HOUSING FINANCE POLICY CENTER

HOUSING FINANCE AT A GLANCE

A MONTHLY CHARTBOOK

February 2017

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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.

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INTRODUCTION

The Latest in GSE Credit Risk Transfers

The GSE's credit risk transfer (CRT) program is growing and tapping into a more diverse investor base, reducing the costs of CRTs and improving liquidity in this market. At the same time, the continued reliance on back-end transactions is cause for concern.

Freddie Mac's first two capital markets CRT transactions of 2017 have been different from previous Structured Agency Credit Risk (STACR) transactions in one important way. Unlike the pre-2017 deals, in which the first loss piece (Tranche B) was 100 basis points thick, the first loss piece (Tranche B2) in the latest transactions is only 50 basis points thick while second loss piece (B1) is also 50 basis points thick. Splitting the old B tranche more granularly in this manner is a noteworthy development for a few reasons.

Although this is hardly the first improvement the GSEs have made to their back-end CRT execution, it is an important one. Splitting the offering into more granular risk buckets will force investors to price the tranches more accurately, thus facilitating more precise price discovery of credit risk. More granular tranching will also help increase the demand for STACR securities. Investors who were previously willing, but unable to invest in the B tranche because investment guidelines prohibited them from taking first loss credit risk will now instead be able to invest in the second loss B1 tranche, which offers a higher expected returns than the previous second loss tranche (M2). Growing and diversifying the investor base is important because it makes the bidding process more efficient and minimizes the cost of risk transfer for Freddie Mac and the taxpayer. A larger, more diverse investor base also bodes well for the liquidity of the CRT market, which is still in its infancy.

Clearly, these innovations are important steps towards improving the efficiency of back-end CRT. But at the same time, they must be viewed in the context of the broader objectives of credit risk transfer and housing finance reform which have near unanimous support: reducing taxpayer risk, passing the benefits of CRT on to borrowers, facilitating broad availability of credit through the economic cycle, ensuring adequate access for lenders of all sizes, and promoting a variety of CRT executions, including at the front end to facilitate an understanding of which programs are most favorable under which circumstances.

Although the GSEs have experimented with front end mechanisms like lender recourse and deeper MI, these transactions have been few and far between, and with very little transparency about pricing and other terms. But more importantly, the GSEs' continued and significant reliance on back-end capital markets transactions doesn't put us on a path towards achieving some of the program objectives outlined above. This matters because it signals that the GSEs' current strategy for credit risk transfer, which revolves largely around the success of back-end transactions, may ultimately keep the program from realizing its full potential.

INSIDE THIS ISSUE

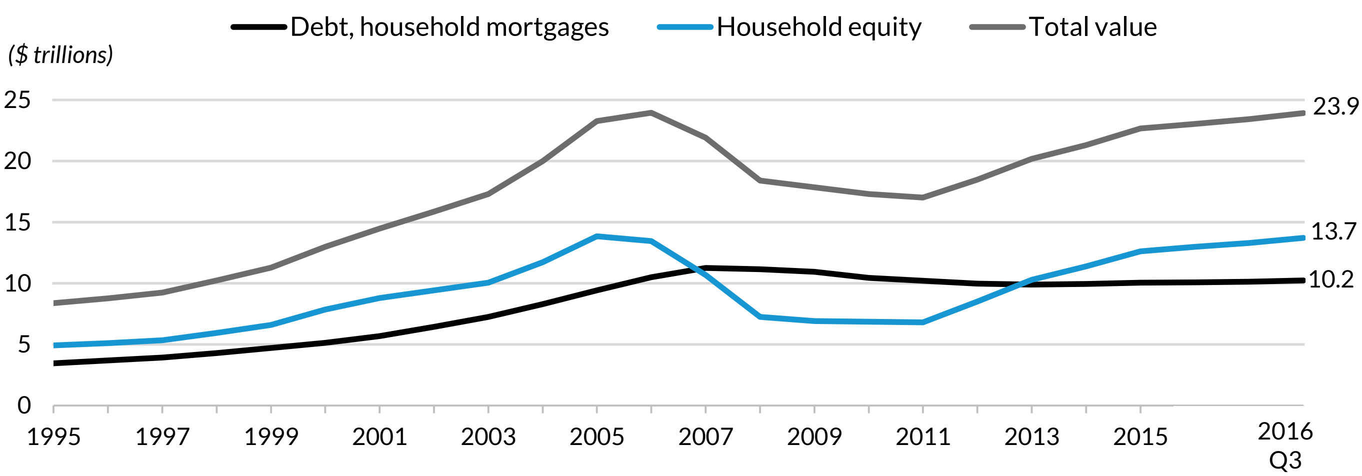
Note: We are planning to include the GSE loan-level credit data special feature next month, when we expect the Freddie Mac update to be released.

