



Commercial Real Estate  
at the Crossroads:  
*What's driving the market,  
what's holding it back*

**Authored by:**  
Anne Kinsella Thompson

 | Center for Real Estate

**Sponsored by:**

  
Commercial Banking



## CONTENTS

1 Executive Summary	3
2 Geographic and demographic impacts on commercial real estate	7
3 Housing	12
4 Office markets	18
5 Retail	23
6 Mixed Use “Lifestyle” Centers	27
7 Trends in Finance: innovative lending practices and data approaches	29
8 Conclusions: what does this tell us about where we are headed?	35
9 References	37

Entire contents © MIT Center for Real Estate 2018

# 1 Executive Summary

*This study examines socioeconomic and industry specific data and how they have evolved and transformed over time. It considers how trends in economic and financial markets, along with regulations and innovation, may influence the market for tools for commercial finance.*

Investment in domestic commercial real estate (CRE) has flourished through the economic recovery. However, the depth and breadth of this revival have varied widely across a number of dimensions. Since hitting bottom in late 2009, CRE construction, prices and investment have evolved. Certain areas of the country and certain industries have thrived, surpassing their 2007 peaks. Other locations and sectors have struggled to recover to pre-recession levels.

Economic forces have not been the only driver shaping the CRE industry; technological advances have also played a major role. Innovation in the computer industry has sparked the development of new tools for investment portfolios, better using the growing array of economic, demographic, geographic, and industry-level data available to measure and project the path of the real estate market risks and returns. While these investments generally move in tandem during periods of expansion and contraction, they often diverge during periods of uncertainty and market adjustment.

CRE markets appear to be entering a period of uncertainty. As we enter the later stages of this current economic recovery, a major concern exists over how long the current trend of moderate and steady expansion will persist. The past decade was dominated by tailwinds as the recovery from the financial crisis helped boost real estate fundamentals and values, as well as the supply and performance of commercial mortgages, to historic levels. The market has entered a new phase in which headwinds have begun to push back. As the balance adjusts over the coming years, the CRE industry will follow suit.

## **Good News: What's Propelling the Markets**

The robust economy remains one of the key tailwinds helping propel growth in the CRE market. Since the end of the recession in 2009, 33 of the previous 36 quarters have seen positive real growth in the U.S. economy. According to a Department of Commerce report, real GDP grew 4.2% in the second quarter of 2018. This was the highest annual rate of change since 2014. The healthy second quarter GDP figure was due in part to a surge in exports, which showed their strongest gain in more than four years and accounted for 25% of the total growth for the quarter. However, the export

boom was driven partly by mounting trade tensions, which led foreign buyers to stock up on American products before tariffs were imposed. Expansion is expected to moderate in the 2nd half of the year, but is on track to surpass 3% in 2018, the strongest annual gain since 2005.

Employment continues to expand at a healthy pace. Over the past five years, seasonally adjusted monthly employment growth averaged 200,000 jobs per quarter. Growth in employment has contributed to an exceptionally low unemployment rate, driving the rate down to an average of 4% in the first half of 2018, a level not seen since the end of 2000.

The steady growth in employment and the low unemployment rate have caused significant tightening in the labor market. While wages remained stagnant in recent years, they have begun to advance, improving 4.9% over the year in the 2nd quarter. This boost in wages has contributed to an increase in consumer spending. Between the second quarters of 2017 and 2018, consumer expenditures grew by 4.8%, continuing the slow but stable upward trend that began in late 2015. The Conference Board's Consumer Confidence Index has crept higher since 2009, reaching an 18-year high in August. In addition, many indicators of business confidence are at or approaching historic highs.

The low inflation rate has also provided a tailwind to CRE by helping keep growth in materials prices in check and, correspondingly, the cost of construction. Low inflation also keeps the expense of property maintenance and improvements in check, helping preserve the positive cash-flow value of properties. With rent increases factored into commercial property leases, modest inflation is leading to net growth in real property income.

Rising government spending has provided a boost to the economy this year. In addition, tax reform is a net near-term positive for business in general and real estate investment. One piece of the legislation that should provide a boost for real estate is a new 20% deduction on pass-through income for LLCs, sole proprietors and S corporations. This deduction will deliver significant savings to property owners and investors who often structure their investments as LLCs and thus provide a substantial boost in after-tax yields on many CRE investments.

### **The Not-So-Good News: areas of increasing concern for CRE investors**

Even as the market is benefitting from these tailwinds described above, significant headwinds are beginning to put downward pressure on CRE markets.

Rising interest rates are one of the key headwinds facing CRE finance markets, with the Federal Reserve gradually tightening monetary policy since late 2015. While interest rates remain comparatively low since the financial crisis, the trend has been decidedly upward since 2016, and uncertainty remains about the pace of future rate increases.

Higher interest rates increase borrowing costs, reducing returns for property owners and limiting their debt capacity. As more properties hit the market at a time when interest rates are rising and financing terms have tightened, the pool of CRE property investors is likely to shrink. For the short term, however, financing activity will likely increase as current owners seek to refinance while rates remain relatively low. Many economists expect additional monetary tightening by the Federal Reserve this year and next. The degree to which this will impact CRE markets depends not only on the pace and rate of increase, but also on the market perception of the potential long-term impact of these higher rates.

While short-term interest rates have increased, gains in long-term rates have been more moderate. This disparity has caused the two rates to converge, leading to a decline in the spread between short- and long-term rates and thus a flattening of the yield curve, making longer-term investments less attractive. The yield curve has trended sharply lower since early 2017, and since mid-August 2018 the spread has averaged less than 25 basis points. This shrinking yield curve is cause for concern because its inversion, which tends to indicate a lack of confidence in the economy, has been a reliable predictor of an impending recession.

While trade tensions provided a boost to second quarter GDP due to strong exports, the impact of trade wars will be negative for the CRE industry. The primary obstacle will be rising commodity prices. Materials prices have already increased due to tariffs, but the impasse with China, Canada and other countries could push the cost of materials higher, thus reducing the return on CRE investment.

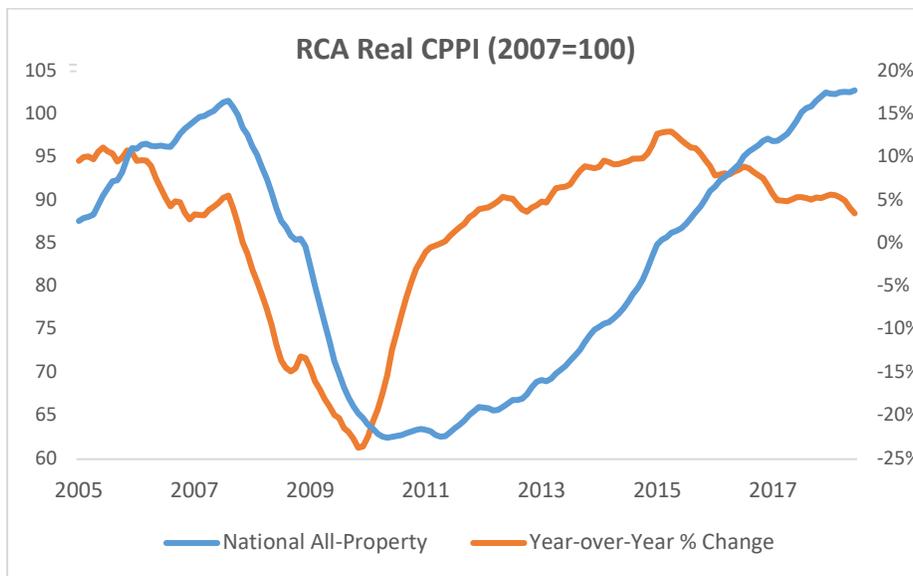
## **Where the CRE Market Stands Now**

Economic expansion is expected to continue to drive growth in net operating income (NOI). However, the pace of growth in CRE NOI has begun to moderate. Interest-rate and trade headwinds, along with growth in labor and materials costs, will put additional downward pressure on NOI, curtailing gains in property cash flows.

Reduced NOI has already contributed to a slow but steady decline in property sales transactions. A Real Capital Analytics (RCA) report on commercial property sales of \$2.5 million or more reveals the trend in sales,

with CRE sales transaction volume falling 5.4% in constant dollars in 2017. While this trend reversed in the first half of 2018, with sales improving 1.1%, the bulk of this gain was generated by robust growth in the industrial sector.

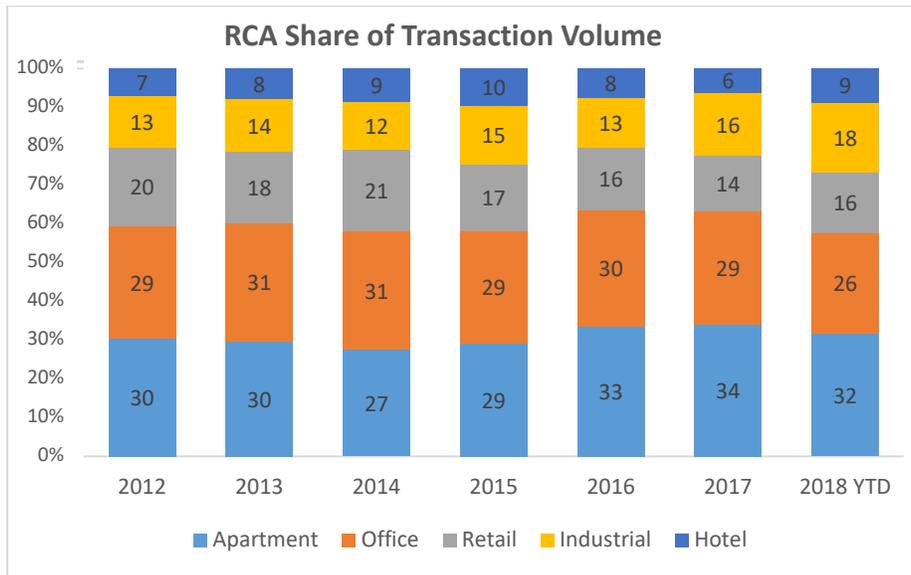
The RCA Commercial Property Price Index (CPPI) is a measure of growth in U.S. commercial property prices. While the real level of the CPPI surpassed its 2007 pre-recession peak in 2017, it has remained essentially stagnant since that point, with the rate of growth trending lower since the start of 2018. According to the RCA report, the real U.S. National All-Property CPPI increased 3.5% year-over-year in June, nearly half the rate of price gains seen in late 2016 and the lowest annual gain since late 2011.



