HOUSING FINANCE POLICY CENTER

HOUSING FINANCE AT A GLANCE

A MONTHLY CHARTBOOK

June 2018

URBAN INSTITUTE · ELEVATE · THE · DEBATE

ABOUT THE CHARTBOOK

The Housing Finance Policy Center's (HFPC) mission is to produce analyses and ideas that promote sound public policy, efficient markets, and access to economic opportunity in the area of housing finance. *At A Glance*, a monthly chartbook and data source for policymakers, academics, journalists, and others interested in the government's role in mortgage markets, is at the heart of this mission.

We welcome feedback from our readers on how we can make *At A Glance* a more useful publication. Please email any comments or questions to ataglance@urban.org.

To receive regular updates from the Housing Finance Policy Center, please visit here to sign up for our bi-weekly newsletter.

HOUSING FINANCE POLICY CENTER STAFF

Laurie Goodman
Center Vice President

Alanna McCargo
Center Vice President

Edward Golding
Senior Fellow

Jim Parrott
Senior Fellow

Sheryl Pardo
Associate Director of Communications

Todd Hill
Policy Program Manager

Jun Zhu
Senior Research Associate

Bing Bai
Research Associate

Karan Kaul
Research Associate

Jung Choi
Research Associate

Bhargavi Ganesh
Research Analyst

Sarah Strochak
Research Assistant

Andrea Reyes
Project Manager

CONTENTS

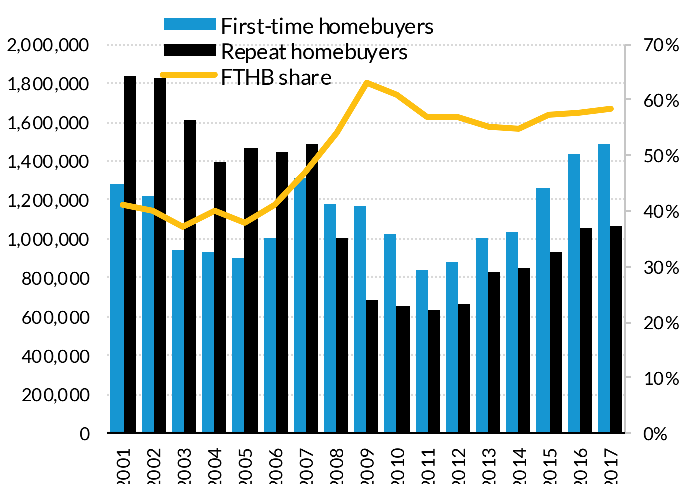
CONTENTS

INTRODUCTION

The increase in first time homebuyers is likely to continue

The top chart on page 20 shows the first-time homebuyer (FTHB) share for purchase mortgages backed by the GSEs (Fannie Mae and Freddie Mac) and the Federal Housing Administration (FHA). The FTHB share has trended higher post-recession for both channels. For FHA, the FTHB share has historically hovered around 80 percent. It bottomed out at around 75 during the recession but has slowly crept up to nearly 83 percent today. The GSE FTHB share was much lower than FHA's historically – about 25 percent during the early 2000s; it increased to about 40 percent during the housing bubble. After falling slightly during the recession, the GSE FTHB share has been on a sustained upswing since 2013, just shy of 50 percent today. The combined FTHB rate for FHA and GSE purchase mortgages is 60 percent, about 20 percentage points above the 40 percent pre-crisis average.

FTHB rate has increased post-crisis in part because improvements in the economy have allowed more FTHBs to enter the market. But a big chunk of the increase in the FTHB share is driven by pullback of repeat buyers from the market.



Source: eMBS, FHA, and Urban Institute.

Between 2001 and 2007, repeat buyers accounted for anywhere from 1.4 to 1.8 million home purchases per year, while FTHBs drove anywhere from 900K to 1.3 million in annual home sales. Today the two have traded places – in 2017 repeat buyers were responsible for just over a million home purchases while FTHBs bought close to 1.5 million homes. What caused this shift? Falling house prices during the recession deprived millions of homeowners from accumulating equity, which had historically provided the funds required to upgrade. However, as house prices have appreciated in recent years and homeowners have accumulated equity, will we finally see repeat buying activity rise to historical levels?

Likely not. Although homeowners have more equity today, most of them also have ultra-low rate mortgages they locked-in during the recession, when rates were persistently low, well below 4 percent, for an extended period of time (page 11). Today, mortgage rates are well above 4.6 percent according to Freddie Mac. If a homeowner with a rate of 3.5 percent were to trade up, they would need to get a new mortgage at the prevailing market rate. At these rates, an illustrative repeat homebuyer who funded the upgrade solely by monetizing their equity (without taking on additional debt) would pay several hundred dollars extra every month because of the higher rate. On a $300,000 mortgage, they would be paying $200 extra every month, or $2400 a year. Because homebuyers typically take on additional debt when they upgrade, the actual increase in the mortgage payment would be much bigger. Plus, the more rates rise in the coming years, the bigger the rate difference will become and the more interest trade up buyers will have to shell out. Surely, many homebuyers will find it much more economical to simply stay in their existing homes. This would continue to dampen repeat buying volumes and keep pushing the FTHB share higher.

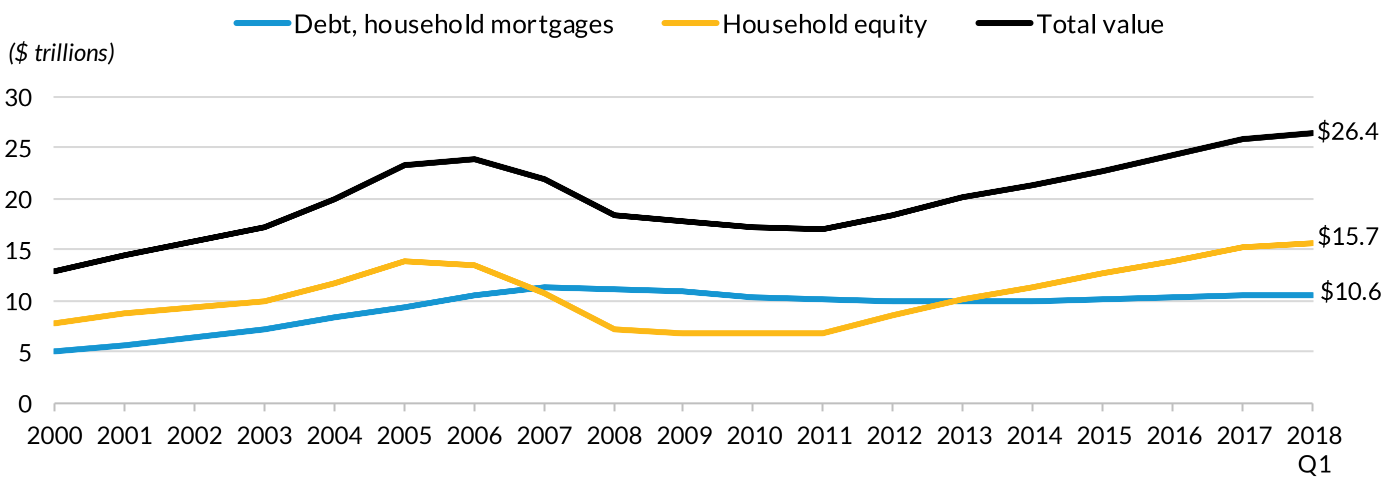
INSIDE THIS ISSUE

- The total value of the US housing market continued to rise in Q1 2018, driven by a $538 billion increase in household equity over the last quarter (page 6).
- Originator profitability measure declined to new post-crisis low in May 2018 as rates went up (page 16).
- The first-time homebuyer share of GSE purchase loans reached the highest level in recent history in March 2018 (page 20).
- Both modifications and liquidations continued to slow down in Q1, 2018; there are no new HAMP modifications, as the program expired at the end of 2017 (page 23).

MARKET SIZE OVERVIEW

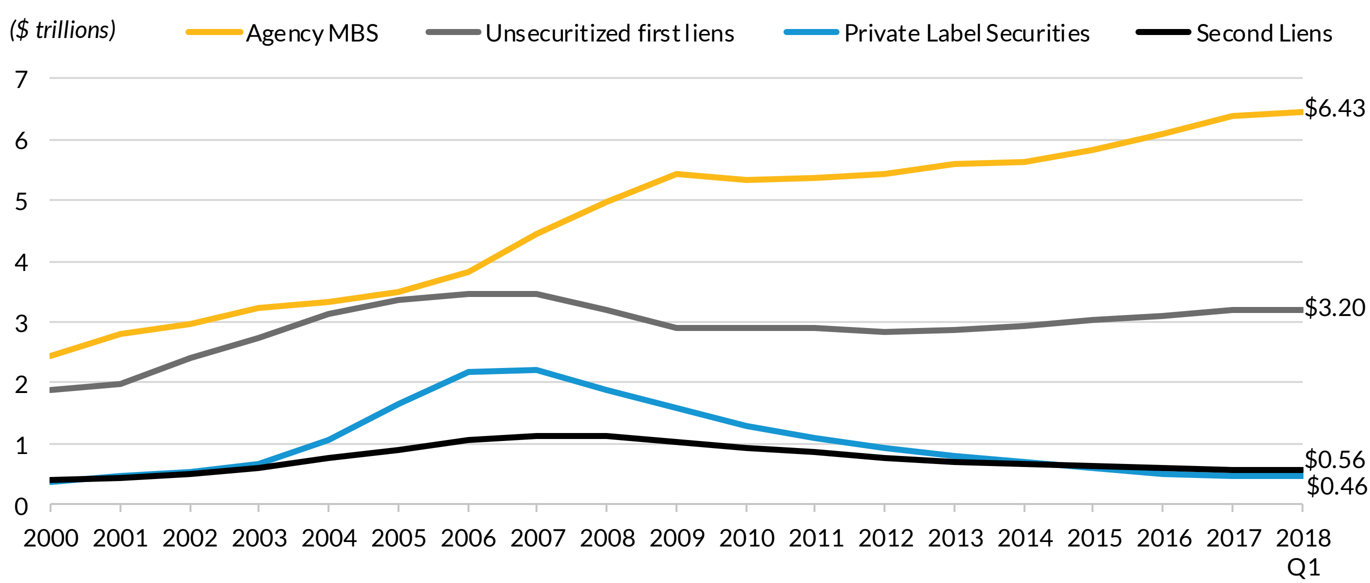
The Federal Reserve's Flow of Funds report has consistently indicated an increasing total value of the housing market driven by growing household equity since 2012, and 2018 Q1 was no different. While total debt and mortgages was stable at $10.6 trillion, household equity reached a new high of $15.7 trillion, bringing the total value of the housing market to $26.4 trillion, 10 percent higher than the pre-crisis peak in 2006. Agency MBS make up 59.3 percent of the total mortgage market, private-label securities make up 4.9 percent, and unsecuritized first liens at the GSEs, commercial banks, savings institutions, and credit unions make up 30.1 percent. Second liens comprise the remaining 5.7 percent of the total.

Value of the US Housing Market



Sources: Federal Reserve Flow of Funds and Urban Institute. *Last updated June 2018.*

Size of the US Residential Mortgage Market



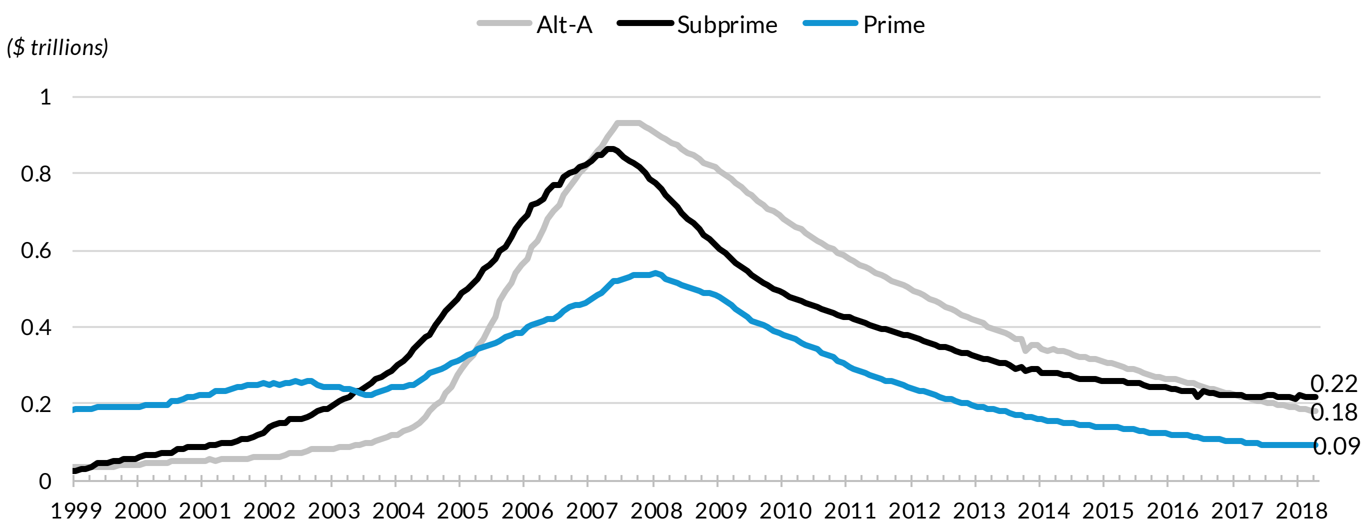
Sources: Federal Reserve Flow of Funds, Inside Mortgage Finance, Fannie Mae, Freddie Mac, eMBS and Urban Institute. *Last updated June 2018.* **Note:** Unsecuritized first liens includes loans held by commercial banks, GSEs, savings institutions, and credit unions.

OVERVIEW

MARKET SIZE OVERVIEW

As of April 2018, debt in the private-label securitization market totaled $487 billion and was split among prime (18.8 percent), Alt-A (37.0 percent), and subprime (44.3 percent) loans. In May 2018, outstanding securities in the agency market totaled $6.47 trillion and were 43.6 percent Fannie Mae, 27.4 percent Freddie Mac, and 29.1 percent Ginnie Mae. Ginnie Mae has had more outstanding securities than Freddie Mac since May 2016.

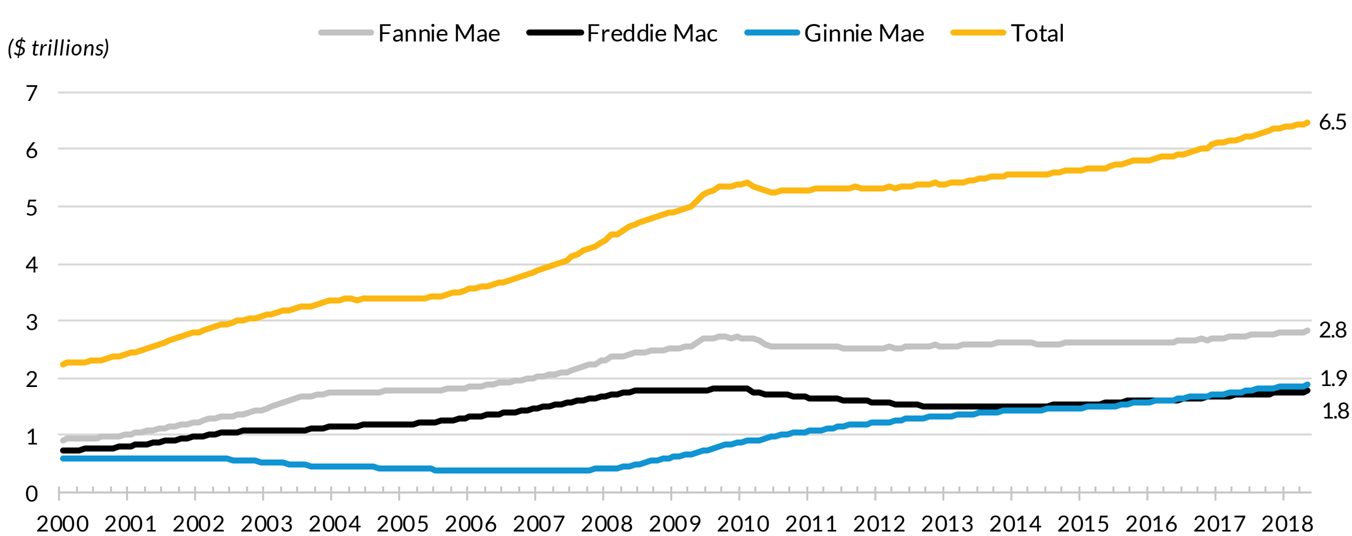
Private-Label Securities by Product Type



Sources: CoreLogic and Urban Institute.

April 2018

Agency Mortgage-Backed Securities



May 2018

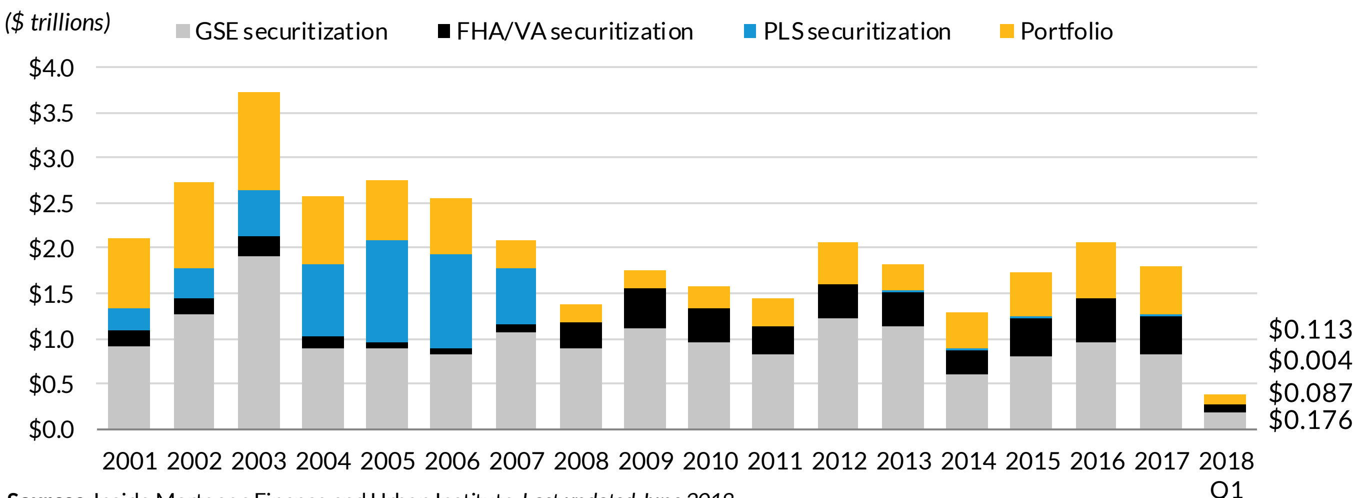
Sources: eMBS and Urban Institute.

