2019 AMHERST MARKET OUTLOOK
U.S. REAL ESTATE

AMHERST MARKET UPDATE

U.S. Real Estate – 2019 Outlook

Executive Summary

U.S. SINGLE FAMILY HOUSING

- While there are signs of froth in some markets, home prices nationally are close to fair relative to longer term fundamentals
- Even in overvalued markets, technical factors do not point to any imminent sharp declines. Markets usually provide leading indicators before they start to correct a fundamental overvaluation
- Markets most susceptible to a downturn are likely the higher priced markets along the coasts as well as some parts of Texas
- Higher yielding low and mid priced homes especially in areas with relatively cheap valuations and opportunity for 'catch-up' growth may provide the best returns in the next few years

U.S. SINGLE FAMILY RENTALS

- Institutional SFR activity continues to progress and has attained critical mass. There are signs of significant new capital flowing into the sector as institutional investors gain greater comfort in the asset class
- Long term trends favoring rental demand, especially for single-family homes, remain strong
- Rising interest rates and lower home-buying affordability may push more demand into SF rentals vs. owning
- Our estimates of total returns for SFR remain attractive in many parts of the U.S.

U.S. Real Estate – 2019 Outlook

Executive Summary

U.S. COMMERCIAL REAL ESTATE

- Price and rent growth remain positive but have started to moderate in office and retail
- Tight cap rate spreads to Treasuries may reduce the possibility of strong CRE price growth in 2019, particularly for larger CBD
- From a relative standpoint, CRE seems undervalued versus where stocks are trading. That may be more telling for stock valuations than CRE
- We continue to prefer a more defensive approach focusing on top of the capital structure in CRE for the most attractive risk-reward

U.S. SECURITIZED PRODUCTS

- The additional return in securitized credit does not adequately compensate for the leverage/idiosyncratic risks. Continued taper and further MBS and Treasury issuance will put pressure on mezzanine/junior securitized spreads in 2019
- An up-in-quality move into more liquid instruments on credit and pricing concerns across the rest of the bond universe could continue to support agency MBS spreads
- Downside risks for agency MBS come from a larger than expected mortgage credit easing or a sloppy reaction to the additional supply
- We continue to prefer top of the capital structure SFR and SASB CMBS within non-government guaranteed sectors

OVERVIEW

Late Cycle Blues

U.S. Real Estate – 2019 Outlook

Financial Markets Reset Lower in Late 2018

- 1H18 financial asset returns were respectable only to give it all away in the October- December selloff
- Equity market returns were flat and with rates rising, Bloomberg Barclays Aggregate had negative returns for the year
- Corporate IG/HY spreads were wider over the year and even more so vs. the mid-year tights
- Commodities also fell sharply with crude down over 10% for the year and copper down 15%
- Real estate performance was positive but less so than the prior years
- All of the above happened even as real economy measures - employment and GDP, grew strongly in 2018. Economic data remains strong but tightening financial conditions and increased Treasury/MBS supply threaten to crowd out liquidity in 2019

	METRIC	2014	2015	2016	2017	2018 YTD[1]	
ECONOMIC FUNDAMENTALS	GDP Y-o-Y Growth (%)	2.7	2.0	1.9	2.5	3.0	Real Economy metrics are strong but mixed on a trend basis, with GDP strong but CRE and HPA slowing
	Non Farm Payrolls Monthly Average (000s)	250.4	226.0	195.3	182.3	206.2	
	Commercial property price growth (y/y)	12.1%	9.4%	9.0%	8.1%	6.4%	
	Home Price growth (y/y)	3.8%	4.2%	5.4%	5.0%	4.7%	
CAPITAL MARKETS	YTD S&P 500 Price Return	11.4%	-0.7%	9.5%	19.4%	-2.5%	Financial Markets slowed in 2018 after a post October correction pushed down returns
	YTD IG CDX Corp Spread Change (bp)	4	22	-21	-19	30	
	YTD HY CDX Corp Spread Change (bp)	52	113	-115	-48	112	
	YTD CMBS BBB Spread Change (bp)	-12	212	-75	-135	-10	
	YTD CRT M3 Spread Change (bp)	35	43	-180	-157	8	
CONSUMER CONFIDENCE	University of Michigan Consumer Sentiment (avg)	84	93	92	97	98	Market sentiment and consumer confidence are at cyclical highs
	Conference Board Consumer Confidence Index (avg)	87	98	100	120	130	

(1) Note: As of December 7th, 2018. Source: Bloomberg, BLS, RCA, JPM, Bank of America, Amherst as of Dec 2018

U.S. Real Estate – 2019 Outlook

No Single Cause for the Post October Selloff

- Bond market returns lagged as the US was well on its way in the hiking cycle
- Equity markets worried about the hiking cycle and potential slower earnings growth in 2019
- Trade war fears were frequently talked about
- A stronger USD, slowing China, and other country specific news made it to the headlines
- Some pointed to liquidity drying out as quantitative easing (QE) reversed course
- The real question for us is if late 2018 was a prelude to what may happen in 2019? Especially when it comes to real estate!

U.S. Real Estate – 2019 Outlook

TOP 10 QUESTIONS FROM OUR STANDPOINT FOR REAL ESTATE IN 2019

U.S. SINGLE FAMILY HOUSING

- Is the U.S. housing market fundamentally undervalued or overvalued?
- Is fundamental under/overvaluation enough to trigger a jump/collapse in home prices?
- What parts of the market are most susceptible and what will likely provide strong long term returns?

U.S. COMMERCIAL REAL ESTATE

- How will CRE cap rates behave in a rising rate environment?
- Would we rather be in an aggressive CRE strategy in today's solid economic environment or opt for defensive strategies?
- Will the opportunity zone legislation provide the next impetus for real estate redevelopment in the U.S.?

U.S. SINGLE FAMILY RENTALS

- An often repeated one from us - Is Single Family Rental (SFR) market here to stay as a mainstream CRE asset class?
- What does the confluence of positive demographics, low construction/inventory, but worsening affordability mean for the SFR market?

U.S. SECURITIZED PRODUCTS

- Is the reversal of QE worse for agency MBS or securitized credit?
- How should fixed income investors position themselves in securitized products?

U.S. SINGLE FAMILY HOUSING
U.S. SINGLE FAMILY RENTALS
U.S. COMMERCIAL REAL ESTATE
OPPORTUNITY ZONES
U.S. SECURITIZED PRODUCTS

U.S. SINGLE FAMILY HOUSING

Not Late Cycle Yet

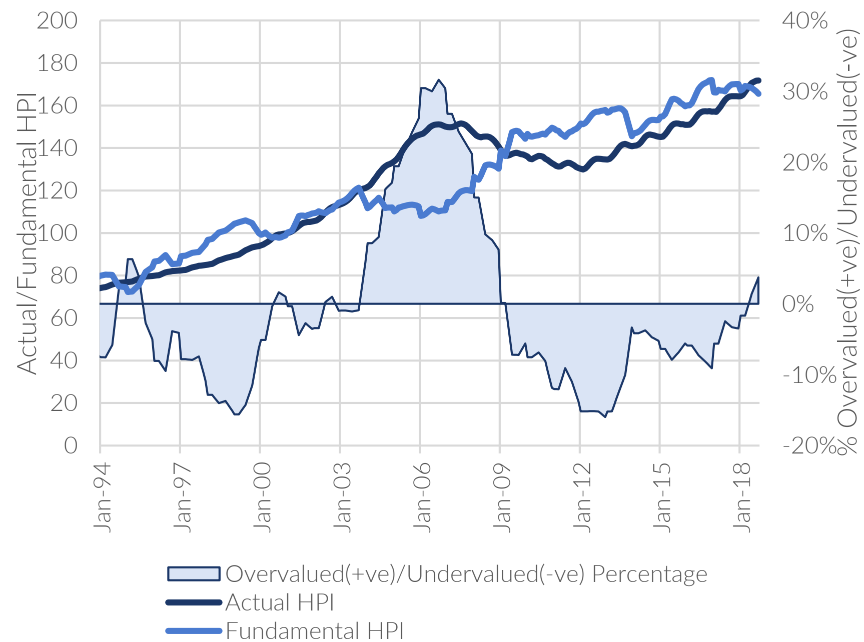
U.S. Real Estate – 2019 Outlook

U.S. Home Prices Growing at a Steady Rate

- Home price appreciation has been steady at 4-5% annualized rate since 2014
- Amherst models suggested that nationally, housing was 30-32% above fundamental (sustainable) levels in 2006
- Home prices fell below fundamental levels during the recession, bottoming at 15% below fundamentals in 2012
- The steady 4-5% rise in home prices since 2014 and rising rates has brought home prices to equilibrium with fundamentals. Currently, prices on average across the nation are slightly overvalued (3%) on our models

AMHERST HOME PRICE INDEX Y/Y CHANGES (JAN '00 – SEP '18)

AMHERST HOME PRICE INDEX AND FUNDAMENTAL VALUE (JAN '94 - SEP '18)



Source: Amherst as of December 2018.

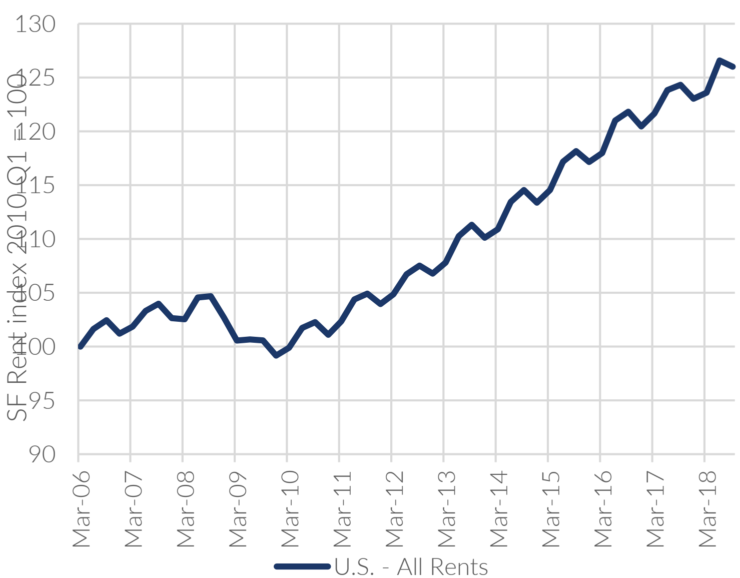
AMHERST MARKET UPDATE

U.S. Real Estate – 2019 Outlook

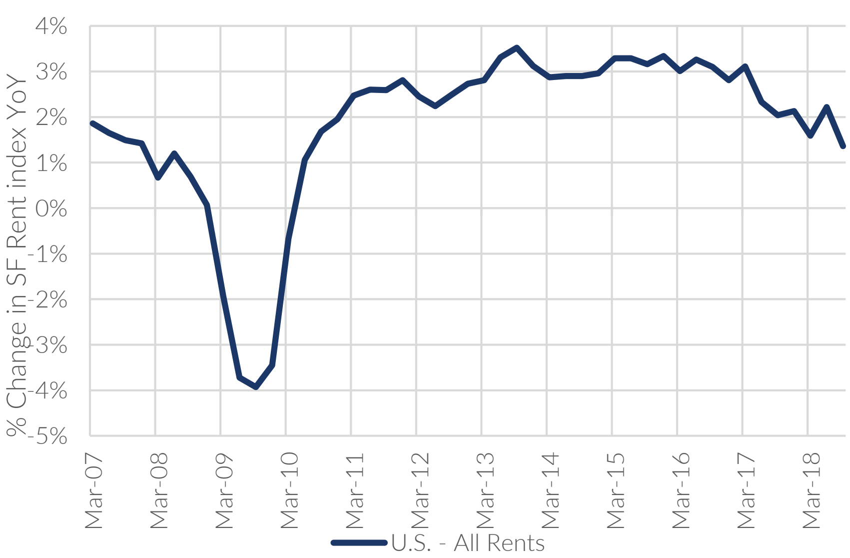
Rent Growth Slowing But Remains Positive

- Amherst's U.S. SFR Rent index (the "index) shows a CAGR of 2.8% since 2010 Q1
- Based on the index, SFR Rents nationally grew by 1.8% on a Y-o-Y basis for the latest data available (2018 Q3) with average annual growth rate of about 2.2%
- The index is based on re-leases on the same properties that are put on the market and therefore may be an underestimate of true rent growth (renewals and easy to place rental units may never show up)

AMHERST U.S. SFR RENT INDEX (2010 Q1 = 100) (MAR '06 – SEP '18)



AMHERST U.S. SFR RENT INDEX Y-O-Y CHANGES, % (MAR '07 - SEP '18)



Source: Amherst SFR Rent Index as of November 2018. For full definition of Amherst's U.S. SFR Rent Index, please refer to disclosures

U.S. Real Estate – 2019 Outlook

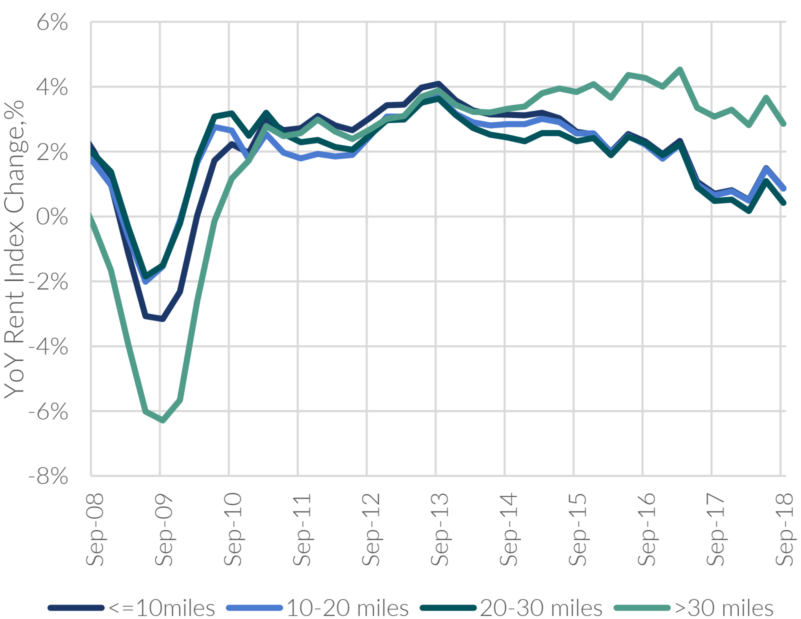
Parts of Florida, Nevada, California and some parts of Texas still seeing 3-5% rent growth; suburban homes outperforming locations closer to CBDs

- Palm Bay, Las Vegas, Port St. Lucie are some of the top rent growth areas as of Sep 2018
- Seattle, Nassau County and Chicago have seen some of the worst YoY rent growth as of Sep 2018
- Areas further away from CBDs have outperformed locations closer to CBDs in rent growth since 2014-15 catching up from the steeper fall during the GFC

TOP 5/BOTTOM 5 AREAS BY YOY RENT GROWTH, SEP 2018

RANK FROM TOP	METRO AREA
1	Palm Bay-Melbourne-Titusville FL
2	Las Vegas-Henderson-Paradise NV
3	Port St. Lucie FL
4	Houston-The Woodlands-Sugar Land TX
5	Los Angeles-Long Beach-Glendale, CA
RANK FROM BOTTOM	**METRO AREA**
1	Seattle-Bellevue-Everett, WA
2	Nassau County-Suffolk County, NY
3	Chicago-Naperville-Arlington Heights, IL
4	Bridgeport-Stamford-Norwalk CT
5	Denver-Aurora-Lakewood CO

AMHERST SFR RENT INDEX CHANGE BY DISTANCE FROM CBD(SEP '08 – SEP '18)



Source: Amherst SFR Rent Index as of November 2018.

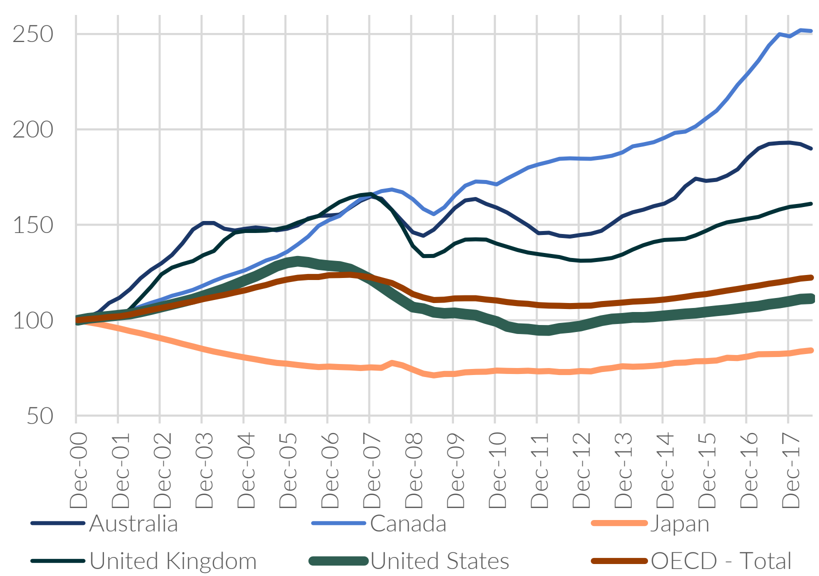
AMHERST MARKET UPDATE

U.S. Real Estate – 2019 Outlook

Price/Rent Ratio Has Grown Slower in the U.S. than in Other Countries

- Since the GFC bottom, the price rent ratio has grown only by 8% in the U.S. as compared to 21% in UK, 32% in Australia and 62% in Canada. Even Japan has witnessed this ratio increase by about 18%
- Compared to the pre-GFC high in the U.S., the ratio is still 15% lower according to data from the OECD

HOUSE PRICE / RENT RATIO (2000 Q4 = 100)



CHANGE IN PRICE/RENT RATIO FOR U.S. VS. THE REST

	CHANGE IN PRICE RENT RATIO		
	VS 2000 DEC	VS GFC BOTTOM	VS PRE GFC HIGH
Australia	90%	32%	15%
Canada	152%	62%	49%
Japan	-16%	18%	NA
United Kingdom	61%	21%	-3%
United States	11%	8%	-15%
OECD - Total	22%	11%	-1%

Source : OECD (2018), "Prices: Analytical house price indicators", Main Economic Indicators (database), accessed on 29 November 2018, Amherst as of Nov 2018

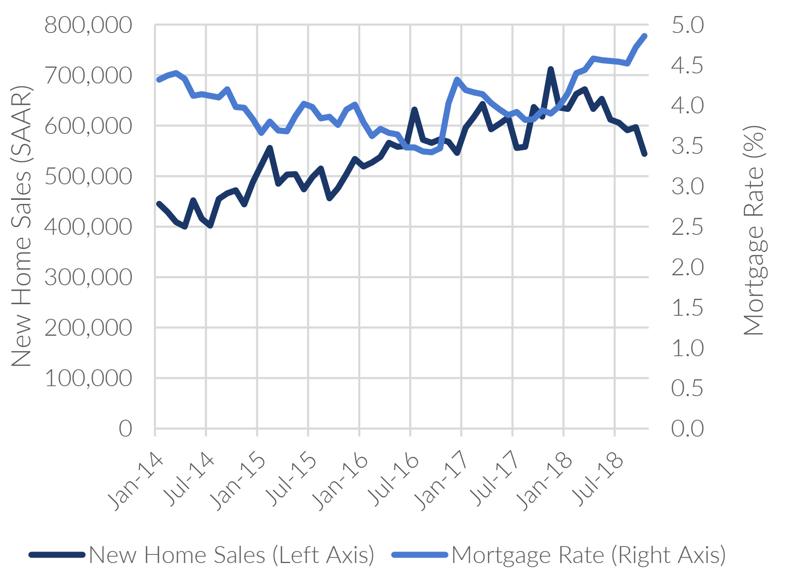
AMHERST MARKET UPDATE

U.S. Real Estate – 2019 Outlook

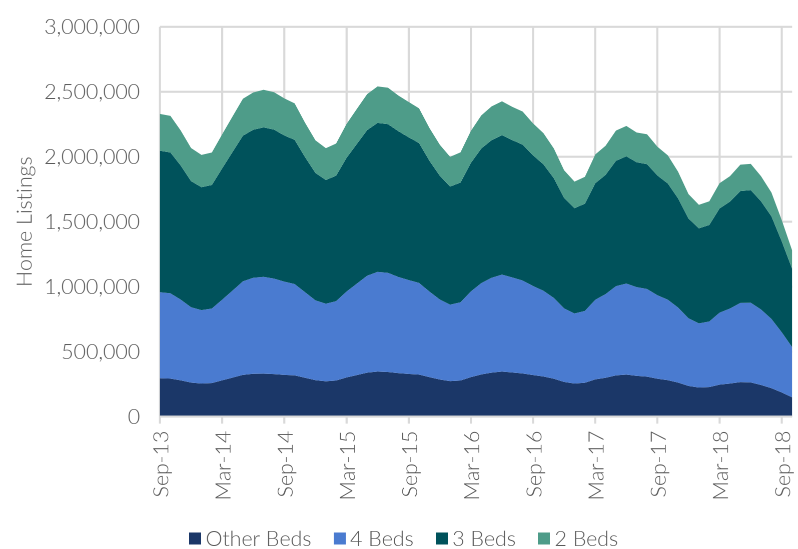
Affordability is a Worry; But Lack of Supply a Positive

- While home prices are still rising, higher interest rates and SALT deduction cap may put pressure on prices
- New home sales have declined from a seasonally-adjusted 650k per year rate in Q4 2017 to 580k per year rate in Q3 2018
- Listings for sale have also fallen likely indicating a supply shortage that may support home prices

NEW HOMES SALES ARE SLOWING AS MORTGAGE RATES RISE (JAN '14 – OCT '18)