The recent declines in sales transaction volume and the trend of subdued price growth aren't necessarily a sign of decreased interest in commercial real estate as an investment. Rather, they appear to be a sign of a mismatch between the price at which owners are currently willing to sell a property and what potential buyers are willing to pay, or a widening bid-ask spread. Potential buyers may be deterred by expectations of slower property price appreciation even as potential sellers anticipate that property cash flows will continue to be strong and that they can tap mortgage and other finance markets to extract accrued value.

With price and value gains moderating and NOI continuing to show stable growth, commercial real estate will rely on income to drive total returns moving forward, versus value or price appreciation. The National

Council of Real Estate Investment Fiduciaries (NCREIF) Property Index (NPI), which discerns between property income and appreciation returns, reveals this trend. According to the NPI, total returns have drifted lower since 2015, with the decline entirely attributable to lower rates of appreciation. In contrast, growth in income has remained steady over the past three years and thus has comprised a rising share of total returns. In 2015, more than half of returns were from appreciation. By the second quarter of 2018 this had reversed, with income growth accounting for over 60% of returns.



The discussion above focuses on the CRE market as a whole, but short- and long-term trends have varied widely across sectors. The variation in performance and risk, along with the relative size of the sectors, drives the CRE market as a whole.

## 2 Geographic and Demographic Impacts on Commercial Real Estate

*Large-scale urban development in primary metropolitan areas helped fuel the recovery in CRE, yet within the past year or two the trend began to shift. As construction pricing and land costs in traditional gateway markets continue to escalate, investment capital and development have increasingly been directed to adjacent suburbs and secondary markets.*

## The market looks to new locations for value

More attention is now being given to the significant business and living cost advantages in the secondary markets. This focus will become even more important as the economic cycle progresses. While the center of market activity nationwide remains in major urban areas, both new and existing companies are establishing footprints in more affordable secondary markets in their pursuit of highly skilled talent and for a lower cost of doing business. Despite potentially lower wages, new residents are also seeing the advantages of living in secondary markets. Average secondary market housing costs are significantly more affordable than in primary markets. Along with more affordable housing, an increasing number of secondary markets have added some of the amenities of primary markets at a much lower cost.

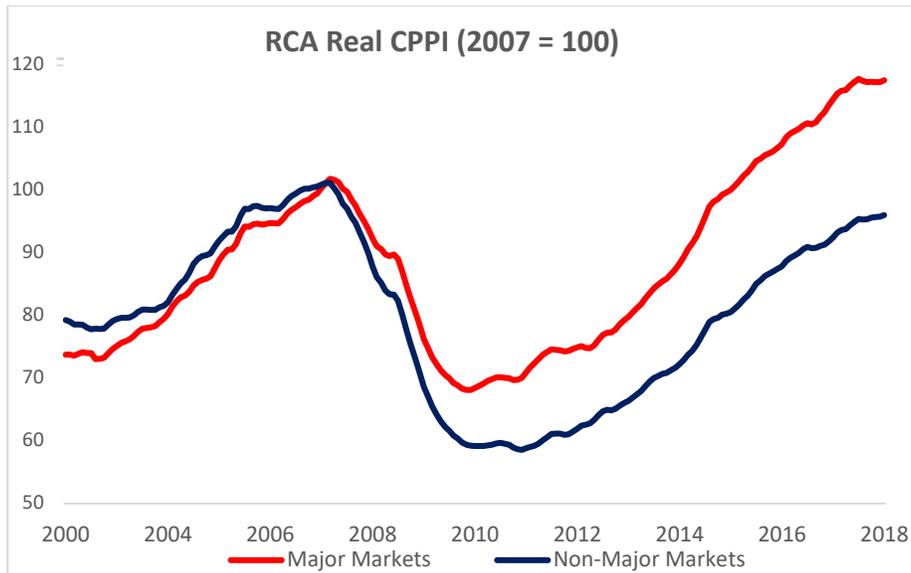
The key for growth in these secondary markets is industry clusters, as groups of firms gain a competitive advantage through proximity and interdependence. Both theory and research suggest that firms and regions benefit from clustering, evidence that has led to the widespread adoption of clusters within the economic development field. However, there are glaring gaps between acknowledgement of the importance of clusters and the practical ability to develop initiatives that help clustered firms become more competitive and spur growth.

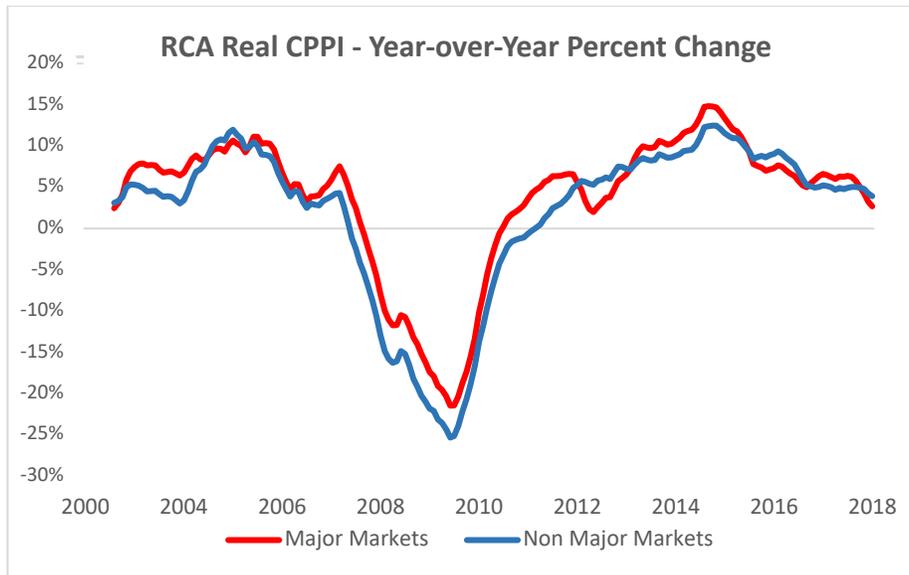
Plenty of capital remains for investors to grow CRE portfolios, and more of that capital is moving away from primary markets. The economic recovery that has been slower to trickle down into secondary and tertiary markets is gaining momentum. As a result, investors have started shifting to secondary markets because the primary markets have topped out for market pricing and property values. This trend is increasing demand for office space and decreasing office vacancy rates in these markets. The limited office space, housing and entertainment options in these markets has led to a revival in construction across most sectors.

According to the Urban Land Institute's 2018 Emerging Trends Report, the investment outlook for secondary markets improved 12% compared with its 2013 survey. Over the same period, the investment outlook for primary markets fell 6%. Among the top locations on their list are Seattle, Austin, Salt Lake City and Raleigh-Durham. At the same time, traditional gateway markets such as Manhattan, San Francisco and the District of Columbia have fallen in the rankings.

The relative trends in primary market and secondary market performance are demonstrated by the RCA CPPI. While both geographic

sectors topped out in 2007, constant dollar asset pricing in primary markets began to improve at the start of 2011 and returned to previous cycle peaks in mid-2015. While real growth in major market asset prices has moderated since that point, in mid-2018 these prices were 18% above pre-recession levels. The secondary markets have lagged behind. Bottoming out in mid-2011, they began a relatively slower ascent, and in mid-2015, when major market asset prices surpassed 2007 levels, secondary market prices were just 80% of those highs. From the trough of the market until early 2016, the year-over-year growth in primary market price appreciation consistently outpaced the change seen in the secondary markets. Over the past two years, growth in these markets has been more aligned. Still, at 95%, secondary market prices are just now approaching 2007 levels. This presents an opportunity for investment in these secondary markets, as they still have room for appreciation.





### Opportunity follows population

The impact of changing demographics will primarily be seen in the housing market, which is by far the largest real estate sector. However, the preferences of various demographic cohorts will also have major impacts on all CRE sectors.

The Census Bureau’s most recent population projections for the U.S. estimate an average increase of 2.3 million people per year over the next decade. The bulk of this growth will be among those aged 35-44 and 65 and over. Slower population growth is expected among those aged 34 and under, while the number of people in the 45-64 age bracket is projected to decline. This number, however, reflects a revision by the Census Bureau due to the new outlook for lower net foreign immigration. Although lower than the 1.3 million per year previously projected, net immigration is still expected to average 1.0 million annually over the next decade, comprising 43% of the average annual population growth over the decade. Continued changes in immigration policy may result in further downward revisions by the Census Bureau.

In terms of households, the latest Census Bureau data point to an increase in household growth. In the second quarter of 2018, there were 1.45 million additional households compared with a year earlier. This far exceeded the annual average of 660,000 from 2007 to 2013 and the 1.1 million average over the past three years and is more in line with pre-

recession household growth. Over the next few years, household gains are expected to remain above 1.2 million per year.

The recent acceleration in household growth in part reflects the vast number of millennials moving into the age groups most likely to head their own households. Born toward the end of the last century, millennials now comprise the youngest segment of the workforce. As they age, they are growing in affluence, and they need places to live, work and shop. This generation is driving much of the rebound in household growth, comprising 33% of households formed annually between 2012 and 2017.

Over the past decade, as millennials entered the labor force, they increasingly looked toward urban centers to start out. Many in this demographic gravitated toward thriving gateway markets. The general perception has been that these children of baby boomers who were raised in the suburbs were looking toward a more urban lifestyle than their parents had. More recently, they have been priced out of these markets. As they look to settle down, they are more frequently turning to suburban areas and secondary markets.

A major challenge facing builders and investors is determining where millennials will want to live and work. What type of office environment do they prefer? What types of shops would they like to visit, or will they shop mostly online? These questions are important for employers, retailers, property developers and investors alike.