OVERVIEW

MARKET SIZE OVERVIEW

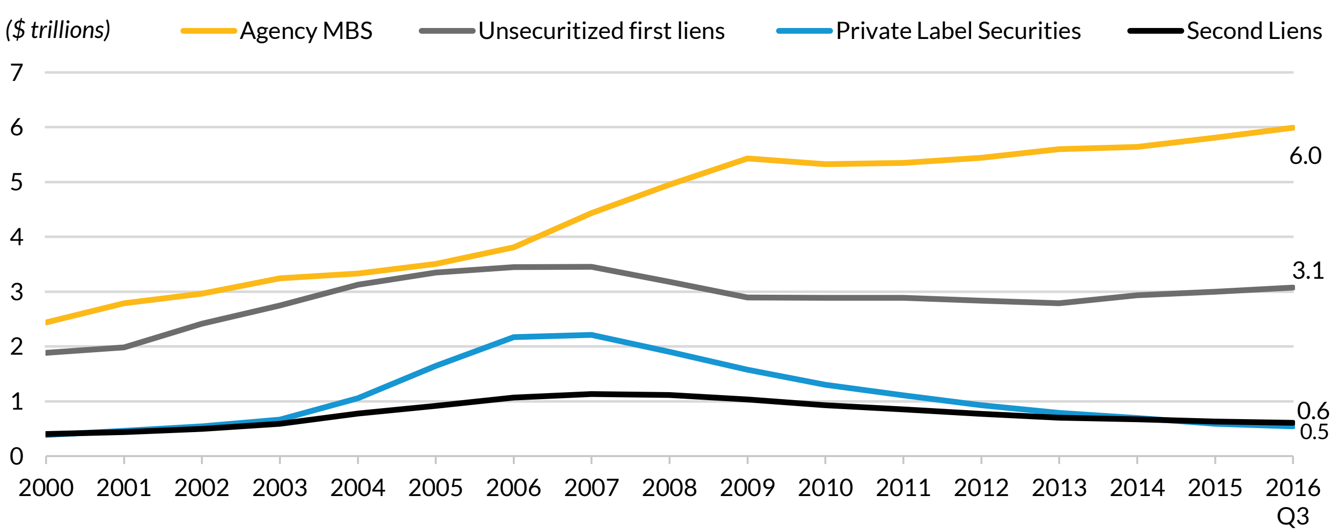
The Federal Reserve's Flow of Funds report has consistently indicated an increasing total value of the housing market driven by growing household equity since 2012, and the trend continued according to the latest data, covering Q3 2016. Total debt and mortgages increased to $10.2 trillion, and household equity increased to $13.7 trillion, bringing the total value of the housing market up slightly to $23.9 trillion. Agency MBS make up 58.6percent of the total mortgage market, private-label securities make up 5.3 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 6.0 percent of the total.

Value of the US Housing Market



Sources: Federal Reserve Flow of Funds and Urban Institute.

Size of the US Residential Mortgage Market

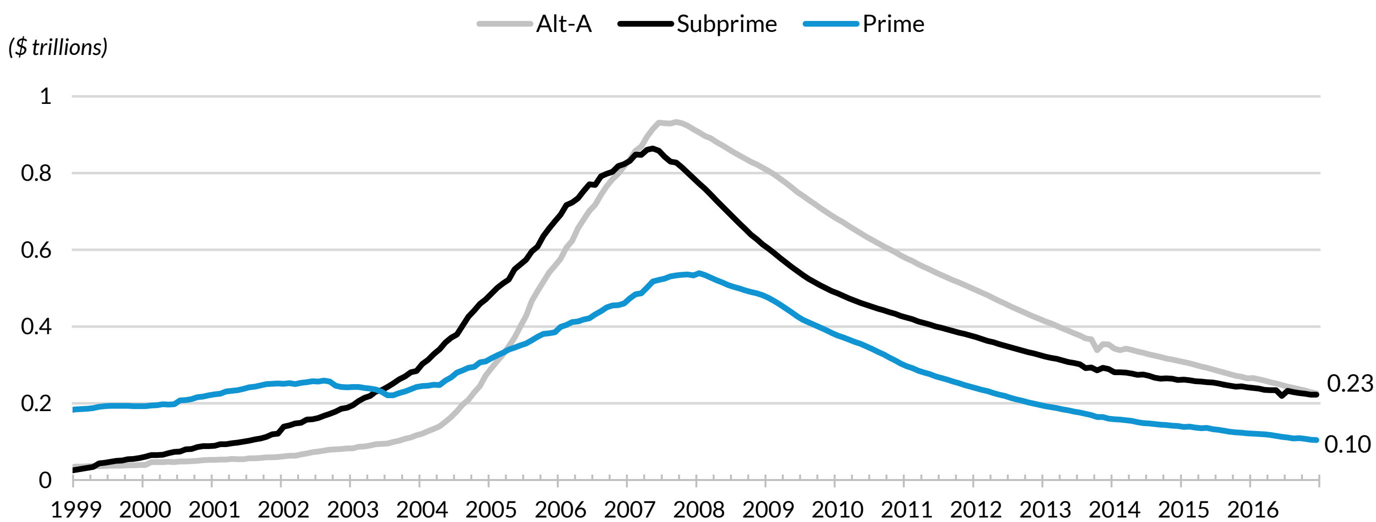


Sources: Federal Reserve Flow of Funds, Inside Mortgage Finance, Fannie Mae, Freddie Mac, eMBS and Urban Institute.
Note: Unsecuritized first liens includes loans held by commercial banks, GSEs, savings institutions, and credit unions.

