

## Insight & Outlook

December 22, 2015

### In this Edition:

#### Insight: Marketplace Lending: The Final Frontier?

Confusion surrounds marketplace lenders, the recent and novel entrants in the field of consumer finance. These lenders are Internet-based startups that combine elements of traditional lending with aspects of social media. (p. 1)

#### Outlook: Looking Ahead

The unemployment rate has steadily declined; there has been consistent real economic growth, and the housing sector is strengthening. These good economic signs are reasons why the Fed raised short-term interest rates for the first time in nearly a decade. However, the economy has much room for improvement. (p. 7)

#### In Closing: All Real Estate is Local

National house price averages obscure important differences across the country. Prices in Texas fell only 4 percent during the crisis – less than 1/4 of the national house price decline – and have risen well past the previous peak. In contrast, prices fell 44 percent in Florida and remain below their previous peak. (p. 12)

## Marketplace Lending: The Final Frontier?

In the 1950s and '60s, Hollywood responded to the public's growing fascination with outer space with a host of films and TV shows featuring visitors from another galaxy. In many of these stories, the protagonists debated the intentions of the extraterrestrial visitors. Often a hot-headed military leader proposed pre-emptively blasting the invaders to smithereens, while a high-minded scientist argued for attempting a peaceful dialogue with the visitors. It wasn't always easy to determine the best approach. In *The Day the Earth Stood Still* (1951), the military initially attacked a peaceful emissary from the cosmos and nearly triggered the destruction of Earth. On the other hand, in the *Twilight Zone* episode *To Serve Man* (1962), humankind accepted technological help from an advanced and apparently benevolent race from space, only to discover they had made a fatal mistake.

Similar confusion surrounds marketplace lenders, recent and novel entrants in the field of consumer finance. These lenders are Internet-based startups that combine elements of traditional lending with aspects of social media. Just as it wasn't always easy in the Hollywood movies to tell whether space aliens were friends or foes, it can be difficult to determine exactly what marketplace lending is. Do marketplace lenders offer technically-advanced underwriting methods that reach market segments overlooked by traditional lenders? Or are they instead attempts to escape the increasing burden of regulation? Is the peer-to-peer lending employed by some marketplace lenders a new form of financial intermediation? Or is peer-to-peer lending just a temporary stepping stone to a traditional lending structure? Will marketplace lenders become an Uber-like disruptive force in consumer lending, or are they simply old-fashioned

Forecast Summary	2015	2016
Real GDP Growth (%)	2.2	2.5
30-Year Fixed Mtg. Rate (%)	3.9	4.4
FMHPI House Price Appreciation (%)	5.8	4.4
1-4 Family Mortgage Originations (\$ Billions)	1,750	1,580

consumer lending dressed up for the Internet?  
 Can marketplace lenders move beyond unsecured consumer lending to mortgage lending? Stay tuned.

### What is marketplace lending?

A marketplace lender (ML) is a nonbank intermediary that provides one or more types of consumer loans. MLs typically reach borrowers through the Internet. Many MLs rely on peer-to-peer lending, that is, by matching individual borrowers to investors. Some marketplace lenders focus on niche markets, such as borrowers looking to consolidate and refinance credit card or student loan debt at more favorable terms. Often the borrowers served by MLs have limited credit histories that make it difficult for the borrowers to tap traditional consumer lending sources. Most marketplace loans are unsecured, but some MLs have ventured into auto and mortgage loans.

Marketplace lending is a new phenomenon, small in size but growing rapidly, with important variations in business model across firms. These variations make it impossible to identify a “typical” ML. Instead, we discuss some of the notable characteristics of MLs.

#### Peer-to-peer lending

Peer-to-peer (P2P) lending [appeared](#) in the United Kingdom in 2005; the United States followed a year later. China and Australia also report measurable volumes of P2P lending. P2P lending is still small – Morgan Stanley estimates that originations in the U.S. will reach roughly \$15 billion per year (Strethapramote et al 2015), but lending volume is growing rapidly.

P2P lending differs in important ways from traditional bank lending. Exhibit 1 displays a highly-simplified example of bank portfolio lending. The bank accumulates funds from a host of depositors. It uses those deposits to make loans – unsecured loans, auto loans, bank loans, small business loans, mortgage loans, etc. – and holds the loans as assets in its portfolio.

### What about Loan Prospector®?

*Marketplace lenders have highlighted their proprietary automated underwriting systems (AUSs). MLs claim these systems increase the ease and speed of applying for loans, reduce origination costs, and expand access to credit by incorporating novel underwriting criteria.*

*It’s worth remembering that not so long ago Freddie Mac was lauded for exactly the same achievements. Freddie revolutionized underwriting in 1995 when it introduced Loan Prospector (LP), Freddie Mac’s proprietary automated underwriting system. LP was described as “[a] revolution built around technology and automated underwriting is promising big changes in the days ahead. Artificial intelligence can now decide in seconds which loans Freddie Mac will buy and borrowers are getting loan approval in hours. [Mortgage Banking, Oct.94] LP was presented as a way to “strengthen America’s housing finance system by improving the process, reducing costs and expanding homeownership”. [SMM, 1996] In 2001, Freddie Mac announced that LP had already reduced origination costs by \$6.5 billion. [National Mortgage News, Feb.2001] LP also reduced the need for documentation and thus was able to approve loans in minutes rather than days or weeks. [Mortgage Banking, Mar.2001]*

*Perhaps most important, LP was designed to identify creditworthy borrowers who might otherwise be denied access to a mortgage. To cite just one example,*

*At first glance, Louise Beyler of Gainesville, GA, might appear as an unlikely candidate for a mortgage to buy a \$105,500 home. Self-employed and earning \$19,000 a year, Beyler would have to spend nearly 45 percent of her income to cover the mortgage payments. Given her circumstances, many lenders would deny Beyler a mortgage. Thanks to automated underwriting, however, Beyler’s application was approved – in just three days. [SMM, 1996]*

#### References

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- Peter Mahoney and Peter Zorn (1996), “The Promise of Automated Underwriting”, Secondary Mortgage Markets, 18-23
- James Faucett (2001), “Freddie Mac Says Loan Prospector Has Yielded \$6.5 Billion of Savings”, National Mortgage News, 13
- Paul Peterson (2001), “Keeping Promises”, Mortgage Banking, Vol. 61 (1996), “Freddie Mac, FHA announce automated underwriting pilot”, America’s Community Banker, Vol. 5 Issue 9, p8.