The aging baby boomers are another large cohort that will continue to greatly impact the CRE market. Until recently, there was a general consensus that as these boomers began to retire, many would downsize and migrate to urban centers for both the cultural experience and the ease of access to goods and services. So far, this has not proven to be true: no mass exodus of this demographic from the suburbs to Florida or urban centers has taken place. In fact, the majority of baby boomers are choosing to stay put, at least while they remain relatively healthy and mobile.

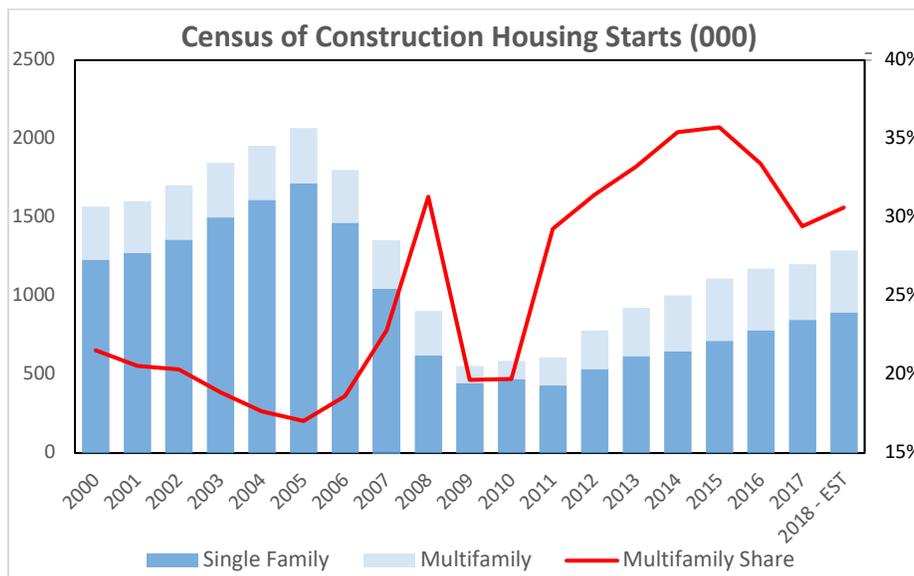
Many studies have been conducted to try to project the preferences of this aging demographic, the leading edge of which is now in their early seventies. Most expect downsizing won't occur until boomers reach their late seventies or early eighties, and the exodus is more likely to be to retirement communities than to major urban centers.

### 3 Housing

*Multifamily residential construction led the housing recovery. According to the Census Survey of Construction (SOC), multifamily starts rebounded nearly four-fold from the 2009 trough to 400K units in 2015 – the highest annual level since 1988, accounting for more than half the gains in housing starts over that period.*

#### Where the multifamily market is headed

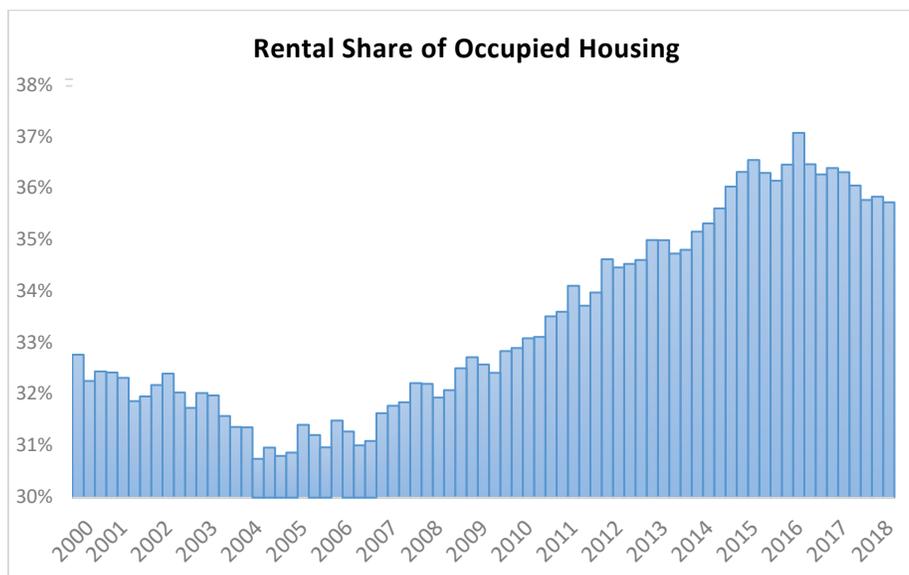
Multifamily residential construction led the housing recovery. According to the Census Survey of Construction (SOC), multifamily starts rebounded nearly fourfold from the 2009 trough to reach 400,000 units in 2015—the highest annual level since 1988, accounting for more than half the gains in housing starts over that period.



New multifamily units are increasingly in large buildings with many amenities. The SOC data show that more than half of the units completed in 2017 were in buildings with 50 or more units, compared with just 13% in 1999. Rentals continue to comprise the largest share of multifamily unit construction. Historically, multifamily starts have averaged 75% rental. After bottoming out at 53% in 2007, the rental rate rose above 90% in 2011. It has remained above that level through the second quarter of 2018.

Census Bureau data from the American Housing Survey confirm the strength of the multifamily market recovery in general and the rental market in particular. While the homeownership rate tumbled during the

recession, the rental share of occupied units surged to a historic high of 37.1% in the second quarter of 2016. Overall household growth slowed during the recovery but remained positive, with an increase in new rental households more than offsetting a decline in owner-occupied units.



A number of indicators, however, show that the multifamily market may be approaching a turning point. According to the Census of Construction, multifamily starts began to waver in 2016, dipping 1.3% over the year. This was followed by a 9.7% decline in 2017. Despite a 6.2% increase in the first half of 2018, a slowdown has been evident in metropolitan areas where construction had been strongest.

Data from the Census Bureau show apartment rents steadily increasing. Rents rose 7.4% in the first half of 2018 compared with the first half of 2017. This was the highest rate of increase in a decade. Among professionally managed buildings, however, the pace of growth has waned. REIS, the respected commercial real estate data and analytics firm, reported rent growth of 4.5% annually as of the second quarter of 2018, down from an annual high of 6.1% in 2015.

While rent growth continues to outpace inflation, an uptick in vacancy rates over the past year signals another shift in rental market conditions. According to Census data, the rental vacancy rate among buildings with five or more units bottomed out at a 30-year low of 7.0% at the end of 2015. The rate has since trended modestly higher, reaching 8.4% in the second quarter of 2018. The vacancy rate among professionally

managed multifamily properties as reported by REIS has also moved higher, rising to 4.8% in the second quarter of 2018, up from 4.3% a year earlier and the highest rate since the third quarter of 2012.

Evidence from the Census Bureau's Survey of Market Absorption supports this softening in the market, with the share of new units rented within six months shrinking from 82% on average in 2013–2014 to just 76% in 2017. The share of new apartments rented within three months dropped even further, from 63% to 55%—only slightly above absorption rates at the depth of the Great Recession.

The rise in vacancies and the slowdown in rent growth are due not only to weaker rental demand, but also to completions outpacing absorptions. Multifamily completions rose 10.4% in the first half of 2018, exceeding absorptions and leading to an uptick in vacancies and weaker rent gains, particularly for new units at the high end of the market. As new inventory continues to enter the market, new supply will outpace growth in demand, and the upward trend in vacancy rates is expected to persist.

Most of the easing in the apartment market has been among high-end rentals, as the majority of new multifamily supply coming on line over the past few years has been clustered in this high-rent Class A segment, the bulk of which has been in major metropolitan areas. Meanwhile, there has been little growth in the stock of the more affordable Class B/C segment. Strong demand for multifamily rentals has prompted developers to renovate Class B/C properties into Class A properties, which command the highest rents. The result is that while the number of Class A units has increased fivefold since the end of the recession to an estimated 5.0 million units in 2017, the number of Class B/C units has remained essentially flat at an estimated 5.7 million units, according to the sample data tracked by REIS.

This trend appears to be shifting as the sharp rise in the cost of urban living has resulted in growth of the suburban apartment market. This suburban construction generally has a more balanced mix of rental stock. Most of the large-scale suburban development is happening near highways and mass transit. The construction costs on these projects are generally lower, as the availability of land allows for low- to mid-rise development.

### **Owners are outpacing renters**

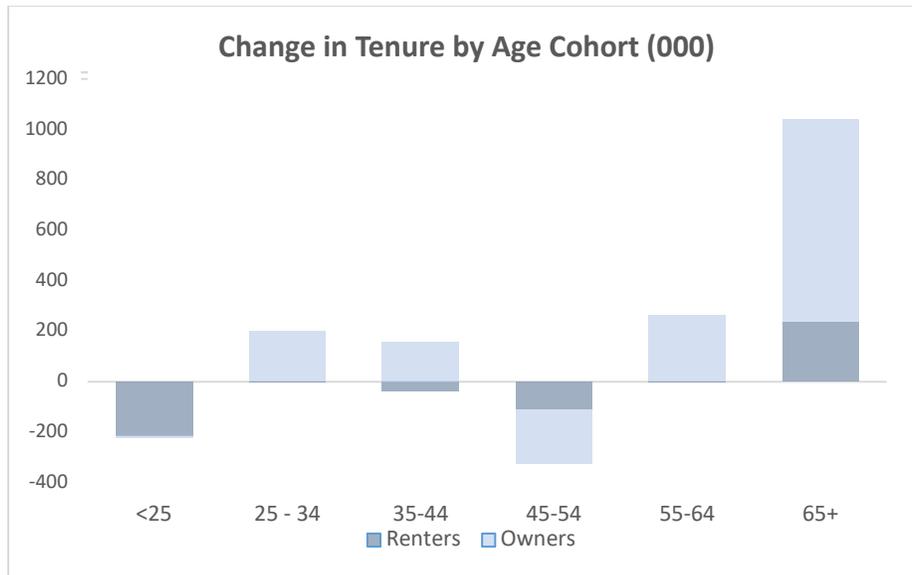
A significant change recently has been the notable shift away from renting. This is evident in both the rebound in homeownership rates in 2016 and the decline in rental households, which fell in 2017 for the first time since 2004. This decline accelerated in the first half of 2018, with a loss of

165,000 renter households over the year. Meanwhile, the total number of households surged by 1.45 million, far higher than the one million historic average. All this growth was due to a 1.61 million expansion in owner-occupied units.

