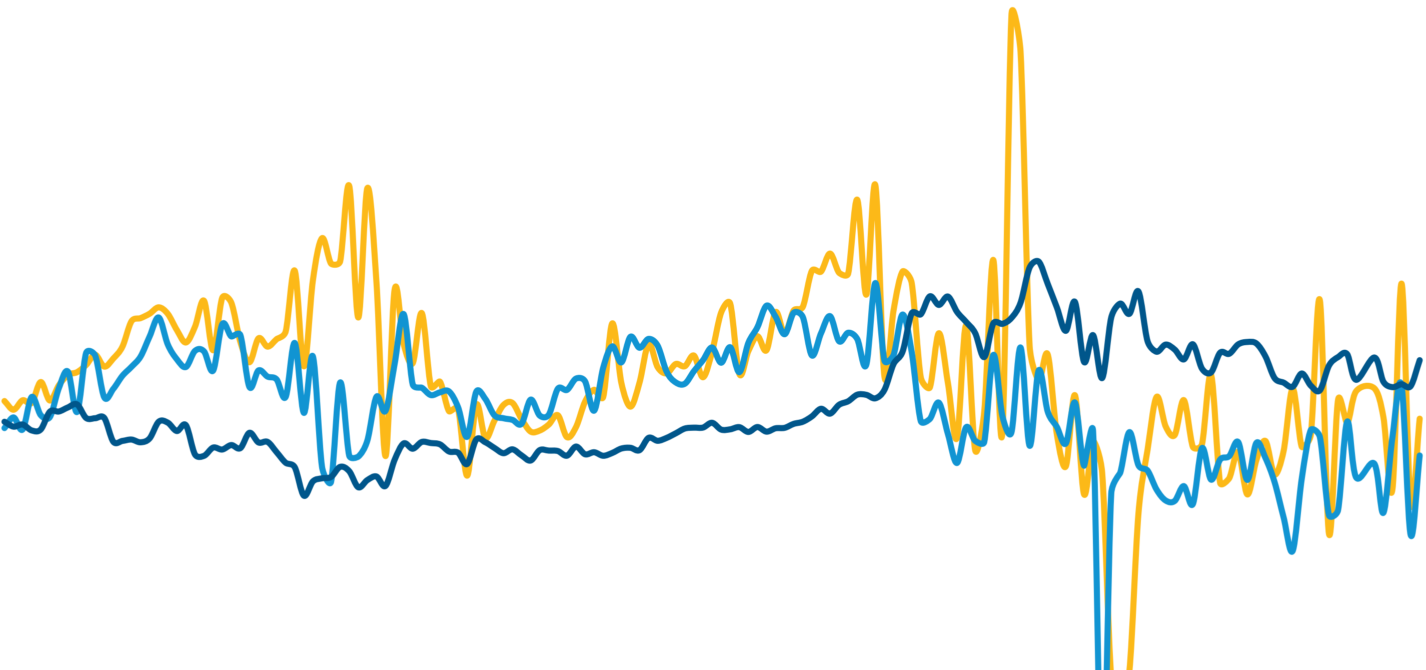
HOUSING FINANCE POLICY CENTER



HOUSING FINANCE AT A GLANCE

A MONTHLY CHARTBOOK

April 2018

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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.

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INTRODUCTION

MGIC's premium cut will impact more than just affordability

One of the largest private mortgage insurance firms, Mortgage Guaranty Insurance Corp, recently announced a reduction in the insurance premiums for its borrower paid MI policies. Going into effect on June 4th, this reduction is more geared towards the lower end of the credit spectrum – the lower the borrower credit-score, the bigger the reduction (see table).

MGIC's current and new annual premiums for 95.01 to 97 LTV loans, effective 6/4/2018 (%)

FICO	620 – 639	640 - 659	660 - 679	680 - 699	700 - 719	720 - 739	740 - 759	760+
Current	2.25	2.05	1.90	1.40	1.15	0.95	0.75	0.55
New	1.80	1.60	1.50	1.17	0.96	0.84	0.67	0.55
Reduction	-0.45	-0.45	-0.40	-0.23	-0.19	-0.11	-0.08	0.00

MGIC reduced its premiums for all LTV buckets, with the highest LTV loans receiving the largest cut. While other PMIs haven't yet announced a rate cut, we expect many to follow suit in the near future, as PMI compete primarily on price. It goes without saying that this reduction will help mortgage payment affordability in the wake of rising interest rates and house prices. How much? At today's premiums, our analysis shows that FHA mortgages are generally more economical than PMI for borrowers with FICO scores below 740 (assuming a typical $250,000 home with a 3.5 percent down payment and also factoring in the GSE g-fees, LLPAs, and FHA premiums). With the premium reduction, this breakeven FICO will move lower as PMI becomes more attractive. With this change, PMI execution will generally become more attractive than FHA for borrowers with FICO scores above 720 (See page 33).

As a result, there will be a shift in the market share as FHA loses many 720 to 740 FICO borrowers to the PMIs, although FHA's share will likely stay within the historical range of 10 to 15 percent of total originations. Because these are also the most creditworthy borrowers for the FHA, their loss would increase the share of lower quality loans in the FHA's book of business. However, its impact on the MMI Fund is likely to be limited given the overall high quality of recent originations and continued strong house price appreciation.

This development would also add a layer of complexity to FHA's thinking with respect to its own mortgage insurance premiums (MIP). Hours after President Trump was inaugurated in Jan 2017, HUD suspended the 25 basis points MIP cut that was announced by the departing Obama administration. While the likelihood that the cut will be reinstated remains very low under the current administration, any potential deterioration in the macro environment could force the administration to contemplate a MIP increase.

And therein lies the tricky balance. While a premium increase would bring in more revenue per loan, it would make FHA execution even more expensive relative to PMI, leading more high-quality borrowers to opt for PMI instead. And just as with MGIC's premium cut, such a move would leave the FHA with a book of business that is even more heavily weighted towards the lower end of the credit spectrum. Of course it is way too early to draw any conclusions, but the latest PMI premium cut will make FHA's difficult job of balancing its mission and risk somewhat more complex.

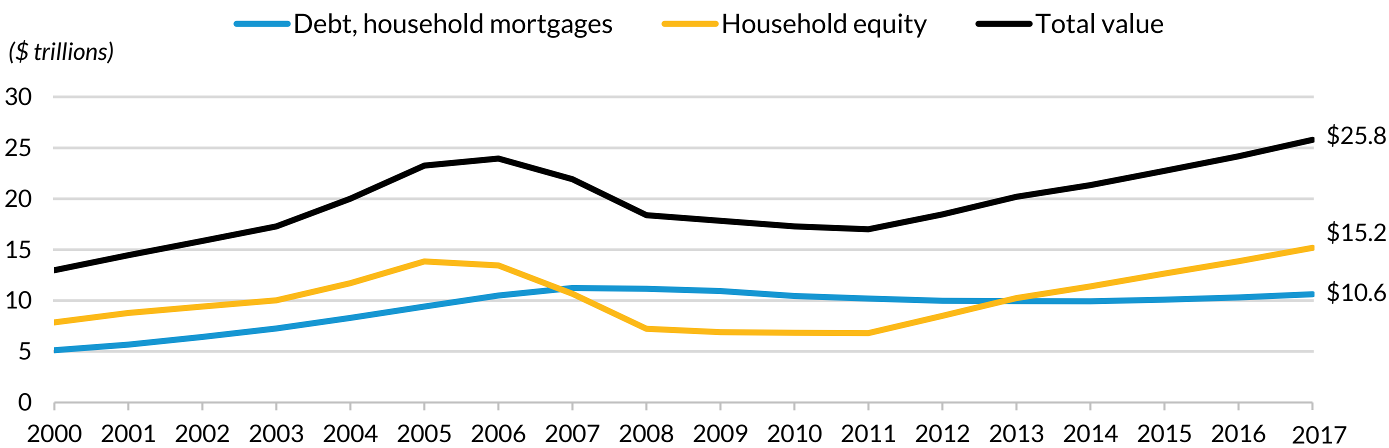
INSIDE THIS ISSUE

- While the non-agency MBS issuance remained low, the prime non-agency securitization grew 80 percent YOY in Q1 2018 (page 10).
- Nonbank median DTI continued to increase in March 2018, while bank median DTI stayed flat (page 14).
- HCAI shows mortgage credit availability expanded to 5.8 in Q4 2017, the highest level since 2013 (page 16).
- The Fannie Mae and Freddie Mac portfolios are now both below the $250 billion maximum portfolio size required by year end 2018. Fannie met the target in 2017, Freddie met the target in February 2018 (page 24).
- Special quarterly feature includes GSE default, composition, loss severity, and repurchase indicators (pages 34-41).

MARKET SIZE OVERVIEW

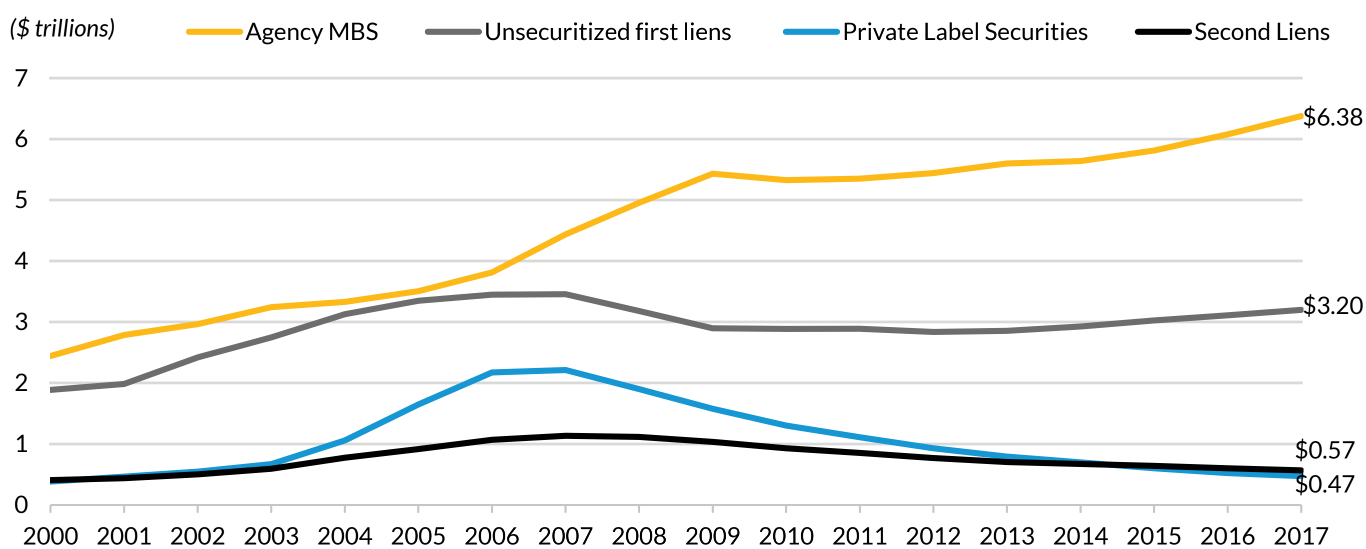
Since 2012, the Federal Reserve's Flow of Funds report has consistently indicated an increasing total value of the housing market, driven by growing household equity and 2017 Q4 was no different. Total debt and mortgages increased slightly to $10.6 trillion, and household equity reached a new high of $15.2 trillion, bringing the total value of the housing market to $25.8 trillion, surpassing the pre-crisis peak of $23.9 trillion in 2006. Agency MBS make up 60.0 percent of the total mortgage market, private-label securities make up 4.5 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 5.4 percent of the total.

Value of the US Housing Market



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

Size of the US Residential Mortgage Market



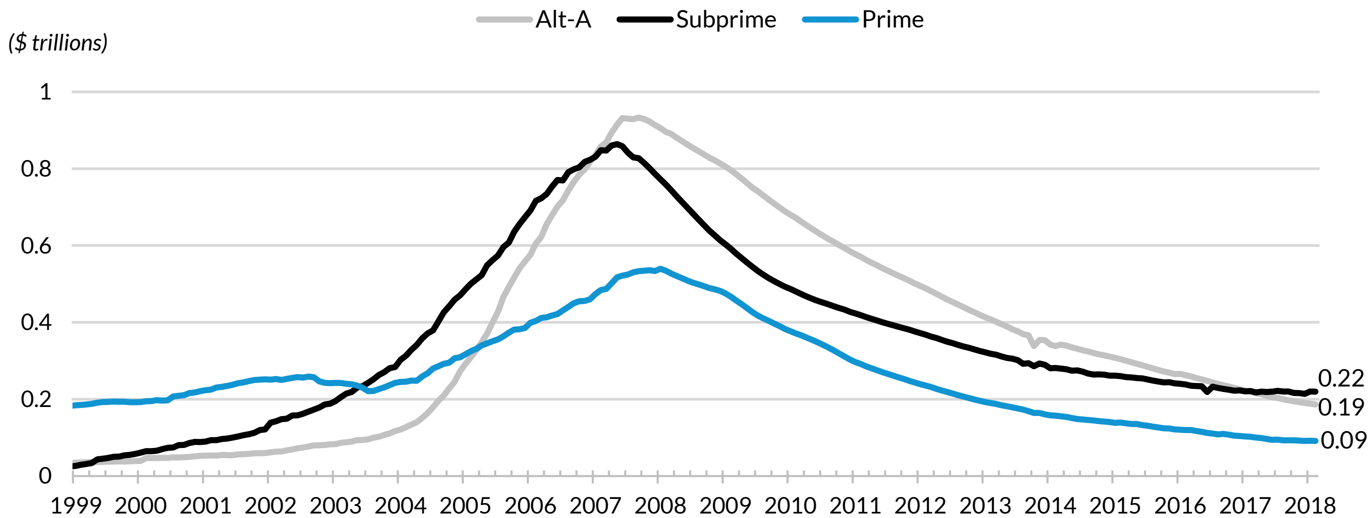
Sources: Federal Reserve Flow of Funds, Inside Mortgage Finance, Fannie Mae, Freddie Mac, eMBS and Urban Institute. *Last updated March 2018.* **Note:** Unsecuritized first liens includes loans held by commercial banks, GSEs, savings institutions, and credit unions.

OVERVIEW

MARKET SIZE OVERVIEW

As of February 2018, debt in the private-label securitization market totaled $497 billion and was split among prime (18.4 percent), Alt-A (37.4 percent), and subprime (44.2 percent) loans. In March 2018, outstanding securities in the agency market totaled $6.43 trillion and were 43.7 percent Fannie Mae, 27.3 percent Freddie Mac, and 28.9 percent Ginnie Mae. Ginnie Mae has had more outstanding securities than Freddie Mac since May 2016.

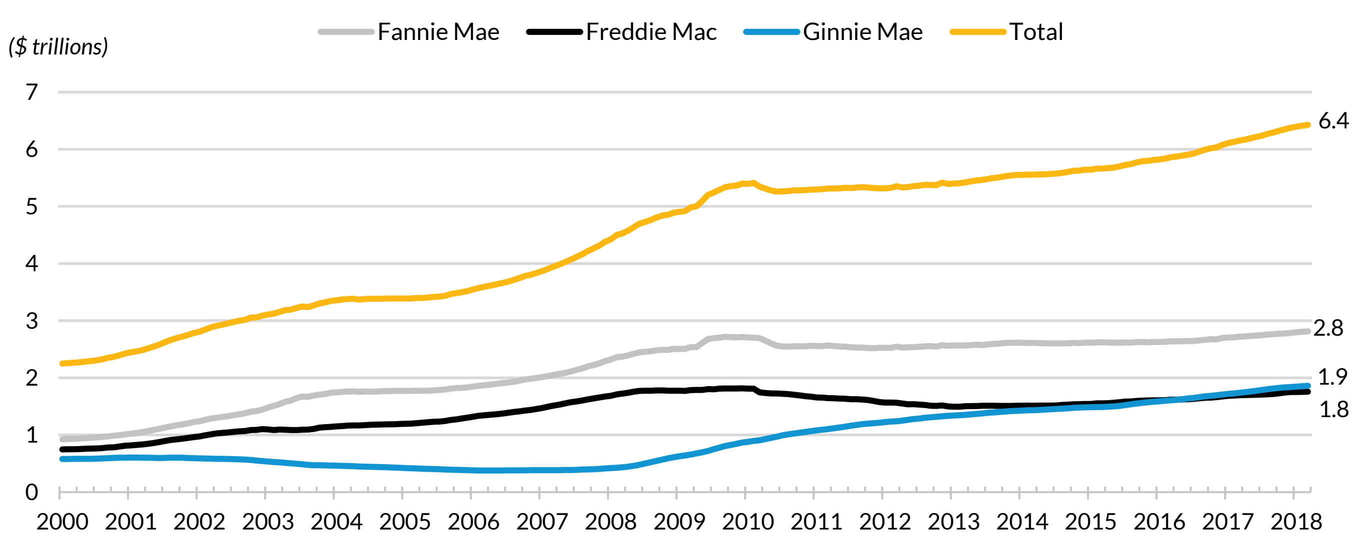
Private-Label Securities by Product Type



Sources: CoreLogic and Urban Institute.

February 2018

Agency Mortgage-Backed Securities



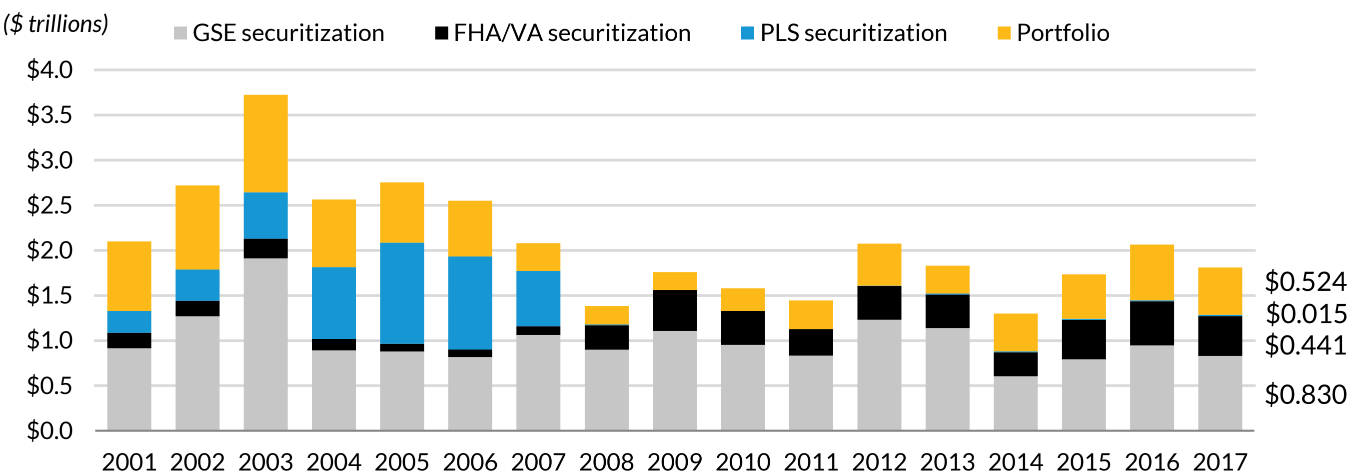
March 2018

Sources: eMBS and Urban Institute.

