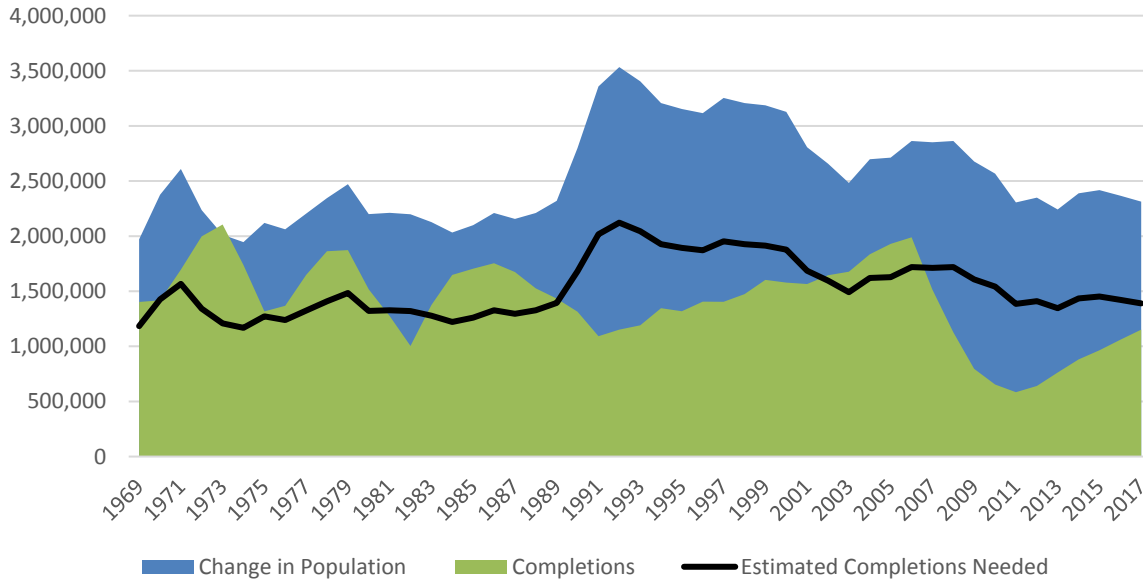
Sources: U.S.Census Bureau, Moody's Analytics, Freddie Mac

However, supply is only half of the story. Changes in demand play a vital role in household completions. We use population changes to measure how much demand has changed over the past five decades. While household demand is dependent on more than just population – such as demographic and economic factors - population is used as a rough estimate for how demand dynamics in the U.S. have changed over this time period. As seen in Exhibit 11, from the late 1960s to the late 1980s, population changes remained relatively consistent at a rate of 2.2 million added each year. In the 1990s and early 2000s, population growth increased to 3.2 million on average per year. Since the early 2000s, population changes have moderated, and as of 2017, had increased by 2.3 million over the year. By computing the average housing completions as a ratio of the average population change from 1969 to 2007, we estimate that housing supply fell short by about 240,000 units in 2017.² Over the past 10 years, the cumulative shortage is roughly 6 million, an average of 600,000 per year. This was most severe in the years just after the Great Recession when there was little demand. But, in the past few years, as construction in both single-family and multifamily have picked up, the gap has narrowed considerably.

¹ Average based on 1968-2007, excluding the Great Recession years which saw an unprecedented drop in household completions. Averaging from 1968-2017 is 1.4 million total housing units completed annually.

² Population impacts were measured by finding the average population additions to the economy from 1969-2007, which is 2.5 million. During that time, on average 1.5 million housing units were added to the economy annually, or a ratio of 0.6. We can compute the shortage or surplus of households completed based on population changes in a given year and apply the long-run average ratio of completions to population change.

Exhibit 11: Change in Population and Completions, Estimated Completions Needed Based on Ratio of Average Completions to Population Change



Sources: U.S. Census Bureau, Moody's Analytics, Freddie Mac

Using this same methodology, we look at the housing shortage, or surplus, adjusted for population at the metro level for the top 40 metros by overall population going back to 1985³. The majority of metro areas are experiencing a shortage of total housing over the past 10 years, but some metros have seen a surplus in just the past year alone, shown in Exhibit 12.

For example, in Austin, housing completions from 2008-2017 averaged 15,000 units and population grew by 53,000, annually. Historically, from 1985-2007, 13,000 units were completed on average and population grew by 38,000 annually. While population additions increased by 41 percent, housing completions increased by only 17 percent. Based on the average population growth from 2008-2017, housing completions in Atlanta fell short of demand by an average of 3,000 units each year. However, in 2017 alone, Atlanta saw population increase by 52,000 and completions up 23,000, a 79 percent increase in completions. This implies that in 2017, the metro experienced a surplus of housing, though this is based on a one-year change in supply and population.