Accompanying the decline in the number of rental households has been a drop in the rental rate. The rental share of occupied housing fell from a historic high of 36.6% in 2016 to 36.1% in 2017. The decline continued in 2018, reaching a 4-year low of 35.7% in the 2nd quarter. The characteristics of the rental market have also begun to change. The largest share of homebuyers recently has been those under the age of 35. As this sizable demographic has gravitated toward homeownership, the number of renter households in this age cohort has slipped. In 2017, the number of younger renter households fell by 216,000, reducing the renter share in this age group by 0.8%, to 64.7%. Given the vast expansion in the supply of apartments in city centers during this recovery, the obvious question is whether there will be sufficient demand for these units as the younger generation continues to establish more traditional households. While Generation Z is following close behind the millennial generation, the size of this younger cohort does not compare with its predecessor.

The renter share of households between the ages of 35 and 64 also decreased slightly last year. Meanwhile, the renter share of households age 65 and older remained level, but those numbers climbed by 236,000 last year as growth in the older population increased. So far, data indicate that the downsizing phenomenon anticipated among older baby boomers has not taken place. Elders are choosing to remain put until they are physically unable, indicating growth in multifamily senior living communities should be where the rental growth is strongest.

The change in the tenure choice of households has been sparked not only by younger households starting out and raising families, but also by rising rents, which make homeownership more attractive. According to a survey of active buyers commissioned by the National Association of Realtors in March 2018, 23% of millennials surveyed indicated that rising rents were a trigger for their home purchase. Still, having enough money for a down payment is a major hurdle for potential first-time homebuyers. In addition, rising home prices and a decline in the tax benefit of owning a home may impact tenure choice.

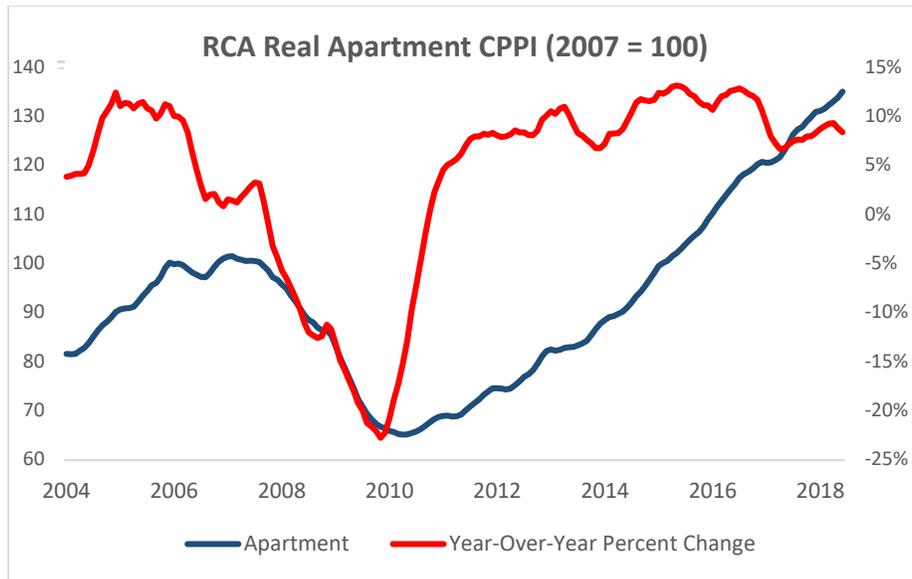


### How the fundamentals look

With vacancy rates rising and rent increases slowing, investors and lenders have become more cautious about the multifamily sector. The Federal Reserve’s survey of senior loan officers indicates that modest net share of domestic banks reported they are tightening lending standards on loans secured by multifamily residential properties.

The NCREIF reports that growth in apartment property revenues has moderated. In the first quarter of 2018, net operating income for multifamily properties grew 3.4% annually—down from a high of more than 10% in 2015. In addition, the annual rate of return on rental property investments, which also exceeded 10% from 2010 to 2015, has fallen and stood at 6.4% in early 2018. This deceleration in the total return is substantially attributable to a drop in investment appreciation.

Rental property prices and sales growth have moderated as well but remain strong. RCA’s CPPI reports that real apartment property prices rose at a 9% annual rate in the first half of 2018—down from the 10.5% rate averaged in 2014–2017. This brings apartment prices 35% above the 2007 peak in real terms. The improvement in apartment prices has lifted the all-property CPPI back to pre-recession highs, while the office, retail and industrial components remain below 2007 levels. The transaction volume of apartment properties improved 9.1% in the first half of 2018, following a 3.2% decline in 2017.



The primary concern for the multifamily sector is the amount of new supply entering the market. Underwriters need to pay particular attention to new completions, permits, absorption, and rental rates in their area. While occupancy is expected to remain positive, vacancy rates should continue to increase as new supply outpaces growth in demand. These high vacancies could put downward pressure on rents and elevate risk in some markets.

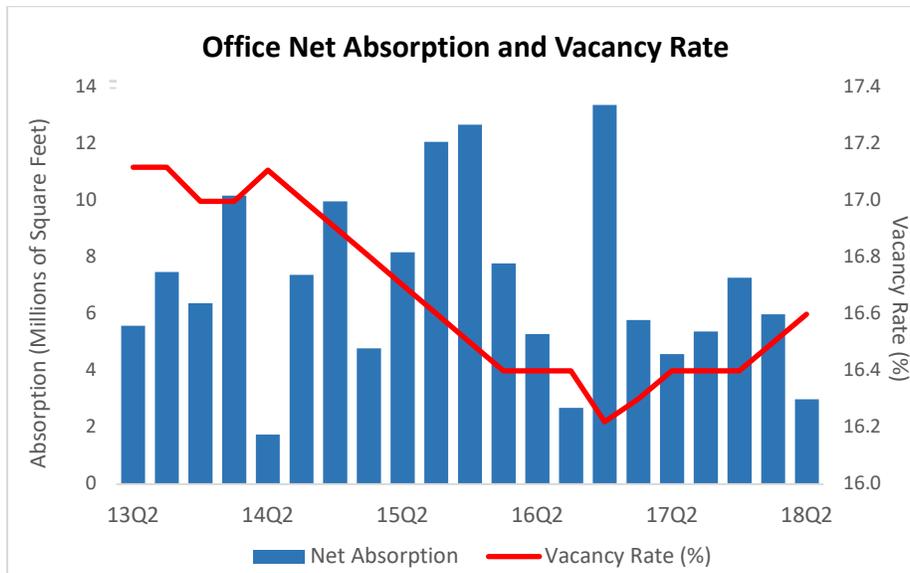
Banks should consider placing more resources in financing Class B and Class C properties. These properties have lower vacancy rates, lower leverage and often better debt service coverage, factors which often make this subclass a better risk for greater pricing. Focusing on this asset class will increase returns, lower current risk and place banks in a better position for the next downturn. A wealth of opportunity for investment in suburban Class B and Class C properties is likely in the near term.

Rising interest rates through 2018 will cause capitalization rates to increase slightly, which will put downward pressure on property price growth and will slow origination volume. However, strong economic growth and favorable multifamily fundamentals will continue to create investor demand for multifamily investments.

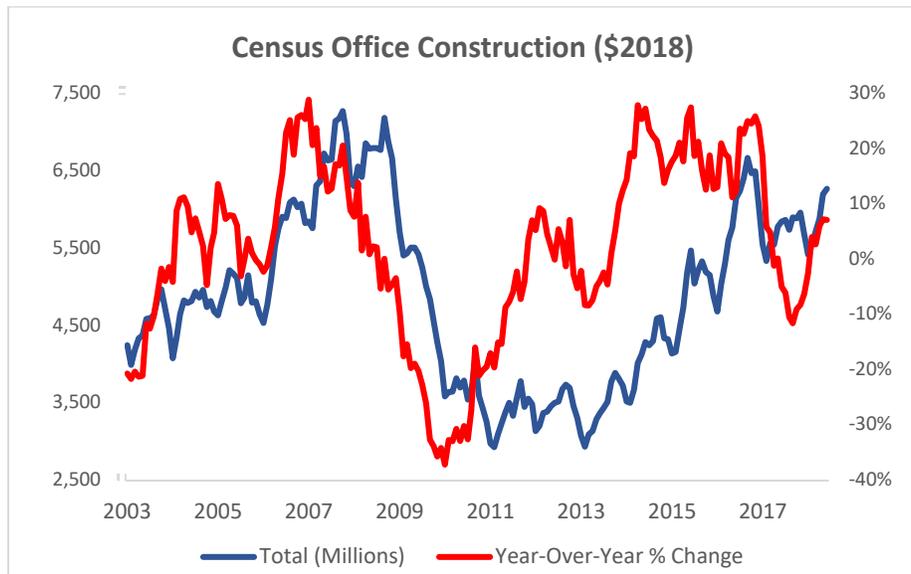
## 4 Office Markets

*Our nation's robust and economy and accompanying healthy employment gains have been supportive of a strong market for office space. However, despite these positive indicators the impact on office rents and vacancies has been more muted.*

Growth in office supply has been a barrier to marked improvements in rents and vacancies. The Census Survey of Construction shows that office starts began to rebound in late 2013, with the real value of construction improving year-over-year. From mid-2014 through the end of 2016, the mean annual pace of growth in start exceeded 25%. Given an average 2-year lag from start to completion, the supply of new office space jumped in 2016. A shortage of office space led to strong absorption through 2017. This began to change in 2018, with a growing supply surpassing demand. As a result, competition among landlords for tenants and rising vacancy rates has constricted growth in rents.



Office construction began to slow in late 2017 as the threat of overbuilding became evident. As rent growth, inflation and interest-rate trends are not supporting increased activity, we expect construction to decrease. This should lead to a reduced supply of new space entering the market by mid-2019. However, with the economy peaking and changes in occupation models altering demand for traditional office space, the market could be in for a correction in the next year or two.