OVERVIEW

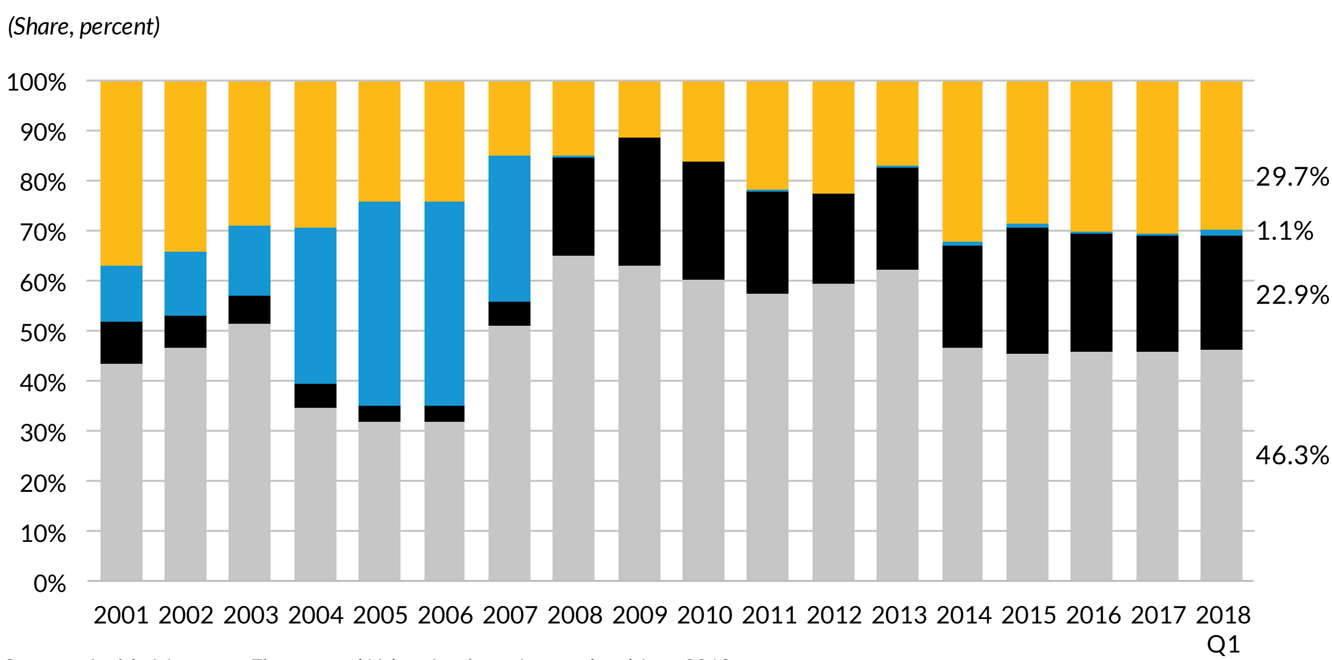
ORIGINATION VOLUME AND COMPOSITION

First Lien Origination Volume

First lien originations totaled $380 billion in Q1 2018, down 16 percent from the first quarter of 2017, mostly due to high interest rates. The portfolio originations share was 28 percent, the GSE share was around 46 percent, and the FHA/VA share was around 23 percent, all consistent with 2017 shares. Origination of private-label securities was under just over 1 percent, slightly higher than the 2017 share.



Sources: Inside Mortgage Finance and Urban Institute. *Last updated June 2018.*



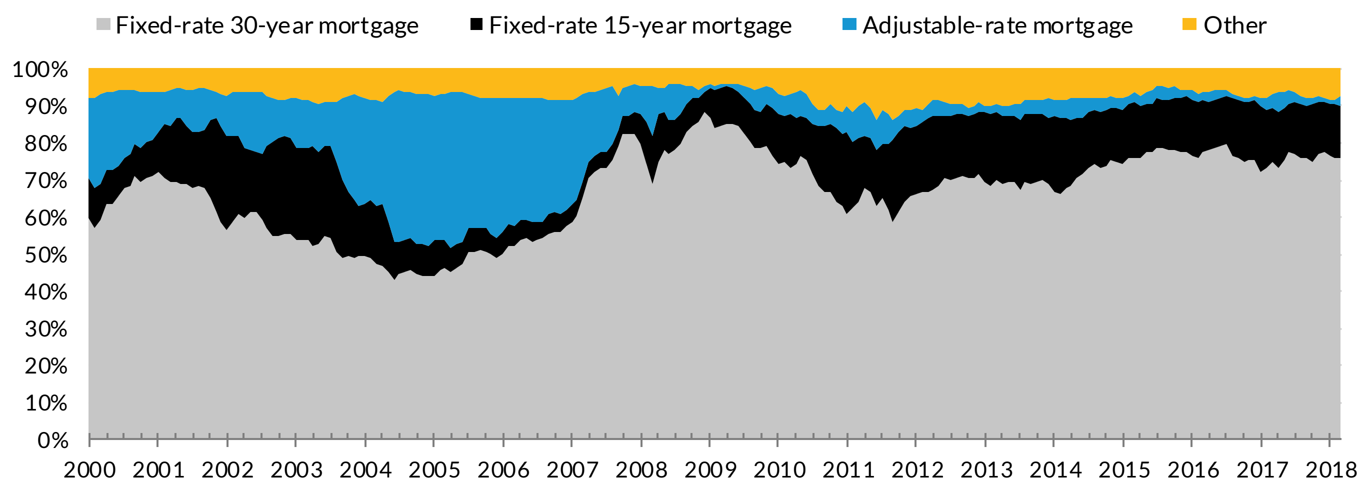
Sources: Inside Mortgage Finance and Urban Institute. *Last updated June 2018.*

OVERVIEW

MORTGAGE ORIGINATION PRODUCT TYPE

Adjustable-rate mortgages (ARMs) accounted for as much as 42 percent of all new originations during the peak of the 2005 housing bubble (top chart). The ARMs fell to an historic low of 1 percent in 2009, and then slowly grew to a high of 6 percent in April 2014. Since then, ARMs have begun to decline again to 2.4 percent in March 2018. The 15-year fixed-rate mortgage (FRM), predominantly a refinance product, accounted for 14.1 percent of new originations in March 2018. If we exclude refinances (bottom chart), the share of 30-year FRMs in February 2018 stood at 91.1 percent, 15-year FRMs at 5.2 percent, and ARMs at 2.0 percent.

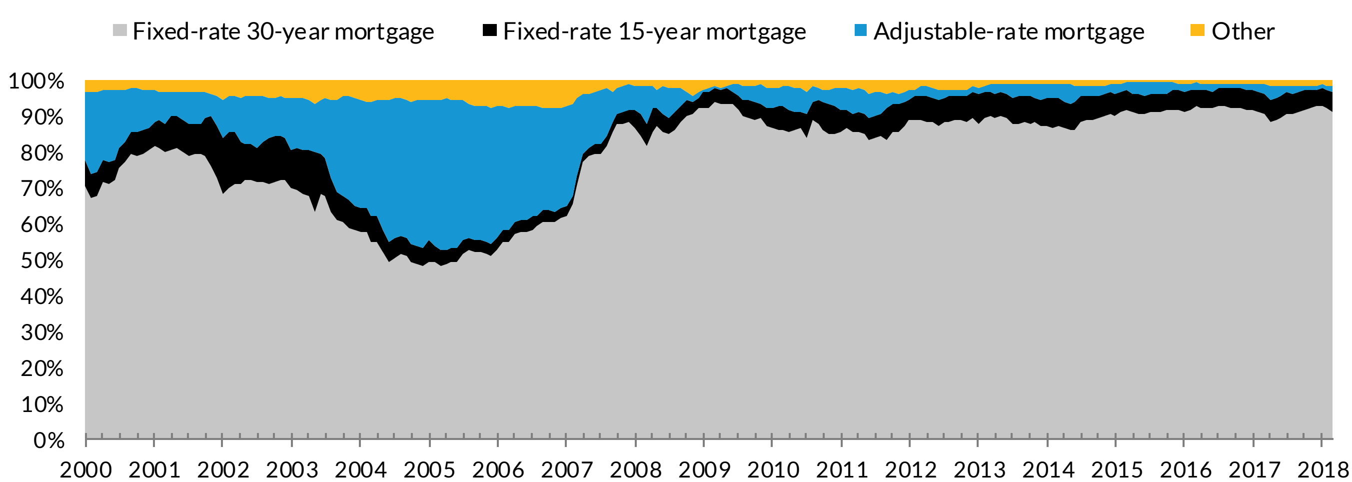
All Originations



Sources: CoreLogic, eMBS, HMDA, SIFMA and Urban Institute.

March 2018

Purchase Loans Only



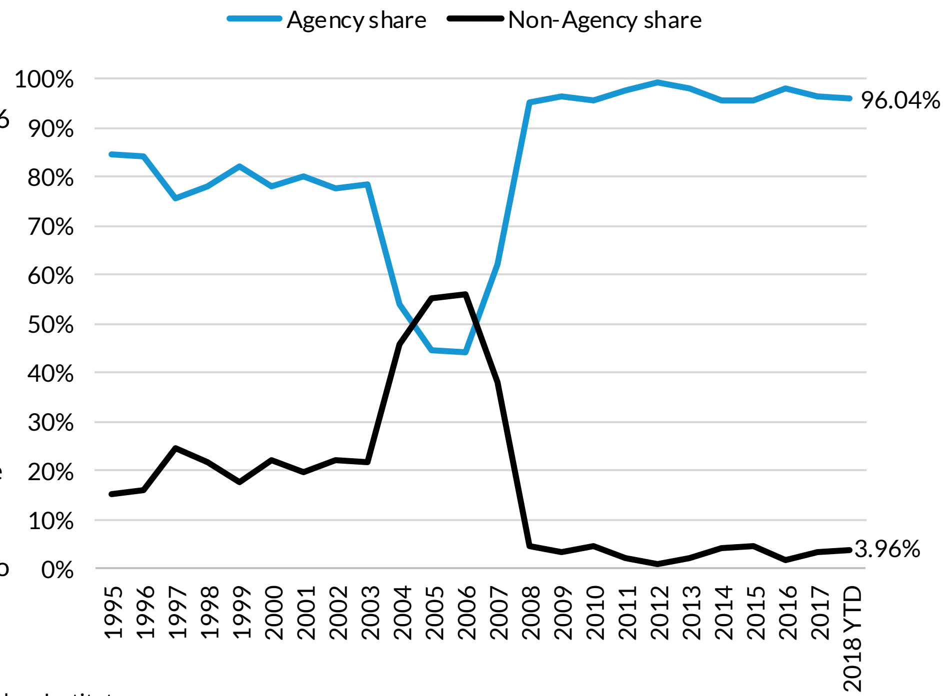
Sources: CoreLogic, eMBS, HMDA, SIFMA and Urban Institute.

March 2018

SECURITIZATION VOLUME AND COMPOSITION

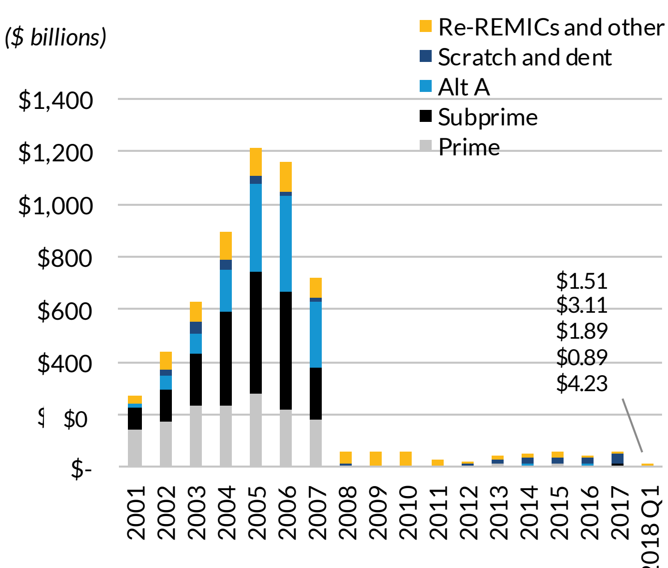
Agency/Non-Agency Share of Residential MBS Issuance

The non-agency share of mortgage securitizations in the first five months of 2018 was 3.96 percent, slightly above the 3.4 percent share in 2017. The non-agency securitization volume totaled \$11.62 billion in the first quarter of 2018, only a 2 percent increase over the same period in 2017, but there is a change in the mix. The non-performing and re-performing (scratch and dent) deals dropped 48 percent compared to a year ago, while the prime securitizations surged 80 percent year over year. Non-agency securitizations continue to be tiny compared to pre-crisis levels.



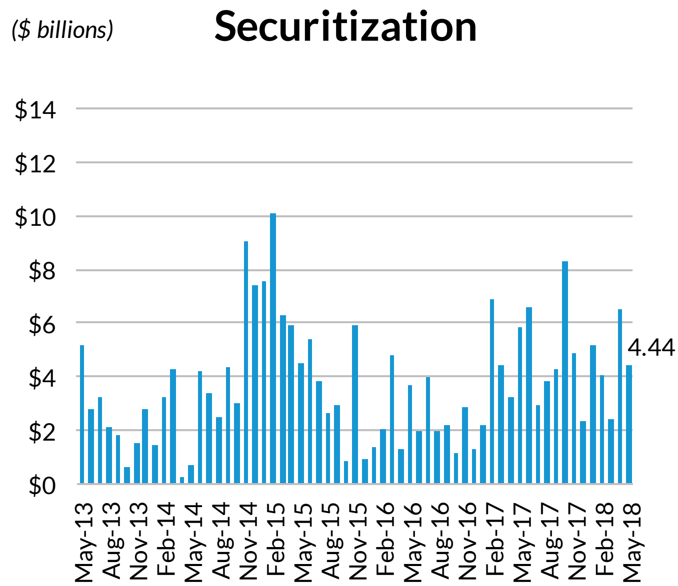
Sources: Inside Mortgage Finance and Urban Institute.
Note: Based on data from May 2018.

Non-Agency MBS Issuance



Sources: Inside Mortgage Finance and Urban Institute.

Monthly Non-Agency Securitization



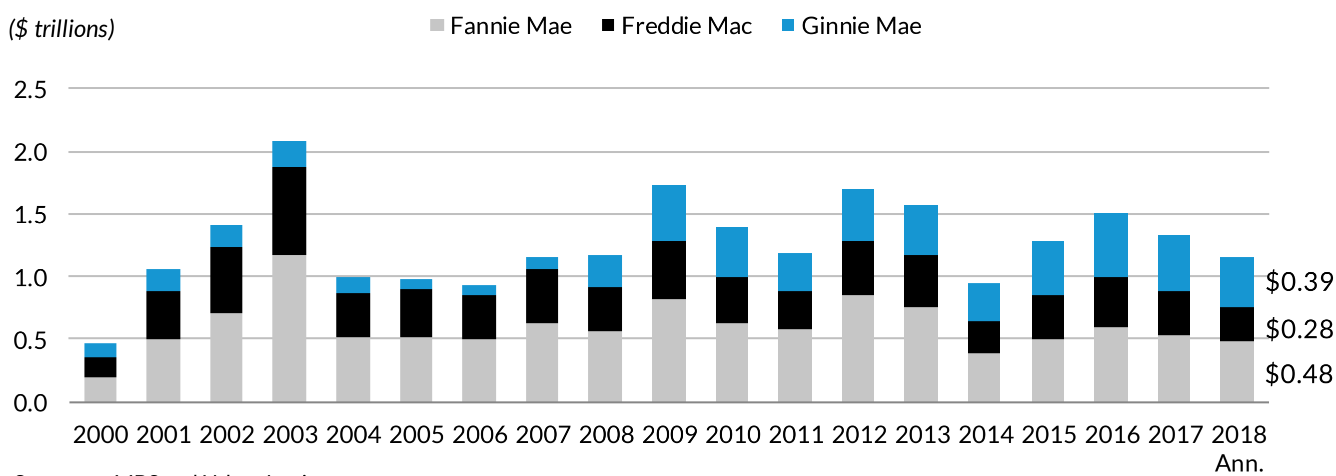
Sources: Inside Mortgage Finance and Urban Institute.

OVERVIEW

AGENCY ACTIVITY: VOLUMES AND PURCHASE/ REFI COMPOSITION

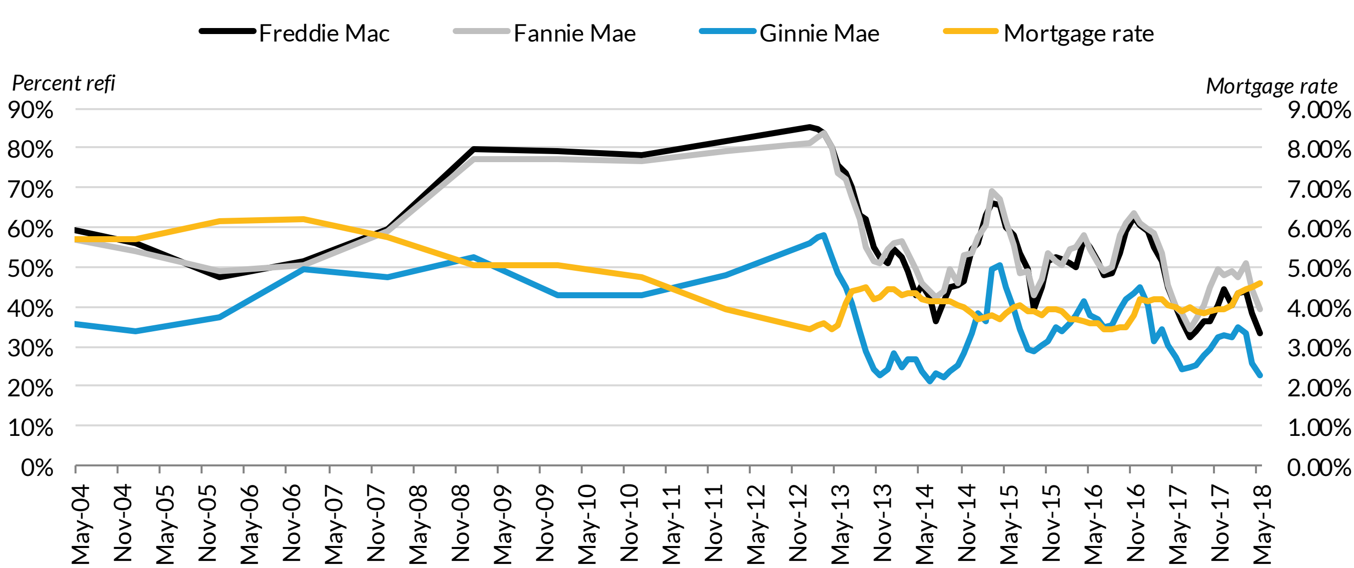
Agency issuance totaled $478.8 billion in the first five months of 2018, $1.149 trillion on an annualized basis. This is down about 9.0 percent from the first five months of 2017. In May 2018, the refinance share continued to decline for all three agencies. This is a result of increasing interest rates and the spring uptick in purchase activity. Loans sold into GSE pools in May are based on March and April home sales.