BUT LOW INVENTORY CONTINUES TO SUPPORT PRICES **(SEP '13 – OCT '18)**



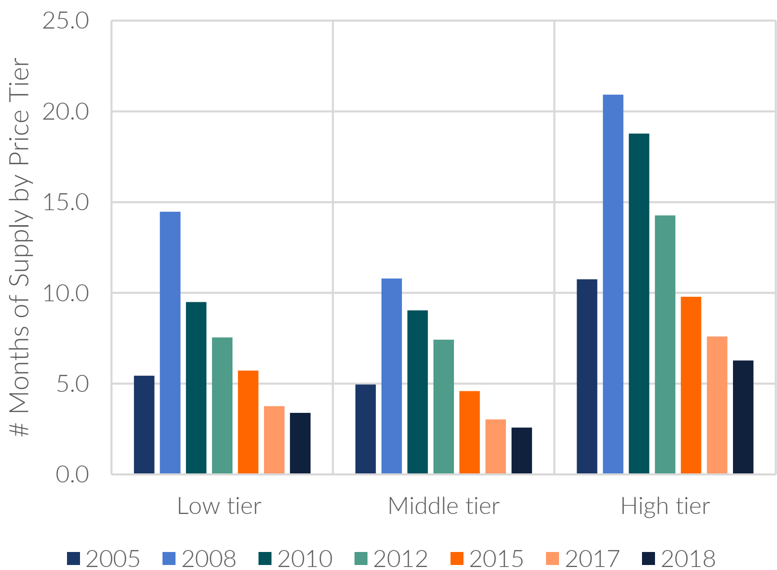
Source : Census Bureau, Freddie Mac U.S. Mortgage Market Survey 30Y Mortgage, Amherst as of Dec 2018. SALT deduction stands for State and Local Tax

U.S. Real Estate – 2019 Outlook

Inventory Lower in Most Areas in 2018; Only a Handful of Areas Have Higher Inventories

- The high end of the market has the longest supply pipelines among price tiers but this has been the case since 2005
- Most areas have seen falling inventory levels across price tiers but some like Fort Lauderdale have seen rising inventories

INVENTORIES HAVE FALLEN ACROSS PRICE TIERS



HIGHER END HAS MORE INVENTORY THAN OTHERS

	MONTHS SUPPLY BY PRICE TIER			
	LOW TIER	MIDDLE TIER	HIGH TIER	ALL TIERS
U.S.	**3.4**	**2.6**	**6.3**	**3.7**
Austin	1.5	2.8	4.5	2.9
Atlanta	1.8	2.1	5.4	3.1
Boston	0.9	0.8	1.1	0.9
Chicago	3.4	2.6	6.5	3.8
Dallas	1.2	2.2	5.4	3.0
Houston	3.8	2.6	6.8	4.1
Fort Lauderdale	4.6	3.7	9.9	5.6
Las Vegas	1.0	2.2	5.7	2.8
Los Angeles	5.1	2.7	6.2	4.0
New York	4.5	4.2	10.1	5.5
San Jose	2.2	1.3	1.6	1.6
San Francisco	2.6	1.2	2.2	1.7
Seattle	1.3	1.8	2.8	1.9
Stamford	4.9	5.0	15.6	7.3

Source : Amherst as of Dec 2018 estimated from MLS Data

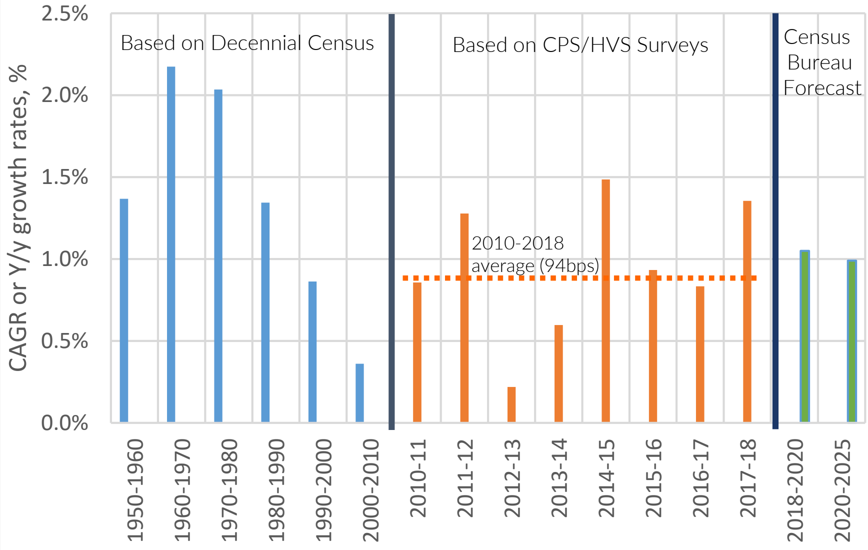
AMHERST MARKET UPDATE

U.S. Real Estate – 2019 Outlook

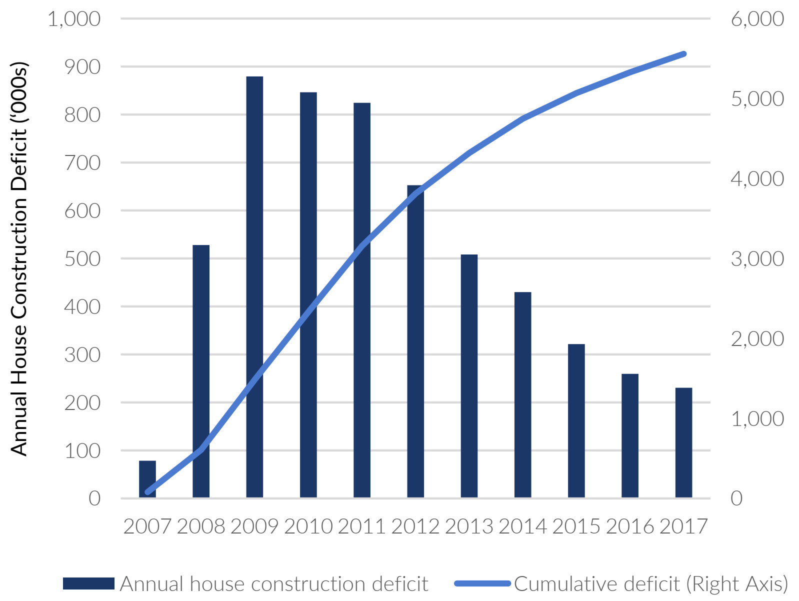
Construction Has Failed to Keep Up With Household Growth

- Population growth will continue to fuel housing demand, with household growth increasing at a faster rate through 2025 compared to 2010-2018 (94bps) as millennial household formation peaks
- Too few homes have been built after the crisis with an estimated deficit of nearly 6 million homes[2]

HOUSEHOLD GROWTH TO PICK UP[1]



CONSTRUCTION DEFICIT POST-CRISIS SHOULD SUPPORT DEMAND[2]

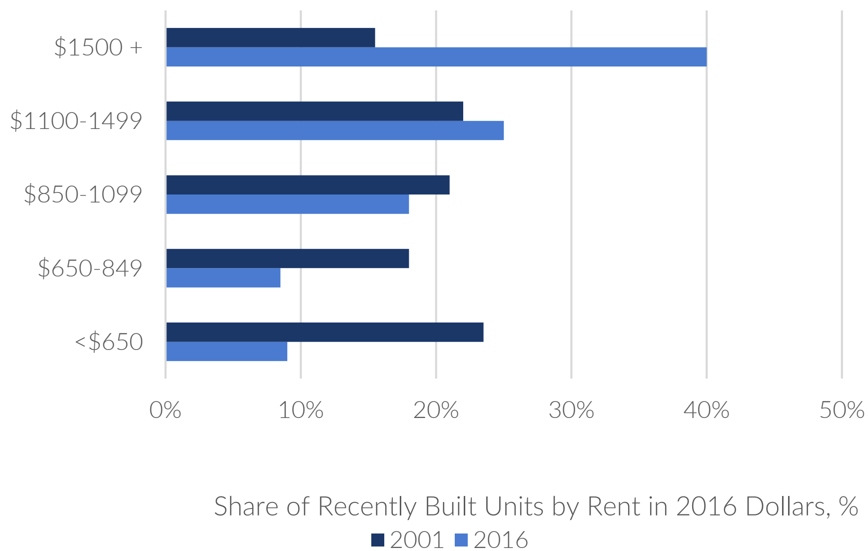


Source: (1) 2018-2020 and 2020-2025 households estimated by using population estimates and assuming the household rate by age group remains at 2017 levels. Amherst Census Bureau as of November 2018 (2) Amherst tabulation of U.S. Census bureau data on U.S. Housing Units Starts as of September 2018. Note: Annual deficit is shown as the difference between homes constructed in the year vs the longer run average from 1960-2017. For illustrative purposes only. The views expressed herein are for information purposes only, and are derived by Amherst from current market conditions and assumptions, which may materially change over time. Please see important disclosures at the end of this presentation.

Most New Builds Have Been at the Higher End; Supply Limited at the Lower End

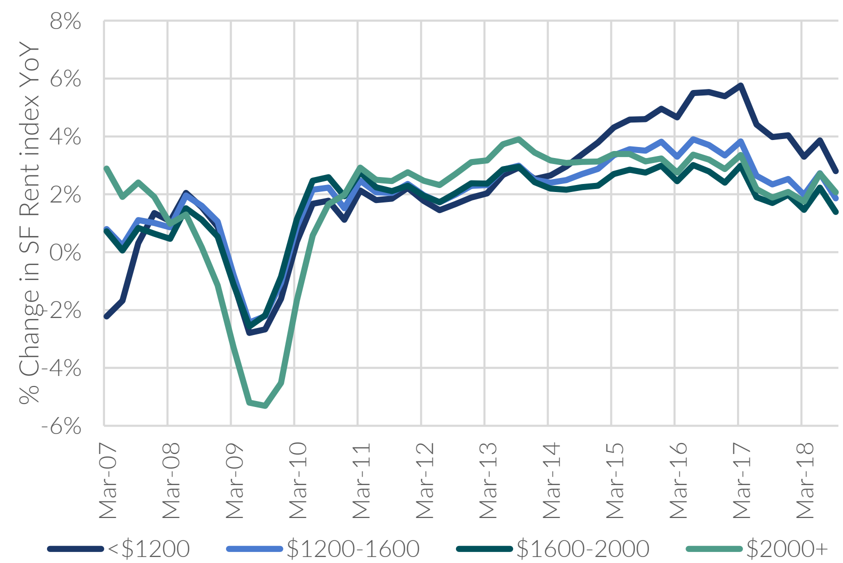
- Construction has mostly been focused on higher end with 65% of new units from 2014-2016 at above $1100 of housing cost. For units built in 1999-2001 the share was 37% (all housing costs are adjusted to 2016 dollars)
- While the high end was experiencing the strongest rent growth within SFR from 2011-2014, low end rent growth has been much stronger in the last 3-4 years

SHARE OF RECENTLY BUILT UNITS BY MONTHLY HOUSING COST



Notes: Recently built units in 2001 (2016) were built 1999-2001 (2014-2016). Monthly housing costs include rent and utilities and have been adjusted to 2016 dollars using the CPI-U All Items Less Shelter. Rental units exclude vacant units and units where no cash rent is paid.
Source: "AMERICA'S RENTAL HOUSING 2017" from the Joint Center for Housing Studies of Harvard University based on U.S. Census Bureau, 2001 and 2016 American Community Survey 1-Year Estimates.

RENT GROWTH BY CURRENT RENT TIER (MAR '07 – SEP '18)

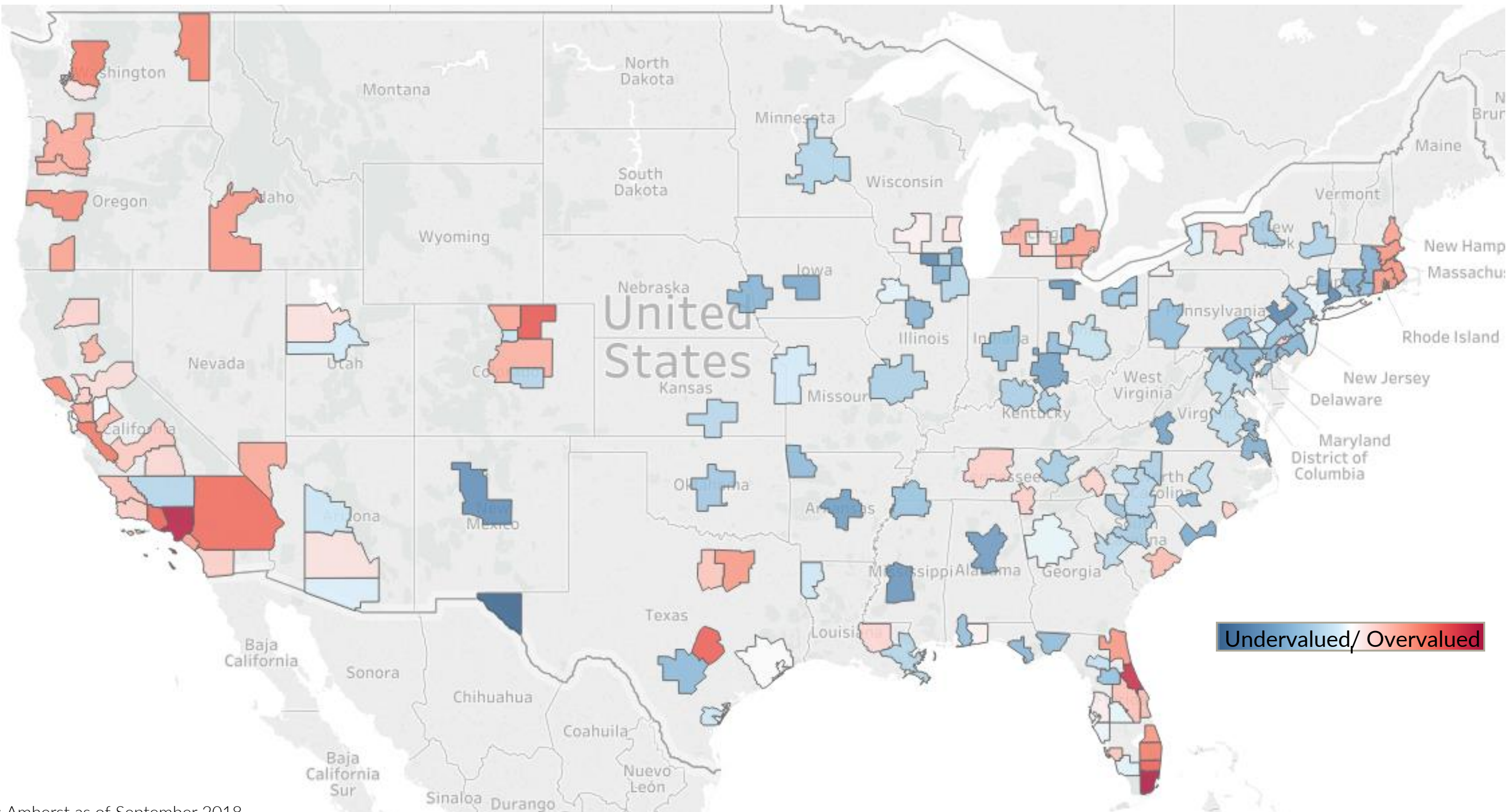


Source: Amherst Rent Index as of Nov 2018

U.S. Real Estate – 2019 Outlook

Some Areas Have Overshot Fundamentals and are at a Greater Risk From a Broader Slowdown

- Some areas along the coasts (Los Angeles/Miami) are overvalued vs. our proprietary fundamental measure based on incomes, inequality, supply elasticity and interest rates. Parts of Texas appear overvalued
- The Midwest/Mid-Atlantic seem undervalued on this metric



Source: Amherst as of September 2018

Is Fundamental Overvaluation Alone Enough to Trigger a Turn in Home Prices?

MARKETS CAN REMAIN FUNDAMENTALLY UNDERVALUED/OVERVALUED FOR LONG PERIODS

- Markets that are over or under valued can reach equilibrium either by the home price index moving closer to the fundamentals (for example, by growing slower/faster than incomes) or by fundamentals changing over time
- As such, while overvalued markets have a higher likelihood of a correction, overvaluation alone does not mean that prices will fall immediately

THERE ARE SIGNS THAT HELP IDENTIFY MARKETS TURNING BETTER THAN FUNDAMENTALS CAN

- To better predict when a market is likely to turn, we rely on market technical metrics that track transaction prices, volumes and liquidity
- We systematically surveil hundreds of markets and submarkets across dozens of market measures to look for red flags

A SINGLE PROPRIETARY RELATIVE HOUSING STRENGTH INDICATOR FOR EACH MARKET TO BETTER PREDICT TURNS

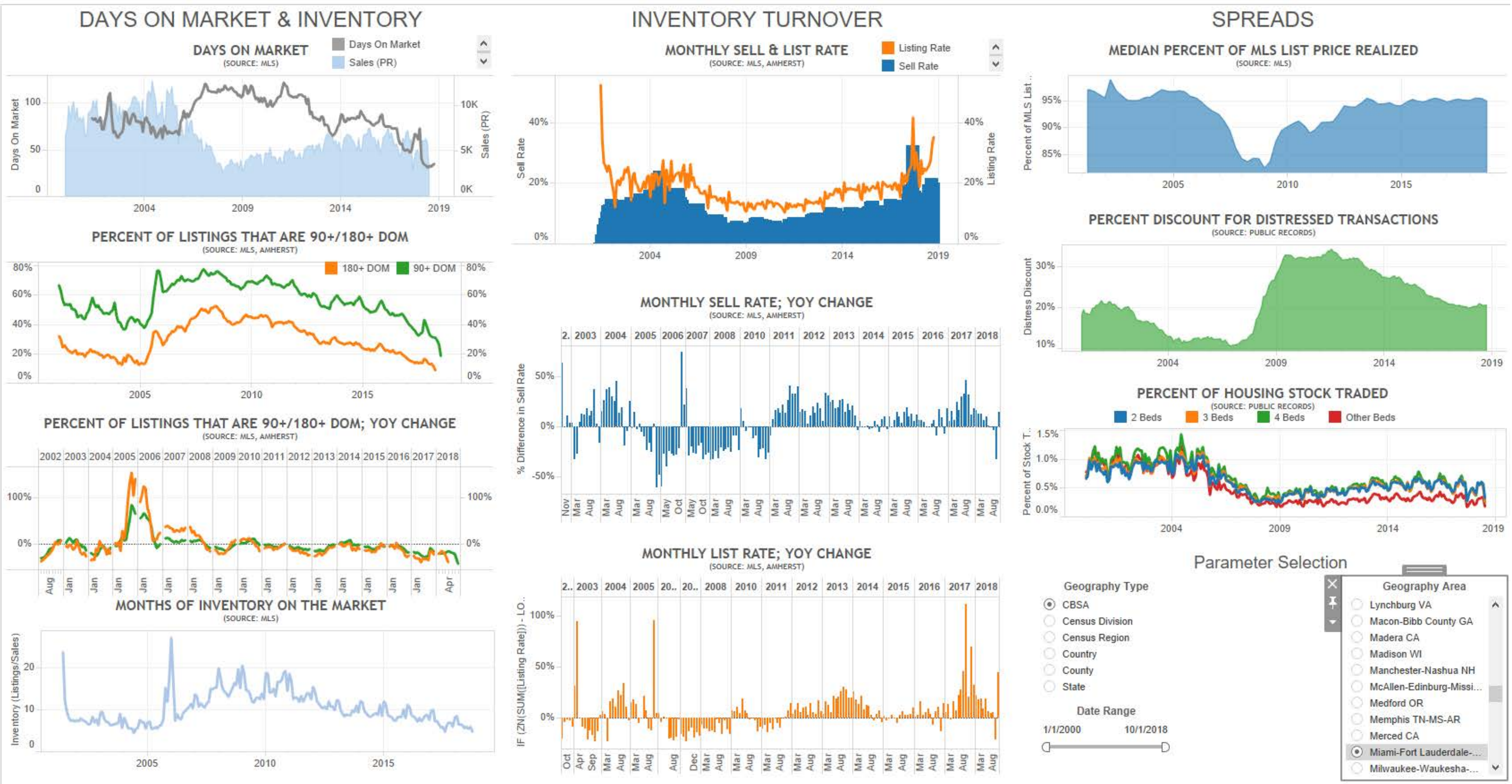
- We combine price, volume and liquidity metrics to create a unified housing score that tracks the relative strength / weakness of every market
- We track these scores at various geo aggregations like CBSA, county, submarkets zip-codes and so on

AMHERST MARKET UPDATE

U.S. Real Estate – 2019 Outlook

Our Proprietary Housing Score Sees No Immediate Signs of Stress Even in Overvalued Markets

