

U.S. Single-Family Rental – An Emerging Institutional Asset Class

INTRODUCTION

Single-family suburban homes have been the mainstay of the U.S. housing market since the post-World War II automobile boom. However, as mortgage credit availability became scarce and homeownership plummeted following the financial crisis, the demand for single-family homes manifested itself in the form of rentals — amplifying the opportunity in the single-family rental (“SFR”) space. This paper examines single-family rentals as an institution-owned, longer-term commercial real-estate (“CRE”), much as apartment and office REITs are viewed.



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U.S. SINGLE-FAMILY RENTAL – AN EMERGING INSTITUTIONAL ASSET CLASS

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1 - Source: Estimated by Amherst Capital based on Federal Reserve Z.1 release as of June 9 2016; and MSCI, SIFMA data; and data from the National Multi-family Housing Council.

2 - Source: Amherst InsightLabs estimates based on CoreLogic County Record and Transaction Data as of Q1 2016

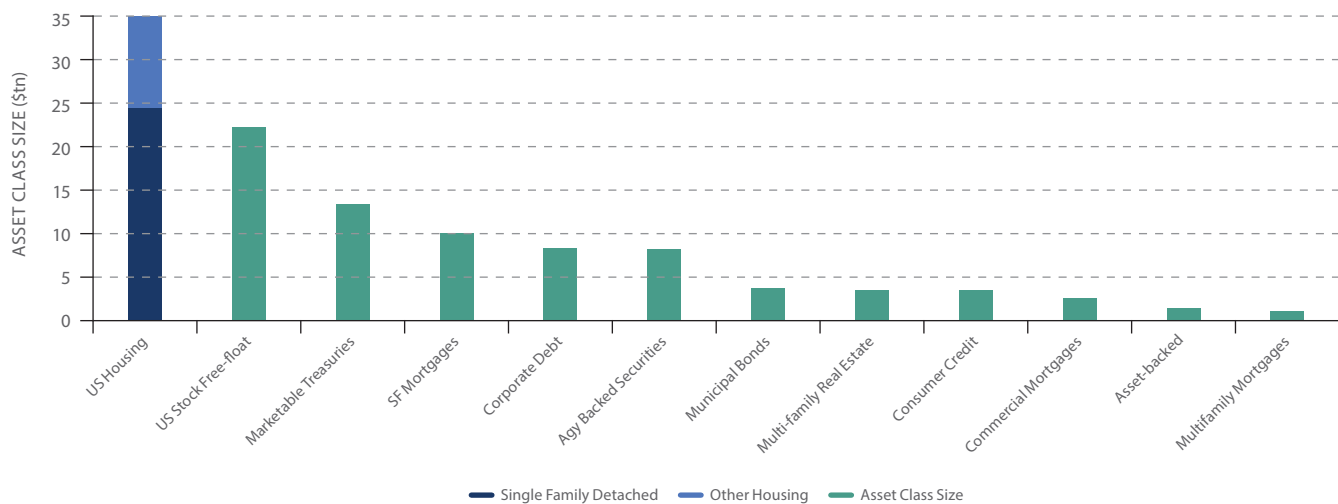


SECTION I

30,000-FOOT VIEW OF U.S. HOUSING

Before diving into the world of single-family rentals, we need to get the lay of the land. The total value of the U.S. housing stock is approximately \$35 trillion, making it the world's largest asset class. To put it into perspective, it is larger than the combined value of U.S. S&P market capitalization (~\$20tn) plus marketable U.S. treasuries (\$13tn). Even parts of it — single-family or multi-family — are much bigger than most other comparable asset classes (Figure 1).

FIGURE 1 *U.S. housing is the world's largest asset class*



Source: Estimated by Amherst Capital based on Federal Reserve Z.1 release as of June 9 2016; and MSCI, SIFMA data; and data from the National Multi-family Housing Council.



1.1 U.S. HOUSING IS AN AMALGAMATION OF LOCAL MARKETS

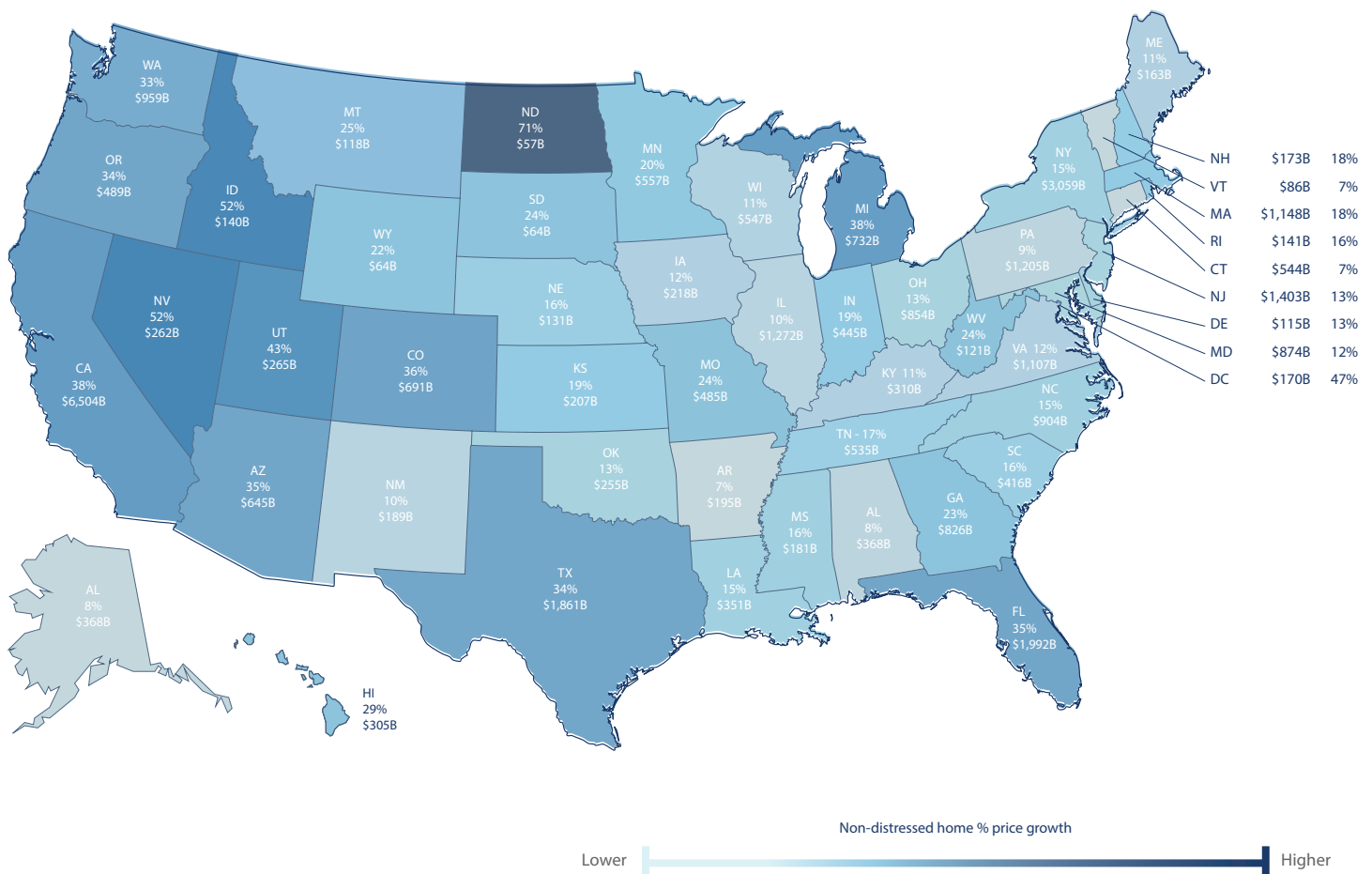
While market observers often simplify and talk about U.S. housing as a whole, it is really a very diverse asset class. In many ways, it is an amalgamation of many large local markets. An area appearing overstretched for some reason may catch the attention of the media, but that does not mean the same holds true across the country. Similarly, market participants sometimes overemphasize what is happening on the coasts. Yes, CA and NY form a large part of the U.S. housing stock by value, but by no means are they the bulk of U.S. housing.

Figure 2 shows our estimates of housing stock value by state, with the top 2 states accounting for <30% of the value. Our estimates show that even the top 20 MSAs (within a total of 382) constitute <50% of the value of U.S. housing stock, and only 40% of housing by number of units.

In addition, many regional markets that were highly correlated during the financial crisis have experienced vastly different recoveries since the bottom in prices.

FIGURE 2 *Home price recovery from trough is very region-specific (HPA, est. home value)*

[Average U.S. recovery since 2011 = 20% | Total value is approximately \$35 trillion]



Source: U.S. Census Bureau, Amherst InsightLabs, Amherst Capital as of April 2016

Note: We show non-distressed home % price growth from the trough based on Amherst non-distressed HPI. The second number listed for each state shows our estimate of housing stock \$ value based on census data.

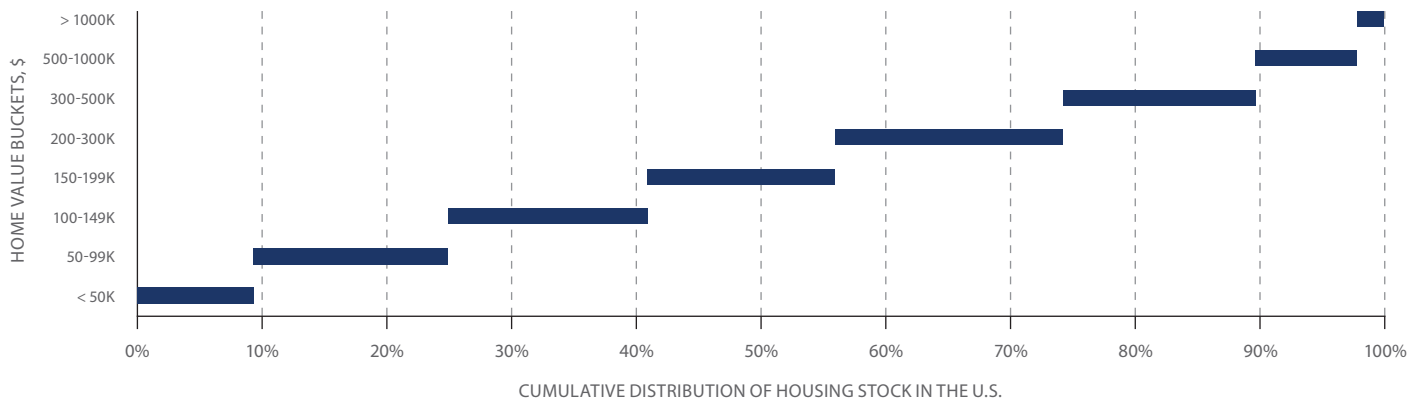


1.2 LOCAL MARKETS ARE HIGHLY HETEROGENEOUS

There is tremendous variation in housing stock, even in local markets. The variations stem from a multitude of factors, including property age, size, price point, and even style. For the U.S. as a whole, 10% of the housing stock (in units) is priced over half a million dollars, while another 10% is at \$50k or lower (Figure 3). While higher priced homes tend to be more concentrated on the coasts, there is much variation

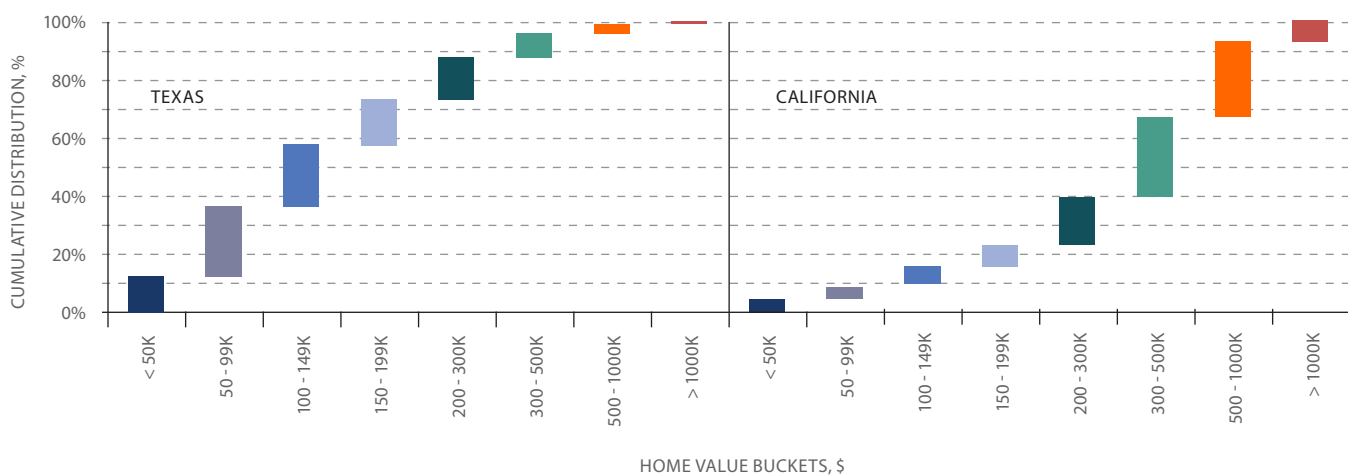
even within specific states (Figure 4). The median bucket in California is homes worth \$300-500K, while in Texas it is \$100-150K. However, even California has a sizable number of homes priced below \$150K, while Texas has a sizeable number of homes above \$300K.

FIGURE 3 *Cumulative distribution of housing stock (by price buckets, %units)*



Source: U.S. Census Bureau "2014 American Community Survey," Amherst Capital as of June 2016.

FIGURE 4 *Cumulative distribution of housing stock – Texas & California (by price buckets, % units)*



Source: U.S. Census Bureau "2014 American Community Survey," Amherst Capital as of June 2016.

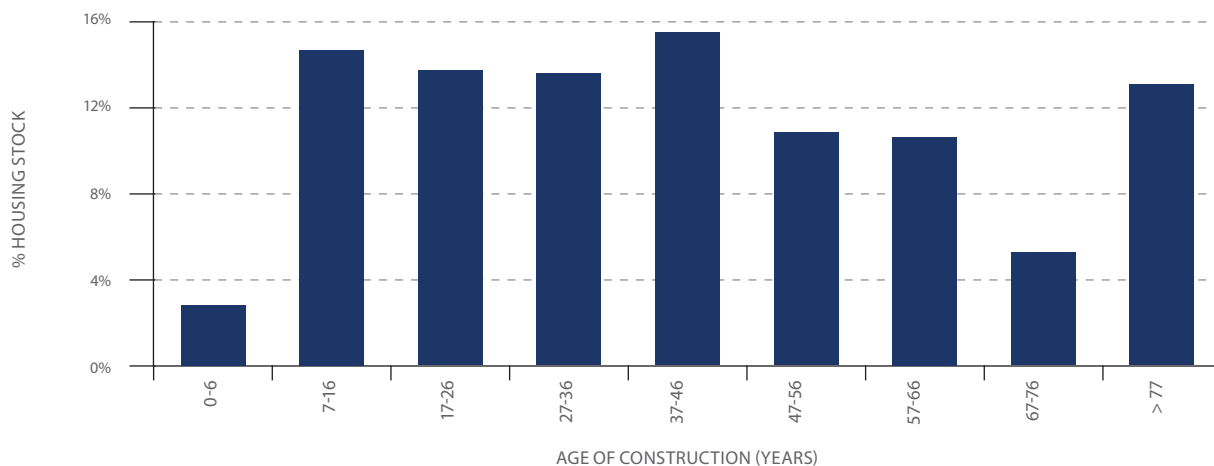


Similarly, there is a wide distribution of homes across other dimensions, such as age of construction (Figure 5) and size of the house.

The point is — while it is convenient to talk about U.S. housing with broad brushstrokes, in reality the only way to paint a coherent picture is by getting into granular details. Fundamental factors like the local economy, demand in conjunction with the size and supply of the housing stock, price point, and many other factors matter when evaluating housing or strategies for single-family rental investments. With that in mind, we now focus on the topic at hand — single-family rentals.

“...while it is convenient to talk about U.S. housing with broad brushstrokes, in reality the only way to paint a coherent picture is by getting into granular details.”

FIGURE 5 *Distribution of housing stock (by age of construction, % units)*



Source: U.S. Census Bureau “2014 American Community Survey,” Amherst Capital as of June 2016.



1.3 MORE THAN 15MN SINGLE-FAMILY RENTALS NATIONWIDE

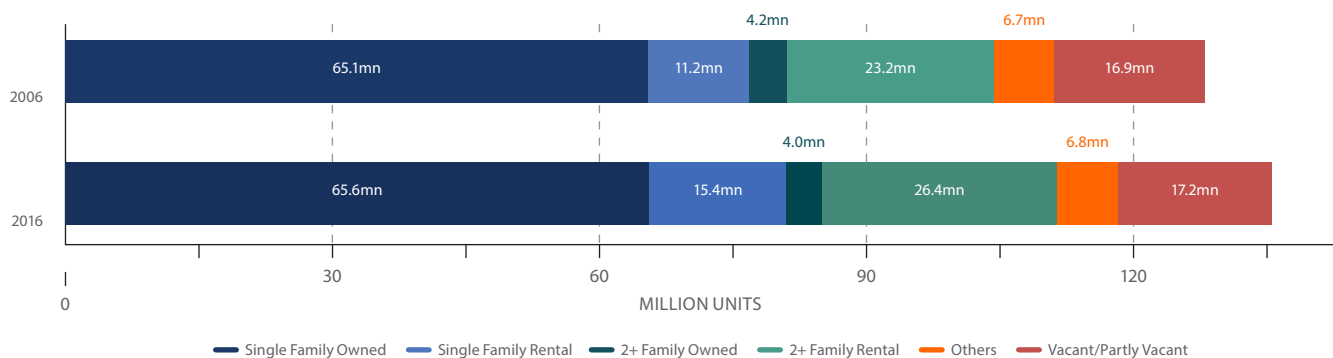
We start by decomposing the U.S. housing stock by structure and tenure. Specifically, (a) the proportion of single-family versus multi-family; (b) do the occupants own or rent; and (c) how have these numbers changed over time.

The total stock of housing units in the U.S. (135.5mn) is up about 6.5% over the last 10 years (Figure 6). Of those 135.5mn units, as Figure 6 shows, ~118mn are occupied housing units or households. Of these, ~74.4mn are owner-occupied (~63% home ownership rate) and 43.8mn are renter-occupied. Based on the type of structure/tenancy, U.S. housing can be broadly split into 6 segments:

1. single-family owned (65.6mn in 2016, up from 65.1mn in 2006)
2. single-family rental (15.4mn in 2016, up from 11.2mn in 2006)
3. 2+ family owned (4.0mn in 2016, down from 4.2mn in 2006)
4. 2+ family rental (26.4mn in 2016, up from 23.2mn in 2006)
5. others, such as mobile homes, RVs, boats etc. (6.8mn in 2016 vs. 6.7mn in 2006)
6. partly occupied or vacant, i.e., the fully vacant/seasonal/2nd homes (17.2mn in 2016 vs. 16.9mn in 2006)

At about 15.4mn occupied units, single-family rentals form ~13% of all occupied housing in the U.S. To put it differently, a bit more than 1 in 8 households in the U.S. lives in a single-family rental property (according to data from the U.S. Census Bureau).

FIGURE 6 *U.S. occupied housing stock – by owner/rentals & units in structure*



Source: U.S. Census Bureau, Amherst Capital estimates based on U.S. Census Bureau surveys as of Q2 2016.