**Exhibit 1: Traditional Bank Lending Model**



In traditional portfolio lending, the loans are assets of the bank and the deposits are liabilities. Deposits are federally insured. As a consequence, depositors need not monitor the creditworthiness of the borrowers. In fact, depositors often have no idea of the bank’s business model – the types of loans it makes, the ratio of loans to securities in the bank’s assets, etc.

In P2P lending, there are no depositors. Instead, the ML matches investors to individual loans. These investments are not insured; the investors bear the risk that borrowers will default. Investors in P2P lending can buy small portions of loans – as small as \$25 – and thus can diversify their credit risk if they choose. In some cases, investors and borrowers have some common tie – in the case of some student loan MLs, investors and borrowers may be alumni of the same university.

**Exhibit 2: Marketplace Lending Model**



In this simplified example (Exhibit 2), the ML serves essentially as a matchmaker for borrowers and investors. In addition, it underwrites the loans and services them. It collects transaction and servicing fees from borrowers and investors. This business model permits MLs to operate with smaller balance sheets and, thus, smaller capital needs than banks.

Some features of P2P lending are found in other lending practices and institutions. Brokers always have provided opportunities for individuals to invest in second mortgages and small business loans. And mutual or cooperative financial organizations such as credit unions are comprised of members with some common tie, often membership in the same profession. Less formally, individuals within extended families or ethnic communities often have made direct loans to other individuals in the same group. The P2P lending offered by the MLs appears to be an outgrowth of some of these earlier practices.

The simple P2P model illustrated above relies exclusively on individual investors to fund the loans. In reality, the process is more complicated. MLs must obtain initial funding to cover the time between the close of a loan and its sale to investors. Typically MLs obtain warehouse funding from banks to cover this gap.

Not all MLs rely on P2P lending. Some MLs partner with banks or other institutional investors and operate in a fashion similar to mortgage brokers. In some cases, MLs work exclusively with a single bank. Some of the larger MLs have begun to securitize loans, tapping the private placement or capital markets for funds. It may be that more-successful MLs will outgrow the P2P method of funding loans over time.

In addition to short-term funding, MLs also need capital. While some MLs rely on crowdfunding to bootstrap their operations, it is common for MLs to work with banks, institutional investors, and venture capitalists to raise capital and issue debt as their businesses grow.

### **Internet lending**

Consumer-facing industries have long embraced the Internet as a way to reduce their costs and to increase convenience for their customers. Big box stores have surrendered ground to Internet retailers. The cost advantage of Internet commerce has driven some firms to eliminate physical stores in favor of an Internet-only presence (Tower Records). In other cases, previously-dominant firms have gone out of business (Borders Books).

Bank use of the Internet also is not new. Bank ads tout the ability for you to monitor your accounts, transfer funds, schedule bill payments – all online. You can even deposit a check by snapping a picture of it with your smartphone. Some banks, like some retailers, operate only online. And both bank and non-bank lenders allow potential borrowers to apply for loans online.

MLs' Internet presence is distinguished from that of traditional banks by two characteristics. First, MLs have emphasized the social media elements of their business model. P2P lending is essentially a more social activity than bank portfolio lending, where depositors are completely insulated from the lending activities of the bank. MLs take pains to describe their services in ways that highlight the social aspects. The name of one prominent ML is **SoFi**, a contraction of "Social Finance". SoFi was founded in 2011 with a focus on refinancing student loans of "early stage professionals". The SoFi web site refers to its borrowers as "members". They offer a "Partner" program for firms that employ or have business relationships with current or potential SoFi members. The "Community" tab on the SoFi home page links to pages describing "member stories", career planning and job search assistance services, an Entrepreneur program (mentorship, access to investors, loan deferrals), a referral program, and events like happy hours, community dinners, and career seminars.

## **Selected Marketplace Lenders**

### **Personal Loan Specialists**

**Lending Club** Founded in 2007, Lending Club has the largest share of unsecured consumer loans originated by a marketplace lender (ML). Lending Club was the first ML to file for an IPO, doing so in 2014. Lending Club has **signaled** an interest to enter the mortgage market.

**Prosper** Heralded as the first marketplace lender in the US, Prosper is also the **second** largest ML in the US. Prosper offers unsecured consumer loans.

**SoFi** SoFi was founded in 2011 by four students who met at the Stanford Graduate School of Business. SoFi originally focused on refinancing student loans but has since **expanded** to other business lines including mortgages. SoFi plans to originate \$3 billion in mortgages in 2016.

**Avant** Avant has originated \$1.8 billion of personal loans since its founding in 2012.

### **Business Loan Specialists**

**OnDeck** OnDeck specializes in small business loans. Since their founding in 2006, OnDeck has **originated** \$3 billion small business loans. In December of 2014 OnDeck was the second US ML to go **public**. OnDeck recently announced a strategic partnership with JP Morgan Chase Bank.

**CAN Capital** Focused on small to medium sized business loans, CAN capital has **originated** \$3.6 billion since its founding in 1998.