MIAMI-FORT LAUDERDALE-WEST PALM BEACH, FLORIDA MARKET SURVEILLANCE



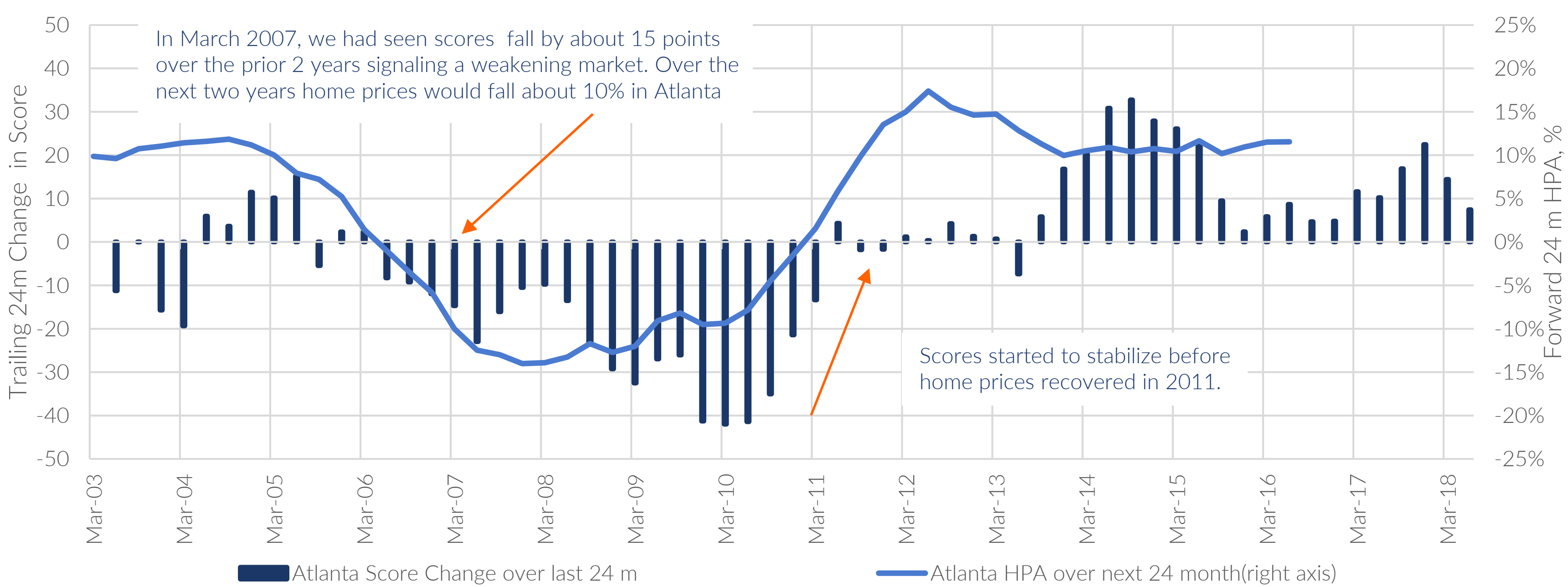
Source: County Record and MLS Data, Amherst as of Oct 2018

U.S. Real Estate – 2019 Outlook

Backward Looking Change in our Proprietary Housing Score is a Reasonable Predictor of Forward HPA

- With Atlanta as example we show that at any point in time scores falling over the prior 24 months (columns in the chart) are a reasonable predictor for 24 m forward HPA from that point (line in the chart)
- For instance, Atlanta market was overvalued fundamentally from 2004 onwards but kept on growing at nearly 5% per annum into 2007. Change in housing score was a leading indicator of the fall in prices that followed
- The housing indicator is not perfect but when paired with a fundamental measure can be a potent tool to predict home prices

ATLANTA TRAILING SCORE CHANGE VS FORWARD HPA – 24 M LAG (MAR '03 – JUN '18)



Source: Amherst as of Nov 2018

U.S. Real Estate – 2019 Outlook

Combining Proprietary Score with Fundamentals Dramatically Improves Home Price Forecast Accuracy

- Pairing score changes with fundamental over/undervaluation improves ability to pick downturns
- The top left corner shows areas/times with both falling scores and are most overvalued vs. fundamentals
- As the 2 yr forward CBSA-level HPA shown in each box shows this combination(falling scores and fundamentally overvalued) results in much worse performance than rich areas with rising scores (bottom left corner) or cheap areas with weak scores (top right corner)
- Overvalued markets with falling scores are much more likely to correct than overvalued markets with rising housing scores

RICH VS FUNDAMENTAL ← → CHEAP VS FUNDAMENTALS

↑ FALLING SCORES

↓ RISING SCORES

	DATA SHOWN IS AVERAGE 2YR FORWARD HPA									
	DECILE BY RICH CHEAP VS FUNDAMENTAL HPI									
SCORECHANGE24M DECILE	1	2	3	4	5	6	7	8	9	10
1	-19.4%	-10.1%	-8.4%	-5.2%	-5.1%	-4.3%	-5.3%	-4.0%	-2.7%	1.6%
2	-13.0%	-3.9%	-2.7%	-1.8%	-1.4%	-0.9%	-1.4%	-1.5%	1.6%	4.6%
3	-9.5%	-4.2%	-1.7%	1.6%	1.3%	2.7%	1.5%	2.3%	4.1%	9.3%
4	-9.3%	1.5%	3.1%	6.0%	6.1%	5.7%	5.1%	6.9%	7.8%	10.0%
5	-5.9%	3.9%	4.4%	2.6%	6.9%	9.4%	7.7%	8.5%	10.0%	8.6%
6	-4.3%	5.4%	9.4%	6.6%	11.7%	8.3%	9.6%	9.4%	8.8%	8.4%
7	-4.0%	11.8%	10.4%	7.0%	9.8%	9.0%	8.6%	8.9%	8.3%	9.0%
8	-3.5%	11.2%	10.4%	13.9%	9.8%	9.7%	10.3%	8.0%	9.0%	8.0%
9	-3.8%	9.2%	11.2%	14.9%	13.4%	10.6%	8.2%	9.0%	8.3%	8.4%
10	0.1%	16.1%	10.9%	11.2%	13.4%	9.8%	11.8%	9.9%	7.5%	8.5%

Note: Rolling 2 year returns from Q1 2004 – Q3 2018. Source: Amherst as of Nov 2018

U.S. Real Estate – 2019 Outlook

Large CBSAS Ranked by Score Change

- Among the largest markets, Riverside/Chicago/Detroit have seen improving scores over last two years. Of these, our model finds Riverside/Detroit to be overvalued and Chicago to be undervalued
- Houston has seen a big decline in scores over the last two years led by oil prices and shows as fairly valued in our model
- Areas like Seattle are at close to the highest levels on raw score with not much more room for improvement and their score changes have been close to flat in last 2 years. We would closely watch for any meaningful declines in our housing score especially in overvalued areas.

CBSA NAME	2-YEARS SCORE CHANGE AS OF SEP '18	%OVERVALUED(+ve)/UNDERVALUED(-ve)
Riverside-San Bernardino-Ontario CA	24.2	21%
Chicago-Naperville-Elgin IL-IN-WI	20.8	-9%
Detroit-Warren-Dearborn MI	16.8	11%
New York-Newark-Jersey City NY-NJ-PA	16.3	-1%
Tampa-St. Petersburg-Clearwater FL	15	2%
San Diego-Carlsbad CA	13.3	7%
Miami-Fort Lauderdale-West Palm Beach FL	12.5	35%
Los Angeles-Long Beach-Anaheim CA	12.4	33%
Washington-Arlington-Alexandria DC-VA-MD-WV	11.5	14%
Phoenix-Mesa-Scottsdale AZ	11.3	4%
Atlanta-Sandy Springs-Roswell GA	10.3	-2%
Baltimore-Columbia-Towson MD	9.6	-15%
Denver-Aurora-Lakewood CO	6.6	11%
St. Louis MO-IL	3.6	-10%
San Francisco-Oakland-Hayward CA	3.6	12%
Dallas-Fort Worth-Arlington TX	3	15%
Pittsburgh PA	2.5	-14%
Minneapolis-St. Paul-Bloomington MN-WI	0.3	-8%
Seattle-Tacoma-Bellevue WA	-0.1	19%
Houston-The Woodlands-Sugar Land TX	-11.8	0%

Source: Amherst as of Nov 2018

U.S. Real Estate – 2019 Outlook

Housing in 2019

- While there are signs of froth in some markets, overall U.S. home prices are close to fair relative to longer term fundamentals
- Even in overvalued markets, technical factors (low supply/ reasonably strong demand) are likely to keep sharp corrections at bay
- Markets that are most susceptible to a downturn are likely the higher priced markets along either coast as well as parts of Texas
- Segments that are likely to provide above average total returns, are likely to be higher yielding homes (i.e. low/mid priced homes) especially in areas with relatively cheap valuations and opportunity for 'catch-up' growth

U.S. SINGLE FAMILY RENTALS

Increasingly More Mainstream

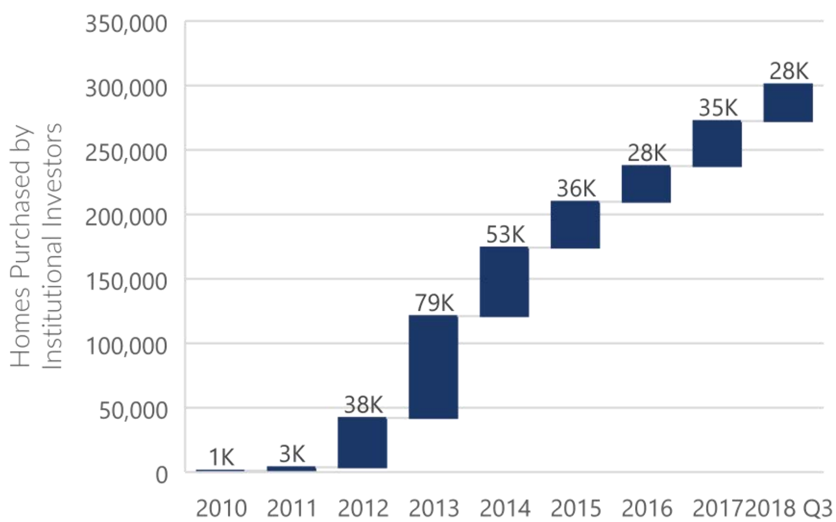
AMHERST MARKET UPDATE

U.S. Real Estate – 2019 Outlook

Institutions Have Purchased 300K+ Homes since 2010 … and Growing

- By our estimates, the institutions in our tracking set have purchased over 300K homes since 2010
- The largest owners are now comparable in scale to large multifamily owners. The benefits of scale will become more apparent in coming years

ESTIMATED INSTITUTIONAL PURCHASES OF SINGLE FAMILY RENTAL HOMES



HOW BROAD IS THIS ESTIMATED INSTITUTIONAL OWNERSHIP?

YEAR	HOMES BOUGHT	# INSTITUTIONS BUYING ANY HOMES	# INSTITUTIONS BUYING >100 HOMES	# INSTITUTIONS INCREASING BUYS VS. PRIOR YEAR
2010	1,214	16	6	16
2011	2,600	22	5	17
2012	38,196	24	12	23
2013	79,035	25	19	20
2014	53,132	25	21	17
2015	35,616	26	22	9
2016	27,663	25	19	12
2017	34,986	26	18	16
2018 Q3	28,403	23	14	8

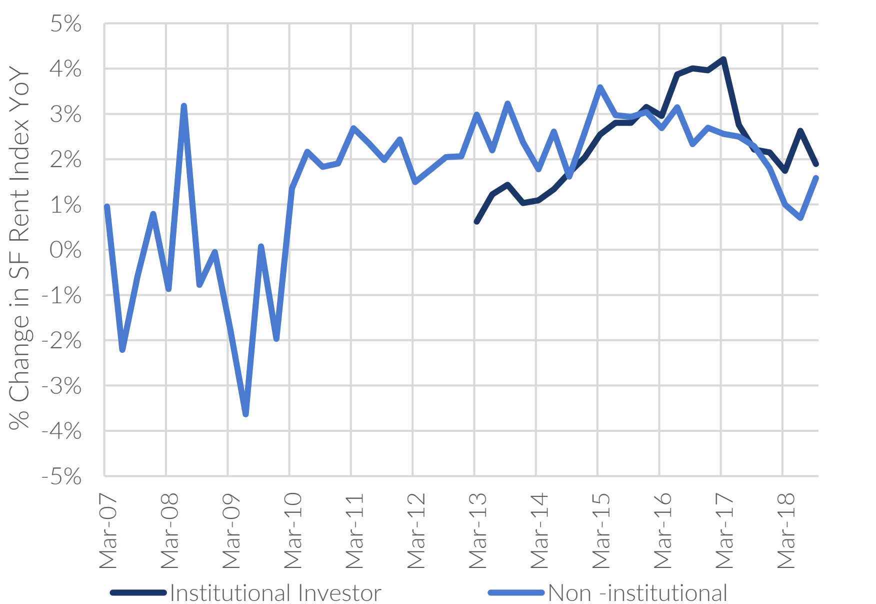
Source: Amherst as of 2018 Q3. 2018 Numbers are YTD through Q3 2018. For counting institutions with rising/falling purchases we annualize the 2018 numbers for comparison.

U.S. Real Estate – 2019 Outlook

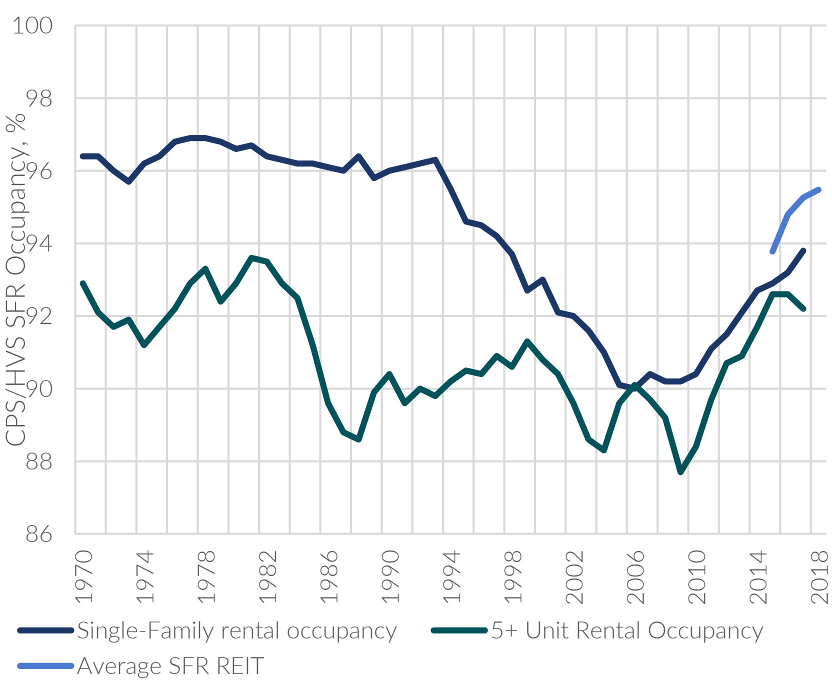
How Have Institutions Fared So Far?

- Institutionally owned rental pair transactions show better than average rent growth in 2016-2018 in part indicating a better mix of properties
- Single family rentals have enjoyed higher occupancy rates than 5+ unit apartments based on Census CPS/HVS data
- The occupancy rates reported by SFR REITs are even higher at about 95-96% in recent years

U.S. SFR INDEX YOY CHANGES FOR INSTITUTIONS AND OTHERS (MAR '07 – SEP '18)[1]



SFR/ 5+ UNIT OCCUPANCY RATES CENSUS CPS/HVS SURVEY[2]



Source: (1) Amherst as of Nov 2018 (2) Amherst tabulation of Census Bureau HVS Survey Data and Financial reporting from publicly traded SFR REITs(INVH and AMH)

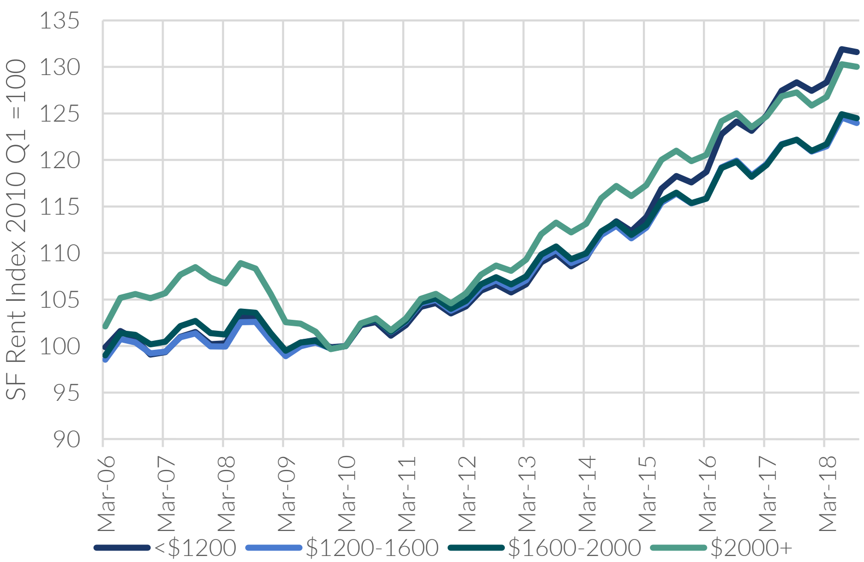
AMHERST MARKET UPDATE

U.S. Real Estate – 2019 Outlook

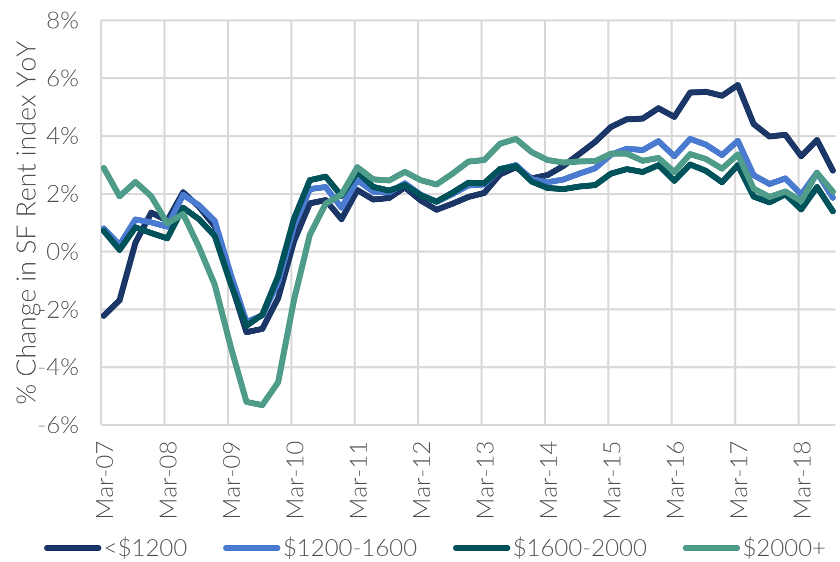
Institutions Have Focused on the Lower to Middle Segment Which Has Outperformed

- Nationally, rents have grown about 25-30% since 2010 with the high end and low end outperforming
- In recent periods, the low end has caught up with the high-end and continues to grow faster

CUMULATIVE GAINS OVER 5 YEARS (MAR '06 – SEP '18)



RENT GROWTH BY CURRENT RENT TIER (MAR '07 – SEP '18)



Source: Amherst Rent Index as of Nov 2018

GSE Step Back; But Financing Freely Available for SFR

- The FHFA announced in August 2018 that Fannie Mae and Freddie Mac will conclude their SFR pilot programs
- They cited the main reason they decided not to pursue it was that "the larger single-family rental investor market continues to perform successfully without the liquidity provided by the Enterprises"
- Public ("CUSIP") Securitized SFR issuance remains a strong source of financing for institutional operators
- For 65-70% LTV financing, spreads of 120-135 bps plus deal costs are available. This implies an all in financing spread of about 170-185bps. For comparison CMBS spreads are reported in the 160-200 range for 5yr fixed loans
- Large/mid-sized players can also tap similar financing structures in the private "non-CUSIP" financing markets that may offer more flexibility and lower setup costs than public securitizations

US SFR SECURITIZED ISSUANCE IMPLIED FINANCING COSTS

SFR FIXED RATE (PROG 2018-SFR3)				
Tranche	Rating	LTV	Spread	Cum. Spread
A	Aaa/AAA	34%	80	80
B	Aa3/AA+	43%	100	84
C	A3/AA-	46%	110	86
D	Baa3/A	52%	135	91
E	NR/BBB	63%	180	107
F	NR/BB	72%	230	122
SFR FLOATING RATE (IHSFR 2018-SFR4)				
Tranche	Rating	LTV	Spread	Cum. Spread
A	AAA/Aaa/AAA	33%	110	110
B	AA+/Aa2/AAA	42%	125	113
C	AA-/A2/AA-	49%	140	117
D	A-/Baa2/A-	54%	165	122
E	BBB/NR/BBB-	60%	195	129
F	BBB-/NR/NR	65%	220	136

SENIOR MORTGAGE FINANCING MATRIX – CUSHMAN WAKEFIELD

PROPERTY TYPE	5 yr Fixed > 60 LTV	3-5 yr Floating >60 LTV
Multifamily - Average	165	208
Retail - Malls	185	198
Retail - Grocery Anchored	185	198
Retail - Strip & Power Center	200	213
Industrial - Multitenant	160	188
Office - CBD	185	198
Office - Suburban	200	208
Lodging - Full Service	235	308
Lodging - Limited Service	265	365

Cumulative spreads plus about 30-50 bps in deal costs show comparable/ tighter spreads on SFR vs other CRE sectors

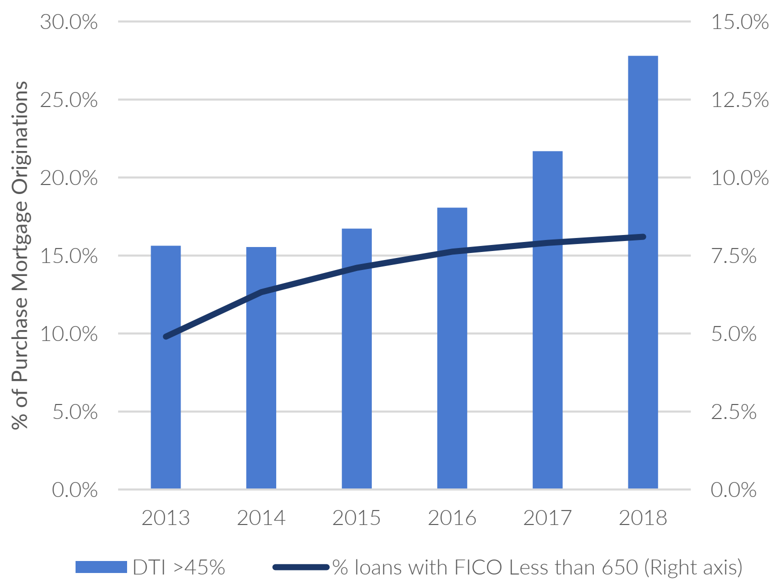
Source: Deal Documents from Bloomberg, CRE Loan Rates from Cushman Wakefield as of Dec 2018