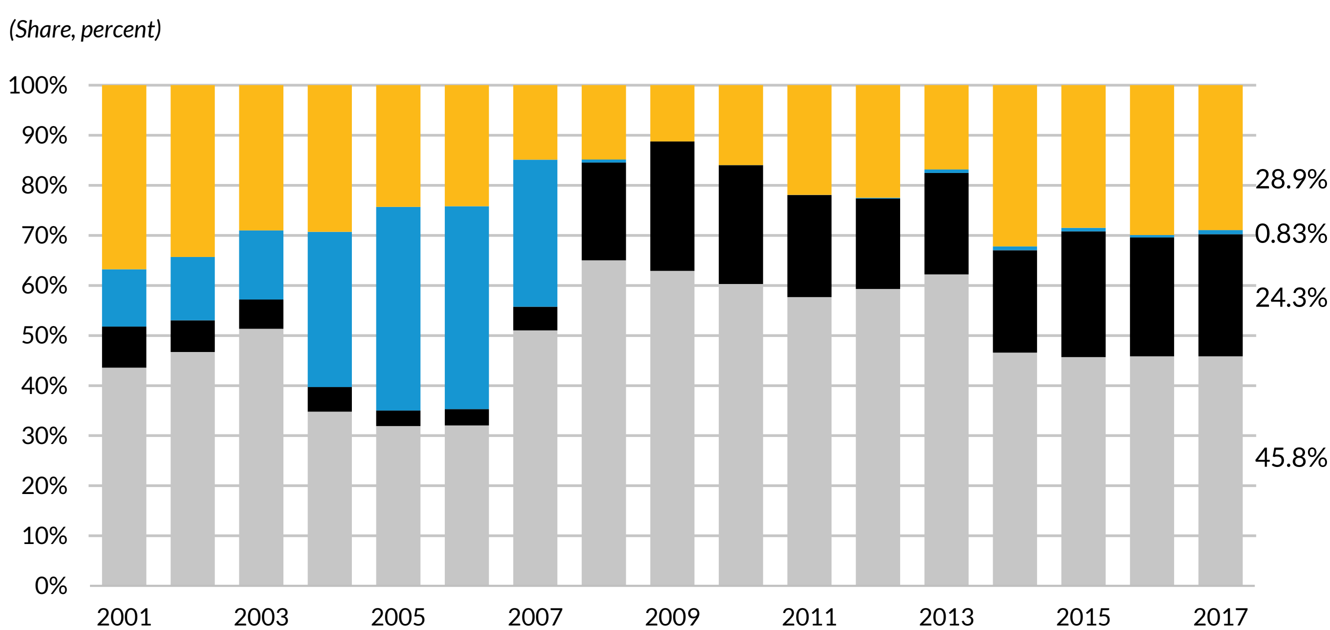
OVERVIEW
ORIGINATION VOLUME AND COMPOSITION

First Lien Origination Volume

After a record high origination year in 2016 ($2.1 trillion), the first lien originations totaled $1.8 trillion in 2017, down 14 percent from 2016, mostly due to elevated interest rates. The portfolio originations share was 29 percent, the GSE share was around 46 percent, and the FHA/VA share was around 24 percent, all consistent with 2016 shares. Origination of private-label securities was under 1 percent in both years.



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



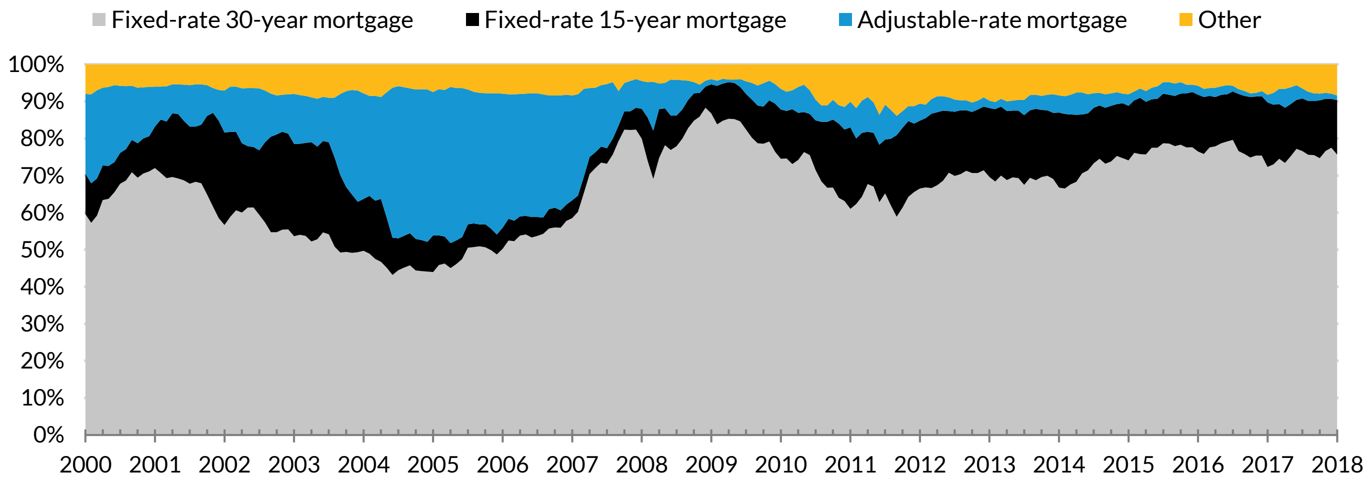
Sources: Inside Mortgage Finance and Urban Institute. *Last updated March 2018.*

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 1.3 percent in January 2018. The 15-year fixed-rate mortgage (FRM), predominantly a refinance product, accounted for 14.7 percent of new originations in January 2018. If we exclude refinances (bottom chart), the share of 30-year FRMs in January 2018 stood at 92.2 percent, 15-year FRMs at 5.1 percent, and ARMs at 1.2 percent.

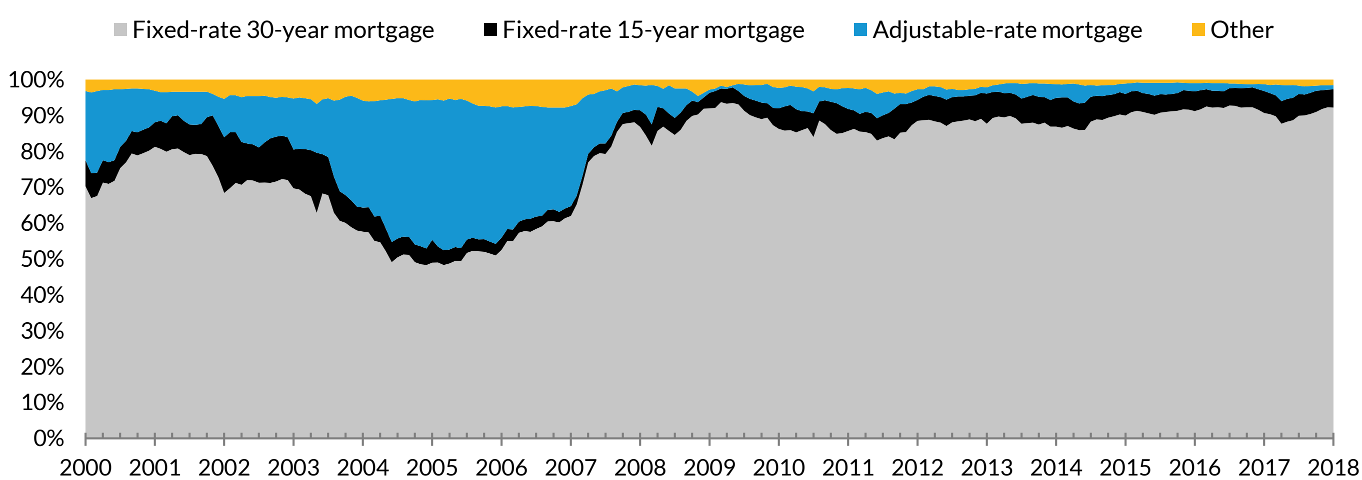
All Originations



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

January 2018

Purchase Loans Only



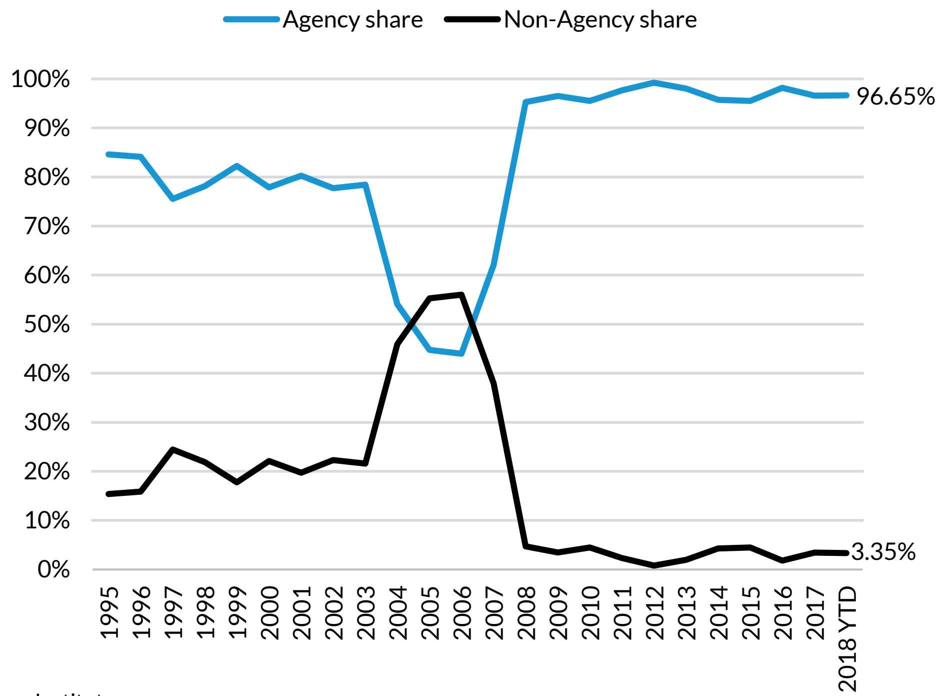
Sources: CoreLogic, eMBS, HMDA, SIFMA and Urban Institute.

January 2018

SECURITIZATION VOLUME AND COMPOSITION

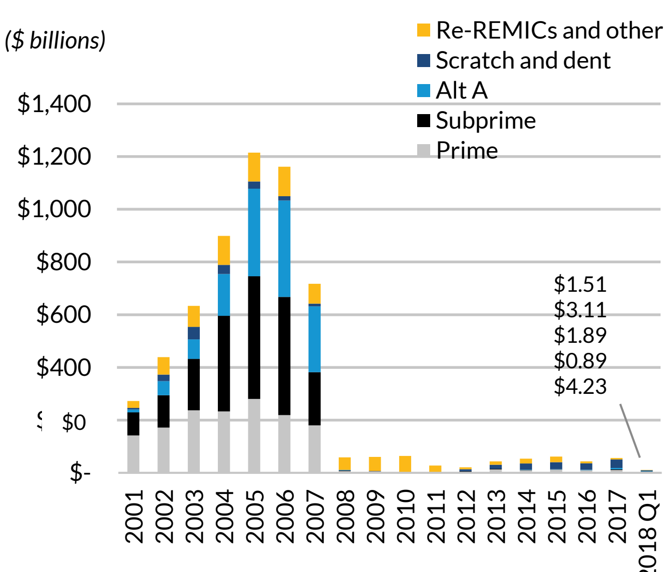
Agency/Non-Agency Share of Residential MBS Issuance

The non-agency share of mortgage securitizations in the first quarter of 2018 was 3.4 percent, equal to the share in 2017 and above the 1.8 percent share in 2016. 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.



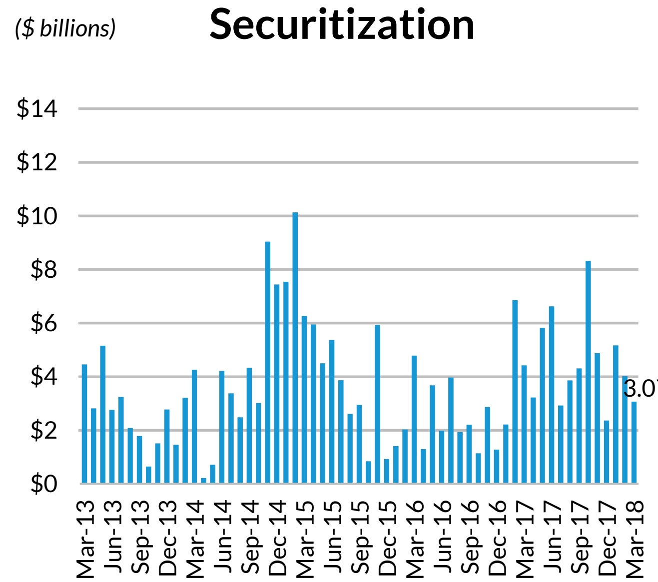
Sources: Inside Mortgage Finance and Urban Institute.
Note: Based on data from March 2018.

Non-Agency MBS Issuance



Sources: Inside Mortgage Finance and Urban Institute.

Monthly Non-Agency Securitization



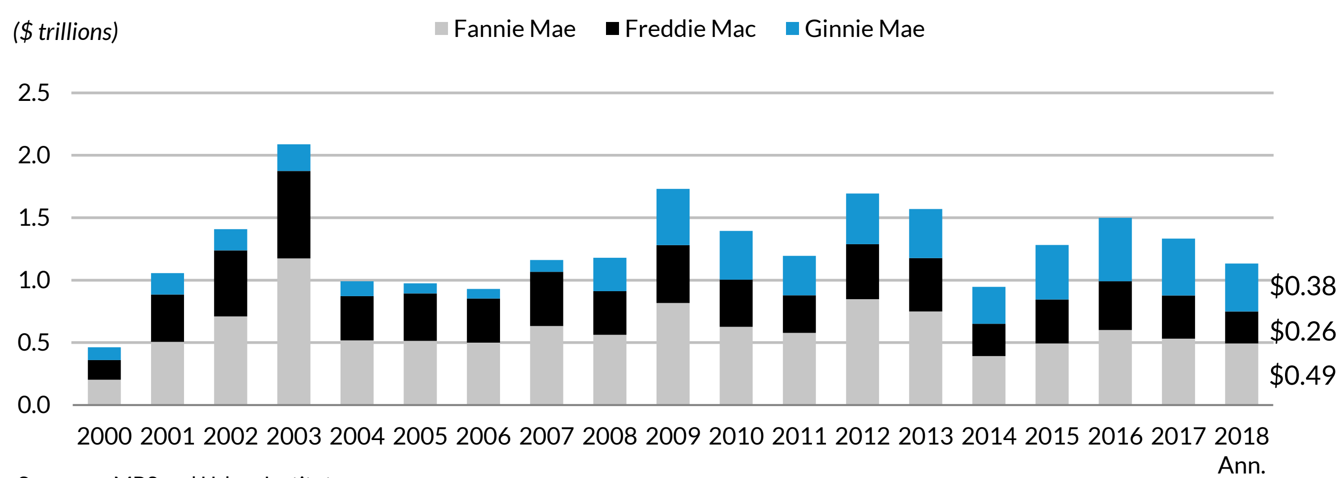
Sources: Inside Mortgage Finance and Urban Institute.

OVERVIEW

AGENCY ACTIVITY: VOLUMES AND PURCHASE/ REFI COMPOSITION

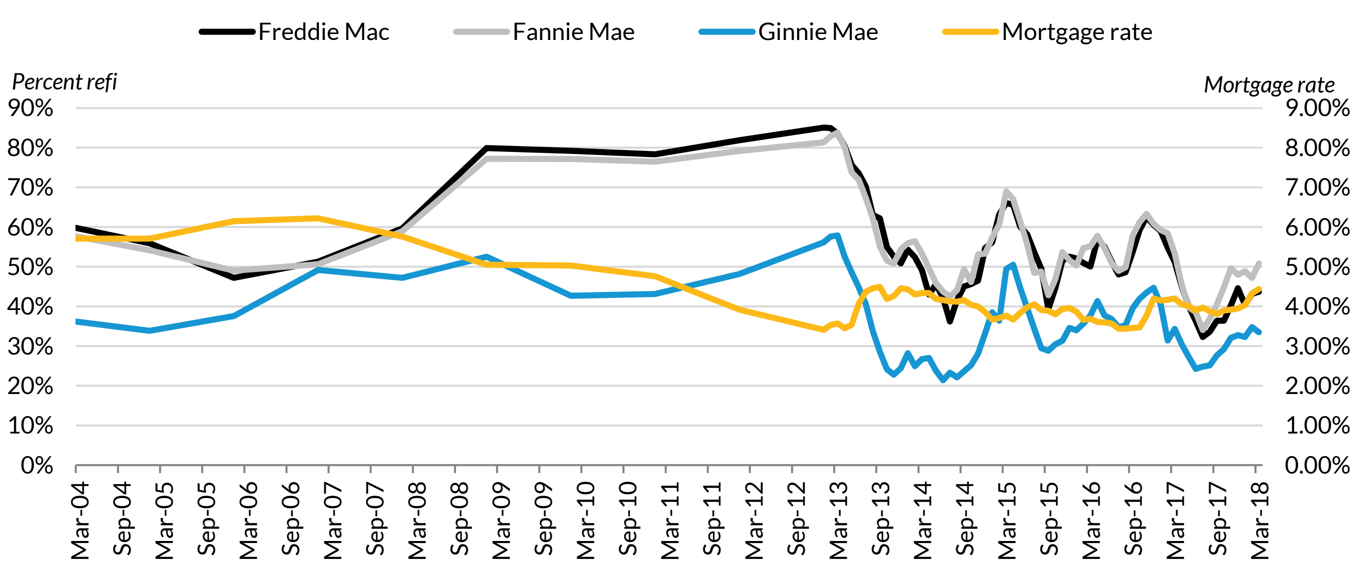
Agency issuance totaled $283.47 billion in the first quarter of 2018, $1.134 trillion on an annualized basis. This is down about 14.1 percent from the first quarter of 2017. In March 2018, the change in the refinance share was inconsistent between agencies: increasing for Fannie Mae and Freddie Mac, and declining slightly for Ginnie Mae. While it might, at first blush seem surprising to see an increase in the refi share during a period of rising interest rates, seasonal patterns pull in that direction. The winter lull in purchase activity drives the refi share up; loans sold into GSE pools in March are based on January and February home sales.

Agency Gross Issuance



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

Percent Refi at Issuance



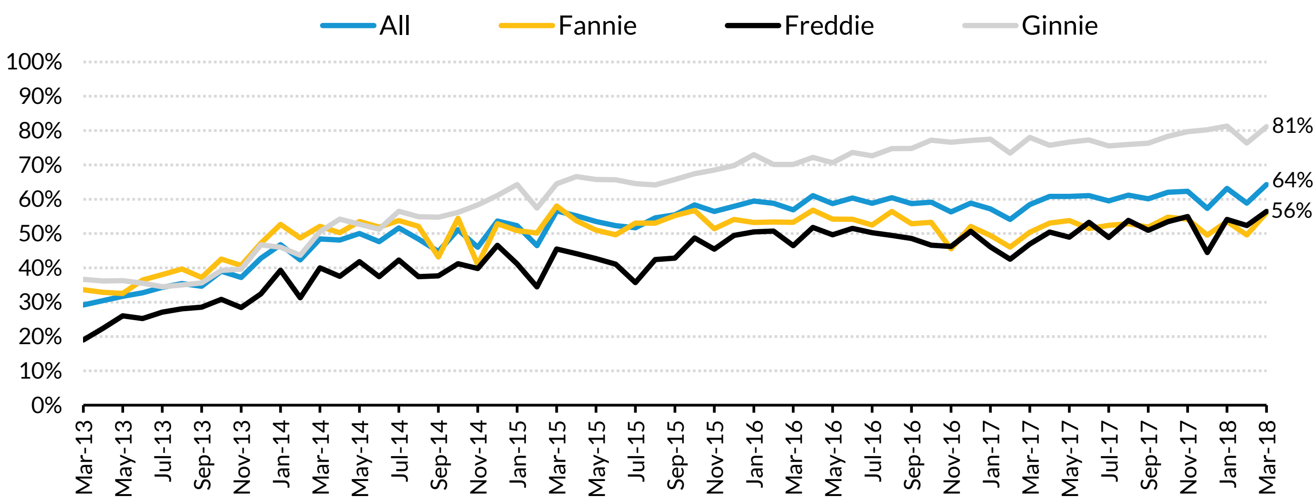
Sources: eMBS and Urban Institute.
Note: Based on at-issuance balance. Figure based on data from March 2018.