Note: Based on 2014 American Community Survey 1-year estimates and scaled up to the 2016Q2 HVS/CPS survey



1.4 SINGLE FAMILY RENTALS ARE COMPARABLE TO OTHER CRE PROPERTY TYPES

In absolute size and market value, single-family rentals are comparable to other commercial real estate classes. We estimate the value of single-family rentals to be ~\$3.1tn, slightly lower than multi-family and larger than our estimates of other commercial real estate (“CRE”) sectors such as office, retail, industrial and hotels (Figure 7a).

If we break down the different types of multi-family buildings, we find that single-family rentals are bigger in number than the various subtypes within the 2+ structures³ (Figure 7b). The 15.4mn in SFR compares to about 10mn rental households living in mid-sized, 5-19 unit apartment buildings, ~8mn living in 2-4 unit buildings, and about 5mn in large 50+ unit multi-family properties.

“U.S. housing is the world’s largest asset class, and even the size of single-family rentals is comparable to other big income generating CRE sectors.”

BOTTOM LINE - U.S. housing is the world’s largest asset class, and even the size of single-family rentals is comparable to other big income generating CRE sectors. Additionally, given the heterogeneity in housing, detailed granular analysis is required when evaluating strategies for single-family rental investments.

FIGURE 7a *Estimated Value of CRE*

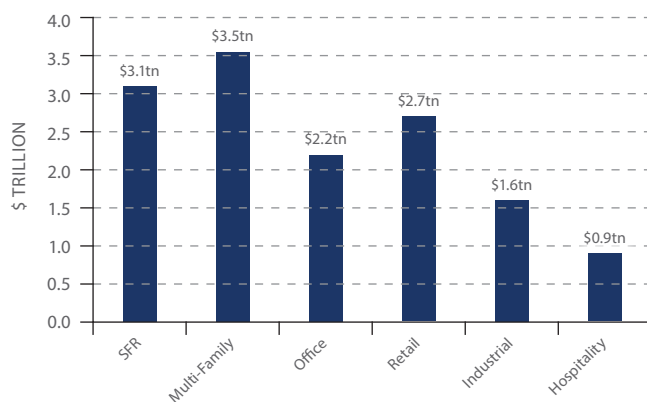
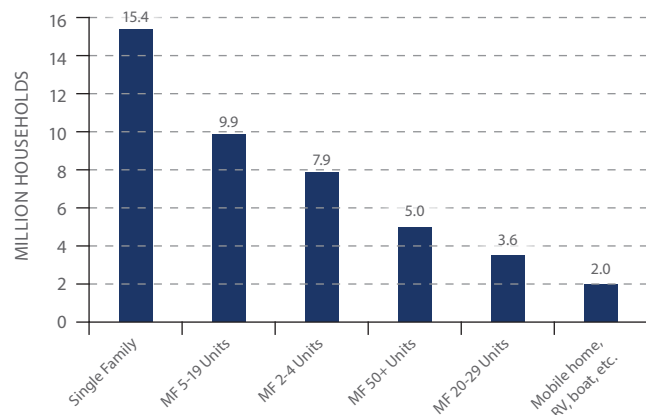


FIGURE 7b *Rentals by type of structure*



Source: U.S. Census Bureau, Amherst InsightLabs, Amherst Capital estimates based on U.S. Census Bureau surveys as of Q2 2016.

Left Chart: Single-family values based on AIL AVM; Office/Retail and Industrial based on Costar data as of 2016 Q2 and “Slicing, Dicing and Scoping the size of the US Commercial Real Estate Market”, by Andrew Florence, Norm Miller and Ruijue Peng of Costar/PPR; multi-family based on National Multi-family Housing Council and Moody’s CPPI as of 2015; Hospitality based on RCA and STR Global estimates as of 8/31/2016.

Right Chart: based on Based on American Housing Survey estimates (Latest Survey as of 2013).

3 - Refers to any type of housing which has more than 1 unit per physical structure (2-4 units or 5+ unit multifamily).



SECTION II

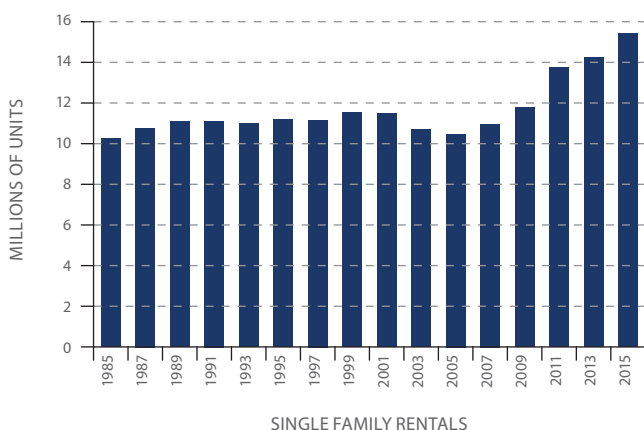
SFR ARE NOT A NEW PHENOMENON

Section I showed that single-family rental market is comparable in size to other CRE property types and is also a big part of rental housing in the U.S. However, single-family rentals have been around for a very long time. As Figure 8 shows, single-family rentals have exceeded 10mn units since the 1980s. Their number declined some during the pre-crisis boom as easy credit conditions enabled many renters to become homeowners. However, post-crisis, as many households fell behind on their mortgages and mortgage credit availability became scarce, those homeowners turned into forced renters. While the last few years saw explosive growth in the number of single-family rental units, the fact is — a very large number of single-family rentals have been around for a long time. As a percentage of all rentals, they have accounted for 30-35% over the last 3 decades. So the question is: what has changed and why discuss them now?

2.1 INSTITUTIONAL INVOLVEMENT IN THE HOUSING MARKET ROSE

What has changed is the involvement of institutions in the housing market. Pre-crisis, institutions typically had “derivative” exposure to the housing market as lenders, servicers and end investors in securitizations. As a result, pre-crisis, the vast majority of transactions in the housing market were between end-consumers (marked as C2C in Figure 9). As Figure 9 shows, we estimate that this was typically in excess of 80% of all transactions before 2006.

FIGURE 8 *SFR has been a BIG asset class for the last 30 years*



Source: U.S. Census Bureau, Amherst Capital estimates based on U.S. Census Bureau surveys

Note: Based on 2014 American Community Survey 1-year estimates and scaled up to the 2016Q2 HVS/CPS survey

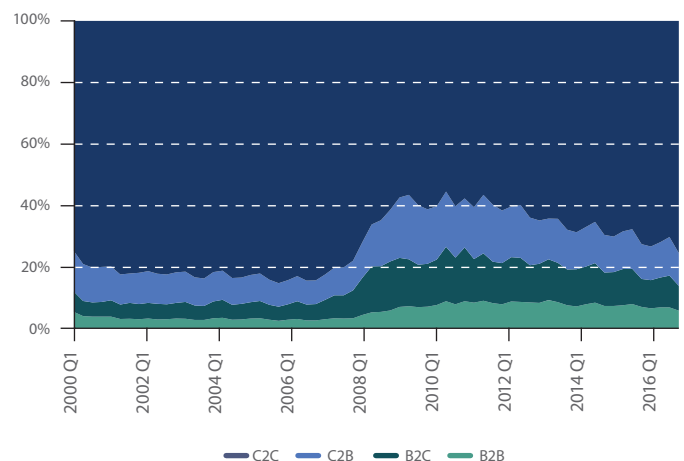
As the crisis unfolded and delinquencies led to increasing foreclosures, transactions where consumers were “selling” to businesses (institutions) increased significantly (marked as C2B). Typically, these transactions recorded reposessions of houses following foreclosures.

This was followed by a rise in Business-to-Consumer (marked as B2C in Figure 9) selling, where the foreclosing bank sold these properties back to the market.

At around the same time, big institutions started buying these homes to rent, which shows up as rising B2B transactions where both the buyer and seller were corporation/business. This subset usually accounts for portfolio sales of homes and other transfers among institutions.

In our view, there are two key differences since 2008. One, the B2B share has increased due to foreclosures and/or mergers or acquisitions of smaller players. Two, for the first time in history, big institutional investors are emerging — ones owning several thousand properties as opposed to the few or the 10s-100s historically owned by some other business entities.

FIGURE 9 *Estimated transactions between businesses and end-consumers in the housing market*



Source: Amherst InsightLabs estimates based on Corelogic County Record and Transaction Data as of Q1 2016



2.2 INSTITUTIONAL OWNERSHIP OF SFR HAS INCREASED

We estimate that these large buyers started purchasing in 2009-2010, and became more active after 2012. The 20-25 institutions that raised money to buy SFR homes for rent are now estimated to own upwards of 190k homes. The large buyer ownership number has grown steadily after the initial spurt in 2013, and newer players are now buying an increasing share of homes (Figures 10a-b).

“There are two key differences since 2008. One, the B2B share has increased due to foreclosures and/or mergers or acquisitions of smaller players. Two, for the first time in history, big institutional investors are emerging – ones owning several thousand properties as opposed to the few or the 10s-100s historically owned by some other business entities.”

FIGURE 10a *Cumulative holdings of institutions*

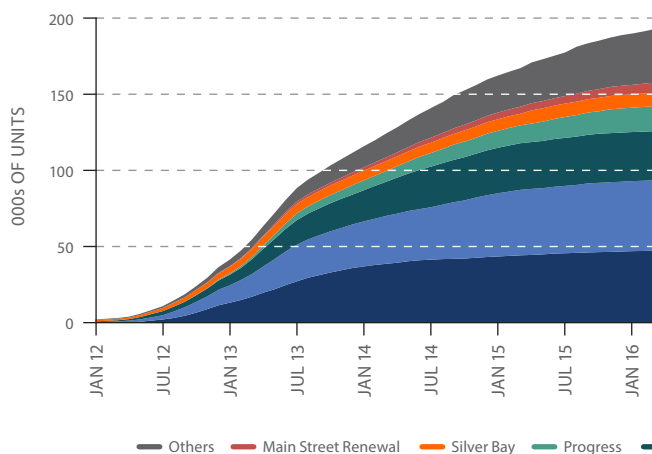
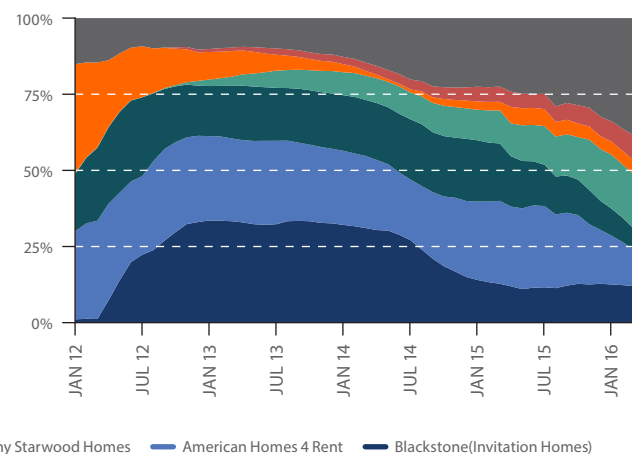


FIGURE 10b *Composition - trailing 12 month buying*



Source: Amherst InsightLabs estimates, based on CoreLogic county record and transaction data as of Q1 2016



That said, the share of institutional owners in the SFR market is still very small. Institutional investors own 190k homes, approximately 1.2% of single-family rental homes by # of units (190k/15.4mn). The share is even lower when measured by market value. The average single-family home has a value of \$200,000-250,000; the average home purchased and refurbished by institutional investors is \$166,000. Thus, total market value of institutional investors is \$32 billion (190,000 x \$166,000). The total market value of single-family rentals in the United States is \$3.1 trillion – this translates into institutional ownership of just 1%.

FIGURE 11 *Estimated institutional holdings - single-family rental properties*

Institution	Units with Sale Amount in transaction Data	Total Count	% Coverage	Est. Purchase Price (\$mn)	Est. All in Cost (\$mn)	Average Cost	Average Landed Cost
Blackstone (Invitation Homes)	44,386	47,342	94%	8,156	8,886	172,273	187,697
American Homes 4 Rent	39,043	46,131	85%	6,579	8,124	142,606	176,112
Colony Starwood Homes	27,193	32,272	84%	4,806	5,856	148,909	181,452
Progress Residential	14,321	16,345	88%	2,651	2,879	162,175	176,118
Silver Bay Realty Trust	6,928	8,798	79%	943	1,265	107,159	143,827
Main Street Renewal	5,694	6,754	84%	713	862	105,632	127,572
Tricon American Homes	5,103	6,743	76%	719	812	106,625	120,478
Cerberus Capital Management	3,428	5,912	58%	471	527	79,740	89,192
Havenbrook Homes	3,917	4,061	96%	385	459	94,866	113,134
Connorex-Lucinda	2,704	2,994	90%	201	262	67,082	87,475
Altisource Residential	1,522	2,912	52%	435	520	149,469	178,482
Golden Tree Insite Partners (GTIS)	2,182	2,911	75%	331	378	113,667	129,683
Vinebrook Homes	998	1,973	51%	95	134	48,156	67,840
Gorelick Brothers Capital	1,460	1,784	82%	141	163	78,806	91,146
Camillo Properties	13	1,314	1%	53	240	40,069	182,857
Haven Homes	1,253	1,294	97%	213	245	164,778	189,434
Lafayette Real Estate	994	1,271	78%	99	113	77,627	89,106
Transcendent Investment Management	598	628	95%	59	68	94,139	107,823
Reven Housing Reit	216	500	43%	59	73	117,633	146,312
Broadtree Home Rentals	432	468	92%	50	57	106,283	122,224
Prager Property Management	119	277	43%	45	59	162,351	214,073
Pintar Investment Company	151	164	92%	32	37	196,862	227,510
TOTAL	162,655	192,848	84%	27,235	32,020	141,223	166,036

Source: Amherst InsightLabs estimates based on Corelogic County Record and Transaction Data as of Q1 2016



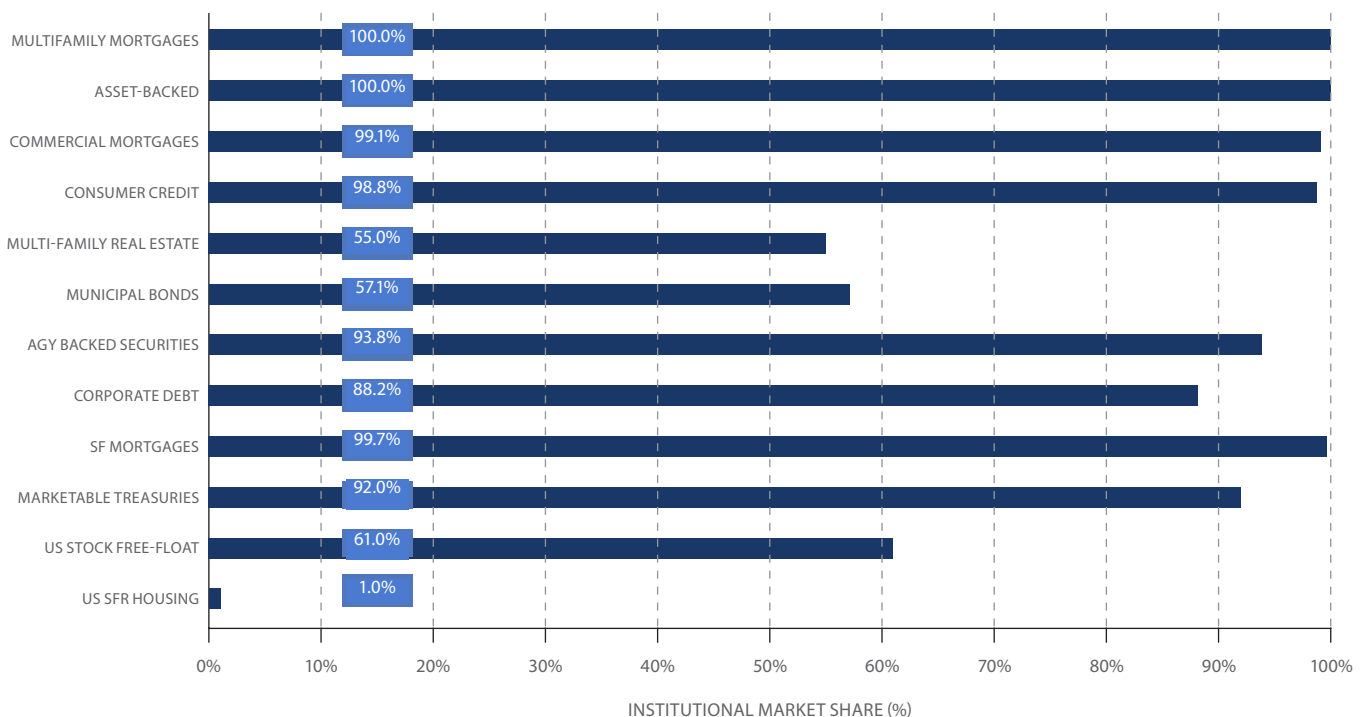
2.3 INSTITUTIONAL OWNERSHIP IS MUCH LOWER THAN OTHER SECTORS

The 1% market share is in stark contrast with other income-producing real estate sectors, such as multi-family housing, where institutions own 50-55% (especially among larger buildings). Institutional ownership is also high in other real estate-related mortgage sectors where institutions dominate and own upwards of 80-90% (Figure 12).

“Single-family rentals have been around for a long time, but large-scale institutional participation is a new phenomenon.”

BOTTOM LINE - Single-family rentals have been around for a long time, but institutional ownership of them is a new phenomenon. That said, even with the last 3-4 years of buying, the share of institutions remains tiny versus other income-generating asset classes.

FIGURE 12 *Share of institutional ownership across assets*



Source: Estimated by Amherst Capital based on Federal Reserve Z.1 release as of June 9 2016; and MSCI, SIFMA data; and data from the National Multi-family Housing Council as of Q2 2016.



SECTION III

INSTITUTIONAL SHARE TO GROW – BUT WHY NOW?

We expect the share of institutions to rise in the coming years. The question is – why now, especially given that single-family rentals have been around for decades. The reason is – a lot of changes in the post-crisis years that favor institutions over mom and pop investors. To understand, it might be useful to go back in time and understand why institutional participation was non-existent in this space.

3.1 INSTITUTIONS HAVE SEVERAL ADVANTAGES

Historically, the lower rate of institutional participation was due to a few key reasons. First, it was challenging to assemble portfolios of single-family properties in a scalable manner. Second, it was considered (and for good reason) more challenging to manage a portfolio of geographically dispersed single-family homes than multi-family properties. Third, at least in the 10-20 years before the housing crisis, mortgage credit in the single-family space had been relatively easily available. Thus in areas where single-family housing operators were likely to find the best demand prospects, residents were generally able to take out mortgages and buy the homes themselves.

After the financial crisis, there have been significant changes in the market vis-a-vis mortgage credit availability, bulk supply of homes to build scale, and use of technology. We believe that many of these advantages will be sustained over time and will help institutional portfolios of SFR properties to compete favorably with both mom and pop investors and multi-family operators.

Economies of scale – Many of the institutional single-family rental operators have made significant investments in infrastructure, allowing for the realization of economics of scale. For instance, repairs can be made more economically, as institutional investors learn which contractors are dependable and reasonably priced, and can rely more on these tested entities. Similarly, appliances, carpet and paint can be purchased in bulk, thus reducing per unit costs.

Access to cheaper and more appropriate financing Institutions can access warehouse financing lines as well as a securitization market, at levels likely cheaper than smaller investors can finance. Institutions can also use more appropriate 5-10 year term financing similar to other commercial real estate investors. Smaller investors' access to financing is mostly limited to 30-year, fixed-rate loans which are likely more expensive than institutional financing.

In addition, from the investors' point of view, portfolios of single-family properties have advantages over multi-family investments.