On the flip side, Detroit shows a shortage of housing completions in 2017, but a surplus from 2008-2017. This trend is due mostly to a decline in population in the Detroit metro area, down 175 percent, in the past 10 years. However, in 2017, Detroit experienced its largest increase in population since 1996, while housing completions remained subdued.

This analysis combines supply and demand changes to indicate a shortage or surplus of supply. However, the reason for the shortage or surplus could be driven by construction or population. While it is not apparent in just the shortage/surplus numbers which is the main driver, this analysis provides historical context and insight to the overall housing balance by metro. Furthermore, the 2017 shortage/surplus provides only a current snapshot of how the balanced the housing market is. Supply and demand are not limited to just one year, but can spill over from subsequent years. As in the Detroit example, the shortage in the past year does not imply that more housing is necessarily needed since the area experienced a surplus the prior few years.

³ Data on completions by metro level not available until 1985

Exhibit 12: Shortage/Surplus of Total Housing Completions by Metro Area

| Metro | 2017 Shortage/Surplus | 2008-2017 Average Shortage/Surplus | Metro | 2017 Shortage/Surplus | 2008-2017 Average Shortage/Surplus |
|--------------|--------------------------|--|---------------------|--------------------------|--|
| Atlanta | -9,600 | -19,800 | Minneapolis | -10,900 | -9,100 |
| Austin | 5,600 | -3,000 | Nashville | 700 | -5,200 |
| Baltimore | 3,500 | -4,400 | New York City | 22,600 | -17,100 |
| Boston | -9,400 | -19,300 | Oklahoma City | 2,000 | -5,300 |
| Charlotte | -4,200 | -7,800 | Orlando | -6,000 | -9,000 |
| Chicago | 19,300 | -1,300 | Philadelphia | -3,100 | -6,900 |
| Cincinnati | -7,100 | -3,700 | Phoenix | -7,800 | -11,600 |
| Cleveland | -200 | -8,700 | Pittsburgh | 7,300 | 3,000 |
| Columbus | -7,400 | -7,300 | Portland | -6,000 | -5,100 |
| Dallas | 9,000 | -12,400 | Riverside | 4,800 | -5,900 |
| Denver | -800 | -11,200 | Sacramento | 200 | -4,800 |
| Detroit | -21,700 | 18,700 | San Antonio | -700 | -6,200 |
| Houston | 5,900 | -8,300 | San Diego | -2,500 | -9,200 |
| Indianapolis | -5,800 | -6,000 | San Francisco | 0 | -14,100 |
| Jacksonville | -200 | -3,600 | San Jose | 3,900 | -4,100 |
| Kansas City | -2,200 | -5,300 | Seattle | -14,400 | -10,500 |
| Las Vegas | -9,500 | -4,300 | St. Louis | 2,600 | -600 |
| Los Angeles | 14,500 | -5,800 | Tampa | -3,900 | -8,400 |
| Miami | -20,500 | -22,600 | Virginia Beach | 1,300 | 200 |
| Milwaukee | 2,100 | -1,800 | Washington, D.C. | -2,500 | -20,900 |

Sources: U.S. Census Bureau, Moody's Analytics, Freddie Mac. Note: values rounded to the nearest 100

Demographic and economic drivers impact housing and development decisions more acutely than just calculating long-run averages. Nonetheless, this analysis shows we continue to see an overall shortage in total housing being delivered to the market. While the multifamily market continues to experience elevated levels of new construction, and in some metros, has surpassed long-run averages, the total amount of housing falls short in many areas and has done so for the past several years.

As we hit the 10-year mark since the start of the Great Recession, the multifamily market continues to experience healthy performance overall. Fundamentals in the past few years have started to moderate, but remain healthy with rents above inflation and vacancy rates increasing slowly. Individual metros, and specifically submarkets, will see the impacts more drastically. But, with a solid macroeconomy, we don't see any looming potential to derail the multifamily market. Returns will revert back to modest growth, which should help cap the amount of new supply developers are willing to build, keeping the multifamily market in relative balance. Strong demand, due to demographic and lifestyle preferences, will continue to support the elevated levels of new supply in the next few quarters.

For more insights from the Freddie Mac Multifamily Research team, visit <https://mf.freddiemac.com/research>.