OVERVIEW
MARKET SIZE OVERVIEW

As of December 2016, debt in the private-label securitization market totaled $556 billion and was split among prime (18.9 percent), Alt-A (40.9 percent), and subprime (40.3 percent) loans. In January 2017, outstanding securities in the agency market totaled $6.11 trillion and were 44.3 percent Fannie Mae, 27.6 percent Freddie Mac, and 28.1 percent Ginnie Mae. The total balance of Ginnie Mae's outstanding securities has been larger than that of Freddie Mac's since May 2016.

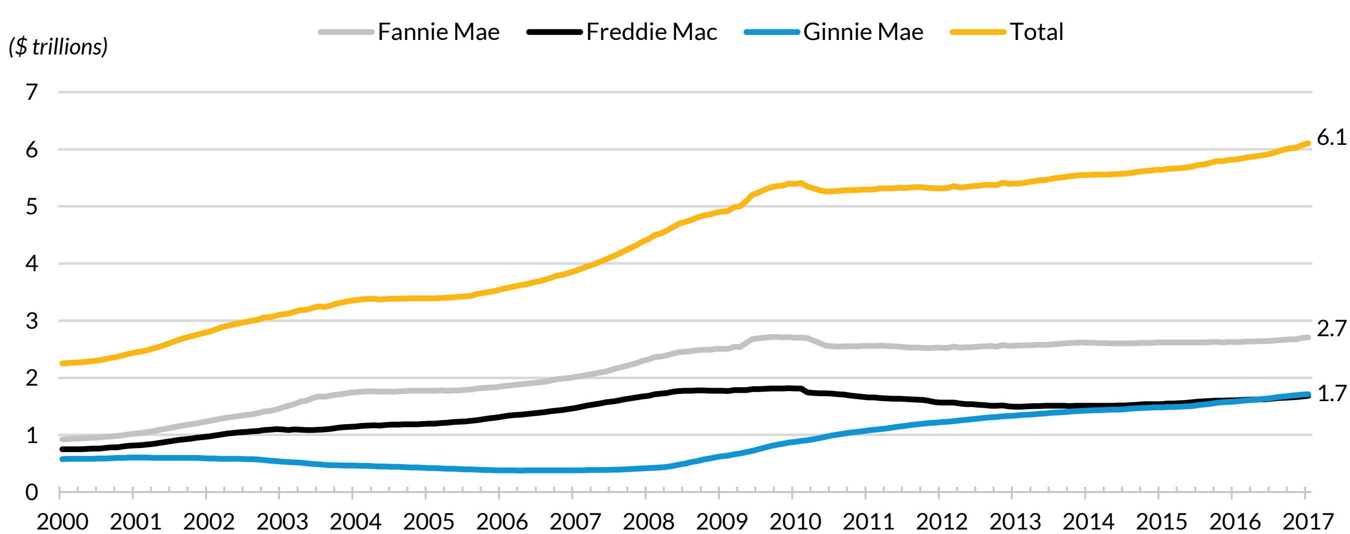
Private-Label Securities by Product Type



Sources: CoreLogic and Urban Institute.

December 2016

Agency Mortgage-Backed Securities



January 2017

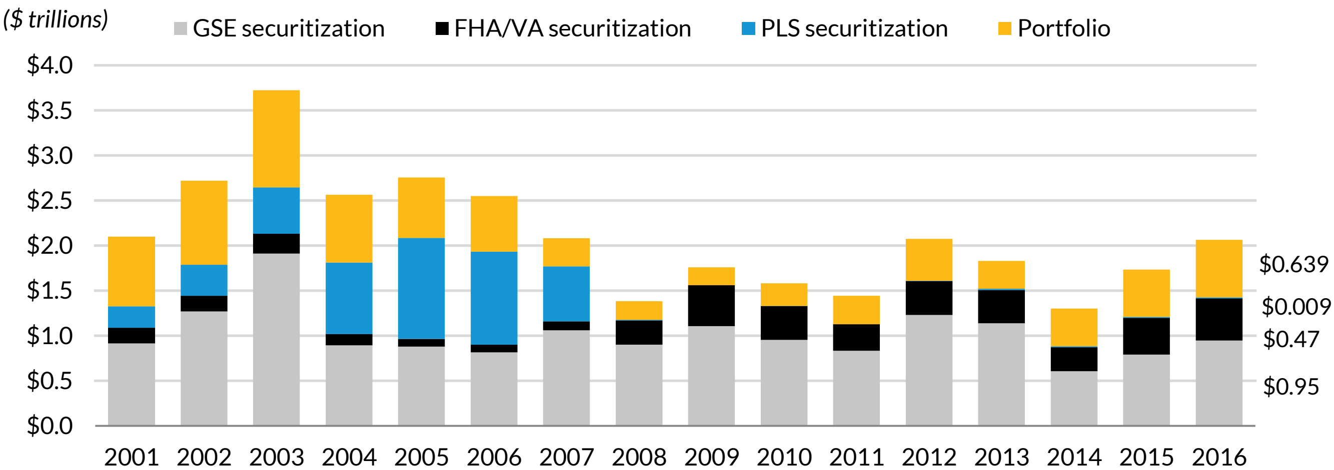
Sources: eMBS and Urban Institute.