More favorable risk/return trade-off– We believe the risk-adjusted return on SFR is more favorable than on multi-family properties. Single-family home prices lagged multi-family significantly over the last several years. In addition, single-family price volatility, both on a historical and forward looking basis, is lower than multi-family and other CRE.

Access to data and custom-built technologies can bridge the operating margin gap– We believe SFR assets may allow for above average returns to investors who make the required investment in data and technology. While this requires a significant investment of time and money, that cost can be defrayed over thousands if not hundreds of thousands of homes. The right technology can help over the longer run by reducing acquisition and operating costs and improving overall operating margins, bridging the gap to multi-family (we discuss some early evidence later in the section).



3.2 ECONOMIES OF SCALE

Institutional investor-operators have made significant investments in on-the-ground infrastructure over the last few years, which has led to better economies of scale and potentially lower costs versus what can be achieved by smaller investors. These economies of scale can help in the entire life-cycle of single-family rentals, from purchasing and fixing up the properties, to renting them out, managing ongoing repairs and maintenance costs, and eventually also in dispositions.

To see how institutional investors can leverage these economies of scale, here are a few examples of savings that can be achieved for large portfolios that smaller ‘mom-and-pop’ investors may find it harder to achieve:

Property acquisition – As anyone who has ever purchased a home knows, buying individual properties takes time and effort. This is true for single-family operators as well. However, the underwriting, bidding, follow-up negotiations and final closing processes are streamlined by institutional operators who typically intend to bid on thousands of properties across the country and hundreds of properties in any given geographical area. Many operators have put together the right technology/workflow solutions as well as the human capital required to efficiently underwrite, bid and buy homes. While setup costs of such an operation are significant and do increase in part with new geographies, once they are set up, operators can reap economies of scale.

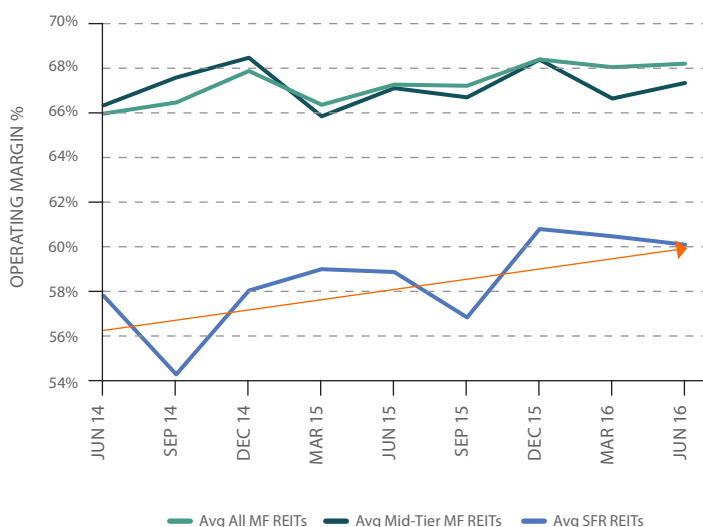
Fixing up properties to rental standards – Another example of potential sources of economies of scale is in fixing up the properties to a certain rental standard. While many operators follow different strategies on this aspect, spending a lot or little on upfront repairs, we believe this can be a significant source of savings both on an upfront and ongoing basis. For instance, operators can choose a standard set of appliances, HVAC units and other equipment to be installed in the house. They can buy these in bulk, saving on upfront costs. In addition, standardization eventually helps in future repairs with replacement parts.

Marketing for rentals – Many institutional operators use their own websites to market homes for rentals across the country besides listing on aggregator websites. We believe this has a two-fold effect: faster lease-up rates, and fewer commissions paid to agents/brokers bringing in rentals.

Property maintenance and repairs – As mentioned before, operators who use standardized appliances for initial repairs may eventually save money on ongoing maintenance and repairs from the perspective of replacement part costs. In addition, institutional operators operating hundreds of properties in many cities can identify the best providers/contractors that provide the most reliable and economic services. They can also potentially negotiate bulk repair contracts or even hire teams of plumbers, electricians and other contractors in certain areas where they have particularly large concentrations of properties.

The economies of scale are already visible to some extent, in comparing portfolio operating margins on single-family REITs vs. multi-family REITs. Operating margins on SFR REITs have been improving, and converging with multi-family levels over the past 6-8 calendar quarters (see Figure 13). Overall, we expect this improvement to continue as operators scale up (although SFR operating margins will likely remain somewhat below multi-family levels).

FIGURE 13 *SFR REIT margins are catching up*



Source: Bloomberg, Amherst Capital as of August 2016

Note: Avg ALL MF shows Operating Margins averaged across 8 largest Apartment REITs. Some, like Equity Residential and Avalon Bay, are concentrated in coastal cities such as NYC, Boston, Los Angeles, San Francisco and have little overlap with areas in which SFR REITs are active. We show the more geographically diverse mid-tier Multi-Family REITs grouped as the red line “Avg Mid-tier MF REIT” to represent comparable MF REITs. SFR REITs include SBY and AMH. All MF REITs include AIV, AVB, CPT, EQR, ESS, MAA, PPS and UDR. All Mid-tier REITs includes CPT, MAA and PPS

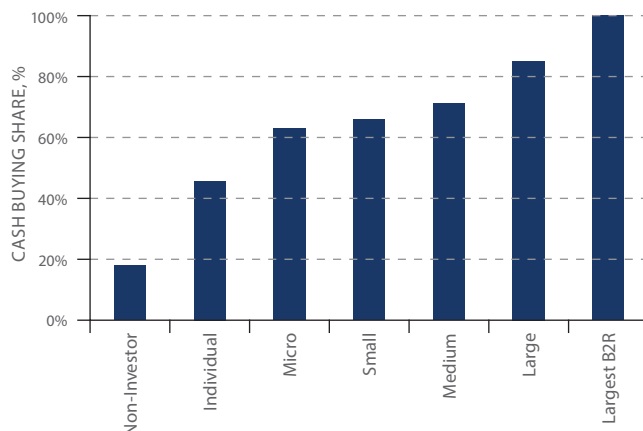


3.3 ACCESS TO CHEAPER FINANCING

Another potential advantage for institutional investors in single-family space is their access to cheaper and better-structured financing vehicles. This allows institutional investors to avoid any reliance on longer term and usually more expensive mortgages while other classes of investors still rely on mortgages to some degree. Figure 14a shows the % of cash purchases across different buyer segments, based on CoreLogic transaction and county assessors' data. For individuals investors (not tagged as a corporate entity), the cash-buyer rate is just short of 50%. In contrast, the cash-buying rate for institutional investors is much closer to 100%, especially for larger institutional buyers who have access to cheaper sources of financing at a portfolio level.

For example, a recent SFR securitization PROG 2016-SFR1 priced at an all-in funding cost of about L +230bps^{4a}, less than a typical single-family mortgage. Similarly, recent news reports and SEC filings show that an SFR REIT was able to raise \$1bn in term and revolving financing at an average spread of L+175-230bps^{4b}. We believe this cheaper financing should drive down the aggregate cost of capital for institutional buyers.

FIGURE 14a *Cash purchases by investor types*



Source: Amherst InsightLabs estimates based on Corelogic County Record and Transaction Data. Federal Reserve Board

Note: For a detailed methodology, please see Large-Scale Buy-to-rent Investors in the Single-Family Housing Market: The Emergence of a New Asset Class?, James Mills, Raven S. Molloy and Rebecca E Zarutskie

4a - Based on Bloomberg news reports about the deal pricing.

4b - Based on Sec filings and news releases from American Homes For Rent.

In addition to the ability to pay cash, institutional buyers are likely to be more nimble/flexible in the bidding process. This advantage is likely greatest when buying at foreclosure auctions but also possible for other types of purchases. All else being equal, sellers are likely to prefer the ease and speed of cash purchases over a mortgage purchase. This should give institutional investors a significant competitive edge in buying properties. As Figure 14b shows, institutional and large investors with access to cash initially targeted distressed sales, but as the availability of distressed opportunities has decreased, they have shifted to buying more and more non-distressed properties. In 2012, less than a third of institutional buys were from non-distressed sales (not from foreclosures, short-sales or REO sales). By 2014, that number had increased to more than 50%. Since then it has likely grown further, with some of the institutions focused on building longer-term platforms that rely more on buying from regular MLS listings, effectively filling the gap in demand and supply of housing and mortgage credit.

FIGURE 14b *% non-distressed buys by investor type*

Buyer		% non-distressed		
		2012	2013	2014
Investor	Institutional	31.7	46.5	50.9
	Large	28.0	35.8	43.8
	Medium	28.6	38.3	38.9
	Small	39.1	47.3	51.5
	Micro	53.3	60.9	64.5
	Individual	52.9	62.6	67.5
	Non-Investor	75.3	82.0	86.5



3.4 BETTER RISK-ADJUSTED RETURNS THAN MULTIFAMILY

When investors are comparing the potential returns of single-family versus multi-family properties, they need to bear in mind that multi-family prices rose much faster in the last 5-7 years than have those on single-family (Figure 15a). The Moody's/RCA CPPI index for apartments is ~43% higher than its previous peak in 2007, while single-family home prices are still 3-5% below their previous high. Because of that price differential, despite lower operating margins in the single-family space, single-family net-cap rates are now comparable to multi-family in many areas.

There is another compelling case for SFR versus other commercial real estate investments and it is not based

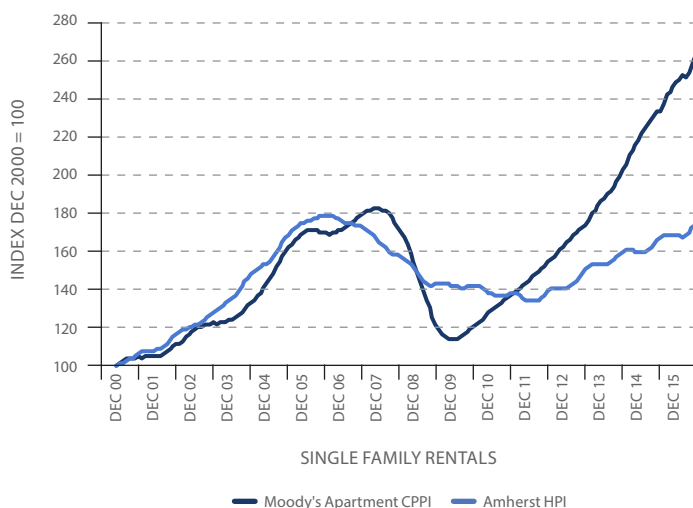
on return — it is based on risk. Historically, single-family home prices have been much less volatile than other properties (such as apartments).

Figure 15b compares historical volatility of logarithmic (“log”) price changes and shows that single-family price volatility averaged ~6.4%/year for the last 10 years.

Over the same period, volatility in multi-family prices was much higher, at ~14%/year, while other commercial real estate sectors such as office or retail have been ~17% and ~14%/year, respectively. We believe that a portfolio of single-family homes is likely to have much lower price volatility than a portfolio of other commercial real estate properties.

“There is another compelling case for SFR versus other commercial real estate investments and it is not based on return — it is based on risk.”

FIGURE 15a *MF CPPI outpaced SF HPI*



Source: Bloomberg, Moody's/RCA, Amherst InsightLabs from Dec 00 to May '16

Note: SF HPI is the Amherst HPI Index. Apartment, Office and Retail CPPI are commercial property price indices created by Moody's/RCA. The data shows the annualized standard deviation of rolling log price changes ($\log(P(t+1)/P(t))$) over the last 5/10/15 years from the latest data release. The latest data release for Amherst HPI is as of May 2016. For CPPI indices, the latest data is as of June 2016.

FIGURE 15b *SF property values have lower volatility*

ANNUALIZED STANDARD DEVIATION OF LOG PRICE CHANGES				
	SF HPI	Apartment CPPI	Office CPPI	Retail CPPI
5 yr	4.2%	1.7%	5.3%	3.7%
10yr	6.4%	14.5%	17.2%	13.6%
15yr	7.3%	12.8%	15.0%	12.7%



FORWARD-LOOKING MEASURES OF VOLATILITY ARE ALSO LOWER FOR SINGLE-FAMILY VS. OTHER CRE

It is important to realize that it is not only historical volatilities that show single-family properties as less volatile than commercial properties. There is forward-looking evidence of this from traded option prices on equity REITs.

In Figure 16, we back out implied property value volatilities from the equity option-implied volatilities and the company-level leverage ratios. To do this, we assumed that the asset value of a REIT is purely the value of the properties owned by it. We further assume that the equity value is a long call option on the underlying assets, with the strike as the face value of the debt. Based on these assumptions, we use the following formula to derive the implied property price volatility for the various CRE REIT sectors in Figure 16.

The Delta term in most cases is equal or very close to 1, since the equity as an option is fairly deep in-the-money on the underlying assets. Looking across various REIT sectors we find that despite the relatively short time that SFR REITs have been in the market, the projected option-implied property value volatilities in SFR space are ~10-11% for SFR, compared to 15-16% for apartments, 16-17% for student housing, and 13-14% for manufacture housing REITs (see Figure 16).

This lower historical and implied forward volatility should, all else being equal, make SFR investments look more favorable than other commercial real estate/multi-family investments at similar or even lower cap rates. Over time, it should result in allowing more financial leverage for the same overall risk on the equity involved.

$$\text{Implied property price volatility} = \text{Implied Equity Price Volatility} \times (\text{Equity Value} / \text{Total Asset Value}) \times (1 / \text{Delta of Equity value to the underlying asset value})$$

FIGURE 16 *Early evidence from SFR REITs shows somewhat lower volatility on the underlying asset*

REIT Sector	Last 6m Avg Implied Property Vol by moneyness			Last 24m Avg Implied Property Vol by moneyness		
	ATM	25% ITM	50% ITM	ATM	25% ITM	50% ITM
SFR	10%	13%	13%	11%	12%	13%
Apartments	15%	20%	25%	15%	19%	22%
Hotels	16%	18%	20%	15%	17%	18%
Office	13%	16%	17%	12%	15%	16%
Office/Industrial	14%	19%	20%	14%	18%	19%
Industrial	15%	19%	20%	15%	18%	19%
Retail - Regional Malls	13%	18%	21%	13%	16%	19%
Retail - Shopping Center	14%	17%	18%	14%	18%	18%
Storage	18%	25%	33%	17%	23%	27%
Student Housing	17%	24%	25%	16%	21%	22%
Technology	19%	25%	33%	19%	23%	28%
Specialty	13%	17%	19%	13%	16%	17%
Health Care	13%	18%	21%	13%	17%	18%
Manufactured Homes	13%	18%	19%	14%	19%	20%

Source: Bloomberg, Amherst Capital as of August 2016

Note: We derive the asset-implied volatility based on the equity option-implied volatility from historical option pricing on REITs. To do this we assumed that the equity itself is a call option on the underlying portfolio of properties owned by the REITs.

Note: ATM refers to "At The Money" and ITM refers to "In The Money"



3.5 INSTITUTIONAL PORTFOLIOS LIKELY PROVIDE BETTER CONSUMER PROTECTIONS

Last but not least, we believe that institutional portfolios of single-family rental properties are likely to provide better consumer protections to end-renters than do individual investor-owned rental homes. Institutional investors have to abide by laws such as the Fair Housing Act (renter protection against discrimination by landlords). Individual owner-landlords on the other hand, under certain conditions, may be exempt from some of these requirements.

Similarly, as we show in more detail in Section VI, institutional investors have generally invested in homes that are less likely to have exposure to lead paint by mostly buying homes built after 1978. Smaller and individual investors have been more active in buying older homes with potential lead poisoning exposure/risks. As a result, we believe that institutional investor portfolios of SFR homes are likely better for renters than individually owned single-family rentals.

3.6 TECHNOLOGY WILL HELP BRIDGE THE GAP TO OTHER CRE SECTOR MARGINS

The key to the growth of the institutional market is in access to data, and building the right technologies to mine that data. We believe these building blocks are only possible with institutional money as investment amounts are huge and need to be spread over thousands of homes. As much of that technology has already been built, the marginal cost of new acquisitions is very low – another potential benefit versus mom and pop investors.

In fact, with the right data and technology, it becomes possible to manage the full life cycle of a rental property more efficiently – from the process of deciding which geographies to target, bidding on and buying single-family properties, refurbishing them to a certain standard, marketing and leasing up these properties, and managing turnover, repairs & maintenance. *Please see example on next page.*

“The key to the growth of the institutional market is in access to data, and building the right technologies to mine that data. We believe these building blocks are only possible with institutional money as investment amounts are huge and need to be spread over thousands of homes.”



EXAMPLE – HOW TECHNOLOGY CAN HELP

To understand how these technologies can help, consider the complexities facing an institutional investor on how to go about bidding on and buying properties. If we take the analogy to mortgage-backed securities space that most institutional investors are more familiar with, this usually begins with a portfolio allocation decision based on expected risk-adjusted returns for different security sectors (such as non-agency MBS vs. CMBS vs. agency MBS). After deciding portfolio allocation, an investor has the option to buy bonds either from dealer inventories or from new bid lists that come out on a daily basis.

Similarly in single-family space, the first decision point is — where in the country to invest and specific house types/areas to target (plus other factors that we discuss in more detail in Section VI). To make these decisions easier, at Amherst Capital we use AIL's custom made Amherst Data Explorer market surveillance tool, which joins census-tract level information (such as population, homeownership, vacancy, incomes, crime index, school quality, inventory, transactions, mortgage delinquencies, etc.) with MLS listings and model-estimated underwriting information for all the listed homes (such as underwritten rent, underwritten net cap-rates). The tool allows users to view this information graphically on the U.S. map, aggregated at various levels (from “U.S. overall” right down to individual listings).

Likewise, for the eventual buying process, every day we import all the new MLS listings across the markets we target (filtered for certain selected characteristics) into our automatic underwriting tool. This tool runs all properties through an initial automatic underwriting process which estimates refurbishing costs, potential incomes, taxes, insurance, other expenses, to calculate an estimated NOI and cap rate for a property. Thus each morning we have a “bid list” of targeted properties with projected returns automatically run. An investment professional can then review these lists and modify assumptions as needed to determine a final bid on those properties.

TECHNOLOGY IS CRITICAL TO DISTILL THOUSANDS OF LISTINGS AND MILLIONS OF TRANSACTIONS TO ACTIONABLE TARGET PROPERTIES

The entire process uses vast amount of data that is impossible to distill into actionable information without the use of technology. In the first 6 months of 2016, Amherst InsightLabs supported close to 130,000 initial underwrites through the SFR models, using about 33 million different sales comp instances. Of these 130,000 properties about 18,000 went through more detailed underwrites using tweaked models. Of those, ~4,000 homes were physically inspected by Main Street Renewal. Ultimately more than 1,500, were purchased through the Main Street Renewal platform.

On average, each day there are ~500 new MLS listings across the 21 MLS boards in our target markets. Without using technology to filter and deliver automated valuations, we believe it would be extremely time-consuming and inefficient to review and bid on these properties. The only way to do this in a cost effective manner is to use technology to facilitate the investment and property management process, which improves efficiencies across the entire process.