**Kabbage** Kabbage is another ML that focuses on small business loans. Kabbage recently **announced** that they extend more than \$5 million per day to small businesses. They have also extended into personal consumer loans with another platform named "Karot".

### **Real Estate Specialists**

**GroundFloor** GroundFloor **offers** short term financing for fix and flip investors in single-family homes.

**LendingHome** LendingHome offers short-term bridge loans for the acquisition or rehabilitation of single family properties and longer term financing for single asset rental loans. LendingHome has signaled they are **preparing** to enter the non-conforming mortgage market as well. As of April of 2015, LendingHome had originated more than \$100 million in mortgages.

Second, MLs advertise online underwriting models that incorporate nontraditional criteria. In the student lending sector, the target borrowers of MLs are recent graduates with high-interest student loans, better-than-average economic prospects, and short credit histories. The industry describes these borrowers as “HENRYs”, that is, “High Earners, Not Rich Yet”. These underwriting models are proprietary, but MLs and media reports suggest they take into account factors like SAT scores, school attended, and current job in addition to more traditional criteria. In a combination of a novel credit risk management practice and the social aspect of finance, SoFi also assists unemployed borrowers to find new jobs and claims to have helped 140 unemployed borrowers so far. (Lavet and Watson 2015)

### ***Target borrowing communities***

Some MLs specialize in lending to a narrowly-defined group of borrowers. For instance, SoFi [began](#) as a way for Stanford Graduate School of Business alumni to invest in student loan refinances for new graduates of the business school. Today SoFi offers a variety of types of loans to a wider range of borrowers, but their expertise in student loan refinancing undoubtedly tilts their borrower population toward highly-educated Millennials.

Other MLs concentrate on credit card and other debt consolidation loans. Borrowers from these types of MLs may span a wider range of creditworthiness. Some of the MLs publish information about the distribution of credit grades (defined by the MLs) in the pool of loans they originate.

While it is hard to document, there is a presumption that Millennials comprise the dominant borrower group in marketplace lending. Some survey evidence indicates that Millennials have high awareness of marketplace lending and are comfortable with the Internet application process. (Strethapramote et al 2015) Furthermore some of the types of loans offered (student loan refinances, credit card consolidations) and the relatively small loan sizes (often capped around \$35,000) may tend to appeal to a younger audience.

### ***Regulation***

Marketplace lenders are not subject to banking regulations or examination by bank regulators. However marketplace lenders are subject to consumer lending laws and examination by the Consumer Financial Protection Bureau (CFPB). State consumer loan licensing laws and regulations also apply to MLs. In some cases – for example, student loans – additional state and federal laws and regulations apply.

In 2008, the Securities and Exchange Commission (SEC) found Prosper Marketplace, an early P2P lender, to be in [violation](#) of the Securities Act of 1933 and issued a cease and desist order. The SEC now treats all P2P lending transactions as sales of securities and requires all platforms to register with SEC.

### **The future of marketplace lending**

The rapid growth of marketplace lending combined with its emphasis on Internet outreach and its novel underwriting practices have generated dramatic predictions of its future. PricewaterhouseCoopers LLP [estimates](#) that P2P originations totaled approximately \$5.5 billion in 2014. They project the market could reach \$150 billion by 2025. Other estimates are much, much higher. In these scenarios, MLs present a disruptive innovation that threatens traditional lenders.

Skeptics question these forecasts. The marketplace lending industry is comprised of relatively small firms with limited capital compared to banks. This industry has not weathered a shake-out yet, raising questions about the resilience of many of the players. And larger institutions – banks and non-banks – may adopt some of the strategies employed by MLs or simply purchase the more successful firms.

It's too soon to tell whether marketplace lending is the next Uber or just another flash in the pan. Here are some factors to consider in forming an opinion.

- **Cost reduction.** Increased capital and regulatory costs have challenged the bank lending model. By operating as nonbanks and avoiding balance sheet lending, MLs have gained a significant cost advantage. Competitive pressures will push traditional lenders to see what aspects of the ML model they can copy to reduce costs.
- **Niche lending.** By virtue of their small size and lower costs, MLs can target niche markets – recent graduates from elite (and expensive) schools, Millennials looking to consolidate credit card loans, borrowers with limited credit histories that make it difficult to qualify for traditional loans. Larger lenders may not find it profitable to focus on these markets.
- **Nontraditional underwriting.** Big data holds out the promise of more predictive underwriting models. MLs advertise proprietary algorithms that outperform industry-standard credit scores, especially for borrowers with limited credit histories. These algorithms have yet to be tested in a challenging economic environment. Some of them will fail to live up to expectations, but there is always the possibility of a breakthrough. Some established Silicon Valley investors have bankrolled startups in the developing world that analyze data from borrowers’ smartphone and Internet usage to gauge creditworthiness. **Scores** are assigned based on the frequency of sending and receiving texts, the time of day that calls are most frequently placed, and even how rapidly the phone battery is drained.
- **Mortgage lending.** Unsecured consumer lending represents the dominant form of marketplace lending, followed by loans to small- and medium-sized businesses, and student loan refinances. Secured lending – auto loans and residential mortgages – comprises a negligible share at present. For example, SoFi originated \$24 million in mortgages in 2014 but \$1.3 billion in student loans. (Strethapramote et al 2015) Mortgage lending is a particularly complicated sector compared to comparatively straightforward unsecured consumer lending. Not only are there additional regulations covering mortgage lending, but defaults entail foreclosure and disposition of the collateral—complex and costly processes. Morgan Stanley estimates ML mortgage lending could total \$14 billion by 2020, but this would still represent less than one percent of industry originations.
- **Regulatory evolution.** Regulators may choose to increase oversight of MLs, particularly if marketplace lending continues growing at a breakneck pace. The underwriting algorithms of the ML lenders may come under scrutiny both from a prudential and a fair lending perspective. Also the practice of funneling loans through banks – the so-called “rent-a-charter” relationships between MLs and banks – may cause regulators to question whether these practices are primarily methods for evading regulation.