U.S. Real Estate – 2019 Outlook

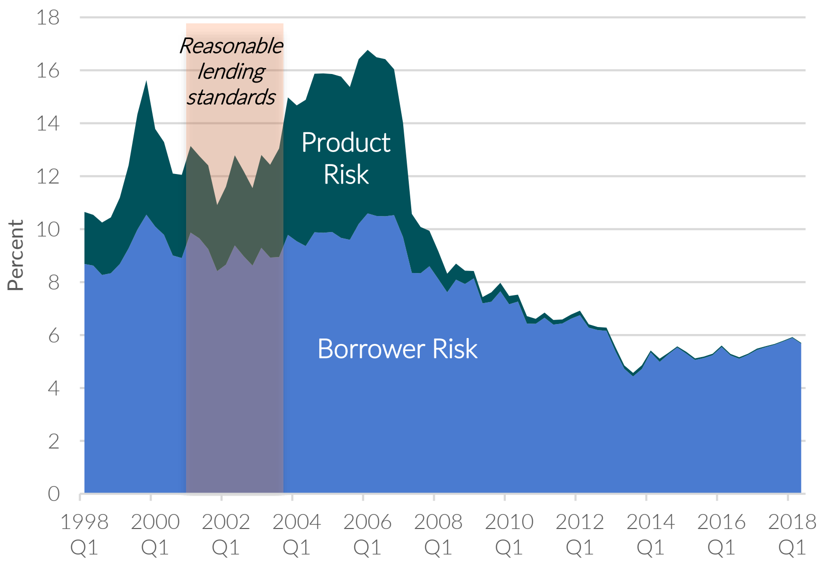
Macro Backdrop Remains Supportive for Rentals

- Mortgage credit has loosened modestly since the post-crisis tights with share of higher debt-to-income (DTI) and lower FICO increasing modestly
- However, credit availability remains far below what is generally considered reasonable lending standards of early 2000s

BORROWER CREDIT RISK IS SLOWLY BEGINNING TO LOOSEN[1]



BUT REMAINS FAR BELOW PRE-CRISIS LEVELS (MAR '98 – SEP '18)[1]



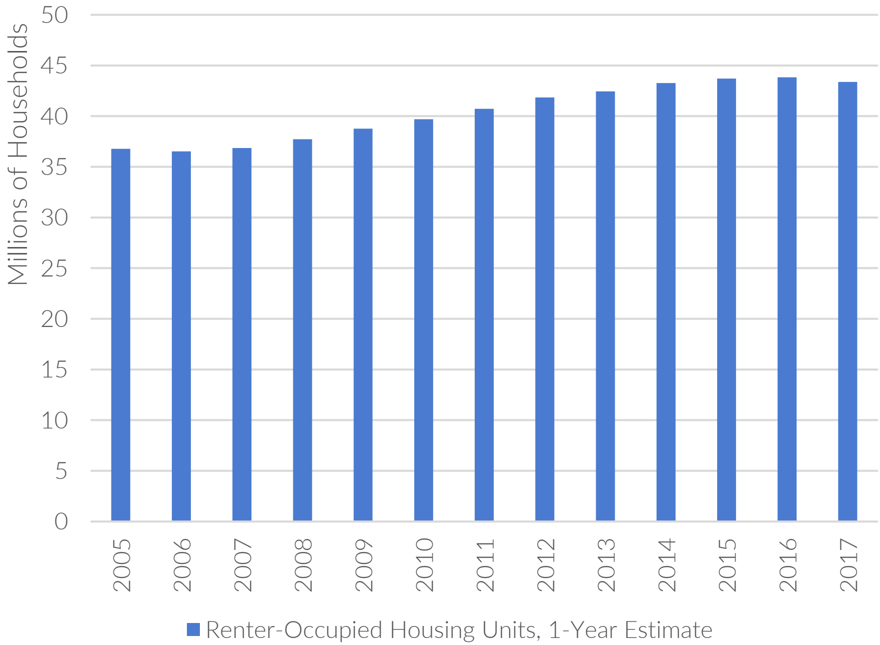
Source: (1) Amherst as of December 2018. (2) Urban Institute based on eMBS, Corelogic, HMDA and Inside Mortgage Finance Data as of October 2018. Note: Product risk refers to the amount of mortgage credit risk taken by the market that is attributable to certain risky mortgage products like shorter reset hybrids. The rest of the mortgage credit risk taken by the market is classified as borrower risk. See Measuring Mortgage Credit Availability Using Ex-Ante Probability of Default for more details. For illustrative purposes only. The views expressed herein are for information purposes only, and are derived by Amherst from current market conditions and assumptions, which may materially change over time. Please see important disclosures at the end of this presentation.

U.S. Real Estate – 2019 Outlook

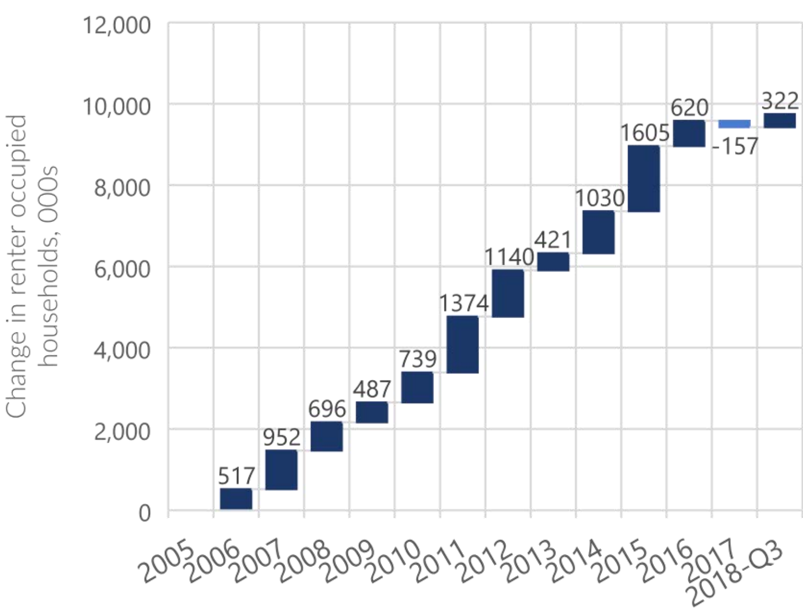
ACS reported a 450k decline in number of rental homes from 2017 vs. 2016. Is that a Cause of Concern?

- Housing Vacancy Survey from the Census shows Renter Occupied Unit growth reported a smaller decline and shows positive growth in 2018, which suggest a possible reversal in the 2018 ACS data when it is published next year
- Sampling idiosyncrasies (missing CBSA/counties in 2017 vs 2016, effect of Hurricanes in Texas/Florida and falling survey response rates) may have led to an overstatement of the declines
- Longer-term supportive factors remain in place and are likely to lead to growing single-family detached rental demand in the coming 5-7 years

2017 RENTER OCCUPIED HOUSE COUNTS DROPPED VS 2016[1]



HVS SURVEY SHOWS RENTER UNIT GROWTH IS BACK IN 2018[2]



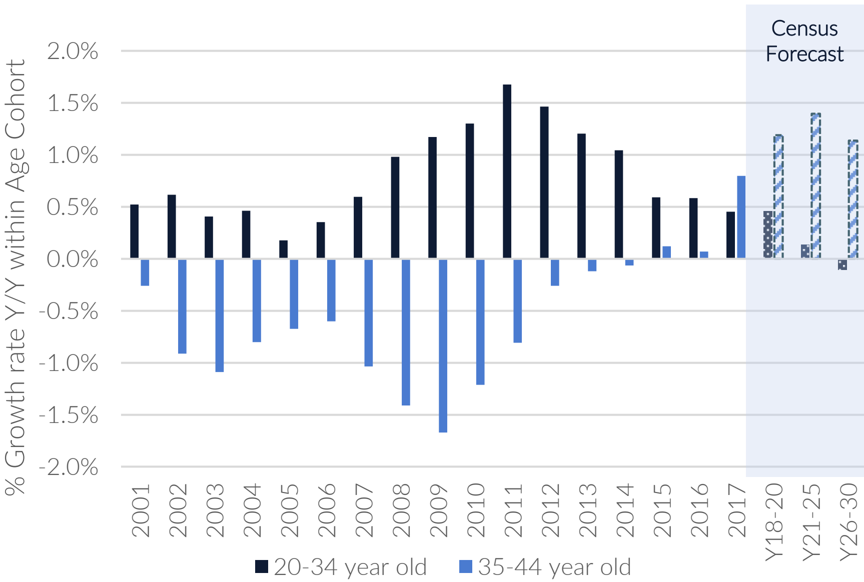
Source: (1) Census Bureau ACS Surveys Latest is 2017 ACS survey data released in Sep/Oct 2018. HCS survey from Census. (2) Housing Vacancy Survey from Census Bureau as of Dec 2018

U.S. Real Estate – 2019 Outlook

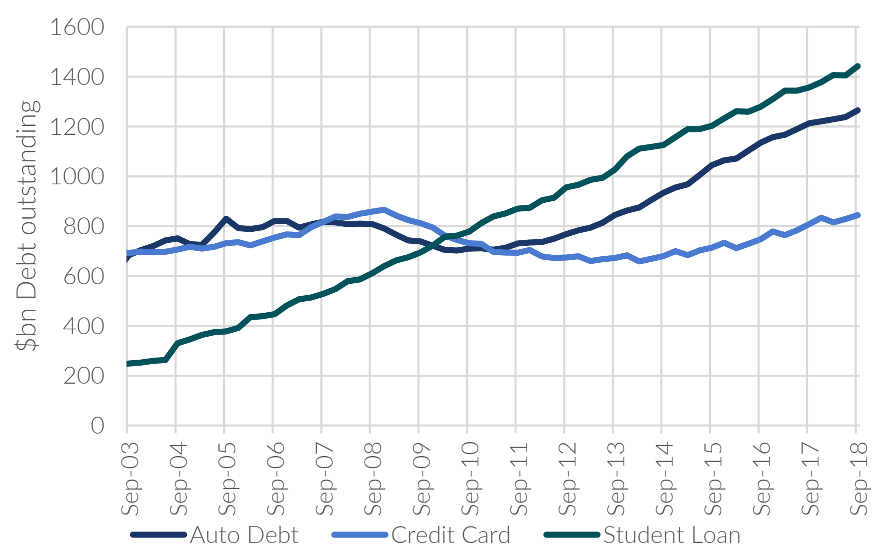
35-44 Age Cohort to Increase Meaningfully in Coming Years

- The cohort going from below 35 to 35-44 is a big driver of demand for single family homes
- With tight mortgage credit and ever increasing consumer debt loads, buying may not be an easy option for many millennials leading to greater demand for single family rentals

35-44 YEARS COHORT SET TO RISE IN RISE AS MILLENNIALS AGE[1]



RISING DEBT LOADS WILL PUSH THEM TO RENTALS[2]



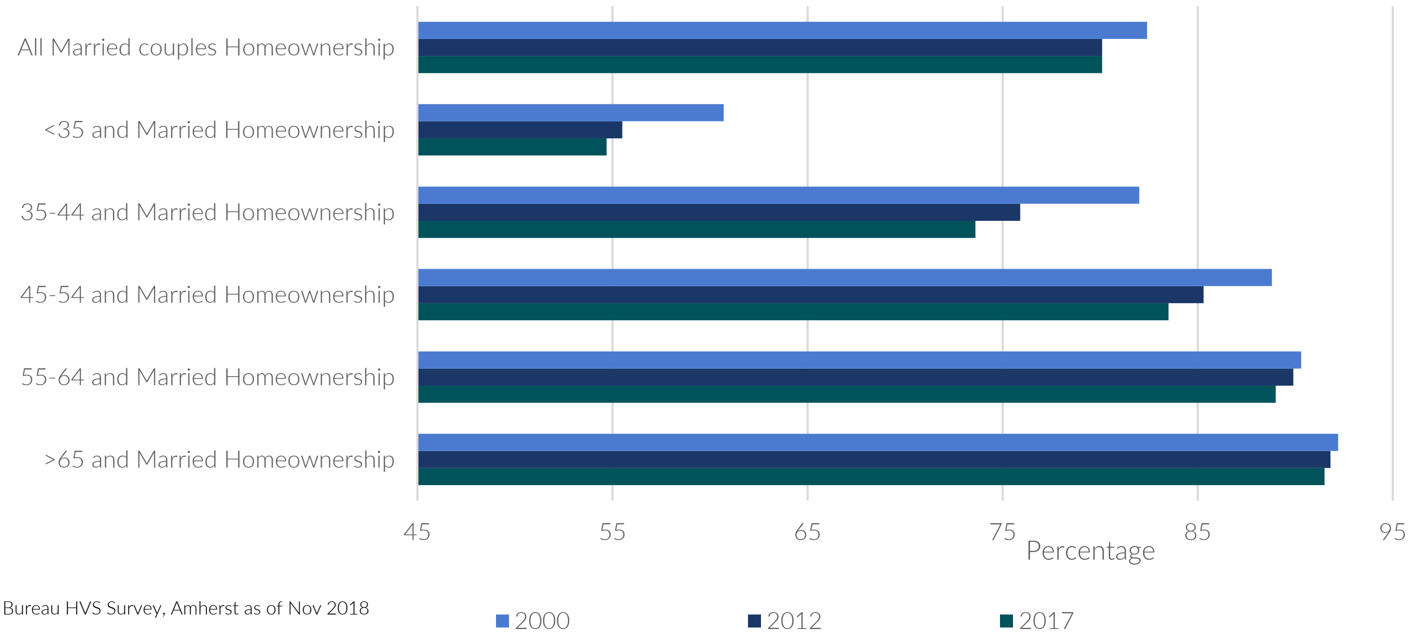
Source: (1) Census Bureau Intercensal Estimates of Resident Population, Amherst of Nov 2018. and Projected 5-Year Age Groups and Sex Composition of the Population Projections for United States 2017-2060. (2) Federal Reserve Bank Quarterly Report on Household Debt & Credit as of Nov 2018

U.S. Real Estate – 2019 Outlook

Falling Marriage Rates May Put a Ceiling on Ownership Rates

- Share of married couple households (traditionally with higher ownership rates) fell from 52.5% to 47.6% from 2000 to 2017
- Even among married couples homeownership has declined
- Driven by delayed marriage from < 35yr cohorts and an equally big drop in 35-44yr olds
- Married couples in the 45-54yr age range also saw steep drops in ownership
- The fall in ownership is likely to be somewhat sticky given foreclosure experience and aversion to owning

HOME OWNERSHIP HAS FALLEN AMONG MARRIED HOUSEHOLDS IN MOST AGE GROUPS

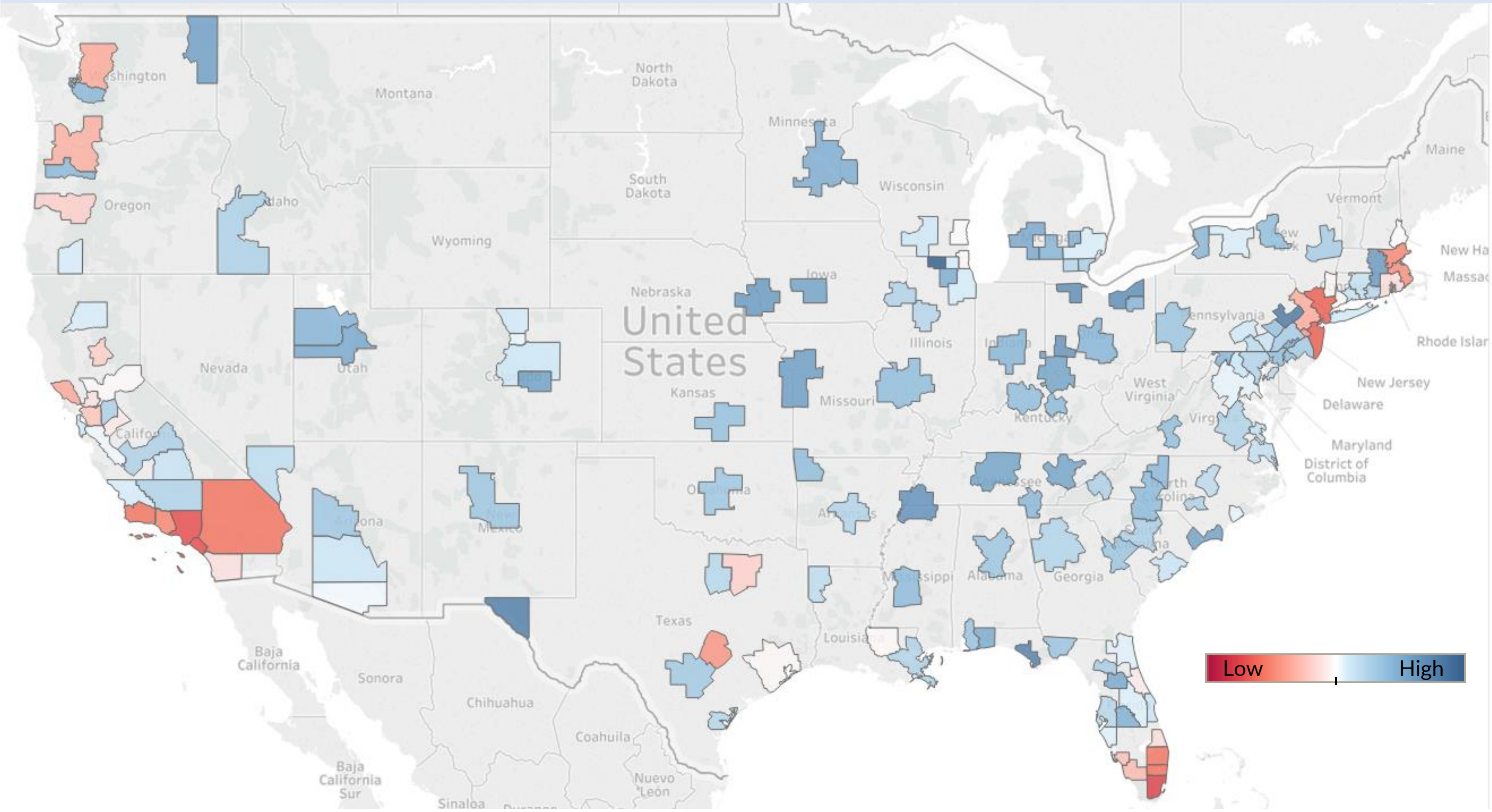


Source: Census Bureau HVS Survey, Amherst as of Nov 2018

U.S. Real Estate – 2019 Outlook

Predicted Total Returns Remain Attractive in Many Modestly Priced Areas

U.S. SINGLE FAMILY DETACHED PREDICTED ANNUALIZED RETURNS OVER 5 YEARS



Source: Amherst as of Dec 2018

U.S. Real Estate – 2019 Outlook

SFR - On Way to a Mainstream CRE Asset Class

- Institutional SFR activity continues to progress and has attained critical mass. There are signs of significant new capital flowing into the sector as institutional investors gain greater comfort in the asset class
- Long term trends favoring rental demand, especially for single-family homes, remain strong
- Rising interest rates and lower home-buying affordability may push more demand into SFR rentals vs. owning
- Our estimates of total returns for SFR remain attractive in many parts of the U.S.

U.S. COMMERCIAL REAL ESTATE

What Do Rising Rates Mean for CRE Prices?