OVERVIEW

NONBANK ORIGINATION SHARE

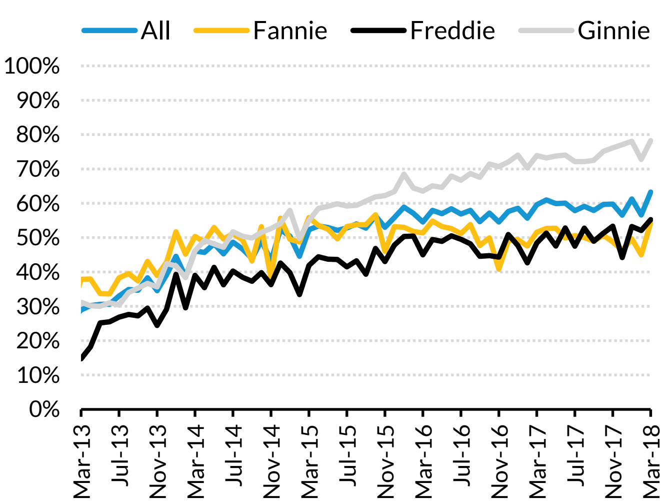
The nonbank origination share has been rising steadily since for all three agencies since 2013. The Ginnie Mae nonbank share has been consistently higher than the GSEs, standing at 81 percent in March 2018. The Fannie Mae and Freddie Mac nonbank shares both stood at 56 percent. The nonbank originator share is higher for refinance loans than for purchase loans across all three agencies.

Nonbank Origination Share: All Loans



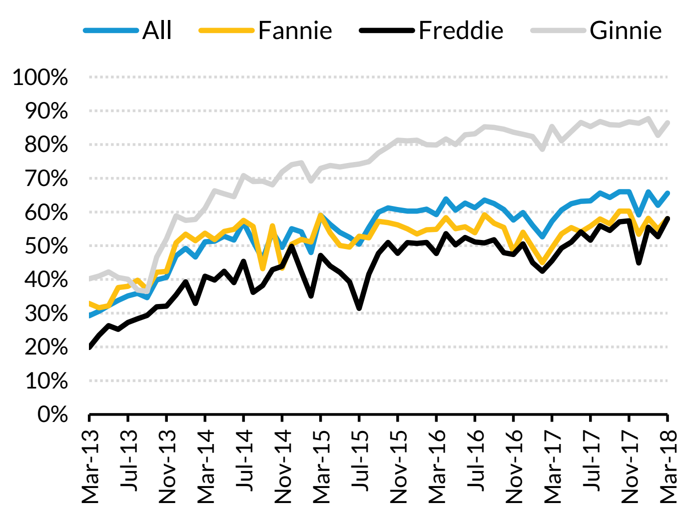
Sources: *eMBS and Urban Institute.*

Nonbank Origination Share: Purchase Loans



Sources: *eMBS and Urban Institute*

Nonbank Origination Share: Refi Loans



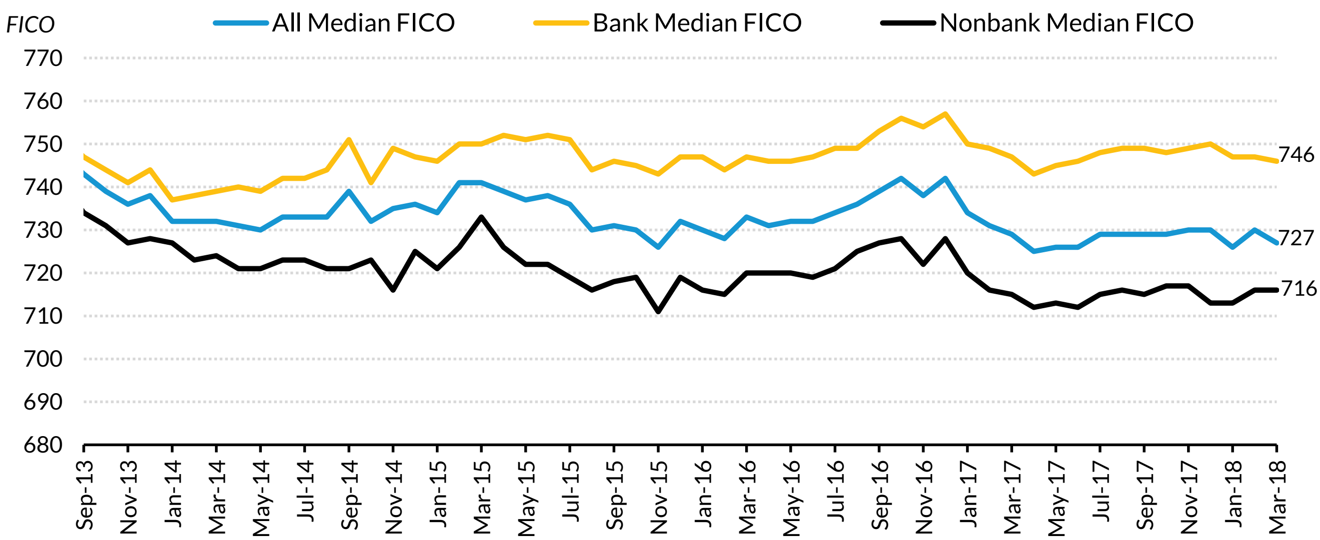
Sources: *eMBS and Urban Institute*

OVERVIEW

NONBANK CREDIT BOX

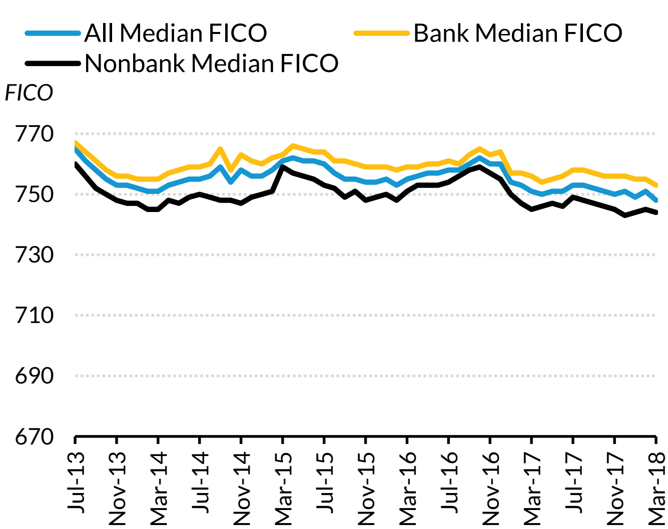
Nonbank originators have played a key role in opening up access to credit. The median GSE and the median Ginnie Mae FICO scores for loans originated by nonbanks are lower than their bank counterparts. Within the GSE space, both bank and nonbank FICOs have declined since 2014, with further relaxation 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



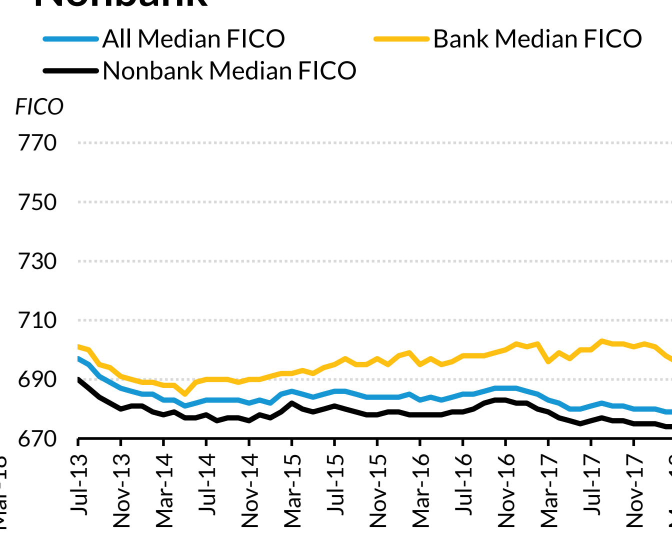
Sources: *eMBS and Urban Institute.*

GSE FICO: Bank vs. Nonbank



Sources: *eMBS and Urban Institute.*

Ginnie Mae FICO: Bank vs. Nonbank



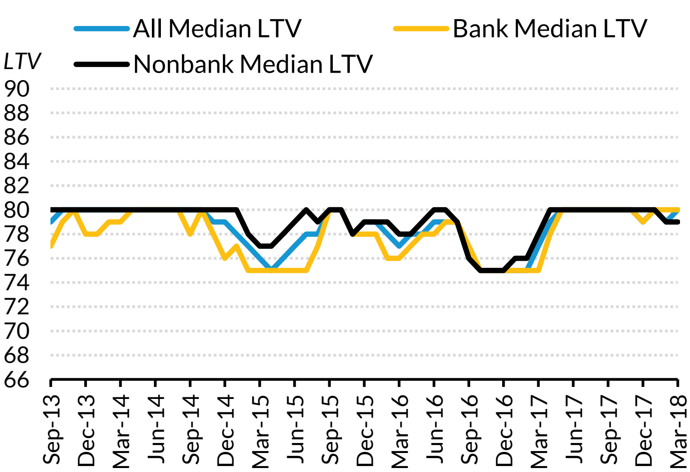
Sources: *eMBS and Urban Institute.*

OVERVIEW

NONBANK CREDIT BOX

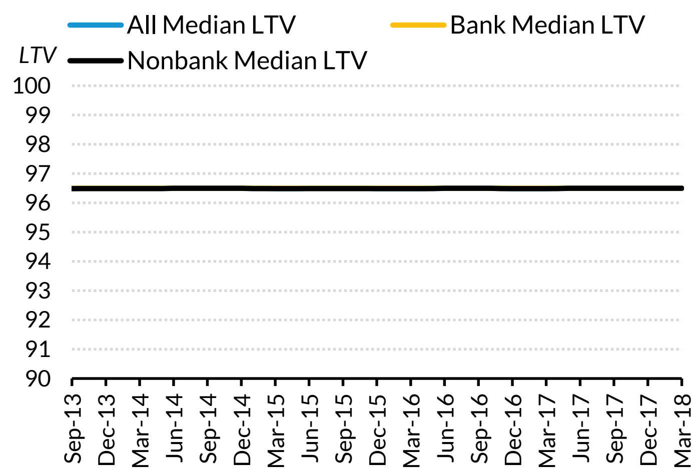
The median LTV ratios for loans originated by nonbanks are similar to their bank counterparts, while the median DTIs for nonbank loans are higher, indicating that nonbanks are more accommodating in this as well as in the FICO dimension. Note that since early 2017 there has been a measurable increase in DTIs. This is true for both Ginnie Mae and GSE loans, banks and nonbank originators.

GSE LTV: Bank vs. Nonbank



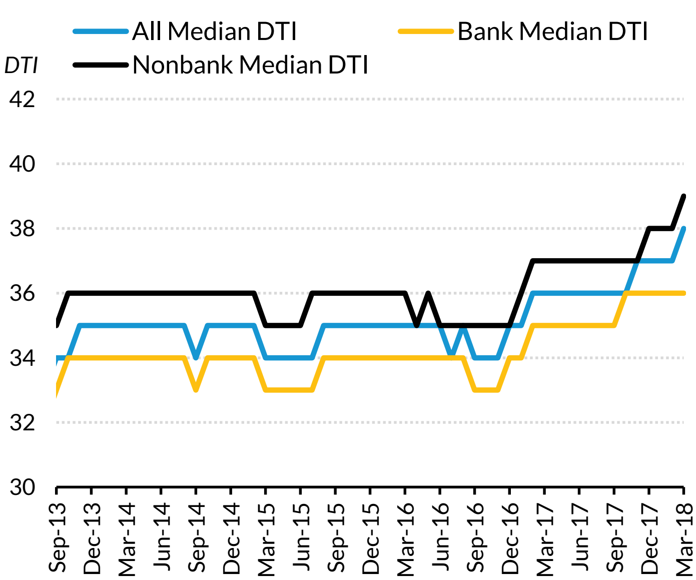
Sources: *eMBS and Urban Institute.*

Ginnie Mae LTV: Bank vs. Nonbank



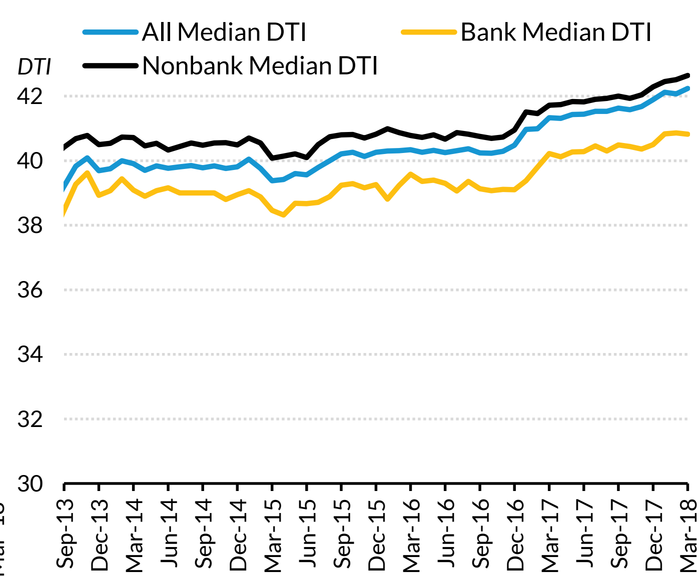
Sources: *eMBS and Urban Institute.*

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 35-38 percent in 2017 to a forecast 25 -29 percent in 2018. Fannie, Freddie and MBA all forecast 2018 housing starts to be around 1.3 million units, up from an estimated 1.2 million units in 2017. Home sales forecasts for 2018 range from 6.2 million to 6.4 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
2017 Q1	408	397	361	47	42	41
2017 Q2	490	475	463	33	30	32
2017 Q3	468	500	465	34	32	31
2017 Q4	438	428	370	37	32	35
2018 Q1	386	335	346	43	30	37
2018 Q2	473	495	444	28	25	25
2018 Q3	436	500	450	23	24	22
2018 Q4	396	410	370	25	23	27
FY 2014	1301	1350	1261	40	39	40
FY 2015	1730	1750	1679	47	45	46
FY 2016	2052	2125	1891	49	48	48
FY 2017	1842	1850	1710	38	36	35
FY 2018	1690	1740	1610	29	25	27
FY 2019	1686	1780	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%, 4.0%, and 4.2%. For 2018, the respective projections for Fannie, Freddie, and MBA are 4.4%, 4.5%, and 4.9%.

Housing Starts and Homes Sales

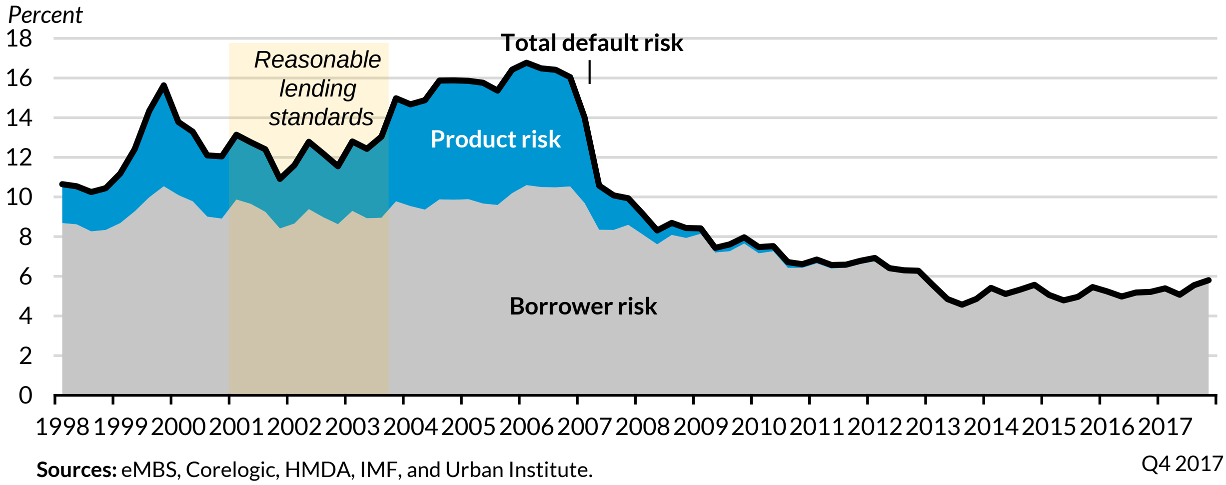
Year	Housing Starts, thousands			Home Sales. thousands				
	Total, FNMA estimate	Total, FHLMC estimate	Total, MBA estimate	Total, FNMA estimate	Total, FHLMC estimate	Total, MBA estimate	Existing, MBA estimate	New, MBA Estimate
FY 2014	1003	1000	1001	5377	5380	5360	4920	440
FY 2015	1112	1110	1108	5751	5750	5740	5237	503
FY 2016	1174	1170	1177	6013	6010	6001	5440	561
FY 2017	1203	1210	1208	6124	6170	6162	5538	624
FY 2018	1288	1300	1289	6275	6350	6280	5638	642
FY 2019	1306	1400	1376	6439	6450	6453	5786	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.

CREDIT AVAILABILITY AND ORIGINATOR PROFITABILITY

Housing Credit Availability Index (HCAI)

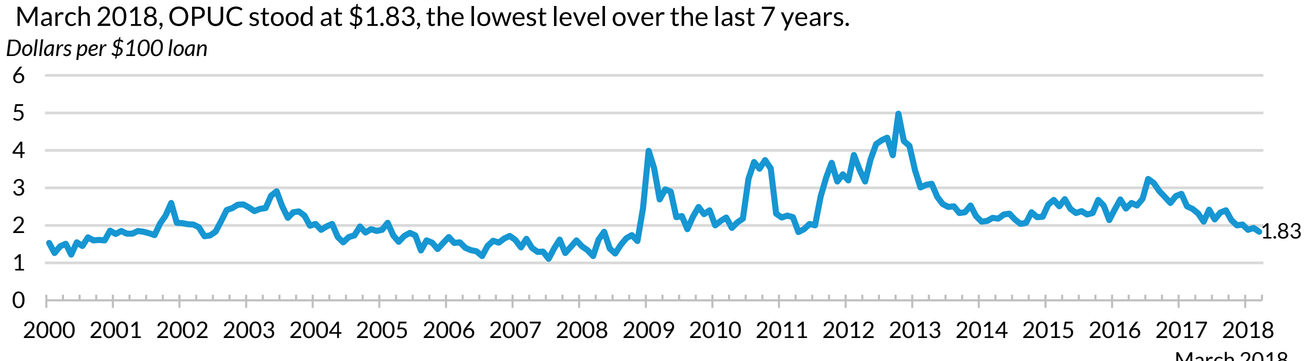
HFPC's Housing Credit Availability Index (HCAI) assesses lenders' tolerance for both borrower risk and product risk, calculating the share of owner-occupied purchase loans that are likely to default. The index shows that credit availability increased for a second quarter in a row to 5.8 percent, the 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 March 2018, OPUC stood at $1.83, the lowest level over the last 7 years.