The current generation of MLs all may fail in the next economic downturn. Regulators may impose higher standards on MLs. The cost advantages of marketplace lending may not extend to mortgage lending. But innovation is difficult to stop. New startups will look for ways to improve upon current ML business models. Large bank lenders may incorporate the most successful of the ML innovations. It’s difficult to say where all this will lead, but one prediction is indisputable. Expect change.

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## The Outlook: Looking ahead

Since the financial crisis, the economy has largely improved. After December's FOMC meeting concluded, Yellen told reporters, "The economic recovery has clearly come a long way..." The unemployment rate has steadily declined; there has been consistent real economic growth, and the housing sector is strengthening. These good economic signs are reasons why the Fed raised short-term interest rates for the first time in nearly a decade. However, the economy has much room for improvement.

### The Economy

The economic recovery appears to be picking up momentum:

- Real growth in the third quarter was revised up to 2.1 percent.
- New durable goods orders increased 3 percent in October exceeding even the most optimistic of forecasts.
- Inflation remains subdued. The overall PCE deflator was flat in October thanks to declining gas prices. We expect the restrained price inflation to support strong spending.

We don't expect tighter monetary policy to generate a spike in longer-term interest rates in the foreseeable future. The Fed has committed publically to measured increases in short-term rates. While mortgage rates will rise modestly, they will remain at historically low levels. Combined with stronger job and income growth, the net result may be strong growth in household formation, construction, and home sales.

### Housing and mortgage markets

Several bright spots have emerged as housing continues its long recovery from the Great Recession. Home sales and house prices shine the brightest.

Home sales in 2015 remain on pace for their best year since 2007, and distressed sales – foreclosures and short sales – continue to decline. In 2015, many national house-price indexes recorded solid annual percentage gains through the third quarter of the year. For example, our Freddie Mac House Price Index increased 5 percent from September 2014 through September 2015. A number of hard-hit, depressed housing markets reported annual appreciation in excess of 20 percent, reflecting strong investor demand for undervalued homes.

Housing starts rose in large part because of an increase in construction of apartments and other multi-family properties. However, supply has struggled to keep up as vacancy levels continue to decline. Demand has absorbed many of the new units allowing landlords to increase rents. Rents have outpaced inflation, growing 20 percent over the last five years.

### Looking Ahead

After posting the best year in home sales since 2007 in 2015, what will the next two years look like for the economy and housing markets? As the Fed enters a tightening period, interest rates in the U.S. should start rising. Higher rates will present an affordability challenge, but years of pent-up demand and a strengthening labor market will likely allow housing markets to continue their momentum from this past year into the next two years.

With most of the rest of the world easing monetary policy, higher rates in the U.S. will likely drive more private capital into U.S. Treasury markets restraining increases in long-term interest rates and putting downward pressure on the U.S. dollar. This factor likely will keep core inflation below the Fed's target rate of two percent, moderating the pace of Fed rate increases.

When mortgage interest rates rose in 2013, housing activity cooled significantly. However, the U.S. economy now is much stronger than it was in the spring of 2013. Over 6 million jobs have been added since then and, while median household income growth has been flat, the prospects for future gains are the best they've been since the Great Recession. Moreover, nominal income growth over the next year is expected to exceed 5 percent according to the University Of Michigan Survey Of Consumers.

### ***Interest Rates***

The 30-year mortgage interest rate started the year at about 3.7 percent and remained under 4 percent for most of the year. Mortgage rates will increase gradually through 2016 in response to monetary tightening, averaging 4.4 percent for the year.

Rising mortgage rates will reduce affordability, especially in the nation's hottest real estate markets. Declining affordability will make it particularly tough for prospective first-time homebuyers.

### ***House Prices***

The imbalance between housing demand and supply continues to boost prices. We expect house price growth to moderate a bit to 4.4 percent in 2016, still well above the long-run sustainable rate of house price growth. The 2016 moderation in house price appreciation reflects, in part, the reduction in affordability and associated reduction in demand that will follow the Fed's monetary tightening.

### ***Home Sales***

Housing activity will grow in 2016, despite monetary tightening. Total housing starts will increase 16 percent from 2015 to 2016, and total home sales will increase 3 percent. While single-family homes will account for most of the construction pickup, rental apartment construction also will increase.

### ***Single-Family Originations***

While home purchases will increase next year, higher interest rates will reduce the volume of refinances. As a consequence, mortgage originations will be lower in 2016 than in 2015.

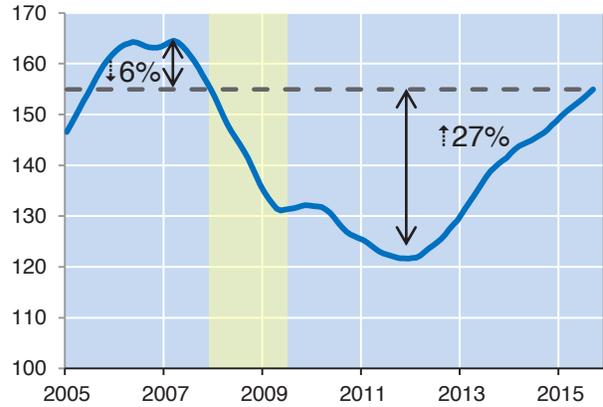
Despite years of sustained low levels of mortgage interest rates, refinance activity has remained unexpectedly high. Our upward revisions to mortgage originations in 2015 largely came from higher-than-expected refinance activity. Despite mortgage rate increases, the volume of refinances may continue to exceed expectations, especially if the share of cash-out refinances continues to grow. We'll examine this issue in depth next month.