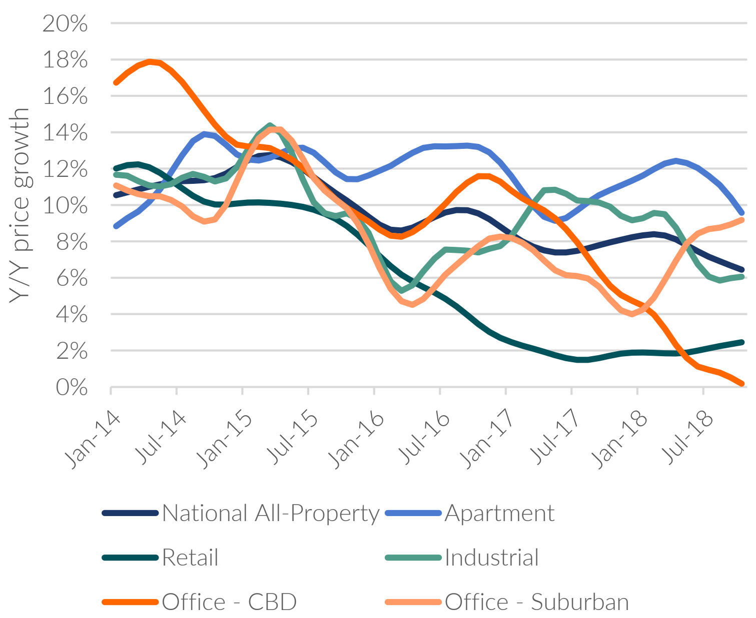
AMHERST MARKET UPDATE

U.S. Real Estate – 2019 Outlook

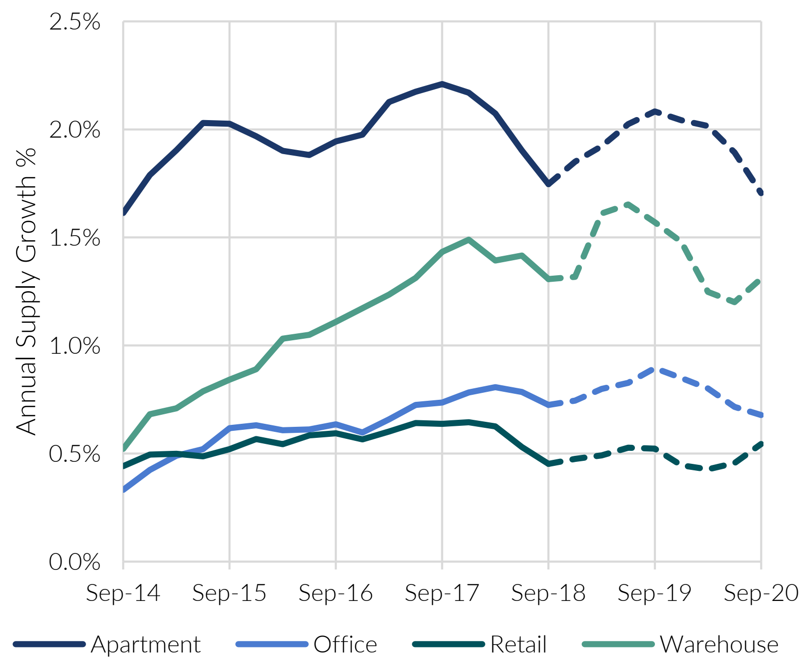
CRE Prices Still Growing But at a Slower Pace

- Price growth has slowed to about 6.5% from 15% y/y in 2014-2015
- Office price growth has slowed most, and was flat for CBD office in Q3 2018 y/y
- Supply to remain elevated going into 2019 and likely to pressure select sectors/regions

PRICE GROWTH HAS SLOWED SINCE 2014 (JAN '14 – OCT '18)



NEW SUPPLY REMAINS ELEVATED VERSUS 2014-2015



Source: (1) RCA as of November 2018. (2) Costar data from SEP '14 – SEP '20 as of November 2018. For illustrative purposes only. The views expressed herein are for information purposes only, and are derived by Amherst from current market conditions and assumptions, which may materially change over time. Please see important disclosures at the end of this presentation.

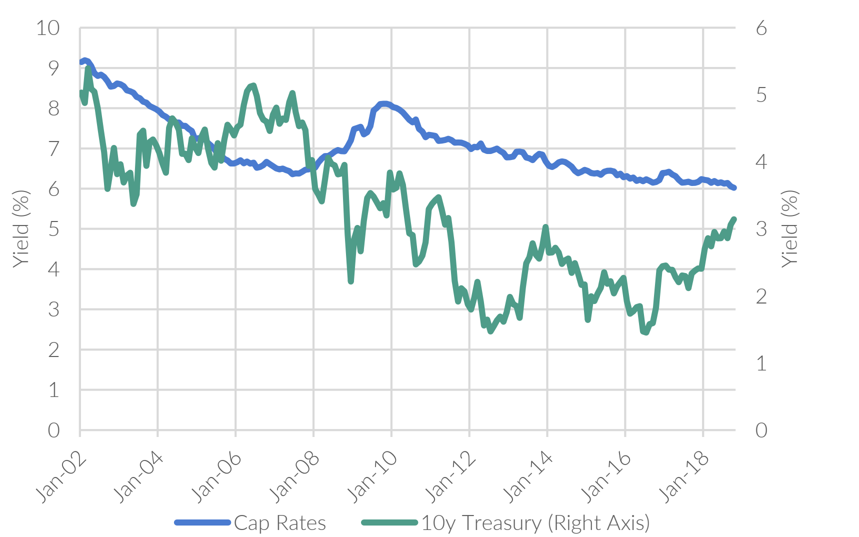
AMHERST MARKET UPDATE

U.S. Real Estate – 2019 Outlook

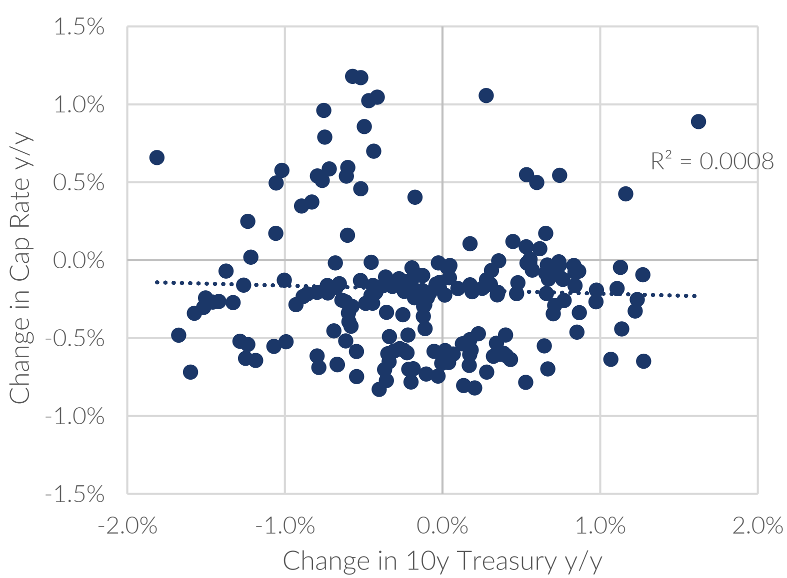
Cap Rates Correlation to Rates is Rather Weak

- Cap rates have been poorly correlated with Treasuries historically
- The risk free component of cap-rates should rise with rates, but it is likely countered by NOI growth which is positively correlated to inflation/ nominal rates

CAP RATES AND TREASURIES ARE NOT MOVING IN LOCKSTEP (JAN '02 – OCT '18)



TREASURY RATES AND CAP RATES ARE UNCORRELATED



Source: Costar as of Q3 2018. For illustrative purposes only. The views expressed herein are for information purposes only, and are derived by Amherst from current market conditions and assumptions, which may materially change over time. Please see important disclosures at the end of this presentation.

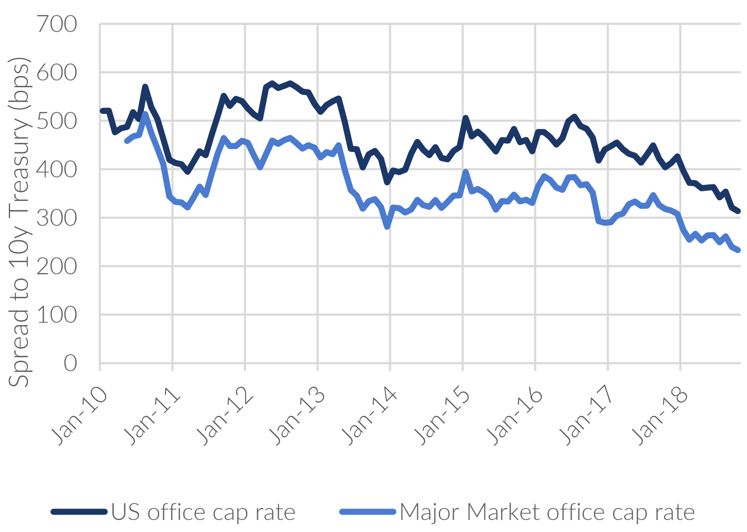
AMHERST MARKET UPDATE

U.S. Real Estate – 2019 Outlook

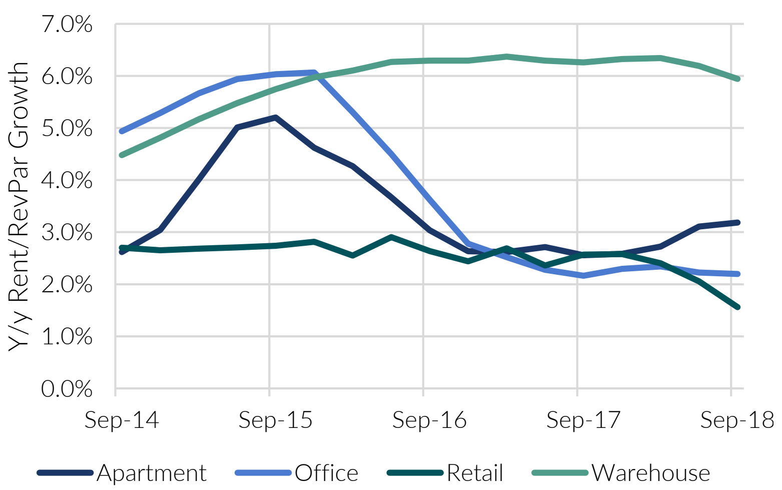
Low Cap Rate Markets Are Likely to Be More Sensitive to Rates

- While cap rates are above pre-crisis levels, they have tightened significantly on a spread to Treasury rates
- Additionally, rent growth has slowed, making it harder for income gains to offset any potential widening in cap rates
- Major Market office for example has significantly tighter cap rates than the overall market, and less room to absorb rising interest rates. These markets may be more exposed in a selloff

MAJOR MARKETS HAVE LESS CUSHION TO TREASURIES (JAN '10 – OCT '18)



RENT GROWTH HAS SLOWED COMPARED TO 2014-2015



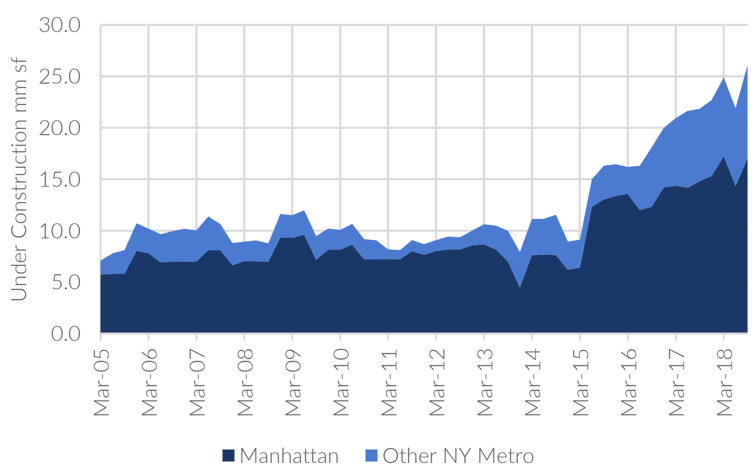
Source: (1) RCA as of November 2018. Major Markets include Boston, Chicago, Los Angeles, New York, San Francisco, and Washington, DC. (2) Costar as of Q3 2018. For illustrative purposes only. The views expressed herein are for information purposes only, and are derived by Amherst from current market conditions and assumptions, which may materially change over time. Please see important disclosures at the end of this presentation.

U.S. Real Estate – 2019 Outlook

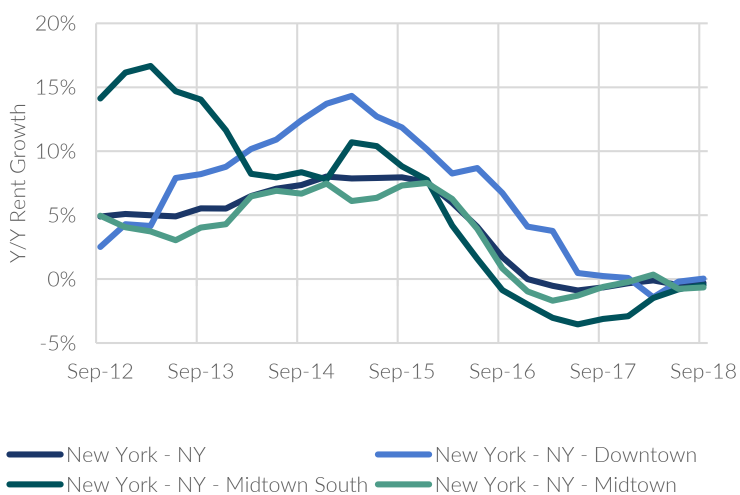
Manhattan Office Supply Highlights Gateway City Risks

- Manhattan has seen a surge in office supply driven new developments in and around Hudson Yards, much of which has yet to come fully online
- The increased supply has put pressure on rents which have witnessed negative growth since early 2017
- The announcement of Amazon's HQ2 coming to Long Island City may help alleviate some of the demand concern, but Amazon will primarily moving into custom built properties in Queens, still leaving space to backfill in Midtown

NEW YORK OFFICE CONSTRUCTION PIPELINE IS GROWING (MAR '05 – SEP '18)



OFFICE RENT GROWTH (SEP '12 – SEP '18)



Source: Costar as of Q3 2018. For illustrative purposes only. The views expressed herein are for information purposes only, and are derived by Amherst from current market conditions and assumptions, which may materially change over time. Please see important disclosures at the end of this presentation.

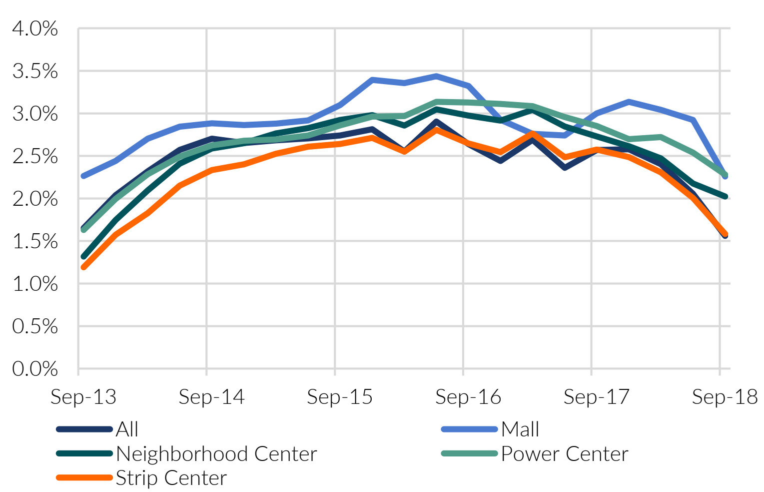
AMHERST MARKET UPDATE

U.S. Real Estate – 2019 Outlook

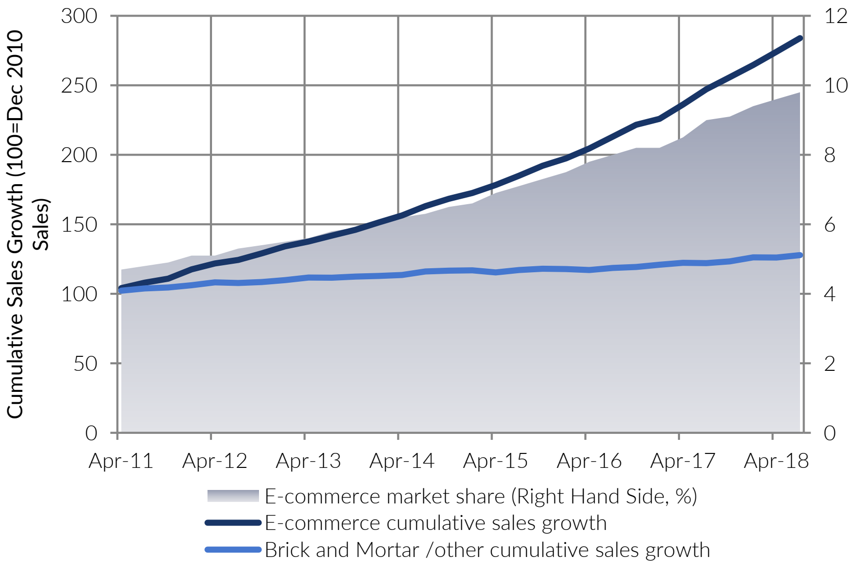
Retail Fundamentals Reflect Slow Motion Downward Trend

- Retail rent growth is slowing as many retailers struggle with e-commerce across retail property types, and is not limited to malls
- So far bankruptcies like Sears and Toys R Us have not pushed vacancies higher due to limited new construction and increasing physical presence of some online retailers
- Sears bankruptcy has so far not caused a wider selloff, but a liquidation could cause some contagion risk in B malls

RETAIL RENT GROWTH SLOWING ACROSS PROPERTY TYPES (SEP '13 – SEP '18)



E-COMMERCE CONTINUES TO GROW MARKET SHARE (APR '11 – JUL '18)



Source: (1) Costar as of Q3 2018. (2) US Census Bureau as of November 2018. For illustrative purposes only. The views expressed herein are for information purposes only, and are derived by Amherst from current market conditions and assumptions, which may materially change over time. Please see important disclosures at the end of this presentation.

U.S. Real Estate – 2019 Outlook

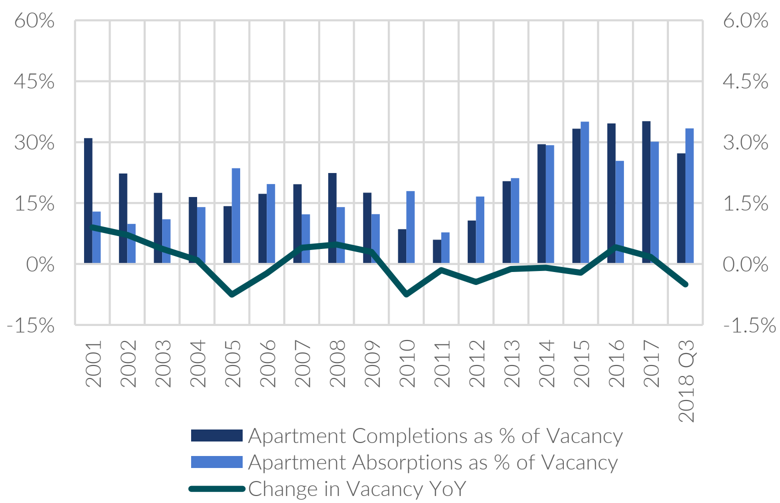
Slowing Apartment Deliveries Temporarily Helping Fundamentals

- Apartments have benefited from a recovering economy, the housing bust forcing and encouraging many households to become renters, and demographic trends
- Rent growth has picked up in 2018 as less supply and a strong economy have helped increase rents growth to 3.2% y/y
- Deliveries have slowed in 2018 y/y but construction pipeline has grown

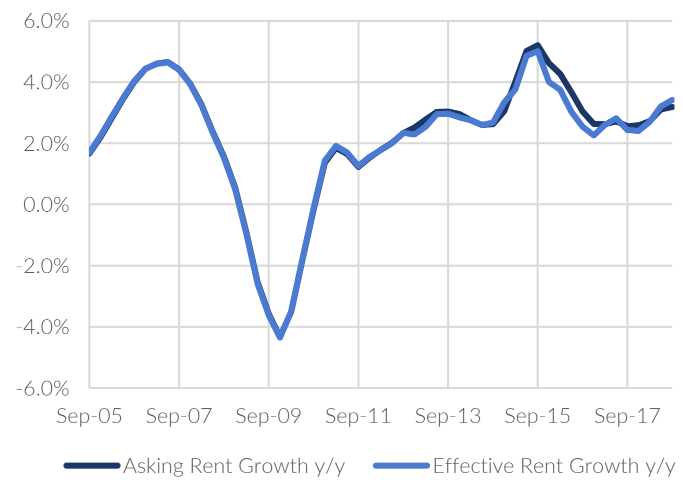
CURRENT CRE MARKET STATS AS OF Q3 2018

	Q3 2018 VALUE	Y/Y CHANGE IN VALUE
Rent Growth Annual	3.2%	0.6%
Vacancy	5.8%	-0.5%
Completions % of Stock	1.7%	-0.5%
Absorptions % of Stock	2.1%	0.3%
% of Stock Under Const.	4.0%	0.3%

APARTMENT SUPPLY SLOWED IN 2018



RENT GROWTH HAS PICKED UP IN 2018 (SEP '05 – SEP '18)



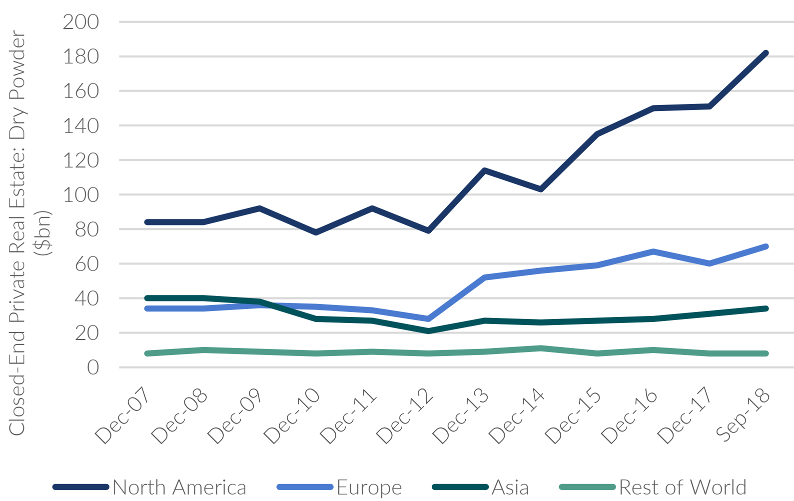
Source: Costar as of Q3 2018. For illustrative purposes only. The views expressed herein are for information purposes only, and are derived by Amherst from current market conditions and assumptions, which may materially change over time. Please see important disclosures at the end of this presentation.