Agency Gross Issuance



Sources: eMBS and Urban Institute.
Note: Annualized figure based on data from May 2018.

Percent Refi at Issuance

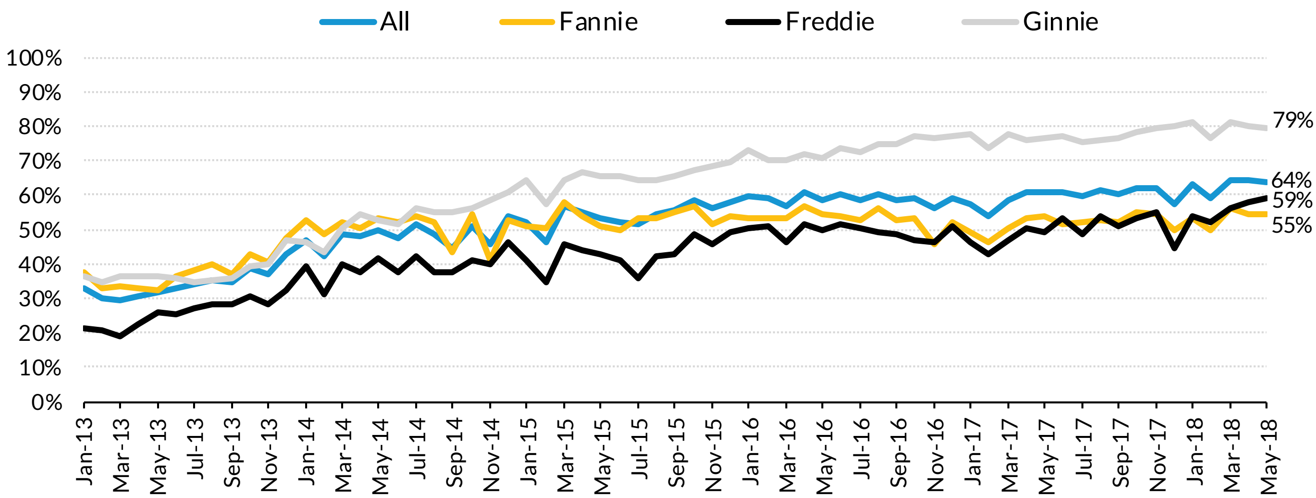


Sources: eMBS and Urban Institute.
Note: Based on at-issuance balance. Figure based on data from May 2018.

NONBANK ORIGINATION SHARE

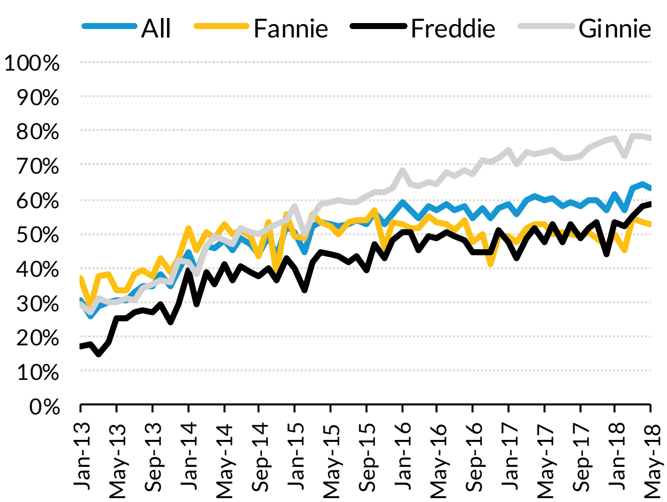
The nonbank origination share has been rising steadily for all three agencies since 2013. The Ginnie Mae nonbank share has been consistently higher than the GSEs, standing at 79 percent in May 2018. The Fannie Mae and Freddie Mac nonbank shares stood at 55 and 59 percent, respectively. The nonbank originator share is higher for refinance loans than for purchase loans across all three agencies.

Nonbank Origination Share: All Loans



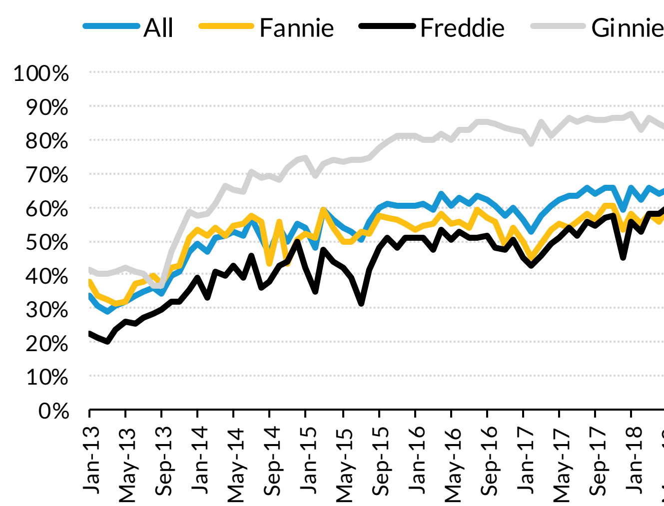
Sources: *eMBS and Urban Institute.*

Nonbank Origination Share: Purchase Loans



Sources: *eMBS and Urban Institute*

Nonbank Origination Share: Refi Loans



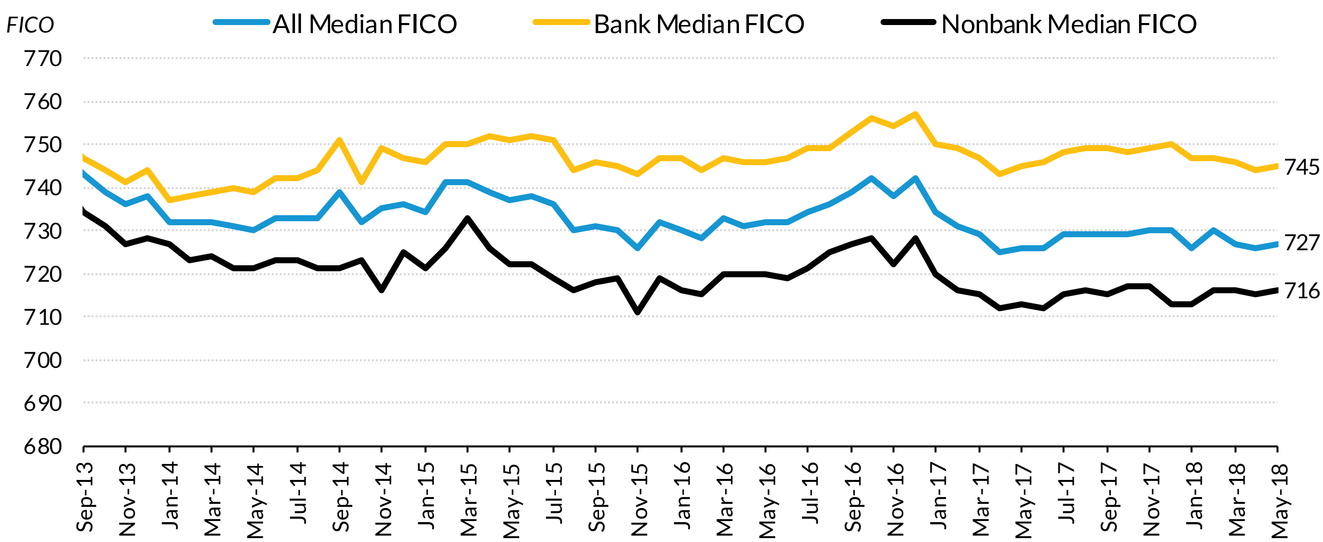
Sources: *eMBS and Urban Institute*

OVERVIEW

NONBANK CREDIT BOX

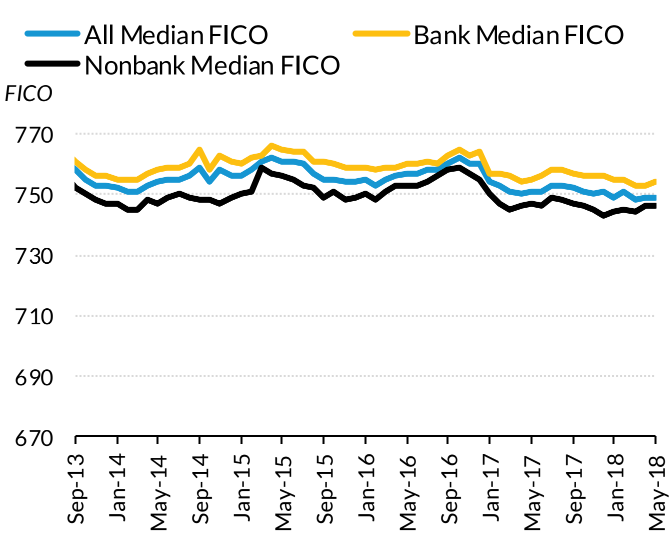
Nonbank originators have played a key role in opening up access to credit. The median GSE and the median Ginnie Mae FICO scores for loans originated by nonbanks are lower than their bank counterparts. Within the GSE space, both bank and nonbank FICOs have declined since 2014, with further relaxation in FICOs since 2017. In contrast, within the Ginnie Mae space, FICO scores for bank originations have increased since 2014 while nonbank FICOs have declined. This largely reflects the sharp cut-back in FHA lending by many banks.

Agency FICO: Bank vs. Nonbank



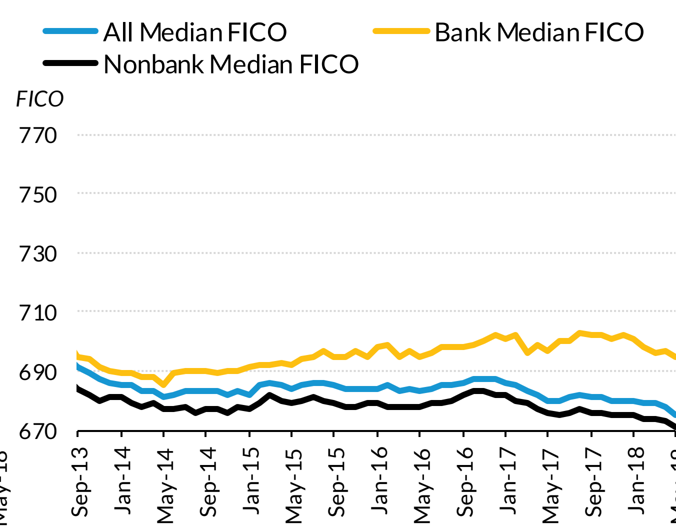
Sources: *eMBS and Urban Institute.*

GSE FICO: Bank vs. Nonbank



Sources: *eMBS and Urban Institute.*

Ginnie Mae FICO: Bank vs. Nonbank

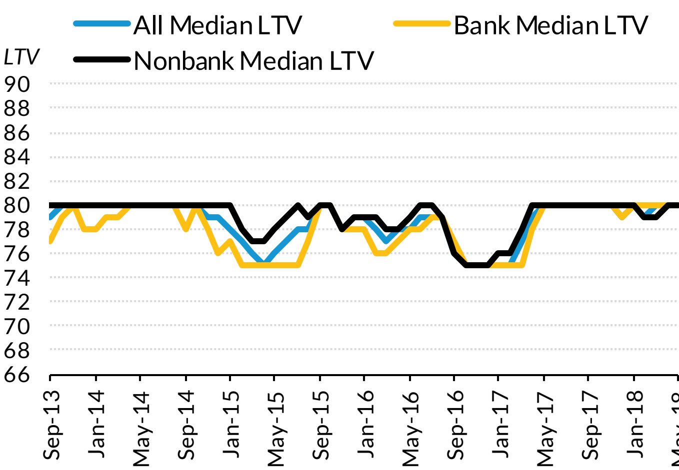


Sources: *eMBS and Urban Institute.*

OVERVIEW
NONBANK CREDIT BOX

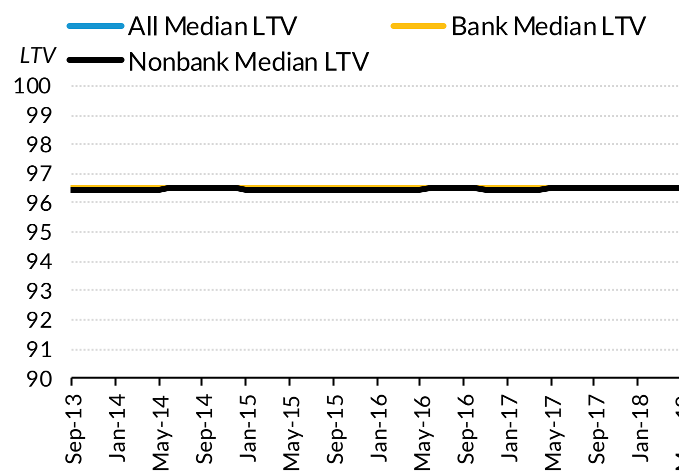
The median LTV ratios for loans originated by nonbanks are similar to their bank counterparts, while the median DTIs for nonbank loans are higher, indicating that nonbanks are more accommodating in this as well as in the FICO dimension. Note that since early 2017 there has been a measurable increase in DTIs. This is true for both Ginnie Mae and GSE loans, banks and nonbank originators. Rising DTIs are to be expected in a rising rate environment, as higher rates and usually accompanying higher home prices drive up borrowers' monthly payments, and the reduction in refinance volumes makes lenders more apt to work a bit harder to get a loan approved for a marginal borrower.

GSE LTV: Bank vs. Nonbank



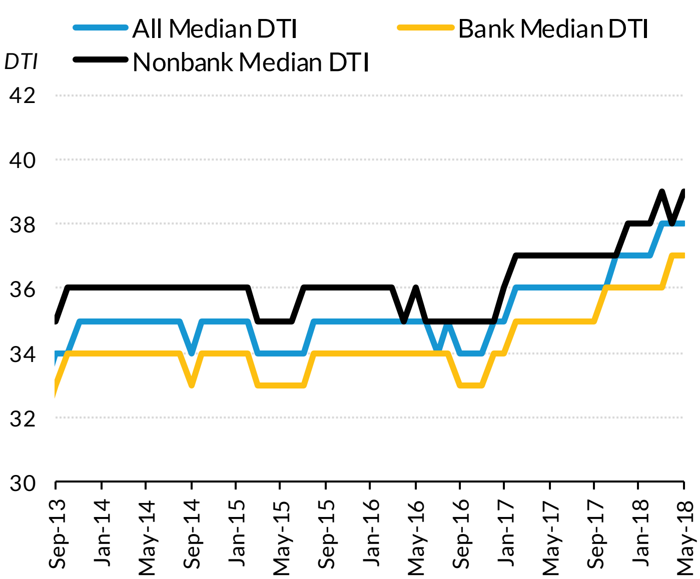
Sources: *eMBS and Urban Institute.*

Ginnie Mae LTV: Bank vs. Nonbank



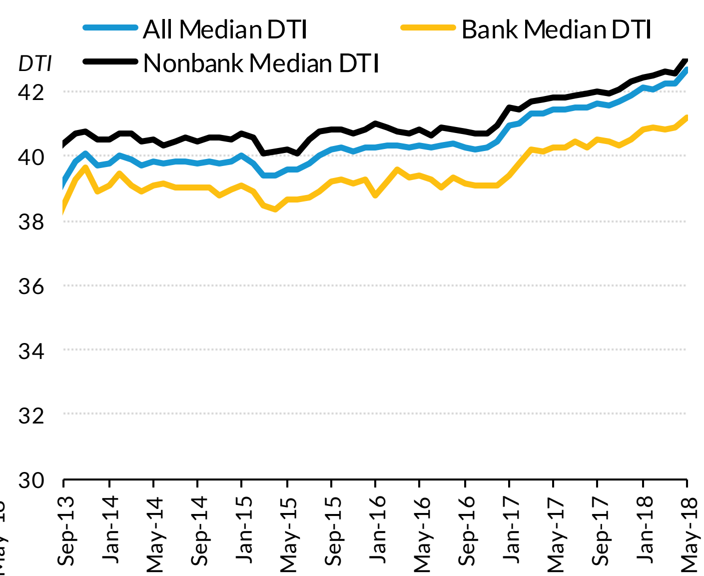
Sources: *eMBS and Urban Institute.*

GSE DTI: Bank vs. Nonbank



Sources: *eMBS and Urban Institute.*

Ginnie Mae DTI: Bank vs. Nonbank



Sources: *eMBS and Urban Institute.*

STATE OF THE MARKET

MORTGAGE ORIGINATION PROJECTIONS

Fannie Mae, Freddie Mac and MBA all forecast origination volume in 2018 to be marginally lower than the 1.7-1.9 billion estimated for 2017. These 2017 and 2018 numbers are considerably lower than the $2.0 trillion of originations in 2016. The differences owe primarily to a decline the refi share: from 48-49 percent in 2016 to 35-36 percent in 2017 to a forecasted 25-29 percent in 2018. Fannie, Freddie and MBA all forecast 2018 housing starts to be around 1.3 million units, up from a 1.2 million units in 2017. Home sales forecasts for 2018 are around 6.3 million, a slight increase from 2017 levels.

Total Originations and Refinance Shares

Period	Originations ($ billions)			Refi Share (%)		
	Total, FNMA estimate	Total, FHLMC estimate	Total, MBA estimate	FNMA estimate	FHLMC estimate	MBA estimate
2018 Q1	372	373	346	41	44	37
2018 Q2	468	441	447	27	20	26
2018 Q3	433	478	450	23	20	22
2018 Q4	393	428	370	25	21	27
2019 Q1	339	430	355	32	24	28
2019 Q2	463	456	465	24	23	22
2019 Q3	455	450	460	24	23	22
2019 Q4	412	424	365	26	21	26
FY 2014	1301	1350	1261	40	39	40
FY 2015	1730	1750	1679	47	45	46
FY 2016	2052	2125	1891	49	47	49
FY 2017	1826	1850	1710	36	36	35
FY 2018	1667	1720	1613	29	25	28
FY 2019	1670	1760	1645	26	23	24

Sources: Fannie Mae, Freddie Mac, Mortgage Bankers Association and Urban Institute.
Note: Shaded boxes indicate forecasted figures. All figures are estimates for total single-family market. Column labels indicate source of estimate. Regarding interest rates, the yearly averages for 2014, 2015, 2016 and 2017 were 4.2%, 3.9%, 3.8%, and 4.0%. For 2018, the respective projections for Fannie, Freddie, and MBA are 4.4%, 4.6%, and 4.3%.