## Supply and demand are shifting

Since the start of the recovery, as with the multifamily market, the bulk of growth in office supply and demand has been in prime markets. As the cost of space in these markets has started to price many firms out of these locations, office development and demand in suburbs and secondary markets have rebounded. These markets, which never fully recovered from the recession, offer expanding job growth, creating demand for office space and housing.

Suburban markets accounted for 81% of net office absorption in 2017. With central business district (CBD) office prices 58% above their 2008 peak, suburban prices remain relatively affordable, with average rents still 4% below their 2007 peak. Suburban markets have a long road ahead, but most growth in the office sector should be concentrated in these areas. Major markets have seen vacancies climb and rent growth stagnate at the same time as many suburban and secondary markets have seen improvement in these measures.

A few factors have kept growth in office demand at bay during this recovery. The rising trend in telecommuting has certainly lessened the need for office space. Another factor is the downsizing of space per worker, which has changed the types of space that many employers are seeking. While open office spaces are the standard, not all firms (and not all functions within a firm) successfully operate in an open-office environment.

A global study by Oxford Economics of more than 1,200 employees from different industries found that the ability to focus without interruptions is a top priority for employees. Noise and distractions are major challenges in open-plan layouts. Over half of those surveyed reported that noise reduces their ability to focus and their satisfaction at work. The study concluded that more attention is needed to create the right balance of open space and private office space. Some companies may be starting to recognize that the open-floor-plan model may prove counterproductive for their business.

Coworker space has become a buzzword in the market for office space. The model offers turnkey workspace for people who are self-employed or working for different employers sharing space, equipment, and services all provided by a third-party provider. Coworking providers typically enter into traditional, long-term lease arrangements with landlords and then sell short-term, all-inclusive memberships, typically on a monthly basis. The occupier is buying a membership, not signing a lease.

Flexible/coworker office-space providers form a sector that has been growing at a robust rate since 2010. Regus, now International Workplace Group, was founded in 1989 and remains the largest provider of flexible office space in terms of total square footage. WeWork, founded in 2010, is arguably the most influential and fastest-growing firm in coworking space. A number of other, recently formed smaller enterprises are clamoring to cash in on the growth in this concept. Over half of all coworking space has opened since early 2015. Recent estimates put flexible office space at 1% of the entire office inventory. Among new leasing activity, coworking leasing among the top ten providers has remained stable at around 2% since 2015. However, the trend in coworker space is not uniform across geography, as innovation hubs where startups are forming have the strongest demand for coworker space.

There is currently a movement within the real estate community to replicate the coworking model where landlords allocate part of their space to coworking. This is typically done either through a joint venture between a coworking provider and a landlord or through a management contract with a building owner.

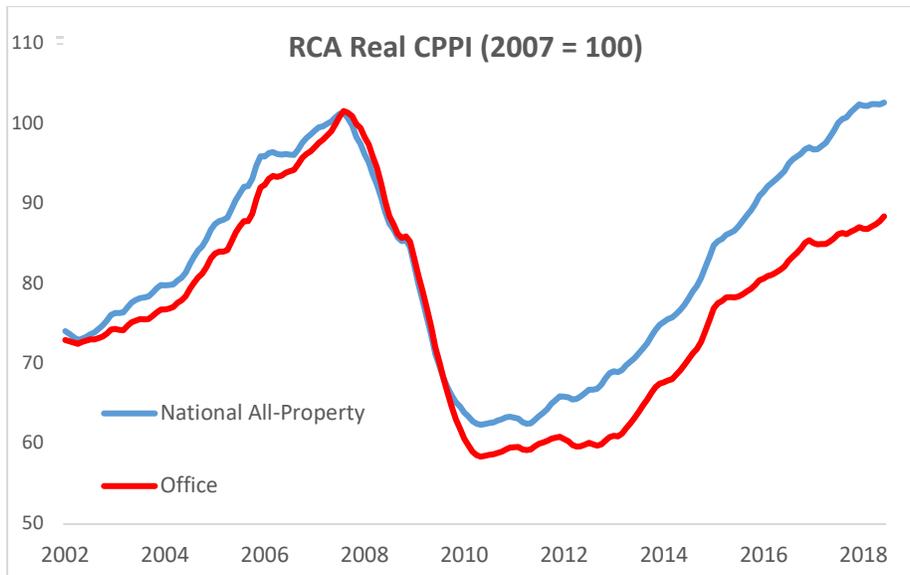
While an economic downturn may reduce the demand for coworking among freelancers, entrepreneurs and small businesses, it could also cause large occupiers to think more seriously about the need for flexibility in their portfolios. Corporate occupiers seeking increased flexibility along with limited capital will trim space from their traditional lease structures and augment the portfolio with coworking space.

Still, the jury remains out as to the long-term prospects for this lease model. Some users find that the space-sharing concept doesn't work for them. In any case, there is likely to be consolidation among providers, which will result in a few well-capitalized companies.

**How sound are office market investments?**

The downshift in property fundamentals has lowered investor interest in office properties, as shown by the change in RCA indicators. Constant-dollar office property sales volumes peaked alongside the all-market sales volume in 2015. Office property sales fell from \$160 billion in 2015 to \$136 billion in 2017. The decline accelerated in the first half of 2018, with office property sales volume shrinking 15% year-over-year.

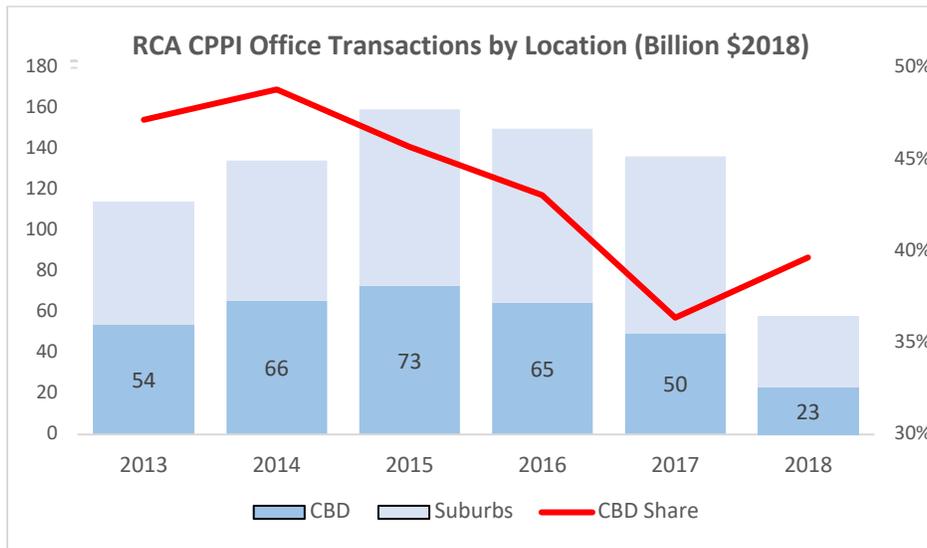
Although RCA National All-Property CPPI surpassed its 2007 peak in mid-2017, office prices have remained below 90% of the pre-recession high this year. While gains both in the all-property CPPI overall and in the office sector remain positive, they continue to moderate. Both saw price appreciation peak in 2015, with real prices overall improving 11.6% and office gaining 11.3%. The annual real rate of growth overall has steadily declined, reaching 4.9% in the first half of 2018, compared with a 2.7% rate of growth for office.



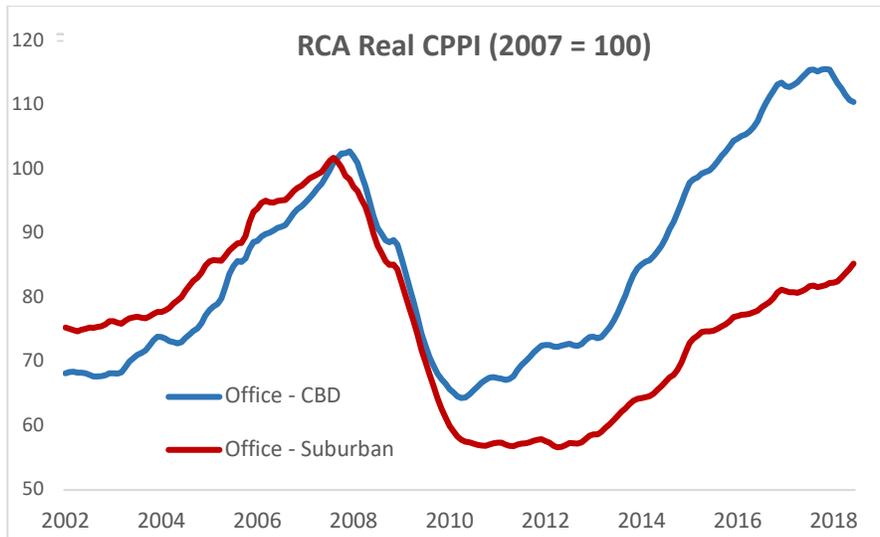
Recent improvements in suburban office markets relative to prime markets are evident from changes in sales volume and price appreciation in these markets. Investment sales volume for office assets in the suburbs is now outpacing sales in CBDs. Expanding job growth is creating office

demand in suburban submarkets that have never recovered from the recession.

Data on sales volume from RCA show gains in CBDs topping out in 2015, with real sales volume expanding 11% to \$73 billion. Over the following 2 years, sales dropped 32%, reaching \$50 billion in 2017. While the volume of sales in suburban markets has been slow to recover, these markets have remained relatively stable, averaging \$87 billion between 2015 and 2017.



A similar but lagged trend is seen in the real price of office space. RCA’s CPPI for CBD office space began to improve in 2010. By 2015, real prices surpassed their mid-2007 peak. While growth over the following 2 years remained positive, the trend reversed at the start of this year, with real prices declining year-over-year for the first time since 2010. Growth in the market for suburban office space has been slow to take hold, as evidenced by relatively weak price appreciation. Halfway through 2018, the real CPPI for suburban offices stood at just 85% of the 2007 peak. Despite a moderating pace of growth, however, suburban prices continue to rise.