U.S. Real Estate – 2019 Outlook

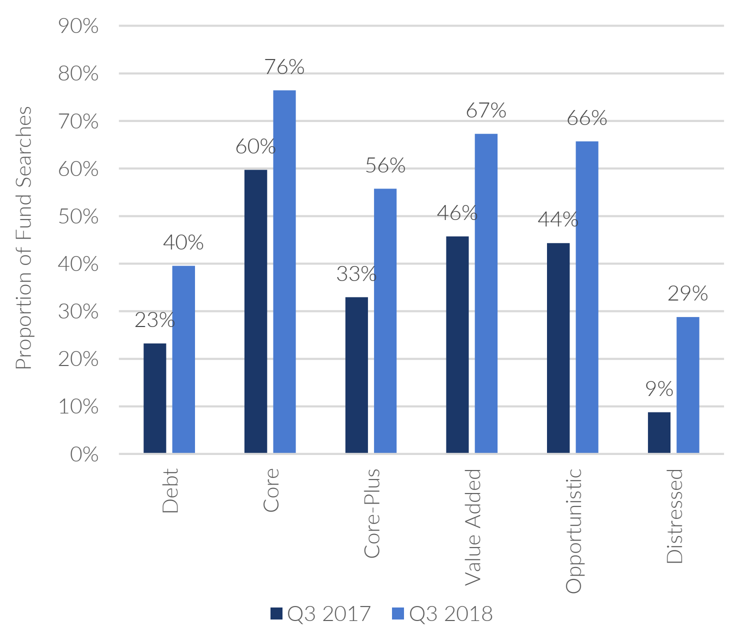
About $180bn of capital raised for US CRE is a potential source of support for prices in 2019

- About $180bn of dry powder targeted at US Real Estate should provide some support and is likely to propel entity level transactions
- Investors are showing increasing interest across real estate private-equity strategies
- Investment capital will likely support prices in 2019 even as rent growth slows

DRY POWDER EXPECTED TO SUPPORT REAL ESTATE IN 2019



INTEREST IN REAL ESTATE STRATEGIES IS GROWING



Source: Preqin November 2018. The views expressed herein are for information purposes only, and are derived by Amherst from current market conditions and assumptions, which may materially change over time. Please see important disclosures at the end of this presentation

U.S. Real Estate – 2019 Outlook

A Simple Framework to Compare CRE Valuations to Stocks?

- Another approach to look at CRE valuations is in relation to other assets as opposed to in isolation. We compare property level metrics for CRE to enterprise - level metrics for stocks stripping out the effect of financial leverage

- **Free-Cash-flow-by-EV** on stocks is most similar to NCF cap-rates on Real estate. However, a couple of things to keep in mind when comparing these one-on-one

- **First, the operating leverage in stocks is typically much higher than in real-estate**. For most stock sectors in our data, operating cashflow margin is of the order of 10-30% while the FCF margin is 5-15%. Real estate typically has 50-80% operating margins (except hotels) and 40-60% NCF margins (except hotel). Hotels which run at lower margins also shows correspondingly higher cap rates

- **Second, reported capex for most stock sectors is likely higher as well.** 3-5% of the EV, with some sectors like Energy, Telecom and Utilities running Capex of close to 9-10% of EV. While most buildings likely need a refresh every 10-20 years, large or appreciating "land values" especially in low cap-rate areas mean that even a full-cycle capex is likely to be smaller than the capex reported on stocks

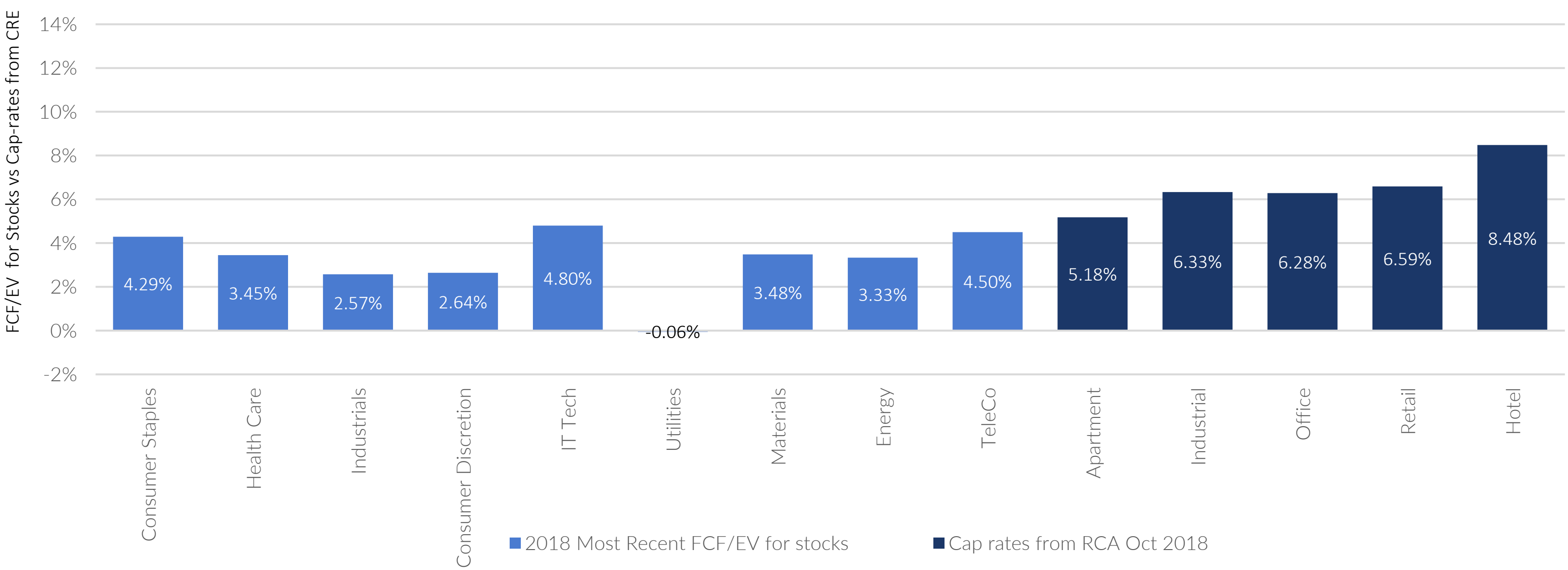
- **Both of these differences make real-estate cashflows less volatile than stocks.** For example, Macy's has exhibited 30-40% annual volatility of cashflows over the last 10-15 years. Retail properties despite stalling in value have only shown ~ 5% cashflow volatility over the period

Source: Amherst as of December 2018. For illustrative purposes only. The views expressed herein are for information purposes only, and are derived by Amherst from current market conditions and assumptions, which may materially change over time. Please see important disclosures at the end of this presentation.

CRE Does Not Appear Overvalued vs Stocks in this Simple Framework

- The Free Cash Flow (“FCF”) to Enterprise Value (“EV”) ratio for stocks is comparable to a cap rate measure on CRE. Overall as of the latest data available in 2018, CRE cap rates were higher than this measure for stocks
- In addition, stocks also have more operating leverage with 5-15% FCF margins vs 40-60% on most CRE sectors (except hotels)
- Adjusted for lower cash flow volatility and lower capex over the lifecycle, CRE seems undervalued versus stocks (not accounting for difference in available leverage/liquidity)

FCF/EV "CAP RATE" FOR STOCKS VS. CRE CAP-RATES



Source: Costar, derived by Amherst from Quarterly financial data for Stocks and RCA /Bloomberg data for CRE as of December 2018. Stock data is as of the latest reported quarter available for each company and CRE cap rates are reported as of Oct 31 2018. For illustrative purposes only Please see important disclosures at the end of this presentation..

U.S. Real Estate – 2019 Outlook

Commercial Real Estate in 2019

- Price and rent growth remains positive but has started to moderate in office and retail
- Tight cap rate spreads to Treasuries may reduce the ability for the growth to continue in 2019, particularly for larger CBD properties
- From a relative standpoint, CRE seems undervalued versus where stocks are trading. That may be more telling for stock valuations than CRE
- We continue to prefer a more defensive approach focusing on top of the capital structure in CRE for the best risk-reward

OPPORTUNITY ZONES

Will They Boost Redevelopment Demand for CRE?

U.S. Real Estate – 2019 Outlook

How Were Qualified Opportunity Zone (QOZ) Census Tracts Selected?

- The Tax Cut passed in late 2017 created a way to invest in certain distressed locations (opportunity zones) and receive substantial tax incentives
- Of the approximately 74K census tracts, 41K were identified as eligible based on 2015 ACS data
- States were allowed to nominate up to 25% percent of their eligible census tracts to be designated as QOZ
- Tracts outside the list could be nominated on 2016 ACS data but would need to show additional analysis
- The tracts in the eligible list were of two types:
    - 31.8K Low income tracts (LIC) – poverty > 20% & median income < 80% of max (state or MSA-median)
    - Up to 5% of tracts could be from 10.3K non-LIC contiguous tracts. These had to be contiguous to designated QOZs and tract median income < 125 of max(state or MSA-median)
- Of the final 8762 Designated QOZs (about 11.8% of all tracts), 97.4% were in LIC tracts, 2.6% contiguous tracts

QOZ	Low Income Census Tract	Contiguous	Not Eligible	Grand Total
DESIGNATED QOZ	8,516	229	17	8,762
NO	23,332	10,083	31,957	65,372
Grand Total	31,848	10,312	31,974	74,134

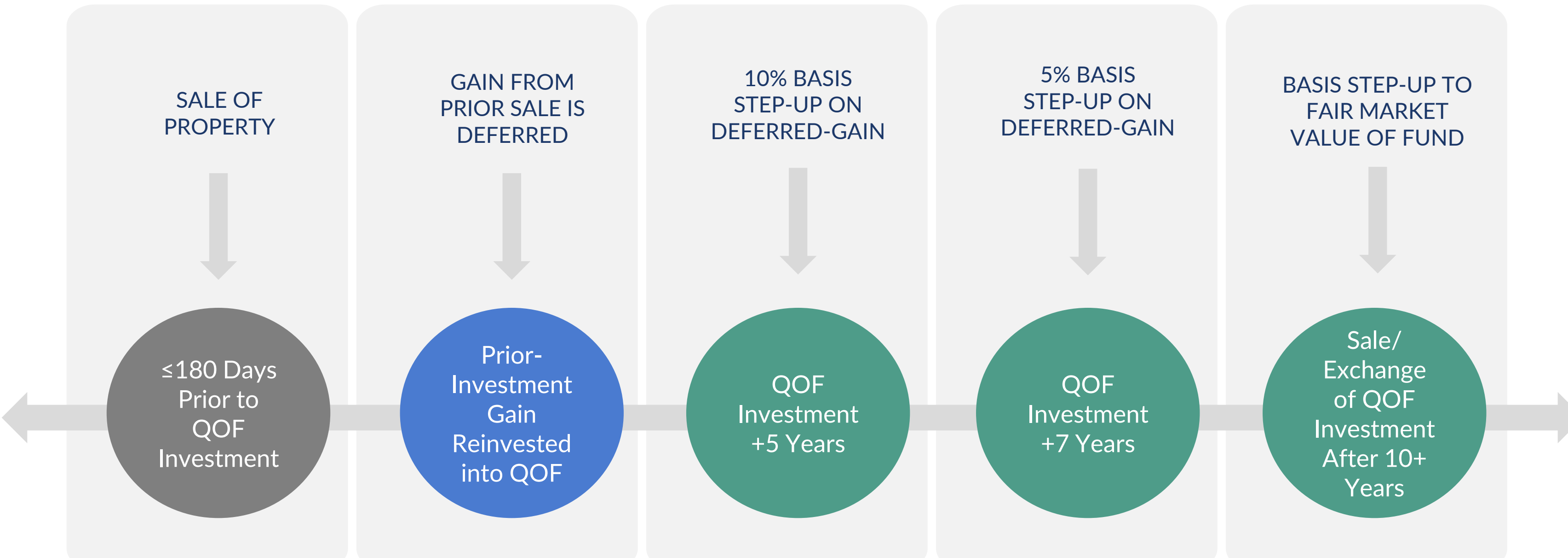
Source: IRS, Community Development Financial Institutions Fund, US Department of Treasury, Amherst as of December 2018. For illustrative purposes only. The views expressed herein are for information purposes only, and are derived by Amherst from current market conditions and assumptions, which may materially change over time. Please see important disclosures at the end of this presentation.

U.S. Real Estate – 2019 Outlook

How Do QOZ Funds Minimize Capital Gains Tax?

- Capital gains invested in QOF(qualified opportunity funds) get their taxes deferred till sale or Dec 2026, whichever is earlier
- Basis is stepped up by 10% if held for 5 years and another 5% if held for 7 years before disposition
- If held for 10 years, completely eliminates Post-QOF capital gains taxes (except for what is due on invested capital gain less step-up basis)

TAX BENEFITS OF QUALIFIED OPPORTUNITY FUNDS (“QOFs”)



Source: IRS, Community Development Financial Institutions Fund, US Department of Treasury. For illustrative purposes only. The views expressed herein are for information purposes only, and are derived by Amherst from current market conditions and assumptions, which may materially change over time. Please see important disclosures at the end of this presentation.

U.S. Real Estate – 2019 Outlook

Average Demographics vs Rest of the Tracts in Each CBSA

- QOZs are much lower income than rest and have demographics along expected lines
- In some CBSAs like Washington DC, the QOZs are much higher income areas than average Qualified Opportunity Zones (QOZs) and these gentrifying areas may see a large chunk of the initial investment in opportunity zones

	Median Household Income		% Homeownership with SF		% population living in SF Rentals		% with 4yr college or more		% Family Households		% White-alone	
CBSAName	QOZ	OTHER	QOZ	OTHER	QOZ	OTHER	QOZ	OTHER	QOZ	OTHER	QOZ	OTHER
Atlanta-Sandy Springs-Roswell GA	29,945	66,622	54.5%	79.2%	23.8%	16.3%	15.9%	34.6%	56.1%	68.2%	27.8%	56.6%
Austin-Round Rock TX	42,969	74,018	72.2%	81.3%	14.9%	13.1%	19.5%	41.0%	61.1%	62.0%	72.7%	79.3%
Charlotte-Concord-Gastonia NC-SC	31,948	63,456	56.6%	81.2%	29.5%	14.4%	12.3%	32.7%	60.3%	68.0%	45.6%	70.2%
Chicago-Naperville-Elgin IL-IN-WI	32,674	72,189	65.7%	86.9%	17.6%	9.0%	13.1%	34.6%	63.8%	65.8%	25.4%	70.1%
Dallas-Fort Worth-Arlington TX	39,793	69,629	68.3%	80.7%	20.2%	14.2%	12.9%	31.1%	67.4%	69.5%	64.9%	69.9%
Denver-Aurora-Lakewood CO	42,334	75,285	60.7%	82.0%	23.5%	13.5%	20.2%	38.8%	55.2%	63.7%	72.4%	82.4%
Detroit-Warren-Dearborn MI	32,885	62,296	63.7%	82.1%	24.3%	15.1%	17.9%	28.0%	51.0%	66.0%	43.6%	72.2%
Houston-The Woodlands-Sugar Land TX	37,406	72,645	70.1%	82.3%	17.0%	13.1%	12.8%	30.3%	64.6%	71.2%	60.9%	66.3%
Kansas City MO-KS	33,667	67,367	63.0%	81.0%	26.1%	15.9%	16.3%	34.0%	52.5%	66.2%	60.8%	80.5%
Las Vegas-Henderson-Paradise NV	29,276	58,654	54.0%	67.3%	20.0%	24.5%	10.0%	21.6%	50.0%	65.3%	54.0%	63.4%
Los Angeles-Long Beach-Anaheim CA	36,034	72,798	51.2%	73.0%	20.9%	17.8%	13.8%	30.5%	66.4%	68.3%	45.6%	56.1%
Miami-Fort Lauderdale-West Palm Beach FL	30,253	58,508	62.5%	78.4%	20.5%	14.0%	12.4%	28.7%	64.1%	65.4%	38.1%	74.8%
Minneapolis-St. Paul-Bloomington MN-WI	39,280	76,671	69.9%	88.3%	15.5%	9.3%	24.1%	38.1%	53.1%	65.5%	52.7%	82.3%
Nashville-Davidson--Murfreesboro--Franklin TN	32,879	63,479	66.2%	83.2%	18.5%	12.8%	17.2%	31.8%	57.4%	66.8%	62.1%	79.1%
New York-Newark-Jersey City NY-NJ-PA	40,911	80,953	66.4%	88.5%	6.1%	5.9%	20.6%	35.9%	61.6%	66.6%	34.7%	61.6%
Orlando-Kissimmee-Sanford FL	34,790	55,634	62.5%	76.3%	25.6%	17.2%	13.6%	29.1%	66.9%	66.5%	46.3%	73.7%
Phoenix-Mesa-Scottsdale AZ	35,493	63,104	60.1%	73.4%	23.1%	20.8%	16.0%	28.2%	56.8%	66.8%	72.1%	79.3%
Raleigh NC	46,361	73,795	73.0%	83.1%	16.5%	12.8%	24.5%	43.6%	66.3%	68.0%	54.6%	70.2%
Riverside-San Bernardino-Ontario CA	32,260	64,329	52.8%	73.7%	27.6%	21.1%	8.0%	20.0%	72.9%	74.8%	54.5%	63.9%
San Diego-Carlsbad CA	35,375	75,589	46.8%	72.2%	23.3%	18.6%	12.5%	34.3%	65.9%	67.1%	56.3%	72.2%
St. Louis MO-IL	32,563	63,592	63.8%	84.7%	23.0%	12.4%	16.7%	31.3%	56.7%	65.5%	35.6%	79.4%
Tampa-St. Petersburg-Clearwater FL	29,163	54,344	59.7%	78.9%	23.6%	14.9%	12.0%	27.6%	54.7%	61.8%	57.9%	80.5%
Washington-Arlington-Alexandria DC-VA-MD-WV	60,026	103,444	72.7%	82.9%	14.8%	12.8%	27.4%	46.2%	59.8%	66.6%	39.9%	56.5%
US Overall	36,183	63,824	65.8%	80.8%	19.4%	14.0%	16.3%	29.2%	60.0%	66.6%	59.3%	74.9%

Source: Census Bureau Amherst extracted as of Nov 2018. Census Data as of YE 2017

U.S. Real Estate – 2019 Outlook

How Much of RE is Within Opportunity Zones?

- Opportunity Zones are generally more urban with < 10% of population and SF homes, and about 15-20% of other CRE asset types
- Since 2015, roughly 13% of MF, 19% of Office, 22% of Industrial and 13% of Retail new construction gross leasable area (GLA) is in QOZs
- By value, the numbers are likely even lower

	% IN QOZ						
CBSA/METRO NAME	POPULATION	SF HOMES	2-4F HOMES	MF UNITS 5+	OFFICE GLA	RETAIL GLA	INDUSTRIAL GLA
Atlanta-Sandy Springs-Roswell GA	5.0	3.9	8.3	10.3	7.0	7.2	9.2
Austin-Round Rock TX	9.8	8.3	11.2	8.1	4.0	4.9	15.7
Charlotte-Concord-Gastonia NC-SC	7.5	7.9	14.4	7.8	8.2	12.3	16.8
Chicago-Naperville-Elgin IL-IN-WI	8.5	8.1	8.3	10.0	2.6	5.7	7.8
Dallas-Fort Worth-Arlington TX	3.7	4.5	3.5	3.4	1.3	4.0	5.5
Denver-Aurora-Lakewood CO	5.2	4.5	13.7	7.6	4.0	8.1	31.7
Detroit-Warren-Dearborn MI	8.2	8.6	15.8	18.9	29.7	14.1	24.8
Houston-The Woodlands-Sugar Land TX	10.9	10.7	12.5	12.8	21.8	9.2	14.2
Kansas City MO-KS	8.3	9.7	18.2	13.1	14.9	11.3	28.9
Las Vegas-Henderson-Paradise NV	8.1	5.8	25.2	17.5	22.9	15.4	30.2
Los Angeles-Long Beach-Anaheim CA	9.9	5.8	15.8	14.9	9.9	11.6	17.6
Miami-Fort Lauderdale-West Palm Beach FL	10.1	9.0	19.7	12.8	8.1	11.4	22.6
Minneapolis-St. Paul-Bloomington MN-WI	6.7	5.0	10.9	14.3	13.5	10.5	11.0
Nashville-Davidson--Murfreesboro--Franklin TN	6.6	6.2	14.1	10.1	9.0	13.3	13.9
New York-Newark-Jersey City NY-NJ-PA	10.7	5.4	15.4	16.8	8.7	13.4	20.6
Orlando-Kissimmee-Sanford FL	9.2	8.5	16.0	9.1	7.2	9.7	12.6
Phoenix-Mesa-Scottsdale AZ	8.4	7.1	29.7	16.1	21.1	15.3	42.1
Raleigh NC	9.8	9.4	14.1	10.5	5.1	11.2	22.4
Riverside-San Bernardino-Ontario CA	13.0	9.2	27.8	23.0	29.3	19.7	11.1
San Diego-Carlsbad CA	7.2	3.8	15.6	11.6	3.0	7.5	5.2
Seattle-Tacoma-Bellevue WA	5.2	4.2	10.9	8.8	10.7	10.4	12.5
St. Louis MO-IL	7.2	8.1	16.1	14.4	31.1	7.3	33.7
Tampa-St. Petersburg-Clearwater FL	7.8	7.4	10.6	11.6	15.0	12.5	11.2
Washington-Arlington-Alexandria DC-VA-MD-WV	8.7	7.0	15.6	14.6	7.7	18.5	15.0
Overall US	8.4	9.1	16.9	14.3	17.0	14.6	19.7

Source: Census Bureau, Costar, Corelogic Property Record and Transaction Data, Amherst extracted as of Nov 2018. Data runs till Sep 2018

U.S. Real Estate – 2019 Outlook

How Much of Trading Volume for Single-Family Homes is in the Opportunity Zones?

- SF Listings Data from MLS shows that of all transacted listings in the last 1yr only about 5.6% by count and 3.3% by value were in QOZs nationally.
- Some areas such as Raleigh, Riverside had higher at about 5% of value in QOZs.