OVERVIEW

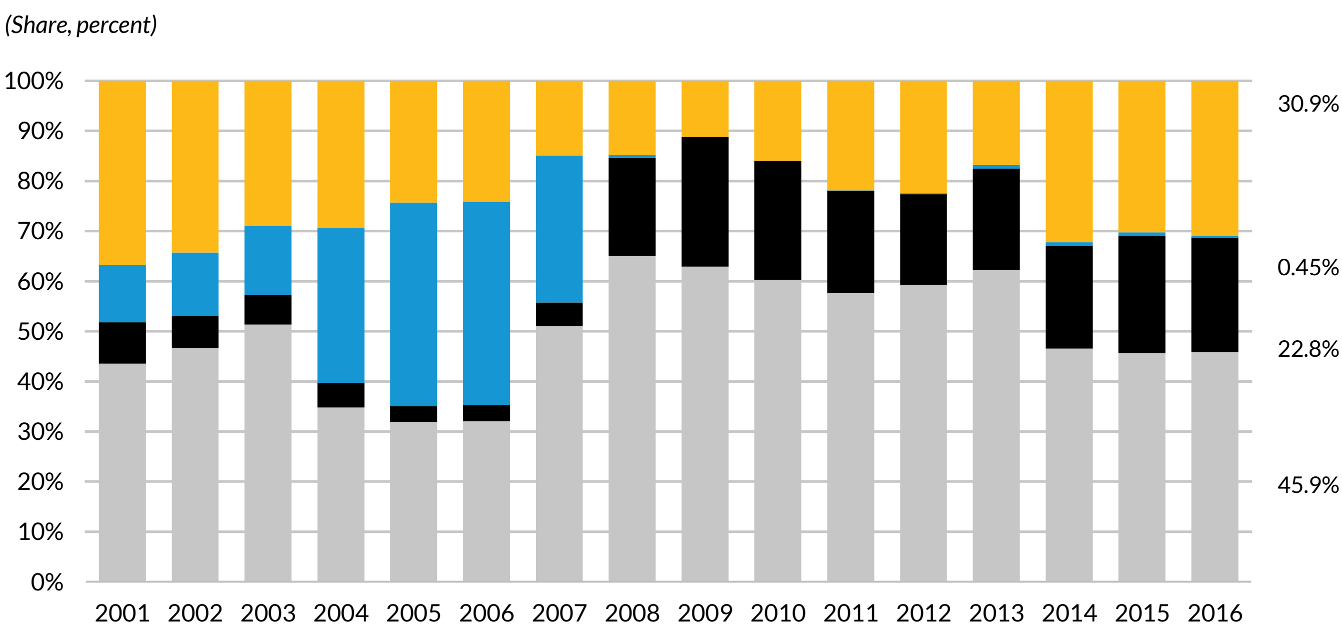
ORIGINATION VOLUME AND COMPOSITION

First Lien Origination Volume

First lien originations in 2016 totaled approximately $2.1 trillion, the most robust origination year since 2012. The share of portfolio originations was 30.9 percent, up from 30.2 percent in 2015. The GSE share went up to 45.9 percent, from 45.7 percent for the same period in 2015. The FHA/VA share was slightly down: 22.8 percent in 2016 versus 23.3 percent in 2015. Origination of private-label securities is well under 1% in both years.



Sources: Inside Mortgage Finance and Urban Institute.