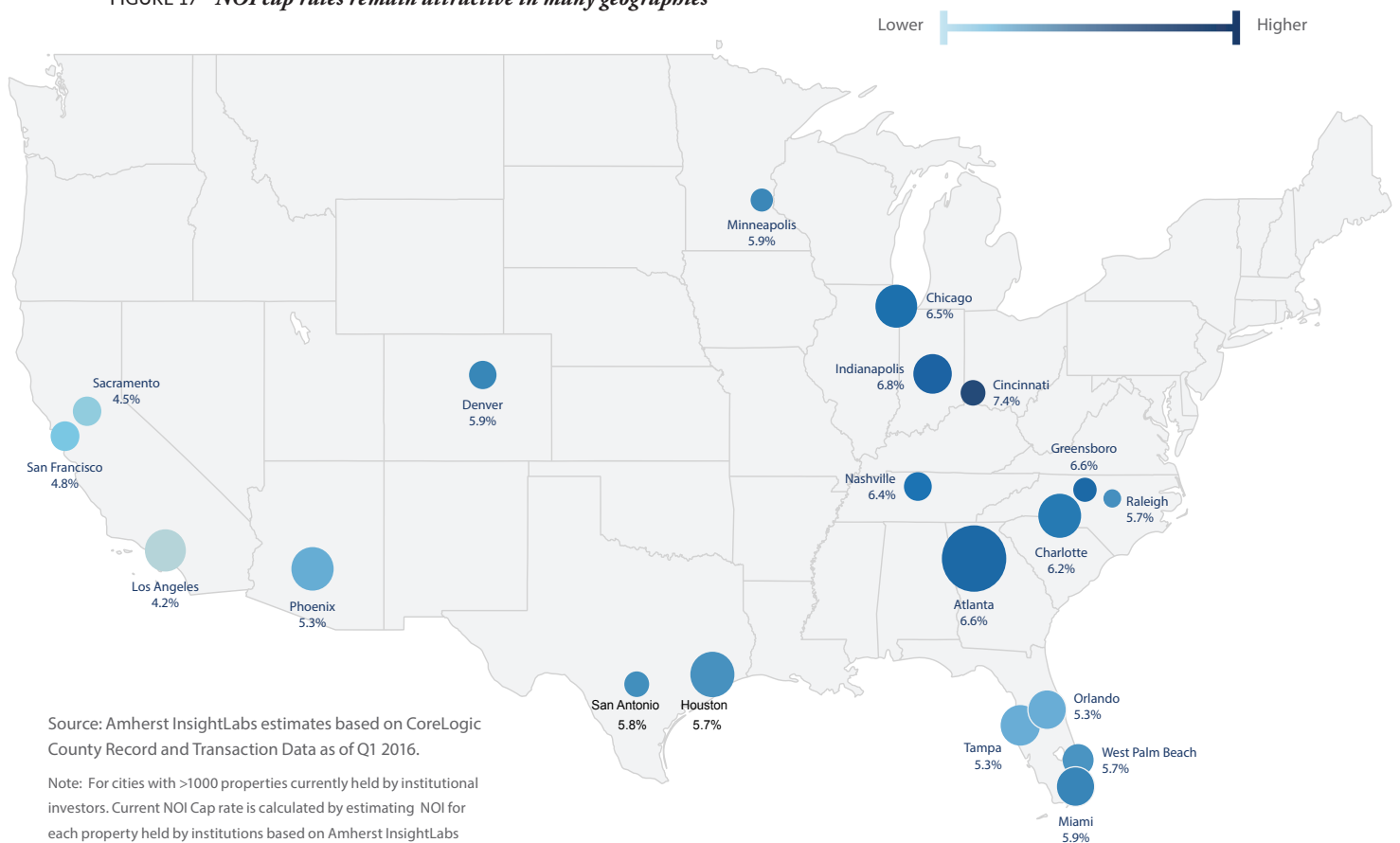
3.7 INSTITUTIONS ARE IN EARLY INNINGS - WITH LONG WAY TO GROW

Overall, we believe institutional investors have significant competitive advantages over small SFR operators/individual investors, and are likely to continue to increase their share of single-family rental homes. The investment in technology will make scaling easier, as infrastructure has already been built. We believe this will be aided by robust investor demand, courtesy of lower volatility of SFR versus other real estate investments.

We also think that while the initial flurry of investors looking to ride rising property prices is over, the asset should be viewed as any other income producing real-estate class. Of the total return, we estimate running income⁵ to be about 60-70% for SFR as cap rates remain attractive across many geographies (Figure 17).

BOTTOM LINE - We believe institutional investors in SFR have unique advantages over individual investors and versus multi-family that will enable them to grow market share in coming years.

FIGURE 17 *NOI cap rates remain attractive in many geographies*



Source: Amherst InsightLabs estimates based on CoreLogic County Record and Transaction Data as of Q1 2016.

Note: For cities with >1000 properties currently held by institutional investors. Current NOI Cap rate is calculated by estimating NOI for each property held by institutions based on Amherst InsightLabs models, divided by the Amherst AVM for that property. Sizes of the bubbles represent the number of properties purchased by institutional holders in these cities.

⁵ - "Running income" refers to cash income generated by property vs. the unrealized income from potential price appreciation.



SECTION IV

FUNDAMENTALS SUPPORT RENTALS (ESPECIALLY SFR)

Having established the case for "why institutions?" and "why now?", we next focus on the long term outlook for housing, particularly the single-family rental sector. While home prices are a small portion of SFR returns (60-70% comes from current income), at heart of this investment is our view that U.S. housing remains generally healthy and home prices are undervalued. We detailed this view in [The Case for U.S. Housing](#) (July 2016). We found that U.S. single family housing has significantly lagged post-crisis recoveries in equities and commercial real estate, and argued that the relative underperformance, in addition to the potential support from pent-up demand, bode well for housing.

We also believe that rental demand is likely to remain strong in the coming decade, especially for single-family homes. While continued growth in the SFR market is not a prerequisite for greater institutional ownership, it will certainly aid and accelerate the process.



4.1 PRE-CRISIS OVERCONSTRUCTION CORRECTED – HALF A TRILLION OF UNBUILT REAL ESTATE

Housing construction in the U.S. has lagged post-crisis, helping absorb excess construction during boom years. In fact, we believe that U.S. housing stock has now turned to a deficit of ~2mn units. We arrive at this number by assuming that housing demand is driven eventually by population growth and patterns in how people consume housing (units demanded per person). Higher population and smaller households on average would both imply higher number of units needed, and vice versa.

It should be noted that our estimate of a 2mn housing supply deficit is somewhat subjective. Using different time periods as appropriate benchmarks for housing units demanded per unit of population creates different results. For example, consider that since 2000, the U.S. has had net construction⁶ of 20.45mn housing units.

1. If demand patterns for housing were the same as in 2000, population change since 2000 would have led to demand for ~17mn housing units – and would mean that the 20.45mn additional housing units built since then imply a surplus of 3.45mn units since then.

2. If we alternatively assume that 2008 is representative of housing demand per unit of population – that implies net demand⁷ for ~23.6mn units – for a deficit of ~3.1mn homes.
3. Finally, if we assume that the downward trend from 1992-2000 in persons/housing unit continues to today (Figure 18a), then estimated demand since 2000 is ~22.5mn units. This shows that the U.S. has seen net construction of 20.5mn units since 2000, while the estimated “fair” demand based on population growth and the trend in housing consumption is ~22.5mn units. This suggests that housing construction since 2000 is now in deficit by ~2mn units.

It is hard to have an objective estimate of absolute excess/deficit, but one thing is clear. We have absorbed more than the net supply of housing units every year since 2009; that is a plus from a supply-demand standpoint ([Urban Wire: Housing supply falls short of demand by 430,000 units](#)).

FIGURE 18a *Persons per housing unit above trend*

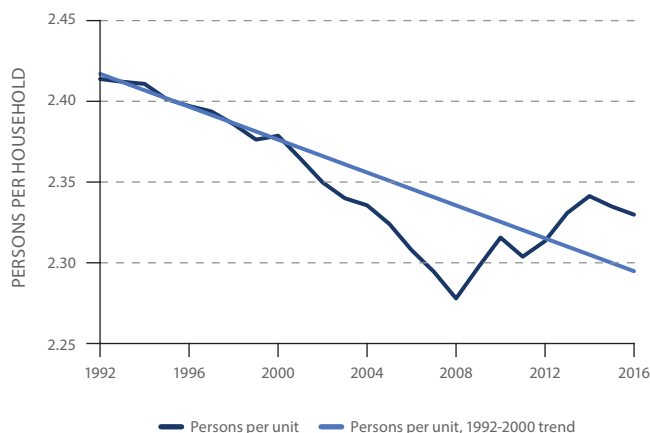


FIGURE 18b *Construction lags demand from population*



Source: Amherst Capital estimates based on U.S. Census Bureau Data as of 2016 Q2

6 - “Net construction” refers to construction net of destruction. The total increase in the number of housing units.

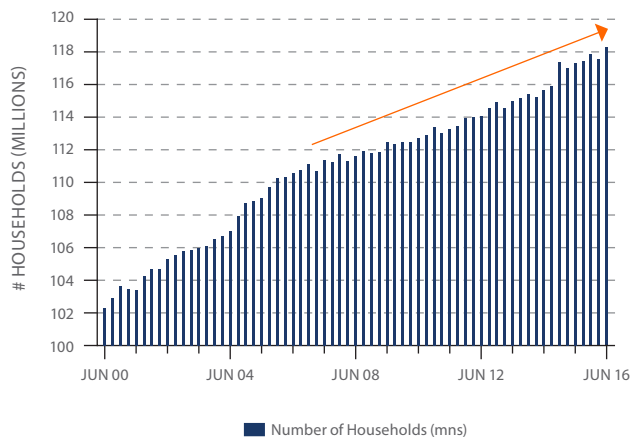
7 - “Net demand” refers to demand net of households combining or people dying.



4.2 SEVEN MILLION MORE HOUSEHOLDS OVER LAST 10 YEARS - ALL AS RENTERS

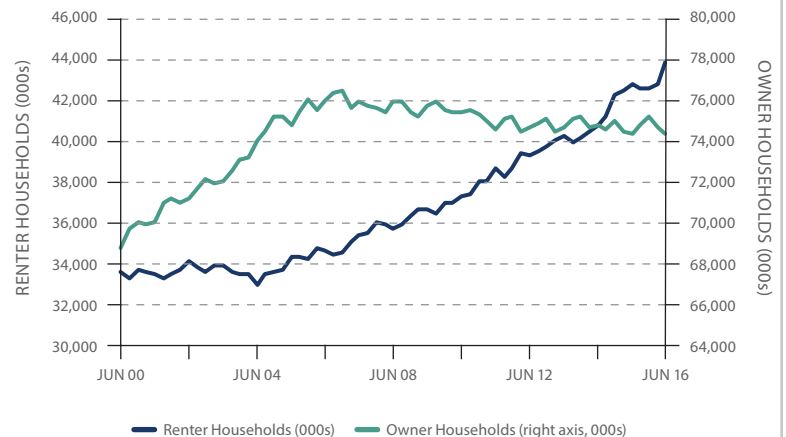
Post-crisis household formation slowed to a trickle in 2007-2009 but has since recovered somewhat. Overall, the number of households has grown steadily in the last few years. As Figure 19a, the U.S. as whole has seen >7mn new households since 2006. However, all the growth has been in rental households (on a net basis), with owner-occupied households declining slightly since 2006 (Figure 19b). A confluence of financial factors and demographic/preference shifts has caused this, which we expect to continue influencing and supporting rental household formation in the coming years.

FIGURE 19a *Household formation mostly renters*



Source: U.S. Census Bureau as of 2016 Q2

FIGURE 19b *Owner-occupied households remain unchanged*





4.3 DEMOGRAPHIC AND PREFERENCE SHIFTS FAVOR RENTAL DEMAND

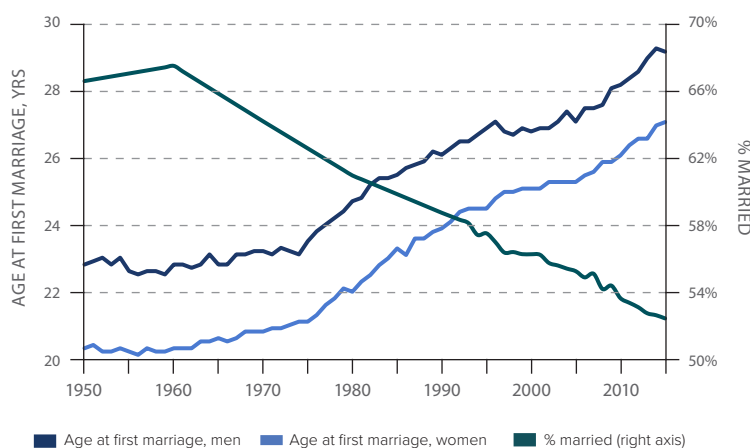
One of the main demographic/preference shifts driving the move away from home-buying into rentals is the rising age at which people are getting married for the first time (Figure 20a). While this trend has been ongoing for the last 40 years or so, the pace of increase sped up somewhat in the last 10 years. As Figure 20a shows, the fraction of the population that is married has also been drifting steadily lower. While marrying later in life does not preclude couples from living together and potentially adding to household formation and home buying, these trends likely delay home buying and will continue to push households into remaining renters for longer periods.

In addition to these longer-term demographic shifts that play out over decades, we are also seeing more subtle change in attitudes towards homeownership post-financial crisis. Figure 20b shows a chart from a Fannie Mae analysis of home buying for 30-32 year olds (long

considered the prime home buying age in the U.S.). Homeownership for all 30-32 year olds fell from >50% in 2000-2006 to just above 40% in 2012. The Fannie study further identified a ‘prime buying candidate’ subset of this age-group, defined as upper-income (top quartile) households with householders having a college education and being married with children. As Figure 20b shows, this sub-group had ~90% homeownership rate in 2006, but that fell to ~80% in 2012.

Restricting this group further by only including non-Hispanic whites (who historically had an even higher homeownership rate) displays the same trend. Even though credit availability and other concerns we highlight below are typically of lesser concern to these groups — many more of these households remain renters. We believe this highlights a subtle post-crisis shift in preference towards renting.

FIGURE 20a *Median age of marriage is rising*

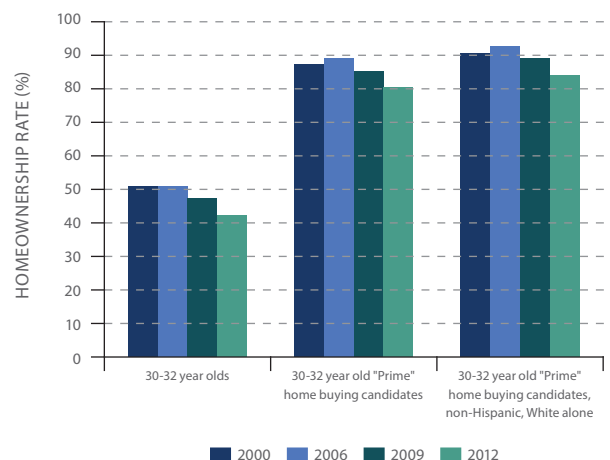


Source: Left chart: U.S. Census Bureau, Current Population Survey, annual supplemental data as of March 2016

Right chart: Fannie Mae Economic and Strategic Research, “Housing Insights” brief volume 4, Issue 4, Aug 18 2014

Note: Prime home buying candidates are defined as upper-income households (top quartile) with householders in their early 30s who have college educations and are married with children.

FIGURE 20b *Ownership fell even in prime buy candidates*





4.4 FINANCIAL PRESSURES AND MARKET CONDITIONS PREVENT HOMEBUYING

Financial conditions are the other major factor likely to continue to prevent households from buying homes. Weaker job market, tighter mortgage credit, and rising levels of student loan debt are all likely to blame. In particular, underwriting has remained at historically tight levels despite the 8-years that have passed since the crisis.

As Figure 21a shows, mortgage credit has remained relatively tight post-crisis (since 2008). Among all mortgage originations, median FICO score has remained >750, and the 25th percentile FICO has remained >700. These are roughly 35-50 points higher than FICO scores even from the more ‘reasonable’ underwriting periods in the ‘90s and the early 2000s.

Similarly, Figure 21b shows the Urban Institute’s Housing Credit Availability Index, which remains considerably below reasonable levels seen well before the crisis years.

FIGURE 21a *Credit scores to quality are much higher*

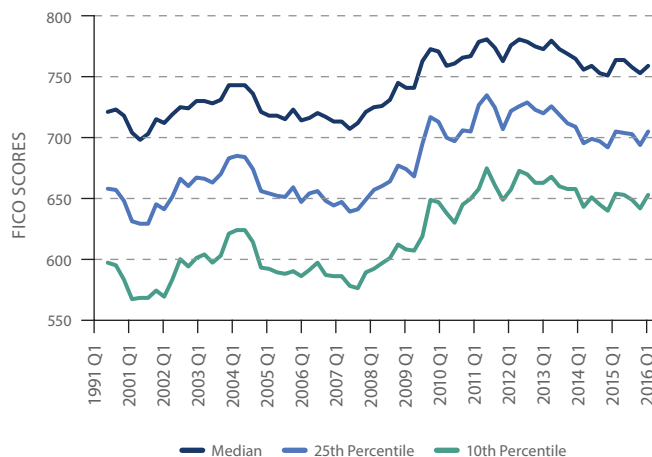
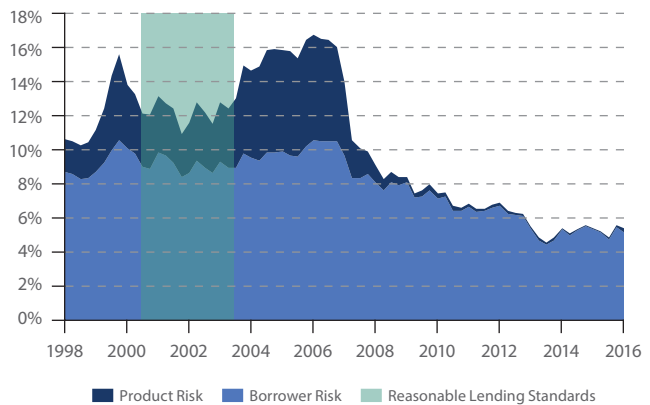


FIGURE 21b *Credit Availability Index*



Source: Urban Institute based on eMBS, CoreLogic, HMDA, and Inside Mortgage Finance Data as of Q1 2016

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.

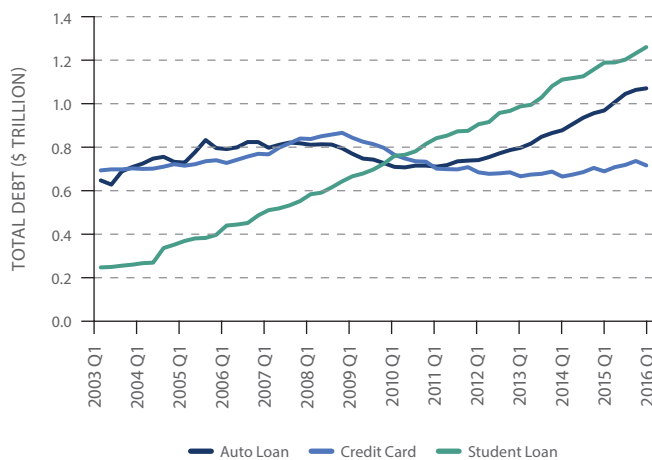


Student loan debt levels have risen dramatically in the last 10-15 years - rising student loan debt levels among younger groups are especially worrying. Figure 22a shows that student loan debt nationally shot up from <\$300bn in 2003 to close to \$1.3tn in 2016, a 4-fold increase over the last 13 years. By its nature, student debt is taken out by college age individuals. That leads to a huge debt burden on the age groups likely to be close to or at prime home-buying age.