	# MLS SF Listings Sold in 1 yr		Total Transacted Value		Average Sale Price		% Sales in QOZ	
CBSAName	QOZ	NOT QOZ	QOZ	NOT QOZ	QOZ	NOT QOZ	By Count	By Dollar Value
Atlanta-Sandy Springs-Roswell GA	3,418	87,432	530,624,345	24,952,026,725	155,244	285,388	3.8%	2.1%
Austin-Round Rock TX	1,011	18,250	269,091,045	7,112,043,555	266,163	389,701	5.2%	3.6%
Charlotte-Concord-Gastonia NC-SC	1,398	22,605	204,855,490	6,640,815,537	146,535	293,776	5.8%	3.0%
Chicago-Naperville-Elgin IL-IN-WI	2,865	54,799	368,413,149	17,855,859,306	128,591	325,843	5.0%	2.0%
Dallas-Fort Worth-Arlington TX	1,508	61,724	249,240,077	19,026,577,436	165,279	308,253	2.4%	1.3%
Denver-Aurora-Lakewood CO	1,163	28,602	401,199,205	14,066,255,937	344,969	491,793	3.9%	2.8%
Detroit-Warren-Dearborn MI	2,306	36,564	239,988,195	8,156,150,023	104,071	223,065	5.9%	2.9%
Houston-The Woodlands-Sugar Land TX	2,594	47,786	441,027,121	13,498,588,546	170,018	282,480	5.1%	3.2%
Kansas City MO-KS	1,325	22,358	149,037,178	5,232,463,425	112,481	234,031	5.6%	2.8%
Las Vegas-Henderson-Paradise NV	1,096	24,710	218,990,595	8,021,675,884	199,809	324,633	4.2%	2.7%
Los Angeles-Long Beach-Anaheim CA	3,362	92,300	1,563,210,337	69,588,136,062	464,964	753,934	3.5%	2.2%
Miami-Fort Lauderdale-West Palm Beach FL	2,356	34,779	499,084,921	15,847,859,152	211,836	455,673	6.3%	3.1%
Minneapolis-St. Paul-Bloomington MN-WI	1,552	36,251	312,144,243	10,973,291,807	201,124	302,703	4.1%	2.8%
Nashville-Davidson--Murfreesboro--Franklin TN	845	17,762	197,413,124	6,012,601,056	233,625	338,509	4.5%	3.2%
New York-Newark-Jersey City NY-NJ-PA	1,373	55,529	389,277,950	27,528,927,016	283,524	495,758	2.4%	1.4%
Orlando-Kissimmee-Sanford FL	1,763	22,135	309,215,131	6,551,476,279	175,391	295,978	7.4%	4.5%
Phoenix-Mesa-Scottsdale AZ	1,622	33,772	341,587,708	10,686,612,047	210,597	316,434	4.6%	3.1%
Raleigh NC	922	10,705	198,373,840	3,482,966,024	215,156	325,359	7.9%	5.4%
Riverside-San Bernardino-Ontario CA	5,119	63,896	1,183,891,328	22,764,355,064	231,274	356,272	7.4%	4.9%
San Diego-Carlsbad CA	461	19,208	203,429,585	14,763,356,772	441,279	768,605	2.3%	1.4%
St. Louis MO-IL	998	26,698	100,151,961	5,769,137,955	100,353	216,089	3.6%	1.7%
Tampa-St. Petersburg-Clearwater FL	2,188	34,381	313,645,704	9,009,578,525	143,348	262,051	6.0%	3.4%
Washington-Arlington-Alexandria DC-VA-MD-WV	4,984	72,703	1,406,638,180	33,444,745,770	282,231	460,019	6.4%	4.0%
US Overall	**121,490**	**2,052,246**	**24,082,489,817**	**712,791,646,560**	**198,226**	**347,323**	**5.6%**	**3.3%**

Source: MLS Data Amherst extracted as of Nov 2018. Data runs till Sep 2018

How Much of Trading Volume for Apartments is in the Opportunity Zones?

- MF (Apartment, MF, Townhouse, Condo) Transactions Data from MLS shows that of all transacted listings in the last 1yr only about 6% by unit count and 4% by value were in QOZs nationally.
- Some areas such as Nashville(17% by value)/Houston(11% by value) have higher shares in QOZs.

	# MLS SF Listings Sold in 1 yr		Total Transacted Value		Average Sale Price		% Sales in QOZ	
CBSAName	QOZ	NOT QOZ	QOZ	NOT QOZ	QOZ	NOT QOZ	By Count	By Dollar Value
Atlanta-Sandy Springs-Roswell GA	324	7,755	60,296,204	1,913,923,064	186,099	246,799	4.0%	3.1%
Austin-Round Rock TX	120	2,339	27,033,998	726,303,417	225,283	310,519	4.9%	3.6%
Charlotte-Concord-Gastonia NC-SC	107	4,529	18,684,495	917,721,210	174,621	202,632	2.3%	2.0%
Chicago-Naperville-Elgin IL-IN-WI	588	28,749	106,717,963	7,996,377,423	181,493	278,145	2.0%	1.3%
Dallas-Fort Worth-Arlington TX	118	4,521	27,373,827	1,160,539,520	231,982	256,700	2.5%	2.3%
Denver-Aurora-Lakewood CO	340	11,066	92,305,930	3,515,650,106	271,488	317,698	3.0%	2.6%
Detroit-Warren-Dearborn MI	584	6,878	103,069,652	1,190,164,455	176,489	173,039	7.8%	8.0%
Houston-The Woodlands-Sugar Land TX	639	5,174	123,091,489	1,014,681,845	192,631	196,112	11.0%	10.8%
Kansas City MO-KS	72	1,654	12,800,470	301,957,222	177,784	182,562	4.2%	4.1%
Las Vegas-Henderson-Paradise NV	543	7,327	100,797,849	1,422,021,948	185,631	194,080	6.9%	6.6%
Los Angeles-Long Beach-Anaheim CA	1,944	47,717	496,064,262	16,958,773,936	255,177	355,403	3.9%	2.8%
Miami-Fort Lauderdale-West Palm Beach FL	1,279	33,021	159,366,606	7,950,925,156	124,603	240,784	3.7%	2.0%
Minneapolis-St. Paul-Bloomington MN-WI	236	2,663	48,616,292	616,922,958	206,001	231,665	8.1%	7.3%
Nashville-Davidson--Murfreesboro--Franklin TN	43	385	19,332,201	93,557,998	449,586	243,008	10.0%	17.1%
New York-Newark-Jersey City NY-NJ-PA	866	13,740	345,444,812	5,080,640,106	398,897	369,770	5.9%	6.4%
Orlando-Kissimmee-Sanford FL	197	6,664	26,641,195	1,130,531,124	135,234	169,648	2.9%	2.3%
Phoenix-Mesa-Scottsdale AZ	525	5,610	102,134,161	1,214,402,098	194,541	216,471	8.6%	7.8%
Raleigh NC	232	2,859	37,637,222	618,306,656	162,229	216,267	7.5%	5.7%
Riverside-San Bernardino-Ontario CA	543	8,109	66,361,431	1,797,129,727	122,213	221,622	6.3%	3.6%
San Diego-Carlsbad CA	362	9,180	127,723,871	4,382,711,683	352,828	477,420	3.8%	2.8%
St. Louis MO-IL	95	2,386	18,202,851	413,973,403	191,609	173,501	3.8%	4.2%
Tampa-St. Petersburg-Clearwater FL	358	10,425	65,247,017	2,121,618,773	182,254	203,513	3.3%	3.0%
Washington-Arlington-Alexandria DC-VA-MD-WV	665	8,071	125,035,594	2,064,552,240	188,023	255,799	7.6%	5.7%
US Overall	**23,929**	**404,498**	**5,345,226,902**	**115,110,728,492**	**223,379**	**284,577**	**5.6%**	**4.4%**

Source: MLS Data Amherst extracted as of Nov 2018. Data runs till Sep 2018

U.S. Real Estate – 2019 Outlook

Better Than Average Total Returns in QOZ Tracts

- QOZs have on average higher than average ranking and higher than average predicted total and excess returns
- We show ranking within CBSA 1 (worse) to 20 (best) and ranking within US 1 (worse) to 50 (best)

	Avg Rank within CBSA		Avg US Rank		Pred. Cum Total Return			Pred. Cum Excess Return	
CBSAName	QOZ	NOT QOZ	QOZ	NOT QOZ	QOZ	NOT QOZ	CBSA	QOZ	NOT QOZ
Atlanta-Sandy Springs-Roswell GA	12.4	7.8	36.2	28.2	8.6%	6.8%	6.9%	1.7%	-0.1%
Austin-Round Rock TX	12.9	8.3	15.3	9.8	4.9%	3.7%	3.8%	1.1%	-0.1%
Charlotte-Concord-Gastonia NC-SC	12.7	8.2	39.2	32.1	9.2%	7.6%	7.7%	1.5%	-0.1%
Chicago-Naperville-Elgin IL-IN-WI	13.1	7.7	34.6	21.5	9.1%	6.1%	6.2%	2.9%	-0.1%
Dallas-Fort Worth-Arlington TX	12.1	7.5	28.2	18.2	6.6%	4.9%	4.9%	1.7%	0.0%
Denver-Aurora-Lakewood CO	10	8.9	28	26	6.6%	6.2%	6.3%	0.3%	-0.1%
Detroit-Warren-Dearborn MI	8.6	5.8	35.4	28.2	8.9%	6.9%	7.1%	1.8%	-0.2%
Houston-The Woodlands-Sugar Land TX	9.6	7.2	24.3	18.4	6.8%	5.6%	5.6%	1.2%	0.0%
Kansas City MO-KS	13.6	8.2	43.1	36.1	10.7%	8.4%	8.5%	2.2%	-0.1%
Los Angeles-Long Beach-Anaheim CA	9.9	8.9	7.1	6.3	2.7%	2.5%	2.5%	0.2%	0.0%
Miami-Fort Lauderdale-West Palm Beach FL	14.3	7.2	20.7	6.9	4.8%	2.1%	2.2%	2.6%	-0.1%
Minneapolis-St. Paul-Bloomington MN-WI	11.8	8.7	37.2	34	8.8%	8.1%	8.1%	0.7%	0.0%
Nashville-Davidson--Murfreesboro--Franklin TN	8.1	9.1	33.6	38.2	7.7%	8.4%	8.4%	-0.7%	0.0%
New York-Newark-Jersey City NY-NJ-PA	9.8	9.9	8.3	8.5	2.8%	2.8%	2.8%	0.0%	0.0%
Orlando-Kissimmee-Sanford FL	12.9	8.3	33.1	24.5	7.5%	6.0%	6.1%	1.4%	-0.1%
Phoenix-Mesa-Scottsdale AZ	10.4	8.9	27.9	26	6.6%	6.3%	6.3%	0.3%	0.0%
Raleigh NC	15.2	9.1	33.6	25.3	7.7%	6.6%	6.7%	1.0%	-0.1%
Riverside-San Bernardino-Ontario CA	10.5	9.6	10.7	9.1	3.3%	3.1%	3.1%	0.2%	0.0%
San Diego-Carlsbad CA	8.7	8.9	16.4	16.3	5.2%	5.2%	5.2%	0.0%	0.0%
St. Louis MO-IL	11.8	8	35.3	28.8	9.5%	7.6%	7.6%	1.9%	0.0%
Tampa-St. Petersburg-Clearwater FL	13.8	8.2	38.3	28.4	8.8%	6.7%	6.8%	2.0%	-0.1%
Washington-Arlington-Alexandria DC-VA-MD-WV	12	8.3	24.1	17.8	6.9%	5.9%	6.0%	0.9%	-0.1%
US	10.9	8.9	21.2	19.4	5.6%	5.2%	5.3%	0.3%	-0.1%

Source: Amherst as of Dec 2018

Will Opportunity Zones Spur Redevelopment?

- Opportunity zones cover areas which are typically demographically much weaker than the rest of the country
- Unsurprisingly these areas only have a small proportion of CRE by units/area and an even smaller proportion by value
- These zones also account for less than 5% of transaction volumes across SF/MF and other asset classes
- Opportunity zones could lead to some redevelopment. Our models expect residential properties in these zones to on average generate higher total return that the average for the CBSA in most metros.
- However, most of the immediate benefit may be in some high-profile zones like Long Island City post Amazon/ areas which are already gentrifying

Positioning in Securitized Products

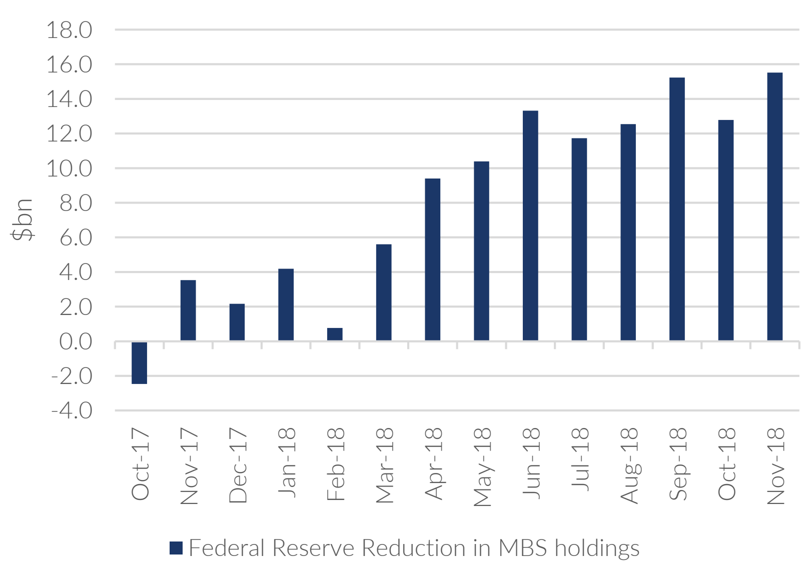
AMHERST MARKET UPDATE

U.S. Real Estate – 2019 Outlook

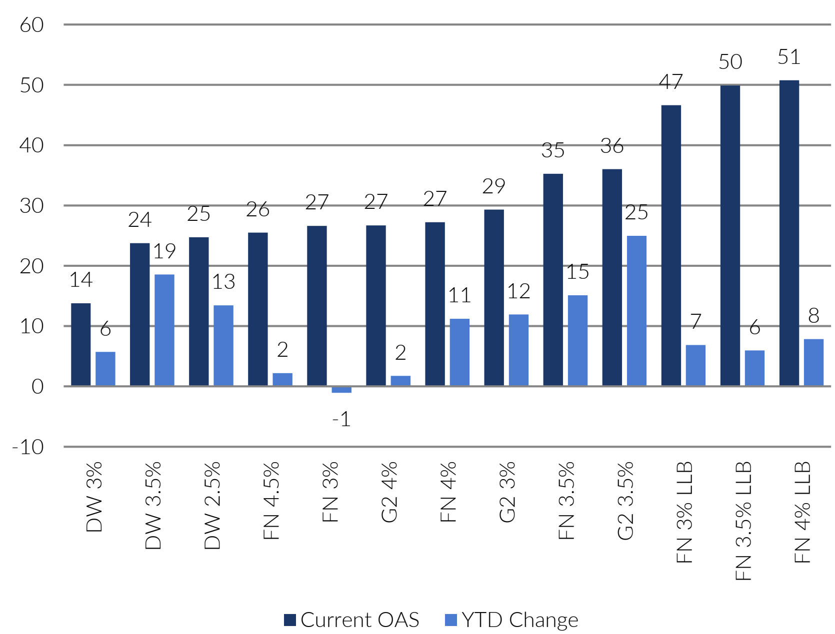
First Full Year of Federal Reserve Tapering Pushed Agency MBS Spreads Wider in 2018

- The Federal Reserve tapering began in late 2017, with $110bn YTD reduction in MBS holdings through Dec 5, 2018
- Agency MBS spreads widened meaningfully in 2018

2018 HAD MEANINGFUL FED REDUCTION OF MBS[1]



AGENCY MBS SPREADS WIDENED IN 2018 (BPS)[2]



YTD information is shown as through December 7, 2018. Source: (1) Federal Reserve, Amherst as of December 2018. (2) Amherst as of December 2018. For illustrative purposes only.

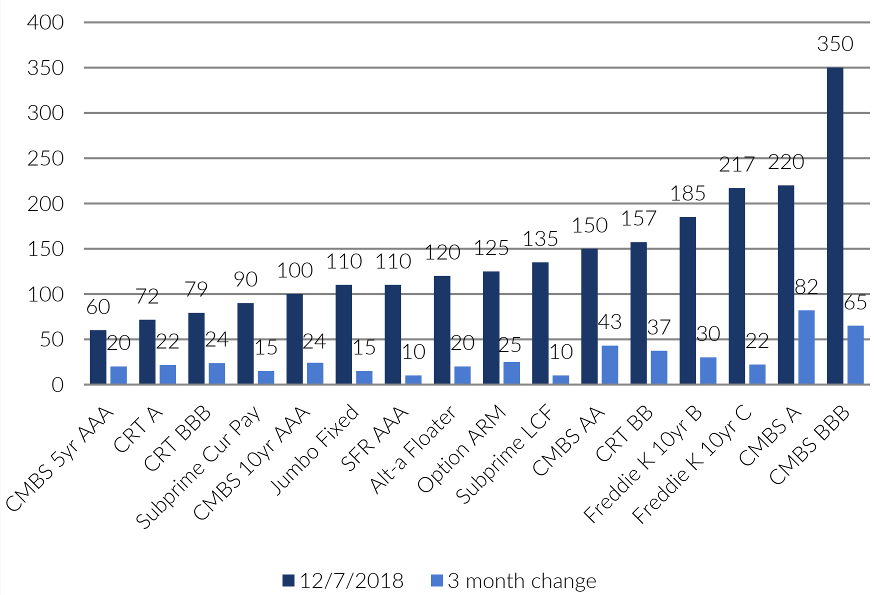
AMHERST MARKET UPDATE

U.S. Real Estate – 2019 Outlook

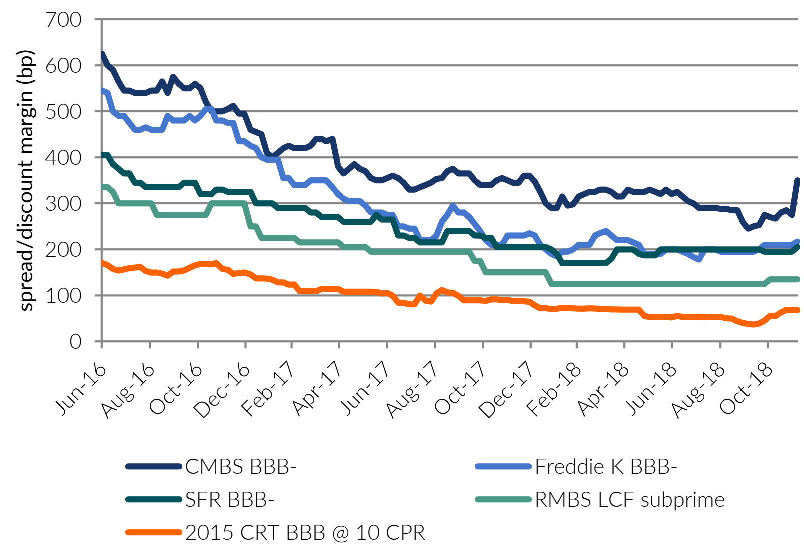
Credit also Widened in Q4 2018, But Remains Historically Tight

- Mortgage credit spreads widened in Q4 2018 for both AAA and BBB credit
- On a YTD basis, AAA credit spreads are modestly wider, while BBB credits are generally flat or slightly tighter as the spread curve compressed
- BBB credit spreads have generally widened back to early 2018 levels, but remain well inside levels from 2014-2016

MORTGAGE CREDIT SPREADS HAVE WIDENED IN Q4 2018[1]



MORTGAGE CREDIT SPREADS REMAIN TIGHT HISTORICALLY (BPS)[2]



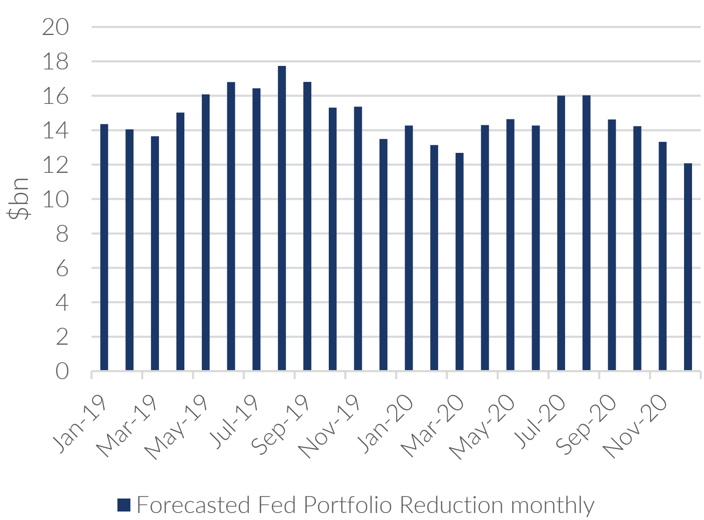
YTD information is shown as through December 7, 2018 Source: Source: (1) JPM, Bank of America, Amherst as of December 2018. (2) JPM, Bank of America, Amherst as of December 2018. For illustrative purposes only.