# Housing Snapshot: A selection of key indicators

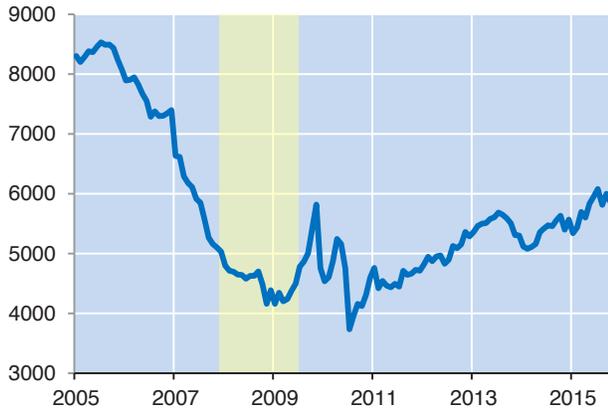
**30-yr Fixed Mrtg Rate (%)**



**Freddie Mac House Price Index**



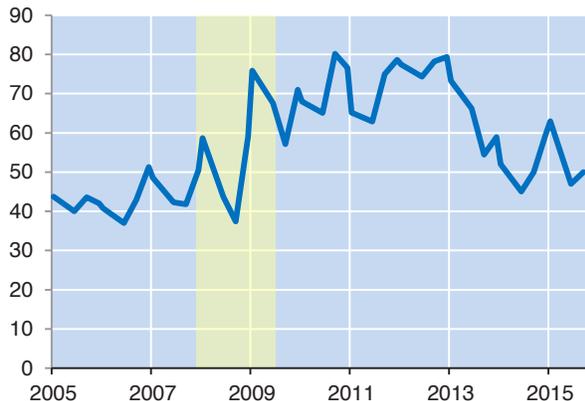
**Total Home Sales (Ths., SAAR)**



**SF Mortgage Originations (\$ Bil.)**



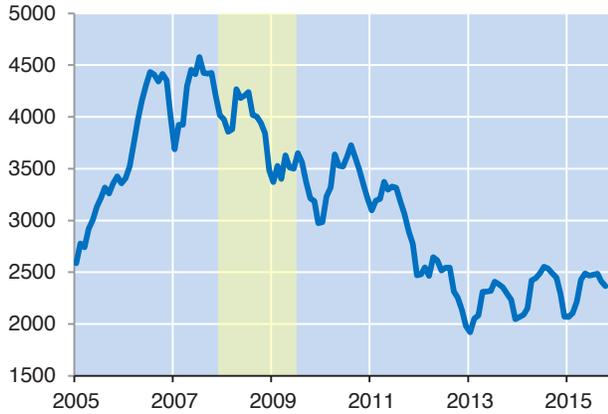
**Refinance Share (% of UPB)**



**NAR Affordability Index**



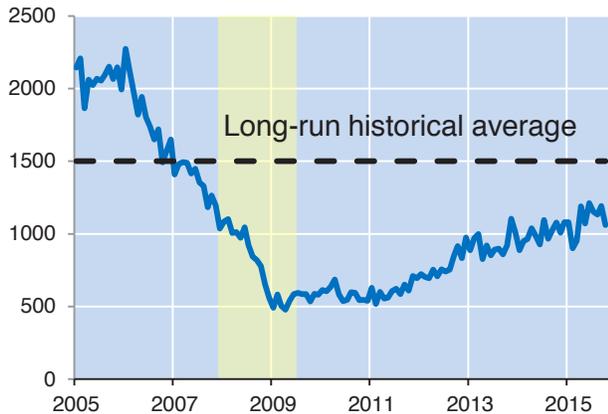
**Homes for sale (Ths., NSA)**



**Homes for rent (Ths., NSA)**



**Housing Starts (Ths., SAAR)**



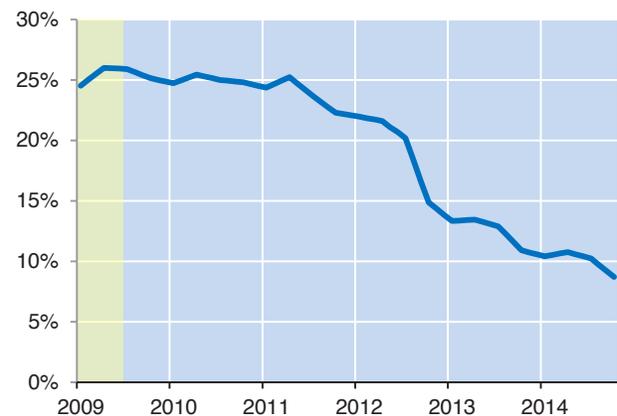
**Rent of Primary Residence (YoY %)**



**Total Homeownership Rate (%)**



**Negative Equity Share**



## December 2015 Economic and Housing Market Outlook

Indicator	Annual Totals															
	2015				2016				2017							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Real GDP (%)	0.6	3.9	2.1	2.0	2.5	2.5	2.5	2.5	2.3	2.3	2.3	2.3	2.2	2.5	2.5	2.3
Consumer Prices (%) a.	-3.1	3.0	1.6	0.9	1.8	2.1	2.1	2.2	2.1	2.1	2.1	2.1	1.2	0.6	2.0	2.1
Unemployment Rate (%) b.	5.6	5.4	5.2	5.0	5.0	4.9	4.9	4.8	4.8	4.8	4.7	4.7	6.2	5.3	4.9	4.8
30-Year Fixed Mtg. Rate (%) b.	3.7	3.8	4.0	3.9	4.1	4.3	4.5	4.7	4.8	5.0	5.2	5.4	4.0	4.2	3.9	4.4
5/1 Hybrid Treas. Indexed ARM Rate (%) b.	2.9	2.9	2.9	3.0	3.2	3.4	3.7	4.0	4.2	4.4	4.6	4.8	2.9	3.0	2.9	3.6
10-Year Const. Mat. Treas. Rate (%) b.	2.0	2.2	2.2	2.2	2.3	2.5	2.7	2.9	3.0	3.2	3.4	3.6	2.4	2.2	2.2	3.3
1-Year Const. Mat. Treas. Rate (%) b.	0.2	0.3	0.3	0.4	0.5	0.8	1.0	1.2	1.4	1.6	1.8	2.0	0.1	0.3	0.9	1.7