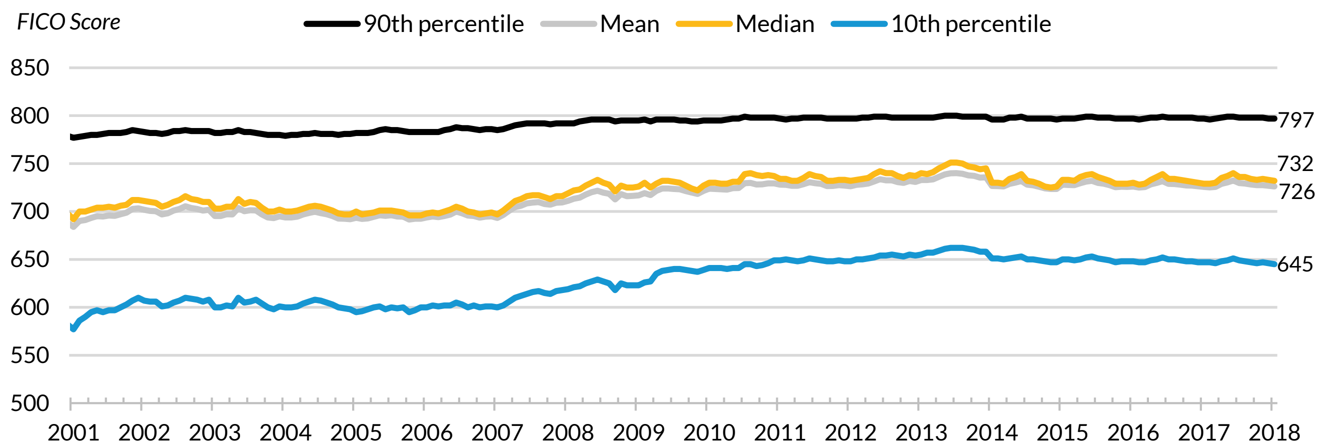


Sources: Federal Reserve Bank of New York, updated monthly and available at this link: http://www.ny.frb.org/research/epr/2013/1113fust.html and Urban Institute.
Note: OPUC is a is a monthly (4-week moving) average as discussed in Fuster et al. (2013).

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 645 as of January 2018. Prior to the housing crisis, this threshold held steady in the low 600s. Mean LTV levels at origination remain relatively high, averaging 87.7, which reflects the large number of FHA purchase originations.

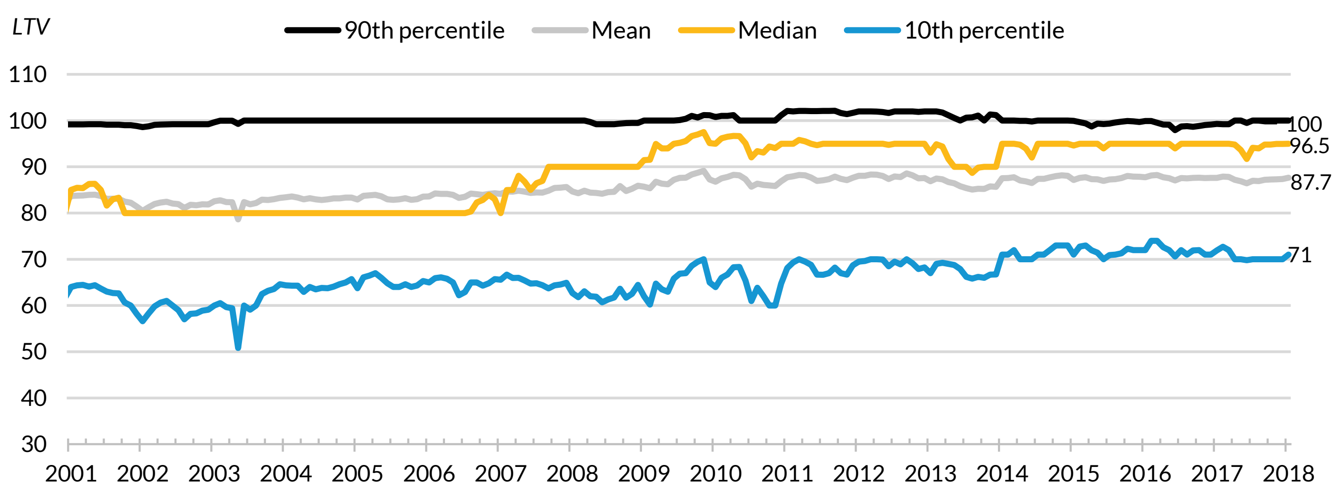
Borrower FICO Score at Origination



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

January 2018

Combined LTV at Origination



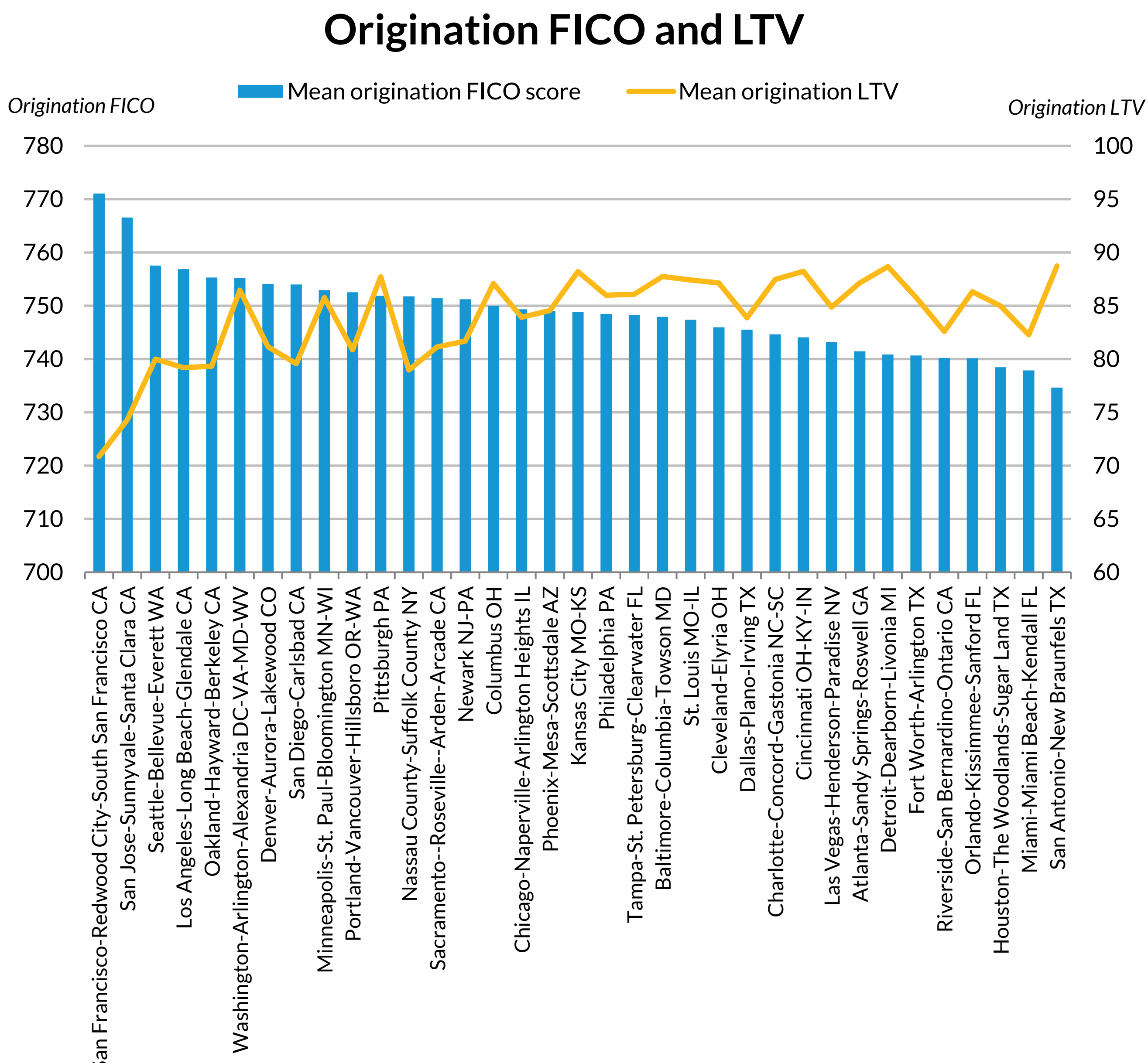
Sources: CoreLogic, eMBS, HMDA, SIFMA and Urban Institute.
Note: Includes owner-occupied purchase loans only.

January 2018

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 771, while in San Antonio-New Braunfels TX it is 734. Across all MSAs, lower average FICO scores tend to be correlated with high average LTVs, as these MSAs rely heavily on FHA/VA financing.



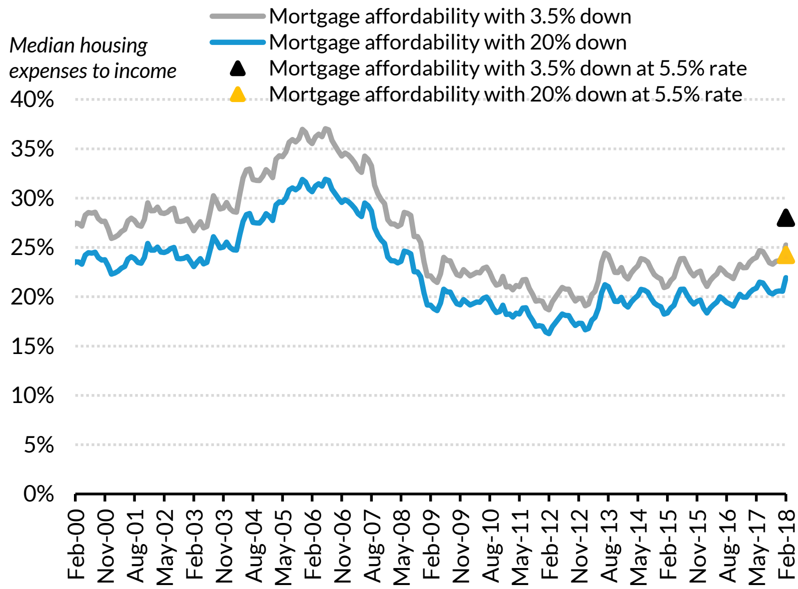
Sources: CoreLogic, eMBS, HMDA, SIFMA and Urban Institute.
Note: Includes owner-occupied purchase loans only. Data as of January 2018.

STATE OF THE MARKET

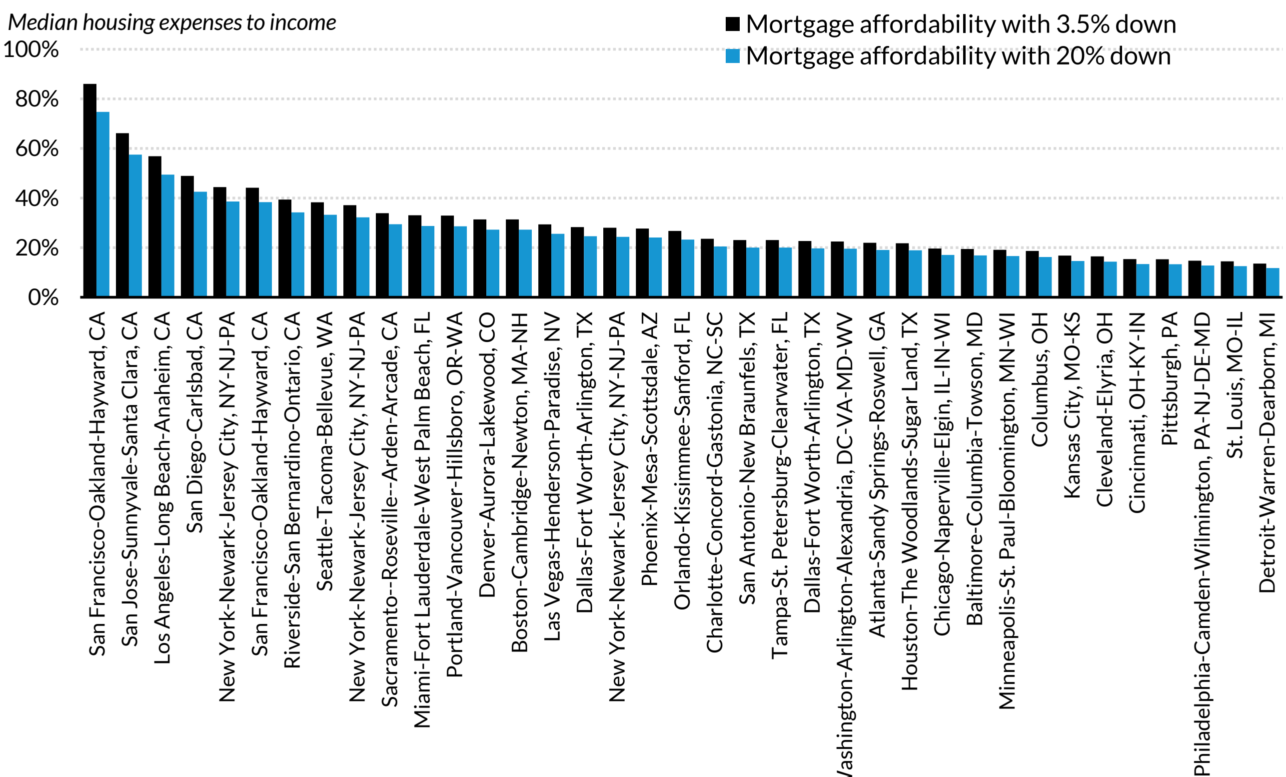
HOUSING AFFORDABILITY

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 January 2018, the share of median income needed for the monthly mortgage payment with a 20% down payment stood at 22 percent. With a 3.5% down payment, the share of income is higher, at 25 percent in January 2018. If interest rates rise to 5.5%, the housing expenses to income share with both a 20 percent and a 3.5 percent down payment would be equivalent to 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



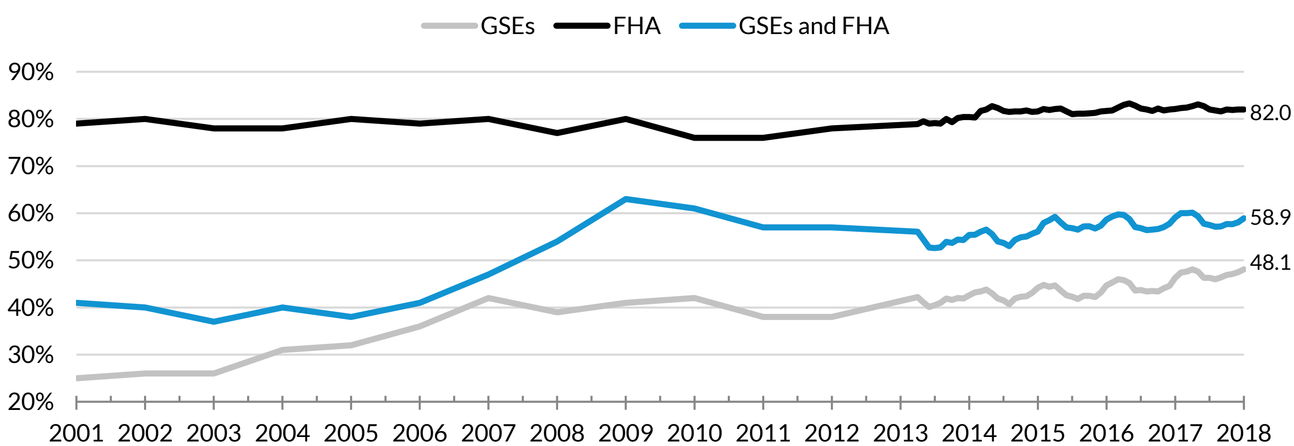
Sources: : CoreLogic, US Census Bureau, Current Population Survey, American Community Survey, Moody's Analytics, Freddie Mac Primary Mortgage Market Survey, and the Urban Institute.

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 February 2018.

STATE OF THE MARKET
FIRST-TIME HOMEBUYERS

First-Time Homebuyer Share

In January 2018, the first-time homebuyer share of GSE purchase loans was 48.1 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 82.0 percent in January 2018. The bottom table shows that based on mortgages originated in January 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.

January 2018

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

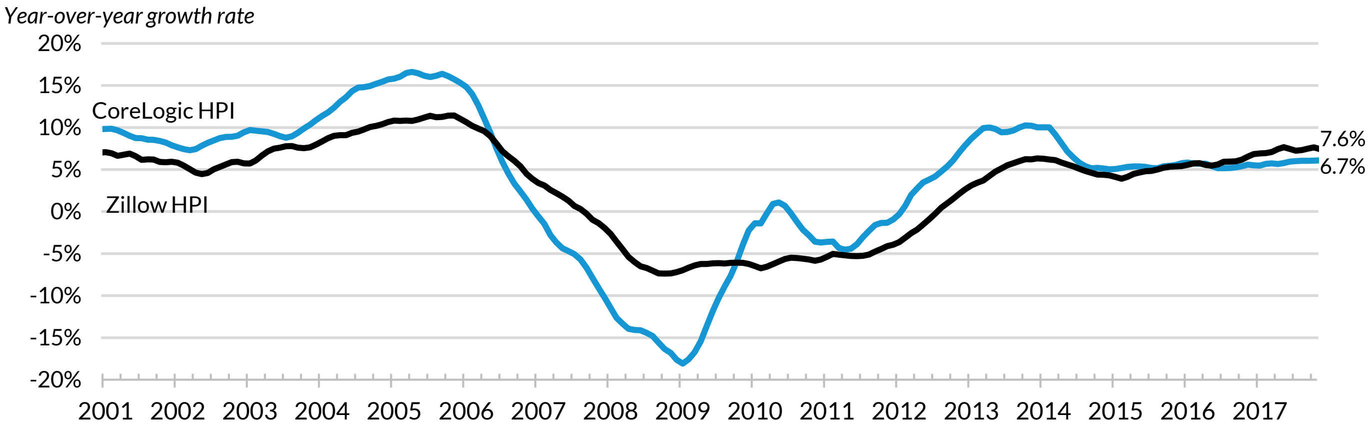
	GSEs		FHA		GSEs and FHA	
Characteristics	First-time	Repeat	First-time	Repeat	First-time	Repeat
Loan Amount ($)	231,050	255,823	203,677	223,282	219,316	250,234
Credit Score	737.7	753.7	673.4	678.9	710.1	740.9
LTV (%)	87.2	79.3	95.5	94.1	90.8	81.8
DTI (%)	36.0	36.6	42.9	43.8	38.9	37.8
Loan Rate (%)	4.25	4.12	4.32	4.22	4.28	4.14

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

STATE OF THE MARKET
HOME PRICE INDICES

National Year-Over-Year HPI Growth

While the strong year-over-year home price growth from 2012 to 2013 has slowed somewhat, home price appreciation remains robust as measured by the repeat sales index from CoreLogic and hedonic index from Zillow. We will continue to closely monitor how rising mortgage rates impact this strong growth.