U.S. Real Estate – 2019 Outlook

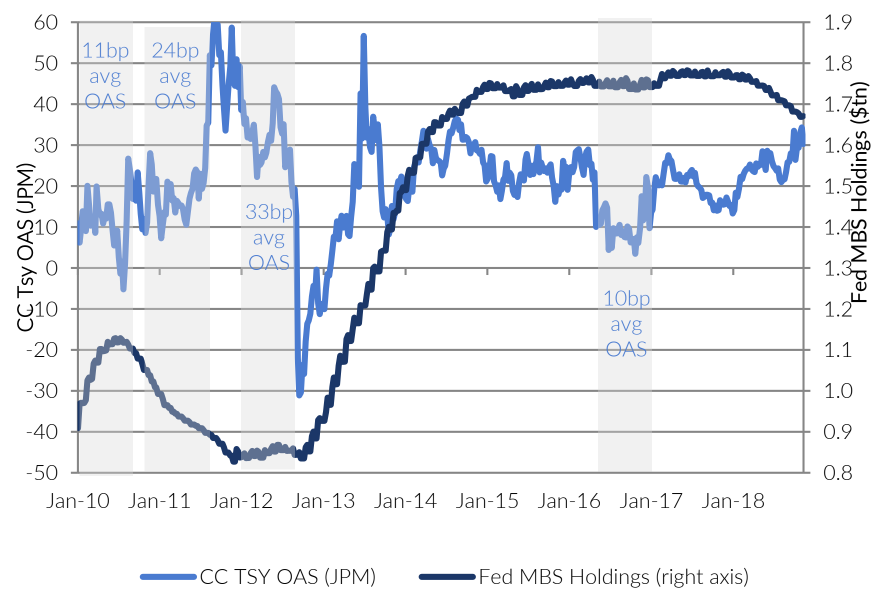
Tapering Will Continue To Add Supply Pressure in 2019

- Based on the latest guidance, we estimate the Federal Reserve will contribute close to $200bn in net supply next year, in addition to about $250bn of natural net supply
- The pace will be similar to that of the 2nd half of 2018 and may have lesser of an impact after the widening in 2018

TAPERING WILL INCREASE NET SUPPLY BY 70-85% IN 2018-2019[1]



MBS PERFORMANCE DURING RECENT FED MBS PORTFOLIO REDUCTION PERIODS[2]



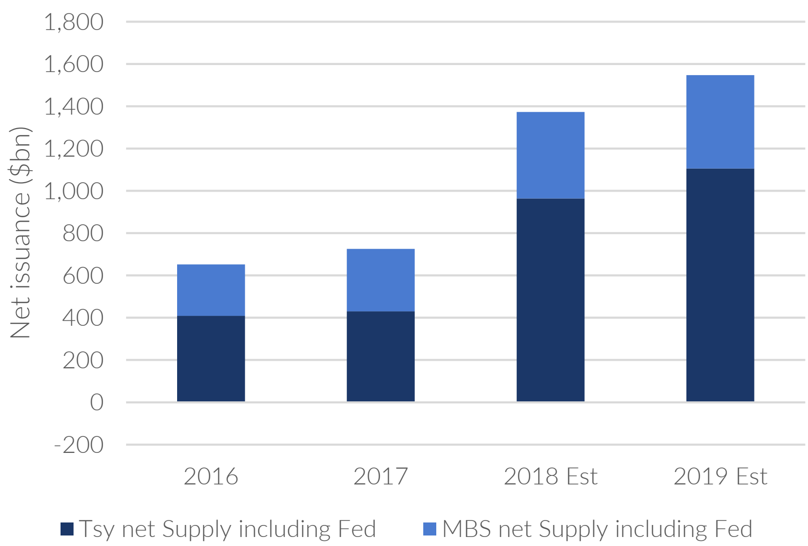
Source: (1) Amherst as of December 2018. (2) JPM, Federal Reserve, Amherst as of December 2018

U.S. Real Estate – 2019 Outlook

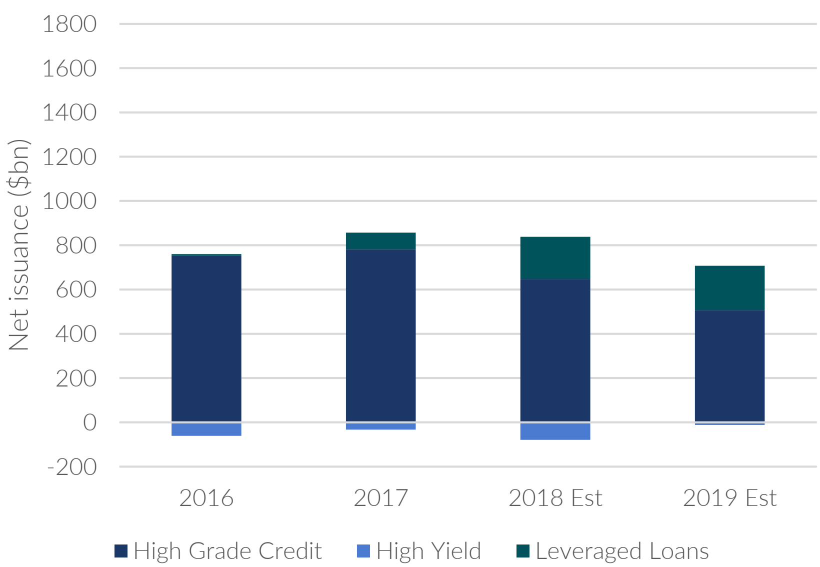
Treasury /Agency MBS Supply Could Crowd Out Liquidity in Other Sectors in 2019

- Larger deficits in 2019 and Federal Reserve tapering will lead to over $1.1tr in estimated net supply of Treasuries in 2019
- The large supply of agency and government guaranteed assets may crowd out investments in credit products, which will also see positive net supply in 2019, and could lead to wider credit spreads
- More broadly the Treasury /MBS issuance could also tighten financial conditions for corporates which have been the engine for growth

NET ISSUANCE OF TREASURIES AND AGENCIES ESTIMATED TO INCREASE IN 2019



NET SUPPLY OF CORPORATES ESTIMATED TO REMAIN POSITIVE AS WELL



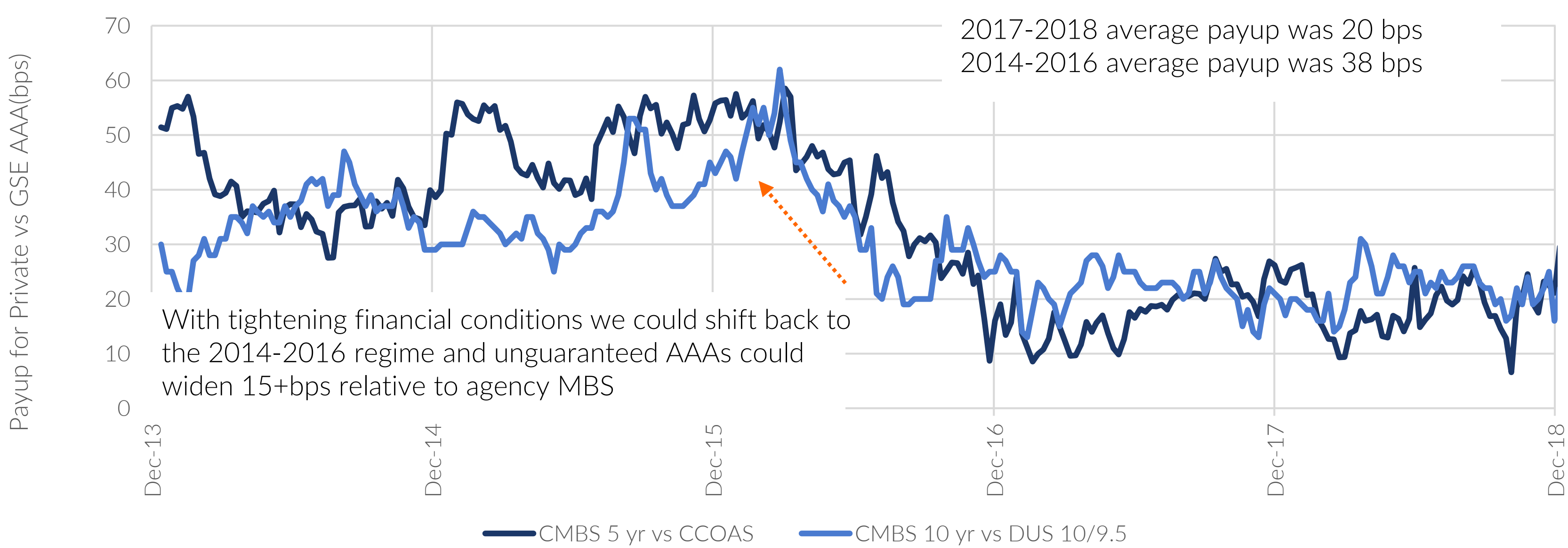
Source: Bank of America Merrill Lynch, Wells Fargo as of November 2018

U.S. Real Estate – 2019 Outlook

Credit Sectors May Be More Exposed to a Taper Driven Selloff

- The spread payup to own private AAAs vs GSE guaranteed AAAs has been fairly constant at around 20 bps since YE 2016. From 2014-2016 the payup averaged almost double at 38 bps
- If financial conditions tighten, and we are in a "2014-2016" era, then private AAAs could widen ~15-20bps relative to agency MBS (which itself could be wider from the supply)
- Overall securitized credit AAAs and other rated bonds could be the bigger losers in a taper driven selloff

AVERAGE PAYUP FOR UNGUARANTEED AAA HAS HALVED SINCE 2016



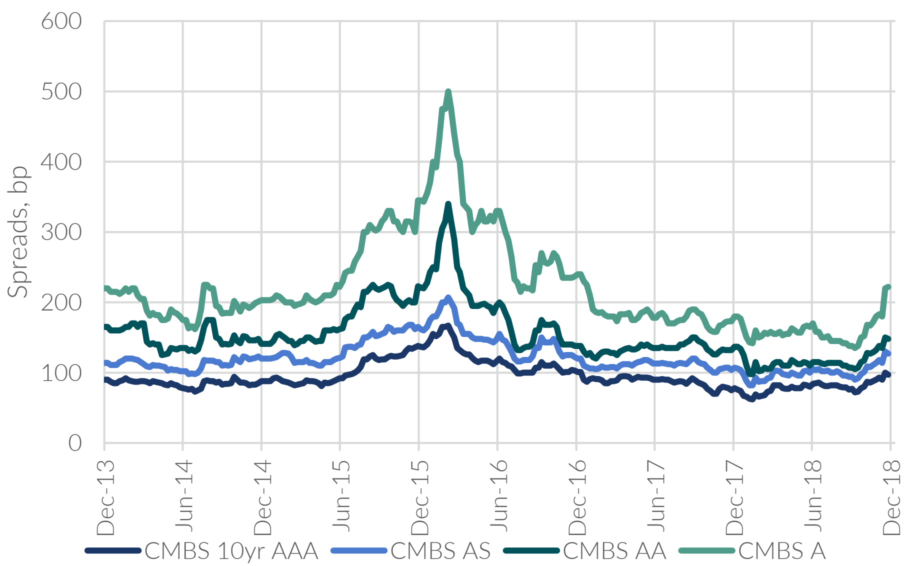
Source: JPM, Amherst as of December 2018

U.S. Real Estate – 2019 Outlook

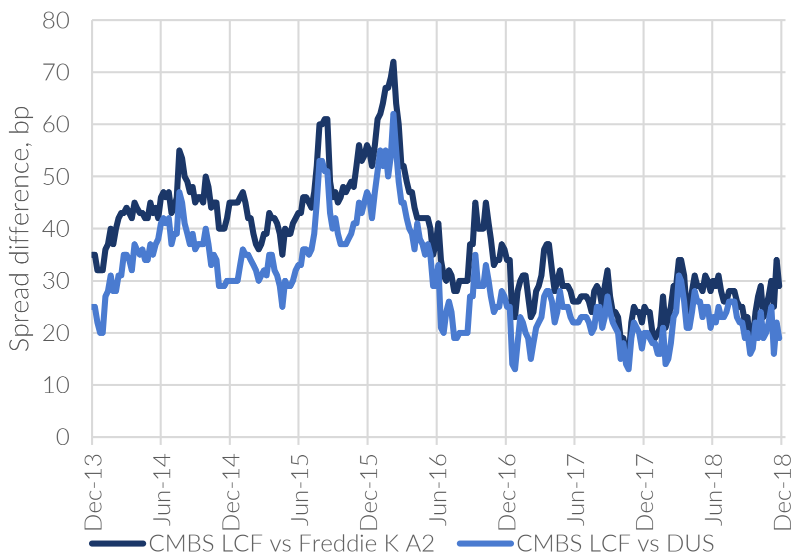
Limited Opportunities in the Conduit CMBS Sector

- CMBS new issue conduit spreads across ratings are in a historically tight range with very little spread pay-up to go below the AAA part of the curve. While we have seen some widening in recent weeks much of this is in line with other sectors
- Conduit AAAs with no guarantee are also trading at historically tight spreads to Agency CMBS bonds with a Fannie Mae or Freddie Mac guarantee.
- Overall compensation for taking credit/spread risk in conduit CMBS is minimal and we prefer Agency CMBS/SASB/SFR AAAs in general which allow us to underwrite the individual property/cross-collateralized pool of assets that back these deals

NEW ISSUE SPREADS ACROSS RATINSG ARE IN A TIGHT RANGE (DEC '13 – DEC '18)



NONAGENCY VS AGENCY CMBS BASIS ALSO AT TIGHT END OF RANGE (DEC '13 – DEC '18)



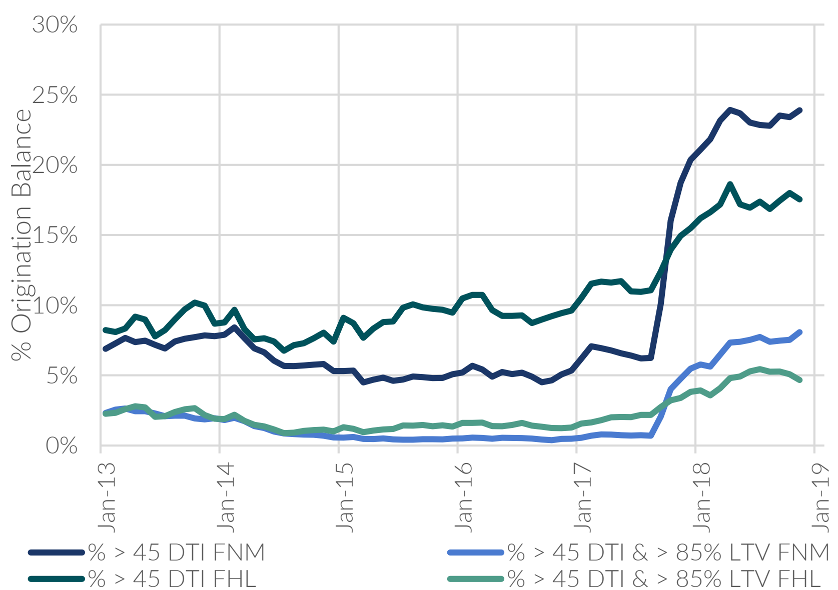
Sources: (1) JPMorgan, Amherst as of 14 December 2018. For illustrative purposes only.

U.S. Real Estate – 2019 Outlook

CRT Very Exposed to Idiosyncratic and Systematic Losses

- The CRT sector remains at much lower enhancement vs the higher risk/layered risk loan that are now entering the system
- Recent CRT deals already have 10-15% >45 DTI loans and high LTV deals have 10-12% of the pool in high DTI and LTV >85
- While these have some mortgage insurance and losses may remain contained, the beta to housing overall is very high
- Based on origination trends, this risk is likely to continue to go up in 2019 issuance

HIGH DTI/LAYERED RISK LOANS ON RISE – WORSE FORWARD CRT QUALITY (JAN '13 – NOV '18)



RECENT CRT DEAL ALREADY HAVE A LOT OF HIGH DTI LOANS

	STACR 2018-HQA2				
Bond Name	Attachment Point(%)	Detachment Point(%)	Spread	% > 45 DTI	% >45 DTI and 85% LTV
M1	3.00	4.00	75	13%	12%
M2	1.15	3.00	230		
B1	0.65	1.15	425		
B2	0.10	0.65	1100		

	STACR 2018-DNA3				
Bond Name	Attachment Point(%)	Detachment Point(%)	Spread	% > 45 DTI	% >45 DTI and 85% LTV
M1	3.00	4.00	75	17%	0%
M2	1.10	3.00	210		
B1	0.60	1.10	390		
B2	0.10	0.60	775		

Sources: eMBS, Fannie Mae, Freddie Mac, Amherst as of December 2018. For illustrative purposes only.

U.S. Real Estate – 2019 Outlook

What to Expect in 2019?

The additional return in securitized credit does not adequately compensate for the leverage/idiosyncratic risks. Continued taper and further MBS/Treasury issuance will put pressure on mezzanine/junior securitized spreads in 2019 and steepen the credit curve

AGENCY MBS

- An up-in-quality move into more liquid instruments on credit/pricing concerns across the rest of the bond universe could continue to support agency MBS spreads
- Downside risks come from a larger than expected mortgage credit easing or a sloppy reaction to the additional supply

PRIVATE LABEL AAA (CMBS/RMBS)

- Conduit CMBS AAAs and new issue RMBS AAAs have widened pretty much in lockstep with nominal agency MBS /IG spreads for instruments with lower liquidity. If they break out of that range, some opportunities may emerge

PRIVATE LABEL MEZZANINE BONDS

- Compensation for credit risk is minimal and does not adequately compensate for the leverage/idiosyncratic risks in more securitized sectors. Residential credit also remains fully priced with very few opportunities across the board
- CMBS remains tight overall but there are opportunities in niche sectors within SASB CMBS and fixed-rate SFR securitizations

The Amherst group of companies comprise of leading real estate investment and advisory firms with a long track record in helping our clients understand risks and opportunities through data-driven solutions for investing, trading and analysis. Our real estate expertise is grounded in distinctive intellectual capital, and differentiated data and analytic capabilities. Amherst is well-positioned to react nimbly and with scale to the evolving opportunities in the real estate capital markets.

As of June 30, 2018, the Amherst group of companies have over $15b of balance sheet assets and manage over $5b of real estate related investments for third parties and itself. Balance sheets assets are related to our affiliated broker-dealer. Real estate related investments include both discretionary investment management assets and assets for which Amherst serves as asset manager or property manager for its single family rental strategies. Managed assets include $1.2 billion of leverage.

ABOUT AMHERST HPI MODEL

Amherst home price index is generated and maintained by Amherst. The index tracks price changes of single-family detached properties in 90 core- based statistical areas (CBSA) and 50 states in the US. The index is published monthly and is based on the Case Shiller repeated sales methodology. Unlike HPI published by S&P Case Shiller Weiss, Corelogic and Federal Housing Finance Agency (FHFA), Amherst HPI is a distressed-free index which does not include price changes due to foreclosures, short-sales, bank repossession and REO resale. The repeated sales HPI rely on tracking price changes in transactions of the same house over time. For each arms-length and distressed- free home sale transaction, a search is conducted to find information regarding previous arms-length and distressed-free sales of the same house. If an earlier transaction is found, the two transactions are paired into a “sale pair.” Sale pairs are designed to track price changes over time for the same house, while holding the quality and size of each house constant. After sales pairs are formed, the index is calculated under a weighted least square framework, in which weights are based on price anomalies and time interval within pairs.

ABOUT AMHERST U.S. SFR RENT INDEX

Amherst Rent index is generated and maintained by Amherst. The index tracks rent price changes of single-family detached properties in 250 core- based statistical areas (CBSA) and 49 states in the US. The index is published quarterly and is based on the Case Shiller repeated sales methodology. The rent index relies on tracking rent price changes of the same house over time. For each lease, a search is conducted to find rent price from the previous lease of the same house. If an earlier lease is found, the two leases are paired into a “lease pair.” Lease pairs are designed to track rent price changes over time for the same house, while holding the quality and size of each house constant. After pairs are formed, the index is calculated under a weighted least square framework, in which weights are based on rent price anomalies and time interval within pairs. The index is based on re-leases on the same properties that are put on the market and therefore does not include any repeat leases which are renewals.

IMPORTANT DISCLOSURES

The comments provided herein are a general market overview and do not constitute investment advice, are not predictive of any future market performance, are not provided as a sales or advertising communication, and do not represent an offer to sell or a solicitation of an offer to buy any security. Similarly, this information is not intended to provide specific advice, recommendations or projected returns of any particular product of Amherst Holdings, LLC ("Amherst") or its subsidiaries. These views are current as of the date of this communication and are subject to rapid change as economic and market conditions dictate. Though these views may be informed by information from sources that we believe to be accurate and reliable, we can make no representation as to the accuracy of such sources nor the completeness of such information. Past performance is no indication of future performance. Investments in mortgage related assets are speculative and involve special risks, and there can be no assurance that investment objectives will be realized or that suitable investments may be identified. Many factors affect performance including changes in market conditions and interest rates and in response to other economic, political, or financial developments. An investor could lose all or a substantial portion of his or her investment. No investment process is free of risk and there is no guarantee that the investment process described herein will be profitable. No investment strategy or risk management technique can guarantee returns or eliminate risk in any market environment.

LIMITATIONS OF PROJECTED RETURNS

Projected returns are hypothetical in nature and are shown for illustrative, informational purposes only. This material is not intended to forecast or predict future events. Specifically, the projected returns are based upon a variety of estimates and assumptions by Amherst of future returns including, among others, estimates of future operating results, the value of assets and market conditions at the time of disposition, related transaction costs and the timing and manner of disposition or other realization events. The returns and assumptions are inherently uncertain and are subject to numerous business, industry, market, regulatory, competitive and financial risks that are outside of Amherst's control. Certain of the assumptions have been made for modeling purposes and are unlikely to be realized. No representation or warranty is made as to the reasonableness of the assumptions made or that all assumptions used in achieving the returns have been stated or fully considered. Actual operating results, asset values, timing and manner of dispositions or other realization events and resolution of other factors taken into consideration may differ materially from the assumptions upon which estimates are based. Changes in the assumptions may have a material impact on the projected returns presented. The projected returns do not reflect the actual returns of any portfolio strategy and do not guarantee future results. Actual results experienced by clients may vary significantly from the hypothetical illustrations shown.

U.S. Real Estate – 2019 Outlook

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