Student loan debt levels likely depress home buying - Data from the Federal Reserve Bank of New York's Consumer Credit Panel (Figure 22b) suggest that mortgage borrowing for 30 year olds has dropped from

about 30% to 25%, with much bigger drops for those who had student loan debt at ages 27-30. In fact, the data show that pre-crisis, 30 year olds with student loans were more likely to have mortgages, likely reflecting higher incomes for college-educated individuals. However in the years following the crisis through 2012, 30 year olds with student debt retreated the most from the mortgage space, as shown in Fig 22b. Other data from the University of Michigan (PSID) and Zillow have been used to show that among those with student loans, homeownership does drop with increasing student loan debt, but it drops significantly for those who fail to finish college.

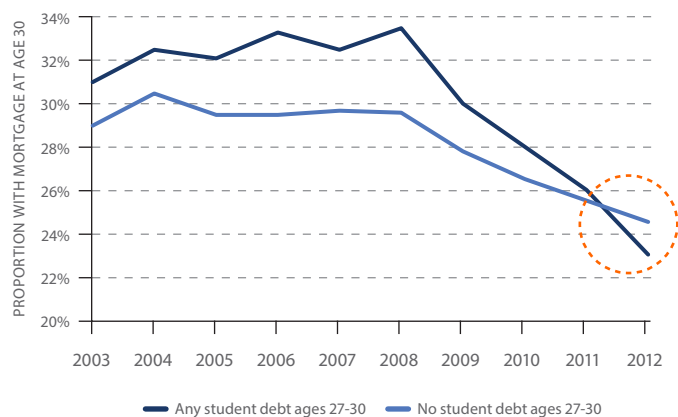
FIGURE 22a *Student Loans have risen 4x since '03*



Source: Left chart: Federal Reserve Board FRBNY Consumer Credit Panel/Equifax as of 2016 Q2.

Right chart: Student Debt Overview last published in 2012

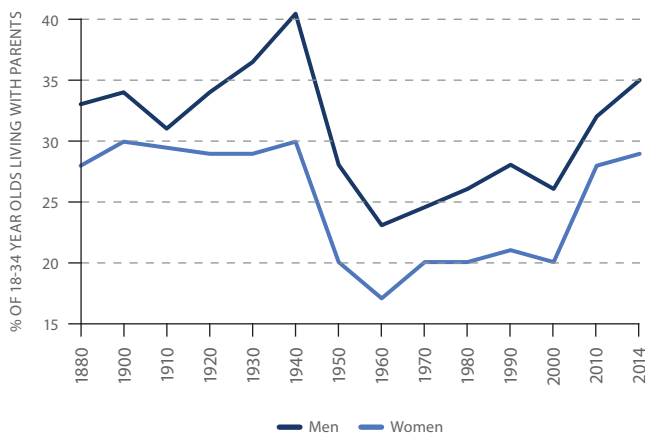
FIGURE 22b *Younger borrowers retreat '03-'12*





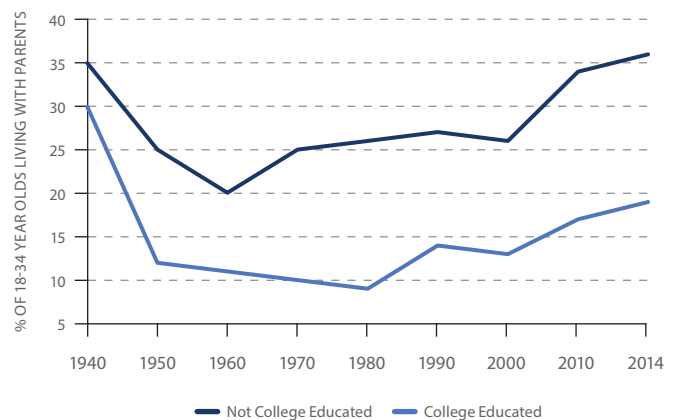
Student loans are not the only problem – While it is true that 18-34 year olds are living with their parents at rates not seen since pre-WWII (Fig 23a), it is overly simplistic to lay all the blame on student loan debt. As Fig 23b shows, 19% of college educated young adults (18-34 year olds) were living with their parents, (per the 2014 survey), up from ~13% in 2000, possibly because of not finding higher income jobs or student loan debt. However, the increase is even more pronounced among non-college educated young adults, who presumably do not have as much student loan debt as college educated individuals. In 2014, ~36% of non-college educated young adults were living with their parents, up from about 26% in 2000.

FIGURE 23a *18-34 yr-olds living with parents (1880-2014)*



Source: Pew Research based on U.S. Census Bureau data

FIGURE 23b *Bigger rise in less educated (1940-2014)*





4.5 DEMOGRAPHIC/PREFERENCE + FINANCIAL FACTORS MAY KEEP RENTAL DEMAND HIGH

These demographic/preference shifts and financial pressures are unlikely to fade soon. The gap between college and non-college educated incomes has continued to rise, which will likely keep boosting demand for student loans.

While the availability of mortgage credit for middle income families in the U.S. could eventually ease, so far this easing has been slow at best, with little or no signs of changing soon.

As a result, we believe household formation is likely to continue to be dominated by renters as opposed to homeowners over the next 10-15 years, reversing the trend since the 1990s.

Based on estimates from the Urban Institute (Figure 24a), in the 2010-2020 decade ~62% of new households will be renters, while in the 2020-2030 decade ~56% are likely to be renters. This translates into 6-9mn new rental households in the next 10-15 years (per Urban Institute estimates). In addition, as Figure 24b shows, there is a hump in the U.S. age distribution for the early-mid 20s. As this cohort ages we expect rising demand for space (as we show in the next section).

FIGURE 24a *Renters to dominate new households*

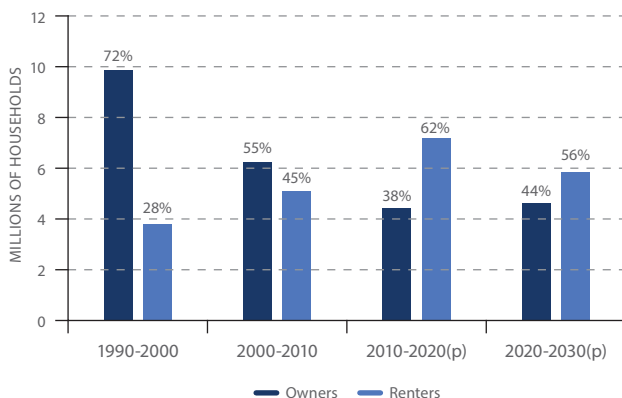
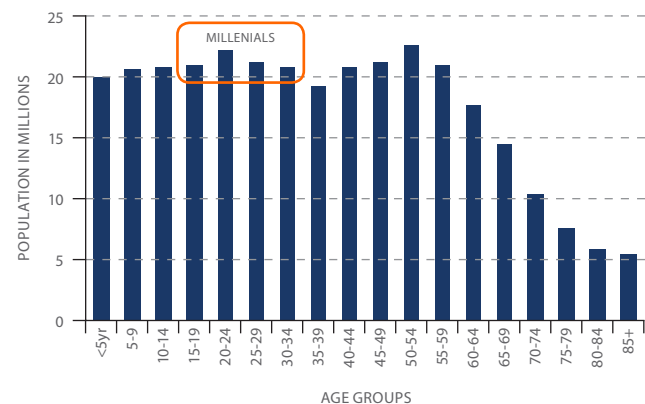


FIGURE 24b *Millennials will turn 30 soon*



Source: Left Chart – Laurie Goodman, Rolf Pendall and Jun Zhu, “Headship and Homeownership: What Does the Future Hold?”, Urban Institute, June, 2015. Right Chart – U.S. Census Bureau CPS Survey as of 2013; Age distribution as of 2013; 20-24 bucket now 23-27



4.6 GROWING/AGING 'FORCED' RENTERS WILL NEED MORE SPACE

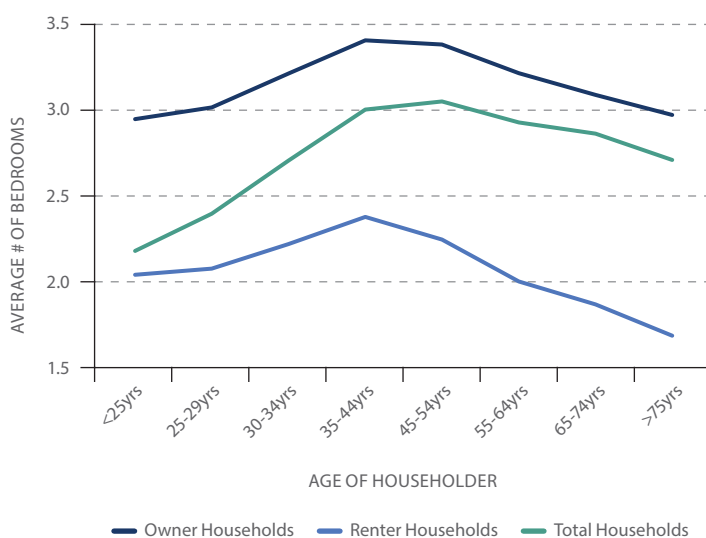
This influx over the next 10-15 years of the new 'forced-renter' households is anticipated to boost all forms of rental housing. However while financial factors described above curb homeownership, they are less likely to curb the actual end-demand for space, as the population of forced-renters age and their families grow. As Figure 25 shows, the demand for space (measured in the average number of bedrooms) increases with the age of the householder peaking for the 45-54 year age group, overall. The median household starts off (when the householder is less than 25 years old) in a 2 bedroom rental and by the time the householder is 35-44 years old, the median household is living in a 3 bedroom owner occupied house.

AGE AND FAMILY SIZE DRIVE THE DEMAND FOR SPACE

Historically, this transition from rentals to ownership, and smaller to larger dwellings, can be seen as increasing homeownership by age, and a smaller fraction of the households living in <2 bedroom house. As of 2013, the homeownership rate in the <30 year old age group was <30%, while at the same time, ~55-70% of the households in that age bucket lived in a 2 or less bedroom house. On the other hand, for households where householder age is >35 years, homeownership rates were higher, at 60-70%, and only ~30% of these households were living in a 2-bedroom or smaller house.

Unsurprisingly, we also see the same dynamic of rising space needs across increasing household size. In going from a 1-person to 3-person household, average size in bedrooms grows from 2.2 to 3.1. The proportion of households living in 2 bedrooms or smaller houses falls from 60% for 1-person households to just 27% for 3-person households.

FIGURE 25 *Need for space peaks at ages 35-55*



Source: Amherst Capital estimates based on U.S. Census data from the American Housing Survey as of 2013, published in 2015.



4.7 MULTI-FAMILY IS ILL-EQUIPPED TO SATISFY THIS NEED FOR SPACE

As time passes and ‘forced – renters’ age and grow their families, this increased demand for space is inevitable. However, multi-family housing is ill equipped to handle that demand for space. As Figure 26a shows, multi-family homes have less than 2 bedrooms on average. In fact, 80-90% of all multi-family occupied housing stock has 2 or less bedrooms.

To move into larger houses, these “forced-renters” would have to look at traditional single-family homes. Since many of them may not be able to buy housing due to debt or other financial constraints, their demand will have to morph into demand for single-family rentals.

Apart from the argument around the need for space, we also hold qualitatively that changing preferences for neighborhood characteristics as families grow (better schools, low crime, etc.) are also likely to drive rental demand into SFR vs. multi-family.

BOTTOM LINE - Fundamentals for housing and rental demand are likely to remain strong for many years. In addition, while supply has gone up in multi-family, demographics actually suggest demand to disproportionately show in single-family in coming years (see Figure 26b).

“...increased demand for space is inevitable...however, multi-family is ill equipped to handle demand...**80-90%** of all multi-family occupied housing stock has 2 or less bedrooms.”

FIGURE 26a *Most MF has less than 2 bedrooms*

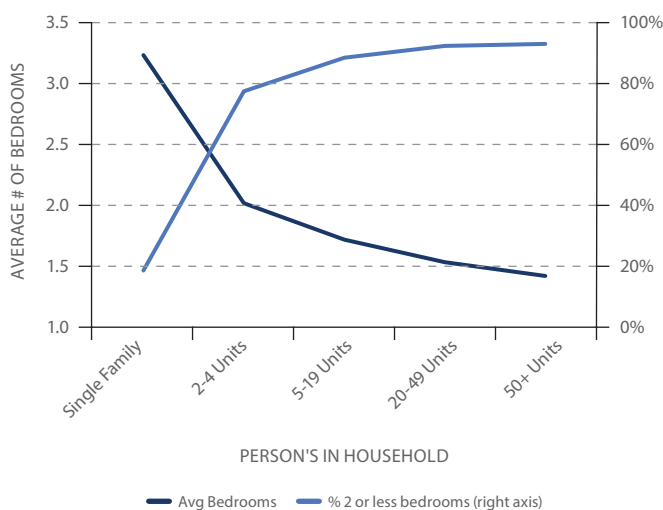
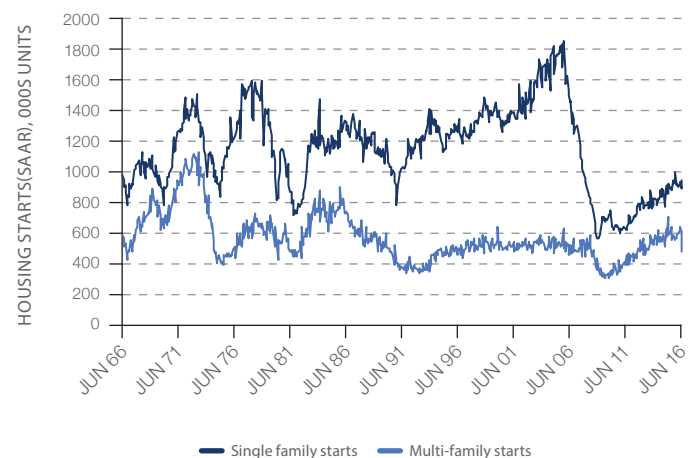


FIGURE 26b *MF supply has picked up while SF has not recovered*



Source: Left chart: Amherst Capital estimates based on Census data from the American Housing Survey as of 2013. Right chart: US Census Bureau as of 9/30/2016



SECTION V

ECONOMICS OF THE SFR BUSINESS

Having established that SFRs are well supported by housing fundamentals and by changing preferences toward renting, we now turn our attention to the nuts and bolts of a SFR business. In this section, we examine the economics of the SFR business and look at single-family homes as income generating investments. Investors are familiar with thinking about CRE properties through this lens, but single-family rentals are considered (and we believe wrongly!) to be a home price-driven investment alone. We show that in the long run, the income generation potential of these properties drives the value of this investment similar to most other CRE asset classes. We also look at sensitivities of the asset (unlevered) and equity (levered) returns to various assumptions and economic growth factors.

5.1 ECONOMICS FOR AN INDIVIDUAL STABILIZED PROPERTY

We start by looking at a typical SFR property and the economics of owning it as a buy-to-rent property. Figure 27 walks through this example for a stabilized single-family residential property. This is akin to valuing a stabilized CRE property where one buys the property for its income, assuming the property is in good condition and does not require refurbishments.

ACQUISITION COSTS, EXPECTED RENTS, VACANCIES, AND CREDIT LOSSES

We assume that the all-in acquisition cost of owning this property is \$150,000; then show expected annual revenues and costs (for Year 1).

FIGURE 27 *Economics of buying-to-rent*

Illustrative Cashflow Of A Stabilized Single Family Rental Property				
Acquisition Cost	150,000			
	% Home Cost	% Gross Rent	Yearly, \$	Monthly
Gross Rent	10.2%	100.0%	15,240	1,270
Other Income	0.1%	0.9%	132	11
Vacancy	0.8%	7.6%	1,158	97
Credit Cost	0.3%	3.0%	457	38
Net Collected Income	9.2%	90.3%	13,757	1,146
Taxes	1.4%	13.4%	2,036	170
Insurance	0.3%	2.9%	438	37
HOA	0.1%	0.6%	98	8
Repairs and Maintenance	0.3%	3.3%	500	42
Turnover	0.1%	0.9%	130	11
Property Expenses	2.1%	21.0%	3,202	267
Property Management Fee	1.2%	12.2%	1,860	155
NOI	5.8%	57.0%	8,694	725
Capex	0.7%	6.6%	1,000	83
NCF	5.1%	50.5%	7,694	641

Assumptions	
Expected HPA Annually	3.0%
Rent Growth, p.a. %	2.0%
Expense Growth, p.a. %	2.0%
Selling Costs	6.0%

Illustrative returns

5 Year Horizon Return	6.9%
10 Year Horizon Return	7.4%
15 Year Horizon Return	7.5%
20 Year Horizon Return	7.5%

Source: Amherst Capital. For illustrative purposes only. Please see important disclosures at the end of this paper.



For instance, based on our experience, we can find such properties have a gross rent of ~\$1,270/month or \$15,240 in annual gross possible rental income. From that rental income we deduct close to 7.6% as expected *vacancy* costs (the expected vacancy rate for a portfolio of stabilized properties) and 3% as expected *credit* costs (costs related to tenants missing payments, possible evictions etc). Including a small amount of other income for this property, we have annual expected revenues of \$13,757, which is ~ 90% of gross potential rent and ~9.2% of the purchase price.

PROPERTY AND PORTFOLIO LEVEL EXPENSES

Next, we reduce our expected annual revenue number by the property level expenses that would likely be incurred. These include taxes, insurance, HOA⁸ fees, Repairs & Maintenance (to repair regular wear and tear) and turnover expense (when a tenant leaves; the costs to market/bring in a new tenant). In Figure 27, we show average numbers for these individual line items. In reality, detailed data/models allow operators to pinpoint these expenses at property level based on prevailing costs in the area and prior experience across different geographies. We also deduct fees paid to the property management company.

Based on these assumptions we would see net operating income (“NOI”)⁹ \$8,694 annually on a \$150,000 home. That’s ~57% of gross potential rents and ~5.8% of the property value (NOI cap-rate). Then we deduct capital expenditures (“CAPEX”) from this to show our estimates of annual net cash flow (“NCF”)¹⁰ at \$7,694, NCF margin of ~50.5%, and a NCF cap-rate of ~5.1%. That covers the expected Year 1 cash flows on this stabilized property. Finally, we project the annual incomes for each year forward based on assumptions shown, and calculate expected horizon returns.

PROJECTING CASH FLOWS FORWARD AND LOOKING AT HORIZON RETURNS

To do this, we need to make some assumptions on how various components in these cash flows change with time. For illustrative purposes we make some simple assumptions in Figure 27 and assume that home prices grow at 3% per year, while rents and expenses grow at 2%/year. To calculate estimated horizon returns we also assume that we incur 6% of the forward home value as selling costs. Based on these assumptions, we forecast cash flows – (1) cash paid to buy the property, (2) NCF received each year forward, and (3) net proceeds from a sale received at the end of investment horizons. We calculate these cash flows for different horizons (5/10/15/20 years) and the implied internal rate of return (“IRR”). Based on these assumptions, we find that our horizon returns go from ~7%/year in a 5-year horizon to ~ 7.5%/year for a 20-year horizon. Most of this increase in going from 5 to 20 years, under these assumptions, comes from selling costs being amortized over a longer period.

CAVEATS

In analyzing SFR economics it’s important to be careful about a few things. First, these numbers are illustrative of the various aspects of the costs and revenue streams, but actual revenue and costs can vary based on many different factors. Second, we used a 6% cost for selling the property into the retail market. This may not be a practical level for large SFR portfolios, and may require additional discounts based on a portfolio- or cap rate-based valuation.

In addition, cap-rates can rise or fall depending on whether prices grow in line with rents. For instance, if mortgage credit becomes more readily available again, prices could rise faster than rents, and vice versa. Thus it is important to look at sensitivities of returns across these various assumptions, as we discuss later in the section.