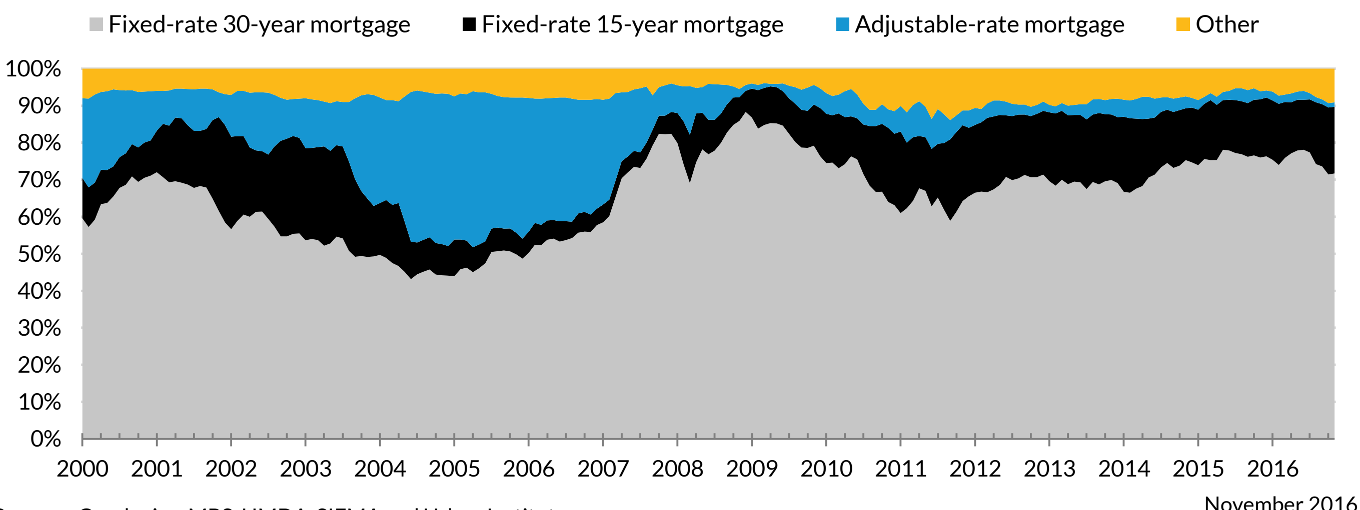
Sources: Inside Mortgage Finance and Urban Institute.

OVERVIEW

MORTGAGE ORIGINATION PRODUCT TYPE

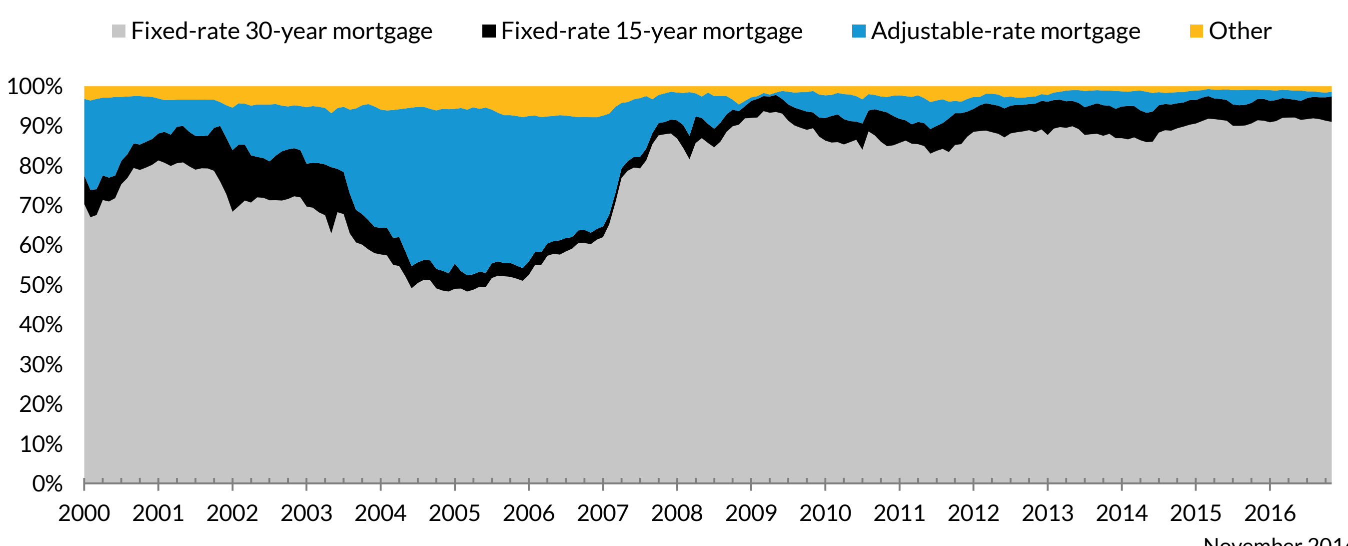
Adjustable-rate mortgages (ARMs) accounted for as much as 42 percent of all new originations during the peak of the recent housing bubble in 2005 (top chart). They fell to a historic low of 1 percent in 2009, and then slowly grew to a high of 6 percent in April 2014. Since then they declined again to 1.2 percent of total originations in November 2016. 15-year fixed-rate mortgages (FRMs), predominantly a refinance product, comprise 18 percent of new originations. If we exclude refinances (bottom chart), the share of 30-year FRMs in November 2016 stood at 91.0 percent, 15-year FRMs at 6.4 percent, and ARMs at 1.2 percent.