Sources: CoreLogic, Zillow, and Urban Institute.

February 2018

Changes in CoreLogic HPI for Top MSAs

After rising 52.2 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 18 and 19 percent, respectively, to return to peak levels.

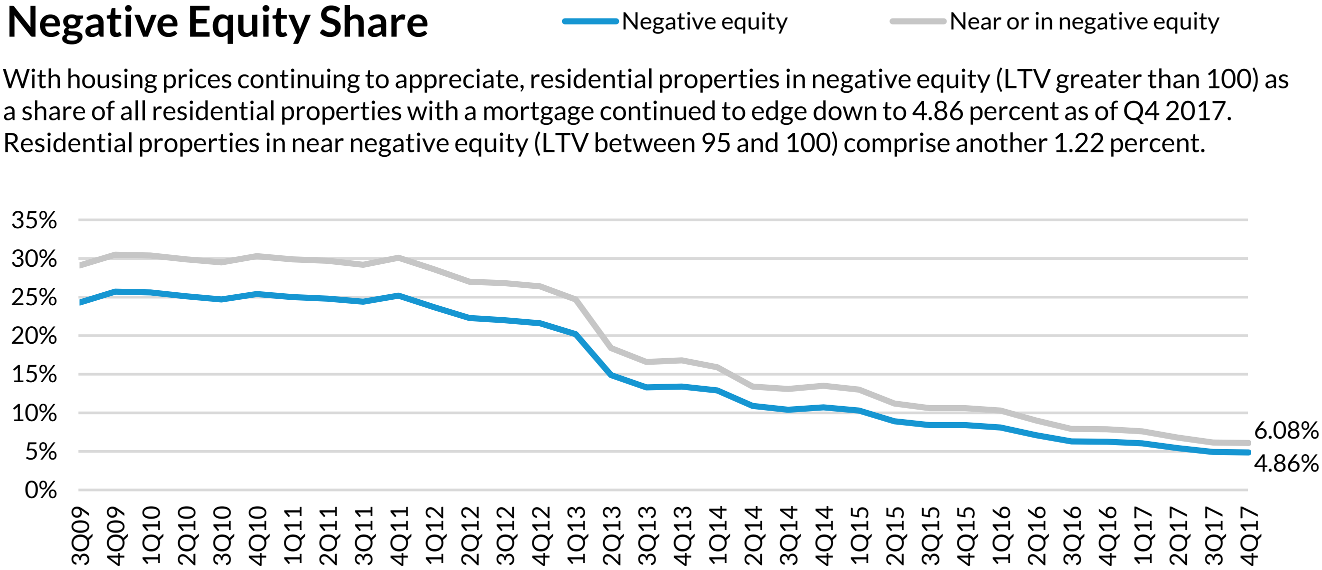
MSA	HPI changes (%)			% Rise needed to achieve peak
	2000 to peak	Peak to trough	Trough to current	
United States	93.7%	-33.2%	52.2%	-1.7%
New York-Jersey City-White Plains NY-NJ	111.6%	-16.7%	31.5%	-8.6%
Los Angeles-Long Beach-Glendale CA	177.0%	-38.4%	75.3%	-7.4%
Chicago-Naperville-Arlington Heights IL	65.9%	-35.7%	35.6%	14.6%
Atlanta-Sandy Springs-Roswell GA	38.0%	-32.9%	65.1%	-9.6%
Washington-Arlington-Alexandria DC-VA-MD-WV	155.2%	-34.1%	36.5%	11.1%
Houston-The Woodlands-Sugar Land TX	39.6%	-14.1%	47.6%	-21.2%
Phoenix-Mesa-Scottsdale AZ	123.7%	-52.6%	78.9%	18.0%
Riverside-San Bernardino-Ontario CA	186.1%	-52.6%	77.2%	19.0%
Dallas-Plano-Irving TX	34.3%	-13.8%	61.6%	-28.2%
Minneapolis-St. Paul-Bloomington MN-WI	72.9%	-30.3%	45.4%	-1.4%
Seattle-Bellevue-Everett WA	90.9%	-29.1%	89.9%	-25.8%
Denver-Aurora-Lakewood CO	35.6%	-13.1%	80.3%	-36.2%
Baltimore-Columbia-Towson MD	122.8%	-24.6%	15.6%	14.7%
San Diego-Carlsbad CA	144.9%	-37.5%	67.2%	-4.3%
Anaheim-Santa Ana-Irvine CA	160.6%	-35.7%	58.6%	-2.0%

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

STATE OF THE MARKET
NEGATIVE EQUITY & SERIOUS DELINQUENCY

Negative Equity Share

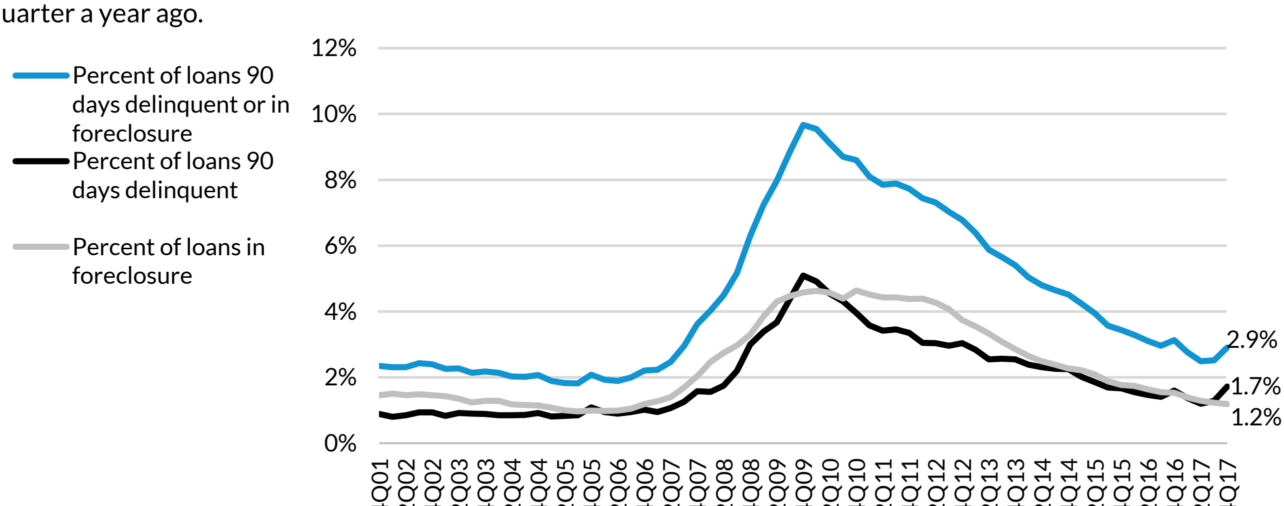
With housing prices continuing to appreciate, residential properties in negative equity (LTV greater than 100) as a share of all residential properties with a mortgage continued to edge down to 4.86 percent as of Q4 2017. Residential properties in near negative equity (LTV between 95 and 100) comprise another 1.22 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 March 2018.*

Loans in Serious Delinquency/Foreclosure

Due to the hurricanes in the fall of 2017, 90 day delinquencies increased from 1.29 to 1.72 percent in Q4 2017. The percent of loans in foreclosure continued to edge down to 1.19 percent. The combined delinquencies totaled 2.91 percent in Q4 2017, up from 2.52 percent in Q3 2017 but down from 3.13 percent in the same quarter a year ago.



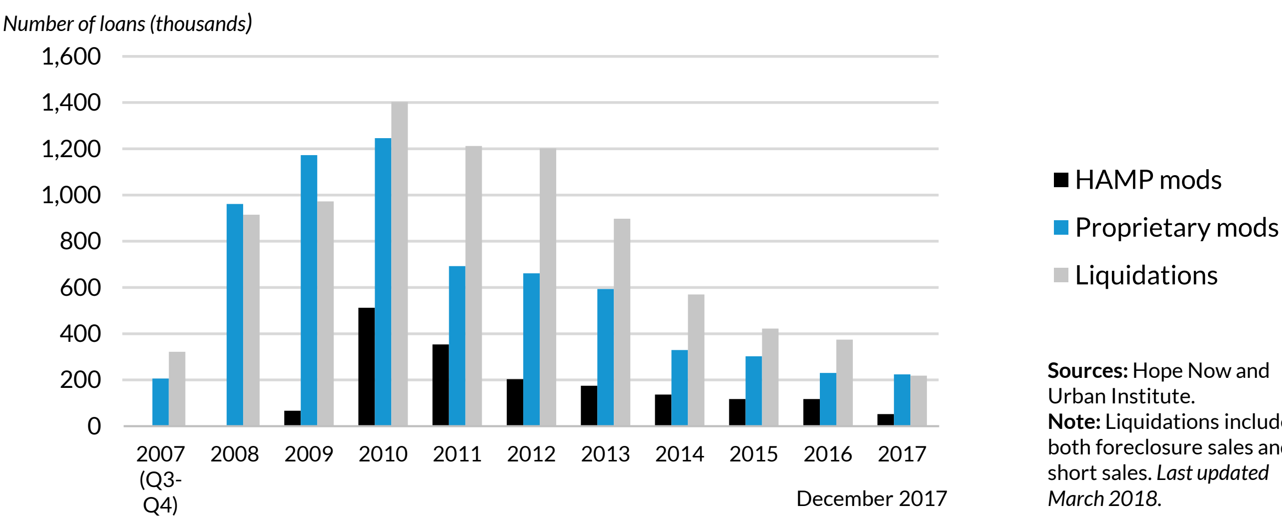
Sources: Mortgage Bankers Association and Urban Institute. *Last updated February 2018.*

STATE OF THE MARKET

MODIFICATIONS AND LIQUIDATIONS

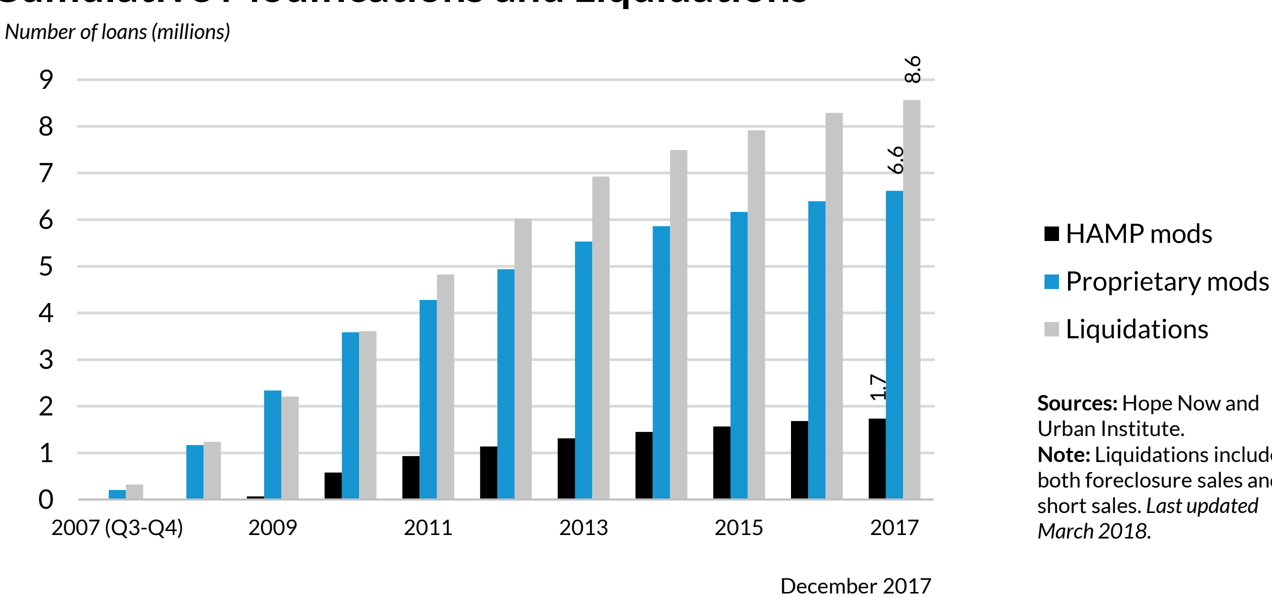
Total modifications (HAMP and proprietary) are roughly equal to total liquidations. Hope Now reports show 8,354,003 borrowers have received a modification since Q3 2007, compared with 8,562,508 liquidations in the same period. Modifications and liquidations have slowed significantly over the past few years. In 2017, there were just 275,872 modifications and 218,641 liquidations.

Loan Modifications and Liquidations



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

Cumulative Modifications and Liquidations

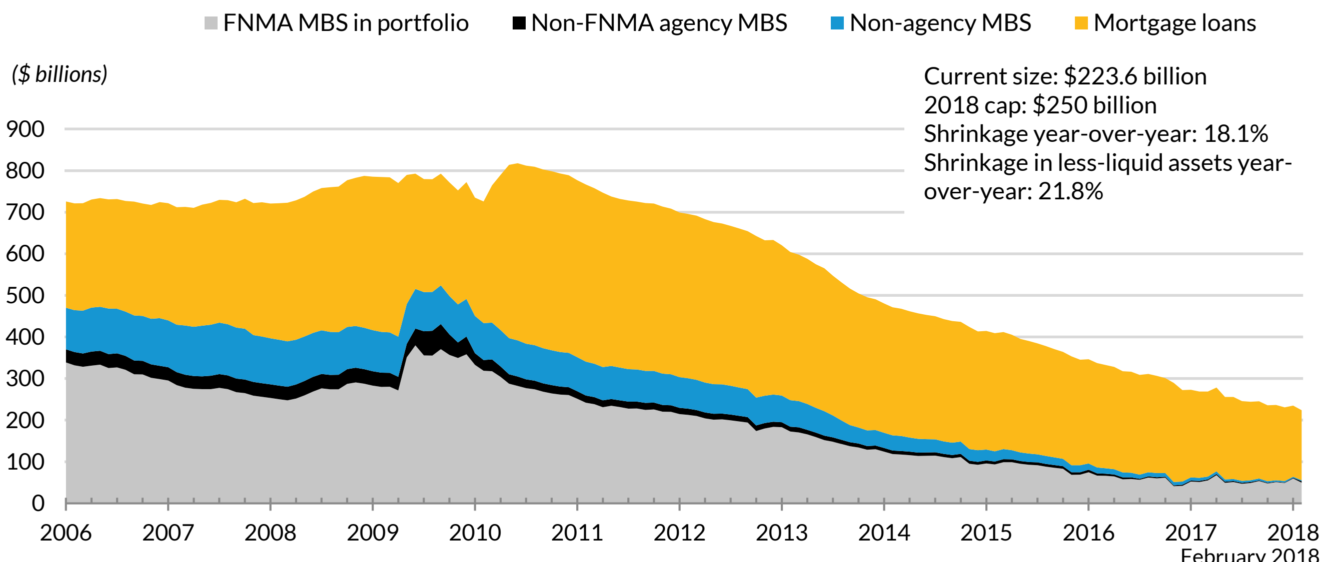


Sources: Hope Now and Urban Institute.
Note: Liquidations includes both foreclosure sales and short sales. *Last updated March 2018.*

GSE PORTFOLIO WIND-DOWN

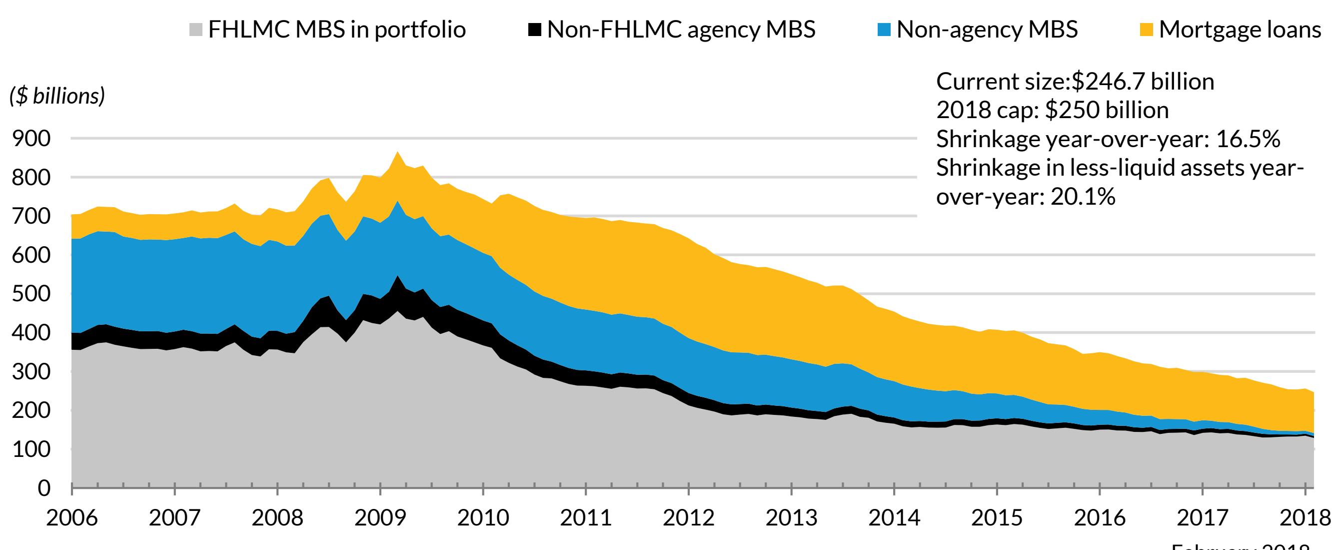
Both GSEs continue to contract their portfolios. Since February 2017, Fannie Mae has contracted by 18.1 percent and Freddie Mac by 16.5 percent. They are shrinking their less-liquid assets (mortgage loans and non-agency MBS) faster than they are shrinking their entire portfolio. The Fannie Mae and Freddie 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.

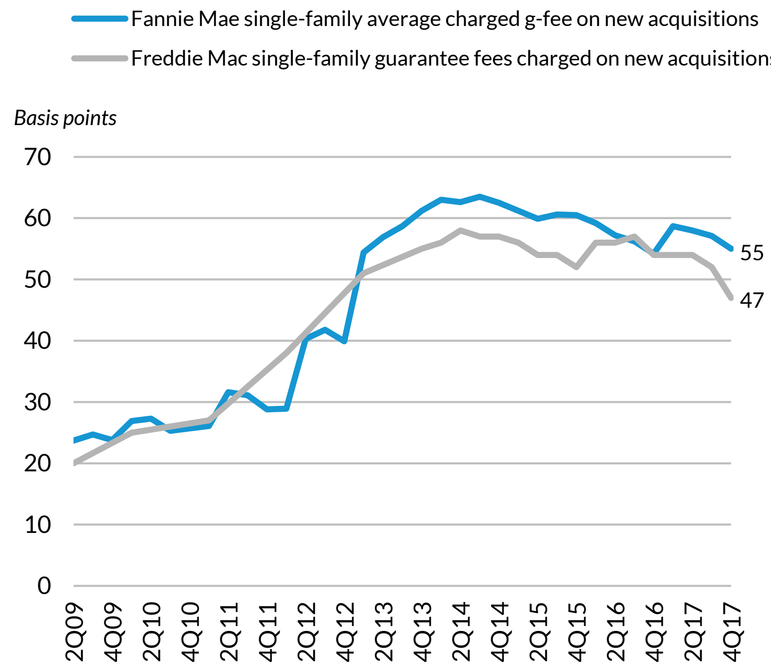
GSES UNDER CONSERVATORSHIP

EFFECTIVE GUARANTEE FEES

Guarantee Fees Charged on New Acquisitions

The latest 10-K indicates that Fannie's average g-fees on new acquisitions decreased from 57.1 to 55 bps in Q4 2017 and Freddie's decreased from 52 to 47 bps. This is still a marked increase over 2012 and 2011, 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 February 2018.