Housing Starts and Homes Sales

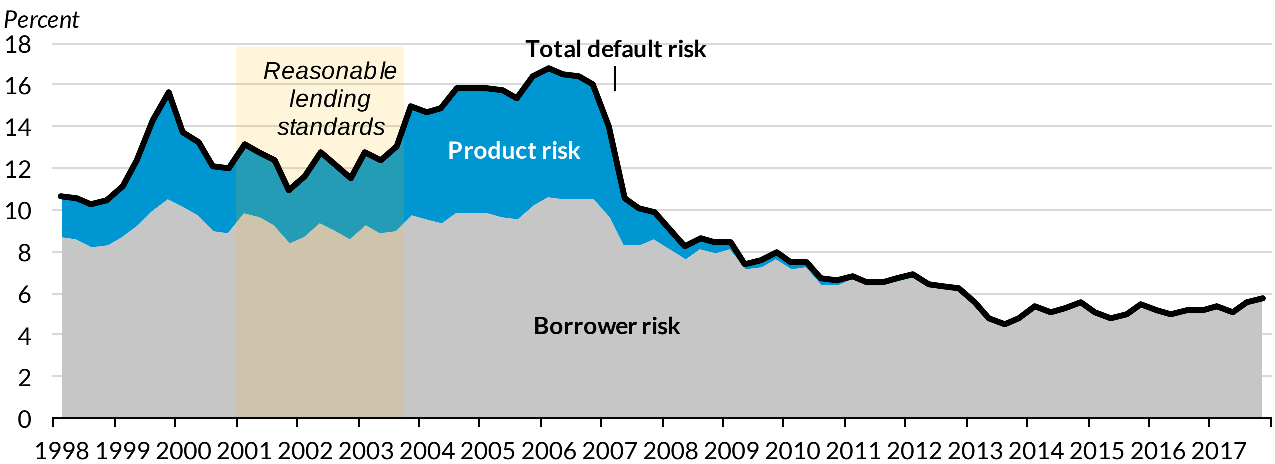
Year	Housing Starts, thousands			Home Sales. thousands				
	Total, FNMA estimate	Total, FHLMC estimate	Total, MBA estimate	Total, FNMA estimate	Total, FHLMC estimate	Total, MBA estimate	Existing, MBA estimate	New, MBA Estimate
FY 2014	1003	1000	1001	5377	5380	5360	4920	440
FY 2015	1112	1110	1108	5751	5750	5740	5237	503
FY 2016	1174	1170	1177	6013	6010	6001	5440	561
FY 2017	1203	1200	1208	6123	6120	6159	5542	617
FY 2018	1300	1300	1313	6279	6300	6295	5642	653
FY 2019	1306	1400	1376	6375	6440	6450	5783	667

Sources: Mortgage Bankers Association, Fannie Mae, Freddie Mac and Urban Institute.
Note: Shaded boxes indicate forecasted figures. All figures are estimates for total single-family market; column labels indicate source of estimate.

STATE OF THE MARKET
CREDIT AVAILABILITY AND ORIGINATOR PROFITABILITY

Housing Credit Availability Index (HCAI)

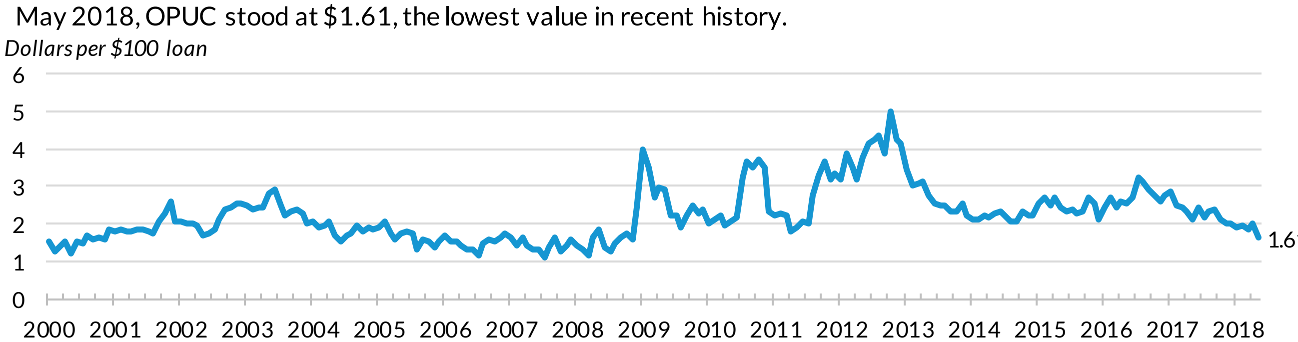
HFPC's Housing Credit Availability Index (HCAI) assesses lenders' tolerance for both borrower risk and product risk, calculating the share of owner-occupied purchase loans that are likely to default. The index shows that credit availability increased for a second quarter in a row to 5.8 percent, the highest level since 2013, in the fourth quarter of 2017 (Q4 2017). This increase was mainly driven by the credit expansions within both the GSE and government channels, thanks to higher interest rates and lower refinance volumes. More information about the HCAI, including the breakdown by market segment, is available here.



Sources: eMBS, Corelogic, HMDA, IMF, and Urban Institute.
Note: Default is defined as 90 days or more delinquent at any point. *Last updated April 2018.*

Originator Profitability and Unmeasured Costs

When originator profits are higher, mortgage volumes are less responsive to changes in interest rates, because originators are at capacity. Originator Profitability and Unmeasured Costs (OPUC), formulated and calculated by the Federal Reserve Bank of New York, is a good relative measure of originator profitability. OPUC uses the sales price of the mortgage in the secondary market (less par) and adds two additional sources of profitability; retained servicing (both base and excess servicing, net of g-fees), and points paid by the borrower. OPUC has generally been high when interest rates were low, as originators are capacity constrained due to refinance volume, and have no incentive to reduce rates. Conversely, when interest rates are relatively high and refi activity is low, originators are competing for a more limited amount of mortgages, driving profitability down. In May 2018, OPUC stood at $1.61, the lowest value in recent history.



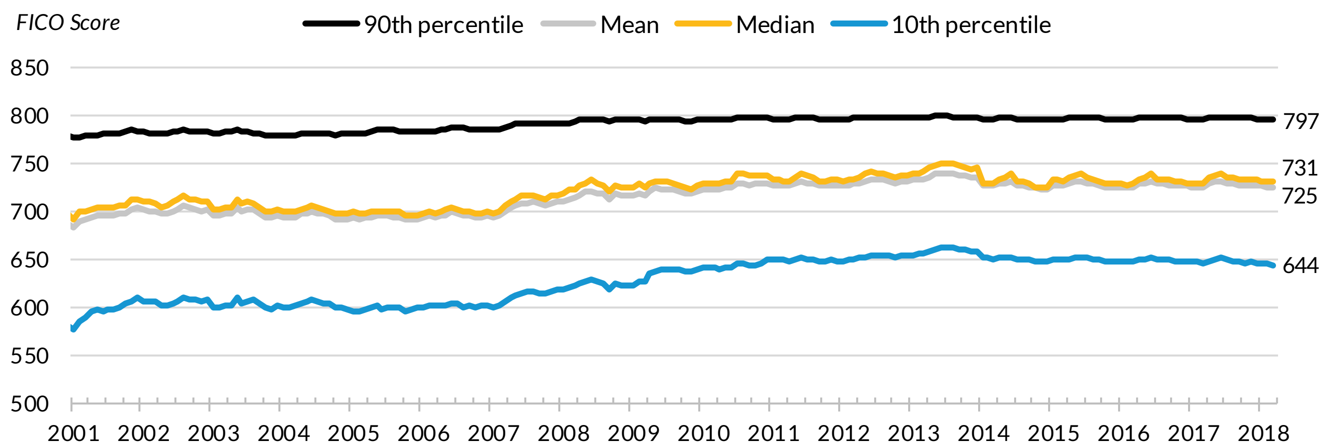
Sources: Federal Reserve Bank of New York, updated monthly and available at this link: http://www.ny.frb.org/research/epr/2013/1113fust.html and Urban Institute.
Note: OPUC is a is a monthly (4-week moving) average as discussed in Fuster et al. (2013).

STATE OF THE MARKET

CREDIT AVAILABILITY FOR PURCHASE LOANS

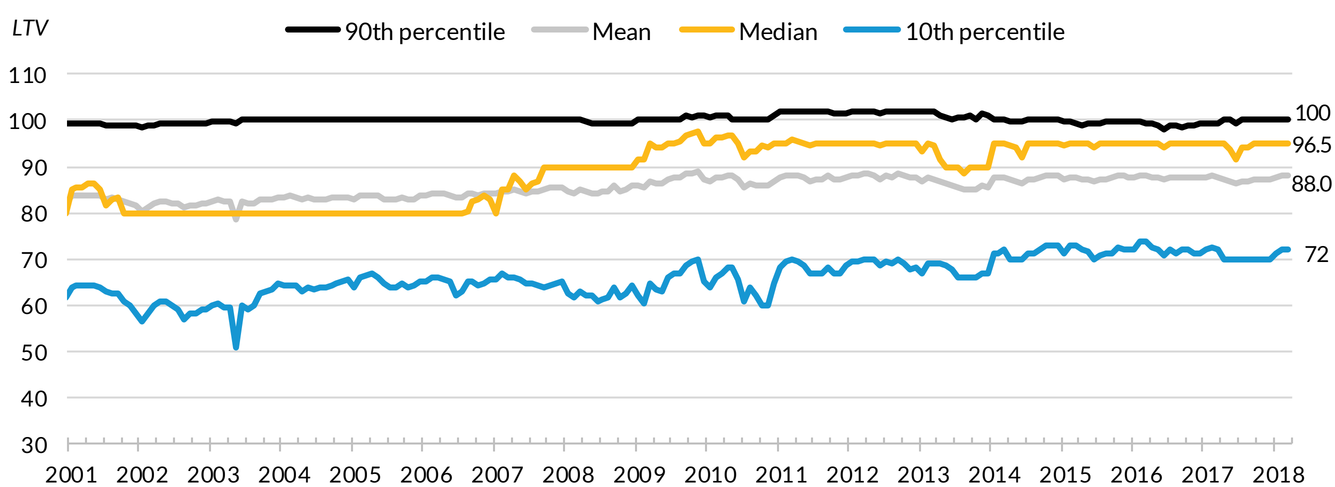
Access to credit remains extremely tight, especially for borrowers with low FICO scores. The mean and median FICO scores on new purchase originations have both drifted up about 21 and 20 points over the last decade, respectively. The 10th percentile of FICO scores, which represents the lower bound of creditworthiness needed to qualify for a mortgage, stood at 644 as of March 2018. Prior to the housing crisis, this threshold held steady in the low 600s. Mean LTV levels at origination remain relatively high, averaging 88.0, which reflects the large number of FHA purchase originations.

Borrower FICO Score at Origination



Sources: CoreLogic, eMBS, HMDA, SIFMA and Urban Institute.
Note: Includes owner-occupied purchase loans only.

Combined LTV at Origination



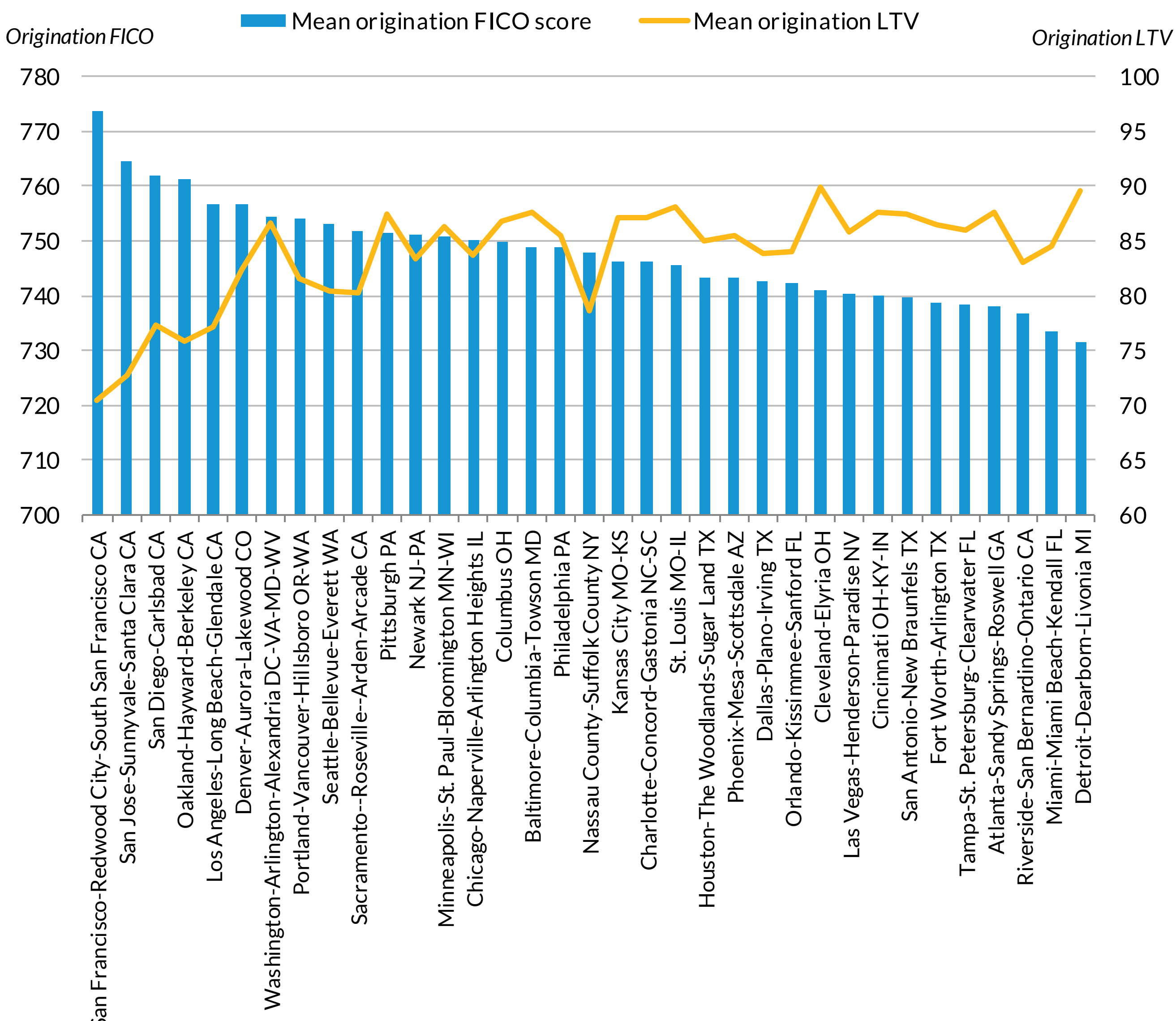
Sources: CoreLogic, eMBS, HMDA, SIFMA and Urban Institute.
Note: Includes owner-occupied purchase loans only.

STATE OF THE MARKET

CREDIT AVAILABILITY FOR PURCHASE LOANS

Credit has been tight for all borrowers with less-than-stellar credit scores- especially in MSAs with high housing prices. For example, the mean origination FICO for borrowers in San Francisco-Redwood City-South San Francisco, CA is 774, while in Detroit-Dearborn-Livonia, MI it is 732. Across all MSAs, lower average FICO scores tend to be correlated with high average LTVs, as these MSAs rely heavily on FHA/VA financing.

Origination FICO and LTV

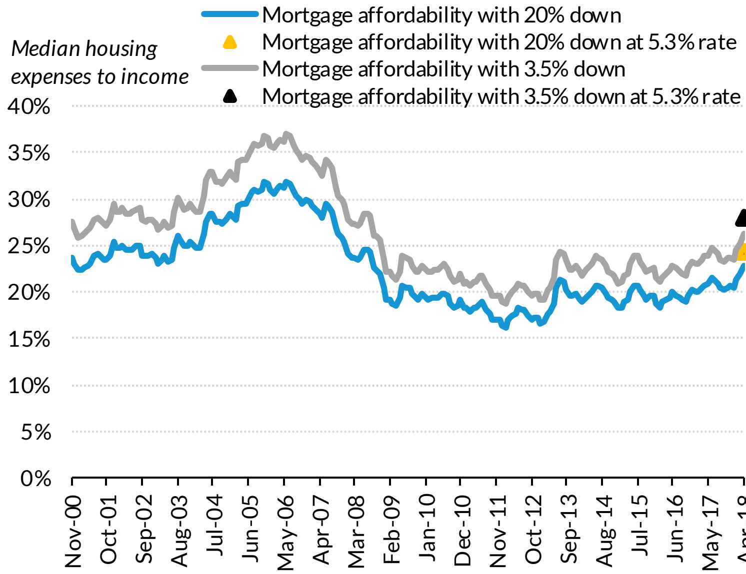


Sources: CoreLogic, eMBS, HMDA, SIFMA and Urban Institute.
Note: Includes owner-occupied purchase loans only. Data as of March 2018.