## 5 Retail Markets

*Retail real estate has lagged behind other commercial real estate sectors during this recovery. The poor performance is in part attributable to growth in the e-commerce market, which has changed the way people shop. Consumers are visiting stores less frequently, and the rise in online sales means retailers need much less physical space - fewer stores, smaller footprints, and more strategic locations. Many chains are struggling, forced to close stores or go out of business entirely.*

Despite the sharp growth in online shopping, however, brick-and-mortar stores still comprise over 90% of all retail purchases, according to data from the Department of Commerce. Americans have also started shopping more. In-store sales, which were stagnant in 2015 and 2016, have picked up, rising 4.0% in 2017 and 4.7% over the year in the second quarter of 2018. Year-over-year growth in e-commerce, while markedly stronger at 15.5% in 2017, moderated slightly to 15.2% in the second quarter of 2018.

The struggle of the retail sector is evident upon entering shopping malls. Many malls are losing customers and tenants, and store closings have reached historic levels. The rate of closures is more typical of a recession than a decade into an economic expansion. In 2017, store closing announcements more than tripled, reaching a record high of more than 7,000. Kmart and Macy's were among the largest retailers to close stores, and Sears recently filed for bankruptcy protection. The loss of these anchor tenants has sapped smaller shops of much-needed revenue, leading to a plethora of empty storefronts in many locations. Bankruptcies have also

increased, with over 600 reported in the retail sector last year. Toys R Us, Payless and The Limited were major chains that filed for bankruptcy in 2017. While store closings and bankruptcy filings moderated through the first half of 2018, they remain high by historic standards.

While retail remains one of the most challenged sectors, it isn't as doomed as headlines may suggest. The retail industry continues to evolve as the needs and desires of consumers change. The current shift of retail is similar to the introduction of the regional mall in the 1950s, which sapped sales from downtown shopping areas, or the emergence of the discount department store in the 1980s that in turn has hindered the bottom line at shopping malls. While major store closings have generated big headlines, there are positive statistics on actual store openings and closings, showing that 2.7 stores open for every one that closes.

The healthy economy and rising wages and consumer spending should help support retail sales through 2018. However, a major impediment to growth in the retail sector may result from trade disputes. Rising tariffs hurt retailers by making items more expensive, reducing consumer demand. As the cost of everything from toys, to tools, to TVs increases, consumption and retail profit will decline.

### **People are still leaving the house to shop**

Many retailers still see the value in physical stores, and several online retailers are expanding into brick-and-mortar stores and showrooms. Stores can help boost brand awareness, allow retailers to interact with their customers and create added efficiencies for the distribution and return of goods. Most people still prefer to try on clothing, as the hassle of returning online deliveries that don't fit or look different in a picture than in person offsets much of the convenience of online shopping. This also holds true for other goods. While online research may lead you to purchase a particular TV or coffee machine, oftentimes shoppers are not as enamored with the goods they receive as the reviewers seemed to be.

Making purchases in physical stores is still the preferred means of shopping, and this is not likely to change markedly in the near future. In addition to the desire to see goods before purchasing, people still like the social aspect of shopping in person with friends, family members, and others.

The key to retail is to provide the "shopping experience" that people are looking for. The demise of mega-department stores is largely because they don't provide this experience. Shoppers want to find what they need

quickly without having to fumble through a massive, all-encompassing department store to try to locate items. Retailers that have learned to match the ease and instant gratification of e-commerce are thriving even while others are failing.

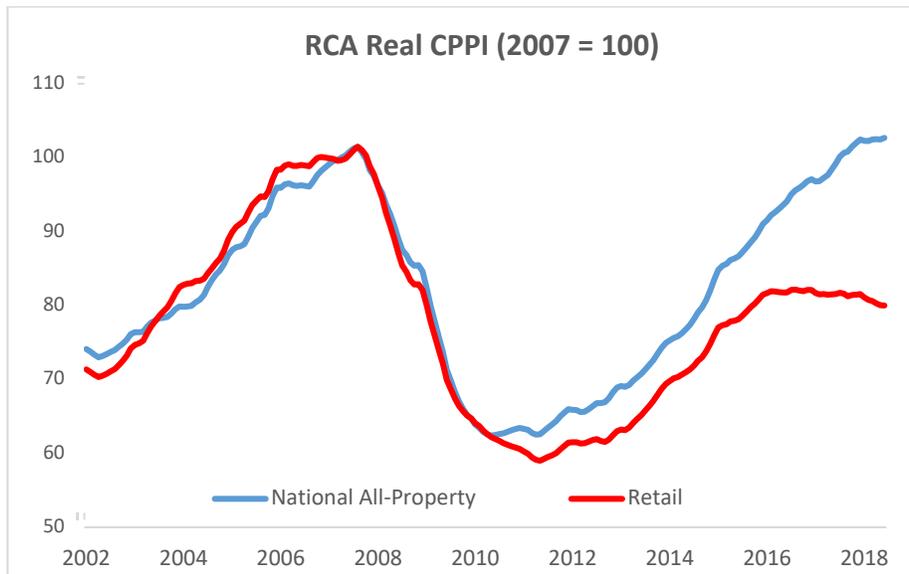
The mix of retail at shopping locations also impacts its success. In general, providing a more eclectic assortment of shops can help boost leasing opportunities. Multi-tenant retail spaces anchored by grocery stores, gyms and other “internet-proof” tenants help boost visits to other stores in the same complex. Accommodating evolving consumer preferences by incorporating a variety of small specialty shops along with a diverse range of dining, entertainment and personal-service options enhances the social aspect of shopping. The development of lifestyle centers that incorporate housing and even office space alongside retail can help provide the social and convenience aspects that some consumers are seeking.

### **The challenges—real and perceived—are still impacting retail**

Returns on retail investments have suffered alongside relative weakness in consumer purchases. The NCREIF Retail Index improved 4.6% year-over-year in the 2nd quarter, lagging behind all other commercial sectors. This drop was entirely attributable to a slowdown in retail property appreciation. While retail income returns have remained positive, the rate of return has trended lower.

Investment in retail properties has suffered from the impact of negative headlines about the troubles facing the retail sector and slow rates of appreciation. Deals have been slow to close as underwriting standards have tightened. In 2017, there was a 16.6% decrease in total retail investment sales volume as compared with 2016, according to RCA. While the trend reversed in the first half of 2018, rising 3.2%, the growth was due in part to sizable portfolio and entity transactions, the largest being Unibail-Rodamco’s acquisition of Westfield Corporation, one of the world’s largest shopping center owners and managers.

Retail property values have also suffered. According to RCA’s CPPI, while real prices for the National All-Property Index types surpassed their pre-recession levels in late 2017, retail property prices remained 20% below the peak in the second quarter of 2018. Despite a 5.5% gain for all commercial property type prices in 2017, retail prices remained flat. In the first half of 2018, growth in all property prices moderated to 4.2% over the year; meanwhile, the retail sector suffered a setback, with property prices falling 1.7% in real terms.



### Bank lending practices in the sector are changing

Financial markets have begun to price the negative risk of retail into certain valuations, making less debt and equity financing available for retail properties. Not surprisingly, this pricing and the availability of financing are not uniform across all retail assets. Strong-performing properties that have adapted to evolving consumer preferences continue to be in high demand, while investors remain bearish on properties that have struggled with high vacancy rates and the resulting stagnant income.

One of the major obstacles facing retail property owners and investors is lease restrictions that were drawn up when the retail market was stronger and properties were more profitable. Since many of these properties are sold off to investors after loans are made, it becomes difficult to make changes in lease terms. Adapting leasing agreements that are more flexible and allowing adjustment when market conditions soften may be useful. However, drawing up these agreements may prove problematic.

Sellers of retail real estate are concerned with how prospective buyers will finance acquisitions in the midst of the challenges facing the industry. Well-conceived mixed-use, high-density, in-fill, “internet-proof” tenancy and grocery-anchored centers with quality sponsorship continue to generate attractive financing from traditional lenders. Riskier retail centers with lack-of-credit tenants or significant rollover are being

underwritten with those risks in mind, limiting leverage and requiring additional capital from the sponsor.

While not all underperforming properties are ripe to be updated and adapted to current consumer preferences, many properties would benefit from such adaptations. The key is to identify undervalued properties in areas with potentially excellent economics, as they may provide the strongest yields upon conversion. While there are limited examples of adaptive reuse, some projects have been very successful. The coming years will see more opportunity for investment in properties with such potential.

## 6 Mixed Use “Lifestyle” Centers

*For years following the financial crisis, urban centers in gateway cities became the desired, hip office destination for major companies. Apartment towers sprang up in these urban centers, quenching millennials’ thirst for downtown living. Traditionally, projects were single-use, perhaps with ground-level retail. Although this trend endures today, more developments now encompass a variety of uses within a single building or multiple buildings.*

One clearly evolving trend is the rising popularity of and optimism for mixed-use developments. “Live-work-play” and “lifestyle” centers have become catchphrases for new urbanism and real estate development. While the concept of mixed-use projects advanced during the mid-2000s, the market crash put a hold on the design and development of such projects. During the early part of this decade, some major projects got back on track and broke ground within primary urban centers. At the forefront of these lifestyle projects was the \$25 billion Hudson Yards in the heart of Manhattan’s West Side. This privately financed public-private partnership, which began construction in 2012, is the most expensive real estate development in U.S. history. The bulk of the project is being constructed on a newly built platform over the Long Island Railroad West Side storage yard. Upon completion, this multiphase, multiuse project will include more than 18 million square feet of residential and commercial development, along with a school, parks and a cultural center.

The availability of prime real estate within major cities is extremely limited, and the redevelopment of such space into mixed-use centers has become prohibitively expensive. Employers in search of talent and affordability are venturing outside of primary city centers to more suburban locations as well as second-tier metropolitan areas. Consequently, many lifestyle developments are now being built outside of

the urban core. Lower costs, desired walkability, access to public transit, shifting demographics and a live-work-play dynamic comparable to what can be found in central business districts have made some suburban markets appealing to young professionals and employers alike.