Indicator	Annual Totals															
	2015				2016				2017							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Housing Starts c.	0.98	1.16	1.16	1.20	1.23	1.28	1.33	1.38	1.43	1.48	1.53	1.58	0.78	0.92	1.00	1.31
Total Home Sales d.	5.49	5.79	5.98	5.80	5.81	5.91	5.91	6.06	6.11	6.16	6.16	6.21	5.03	5.52	5.98	5.92
FMHPI House Price Appreciation (%) e.	1.6	1.2	1.4	1.5	1.3	1.1	0.9	1.0	0.9	0.9	0.9	0.8	6.2	9.6	5.0	4.4
1-4 Family Mortgage Originations f.	\$320	\$390	\$337	\$314	\$250	\$351	\$317	\$286	\$285	\$299	\$261	\$246	\$1,750	\$1,570	\$1,091	\$1,361
Conventional	\$80	\$110	\$113	\$86	\$70	\$109	\$103	\$94	\$95	\$101	\$89	\$84	\$372	\$355	\$259	\$389
FHA & VA	\$400	\$500	\$450	\$400	\$320	\$460	\$420	\$380	\$380	\$400	\$350	\$330	\$2,122	\$1,925	\$1,350	\$1,750
Total	52	45	45	50	48	35	30	28	27	25	23	22	70	59	39	48
Refinancing Share - Originations (%) g.	-0.3	2.6	2.7	2.7	2.7	3.5	3.7	4.0	4.0	4.0	4.0	4.0	-1.8	-0.5	0.7	1.9
Residential Mortgage Debt (%) h.																

Note: Quarterly and annual forecasts are shown in shaded areas; totals may not add due to rounding; quarterly data expressed as annual rates.

Annual forecast data are averages of quarterly values; annual historical data are reported as Q4 over Q4.

a. Calculations based on quarterly average of monthly index levels; index levels based on the seasonally-adjusted, all-urban consumer price index.

b. Quarterly average of monthly unemployment rates (seasonally-adjusted); Quarterly average of monthly interest rates (not seasonally-adjusted).

c. Millions of housing units; quarterly averages of monthly, seasonally-adjusted levels (reported at an annual rate).

d. Millions of housing units; total sales are the sum of new and existing single-family homes; quarterly averages of monthly, seasonally-adjusted levels (reported at an annual rate).

e. Quarterly growth rate of Freddie Mac's House Price Index; seasonally-adjusted; annual rates for yearly data.

f. Billions of dollars (not seasonally-adjusted); conventional for 2014 are Freddie Mac estimates.

g. Home Mortgage Disclosure Act for all single-family mortgages (not seasonally-adjusted); annual share is dollar-weighted average of quarterly shares (2014-estimated).

h. Federal Reserve Board; growth rate of residential mortgage debt, the sum of single-family and multifamily mortgages (not seasonally-adjusted, annual rate).

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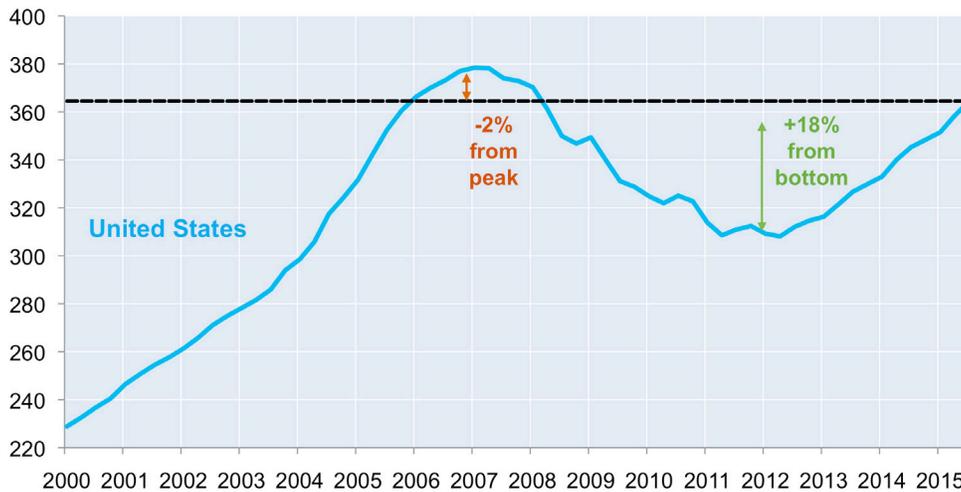
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# In Closing: All real estate is local

We frequently are asked whether house prices have recovered fully from their collapse during the Great Recession. We usually begin our answer by showing Exhibit 1 which displays house prices at the national level since 2000. By this measure, house prices fell 16 percent from their peak in the second quarter of 2006 to their trough in the first quarter of 2012. House prices have recovered steadily since then and currently are within 2 percent of their previous peak.

**Exhibit 1: FHFA All-Transactions House Price Index**



Source: Freddie Mac House Price Index (Seasonally-adjusted)

This national average obscures important differences across the country in house price performance. For instance, we wrote in the October 2015 issue of the Insight & Outlook about Texas's relative insulation from the housing crisis. Prices in Texas fell only 4 percent during the crisis – less than 1/4 of the national house price decline – and have risen well past the previous peak. In contrast, prices fell 44 percent in Florida and remain below their previous peak.