All Originations



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

Purchase Loans Only



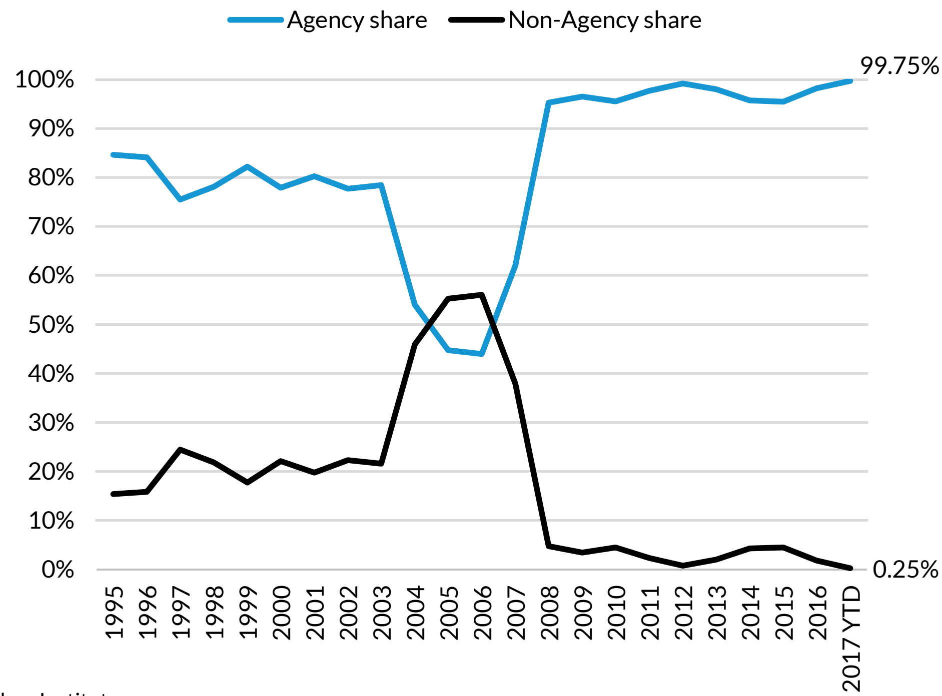
Sources: Corelogic, eMBS, HMDA, SIFMA and Urban Institute.

OVERVIEW

SECURITIZATION VOLUME AND COMPOSITION

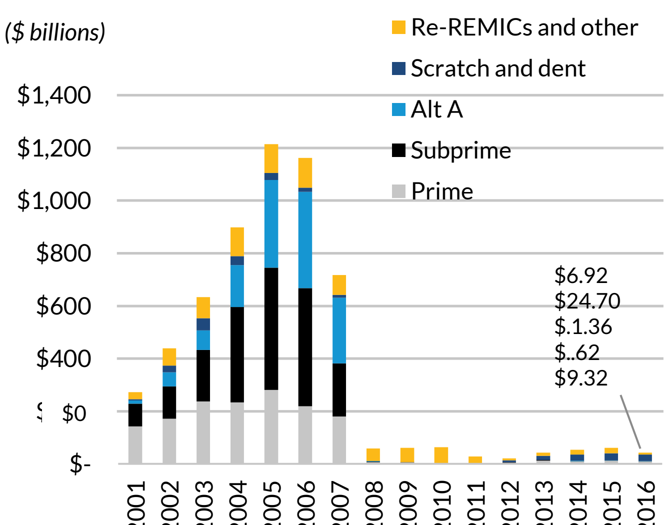
Agency/Non-Agency Share of Residential MBS Issuance

The non-agency share of mortgage securitizations in the first month of 2017 was 0.25%, compared to 1.8% in 2016 and 4.5% in 2015. Moreover, of the limited securitization that is getting done, much of the volume is in non-performing and re-performing (scratch and dent) deals . The volume of prime securitizations in 2016 totaled $9.32 billion, versus $12.08 billion in 2015. And fourth quarter 2016 prime securitizations were particularly light, totaling $1.6 billion, lower than either the preceding quarter or the fourth quarter of 2015. Non-agency securitizations continue to be tiny compared to pre-crisis levels.



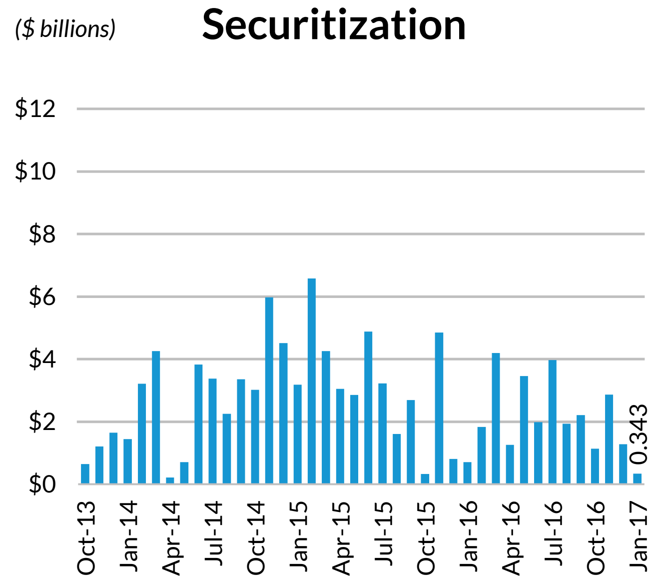
Sources: Inside Mortgage Finance and Urban Institute.
Note: Based on data from January 2017.