These new developments or redevelopments often include a variety of complementary uses such as offices, retail and residences. Retail is primarily focused on neighborhood amenities such as grocery stores, boutique shopping, and dining and entertainment options rather than on department stores or other uses that compete with online retail. These relatively dense developments usually include walkable centers and outdoor community amenities such as parks, promenades and playgrounds.

These projects are often built from the ground up on abandoned or underutilized land, such as industrial property with proximity to cities and that includes other features such as access to a waterfront. Visions of new mixed-use development in suitable locations that come to fruition can often provide diversification that better insulates these projects from market fluctuations.

While these ground-up developments are often successful, a real opportunity exists in the adaptation of retail properties into lifestyle centers. More and more shopping malls are suffering from retail bankruptcy filings and resulting empty storefronts as well as the closure of underperforming major anchor tenants, which further limits visits to these malls. While some of this is attributable to the rise of online shopping, much is also due to a change in consumer preferences when it comes to brick-and-mortar retail.

Consequently, increasing numbers of existing retail-only developments are being converted or redeveloped to include offices, apartments, condominiums, retail spaces and often hotels. New development projects are less about retail-only and more about retail as a part of a live-work-play neighborhood, not a mall. These developments are also adding different kinds of retailers that were previously not thought of as belonging in malls, such as grocery stores, movie theaters and gyms. While there have been few attempts at adaptive reuse of struggling retail locations, many of these existing properties provide a good base and have excellent prospects for being reinvented as multiuse developments. Developers and investors are increasingly turning to mixed-use spaces to fortify their retail holdings.

Not all these projects will turn a mall into a new suburban center, but many do represent a dramatic shift in vision. One of the largest examples to date is the Valley View Center on the outskirts of Dallas. The \$4 billion redevelopment plan for this site began construction in mid-2017, and completion of its first phase is expected in 2019. Another project is the \$400 million renovation and expansion of the Arsenal Mall in Watertown, Massachusetts. The property, Arsenal Yards, is located a couple of miles from Boston, with easy access to the Charles River. The project involves the conversion of the mall into office space, along with the addition of 500 housing units and 350,000 square feet of grocery, entertainment and other retail space.

Major technology companies facing acute housing challenges and a large population of upper- income professionals have markedly increased their interest in and plans for mixed-use real estate development. Much of this development focuses on accessible high-end lifestyle projects. Facebook, for instance, plans to expand its campus in Menlo Park, California, by adding Willow Village, a four-million-square-foot mixed-use project. Google has also entered into the foray of live-work-play projects, with plans to build its first ground-up mixed-use development in Mountain View, California. This five-million-square- foot expansion of its North Bayshore campus will include housing, office, hotel and retail space as well as open space.

Overall, mixed-use projects are becoming an increasingly desirable CRE investment alternative. These projects mitigate some of the risk of single-use developments. In addition, such projects can often charge higher rents and generally provide higher rates of return. The growing interest in such projects from high-tech businesses, retail property owners and real estate investors has led to a rise in research and reporting on the potential opportunities available. Still, the prospects remain high as such projects move from infancy to fruition.

## **7 Trends in Finance: Innovation Lending Practices and Data Approaches**

*Big data is having an extraordinary impact on the growing diversity and number of sources of real estate financing. The proliferation of and expansion in the flow of data have broken down barriers to entry for a wide range of startups and other technology-based firms that are now competing or partnering with traditional providers in nearly every aspect of the financial services industry.*

## Big Data and Machine Learning are driving CRE financing options

The role of research in CRE is not only to collect data, but also to synthesize these data into presentable and digestible analysis. Over the past several years, research's importance within the industry has grown. In a world where data has become ubiquitous and almost every job in the industry includes a research component, knowing how to properly examine and interpret data is a significant advantage. However, as with everything in the real estate space, the way we research is changing due to the influence of new technological tools.

Machine learning is one of the primary tools for data analysis that automates analytical model building. It is a branch of artificial intelligence based on the idea that computers can learn from data, identify patterns and make decisions with minimal human intervention. The combination of increasing data availability and advancements in machine learning has led to transformative uses across industries. It wasn't until relatively recently that the CRE industry began to embrace this advancement in technology, but machine learning and data analytics are now two of the top three areas of CRE tech investment. The technology's impact on CRE markets is one of the most important trends that will define the path of CRE for the next few years.

Property valuation is a necessary task for parties across the real estate industry. Development, investment, lending and brokerage all rely on determining the value of property, either by using external valuations and appraisals or by constructing internal valuation models. Underwriting is core to the real estate industry because it is used to determine both transaction prices and lending limits. Value is typically estimated by combining the output of cash flow models that are driven by cap rates with a relative valuation based on comparable recent sales. Both cap rates and comps are largely imperfect measures because neither can be objectively adjusted for a property's unique location or characteristics, and both are lagging because they are based on past transactions.

The proliferation of big data in the real estate sector has resulted in the development of programs that estimate property values. Unlike in the past, when an appraiser would pull together data on a property and its comps, data availability and machine learning are enabling that work to be done more quickly and often more accurately. Currently, use of these tools is widespread on the residential side.

Technology is altering the CRE market in some very obvious—and some not-so-obvious—ways. Efficient use of technology can simplify and reduce the risks associated with acquisition and management of commercial property and debt portfolios, but the industry continues to be slow to adopt change.

### **Automated valuation models will set the pace—and the price**

Automated valuation model (AVM) is a term for a service that uses mathematical modeling combined with databases of existing properties and transactions to calculate real estate values. The majority of AVMs compare the values of similar properties at the same point in time.

To date, AVMs have primarily been employed in the residential sector. With the explosion in data availability and the continuing development in machine learning software, AVMs are likely to grow in prominence and expand to the commercial sector. The market size presents a lucrative opportunity for new entrants in the real estate industry.

Although real estate prices will keep on fluctuating cyclically, AVMs will steadily continue to improve. To make predictions, AVMs use historical data alongside one or more statistical techniques, such as econometric forecasting, number of repeat sales, hedonic pricing, comparable matching, or machine learning. Good models tend to make only small errors; as a property ultimately sells at arm's length, the value predicted by the model is very close to the actual transaction price. By minimizing errors and improving existing algorithms, AVMs are getting progressively more accurate. Use of machine-learning AVMs in the commercial real estate arena is becoming a reality: the first AVM for the commercial sector is expected to hit the market in the coming months.

### **Alternative financing will play a larger role in CRE transactions**

Nontraditional lenders are growing players in the CRE finance market. A need for flexibility accompanying big data advantages has led to a rise in alternative lending sources as these nonbanks have become quicker than traditional institutions to adopt new technology. These entities have grown substantially and are expected to continue to increase in scope and popularity.

Alternative lenders compete favorably on high loan-to-value loans, filling a void left by big banks and insurance companies that are much more conservative. In fact, these nontraditional sources of funding are not necessarily seen as alternative anymore, as their dollar commitments in funds rival those of some of the largest commercial banks.

## **Crowdfunding comes to CRE**

Crowdfunding is a relatively new concept and is one of the latest additions to the financial possibilities for alternative loans. It involves the practice of pooling small funds from numerous individuals to finance a venture and is gaining interest from a wide array of investors. While crowdfunding remains a relatively small player among sources of real estate finance, accounting for only \$2.5 billion of the \$7 trillion CRE market, it presents major potential for growth.

Although this form of fund aggregation occurs on different platforms, the internet is the primary medium for reaching an audience of potential investors and matching them with potential borrowers. Crowdfunding has dramatically increased the level and types of deals available to investors. The ease, efficiency and scalability of online platforms result in lower minimum investment shares, making equity deals more available to individual investors. Crowdfunding is growing in popularity among small investors looking to diversify their portfolios with stable income-producing assets and provides a hedge against traditional stocks and bonds.

Compared with investing in REITs, real estate crowdfunding offers certain advantages. Among these is increased transparency. With a REIT, information about the underlying investment may be limited, making it difficult to gauge whether a deal is sound; crowdfunding investors have more information to aid in decision-making. Investors in CRE crowdfunding are often able to limit the amount of money required to invest, which allows individuals more diversification among commercial and residential real estate funds. Investors can also benefit from certain tax breaks that normally apply to owning a property. For example, an equity investor is entitled to a depreciation expense deduction to reduce taxes on earnings.

## **Mezzanine financing continues to be an attractive option**

Mezzanine loans are characteristically larger commercial real estate loans composed of debt and equity financing that grant lenders the right to convert liability to an equity interest in a company in case of default. The mezzanine debt is secured not by the property but instead by the stock of the purchasing company. If the borrower of a mezzanine loan defaults, the lender can go after the whole company rather than just the property against which the loan was made.

Mezzanine debt is the level of debt between senior or asset-backed debt and corporate equity. A mezzanine loan typically is used to borrow additional money above the first mortgage on the property.

In all cases, the mezzanine instrument is subordinate to the senior debt, and in virtually all cases, the mezzanine instrument is not secured by the property, but rather by the equity in the entity that owns the equity in the property. As such, the mezzanine position is a riskier one, and for this reason, the cost of mezzanine capital is higher than that of senior mortgage debt.

Mezzanine financing is generally offered to companies that have a track record in their industry, an established reputation and product, a history of profitability, and a viable growth plan for the business, such as through expansions, acquisitions or an initial public offering.

Mezzanine financing usually replaces part of the capital that equity investors would otherwise have to provide a company. Mezzanine loans typically have shorter terms than commercial mortgages—a maximum term of five years, compared with 10 to 15 years for a commercial mortgage. Often, the borrower is just required to make interest-only payments and can either pay off or renew the mezzanine loan when it matures. A borrower will pay—and investors earn—a significantly higher rate of interest on a mezzanine loan. A typical interest rate for mezzanine financing is 12% to 20%, making it a high-risk, potentially high-return debt form.

Currently and for the near future, mezzanine lending is more appealing—and cheaper—than preferred equity. The security of the mezzanine lender can be firmed up by careful inter-creditor agreements and still yield returns in the high single digits.