Fannie Mae Upfront Loan-Level Price Adjustments (LLPAs)

Credit Score	LTV							
	≤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 cover 35.6 percent of its guarantees, while Freddie's STACR covers 53.3 percent. In 2018, Freddie and Fannie have each issued two 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%
Total		**$987,172**	**$29,580**	**3.0%**
Percent of Fannie Mae's Total Book of Business		**35.64%**		

Freddie Mac – Structured Agency Credit Risk (STACR)

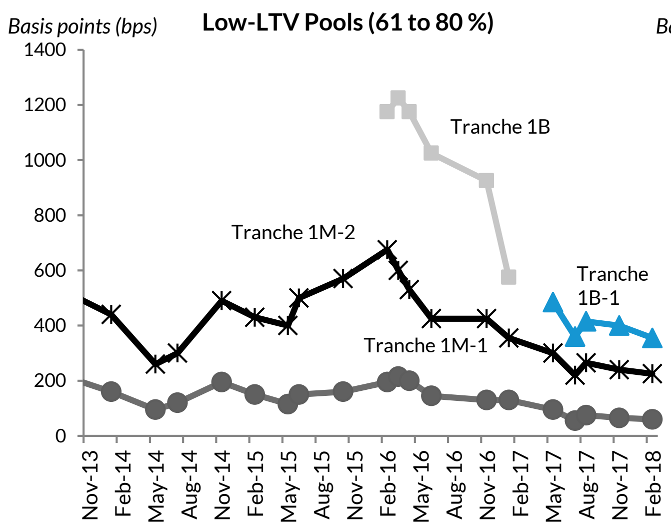
Date	*Transaction*	*Reference Pool Size ($ m)*	*Amount Issued ($m)*	*% of Reference Pool Covered*
2013	STACR 2013 deals	$57,912	$1,130	2.0%
2014	STACR 2014 deals	$147,120	$4,916	3.3%
2015	STACR 2015 deals	$209,521	$6,658	3.2%
January 2016	STACR Series 2016 – DNA1	$35,700	$996	2.8%
March 2016	STACR Series 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%
Total		**$937,339**	**$25,793**	**2.8%**
Percent of Freddie Mac's Total Book of Business		**53.26%**		

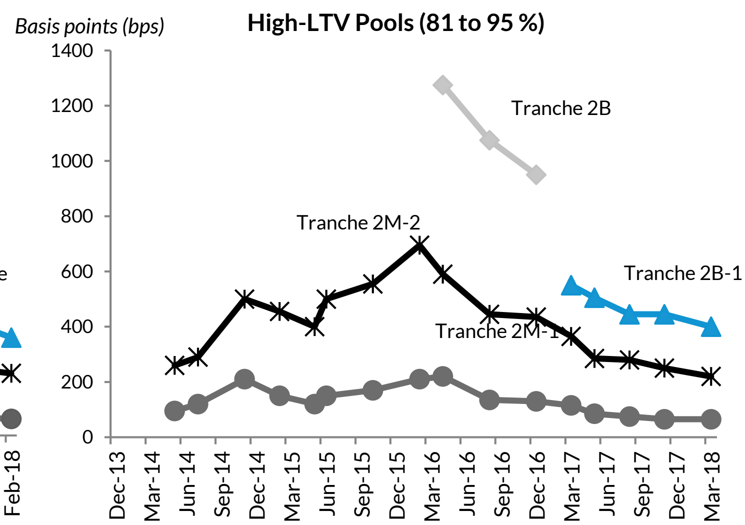
Sources: Fannie Mae, Freddie Mac and Urban Institute.
Note: Classes A-H, M-1H, M-2H, and B-H are reference tranches only. These classes are not issued or sold. The risk is retained by Fannie Mae and Freddie Mac. "CE" = credit enhancement.

GSE RISK-SHARING SPREADS

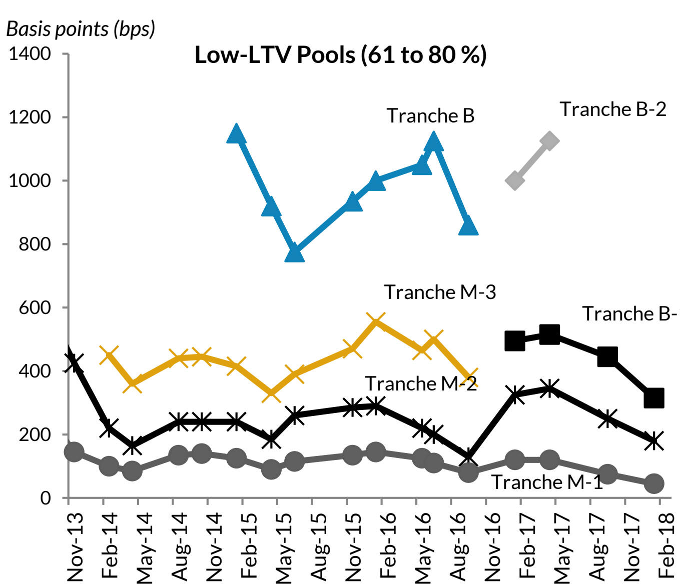
CAS and STACR spreads have moved around considerably since 2013, with the bottom mezzanine tranche and the first loss bonds experiencing considerably more volatility than the top mezzanine bonds. Tranche B in particular has been highly volatile because of its first loss position. Spreads widened especially 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.

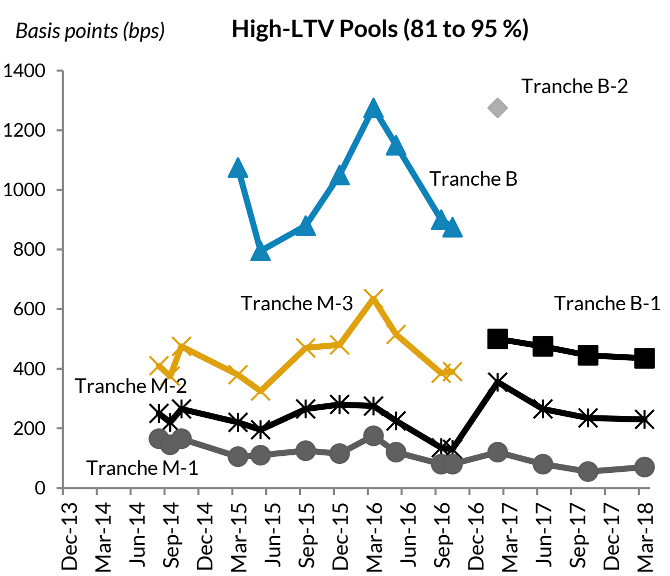
Fannie Mae CAS Spreads at-issuance (basis points over 1-month LIBOR)





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



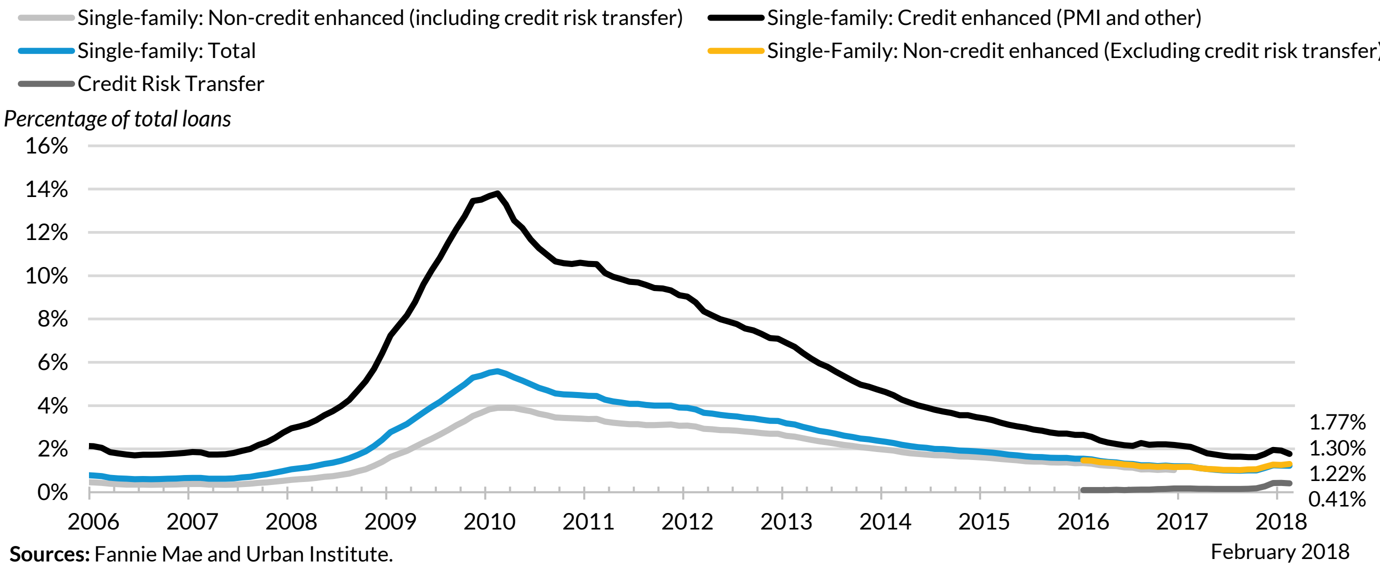


Sources: Fannie Mae, Freddie Mac Press Releases and Urban Institute.

GSES UNDER CONSERVATORSHIP
SERIOUS DELINQUENCY RATES

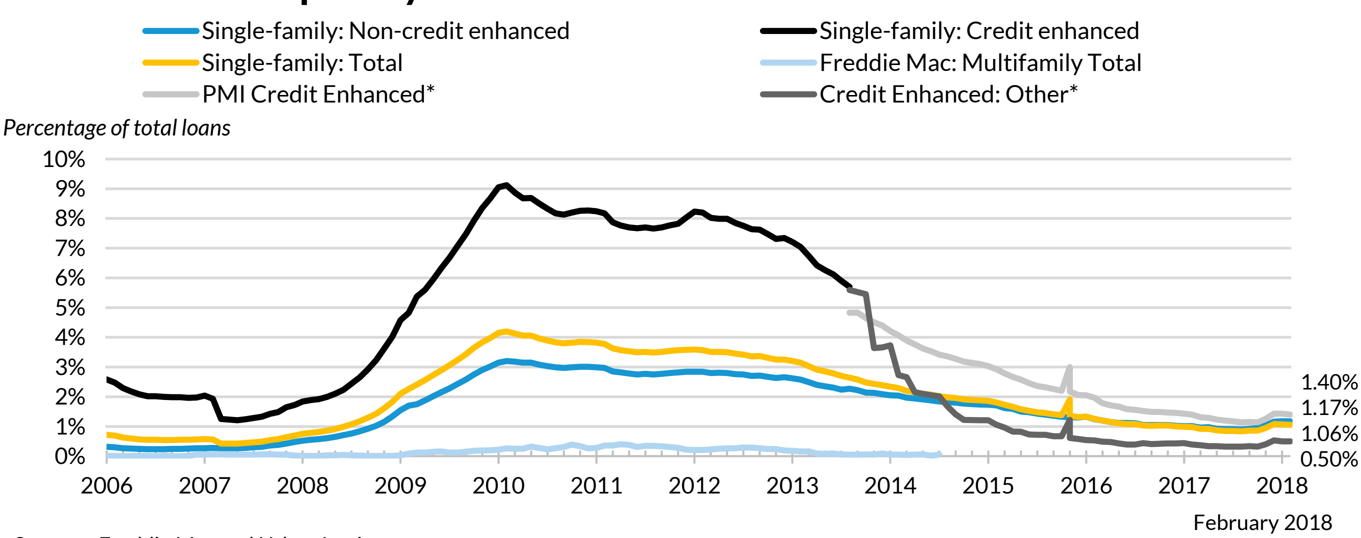
Serious delinquency rates of GSE loans remained elevated in February 2018 compared to recent trends, mostly due to recent hurricanes. Despite this recent increase, there has been a marked long term decline in serious delinquency rates as the legacy portfolio is resolved and the pristine, post-2009 book of business exhibits very low default rates. As of February 2018, 1.22 percent of the Fannie portfolio and 1.06 percent of the Freddie portfolio were seriously delinquent, up from 1.19 percent for Fannie and 0.98 percent for Freddie in February 2017.

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



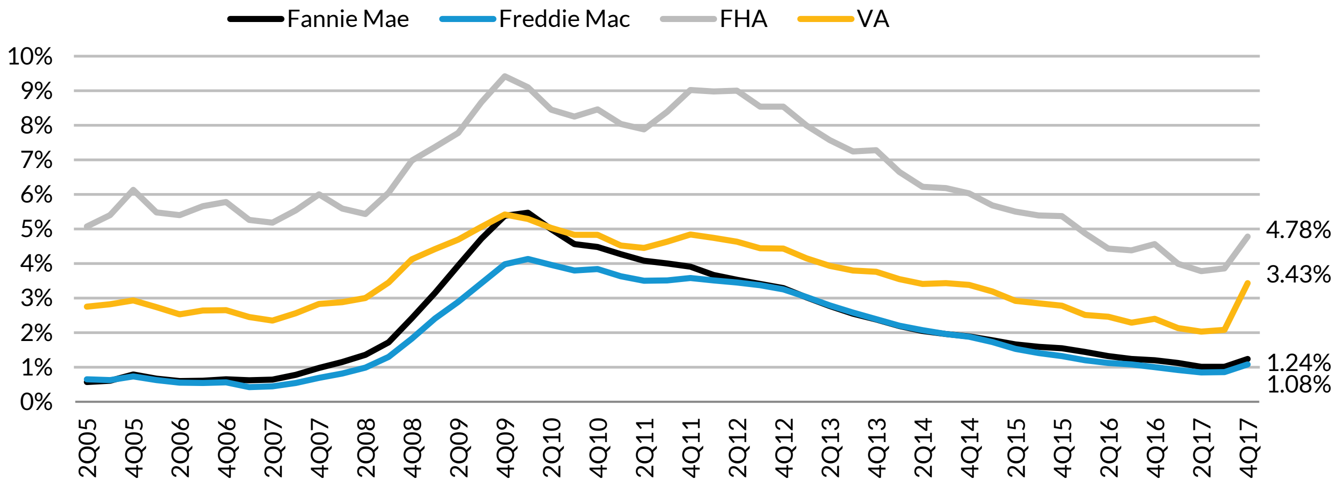
Sources: Freddie Mac and Urban Institute.
Note*: Following a change in Freddie reporting in September 2014, we switched from reporting credit enhanced delinquency rates to PMI and other credit enhanced delinquency rates. Freddie reported these two categories for credit-enhanced loans going back to August 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

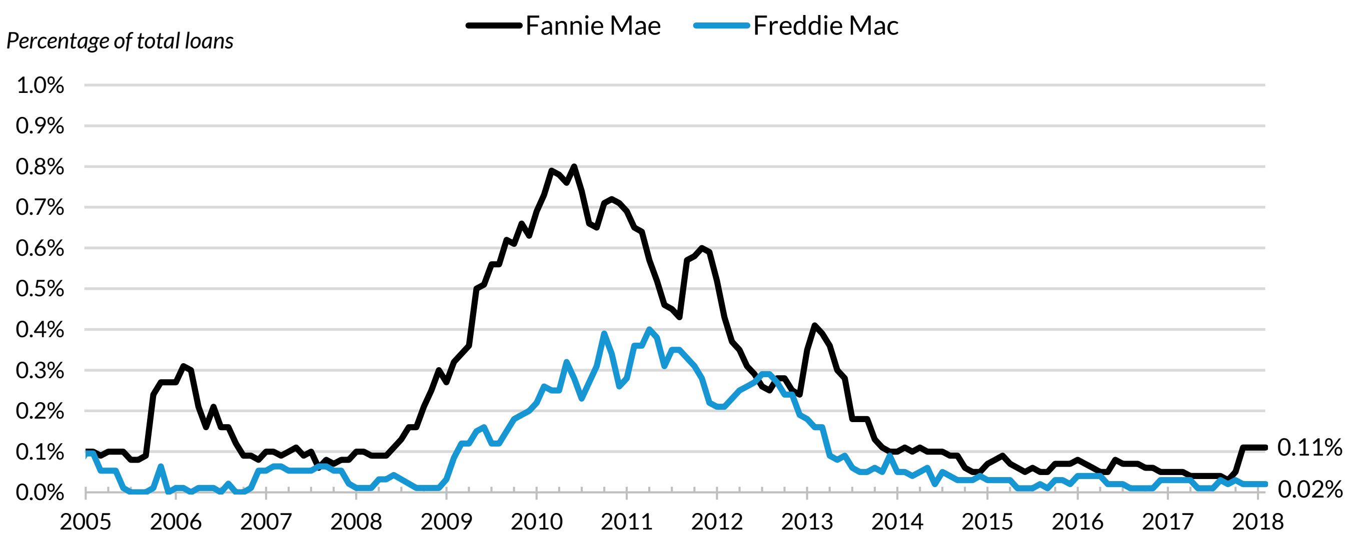
Serious delinquencies for single-family GSE loans, FHA loans, and VA loans moved up in the fourth quarter of 2017, partly due to seasonal factors, but mostly due to the impact of hurricanes Harvey, Irma and Maria. GSE delinquencies remain high relative to 2005-2007, while FHA and VA delinquencies (which are higher than their GSE counterparts) are at levels lower than 2005-2007. GSE multifamily delinquencies have declined to pre-crisis levels, 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 has remained at this level through February 2018. Freddie remained flat at 0.02 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 February 2018.*

Serious Delinquency Rates–Multifamily GSE Loans



February 2018

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 $283.5 billion in the first quarter of 2018, $1.134 trillion on an annualized basis. This is down 14.1 percent year-over-year. When measured on a monthly basis, the agency gross issuance was lower year-over-year for thirteen consecutive months since March 2017, reflecting higher mortgage rates. Net issuance (which excludes repayments, prepayments, and refinances on outstanding mortgages) totaled $51.9 billion in the first quarter of 2018, down 32.7 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	$187.5	$96.0	$283.5
2018 YTD % Change YOY	-15.9%	-10.2%	-14.1%
2018 Ann.	$749.8	$384.1	$1,133.9