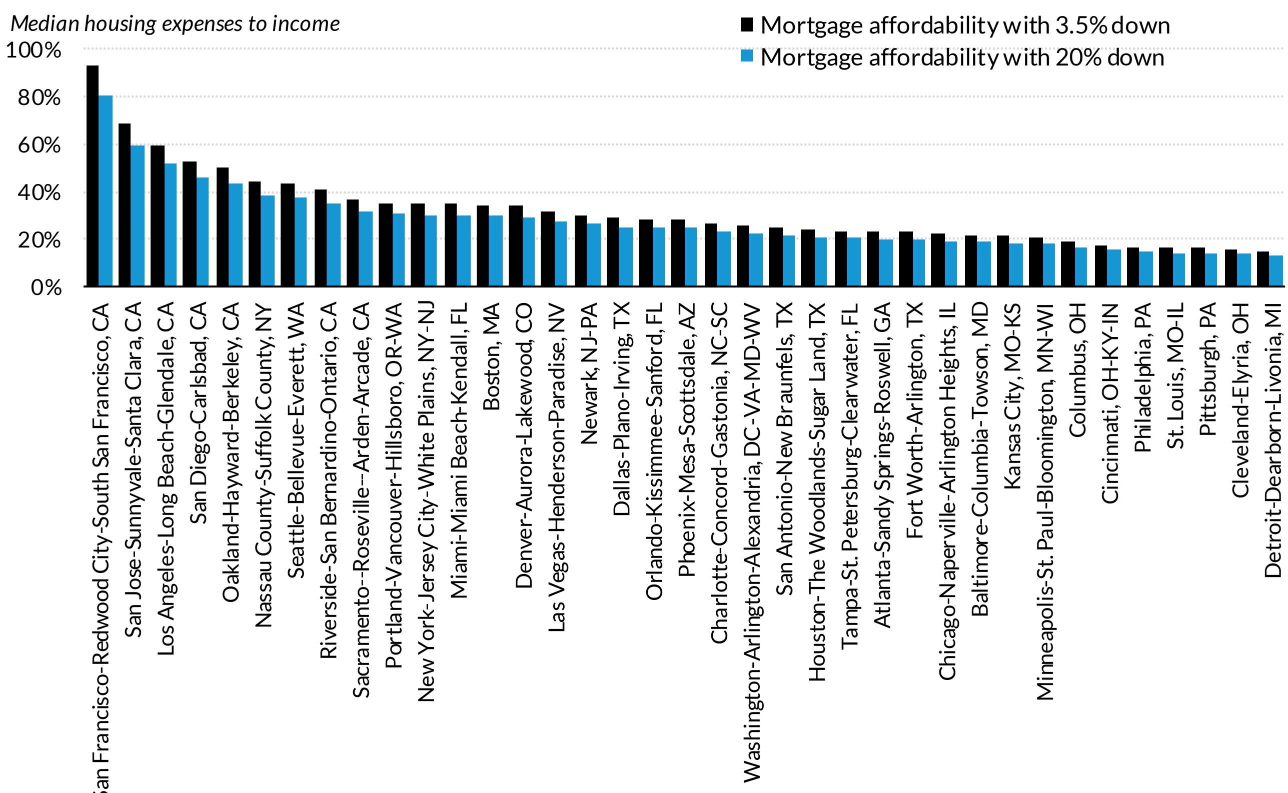
STATE OF THE MARKET
HOUSING AFFORDABILITY

National Mortgage Affordability Over Time

Home prices remain affordable by historic standards, despite increases over the last five years and the recent interest rate hikes. As of April 2018, the share of median income needed for the monthly mortgage payment with a 20% down payment stood at 23 percent. With a 3.5% down payment, the share of income is higher, at 26 percent in April 2018. If interest rates rise to 5.3%, the housing expenses to income share with both a 20 percent and a 3.5 percent down payment would be the same as the 2001-03 averages (24 and 28 percent, respectively). As shown in the bottom picture, mortgage affordability varies widely across MSAs.



Mortgage Affordability by MSA



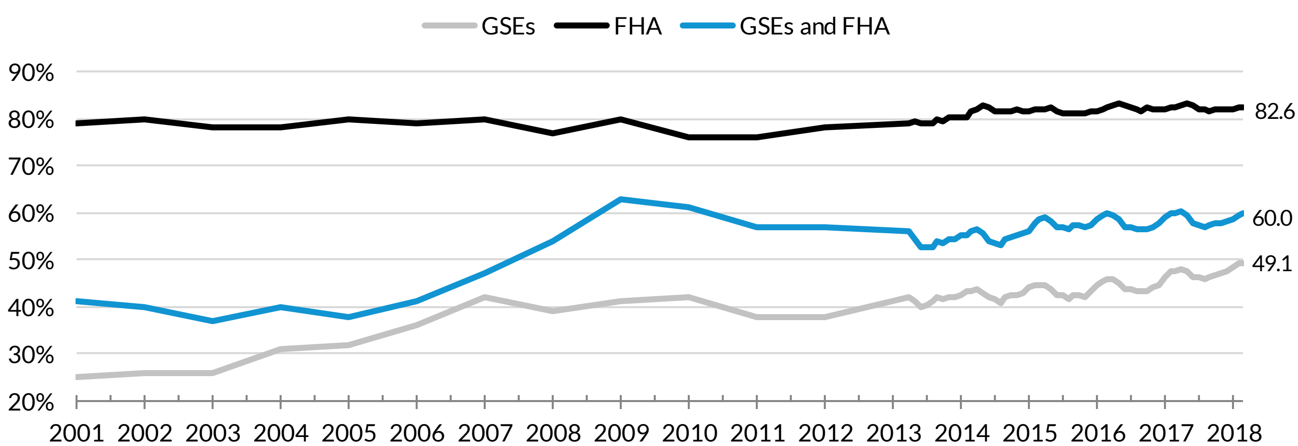
Sources: CoreLogic, US Census Bureau, Current Population Survey, American Community Survey, Moody's Analytics, Freddie Mac Primary Mortgage Market Survey, and the Urban Institute.

Note: Mortgage affordability is the share of median family income devoted to the monthly principal, interest, taxes, and insurance payment required to buy the median home at the Freddie Mac prevailing rate for a 30-year fixed-rate mortgage and property tax and insurance at 1.75 percent of the housing value. Data as of April 2018.

FIRST-TIME HOMEBUYERS

First-Time Homebuyer Share

In March 2018, the first-time homebuyer share of GSE purchase loans was 49.1 percent, its highest level in recent history. The FHA has always been more focused on first-time homebuyers, with its first-time homebuyer share hovering around 80 percent; it stood at 82.6 percent in March 2018. The bottom table shows that based on mortgages originated in February 2018, the average first-time homebuyer was more likely than an average repeat buyer to take out a smaller loan and have a lower credit score and higher LTV and DTI, thus requiring a higher interest rate.



Sources: eMBS, Federal Housing Administration (FHA) and Urban Institute.
Note: All series measure the first-time homebuyer share of purchase loans for principal residences.

March 2018

Comparison of First-Time and Repeat Homebuyers, GSE and FHA Originations

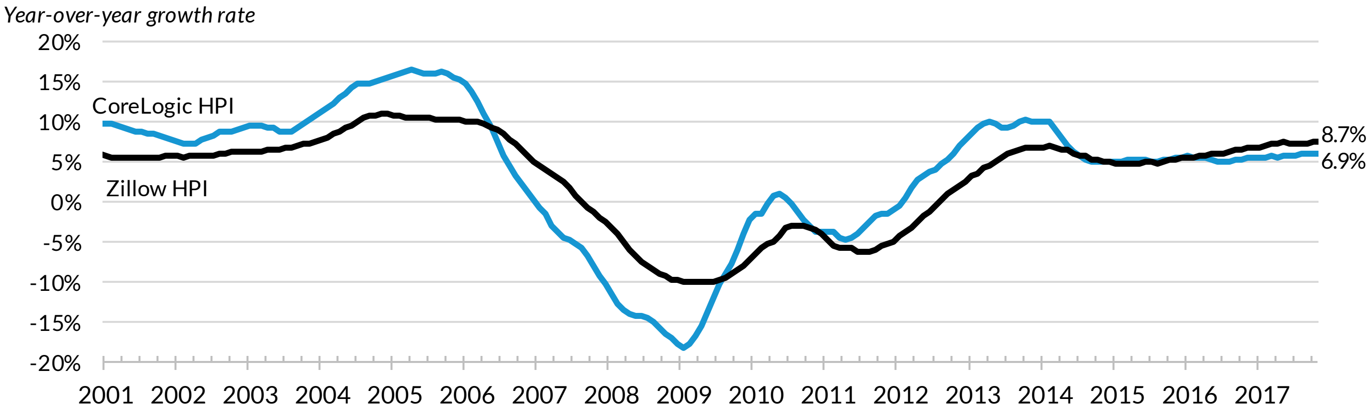
	GSEs		FHA		GSEs and FHA	
Characteristics	First-time	Repeat	First-time	Repeat	First-time	Repeat
Loan Amount ($)	235,213	258,885	202,085	225,081	220,836	253,194
Credit Score	738.4	753.8	671.4	678.3	709.3	741.1
LTV (%)	87.4	79.4	95.6	94.2	91.0	81.9
DTI (%)	36.3	36.8	43.0	44.1	39.2	38.0
Loan Rate (%)	4.63	4.51	4.71	4.61	4.66	4.53

Sources: eMBS and Urban Institute.
Note: Based on owner-occupied purchase mortgages originated in March 2018.

HOME PRICE INDICES

National Year-Over-Year HPI Growth

Home price appreciation remains very robust, as measured by both the CoreLogic's repeat sales index and Zillow's hedonic index. We will be monitoring the impact of rising interest rates on home prices. Historically, rising interest rates (generally observed in tandem with a stronger economy and higher inflation) have been associated with higher home price increases, despite the impact on affordability.



Sources: CoreLogic, Zillow, and Urban Institute.

April 2018

Changes in CoreLogic HPI for Top MSAs

After rising 55 percent from the trough, national house prices have now surpassed pre-crisis peak levels. At the MSA level, ten of the top 15 MSAs have exceeded their pre-crisis peak HPI: New York, NY; Los Angeles, CA; Atlanta, GA; Houston, TX; Dallas, TX; Minneapolis, MN; Seattle, WA; Denver, CO, San Diego, CA, and Anaheim, CA. Two MSAs particularly hard hit by the boom and bust– Phoenix, AZ and Riverside, CA– would each need to rise 16 and 17 percent, respectively, to return to peak levels.

MSA	HPI changes (%)			% Rise needed to achieve peak
	2000 to peak	Peak to trough	Trough to current	
United States	93.8%	-33.1%	55.4%	-3.7%
New York-Jersey City-White Plains NY-NJ	111.4%	-16.8%	31.3%	-8.5%
Los Angeles-Long Beach-Glendale CA	177.0%	-38.4%	78.5%	-9.1%
Chicago-Naperville-Arlington Heights IL	65.9%	-35.6%	38.0%	12.6%
Atlanta-Sandy Springs-Roswell GA	38.0%	-33.0%	67.9%	-11.1%
Washington-Arlington-Alexandria DC-VA-MD-WV	155.1%	-34.0%	38.2%	9.7%
Houston-The Woodlands-Sugar Land TX	39.6%	-14.0%	49.0%	-21.9%
Phoenix-Mesa-Scottsdale AZ	123.7%	-52.6%	81.8%	16.0%
Riverside-San Bernardino-Ontario CA	186.1%	-52.6%	80.0%	17.2%
Dallas-Plano-Irving TX	34.4%	-13.7%	64.9%	-29.7%
Minneapolis-St. Paul-Bloomington MN-WI	72.8%	-30.2%	50.4%	-4.7%
Seattle-Bellevue-Everett WA	90.9%	-29.1%	99.4%	-29.3%
Denver-Aurora-Lakewood CO	35.6%	-13.1%	84.7%	-37.7%
Baltimore-Columbia-Towson MD	122.8%	-24.6%	17.4%	12.9%
San Diego-Carlsbad CA	144.9%	-37.5%	69.3%	-5.5%
Anaheim-Santa Ana-Irvine CA	160.5%	-35.6%	60.7%	-3.4%

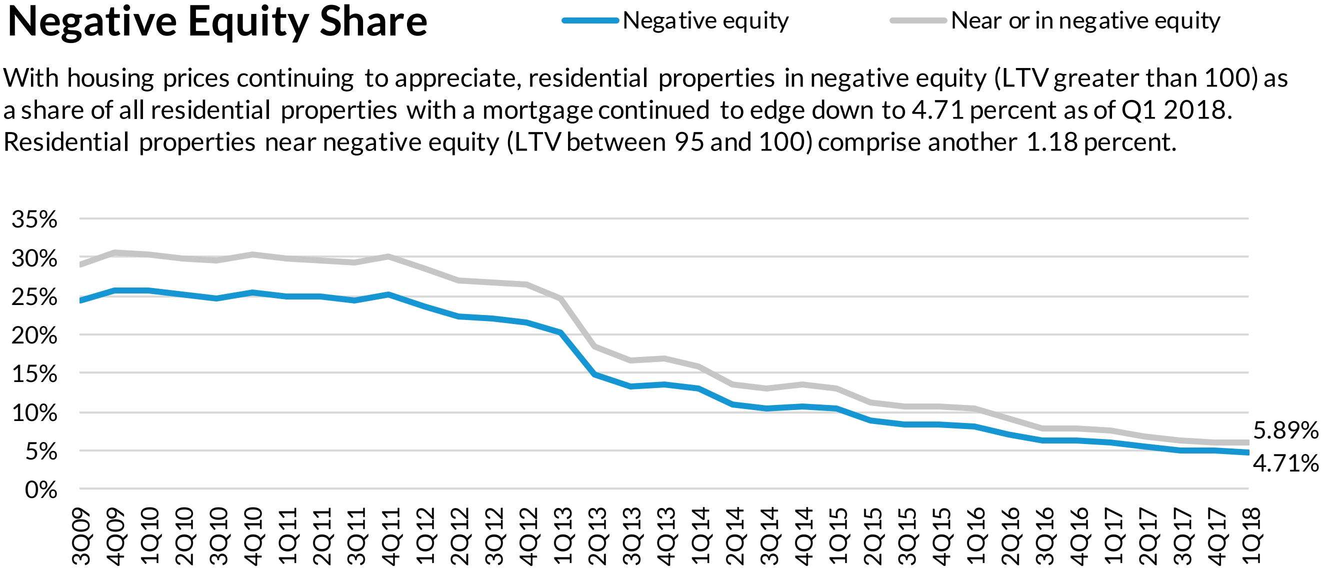
Sources: CoreLogic HPIs and Urban Institute. Data as of April 2018.
Note: This table includes the largest 15 Metropolitan areas by mortgage count.

STATE OF THE MARKET

NEGATIVE EQUITY & SERIOUS DELINQUENCY

Negative Equity Share

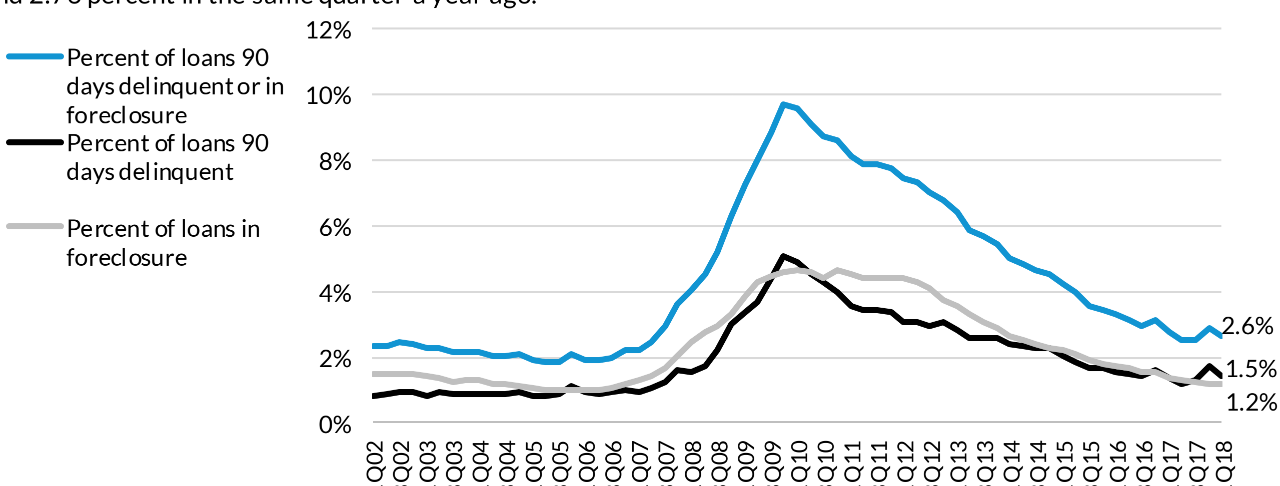
With housing prices continuing to appreciate, residential properties in negative equity (LTV greater than 100) as a share of all residential properties with a mortgage continued to edge down to 4.71 percent as of Q1 2018. Residential properties near negative equity (LTV between 95 and 100) comprise another 1.18 percent.



Sources: CoreLogic and Urban Institute.
Note: CoreLogic negative equity rate is the percent of all residential properties with a mortgage in negative equity. Loans with negative equity refer to loans above 100 percent LTV. Loans near negative equity refer to loans above 95 percent LTV. *Last updated June 2018.*

Loans in Serious Delinquency/Foreclosure

Ninety day delinquencies rose sharply due to the hurricanes in the second half of 2017, but have declined from 1.72 to 1.45 percent in the first quarter of 2018. The percent of loans in foreclosure continued to edge down to 1.16 percent. The combined delinquencies totaled 2.61 percent in Q1 2018, down from 2.91 percent in Q4 2017 and 2.76 percent in the same quarter a year ago.