Borrowers prefer mezzanine debt for a number of reasons. The interest payments on debt are a tax-deductible expense, which saves a lot of money in taxes. No collateral is required for mezzanine financing, which makes it quite easier for borrowers. Even if they have property available for a mortgage, they can keep it and consider it for any other financing they may require in future. Also, mezzanine financing is more manageable than other debt structures because borrowers may include their interest in the balance of the loan. If a borrower cannot make a scheduled interest payment, some or all of the interest may be deferred. This option is typically unavailable for other types of debt.

A number of benefits to investors make mezzanine loans appealing despite relatively riskier CRE projects. These loans provide an attractive combination of higher yields and asset-backed safety. The debt is usually

available to individual investors as a portion of a packaged debt investment. While this financing is quite risky due to lack of collateral, interest rates are much higher, making investors more comfortable with these investments. In case of default, the lender not only has the right to the amount of their investment, but also has the right to other assets of the borrowing company. However, the right of the mezzanine lender in any case of default or inability of the company to repay is always second to the venture capital companies and other senior lenders.

### **Foreign investment continues to play a major role**

Despite trade wars, foreign investment in the U.S. CRE market has been robust. In fact, through 2017, the nation continued to be the largest recipient of foreign direct investment in the world. Healthy expansion in the U.S. economy has outpaced that of other nations, and CRE investment risk here is relatively low. In addition, the U.S. CRE market offers higher returns as well as liquidity, which provides foreign investors the ability to withdraw their funding if they choose to move capital.

Since the start of the recovery, most foreign investment has been poured into large transactions in major cities through the U.S. government’s EB-5 program, which promises permanent residency to foreign nationals who invest at least \$500,000 in any enterprise that creates 10 or more jobs. The program has been popular, providing easy access to low-rate financing for developers. EB-5 money has been used for some substantial projects, including a portion of the \$25 billion Hudson Yards mixed-use development in New York City.

### **Share of Commercial Construction Financing Provided by International Investors**

<b>Year</b>	<b>Apartment</b>	<b>Office</b>	<b>Retail</b>
2015	7.5%	19.2%	39.1%
2016	10.2%	20.4%	7.9%
2017	8.8%	6.4%	10.5%
2018	6.9%	3.6%	4.3%

The future of the program, however, is uncertain. It has been extended on a short-term basis several times over the past three years. Most recently, it was scheduled to expire on September 30, 2018 but was extended to December 7, 2018 in order to avoid a government shutdown.

The lack of clarity as to the program's future has reduced demand among developers and foreign investment. According to RCA data on construction loans, international banks' share of funding has declined significantly in recent years. Through the first half of 2018, the foreign shares of apartment, office and retail construction loans all reached multiyear lows. The future of international investment will depend not only on government programs, but on our evolving relationship with other countries.

### **Bank lending works to remain relevant and competitive**

The rise in alternative sources of financing has negatively impacted traditional bank lending. This is due in part to banks' strict lending standards put in place by regulations. While nonbank lenders may have higher interest rates, they often provide added flexibility for the borrower, and loans are quicker and easier to obtain. Big data and AVMs are increasingly providing means for alternative lenders to closely gauge the potential risk of CRE projects. Bank lending rules were recently eased by the Economic Growth, Regulatory Relief, and Consumer Protection Act signed into law in May. Still, hurdles remain as banks and nonbank lenders increasingly vie for CRE investment alternatives.

## **8 Conclusions: What does this tell us about where we are headed?**

*The CRE market appears to be peaking. Real growth in sales and prices has moderated, with previously hot major markets feeling the brunt of this slowdown. Central business district constant-dollar office prices fell in the second quarter for the first time since 2010. In contrast, growth in suburban office prices has accelerated. Retail property prices continued their year-over-year constant-dollar decline that began in early 2017. Apartment prices continued to increase in the second quarter, although the pace of growth reached the lowest level since 2011.*

As the commercial construction market as a whole appears to be cresting, opportunities remain strong in a couple of areas and sectors. Suburbs and secondary office and apartment markets are benefiting from overpriced and in some cases overbuilt major metropolitan areas. In addition, mixed-use or live-work-play developments are gaining favor, particularly in accessible suburbs. Should these mixed-use projects continue to thrive, adaptive reuse of retail and other properties may provide a modest boost to prices and sales in these sectors. From the investor perspective, the inherent diversity of these lifestyle

developments—when properly thought out and implemented—mitigates some investment risk.

The investment world is evolving as the rise of big data and AVMs has opened the doors to more thorough and accurate evaluation of potential projects. In addition, a number of alternative finance options have developed that both utilize these tools and allow small investors to provide minimal investments in crowdfunded real estate projects. Alternative sources of financing are projected to continue to expand, thus assuming a larger share of real estate funding. At the same time, they will have negative impact on traditional bank lending. As machine learning spreads more widely into the commercial lending sector, the use of these tools will proliferate, and thus more nonbank lending instruments will provide additional options for both large and small investors.

**Anne Kinsella Thompson** is a visiting lecturer and research analyst at the MIT Center for Real Estate. Her research collaborations include working with noted MIT real estate economist Prof. William Wheaton, Yale economist and Nobel Laureate Prof. Robert Shiller, and the late Karl Case at Wellesley College. For ten years prior to returning to MIT, Anne was an economist at Dodge Data & Analytics (formerly McGraw-Hill Construction). She holds a Master's of Science in Real Estate Development (MSRED) and Master's in City Planning (MCP) from MIT, and completed her PhD studies (ABD) at MIT.

Entire contents © MIT Center for Real Estate 2018

## 9 References

Branson, Adam (2018). Financial Crisis Helped Highlight Advantages of Mixed-Use Development for Investors. Urban Land Magazine, October 1, 2018.

Bousquin, Joe (2017). How Developers are Adapting to Residents' New Live-Work-Play Lifestyles. Multifamily Executive. June 2, 2017.

CBRE U.S. Research & Reports. (2018). Global Major Report – Live Work Play: Millennials Myths and Realities.

CBRE U.S. Research & Reports. (2018). Q1 2018 - U.S. Capital Markets. <http://www.cbre.us/research-and-reports/Q1-2018-U-S--Capital-Markets-Figures>.

CBRE U.S. Research & Reports. (2018). Q2 2018 - U.S. Capital Markets. <http://www.cbre.us/research-and-reports/Q2-2018-U-S--Capital-Markets-Figures>.

CBRE U.S. Research & Reports. (2018). Q2 2018 - U.S. Macro Outlook.

Cushman & Wakefield (2018). Coworking and Flexible Office Space: Additive or Disruptive to the Office Market?, August 21, 2018.

Dunham, Dustin (2018). Innovations in “Big Data” Are Impacting Real Estate Investment. Cornell University.

Fisher, Jeffrey (2018). Quarterly Highlight: Highest Return for Institutional Investors Since 2nd Quarter of 2016. National Council of Real Estate Investment Fiduciaries, Published Date: August 23, 2018.

Gentry, Evan (2018). As CRE Lending Landscape Shifts, Nonbank Lenders Step Up. Forbes Real Estate Council, July 16, 2018.

Esmail, Geoff (2018). Apartments Continue to be a Modest Drag on the Overall NCREIF Property Index. National Council of Real Estate Investment Fiduciaries, Published Date: August 23, 2018.

Integrated Business Systems (2018). Big Data's Potential for Commercial Real Estate. <https://www.ibsre.com/blog/big-datas-big-potential-for-commercial-real-estate/>

Johnson, Mary (2018). Growing access to data is changing the commercial real estate market. Bizjournals.

<https://www.bizjournals.com/bizjournals/news/2018/07/13/growing-access-to-data-is-changing-the-commercial.html>

National Council of Real Estate Investment Fiduciaries (2018). NCREIF Property Index.

National Multifamily Housing Council (2018). Research & Insight - Quick Facts: Market Conditions. <https://www.nmhc.org/research-insight/quick-facts-figures/quick-facts-market-conditions/>

National Association of Realtors (2018). Commercial Real Estate International Business Trends 2018.

Norton, Pamela (2017). The (real) Impact of Big Data on Commercial Real Estate. IBM. November 29, 2017.

Price Waterhouse Cooper and the Urban Land Institute (2018). Emerging Trends in Real Estate® 2018. Washington, D.C.: PwC and the Urban Land Institute, 2017.

Real Capital Analytics (2018). Commercial Property Price Index, Real Estate Sales Volume and Cap Rates.

Robinson, Adam (2018). Why is Mixed-Use the Newest Gem in U.S. Development? National Real Estate Investor, May 3, 2018.

Rutzen, Marc (2018). Three CRE Jobs that Will Change with the Rise of Predictive Analytics. Forbes Real Estate Council. Release Date. January 25, 2018.

Saiz, Albert and Salazar, Arianna (2017). Real Trends: The Future of Real Estate in the United States. Capital One Commercial Banking and Massachusetts Institute of Technology Center for Real Estate.

ULI Center for Capital Markets and Real Estate (2018). ULI Real Estate Economic Forecast, Urban Land Institute, April 2018.

U.S. Census Bureau. (2018). Census of Construction. Building Permits - Housing Units Authorized by Building Permits for New Residential Construction.

U.S. Census Bureau. (2018). Census of Construction. Construction Spending – Estimate of the Total Dollar Value of Construction Work Done in the U.S.

U.S. Census Bureau. (2018). Census of Construction. Housing Units Authorized by Building Permits for New Residential Construction.

U.S. Census Bureau. (2018). Housing Vacancies and Homeownership. Housing Vacancy Survey. Second Quarter 2018.

U.S. Census Bureau. (2018). Older People Projected to Outnumber Children for the First Time in U.S. History. U.S. Census Bureau, Population Division Release Date: March 2018.

U.S. Census Bureau. (2018). Table 3. Projection of the Population by Sex and Selected Age Groups for the United States: 2017-2060, U.S. Census Bureau, Population Division.

U.S. Department of the Treasury (2018). Daily Treasury Yield Curve Rates. <http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yield>

Woodwell, Jamie (2018). Commercial/Multifamily Real Estate Finance Markets – 2018. Mortgage Bankers Association.