**Exhibit 2: FHFA All-Transactions House Price Index**

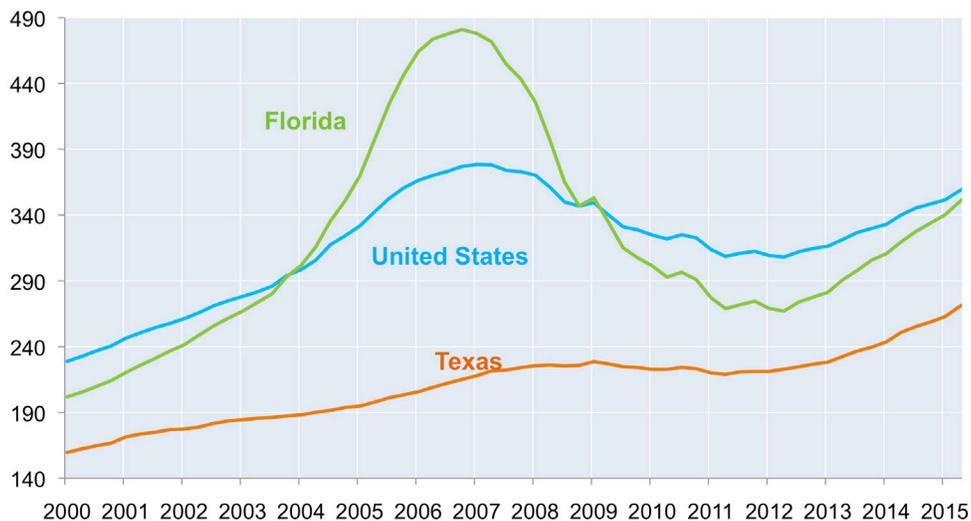
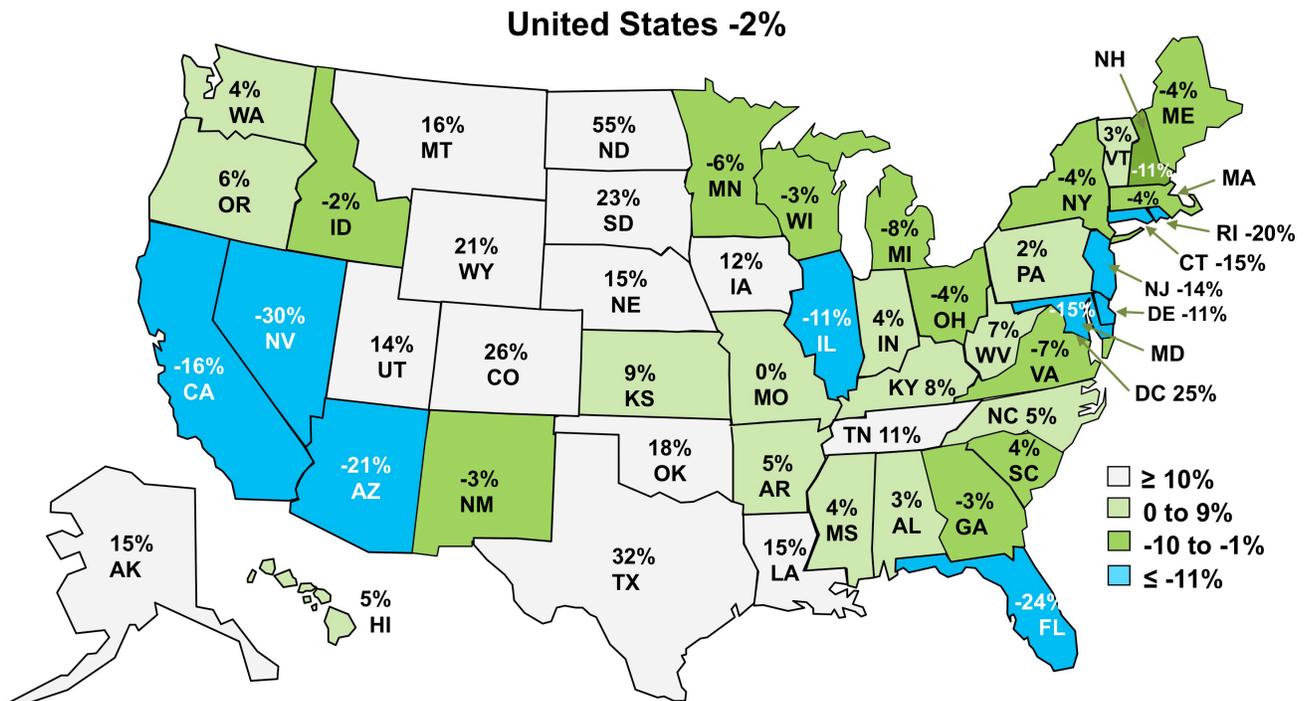


Exhibit 3 summarizes the changes in house prices from June 2006 to September 2015 for all 50 states. This map exhibits clear clusters of house price winners and losers. A swath of states in the center of the country, from Montana and North Dakota down to Texas, has enjoyed strong house price growth and prices currently are well above the June 2006 levels. For the most part, house price recovery has lagged in the states bordering the Mississippi River and east to the Atlantic. California, Nevada, and Arizona form another cluster of significantly lagging states.

**Exhibit 3: FHFA All-Transactions House Price Index Since June 2006**



Source: FHFA All-Transactions House Price Index (NSA)

Equally stark contrasts occur within individual states. California presents a notable example. While house prices in California as a whole remain 16 percent below the June 2006 level, house prices in five California counties already exceed the previous peak levels.