8 - Home Owner Association

9 - Net operating income (“NOI”) equals all revenue from the property minus all reasonably necessary operating expenses.

10 - Net cash flow (“NCF”) equals net operating income minus the capital expenditures needed to maintain property condition.



5.2 WHAT IS FAIR VALUE OF A NON-STABILIZED PROPERTY?

So far we've focused on valuing stabilized, single-family rental properties to get a sense of the economics of the process. However, when buying individual properties, there is usually the additional step of fixing items, or bringing them up to a certain standard. This is usually necessary to make them rentable and to follow the economics laid out in Figure 27. The question is — knowing what we do on how a property is likely to perform once stabilized — what to pay for a non-stabilized property?

To answer, we need to estimate the repair costs/repair budget and the time it usually takes to stabilize a property. For simplicity, we assume that the property earns no revenues during the non-stabilized period, and that we spend or reserve the full acquisition cost basis (purchase price + all costs to stabilize). Based on these assumptions, Figure 28 shows the all-in acquisition basis.

FIGURE 28 *Stabilized vs. non-stabilized price - different stabilization lags*

Stabilized Property Price at 7% IRR		Non stabilized cost basis incl. repair budget at 7% IRR across different months to stabilize			
		6mn	12mn	18mn	24mn
5 Year Horizon	\$149,290	\$145,695	\$142,099	\$138,672	\$135,245
10 Year Horizon	\$154,854	\$151,258	\$147,663	\$144,235	\$140,808
15 Year Horizon	\$158,438	\$154,842	\$151,247	\$147,819	\$144,392
20 Year Horizon	\$160,601	\$157,006	\$153,411	\$149,983	\$146,556
Discount for same IRR		~2%	~5%	~7%	~9%
Discount before \$20K repair budget		~15%	17-18%	19-21%	21-23%

Source: Amherst Capital. For illustrative purposes only. Please see important disclosures at the end of this paper.



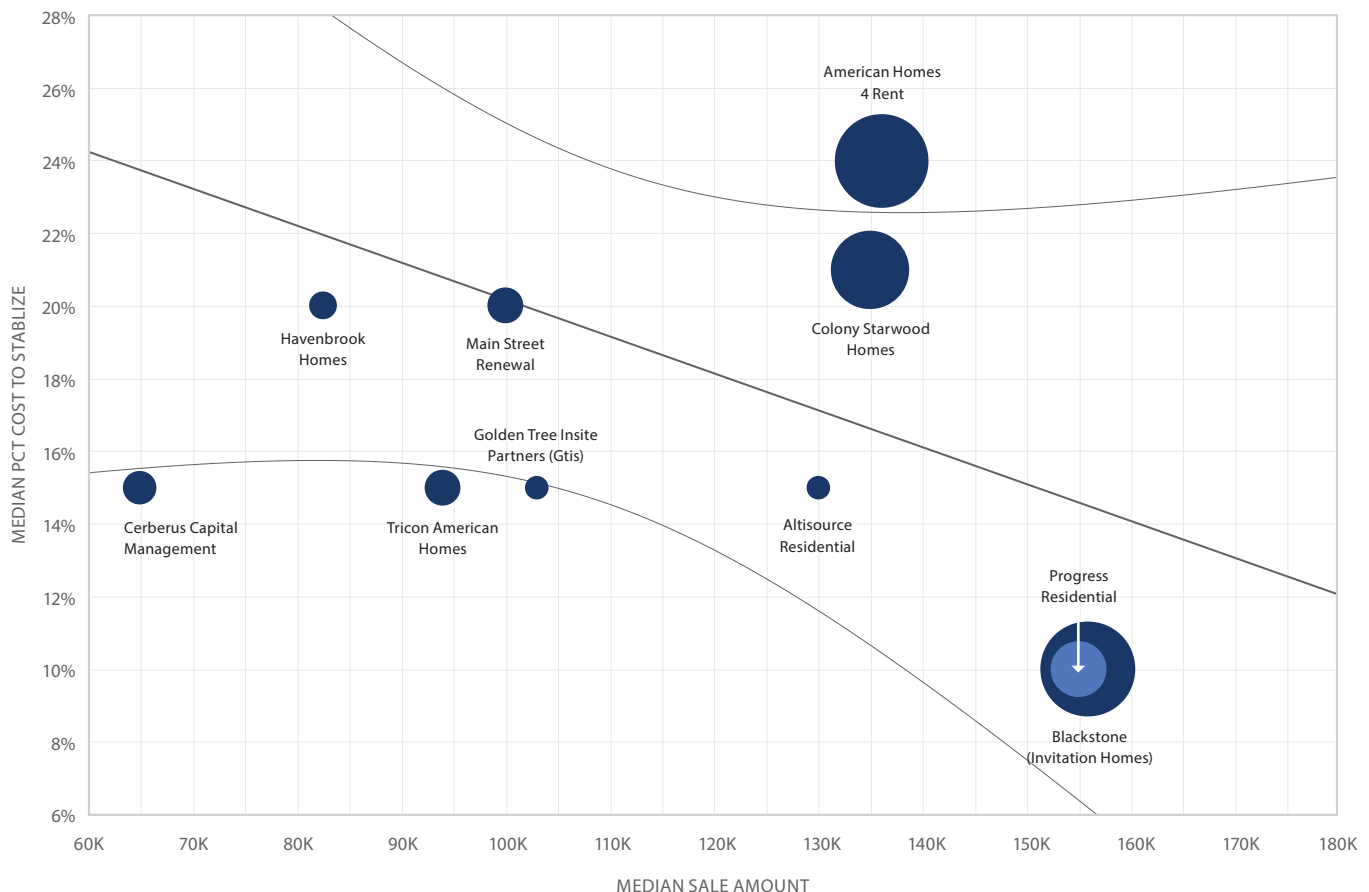
TIME TO STABILIZE IS A FUNCTION OF LOCATION & QUALITY OF HOME

Based on Main Street Renewal's experience¹¹ in buying homes and stabilizing, we find that on average it takes about 6 months to stabilize a property, with 90% of the properties stabilized within 9-12 months.¹² In addition, we find that time to stabilize is dependent on various factors, such as how old a property is, its condition and location. Costs to stabilize vary significantly depending on whether the homes are purchased out of distress or from regular MLS listings. Finally, costs to stabilize also depend upon business decisions made by various

operators in terms of picking markets to operate in (total size/value of the homes). As Figure 29 shows, some operators such as Blackstone and Progress Residential report very low average costs to stabilize but also tend to buy larger median value homes.

In general, we find that stabilized properties can be viewed as a more comparable asset class to multi-family and other commercial real estate. In some geographies with a higher demand for rentals, it may be worthwhile to buy non-stabilized properties at discounts in excess of the ones shown in Figure 29 as illustrations, and seek/earn higher yields.

FIGURE 29 *Cost to stabilize vary based on strategy*



Source: Amherst InsightLabs estimates based on CoreLogic county record and transaction data

11 - Main Street Renewal is a portfolio property management company which acquires, renovates, and manages single-family homes for rent. They are active in domestic U.S. markets.

12 - 6 months is the average time it takes for a property to stabilize - some take more time, some take less time. To provide more color around this variability we show that 90% are stabilized within a 9 - 12month time frame.



5.3 HOW DO THESE CASHFLOWS TRANSLATE INTO LEVERAGED YIELDS?

Most CRE operators rely on financing/leverage to increase returns on their underlying properties. SFR is likely to be very similar in this aspect, with various options available for financing depending on the size of the institutional owners. Figure 30 shows some examples of the various options for institutions of different sizes ranging from large credit facilities/securitizations to buy-to-rent (“B2R”) loans for smaller portfolios of properties. Both the amount of leverage and the financing spreads vary widely across these options, with bank credit facilities and securitizations providing financing at roughly similar rates. Based on recent transactions, the securitization market seems to offer the maximum amount of leverage, at ~65-75% of BPO (broker price opinion) and even higher based on acquisition costs.

Figure 31 shows two examples of leveraged IRRs based on the cash flows we first showed in Figure 23. The leveraged yields build from two assumptions: (i) 65% Loan-to-Value (“LTV”) loan at Libor (“L”) +350bps, reflecting the spreads implied by securitizations in Q1 2016, and (ii) 65% LTV loan at L+235bps, which is more in line with the recent PROG 2016-SFR1 securitization done in July.

We start in Figure 27 with yields of ~6-7% across 5-20 year investment horizons. Under these financing conditions, leveraged IRRs are likely to be about 10-11% in the L+350 case and 12-13% if financing is available at L+235.

In addition to the attractive return potential, we could also argue that historical/projected lower volatility on single-family homes means that risk-adjusted returns for SFR equity holders may be even higher. In theory, the lower projected volatility may also allow SFR operators to access cheaper financing for the same level of leverage. We believe that’s because owning debt backed by an underlying asset is similar to owning a risk-free bond and being short a put option on the underlying property value – and lower volatility should reduce the value of the option that the lenders are short, thus improving the value of a lender’s position. While this may be some time away due to the nascent nature of SFR financing markets, over the last few calendar quarters we’ve seen relative tightening on SFR securitizations vs. CMBS. We believe that as the SFR asset class matures, lower volatility should make lenders charge a lower financing rate – creating an added potential benefit for SFR investors.

FIGURE 30 *Illustrative financing in the SFR market*

TYPE OF FINANCING	# OF PROPERTIES	TYPICAL TERM	TYPICAL FUNDING	TYPICAL RATE
Bank Warehouse loans for portfolio	Hundreds - Thousands	5-7 year Floating with Recourse, IO	50-60% of Value	175-230 bps spread based on recent \$1bn transaction from AH4R
Securitizations	Thousands	5 years Floating or 5/10 year Fixed Non-recourse, IO or small amort	70-75% of BPO	Prog 2016-SFR1 - all in funding spread of 7+232 bps
B2R Loans for smaller Portfolios	Usually Less than 50	Similar to Securitizations	65% of BPO	6% based on B2R 2016-1

Source: Amherst Capital based on analysis of various public securitizations and company financials

FIGURE 31 *Leveraged returns for property*

	Un-leveraged IRR	Leveraged IRR 65% LTV	
		L+235bp Financing	L+350 bps Financing
5 Yr Horizon	6.9%	12.9%	10.9%
10 Yr Horizon	7.4%	13.0%	11.3%
15 Yr Horizon	7.5%	12.6%	11.0%
20 Yr Horizon	7.5%	12.2%	10.6%

Source: Amherst Capital. For illustrative purposes only. Please see important disclosures at the end of this paper.



5.4 WHAT ARE RISKS/SENSITIVITIES TO VARIOUS ASSUMPTIONS?

So far we have shown cash flows and returns based on our base case assumptions. However, our understanding of the economics of SFR would be incomplete without considering the sensitivities of these returns to various assumptions. There are several risks to assumptions shown in Figure 27.

- *Operational Risks* – vacancy rates, expenses, rents & credit costs could be worse than expectations; reputation risk when institutions evict non-paying renters/charge fees that may seem excessive or don't refund full deposits at lease end “for cause” (due to condition or other reasons)
- *Financing Risks* – available leverage and financing spreads are less favorable
- *Housing Risks* – home prices fare worse and exit costs are higher

Figure 32 shows sensitivities of unleveraged and leveraged returns across several scenarios. The first 4

rows of the table show returns over 5/10/15 and 20 year horizons, assuming that vacancies are 20%/15%/7.6% and 5%, respectively. Similarly, the subsequent rows show sensitivities to other factors – the base level of expenses, level of CAPEX, expense growth per year, annual rent growth, and annual home price appreciation (“HPA”). Within each group, the third row represents the base case assumptions we showed in Figure 27. The first 2 cases are the stress scenarios; the last row is the upside scenario.

In reality, it is likely that many factors that drive returns will move in a correlated fashion. Vacancy increases are likely to happen in tandem with flat to declining rents. Similarly scenarios where expenses increase at a staggering 5-10% year after year are likely to be ones where rents and/or home prices are increasing as well. However, for simplicity we are showing sensitivities for changes in only one variable at a time.

FIGURE 32 *Stabilized sensitivity to various factors leveraged/unleveraged*

	Changing Factors	Unlevered Returns Across Horizon				Levered Returns Across Horizon (65 LTV, L +235)			
		5 Year	10 Year	15 Year	20 Year	5 Year	10 Year	15 Year	20 Year
Vacancy	20%	5.6%	6.2%	6.3%	6.3%	9.4%	9.9%	9.6%	9.3%
	15%	6.1%	6.7%	6.8%	6.8%	10.8%	11.1%	10.8%	10.4%
	8%	6.9%	7.4%	7.5%	7.5%	12.9%	13.0%	12.6%	12.2%
	5%	7.2%	7.7%	7.8%	7.8%	13.6%	13.7%	13.2%	12.8%
Base Expenses	50%	5.8%	6.4%	6.5%	6.5%	9.9%	10.3%	10.0%	9.7%
	25%	6.4%	6.9%	7.0%	7.0%	11.4%	11.7%	11.3%	10.9%
	0%	6.9%	7.4%	7.5%	7.5%	12.9%	13.0%	12.6%	12.2%
	-25%	7.4%	7.9%	8.1%	8.1%	14.3%	14.4%	13.9%	13.5%
Base Capex	200%	5.5%	6.1%	6.2%	6.3%	9.2%	9.7%	9.4%	9.1%
	100%	6.2%	6.8%	6.9%	6.9%	11.0%	11.3%	11.0%	10.6%
	0%	6.9%	7.4%	7.5%	7.5%	12.9%	13.0%	12.6%	12.2%
	-25%	7.1%	7.6%	7.7%	7.7%	13.3%	13.5%	13.0%	12.6%
Expense Growth p.a.	10%	6.3%	6.1%	5.2%	3.9%	11.4%	9.9%	7.3%	3.6%
	5%	6.7%	7.0%	6.9%	6.6%	12.4%	12.0%	11.1%	10.3%
	2%	6.9%	7.4%	7.5%	7.5%	12.9%	13.0%	12.6%	12.2%
	1%	7.0%	7.5%	7.7%	7.8%	13.0%	13.3%	13.0%	12.7%
Rent growth p.a.	-5%	5.7%	5.2%	4.5%	3.8%	9.9%	7.6%	5.4%	3.6%
	0%	6.5%	6.7%	6.5%	6.3%	12.0%	11.4%	10.4%	9.4%
	2%	6.9%	7.4%	7.5%	7.5%	12.9%	13.0%	12.6%	12.2%
	5%	7.4%	8.6%	9.2%	9.7%	14.2%	15.6%	16.1%	16.4%
Annual HPA	-2%	2.5%	3.6%	4.3%	4.9%	0.4%	3.3%	5.4%	7.2%
	0%	4.2%	5.1%	5.5%	5.8%	5.9%	7.8%	8.7%	9.3%
	3%	6.9%	7.4%	7.5%	7.5%	12.9%	13.0%	12.6%	12.2%
	5%	8.7%	9.0%	9.0%	8.9%	17.0%	16.1%	14.9%	14.1%

Source: Amherst Capital. For illustrative purposes only. Please see important disclosures at the end of this paper.



LONG HORIZON RETURNS GENERALLY REMAIN ATTRACTIVE ACROSS SCENARIOS

As illustrated in Figure 32, we find that if vacancies in stabilized properties end up being 15-20% instead of our assumed 7.6%, then unleveraged returns fall to about 5-6% and leveraged returns fall to 9-10%, on average over the 20 year horizon. We see similar declines assuming that actual expenses are 50% higher or if the level of CAPEX is 2-3X our base assumption. Similarly, if we witness 5% expense growth/year, leveraged yields only fall from 12.2% to 10.3% over the 20 year horizon, showing the resilience of SFR returns. However, if expenses rise 10% annually while rents only grow at 2%, then as property incomes dwindle, unlevered returns fall to 5-6% in the 5/10 year horizons but to <4% in the 20 year horizon. Such an extreme stress scenario leads to low single-digit returns on the levered equity position – however it's highly unlikely that expenses keep growing at a staggering rate for 10 years while rents and home prices do not.

On balance, while returns can drop in stress scenarios, they generally hold up well except in the most stressful ones. Finally, the last set of rows shows sensitivity to home price assumptions. Here we find that if home prices fall by 2%/year (-1/3rd over 20 years), returns only fall to about 5% for the 20 year horizon. This is because when we assume that only one variable changes at a time, the home price declines do not affect rent

growth. If rents also fall in line with home prices, then we should see lower returns. However, this exercise shows that over longer investment time periods home prices are a very small component of the total returns, and property incomes can form about 60-70% of the full return on a property. As a result, we continue to believe that SFR properties should be viewed as income producing commercial real estate and home price growth by itself matters less over the longer term.

LEVERAGE AND FINANCING SPREADS MATTER LESS AS LONG AS PROPERTIES GENERATE ENOUGH CASH FLOWS

We display more detailed sensitivities to LTV ratios and financing spreads in Figure 33. It shows that as long as the underlying cash flows remain strong, changes in the financial markets should have a smaller effect on the leveraged returns. Similar to Figure 32, the third row represents our base case leverage assumptions (65% LTV at L + 235), with the first two rows showing stress scenarios and the last row showing upside scenarios. For instance, changing LTV from 65% to 50% reduces levered yields from ~13% to ~10.5%. Increasing financing spreads to L+350 from L+235 has a similar effect. If spreads increase further to, say, L+500 – then equity yields can fall further to ~8%.

FIGURE 33 *Sensitivity to leveraged returns to funding spread/leverage/Libor shocks*

		Levered Returns Across Horizon			
	Changing Factors	5 Year	10 Year	15 Year	20 Year
Across Leverage (LTV)	50%	10.2%	10.6%	10.4%	10.2%
	60%	11.8%	12.0%	11.7%	11.4%
	65%	12.9%	13.0%	12.6%	12.2%
	75%	16.3%	16.0%	15.2%	14.5%
Funding Spread(bps)	500	8.3%	9.0%	8.9%	8.7%
	350	10.9%	11.3%	11.0%	10.6%
	235	12.9%	13.0%	12.6%	12.2%
	150	14.3%	14.4%	13.8%	13.4%
Libor Shocks (bps)	200	9.4%	10.0%	9.8%	9.5%
	100	11.1%	11.5%	11.2%	10.8%
	0	12.9%	13.0%	12.6%	12.2%
	-50	13.7%	13.8%	13.3%	12.9%

Source: Amherst Capital. For illustrative purposes only. Please see important disclosures at the end of this paper.



5.5 EVICTION-RELATED REPUTATION RISKS ARE MANAGEABLE

There is one additional risk for institutional investors that mom and pop investors would largely be insulated from – evictions can potentially become time consuming, costly, and even lead to reputation-related issues with economic consequences. Do not get us wrong; the process to evict non-paying renters is generally simpler and shorter than for a foreclosure. That said, even for rentals there are certain legal procedures that need to be followed by landlords before they can evict tenants. First, the defaulting tenant typically has to receive a notice - usually a “Pay Rent or Quit Notice” that gives tenants 3-5 days in most states to pay the rent or move out. If the tenant fails to cure default and also fails to move out, then landlords must begin an unlawful detainer (“UD”) lawsuit by properly serving the tenant with a summons and complaint for eviction. The process is generally quick and if the landlord wins this lawsuit, it would get a judgment for possession of the property and unpaid rents. The law enforcement officer (sheriff or marshal) would then give the tenant a notice and return to physically remove the tenant if he or she has not vacated by then.

The question is:

- Can tenants mount defense and make the process longer and costlier?
- More importantly, is the economic risk from negative publicity of widespread evictions by an institution substantial?