Non-Agency MBS Issuance



Sources: Inside Mortgage Finance and Urban Institute.

Monthly Non-Agency Securitization

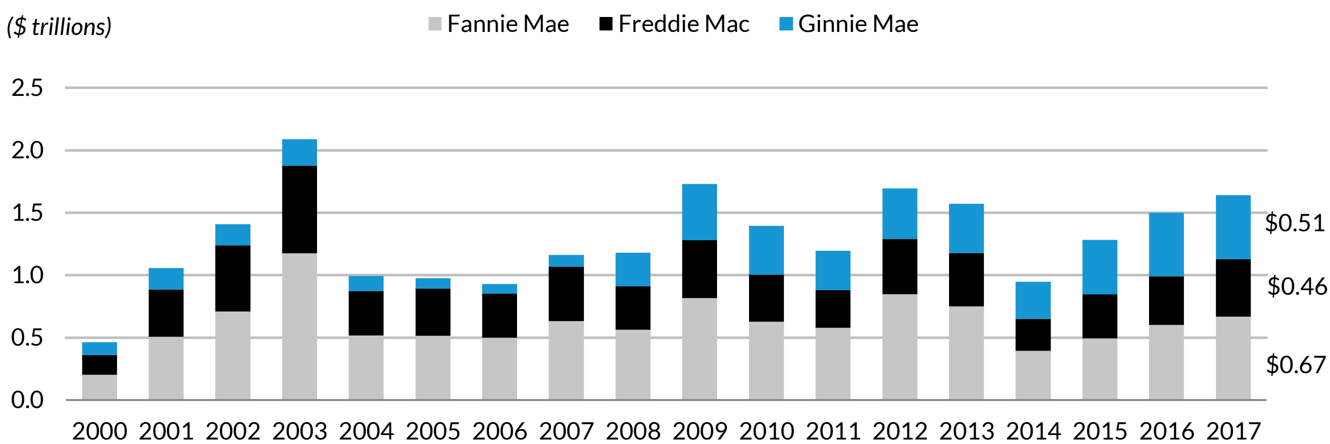


Sources: Inside Mortgage Finance and Urban Institute.
Note: Monthly figures equal total non-agency MBS issuance minus Re-REMIC issuance.

AGENCY ACTIVITY: VOLUMES AND PURCHASE/ REFI COMPOSITION

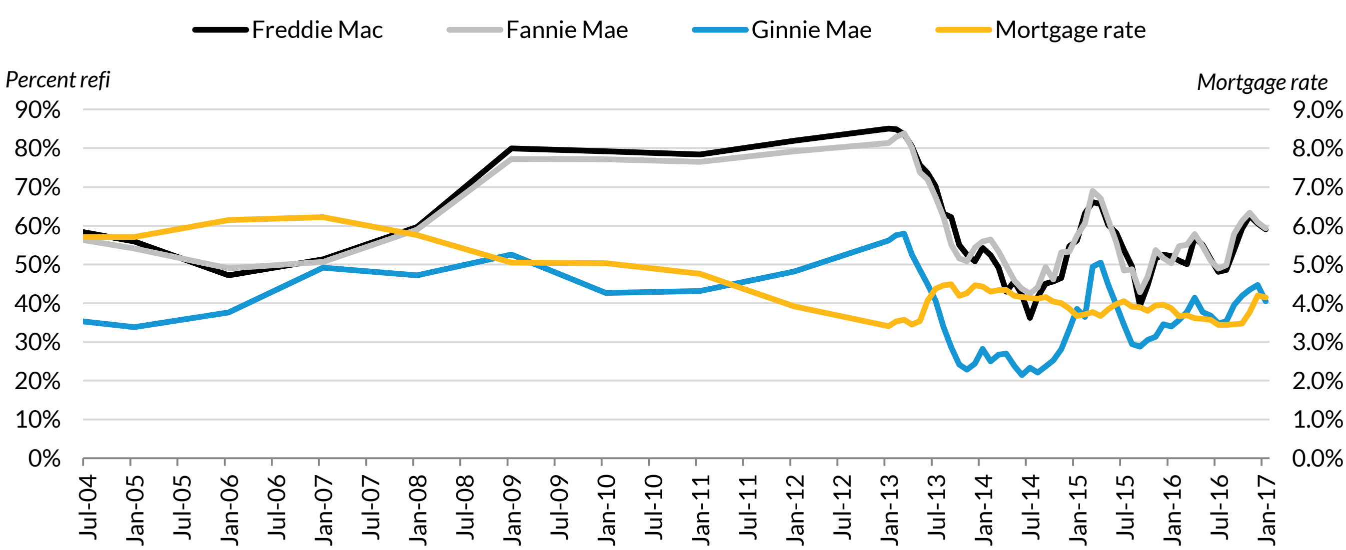
Agency issuance totaled $136.6 billion in January 2017, up from $90.6 billion in the same month a year ago. In January 2017, refinances edged down slightly but stayed high at 59 and 41 percent of the GSEs' and Ginnie Mae's business, respectively, reflecting low mortgage rates in previous months. The interest rates have gone up sharply since Election Day in November 2016, which will cut refinance activity. The delayed impact on agency issuance will show up in the next few months.