**Exhibit 4: Change in California median house price since June 2006**

Counties	Percent Change
Alameda, Marin, San Francisco, San Mateo, Santa Clara	28
All others	-21

Source: California Association of Realtors (Data as of October 2015)

The five counties listed in Exhibit 4 comprise a cluster in the San Francisco Bay area. Two factors distinguish these counties from the rest of the state. First, these counties include Silicon Valley and their economies are heavily influenced by the tech sector. Second, these areas face natural barriers to expanded home building which limit the supply of new homes.



The difference in house price performance across California is striking. If county-level house prices continue to grow at the average rate exhibited since the house price trough, it will be over a year and a half before Los Angeles County passes its previous peak. By the same measure, Fresno County won't revisit its previous peak for another 3.5 years.

As we noted in our October article, these variations across states serve as a reminder that no simple, single factor completely explains either the housing crisis or the succeeding recovery. Multiple factors are at play in each part of the country. All real estate is local.

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**December 2015 Economic and Housing Market Outlook**

*Revised 12/14/2015*

Indicator	2015				2016				2017				Annual Totals					
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2012	2013	2014	2015	2016	2017
Real GDP (%)	0.6	3.9	2.1	2.0	2.5	2.5	2.5	2.5	2.3	2.3	2.3	2.3	1.3	2.5	2.5	2.2	2.5	2.3
Consumer Prices (%) a.	-3.1	3.0	1.6	0.9	1.8	2.1	2.1	2.2	2.1	2.1	2.1	2.1	1.9	1.2	1.2	0.6	2.0	2.1
Unemployment Rate (%) b.	5.6	5.4	5.2	5.0	5.0	4.9	4.9	4.8	4.8	4.8	4.7	4.7	8.1	7.4	6.2	5.3	4.9	4.8
30-Year Fixed Mtg. Rate (%) b.	3.7	3.8	4.0	3.9	4.1	4.3	4.5	4.7	4.8	5.0	5.2	5.4	3.7	4.0	4.2	3.9	4.4	5.1
5/1 Hybrid Treas. Indexed ARM Rate (%) b.	2.9	2.9	2.9	3.0	3.2	3.4	3.7	4.0	4.2	4.4	4.6	4.8	2.8	2.9	3.0	2.9	3.6	4.5
10-Year Const. Mat. Treas. Rate (%) b.	2.0	2.2	2.2	2.2	2.3	2.5	2.7	2.9	3.0	3.2	3.4	3.6	1.8	2.4	2.6	2.2	2.6	3.3
1-Year Const. Mat. Treas. Rate (%) b.	0.2	0.3	0.3	0.4	0.5	0.8	1.0	1.2	1.4	1.6	1.8	2.0	0.2	0.1	0.1	0.3	0.9	1.7

Indicator	2015				2016				2017				Annual Totals					
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2012	2013	2014	2015	2016	2017
Housing Starts c.	0.98	1.16	1.16	1.20	1.23	1.28	1.33	1.38	1.43	1.48	1.53	1.58	0.78	0.92	1.00	1.13	1.31	1.51
Total Home Sales d.	5.49	5.79	5.98	5.80	5.81	5.91	5.91	6.06	6.11	6.16	6.16	6.21	5.03	5.52	5.38	5.77	5.92	6.16
FMHPI House Price Appreciation (%) e.	1.6	1.2	1.4	1.5	1.3	1.1	0.9	1.0	0.9	0.9	0.9	0.8	6.2	9.6	5.0	5.8	4.4	3.5
1-4 Family Mortgage Originations f.																		
Conventional	\$320	\$390	\$337	\$314	\$250	\$351	\$317	\$286	\$285	\$299	\$261	\$246	\$1,750	\$1,570	\$1,091	\$1,361	\$1,205	\$1,091
FHA & VA	\$80	\$110	\$113	\$86	\$70	\$109	\$103	\$94	\$95	\$101	\$89	\$84	\$372	\$355	\$259	\$389	\$375	\$369
Total	\$400	\$500	\$450	\$400	\$320	\$460	\$420	\$380	\$380	\$400	\$350	\$330	\$2,122	\$1,925	\$1,350	\$1,750	\$1,580	\$1,460
Refinancing Share - Originations (%) g.	52	45	45	50	48	35	30	28	27	25	23	22	70	59	39	48	35	24
Residential Mortgage Debt (%) h.	-0.3	2.6	2.7	2.7	2.7	3.5	3.7	4.0	4.0	4.0	4.0	4.0	-1.8	-0.5	0.7	1.9	3.5	4.0

Note: Quarterly and annual forecasts are shown in shaded areas; totals may not add due to rounding; quarterly data expressed as annual rates.

Annual forecast data are averages of quarterly values; annual historical data are reported as Q4 over Q4.

- a. Calculations based on quarterly average of monthly index levels; index levels based on the seasonally-adjusted, all-urban consumer price index.
- b. Quarterly average of monthly unemployment rates (seasonally-adjusted); Quarterly average of monthly interest rates (not seasonally-adjusted).
- c. Millions of housing units; quarterly averages of monthly, seasonally-adjusted levels (reported at an annual rate).
- d. Millions of housing units; total sales are the sum of new and existing single-family homes; quarterly averages of monthly, seasonally-adjusted levels (reported at an annual rate).
- e. Quarterly growth rate of Freddie Mac's House Price Index; seasonally-adjusted; annual rates for yearly data.
- f. Billions of dollars (not seasonally-adjusted); conventional for 2014 are Freddie Mac estimates.
- g. Home Mortgage Disclosure Act for all single-family mortgages (not seasonally-adjusted); annual share is dollar-weighted average of quarterly shares (2014 estimated).
- h. Federal Reserve Board; growth rate of residential mortgage debt, the sum of single-family and multifamily mortgages (not seasonally-adjusted, annual rate).

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