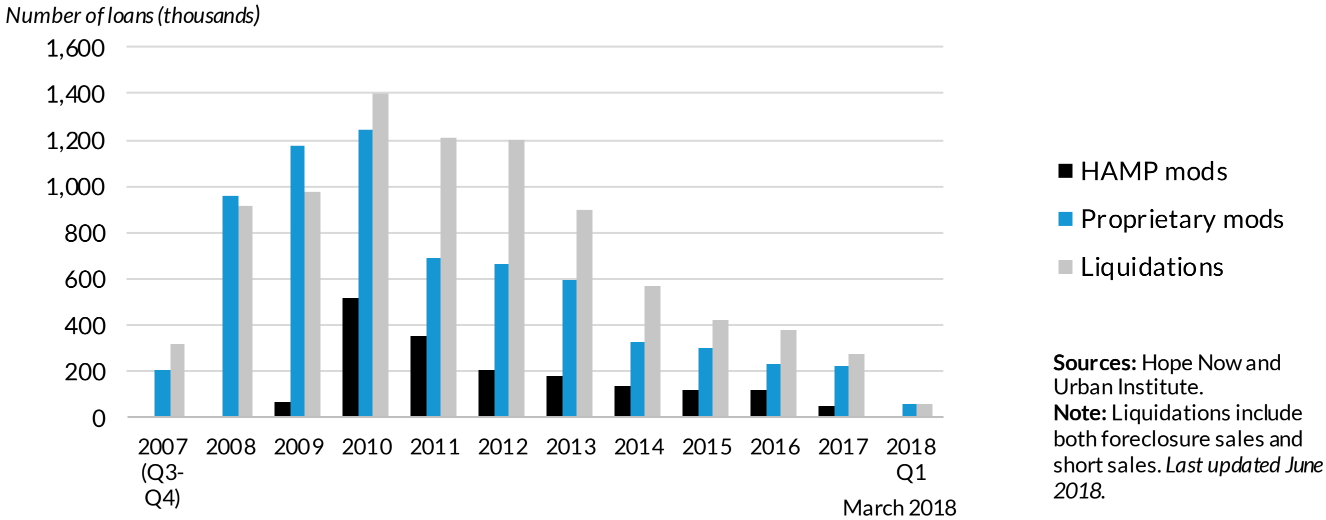


Sources: Mortgage Bankers Association and Urban Institute. *Last updated May 2018.*

MODIFICATIONS AND LIQUIDATIONS

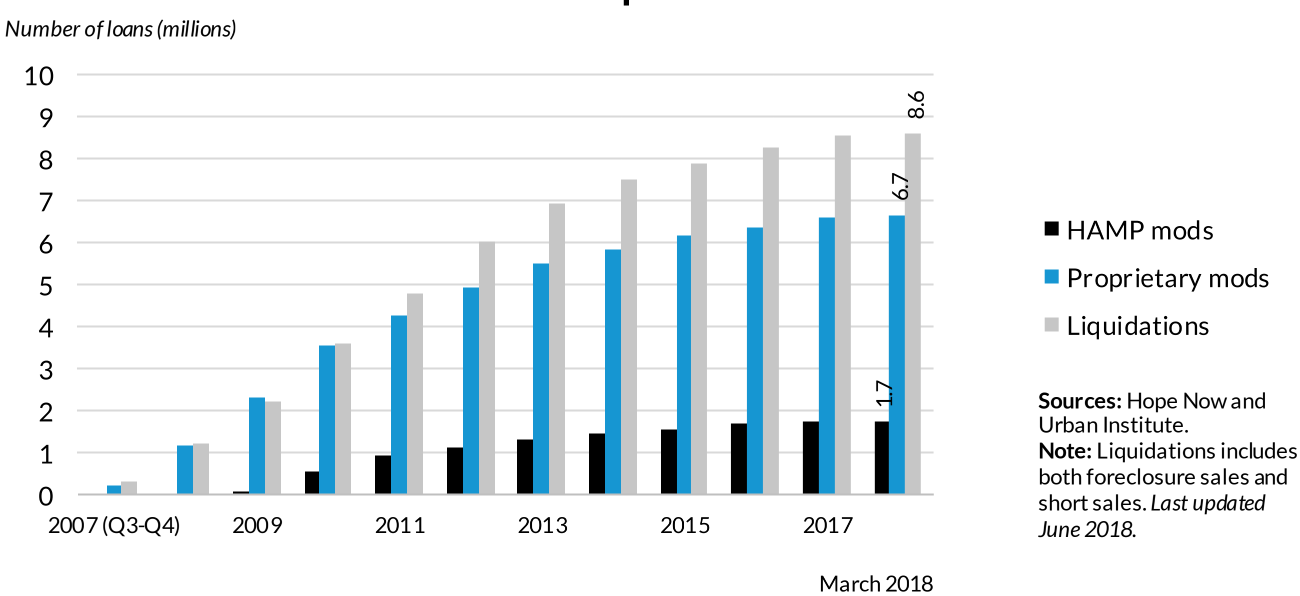
Total modifications (HAMP and proprietary) are roughly equal to total liquidations. Hope Now reports show 8,359,438 borrowers have received a modification since Q3 2007, compared with 8,618,645 liquidations in the same period. Modifications and liquidations have slowed significantly over the past few years. In Q1 2018, there were just 59,537 proprietary modifications and 56,137 liquidations. There were no new HAMP modifications as the program ended in 2017.

Loan Modifications and Liquidations



Sources: Hope Now and Urban Institute.
Note: Liquidations include both foreclosure sales and short sales. *Last updated June 2018.*

Cumulative Modifications and Liquidations

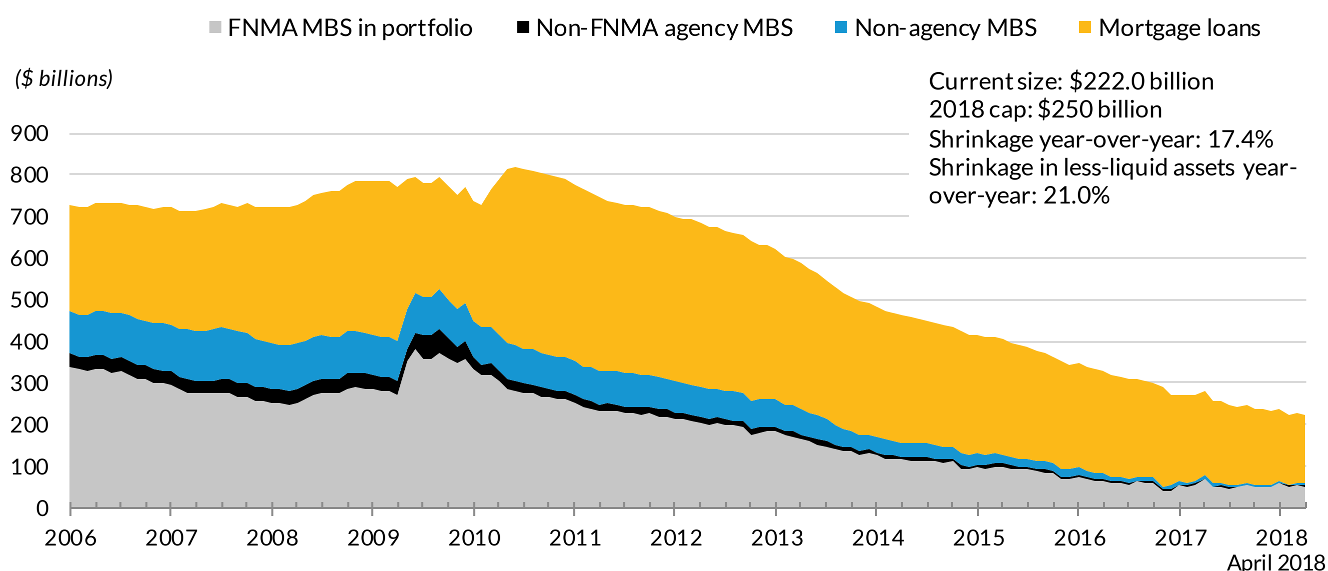


Sources: Hope Now and Urban Institute.
Note: Liquidations includes both foreclosure sales and short sales. *Last updated June 2018.*

GSE PORTFOLIO WIND-DOWN

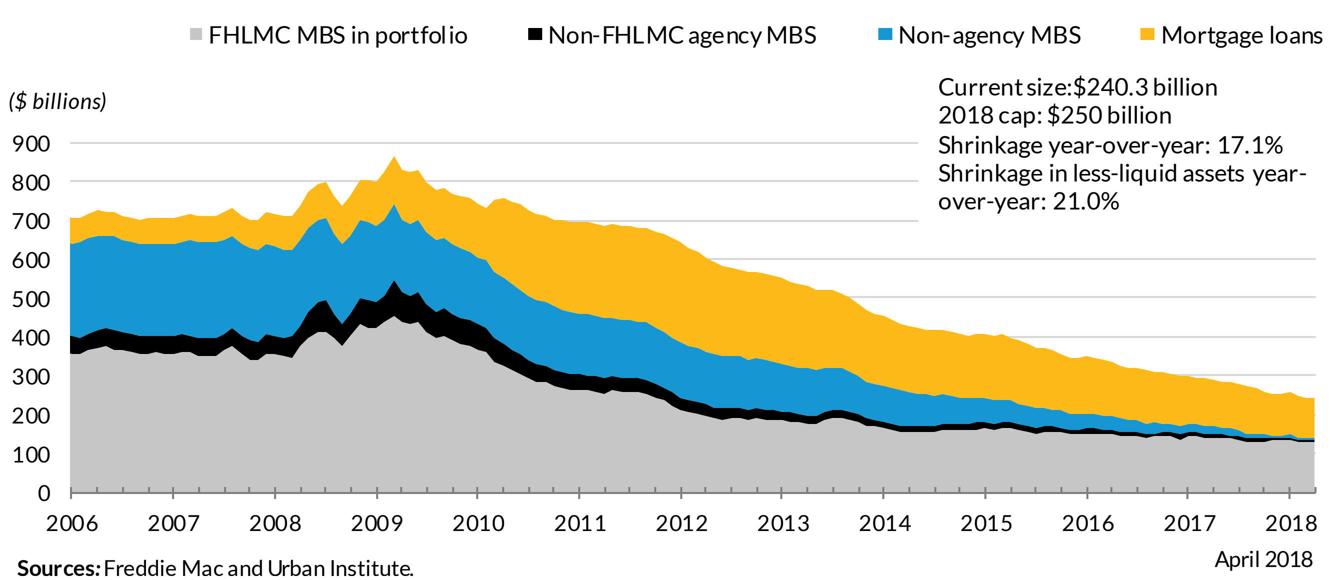
Both GSEs continue to contract their portfolios. Since April 2017, Fannie Mae has contracted by 17.4 percent and Freddie Mac by 17.1 percent. They are shrinking their less-liquid assets (mortgage loans and non-agency MBS) faster than they are shrinking their entire portfolio. The Fannie Mae and Freddie Mac portfolios are now both below the $250 billion maximum portfolio size; they were required to reach this terminal level by year end 2018. Fannie met the target in 2017, Freddie met the target in February 2018.

Fannie Mae Mortgage-Related Investment Portfolio Composition



Sources: Fannie Mae and Urban Institute.

Freddie Mac Mortgage-Related Investment Portfolio Composition



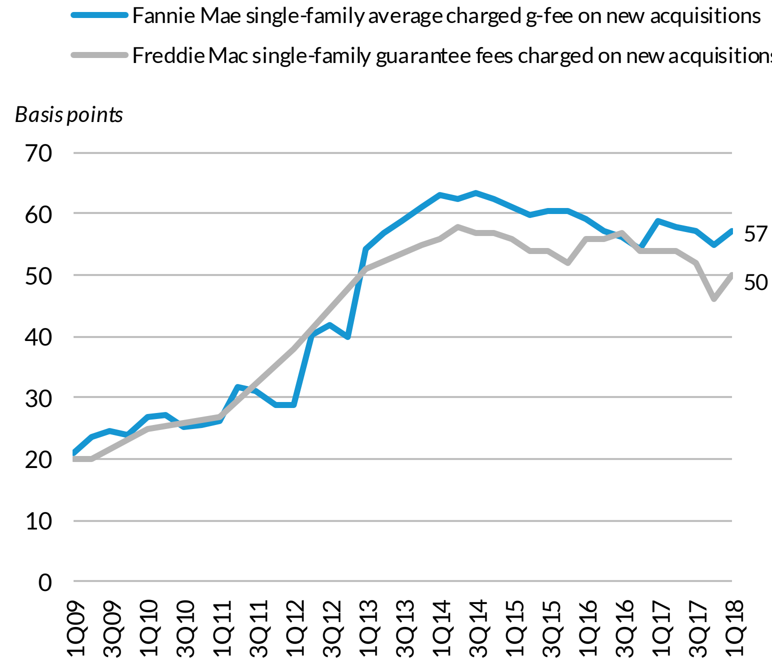
Sources: Freddie Mac and Urban Institute.

EFFECTIVE GUARANTEE FEES

Guarantee Fees Charged on New Acquisitions

The latest 10-Q indicates that Fannie's average g-fees on new acquisitions increased from 55 to 57.1 bps in Q1 2018 and Freddie's increased from 46 to 50 bps. This is markedly higher than g-fee levels in 2011 and 2012, and has contributed to the GSEs' profits. The GSE's latest Loan-Level Pricing Adjustments (LLPAs) took effect in September 2015; the bottom table shows the Fannie Mae LLPAs, which are expressed as upfront charges.

Sources: Fannie Mae, Freddie Mae and Urban Institute. *Last updated May 2018.*



Fannie Mae Upfront Loan-Level Price Adjustments (LLPAs)

	LTV							
Credit Score	≤60	60.01 – 70	70.01 – 75	75.01 – 80	80.01 – 85	85.01 – 90	90.01 – 95	95.01 – 97
> 740	0.00%	0.25%	0.25%	0.50%	0.25%	0.25%	0.25%	0.75%
720 – 739	0.00%	0.25%	0.50%	0.75%	0.50%	0.50%	0.50%	1.00%
700 – 719	0.00%	0.50%	1.00%	1.25%	1.00%	1.00%	1.00%	1.50%
680 – 699	0.00%	0.50%	1.25%	1.75%	1.50%	1.25%	1.25%	1.50%
660 – 679	0.00%	1.00%	2.25%	2.75%	2.75%	2.25%	2.25%	2.25%
640 – 659	0.50%	1.25%	2.75%	3.00%	3.25%	3.75%	2.75%	2.75%
620 – 639	0.50%	1.50%	3.00%	3.00%	3.25%	3.25%	3.25%	3.50%
< 620	0.50%	1.50%	3.00%	3.00%	3.25%	3.25%	3.25%	3.75%
Product Feature (Cumulative)								
High LTV	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Investment Property	2.125%	2.125%	2.125%	3.375%	4.125%	N/A	N/A	N/A

Sources: Fannie Mae and Urban Institute.
Note: For whole loans purchased on or after September 1, 2015, or loans delivered into MBS pools with issue dates on or after September 1, 2015.

GSE RISK-SHARING TRANSACTIONS

Fannie Mae and Freddie Mac have been laying off back-end credit risk through CAS and STACR deals as well as through reinsurance transactions. They have also done front-end transactions with originators and reinsurers, and experimented with deep mortgage insurance coverage with private mortgage insurers. FHFA's 2018 scorecard requires the GSEs to lay off credit risk on 90 percent of newly acquired loans in categories targeted for transfer. Fannie Mae's CAS issuances to date total $1.04 trillion, while Freddie's STACR totals $987 billion. In 2018 so far, Fannie and Freddie have each issued three securities.

Fannie Mae – Connecticut Avenue Securities (CAS)

Date	*Transaction*	*Reference Pool Size ($ m)*	*Amount Issued ($m)*	*% of Reference Pool Covered*
2013	CAS 2013 deals	$26,756	$675	2.5%
2014	CAS 2014 deals	$227, 234	$5,849	2.6%
2015	CAS 2015 deals	$187,126	$5,463	2.9%
February 2016	CAS 2016 – C01	$28,882	$945	3.3%
March 2016	CAS 2016 – C02	$35,004	$1,032	2.9%
April 2016	CAS 2016 – C03	$36,087	$1,166	3.2%
July 2016	CAS 2016 – C04	$42,179	$1,322	3.1%
August 2016	CAS 2016 - C05	$38,668	$1,202	3.1%
November 2016	CAS 2016 - C06	$33,124	$1,024	3.1%
December 2016	CAS 2016 – C07	$22,515	$702	3.1%
January 2017	CAS 2017 – C01	$43,758	$1,351	3.1%
March 2017	CAS 2017 – C02	$39,988	$1,330	3.3%
May 2017	CAS 2017 – C03	$41,246	$1,371	3.3%
May 2017	CAS 2017 – C04	$30,154	$1,003	3.3%
July 2017	CAS 2017 – C05	$43,751	$1,351	3.1%
August 2017	CAS 2017 – C06	$31,900	$1,101	3.5%
November 2017	CAS 2017– C07	$33,900	$1,200	3.5%
February 2018	CAS 2018 – C01	$44,900	$1,494	3.3%
March 2018	CAS 2018 - C02	$26,500	$1,007	3.8%
May 2018	CAS 2018 - C03	$31,100	$1,050	3.4%
Total		**$1,044,772**	**$31,637**	**3.0%**

Freddie Mac – Structured Agency Credit Risk (STACR)

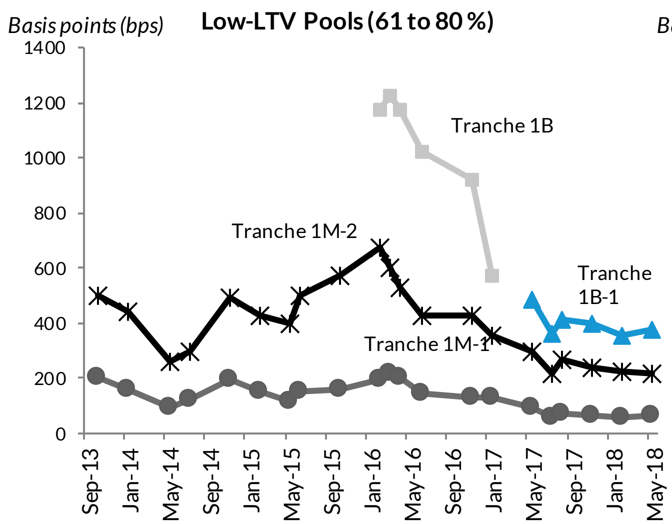
Date	*Transaction*	*Reference Pool Size ($ m)*	*Amount Issued ($m)*	*% of Reference Pool Covered*
2013	STACR 2013 deals	$57,912	$1,130	2.0%
2014	STACR 2014 deals	$147,120	$4,916	3.3%
2015	STACR 2015 deals	$209,521	$6,658	3.2%
January 2016	STACR Series 2016 – DNA1	$35,700	$996	2.8%
March 2016	STACR Series 2016 – HQA1	$17,931	$475	2.6%
May 2016	STACR Series 2016 – DNA2	$30,589	$916	3.0%
May 2016	STACR Series 2016 – HQA2	$18,400	$627	3.4%
June 2016	STACR Series 2016 – DNA3	$26,400	$795	3.0%
September 2016	STACR Series 2016 – HQA3	$15,709	$515	3.3%
September 2016	STACR Series 2016 – DNA4	$24,845	$739	3.0%
October 2016	STACR Series 2016 - HQA4	$13,847	$478	3.5%
January 2017	STACR Series 2017 – DNA1	$33, 965	$802	2.4%
February 2017	STACR Series 2017 – HQA1	$29,700	$753	2.5%
April 2017	STACR Series 2017 – DNA2	$60,716	$1,320	2.2%
June 2017	STACR Series 2017 – HQA2	$31,604	$788	2.5%
September 2017	STACR Series 2017 – DNA3	$56,151	$1,200	2.1%
October 2017	STACR Series 2017 – HQA3	$21,641	$600	2.8%
December 2017	STACR Series 2017 – HRP1	$15,044	$200	1.3%
January 2018	STACR Series 2017 – DNA1	$34,733	$900	2.6%
March 2018	STACR Series 2017 – HQA1	$40,102	$985	2.5%
June 2018	STACR Series 2018 – DNA2	$49,346	$1,050	2.1%
Total		**$986,685**	**$26,843**	**2.7%**

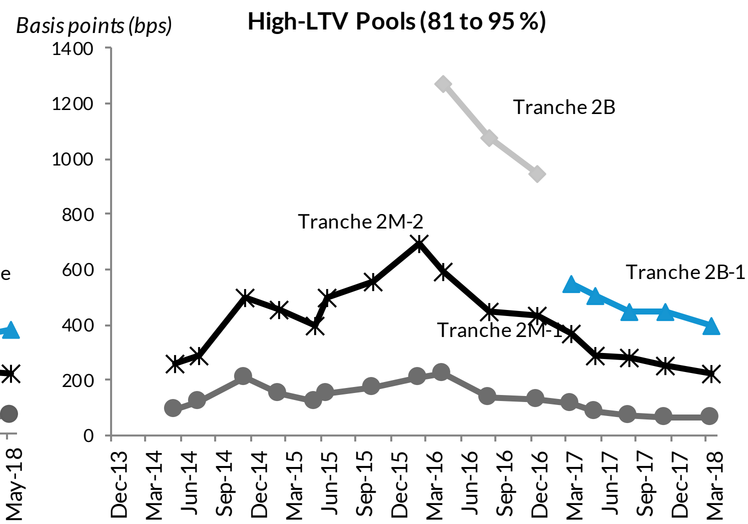
Sources: Fannie Mae, Freddie Mac and Urban Institute.
Note: Classes A-H, M-1H, M-2H, and B-H are reference tranches only. These classes are not issued or sold. The risk is retained by Fannie Mae and Freddie Mac. "CE" = credit enhancement.