Technically, the answer to both is yes. A tenant can mount defense possibly delaying eviction, pointing to mistakes in the eviction notices or other legal procedures similar to the ones used on foreclosures. But at the same time there are key differences that may mitigate risks. For example, in the case of foreclosures – economic interest, servicing interest and documentation required to foreclose could be sitting at 3 separate entities. By contrast, in SFR all of this is centrally managed, making at least the documentation issues that plagued foreclosures (remember robo-signing?) less

likely. Further, there is clear control in the case of SFR, which makes loss mitigation efforts simpler (waiving late fee, or paying renters cash to vacate, to avoid a lengthy eviction process). That said, we would expect institutional players to be more conservative in their approach to defaulting renters than individual investors – making the process slightly longer and more costly but with lower risks.

As such, any potential rental lawsuits are unlikely to lead to renters staying without paying rent for multiple years in a way that some borrowers are able to do on securitized mortgages. That said, it is still possible that widespread evictions of defaulting tenants [even if legal] can lead to negative publicity, make for poor optics and cost money to institutions. While not negligible, we believe those risks have been around and managed by institutions managing multi-family portfolios effectively over the past several decades – and SFR should be no different.

If anything, we believe the risk of similar large-scale eviction is smaller in SFR than in multi-family. First, SFR pools are likely to be more geographically distributed both within a city/MSA and across the country. This may reduce the likelihood of concentrated eviction notices for defaults on rents. Second, while in larger multi-family there might be renter associations and the potential for renters to come together, which can lead to publicity on evictions – we believe this is less likely in SFR due to the wider spread nature of single-family properties.



5.6 A GSE/GOVT FINANCING PROGRAM COULD BE A POSITIVE TAIL SURPRISE

While financing options available for SFR operators are better than those for individuals, pools of SFR still lack a level-playing-field compared to multi-family buildings. A glaring example of this is the lack of government-sponsored enterprises (“GSE”) - backed financing for portfolios of single-family homes. Fannie/Freddie/Ginnie Mae residential loans are available for owner-occupants as well as individual investors. Fannie DUS/Freddie K and Ginnie PL programs are also available for multi-family operators to finance multi-family properties with GSE-backed loans (and as a result, cheaper than private market financing).

However, such financing is not available to SFR operators for portfolios of single-family properties that could be treated similar to multi-family. This runs counter to the point we showed above; portfolio-level volatility on a pool of SFR homes is likely to be lower than on multi-family properties (which should reduce the cost of a GSE/govt.-implied subsidy relative to multi-family if such SFR portfolio loans are made). As such, if the GSEs/FHA allow pools of SFR to be financed similar to multi-family properties, it would be a potential positive surprise for the sector. As institutional involvement in the sector grows and a track record is built which confirms the lower volatility nature of pools of single-family homes compared to multi-family – we believe SFR could be a natural place for GSE credit to expand into.

5.7 HOW WILL SFR INVESTMENTS REACT WHEN RATES RISE?

Another question that is likely on the minds of most real estate investors during recent times is – what happens when rates eventually rise? Higher rates affect various aspects of the single-family rental business, such as financing costs, home prices, as well as the rents and expenses on these properties (if rates rise with inflation).

EFFECT OF RISING SHORT-TERM RATES

If we look at the effect on financing alone, higher short-term rates can increase financing costs since loans are usually floating rate based on Libor. The last set of rows in Figure 33 shows the effect of a 100/200 bps parallel shock to the Libor forward curve. From base case leveraged yield of ~12-13%, the leveraged yield drops to ~11% for a 100bps Libor shock and to ~9% for a 200 bps Libor shock (assuming that all other aspects remain in line with our initial assumptions).

EFFECT OF INCREASING CAP-RATES

Next are concerns about property values as rates rise, since a portfolio of SFR homes is likely to trade based on a cap-rate based valuation. Figure 34 shows the effect of selling the portfolio of properties to a cap-rate based valuation assuming that cash flows and financing remain constant. If cap-rates rise to 6.5%/7.5% then the unleveraged and leveraged yields drop substantially for a 5 year investment horizon. But over longer horizons, the effect on overall returns is much more muted. That’s because over longer periods, incomes and income growth matter much more for returns.

FIGURE 34 *Sensitivity to cap-rates*

		Unlevered Returns Across Horizon				Levered Returns Across Horizon (65 LTV, L +235)			
	Changing Factors	5 Year	10 Year	15 Year	20 Year	5 Year	10 Year	15 Year	20 Year
Exit cap-rate	7.50%	0.2%	4.1%	5.4%	6.0%	-8.8%	4.8%	8.3%	9.6%
	6.50%	2.6%	5.1%	6.0%	6.4%	0.7%	7.9%	9.6%	10.3%
	5.50%	5.5%	6.4%	6.7%	6.9%	9.4%	10.9%	11.1%	11.1%
	4.50%	9.2%	8.0%	7.7%	7.5%	18.2%	14.2%	12.8%	12.1%

Source: Amherst Capital. For illustrative purposes only. Please see important disclosures at the end of this paper.



EFFECT OF HIGHER INFLATION

Finally, higher inflation could cause costs and possibly even rents to escalate beyond our base case assumptions; we have already discussed these possibilities and the sensitivities to expense and rent growth in Figure 32. This shows that, if expenses grow at 5% per annum instead of the assumed 2% then unleveraged yields fall from close to 7% to about 6% and leveraged yields fall from 12-13% to 10-12%. However, if higher cost inflation is accompanied by higher rental growth it would negate all or most of this effect.

COMBINED EFFECT OF INCREASING RATES LIKELY TO BE MUTED

So what is the net effect of all these different effects of a rate increase? Based on our research, historical data have usually shown very little correlation between interest rates and home prices except in certain areas where land is scarce and a large part of home values are attributable to their 'land' cost rather than the structure itself. However for the most part, SFR investors have stayed away from such areas, remaining in places where land value is a small portion of home price. As a result, we expect that any demand shock from higher interest rates is likely to be met with much lower construction

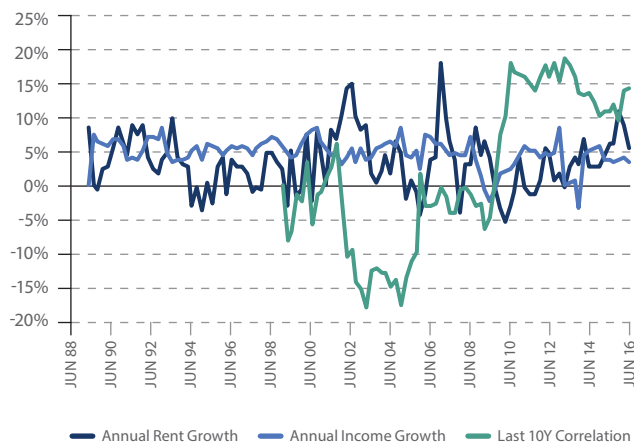
in these areas, which will help stabilize home prices. While large portfolios of SFR properties are still likely to trade based on a cap rate (which could rise with rates), we believe that the backstop bid from end buyers and relatively wide cap rate spreads should also cushion the impact of higher interest rates.

As Figure 35 shows, annual rental growth has been poorly correlated with annual income growth on an aggregate national level. After spending the first few years post-crisis languishing well below income growth, during the past few years rent growth significantly outpaced overall incomes. Eventually, the overall demand for homes is likely to affect rent growth more than interest rates or inflation.

As a result, we believe that the overall effect of higher interest rates is likely to be somewhat muted on unleveraged yields but a bit more severe on leveraged yields if short-term rates rise.

BOTTOM LINE - The economics of single-family rentals as a long-term business look attractive on a risk-adjusted basis. Risks stemming from housing, financing and operations seem manageable.

FIGURE 35 *Rent increases and income growth have weak correlation*



Source: U.S. Census Bureau, Bureau of Economic Analysis, Bloomberg, Amherst Capital. Rent growth is based on Census Median Rents data. Income growth is based on Personal disposable income. Data as of June 30 2016



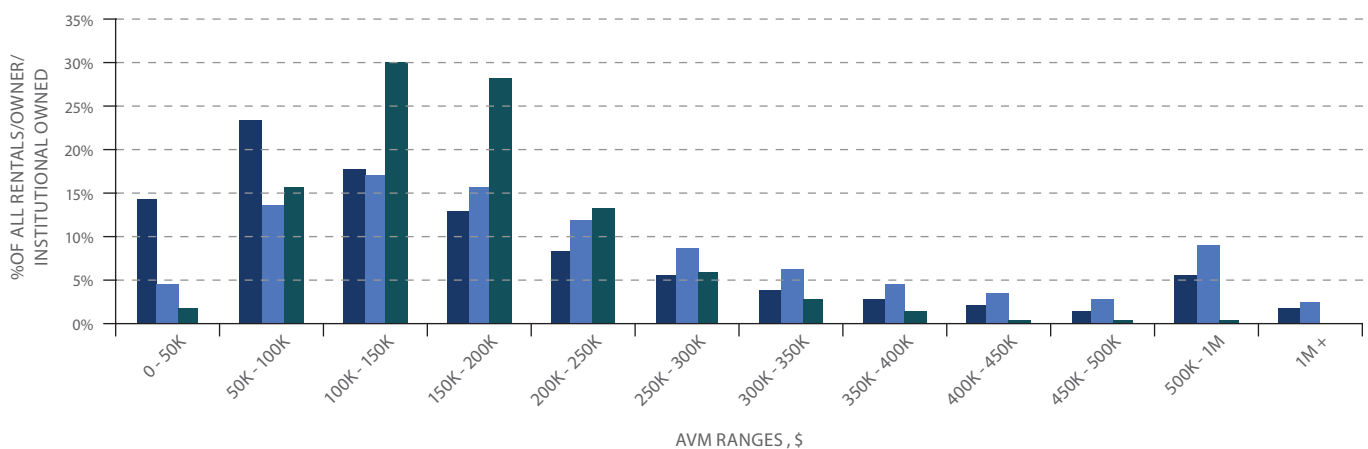
SECTION VI

SELECTING THE RIGHT SFR AREAS / PROPERTIES

So far in this paper, we have made the case that single-family rentals are not a new phenomenon, and are likely to be supported by demographic and financial factors. We also argued that the share of institutional investors is likely to increase and discussed their economics. We next focus on how SFR operators pick actual properties to buy.

First, it is important to realize that single-family rentals are usually in the lower end of the value range compared to owner-occupied single-family houses. Figure 36 shows the Amherst Automated Valuation Model (“AVM”) ¹³ distributions of single-family owner-occupied and rental homes. We also show the AVMs of homes owned by institutional investors (same properties that we showed in Figure 10). Overall single-family rentals are at the lower end of the value distribution, with median rental home values of 100-150K. The median owner home is in the 150-200K range. Institutional buyers have in turn focused on the high-end of the rentals with median in the 150-200K range. Institutional investors are generally focused on better markets with better schools, which generally corresponds with the higher end of the range of rentals.

FIGURE 36 *AVM distributions of single family rentals/owner-occupied and institutional SFR*



Source: Amherst Insight Labs, Amherst Capital, as of Q2 2016.

■ Rental ■ Owner Occupied ■ Institutional Owners

¹³ - Based on Amherst Insight Labs Automated Valuation Model, which produced home value estimates for more than 80 million single-family homes all across the US



6.1 SFR OPERATORS HAVE BOUGHT HOMES IN MODERATELY HIGHER TIER AREAS

To study these differences, we used analysis from AIL (Amherst Insight Labs) which is based on aggregated country level tax assessors records, and transaction records provided by CoreLogic. These two datasets include property-level characteristics for the majority of parcels in the U.S., as well as transaction histories for these parcels. To look exclusively at the single-family asset class, we filtered this data for single-family detached homes (excluding townhouses, condos and others). Based on this resultant dataset, we then identified investors, classified them as individual or corporate, and further divided corporate investors into various buckets as follows - Micro (1 or 2), Small (3 to 10), Medium (11 to 50), Large (>50) and Institutional (largest buy-to-rent investors that usually own 1000s of properties)¹⁴.

INSTITUTIONAL BUYERS FOCUSED ON 3-4 BEDROOMS (TARGETING DEMAND NOT SATISFIED BY MULTI-FAMILY)

Figure 37 shows various characteristics for purchases by all these types of investors as well as non-investor individuals for purchases from 2012 to 2016. In terms of prices paid, the median purchase for institutional investors has been at about \$76 psf (per square foot) which is on the higher side among the smaller corporate investors but in line with individual investors. The median price paid by owner-occupants is much higher, at \$100psf. Some of this is because of the quality of homes

purchased, but also due to the different distribution of geographies in which institutional buyers have been active relative to owner-occupants.

In terms of lot sizes, institutional investors are usually on the lower end, however this is again likely a function of the geographies these institutions focused on, versus other investors being concentrated in relatively fewer geographies with denser populations.

In terms of size by number of bedrooms, large B2R institutional buyers are almost exclusively focused on the 3 or 4 bedroom range, which form close to 90% of institutional buying. This is in line with our finding that the key point of demand for single-family homes is likely from growing families that need more space than is typically available inside multi-family rentals (Figures 25-26). In contrast, smaller corporate investors have holdings that are better distributed across 2-4 bedrooms.

Figure 37 shows that institutional buyers have focused on homes built after 1978, likely, to avoid possible exposure to lead paint. That's in stark contrast to most other investor types and individual owner-occupants. Only 13% of the large institutional investors purchases are homes built <1979, while comparable numbers for other investors/owner occupants exceed 50%.

FIGURE 37 *Different characteristics of homes purchased by price point 2012-2016*

	Largest B2R	Corporate Investors				Individual Investors	Non-Investor
		Large	Medium	Small	Micro		
Average price per square foot (\$)	83	73	72	87	114	114	130
Median price per square foot (\$)	76	52	46	55	65	77	100
Average lot size (sqft)	9,361	14,650	17,062	20,082	30,975	24,100	29,982
Median lot size (sqft)	7,405	7,841	7,920	8,089	8,963	8,363	10,019
Fraction 1 bedroom	0%	1%	1%	1%	2%	2%	1%
Fraction 2 bedroom	2%	14%	18%	19%	19%	19%	14%
Fraction 3 bedroom	47%	40%	36%	35%	32%	35%	35%
Fraction 4 bedroom	32%	22%	20%	19%	20%	20%	26%
Fraction 5+ bedroom	4%	5%	5%	5%	7%	5%	6%
Fraction built pre-1950	2%	18%	23%	25%	28%	20%	15%
Fraction built 1950-1979	11%	36%	37%	39%	38%	37%	32%
Fraction built 1979-2000	33%	23%	17%	17%	18%	23%	25%
Fraction built 2000 or later	54%	23%	24%	18%	17%	20%	27%

Source: Amherst InsightLabs, Federal Reserve Board, as of Q2 2016.

14 - For a detailed methodology, please see Large-Scale Buy-to-rent Investors in the Single-Family Housing Market: The Emergence of a New Asset Class?, James Mills, Raven S. Molloy, Rebecca E. Zarutskie

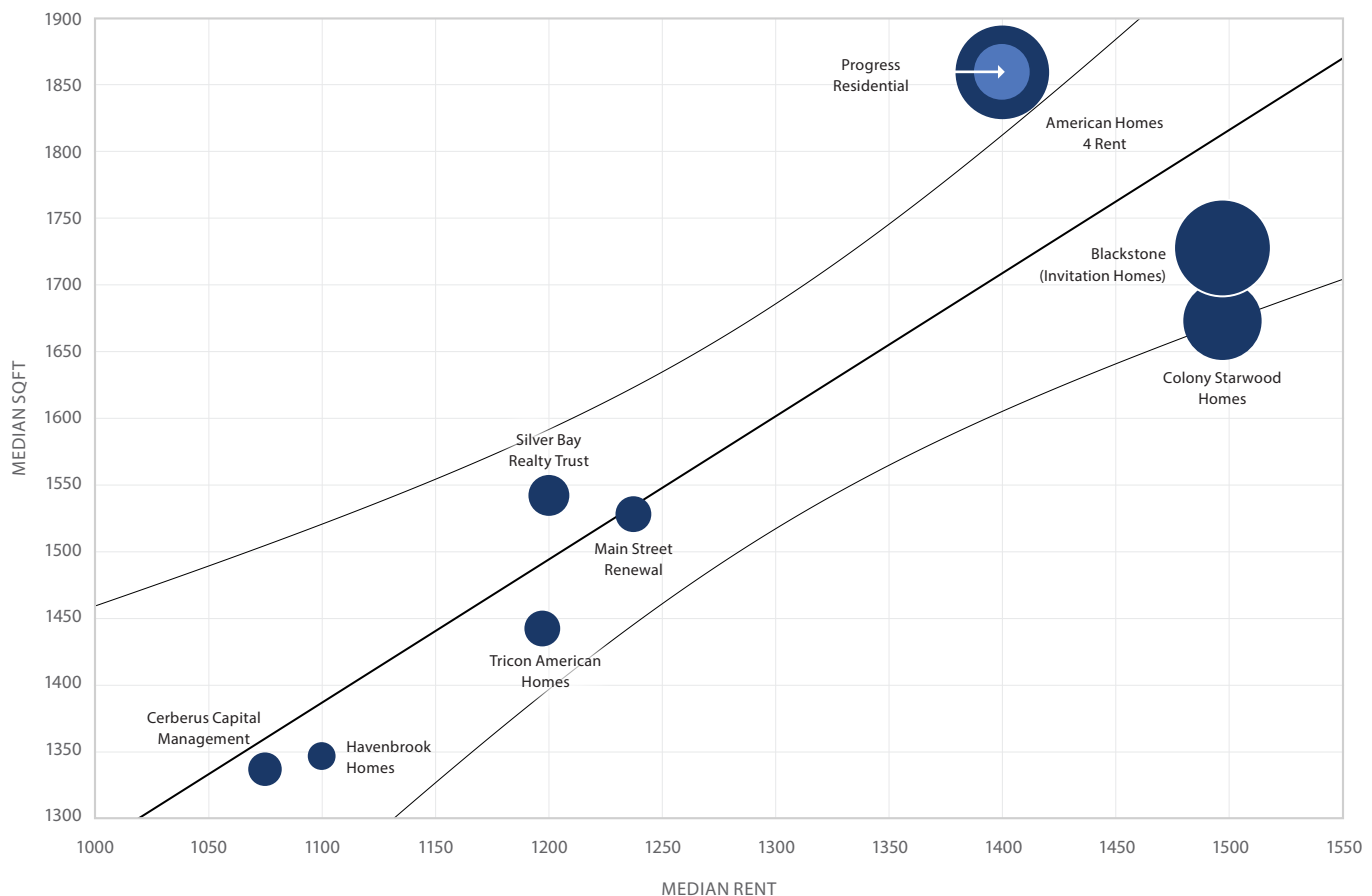


Combining this data with that from other sources (Zillow, census tract level information from the U.S. Census Bureau, AIL, Federal Reserve), our analysis found institutional investors more focused on areas with:

- higher population growth from 1980-2010
- larger fraction of residents with college degrees
- relatively lower poverty rates
- lower property tax rates
- larger fraction of households with children
- low price to rent ratios (higher buys in more distressed areas)

Institutional investors were also less active in areas with the lowest crime rates and highly-rated schools, perhaps because residents of these neighborhoods are more likely to be homeowners rather than renters. Institutional investors targeted areas with relatively low crime and better schools, but were more active in low top tier or high second tier neighborhoods.

FIGURE 38 *Large SFR institutional investors - by estimated rents and property size*



Source: Amherst InsightLabs estimates based on CoreLogic county record and transaction data as of Q1 2016.