Agency Net Issuance

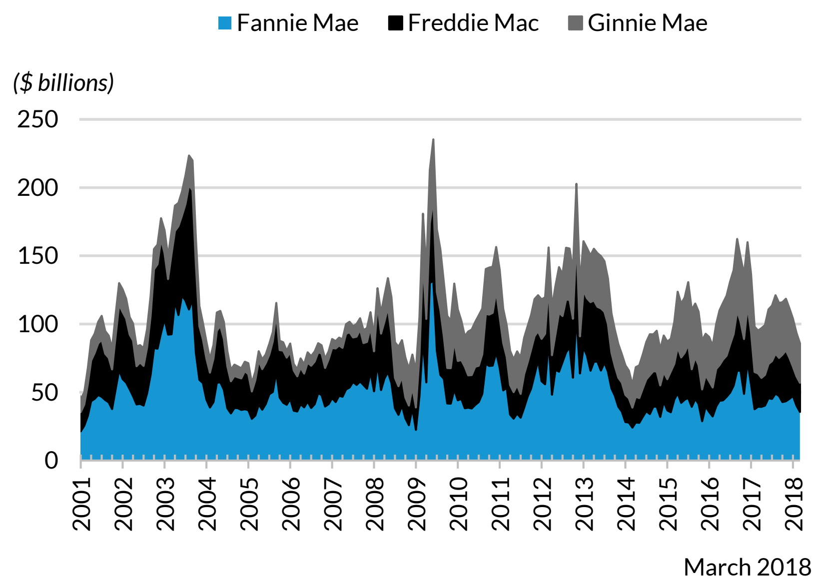
Issuance Year	GSEs	Ginnie Mae	Total
2000	$159.8	$29.3	$189.1
2001	$368.4	-$9.9	$358.5
2002	$357.2	-$51.2	$306.1
2003	$334.9	-$77.6	$257.3
2004	$82.5	-$40.1	$42.4
2005	$174.2	-$42.2	$132.0
2006	$313.6	$0.2	$313.8
2007	$514.9	$30.9	$545.7
2008	$314.8	$196.4	$511.3
2009	$250.6	$257.4	$508.0
2010	-$303.2	$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	$30.9	$21.0	$51.9
2018 YTD % Change YOY	-35.3%	-28.3%	-32.7%
2018 (Ann.)	$123.6	$84.1	$207.7

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

AGENCY GROSS ISSUANCE & FED PURCHASES

Monthly Gross Issuance

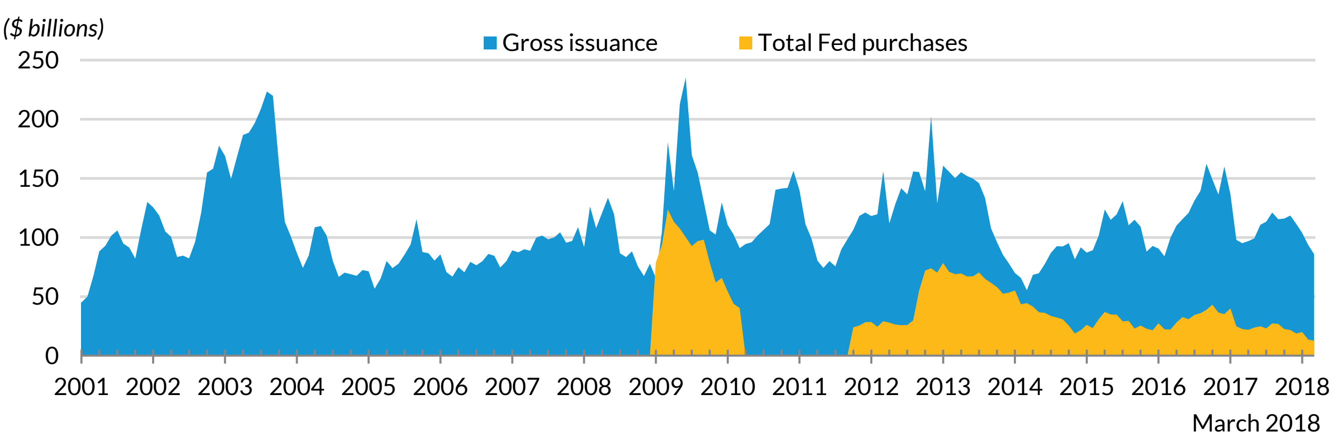
While government and GSE lending have dominated the mortgage market since the crisis, there has been a change in the mix. The Ginnie Mae share rose from its low levels in the pre-crisis period to 28 percent in 2010, then declined to 25 percent in 2013. Since then, the share has bounced back sharply, and now stands at 33.7 percent in March 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 their run off. In March 2018, total Fed purchases declined to $12.7 billion, yielding Fed absorption of gross issuance of 14.8 percent, on par with last month's historical low of 14.6 percent.

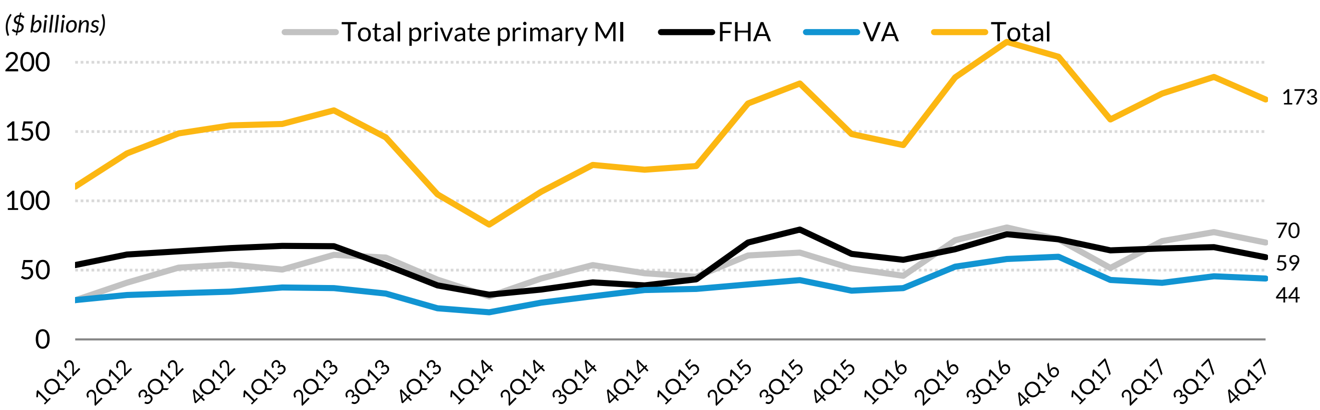


Sources: eMBS, Federal Reserve Bank of New York and Urban Institute.

MORTGAGE INSURANCE ACTIVITY

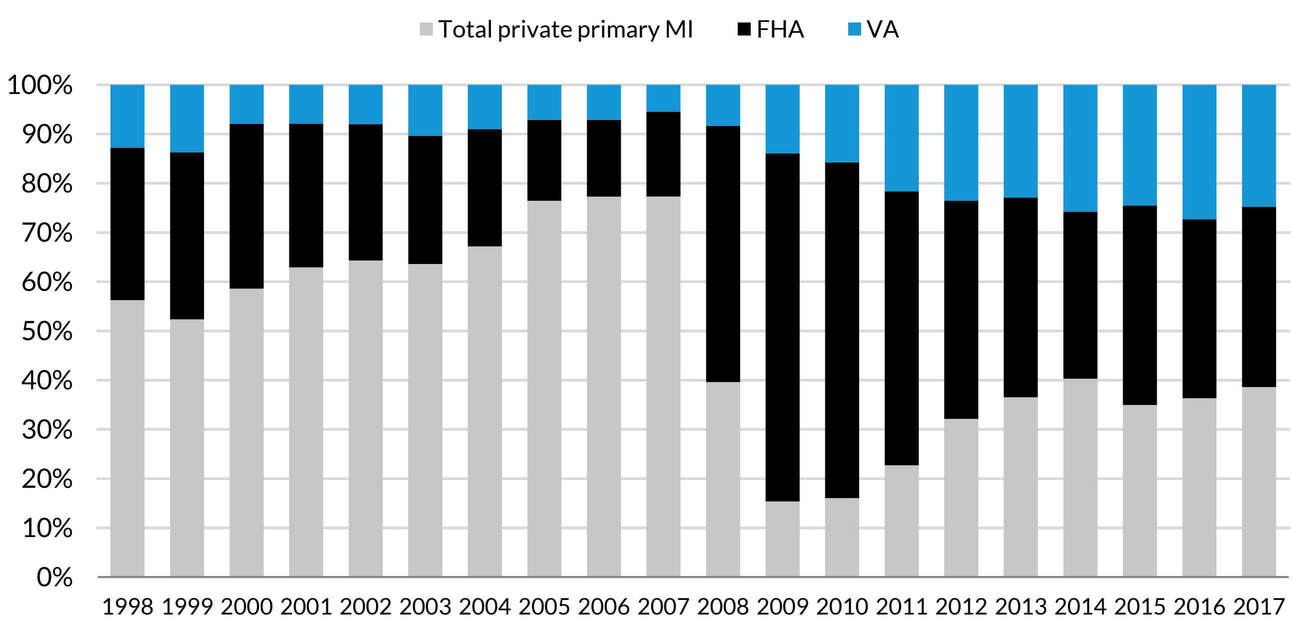
MI Activity

In 2017 Q4, mortgage insurance activity via the FHA, VA and private insurers declined from the previous quarter's $189 billion to $173 billion, down 15 percent year-over-year from the same quarter in 2016. This quarter's decrease is driven by all three channels. Private mortgage insurers and FHA both decreased by $7 billion each, while VA decreased by $2 billion. VA accounted for 24.8 percent of the market in 2017, down from 27.3 percent in 2016, losing 2.5 percent market share to FHA (38.6 percent) and 0.2 percent to private insurers (36.6 percent).



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

MI Market Share



Sources: Inside Mortgage Finance and Urban Institute. *Last updated February 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 by MGIC 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, MGIC 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.

SPECIAL FEATURE: LOAN LEVEL GSE CREDIT DATA

FANNIE MAE COMPOSITION

Since 2008, the composition of loans purchased by Fannie Mae has shifted towards borrowers with higher FICO scores. For example, 66.1 percent of loans originated from 2011 to 2016 were for borrowers with FICO scores above 750, compared to 40.7 percent of borrowers in 2007 and 36.6 percent from 1999-2004.

Balance on 30-year, Fixed-rate, Full-doc, Amortizing Loans

Origination Year	Origination FICO	LTV				Total
		≤70	70 to 80	80 to 90	>90	
1999-2004	≤700	9.4%	15.0%	4.5%	4.5%	33.4%
	700 to 750	9.2%	14.2%	3.4%	3.2%	30.0%
	>750	15.6%	16.1%	2.7%	2.3%	36.6%
	Total	34.2%	45.3%	10.6%	9.9%	100.0%
2005	≤700	12.6%	15.5%	3.4%	2.3%	33.8%
	700 to 750	9.8%	13.3%	2.1%	1.4%	26.6%
	>750	17.4%	18.6%	2.1%	1.4%	39.6%
	Total	39.8%	47.4%	7.7%	5.1%	100.0%
2006	≤700	12.7%	16.1%	3.5%	2.2%	34.5%
	700 to 750	8.9%	13.5%	2.2%	1.2%	25.9%
	>750	15.8%	20.1%	2.4%	1.4%	39.6%
	Total	37.4%	49.7%	8.1%	4.8%	100.0%
2007	≤700	10.8%	15.1%	5.3%	3.1%	34.3%
	700 to 750	7.8%	12.5%	3.0%	1.7%	25.0%
	>750	15.3%	20.1%	3.3%	2.0%	40.7%
	Total	33.9%	47.7%	11.6%	6.8%	100.0%
2008	≤700	7.6%	7.2%	2.9%	2.0%	19.7%
	700 to 750	7.8%	11.9%	4.1%	2.6%	26.4%
	>750	19.1%	25.6%	5.8%	3.4%	53.9%
	Total	34.5%	44.7%	12.7%	8.1%	100.0%
2009-2010	≤700	3.6%	2.9%	0.3%	0.2%	6.9%
	700 to 750	8.2%	10.8%	1.7%	0.8%	21.5%
	>750	32.4%	33.5%	4.0%	1.7%	71.5%
	Total	44.2%	47.2%	5.9%	2.7%	100.0%
2011-2016	≤700	3.2%	4.7%	1.2%	1.8%	11.0%
	700 to 750	5.6%	9.8%	3.0%	4.5%	22.9%
	>750	21.5%	29.1%	7.3%	8.2%	66.1%
	Total	30.3%	43.6%	11.6%	14.5%	100.0%
Total		34.4%	45.2%	10.3%	10.1%	100.0%

Sources: Fannie Mae and Urban Institute.
Note: Fannie Mae loan level credit data includes loans originated from Q1 1999 to Q4 2016. The percentages are weighted by origination balance. The analysis included only mortgages with original terms of 241-420 months.

SPECIAL FEATURE: LOAN LEVEL GSE CREDIT DATA

FANNIE MAE DEFAULT RATE

While the composition of Fannie Mae loans originated in 2007 was similar to that of 2004 and earlier vintage years, 2007 loans experienced a much higher default rate due to the sharp drop in home values in the recession. Originations from 2009 and later have pristine credit characteristics and a more favorable home price environment, contributing to very low default rates.

Default Rate on 30-year, Fixed-rate, Full-doc, Amortizing Loans

Origination Year	Origination FICO	LTV				Total
		≤70	70 to 80	80 to 90	>90	
1999-2004	≤700	3.7%	4.6%	6.1%	7.0%	4.9%
	700 to 750	1.2%	1.9%	2.9%	3.0%	1.9%
	>750	0.4%	0.8%	1.5%	1.7%	0.8%
	Total	1.5%	2.4%	3.9%	4.5%	2.5%
2005	≤700	13.7%	17.3%	19.9%	21.6%	16.6%
	700 to 750	6.3%	9.7%	12.7%	13.1%	8.9%
	>750	2.2%	4.5%	7.1%	8.2%	3.8%
	Total	6.9%	10.2%	14.4%	15.6%	9.5%
2006	≤700	18.1%	22.3%	25.6%	27.2%	21.4%
	700 to 750	8.6%	13.2%	16.0%	16.7%	12.0%
	>750	2.9%	5.8%	9.1%	9.5%	5.0%
	Total	9.4%	13.2%	18.1%	19.3%	12.5%
2007	≤700	19.5%	23.4%	30.7%	31.1%	24.0%
	700 to 750	8.3%	13.4%	19.1%	18.5%	12.8%
	>750	2.7%	5.7%	10.9%	10.8%	5.3%
	Total	9.4%	13.3%	22.1%	21.8%	13.6%
2008	≤700	14.3%	16.9%	23.0%	23.1%	17.5%
	700 to 750	5.0%	7.9%	12.7%	12.6%	8.3%
	>750	1.2%	2.7%	6.2%	6.9%	2.8%
	Total	5.0%	6.4%	12.1%	12.8%	7.1%
2009-2010	≤700	3.8%	4.9%	4.7%	6.1%	4.3%
	700 to 750	1.0%	1.9%	2.4%	2.9%	1.6%
	>750	0.2%	0.6%	1.0%	1.4%	0.4%
	Total	0.6%	1.1%	1.6%	2.2%	1.0%
2011-2016	≤700	0.8%	1.1%	1.2%	1.4%	1.1%
	700 to 750	0.2%	0.3%	0.4%	0.5%	0.4%
	>750	0.0%	0.1%	0.1%	0.2%	0.1%
	Total	0.2%	0.3%	0.3%	0.5%	0.3%
Total		1.9%	2.8%	4.2%	3.5%	2.7%

Sources: Fannie Mae and Urban Institute.
Note: Fannie Mae loan level credit data includes loans originated from Q1 1999 to Q4 2016, with performance information on these loans through Q3 2017. Default is defined as more than six months delinquent or disposed of via short sales, third-party sales, deeds-in-lieu of foreclosure, or real estate owned (REO acquisitions). The analysis included only mortgages with original terms of 241-420 months.

FREDDIE MAC COMPOSITION

Since 2008, the composition of loans purchased by Freddie Mac has shifted towards borrowers with higher FICO scores. For example, 60.8 percent of loans originated from 2011 to 2017 Q1 were for borrowers with FICO scores above 750, compared to 38.9 percent of borrowers in 2007 and 33.2 percent from 1999-2004.

Balance on 30-year, Fixed-rate, Full-doc, Amortizing Loans

Origination Year	Origination FICO	LTV				Total
		≤70	70 to 80	80 to 90	>90	
1999-2004	≤700	7.7%	16.6%	5.5%	5.6%	35.4%
	700 to 750	8.9%	15.9%	3.4%	3.2%	31.4%
	>750	13.6%	15.5%	2.3%	1.8%	33.2%
	Total	30.2%	48.0%	11.2%	10.6%	100.0%
2005	≤700	10.6%	17.0%	3.3%	2.9%	33.9%
	700 to 750	9.4%	15.4%	2.0%	1.6%	28.4%
	>750	15.8%	18.8%	1.7%	1.4%	37.7%
	Total	35.8%	51.2%	7.0%	5.9%	100.0%
2006	≤700	10.1%	17.3%	3.4%	3.2%	34.0%
	700 to 750	8.3%	16.1%	1.9%	1.5%	27.9%
	>750	14.4%	20.7%	1.7%	1.3%	38.1%
	Total	32.8%	54.1%	7.1%	6.0%	100.0%
2007	≤700	9.2%	15.5%	4.6%	4.8%	34.0%
	700 to 750	7.5%	14.3%	2.6%	2.6%	27.0%
	>750	14.4%	19.5%	2.5%	2.6%	38.9%
	Total	31.1%	49.4%	9.7%	9.9%	100.0%
2008	≤700	7.3%	8.7%	3.1%	2.1%	21.3%
	700 to 750	9.2%	13.1%	3.7%	2.4%	28.3%
	>750	21.6%	21.5%	4.7%	2.6%	50.4%
	Total	38.1%	43.3%	11.5%	7.1%	100.0%
2009-2010	≤700	3.9%	3.2%	0.3%	0.2%	7.7%
	700 to 750	9.3%	11.9%	1.7%	0.9%	23.8%
	>750	32.5%	31.0%	3.6%	1.4%	68.5%
	Total	45.8%	46.1%	5.6%	2.5%	100.0%
2011- 1Q17	≤700	3.9%	4.8%	1.3%	1.8%	11.8%
	700 to 750	7.1%	12.1%	3.5%	4.7%	27.4%
	>750	19.5%	27.4%	6.6%	7.2%	60.8%
	Total	30.6%	44.3%	11.4%	13.7%	100.0%
Total		33.4%	46.9%	10.0%	9.8%	100.0%

Sources: Freddie Mac and Urban Institute.
Note: Freddie Mac loan level credit data includes loans originated from Q1 1999 to Q1 2017. The percentages are weighted by origination balance. The analysis included only mortgages with original terms of 241-420 months.

SPECIAL FEATURE: LOAN LEVEL GSE CREDIT DATA

FREDDIE MAC DEFAULT RATE

While the composition of Freddie Mac loans originated in 2007 was similar to that of 2004 and earlier vintage years, 2007 loans experienced a much higher default rate due to the sharp drop in home values in the recession. Originations from 2009 and later have pristine credit characteristics and a more favorable home price environment, contributing to very low default rates.