GSE RISK-SHARING SPREADS

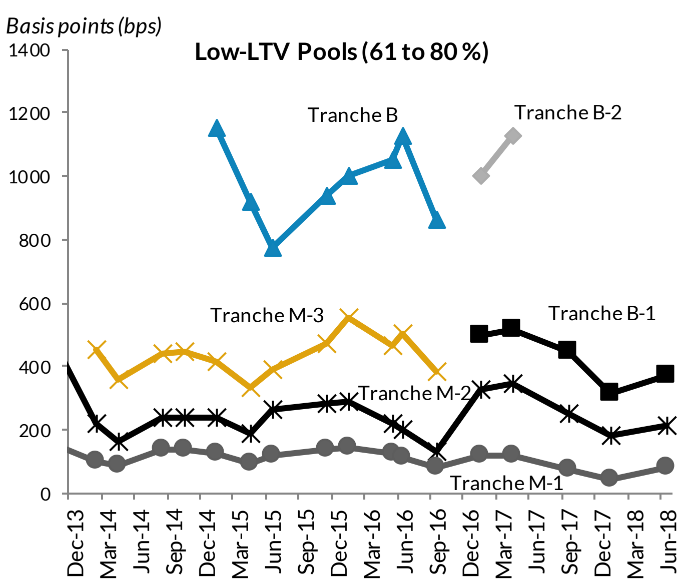
CAS and STACR spreads have moved around considerably since 2013, with the bottom mezzanine tranche and the first loss bonds experiencing considerably more volatility than the top mezzanine bonds. Tranche B in particular has been highly volatile because of its first loss position. Spreads widened especially during Q1 2016 due to falling oil prices, concerns about global economic growth and the slowdown in China. Since then spreads have resumed their downward trend but remain volatile.

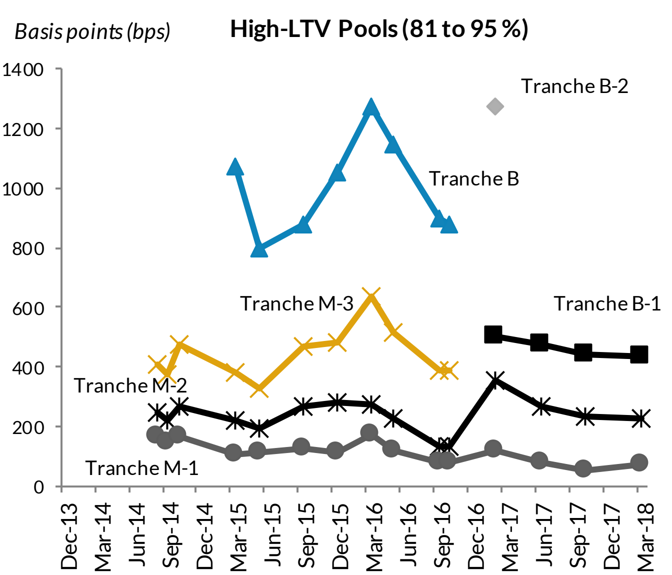
Fannie Mae CAS Spreads at-issuance (basis points over 1-month LIBOR)





Freddie Mac STACR Spreads at-issuance (basis points over 1-month LIBOR)



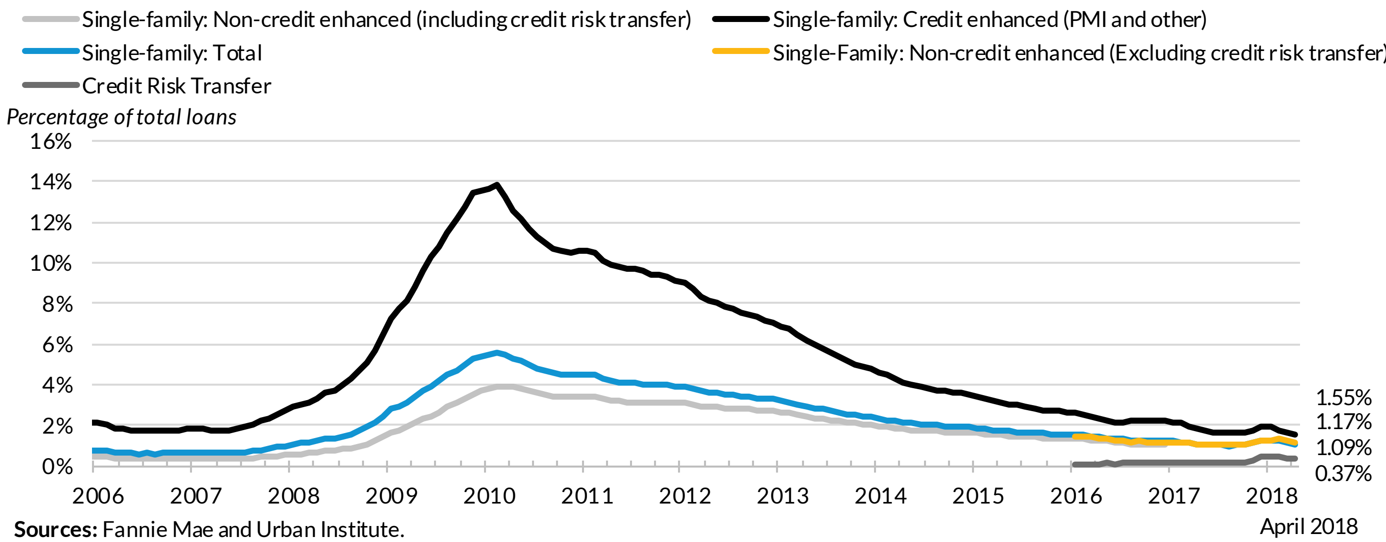


Sources: Fannie Mae, Freddie Mac Press Releases and Urban Institute.

GSES UNDER CONSERVATORSHIP
SERIOUS DELINQUENCY RATES

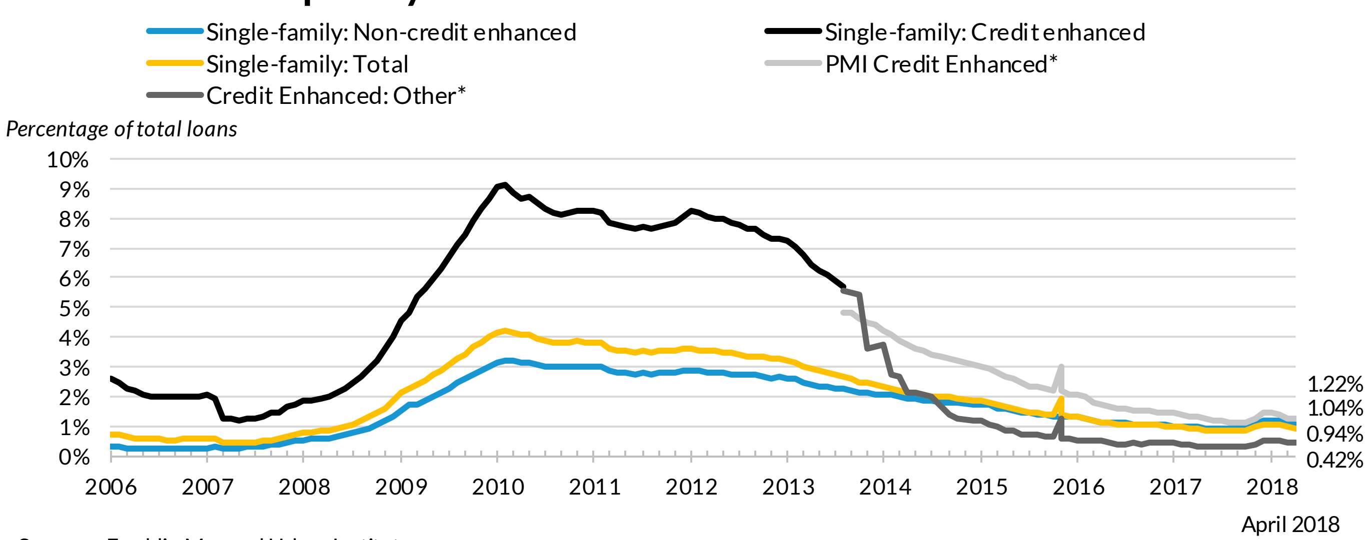
Serious delinquency rates of GSE loans came down slightly in April 2018. Overall, there has been a marked long term decline in serious delinquency rates as the legacy portfolio is resolved and the pristine, post-2009 book of business exhibits very low default rates. As of April 2018, 1.09 percent of the Fannie portfolio and 0.94 percent of the Freddie portfolio were seriously delinquent, down slightly from 1.16 percent for Fannie and 0.97 percent for Freddie in March 2018.

Serious Delinquency Rates–Fannie Mae



Sources: Fannie Mae and Urban Institute.
Note*: Following a change in Fannie reporting in March 2017, we started to report the credit risk transfer category and a new non-credit enhanced category that excludes loans covered by either primary MI or credit risk transfer transactions. Fannie reported these two new categories going back to January 2016.

Serious Delinquency Rates–Freddie Mac



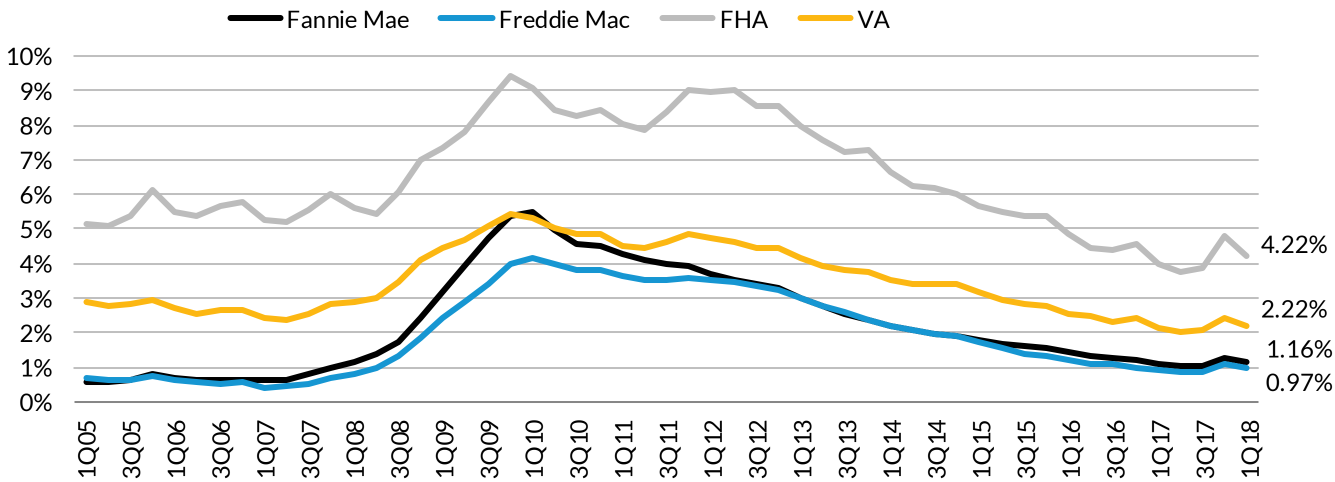
Sources: Freddie Mac and Urban Institute.
Note*: Following a change in Freddie reporting in September 2014, we switched from reporting credit enhanced delinquency rates to PMI and other credit enhanced delinquency rates. Freddie reported these two categories for credit-enhanced loans going back to August 2013. The other category includes single-family loans covered by financial arrangements (other than primary mortgage insurance) including loans in reference pools covered by STACR debt note transactions as well as other forms of credit protection.

GSES UNDER CONSERVATORSHIP

SERIOUS DELINQUENCY RATES

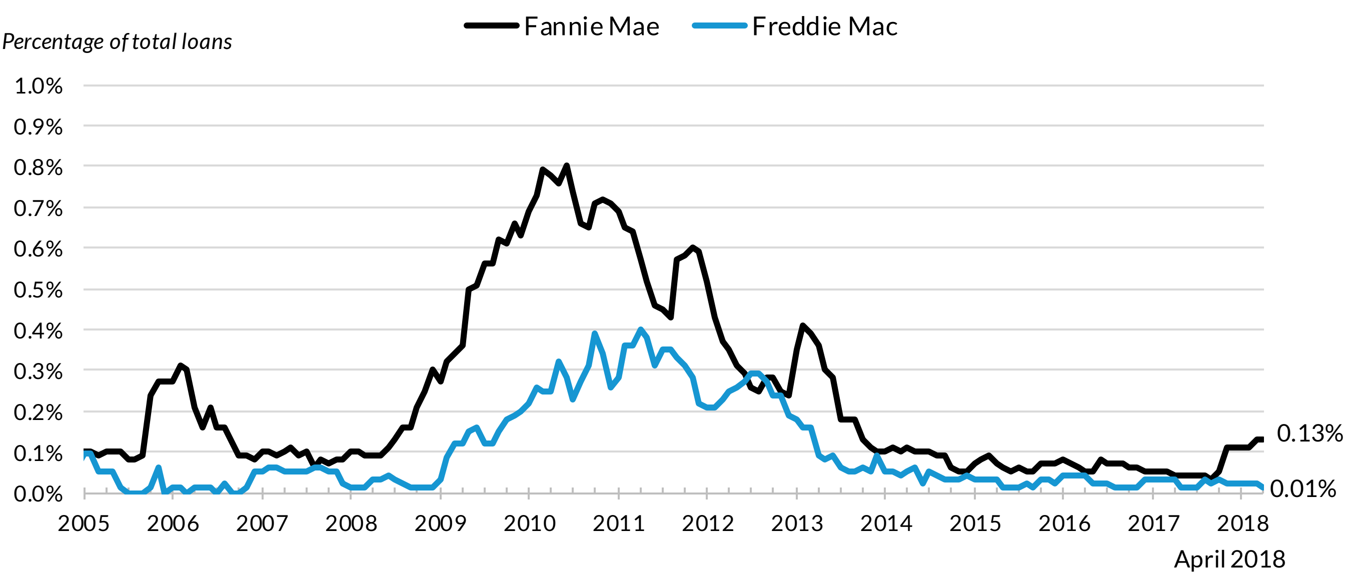
Serious delinquencies for single-family GSE loans, FHA loans, and VA loans declined in the first quarter of 2018, after increasing in the previous quarter due to the impact of hurricanes Harvey, Irma and Maria. GSE delinquencies remain high relative to 2005-2007, while FHA and VA delinquencies (which are higher than their GSE counterparts) are at levels lower than 2005-2007. GSE multifamily delinquencies remain at the levels prevailing before the financial crisis, although they did not reach problematic levels even in the worst years of the crisis. In November 2017, Fannie multifamily serious delinquency rate rose to 0.11 percent, its highest level since early 2014, mostly due to the recent hurricanes; it increased further to 0.13 percent in March 2018 and stayed at that level in April 2018. Freddie declined slightly to 0.01 percent.

Serious Delinquency Rates–Single-Family Loans



Sources: Fannie Mae, Freddie Mac, MBA Delinquency Survey and Urban Institute. **Note:** Serious delinquency is defined as 90 days or more past due or in the foreclosure process. Not seasonally adjusted. *Last updated May 2018.*

Serious Delinquency Rates–Multifamily GSE Loans



Sources: Fannie Mae, Freddie Mac and Urban Institute.
Note: Multifamily serious delinquency rate is the unpaid balance of loans 60 days or more past due, divided by the total unpaid balance.

AGENCY GROSS AND NET ISSUANCE

Agency gross issuance was $478.8 billion in the first five months of 2018, $1.149 trillion on an annualized basis. This is down 9.0 percent year-over-year. When measured on a monthly basis, the agency gross issuance year-over-year has been declining for fifteenth consecutive months since March 2017, reflecting higher mortgage rates. Net issuance (which excludes repayments, prepayments, and refinances on outstanding mortgages) totaled $91.2 billion in the first five months of 2018, down 22.7 percent from the same period of 2017.