6.2 OPERATORS HAVE FOLLOWED DIFFERENT STRATEGIES

We find a fair amount of difference in operating and purchase strategies among SFR operators. Figure 38 shows a distribution of the various SFR operators by median size of their holdings and the estimated median rents. Operators have followed a few different strategies.

On the one hand, some (top right corner of the chart) are concentrated in relatively larger properties (1700-1800 sqft) with estimated monthly rents of about \$1400-1500. On the other, some operators (bottom left of the chart) are focused on the other end of the spectrum with smaller properties (~1300 sqft) and lower monthly estimated rents (\$1100 or less). Still others seem to have followed a middle path, at about 1500 sqft properties and \$1200-1300 in monthly estimated rents.

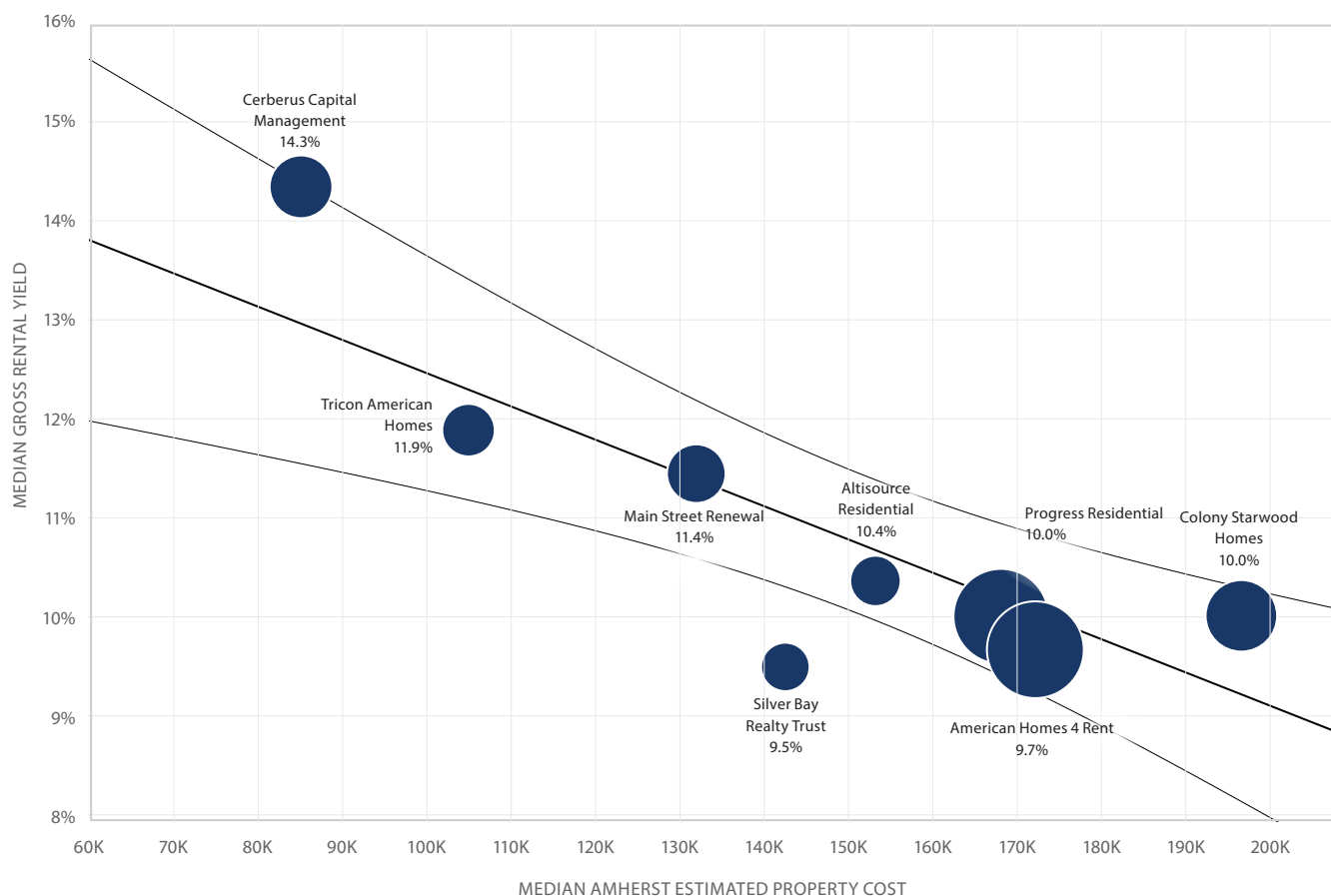
Some of this difference is likely due to the mix of geographies and when the homes were purchased. But we see similar differences even within individual geographies/similar purchase points.

For instance, Figure 39 shows median gross rental yields vs. the median all-in-cost to purchase/rehab for properties purchased in 2015. Even within this subset, we see that different operators clearly followed high/low/mid -segment strategies.

LOWER-PRICED PROPERTIES GENERALLY PROVIDE HIGHER RENTAL YIELDS

As Figure 39 shows, lower price properties generally have the highest potential gross rental yields but also likely incur higher vacancy/credit costs. There are usually some fixed costs to managing these properties and as a result, the difference in NOIs is unlikely to be as high as the difference in gross rental yields shown here. Overall however, there are advantages to being in the small-to-medium, and we believe that this segment provides cap rates in excess of those available in the higher property value size ranges.

FIGURE 39 *Investors by rental yield vs. all in purchase basis, properties purchased in 2015*



Source: Amherst InsightLabs estimates based on CoreLogic county record and transaction data as of Q1 2016.

Note: Amherst Estimated Property Cost shows the ALL estimate for purchase price plus rehab costs as of Q1 2016.

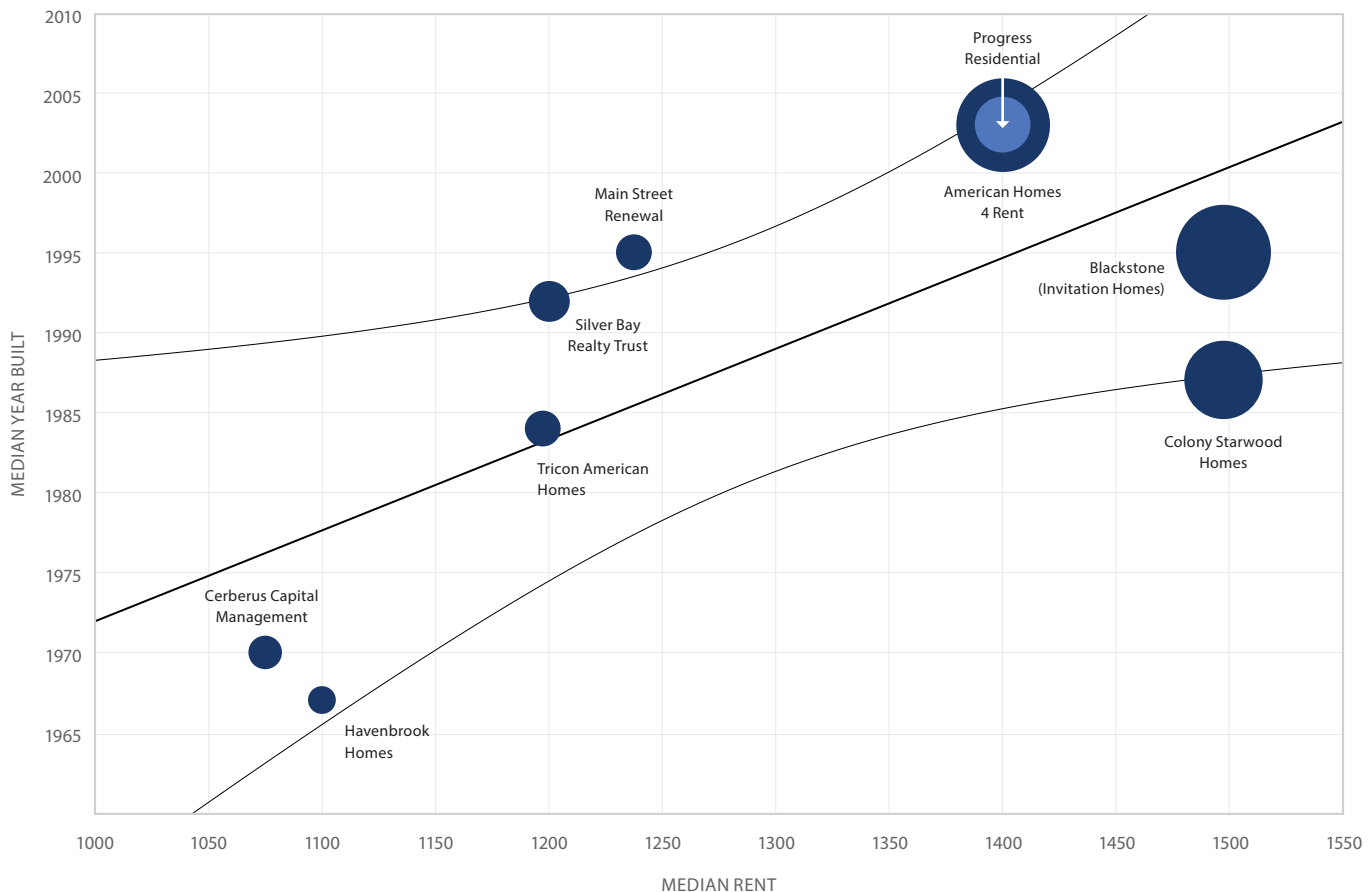


MANY OPERATORS GRAVITATED TOWARDS BUYING HOMES BUILT AFTER 1978

Many operators have also focused their buying on homes built after 1978. Figure 40 shows the median year built for properties for various operators. For all but a handful of operators, the median year built is after 1980. This is likely to avoid properties with potential exposure to lead-based paints, which were banned for residential use in 1978 in the U.S. by the Consumer Product Safety Commission. The EPA estimates that ~87% of homes built before 1940, 69% of homes built 1940-1959, and 24% of homes built 1960-1977 contain lead-based

paints¹⁵. Federal law requires that before leasing homes built prior to 1978, renters must receive notification about known presence of lead-based paint, an EPA-approved information pamphlet on lead-based paint, and contractual language including a “Lead Warning Statement”. In addition to these federal requirements, leasing out homes that have lead-based paint could also open up SFR operators to other legal liability and as a result, most operators seem to have chosen to stay away from such properties.

FIGURE 40 *Large SFR institutional investors, by estimated median rents and median year built*



Source: Amherst InsightLabs estimates based on CoreLogic county record and transaction data as of Q1 2016.

15 - <https://www.epa.gov/lead/protect-your-family-exposures-lead>



6.3 SFR = STABLE ASSET WITH ATTRACTIVE RISK-ADJUSTED RETURN POTENTIAL

In conclusion, we believe single-family rentals are poised to become a much larger institutional asset class over the next 5-10 years. One, we believe that institutional investors now have the means to tap into the right data/technology to enable them effective and efficient scale-up in this asset class. Two, many areas of the country still provide opportunities to buy homes that are likely to have strong current cash flow income (tax advantaged due to depreciation of the value of the properties) and provide protection from wage inflation. Three, single-family home prices are still cheap to fundamentals, with potential for cap rate compression relative to multi-family.

In addition, demographic/preference shifts and credit availability pressures are likely to keep demand for rentals relatively elevated. As 'forced' renters from the last decade age and grow families, they will demand larger homes which the multi-family sector is ill equipped to provide. Given the wide range of single-family housing available across the country, this sector provides opportunities to tailor views further, focusing on either certain geographies, economic strata, and/or with higher potential for either income or capital gains or a mix of the two.

6.4 RISKS FROM WEAKER ECONOMY & SHARP REVERSAL ON MORTGAGE CREDIT AVAILABILITY

The biggest risk to these investments is similar to that in other CRE sectors; namely, weaker economy leading to lower occupancy and rents. Operational risks are likely more controlled now that operators have some experience managing large and diverse portfolios of homes. Another risk in scaling up portfolios of these homes is if home mortgage credit availability makes a strong comeback and home prices increase sharply. While this will make scaling up such portfolios hard, existing portfolios should not be affected much since such an event would increase the takeout price for the homes in those portfolios.

BOTTOM LINE - Institutional operators have targeted different properties as compared to both mom and pop investors as well as to each other. Overall, we believe that SFR provides attractive risk/reward to investors, and institutions are likely to continue growing their market share in the coming years.



SECTION VII

A NEW STRUCTURE FOR HOUSING FINANCE

Having made the case for single-family rentals, any analysis would be incomplete without proposing a structure through which investors could access the opportunity. This is required, given the spectacular failings of the securitization/issuance model used to bring end borrowers and end investors together in residential real estate.

7.1 PRE-CRISIS STRUCTURE – A RUBE GOLDBERG DESIGN

The securitization structure involves a large number of intermediaries without any fiduciary for most of them, and led to worse outcomes for both investors as well as borrowers on homes. To better understand it, we need to break down the pre-crisis securitization structure in detail.

PRE-CRISIS SECURITIZATION ISSUANCE PROCESS

The process of bringing end borrowers and end investors together involve several steps including but not limited to:

1. Find the end borrower (a sales/marketing function)
2. Due diligence (collecting documents, underwriting)
3. Fund the property (placing the lien, recording with the county and MERS)
4. Fund in the secondary market (aggregator, securitization, agency guarantee, rating agency)
5. Distribute that security (dealer/investment bank markets then sells the security)
6. Asset management (managers invest in these securities for a fee from the end investors)

PRE-CRISIS SERVICING AND BOND MANAGEMENT

Post-security creation, the pre-crisis structure involved many intermediaries to transfer cash flows:

1. Sub-servicer collects payments from end borrower
2. Master servicer backstops and checks on sub-servicer; in some instances a special servicer could also be involved
3. Trustee determines how cash flows go through the deal waterfall and pay each tranche
4. Paying agent makes payments to the asset manager for the benefit of the end-investor

Issuance, servicing and bond management was complicated at many levels. As Figure 41 shows, asset managers that had a fiduciary responsibility to end-investors were far removed from actual decisions at the borrower/servicer level that affected outcomes for borrowers and investors. This layering led to many problems, such as multiple levels of fees, financial incentive misalignment, bad underwriting, careless documentation, and unresponsive servicers. Further loss mitigation efforts involved coordinated actions by many entities, whose incentives weren't always correctly aligned. The end result was a near chaos, or better put, a complete chaos. While popular media blames much of the crisis on poor mortgage underwriting, in reality, it was a complete infrastructure failure and in part, due to its poor design.



7.2 PROPOSED STRUCTURE FOR SFR = SIMPLER, MORE TRANSPARENT, BETTER ALIGNS INTERESTS

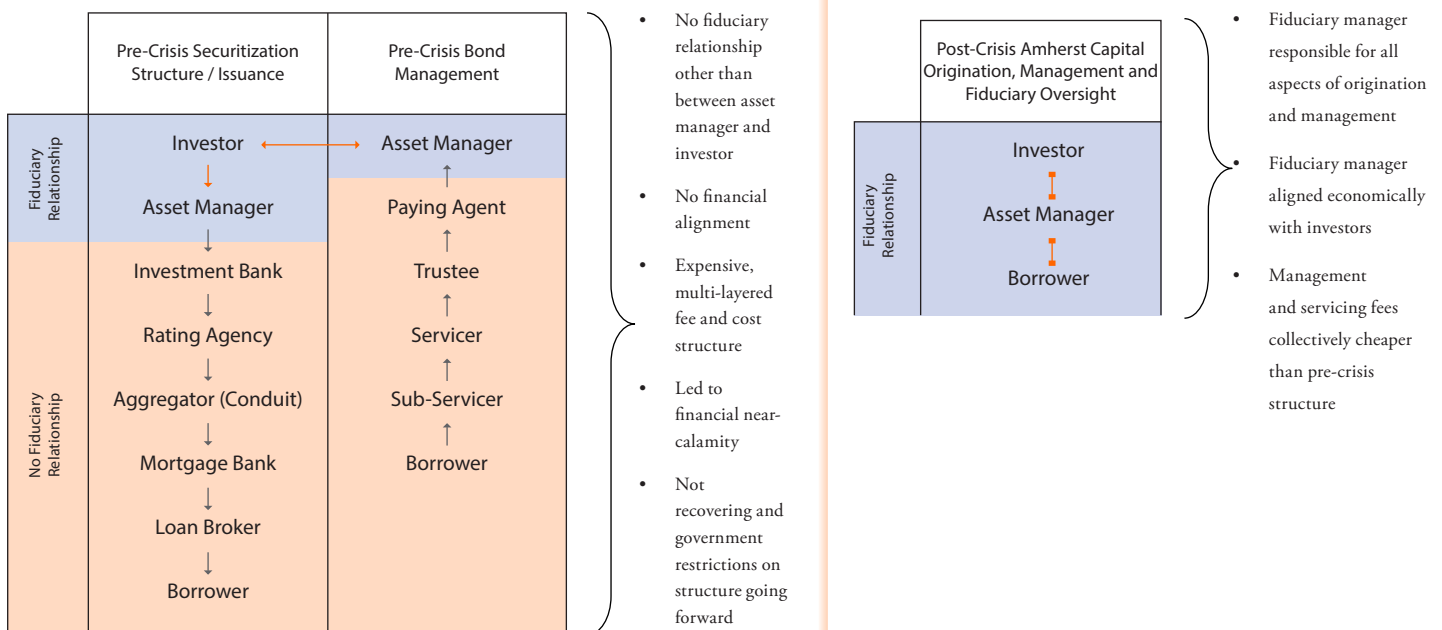
We believe that most of these problems could be avoided by using a vastly simplified structure that we propose (Figure 41). In this structure, the asset manager would be the single vertically integrated entity that would replace the entire broken securitization process. The asset manager would be the fiduciary and responsible for all aspects of property acquisition and management. Asset manager incentives would be economically well-aligned with investors through performance fees.

The structure would also provide complete transparency in investments to the end-investors, which was not possible in pre-crisis securitization structures.

Finally, given the delayering, we believe the effective financial fees and costs would still be lower than what was paid collectively to all different intermediaries in the pre-crisis structure.

BOTTOM LINE - We believe that this proposed template for post-crisis structures will suit SFR equity investments very well, which will lead to them becoming more common as investors recognize their benefits.

FIGURE 41 *Replacing Rube Goldberg securitization structure*



Source: Amherst Capital, Illustrative



U.S. Single-Family Rental – An Emerging Institutional Asset Class

ABOUT AMHERST CAPITAL MANAGEMENT

Amherst Capital Management LLC is a real estate investment specialist with approximately \$6.3 billion[1] of assets under management. Amherst Capital was established in 2014 as a majority-owned subsidiary of BNY Mellon, and is minority-owned by Amherst Holdings, LLC a financial services holding company with more than 10 year history of utilizing its mortgage expertise to assist clients in navigating the real estate capital markets. Amherst Holdings is not an affiliate of BNY Mellon. Texas Treasury Safekeeping Trust Company is a founding seed investor of Amherst Capital. [2] Amherst Capital offers traditional and alternative real estate investment strategies to private and institutional investors globally. Amherst Capital's investment strategies are grounded in deep intellectual capital and proprietary technology designed to help clients meet their portfolio needs. For more information please visit www.amherstcapital.com

ABOUT AMHERST HPI MODEL

Amherst home price index is generated and maintained by Amherst Insightlabs LLC. 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.

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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, but rather to demonstrate how the economics of single family rentals may affect the performance of a portfolio of SFE assets. Specifically, the projected returns are based upon a variety of estimates and assumptions by Amherst Capital of future SFR returns including, among others, assumptions of vacancy, capital expenditures, portfolio level expenses such as taxes, insurance, HOA and repairs and maintenance, and expense and rent growth. 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 Capital'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.

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