Default Rate on 30-year, Fixed-rate, Full-doc, Amortizing Loans

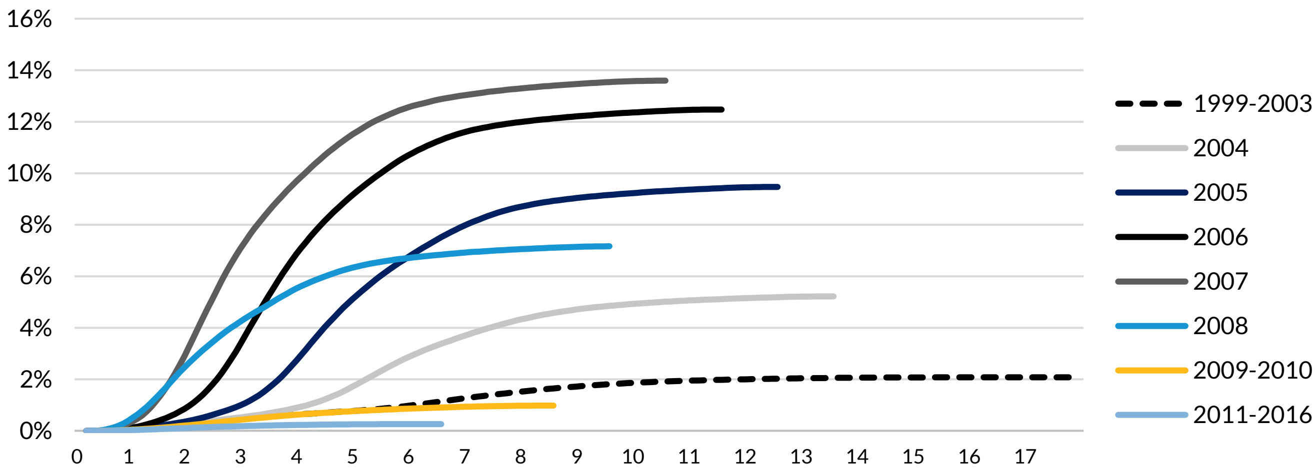
Origination Year	Origination FICO	LTV				Total
		≤70	70 to 80	80 to 90	>90	
1999-2004	≤700	3.0%	4.2%	6.5%	6.9%	4.7%
	700 to 750	1.0%	1.7%	2.7%	2.9%	1.7%
	>750	0.4%	0.8%	1.5%	1.8%	0.7%
	Total	1.3%	2.3%	4.3%	4.9%	2.5%
2005	≤700	12.0%	16.5%	19.5%	20.9%	15.8%
	700 to 750	5.8%	9.4%	12.5%	12.9%	8.6%
	>750	2.0%	4.5%	7.2%	8.3%	3.7%
	Total	6.0%	10.0%	14.5%	15.8%	9.2%
2006	≤700	15.8%	21.0%	24.3%	26.8%	20.3%
	700 to 750	8.0%	12.6%	15.2%	15.3%	11.6%
	>750	2.7%	6.0%	8.9%	9.6%	5.0%
	Total	8.1%	12.8%	18.1%	20.1%	12.0%
2007	≤700	17.0%	22.5%	28.3%	31.0%	23.0%
	700 to 750	7.9%	13.5%	18.0%	18.4%	12.8%
	>750	2.6%	6.3%	10.2%	11.4%	5.6%
	Total	8.2%	13.5%	20.8%	22.6%	13.4%
2008	≤700	13.1%	17.1%	23.4%	22.5%	17.2%
	700 to 750	4.7%	8.4%	12.9%	11.7%	8.1%
	>750	1.4%	3.3%	6.7%	6.3%	3.0%
	Total	4.4%	7.6%	13.2%	13.0%	7.4%
2009-2010	≤700	3.2%	4.7%	4.9%	5.1%	4.0%
	700 to 750	0.8%	1.8%	2.1%	2.6%	1.5%
	>750	0.2%	0.6%	1.1%	1.2%	0.5%
	Total	0.6%	1.2%	1.6%	2.1%	1.0%
2011-1Q17	≤700	0.5%	0.6%	0.7%	0.9%	0.6%
	700 to 750	0.1%	0.2%	0.3%	0.4%	0.2%
	>750	0.0%	0.1%	0.1%	0.2%	0.1%
	Total	0.1%	0.2%	0.2%	0.3%	0.2%
Total		2.0%	3.5%	4.9%	4.8%	3.2%

Sources: Freddie Mae and Urban Institute.
Note: Freddie Mac loan level credit data includes loans originated from Q1 1999 to Q1 2017, with performance information on these loans through Q3 2017. Default is defined as six months delinquent or disposed of via short sales, third-party sales, deeds-in-lieu of foreclosure, or real estate owned (REO acquisitions). The analysis included only mortgages with original terms of 241-420 months.

SPECIAL FEATURE: LOAN LEVEL GSE CREDIT DATA
DEFAULT RATE BY VINTAGE

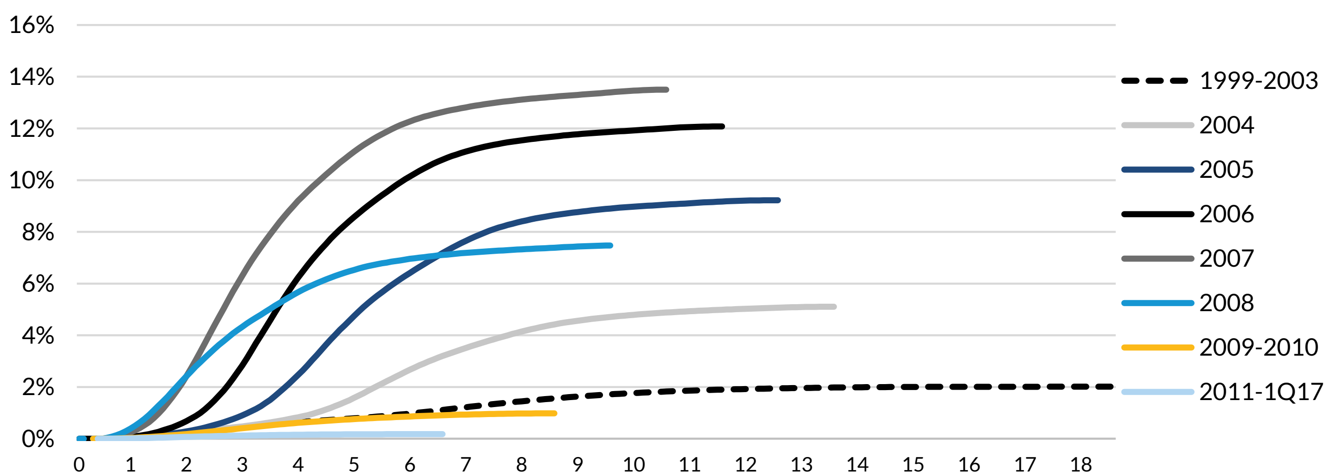
With cleaner books of business and the housing recovery underway, default rates for the GSEs are much lower than they were just a few years ago. For Fannie Mae and Freddie Mac's 1999-2003 vintages, cumulative defaults total around 2 percent, while cumulate defaults for the 2007 vintage are around 13-14 percent. For both Fannie Mae and Freddie Mac, cumulative defaults from post-2009 vintages are on pace to fall below pre-2003 levels. For Fannie loans 79 months after origination, the cumulative default rate from 2009-10 and 2011- 2016 are about 0.91 and 0.26 percent, respectively, compared to the cumulative default rate from 1999-2003 of 1.14 percent. For Freddie loans 79 months after origination, the cumulative default rates total 0.91 percent from 2009-10 and 0.18 percent from 2011-Q1 2017, compared to the rate from 1999-2003 of 1.11 percent.

Fannie Mae Cumulative Default Rate by Vintage Year



Sources: Fannie Mae and Urban Institute.
Note: The analysis included only mortgages with original terms of 241-420 months.

Freddie Mac Cumulative Default Rate by Vintage Year



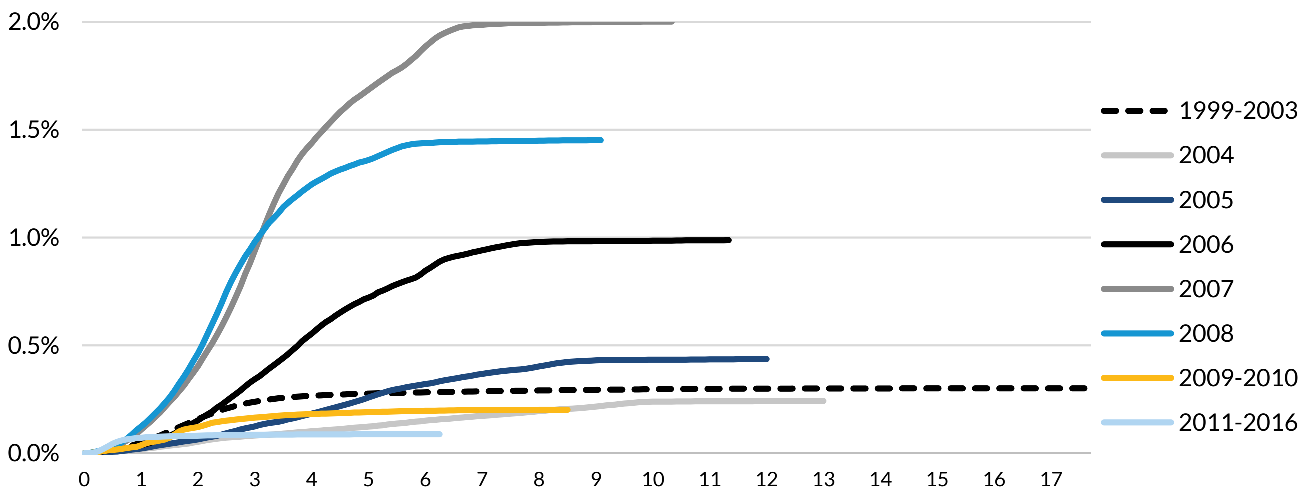
Sources: Freddie Mac and Urban Institute.
Note: The analysis included only mortgages with original terms of 241-420 months.

SPECIAL FEATURE: LOAN LEVEL GSE CREDIT DATA

REPURCHASE RATE BY VINTAGE

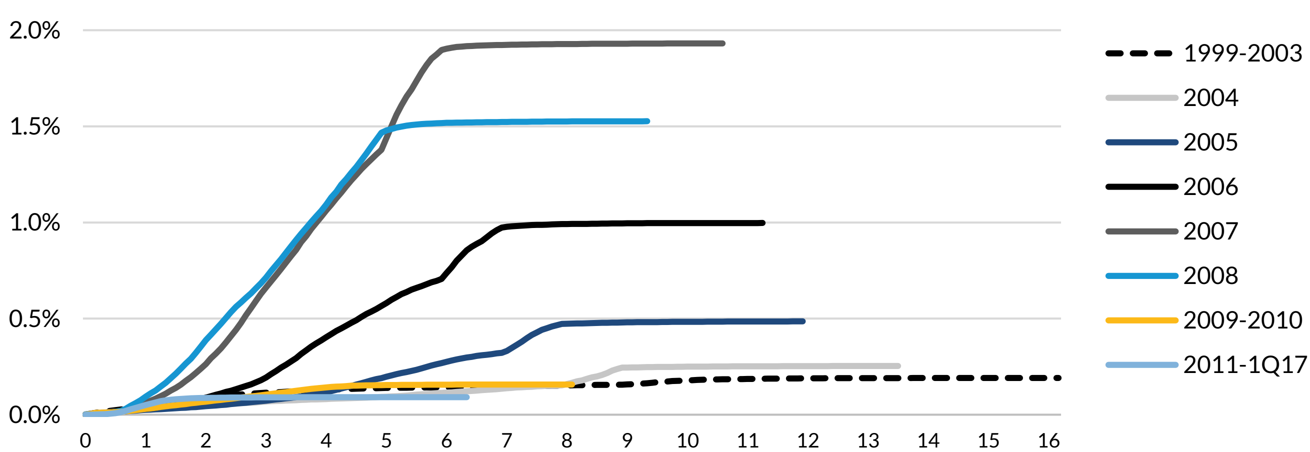
These figures show the cumulative percentage of fixed-rate, full documentation, amortizing 30-year loans of a given vintage that Fannie and Freddie have put back to lenders due to reps and warrants violations. Note that the put-backs are generally quite small, with the exception of the 2006-2008 vintages. These numbers exclude loans put back through global settlements, which are not done at the loan level. Moreover, lenders' attitudes are formed by the total share of put-backs on their books. The database used in this analysis, while very characteristic of new production, excludes many loans that are likely to be put back, including limited documentation loans, non-traditional products (such as interest-only loans), and loans with pool insurance policies.

Fannie Mae Repurchase Rate by Vintage Year



Sources: Fannie Mae and Urban Institute.
Note: The analysis included only mortgages with original terms of 241-420 months.

Freddie Mac Repurchase Rate by Vintage Year



Sources: Freddie Mac and Urban Institute.
Note: The analysis included only mortgages with original terms of 241-420 months.

SPECIAL FEATURE: LOAN LEVEL GSE CREDIT DATA

LOSS SEVERITY

Both Fannie Mae and Freddie Mac's credit data now include the status of the loan after it has experienced a credit event (default). A credit event is defined as a delinquency of 180 days or more, a deed-in-lieu, short sale, foreclosure sale or REO sale. We look at each of the loans and categorize them as to their present status—for Fannie Mae loans (top table) 15.9 percent are current, 15.0 percent are prepaid, 10.6 percent are still in the pipeline and 58.1 percent have already liquidated (deed-in-lieu, short sale, foreclosure sale, REO sale). Freddie Mac's results (bottom table) are very similar. The right side of both tables shows the severity of all loans that have liquidated, broken down by LTV buckets: total Fannie and Freddie severities are around 40-45 percent.

Fannie Mae - Liquidation Rates and Severities for D180+ loans

Year	Paths for D180+ Loans (% of total count)				Severity for Already Liquidated Loans			
	Paths With No Eventual Loss		Paths With Eventual Loss					
	Current	Prepay	Still in the Pipeline	% Already Liquidated Loans	<=60	60-80	>80	Total
1999-2004	13.37%	20.74%	8.48%	57.31%	23.8%	39.3%	23.7%	32.2%
2005	15.81%	10.97%	9.11%	63.31%	33.4%	48.3%	34.8%	44.3%
2006	16.19%	9.39%	8.93%	64.42%	42.0%	54.2%	37.3%	49.7%
2007	18.17%	10.15%	9.84%	60.75%	41.2%	53.5%	35.5%	46.8%
2008	19.26%	12.75%	10.74%	56.45%	34.0%	48.3%	27.7%	39.1%
2009-2010	17.64%	17.59%	17.25%	47.45%	21.7%	33.9%	16.6%	29.1%
2011-2016	18.55%	14.79%	41.49%	25.17%	12.9%	21.6%	5.5%	13.2%
Total	15.87%	14.95%	10.57%	58.05%	34.1%	47.5%	29.1%	40.8%

Freddie Mac - Liquidation Rates and Severities for D180+ loans

Year	Paths for D180+ Loans (% of total count)				Severity for Already Liquidated Loans			
	Paths With No Eventual Loss		Paths With Eventual Loss					
	Current	Prepay	Still In The Pipeline	% Already Liquidated Loans	<=60	60-80	>80	Total
1999-2004	11.89%	18.64%	7.86%	61.61%	28.3%	42.0%	29.1%	35.7%
2005	14.33%	9.97%	7.90%	67.80%	37.0%	49.6%	38.0%	46.3%
2006	14.02%	8.30%	7.57%	70.10%	44.0%	54.5%	40.2%	50.8%
2007	14.70%	8.24%	8.41%	68.65%	47.0%	54.7%	39.5%	49.2%
2008	16.48%	11.00%	9.77%	62.75%	41.4%	51.8%	35.6%	45.4%
2009-2010	15.73%	16.48%	16.96%	50.83%	29.9%	39.7%	19.4%	35.1%
2011-1Q17	17.06%	15.98%	42.80%	24.16%	20.3%	31.1%	9.4%	20.6%
Total	13.83%	12.73%	8.98%	64.46%	39.5%	50.3%	34.9%	44.9%

Sources: Fannie Mae, Freddie Mac, and Urban Institute.
Note: Fannie Mae loan level credit data includes loans originated from Q1 1999 to Q4 2016, with performance information on these loans through Q3 2017. Freddie Mac loan level credit data includes loans originated from Q1 1999 to Q1 2017, with performance information on these loans through Q3 2017. The analysis included only mortgages with original terms of 241-420 months.

SPECIAL FEATURE: LOAN LEVEL GSE CREDIT DATA

LOSS SEVERITY BY CHANNEL

The table below shows the severity of Fannie and Freddie loans that have liquidated, broken down by liquidation channel and vintage year. Foreclosure alternatives, including short sales, note sales, and third party sales have higher defaulted unpaid principal balance (UPB) and much lower loss severities than REO sales. For example, for 2011-2016 originations, Fannie Mae foreclosure alternatives had a defaulted UPB of $171,120 and a loss severity of 10.1 percent, versus a defaulted UPB of $147,087 and a loss severity of 15.0 percent for REO sales.

Fannie Mae - Loss Severity for already liquidated loans

Year	Number of Loans			Mean defaulted UPB ($)			Severity		
	All	REO	Foreclosure Alternatives	All	REO	Foreclosure Alternatives	All	REO	Foreclosure Alternatives
1999-2004	187,718	144,702	43,016	111,904.8	106,155.6	131,163.7	32.16%	36.53%	20.27%
2005	71,952	48,456	23,496	168,888.2	157,472.4	192,427.7	44.27%	48.19%	37.66%
2006	73,234	49,453	23,781	183,262.7	170,360.5	210,052.0	49.73%	53.92%	42.67%
2007	88,830	59,933	28,897	192,618.4	179,213.4	220,380.5	46.84%	51.12%	39.62%
2008	51,982	35,106	16,876	190,491.4	176,100.9	220,329.5	39.15%	43.60%	31.75%
2009-2010	17,885	11,789	6,096	175,498.2	163,146.5	199,311.3	29.13%	33.61%	22.05%
2011-2016	7,118	4,827	2,291	154,898.1	147,086.6	171,119.5	13.23%	14.95%	10.13%
Total	498,719	354,266	144,453	156,072.0	143,886.5	185,889.7	40.81%	44.67%	33.47%

Freddie Mac - Loss Severity for Already Liquidated Loans

Year	Number of Loans			Mean defaulted UPB ($)			Severity		
	All	REO	Foreclosure Alternatives	All	REO	Foreclosure Alternatives	All	REO	Foreclosure Alternatives
1999-2004	161,329	113,113	48,216	112,000.2	106,495.4	124,914.4	35.73%	40.04%	27.10%
2005	86,447	47,474	38,973	170,837.2	156,354.3	188,479.2	46.27%	51.78%	40.70%
2006	90,946	49,402	41,544	183,750.4	166,155.3	204,673.6	50.77%	57.01%	44.75%
2007	96,674	52,824	43,850	185,818.6	168,129.3	207,128.1	49.23%	56.26%	42.34%
2008	47,988	25,240	22,748	195,556.3	178,114.7	214,908.6	45.39%	53.24%	38.17%
2009-2010	14,044	7,243	6,801	180,209.1	169,432.2	191,686.4	35.11%	41.52%	29.08%
2011-1Q17	2,943	1,236	1,707	160,313.5	151,578.8	166,638.1	20.59%	25.43%	17.40%
Total	500,371	296,532	203,839	159,680.4	143,217.6	183,629.5	44.88%	50.14%	38.92%

Sources: Fannie Mae, Freddie Mac and Urban Institute.
Note: Fannie Mae loan level credit data includes loans originated from Q1 1999 to Q4 2016, with performance information on these loans through Q3 2017. Freddie Mac loan level credit data includes loans originated from Q1 1999 to Q1 2017, with performance information on these loans through Q3 2017. The analysis included only mortgages with original terms of 241-420 months.

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