Agency Gross Issuance

Issuance Year	GSEs	Ginnie Mae	Total
2000	$360.6	$102.2	$462.8
2001	$885.1	$171.5	$1,056.6
2002	$1,238.9	$169.0	$1,407.9
2003	$1,874.9	$213.1	$2,088.0
2004	$872.6	$119.2	$991.9
2005	$894.0	$81.4	$975.3
2006	$853.0	$76.7	$929.7
2007	$1,066.2	$94.9	$1,161.1
2008	$911.4	$267.6	$1,179.0
2009	$1,280.0	$451.3	$1,731.3
2010	$1,003.5	$390.7	$1,394.3
2011	$879.3	$315.3	$1,194.7
2012	$1,288.8	$405.0	$1,693.8
2013	$1,176.6	$393.6	$1,570.1
2014	$650.9	$296.3	$947.2
2015	$845.7	$436.3	$1,282.0
2016	$991.6	$508.2	$1,499.8
2017	$877.3	$455.6	$1,332.9
2018 YTD	$316.33	$162.41	$478.75
2018 YTD % Change YOY	-8.7%	-9.7%	-9.0%
2018 Ann.	$759.19	$389.78	$1,148.98

Agency Net Issuance

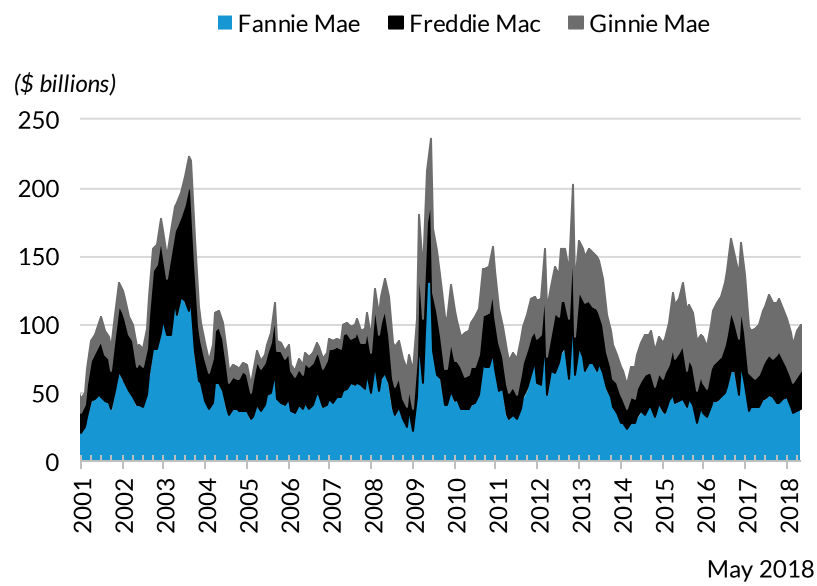
Issuance Year	GSEs	Ginnie Mae	Total
2000	$159.8	$29.3	$189.1
2001	$368.4	-$9.9	$358.5
2002	$357.2	-$51.2	$306.1
2003	$334.9	-$77.6	$257.3
2004	$82.5	-$40.1	$42.4
2005	$174.2	-$42.2	$132.0
2006	$313.6	$0.2	$313.8
2007	$514.9	$30.9	$545.7
2008	$314.8	$196.4	$511.3
2009	$250.6	$257.4	$508.0
2010	-$303.2	$198.3	-$105.0
2011	-$128.4	$149.6	$21.2
2012	-$42.4	$119.1	$76.8
2013	$69.1	$87.9	$157.0
2014	$30.5	$61.6	$92.1
2015	$75.1	$97.3	$172.5
2016	$135.5	$125.3	$260.8
2017	$168.5	$131.3	$299.7
2018 YTD	$50.5	$40.7	$91.2
2018 YTD % Change YOY	-20.7%	-25.0%	-22.7%
2018 (Ann.)	$121.1	$97.7	$218.9

Sources: eMBS and Urban Institute.
Note: Dollar amounts are in billions. Data as of May 2018.

AGENCY GROSS ISSUANCE & FED PURCHASES

Monthly Gross Issuance

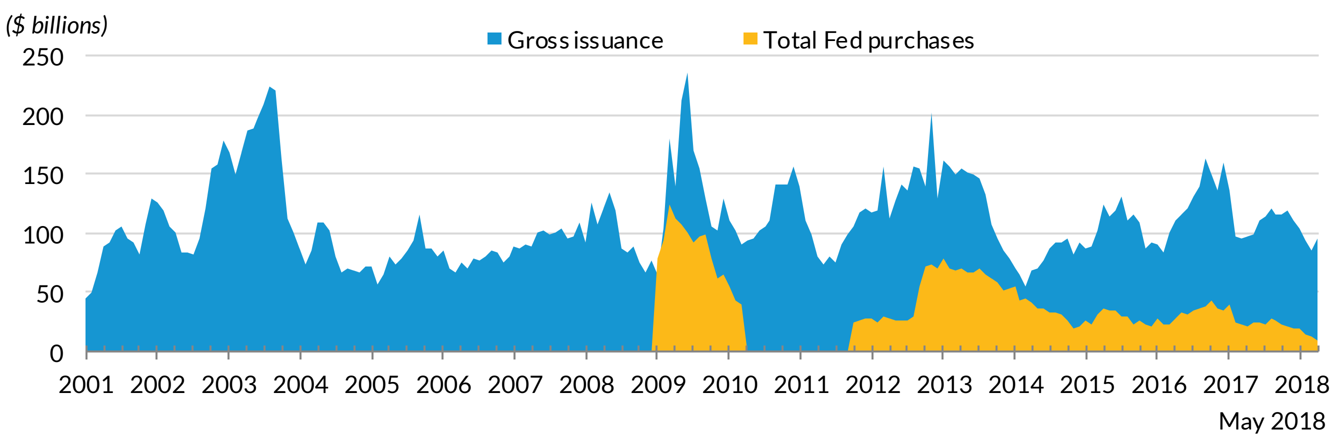
While government and GSE lending have dominated the mortgage market since the crisis, there has been a change in the mix. The Ginnie Mae share rose from its low levels in the pre-crisis period to 28 percent in 2010, then declined to 25 percent in 2013. Since then, the share has bounced back sharply, and now stands at 33.6 percent in May 2018. The increase in this share over the past year is due to the fact that rates have risen, and Ginnie Mae is less dependent on refi activity than its conventional counterparts.



Sources: eMBS, Federal Reserve Bank of New York, and Urban Institute.

Fed Absorption of Agency Gross Issuance

The Fed has begun to wind down their portfolio, and we are beginning to see the effects in slower absorption rates. During the period October 2014-September 2017, the Fed had ended its purchase program, but was reinvesting funds from mortgages and agency debt into the mortgage market, absorbing 20-30 percent of agency gross issuance. With the wind down, which started in October 2017, the Fed will continue to reinvest, but by less than prepayment and repayments. The amount of the MBS taper (amount permitted to run off each month) increased from $8 billion to $12 billion in April 2018. In May 2018, total Fed purchases declined to $9.15 billion, yielding Fed absorption of gross issuance of 9.1 percent, the lowest level since the Fed began its MBS purchase program.

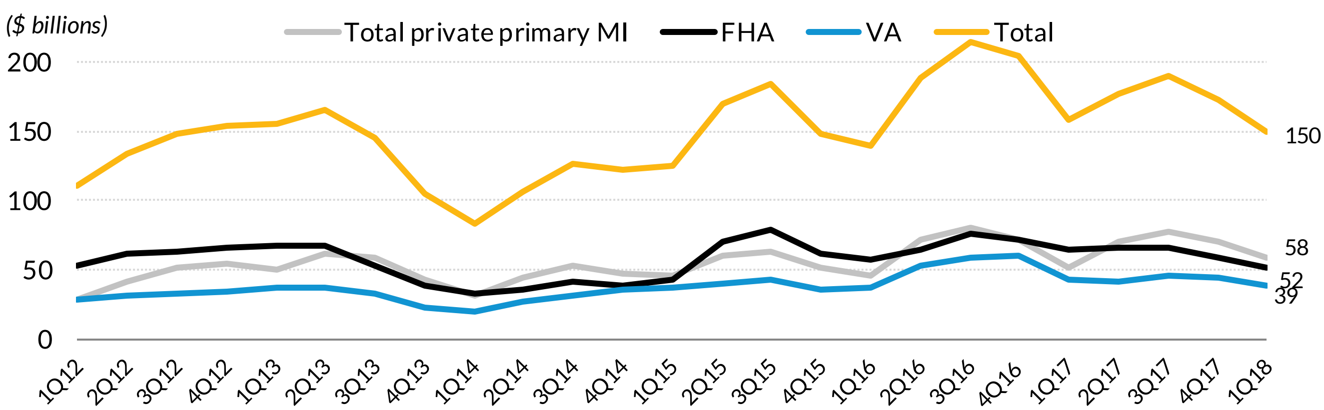


Sources: eMBS, Federal Reserve Bank of New York and Urban Institute.

MORTGAGE INSURANCE ACTIVITY

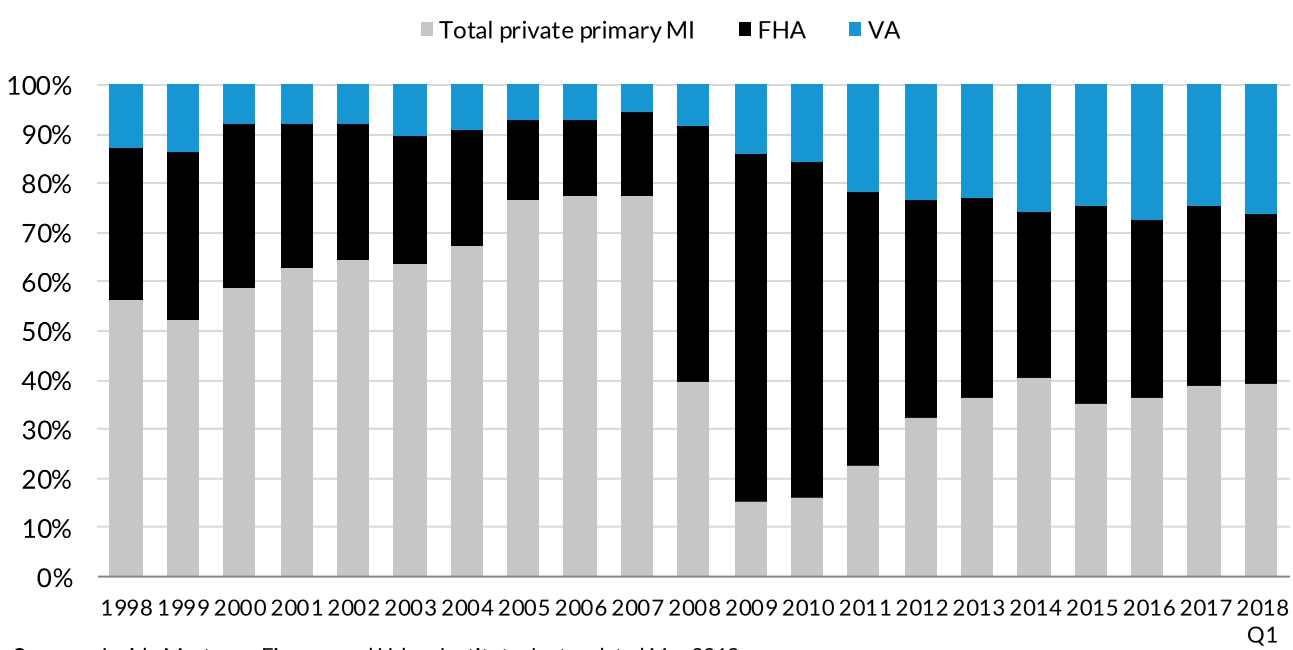
MI Activity

In 2018 Q1, mortgage insurance activity via the FHA, VA and private insurers declined from the previous quarter's $173 billion to $150 billion, down 5.7 percent year-over-year from the same quarter in 2017. This seasonal decrease is driven by all three channels. Private mortgage insurers decreased by 12 billion, FHA decreased by $7 billion, and VA decreased by $5 billion. In the first quarter of 2018, FHA accounted for 34.8 percent of the market, down from 36.6 percent in 2017, losing 1.4 percentage market share to VA (26.1 percent) and 0.5 percent to private mortgage insurers (39.1 percent).



Sources: Inside Mortgage Finance and Urban Institute. *Last updated May 2018.*

MI Market Share



Sources: Inside Mortgage Finance and Urban Institute. *Last updated May 2018.*

AGENCY ISSUANCE

MORTGAGE INSURANCE ACTIVITY

FHA premiums rose significantly in the years following the housing crash, with annual premiums rising 170 percent from 2008 to 2013 as FHA worked to shore up its finances. In January 2015, President Obama announced a 50 bps cut in annual insurance premiums, making FHA mortgages more attractive than GSE mortgages for all borrowers. The April 2016 reduction in PMI rates for borrowers with higher FICO scores and April 2018 reduction for lower FICO borrowers has partially offset that. As shown in the bottom table, a borrower putting 3.5 percent down will now find FHA more economical except for those with FICO scores of 720 or higher.

FHA MI Premiums for Typical Purchase Loan

Case number date	Upfront mortgage insurance premium (UFMIP) paid	Annual mortgage insurance premium (MIP)
1/1/2001 - 7/13/2008	150	50
7/14/2008 - 4/5/2010*	175	55
4/5/2010 - 10/3/2010	225	55
10/4/2010 - 4/17/2011	100	90
4/18/2011 - 4/8/2012	100	115
4/9/2012 - 6/10/2012	175	125
6/11/2012 - 3/31/2013[a]	175	125
4/1/2013 – 1/25/2015[b]	175	135
Beginning 1/26/2015[c]	175	85

Sources: Ginnie Mae and Urban Institute.
Note: A typical purchase loan has an LTV over 95 and a loan term longer than 15 years. Mortgage insurance premiums are listed in basis points.
* For a short period in 2008 the FHA used a risk based FICO/LTV matrix for MI.
[a] Applies to purchase loans less than or equal to $625,500. Those over that amount have an annual premium of 150 bps.
[b] Applies to purchase loans less than or equal to $625,500. Those over that amount have an annual premium of 155 bps.
[c] Applies to purchase loans less than or equal to $625,500. Those over that amount have an annual premium of 105 bps.

Initial Monthly Payment Comparison: FHA vs. PMI

Assumptions	
Property Value	$250,000
Loan Amount	$241,250
LTV	96.5
Base Rate	
Conforming	4.66%
FHA	4.70%

FICO	620 - 639	640 - 659	660 - 679	680 - 699	700 - 719	720 - 739	740 - 759	760 +
FHA MI Premiums								
FHA UFMIP	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
FHA MIP	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%
PMI								
GSE LLPA*	3.50%	2.75%	2.25%	1.50%	1.50%	1.00%	0.75%	0.75%
PMI Annual MIP	2.25%	2.05%	1.90%	1.40%	1.15%	0.95%	0.75%	0.55%
Monthly Payment								
FHA	$1,444	$1,444	$1,444	$1,444	$1,444	$1,444	$1,444	$1,444
PMI	$1,711	$1,648	$1,613	$1,524	$1,482	$1,443	$1,402	$1,378
PMI Advantage	($267)	($204)	($169)	($80)	($38)	$1	$42	$66

Sources: Genworth Mortgage Insurance, Ginnie Mae, and Urban Institute.
Note: Mortgage insurance premiums listed in percentage points. Grey shade indicates FHA monthly payment is more favorable, while light blue indicates PMI is more favorable. The PMI monthly payment calculation does not include special programs like Fannie Mae's HomeReady and Freddie Mac's Home Possible (HP), both offer more favorable rates for low- to moderate-income borrowers.
LLPA= Loan Level Price Adjustment, described in detail on page 25.

RELATED HFPC WORK

PUBLICATIONS AND EVENTS

Upcoming events:
July 11: GSE Pricing and Cross-Subsidization

Projects

The Mortgage Servicing Collaborative

Housing Credit Availability Index (HCAI)

Access and Affordability

Home Mortgage Disclosure Act Projects

Publications

Credit Risk Transfer: A Fork in the Road
Authors: Laurie Goodman
Date: June 7, 2018

GSE Reform is Dead- Long Live GSE Reform!
Authors: Jim Parrott, Mark Zandi
Date: May 9, 2018

Exploring the Viability of Mansion Tax Approaches
Authors: Jung Hyun Choi, Bhargavi Ganesh, Sarah Strochak, Bing Bai
Date: May 8, 2018

The Impact of Proposed Changes to HMDA
Authors: Laurie Goodman, Ellen Seidman, Bhargavi Ganesh
Date: April 27, 2018

Small-Dollar Mortgages for Single-Family Residential Properties
Authors: Alanna McCargo, Bing Bai, Taz George, Sarah Strochak
Date: April 25, 2018

What Fueled the Financial Crisis?
Authors: Laurie Goodman, Jun Zhu
Date: April 4, 2018

Housing Affordability: Local and National Perspectives
Authors: Laurie Goodman, Wei Li, Jun Zhu
Date: March 28, 2018

Is Limited English Proficiency a Barrier to Homeownership?
Authors: Edward Golding, Laurie Goodman, Sarah Strochak
Date: March 26, 2018

Blog Posts

Boston's housing market, in three charts
Authors: Bhargavi Ganesh, Sarah Strochak, Sheryl Pardo
Date: June 5, 2018

Ten years after the crash, what is the state of the housing market?
Authors: Rob Abare
Date: May 30, 2018

The Bay Area's housing crisis, in four charts
Authors: Bhargavi Ganesh, Sarah Strochak, Sheryl Pardo
Date: May 22, 2018

Failure to fund system upgrades at the FHA could cost taxpayers $41 million
Authors: Karan Kaul, Edward Golding
Date: May 3, 2018

Expanding small-dollar mortgages can put homeownership in reach for more families
Authors: Sarah Strochak, Alanna McCargo
Date: April 30, 2018

Proposal to limit mortgage data collection would not help rural, vulnerable areas
Authors: Laurie Goodman, Ellen Seidman, Bhargavi Ganesh
Date: April 30, 2018

The case for expanding mortgage credit, and one way to do it
Authors: Rob Abare
Date: April 20, 2018

Rental pay history should be used to assess the creditworthiness of mortgage borrowers
Authors: Laurie Goodman, Jun Zhu
Date: April 17, 2018

Will fintech innovation benefit borrowers of all incomes?
Authors: Karan Kaul
Date: April 16, 2018

Fannie Mae's efforts to ease mortgage access show how hard it is to balance risk and access
Authors: Karan Kaul, Bing Bai, Laurie Goodman
Date: April 5, 2018

Acknowledgments

The Housing Finance Policy Center (HFPC) was launched with generous support at the leadership level from the Citi Foundation and John D. and Catherine T. MacArthur Foundation. Additional support was provided by The Ford Foundation and The Open Society Foundations.

Ongoing support for HFPC is also provided by the Housing Finance Innovation Forum, a group of organizations and individuals that support high-quality independent research that informs evidence-based policy development. Funds raised through the Forum provide flexible resources, allowing HFPC to anticipate and respond to emerging policy issues with timely analysis. This funding supports HFPC's research, outreach and engagement, and general operating activities.

The chartbook is funded by these combined sources. We are grateful to them and to all our funders, who make it possible for Urban to advance its mission.

The views expressed are those of the authors and should not be attributed to the Urban Institute, its trustees, or its funders. Funders do not determine research findings or the insights and recommendations of Urban experts. Further information on the Urban Institute's funding principles is available at www.urban.org/support.

Housing Finance Innovation Forum Members as of June 2018

Organizations
Arch Capital
Bank of America Foundation
BlackRock
Caliber Home Loans
DownPayment Resource
Ellington Management Group
FICO
Financial Services Roundtable
Freddie Mac
Genworth
Housing Policy Council
JPMorgan Chase
Mortgage Bankers Association
Mr. Cooper
National Association of Home Builders
National Association of Realtors
Ocwen
PennyMac
Pretium Partners
PricewaterhouseCoopers
Prospect Mortgage
Pulte Home Mortgage
Quicken Loans
TIG Advisors
Two Harbors Investment Corp.
U.S. Mortgage Insurers (USMI)
VantageScore
Wells Fargo & Company
400 Capital Management

Individuals
Raj Date
Mary Miller
Jim Millstein
Beth Mlynarczyk
Toni Moss
Shekar Narasimhan
Faith Schwartz
Mark Zandi

Data Partners
CoreLogic
Moody's Analytics
Zillow

URBAN INSTITUTE · ELEVATE · THE · DEBATE