Agency Gross Issuance



Sources: eMBS and Urban Institute.
Note: Annualized figure based on data from January 2017.

Percent Refi at Issuance



Sources: eMBS and Urban Institute.
Note: Based on at-issuance balance. Figure based on data from January 2017

STATE OF THE MARKET

MORTGAGE ORIGINATION PROJECTIONS

Origination volume for 2016 was close to $2.0 trillion to close out the year. In 2017, Fannie Mae, Freddie Mac and MBA expect origination volume to be in the $1.5-$1.6 trillion range, owing to a sharp decline in refinance activity due to rising interest rates. In 2017, refinance activity is expected to be in the 28-33 percent range, representing a drop from the 47-48 percent range in 2016. Fannie, Freddie, and MBA all forecast 2017 housing starts to total 1.23 to 1.27 million units. Home sales forecasts for 2017 range from 5.75-6.39 million, with Freddie predicting a small drop from 2016 levels, while Fannie and MBA are expecting home sales to rise from 2016 levels.

Total Originations and Refinance Shares

	Originations ($ billions)			Refi Share (%)		
Period	Total, FNMA estimate	Total, FHLMC estimate	Total, MBA estimate	FNMA estimate	FHLMC estimate	MBA estimate
2016 Q1	359	385	350	47	51	47
2016 Q2	489	535	510	41	42	46
2016 Q3	572	590	561	50	47	47
2016 Q4	520	490	470	51	48	51
2017 Q1	350	300	344	46	35	38
2017Q2	431	450	430	30	31	28
2017Q3	418	430	437	27	27	26
2017 Q4	370	325	352	28	20	30
FY 2014	1301	1350	1261	40	39	40
FY 2015	1730	1750	1679	47	45	46
FY 2016	1940	2000	1891	48	47	48
FY 2017	1568	1505	1563	33	28	30
FY 2018	1535	1500	1588	25	20	26

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. Regarding interest rates, the yearly averages for 2013, 2014, and 2015 were 4.0%, 3.9% and 3.9%, respectively. For 2016, Fannie Mae, Freddie Mac, and MBA project rates of 3.6%, 3.7%, and 3.7%, respectively. For 2017, their respective projections are 4.2%, 4.2%, and 4.5%.

Housing Starts and Homes Sales

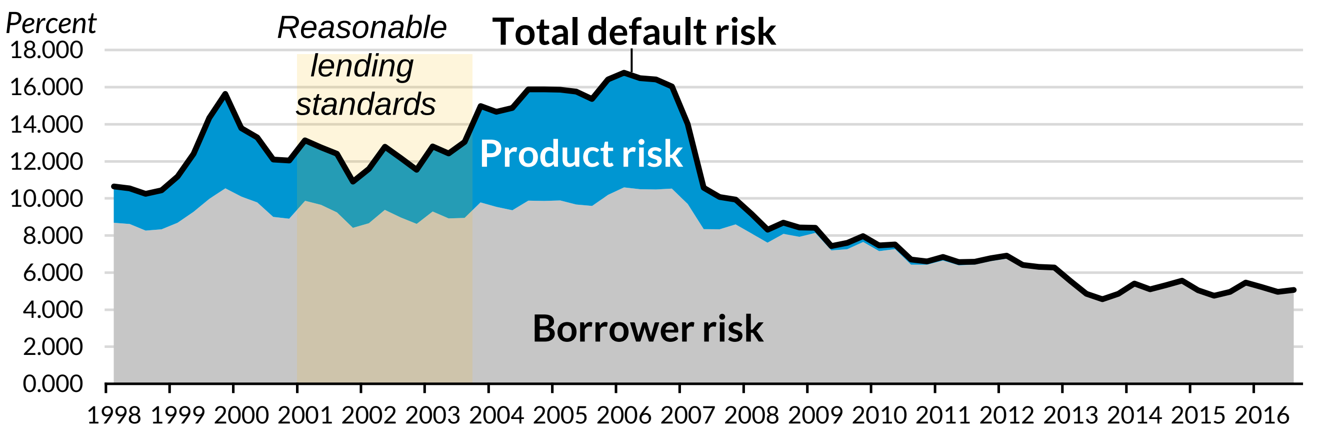
	Housing Starts, thousands			Home Sales. thousands				
Year	Total, FNMA estimate	Total, FHLMC estimate	Total, MBA estimate	Total, FNMA estimate	Total, FHLMC estimate	Total, MBA estimate	Existing, MBA estimate	New, MBA Estimate
FY 2014	1003	1000	1001	5377	5380	5360	4920	440
FY 2015	1112	1110	1108	5751	5750	5740	5237	503
FY 2016	1164	1160	1168	5992	5970	6016	5449	567
FY 2017	1234	1260	1265	6125	5750	6385	5740	645
FY 2018	1333	1360	1358	6314	6020	6645	5950	695

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)

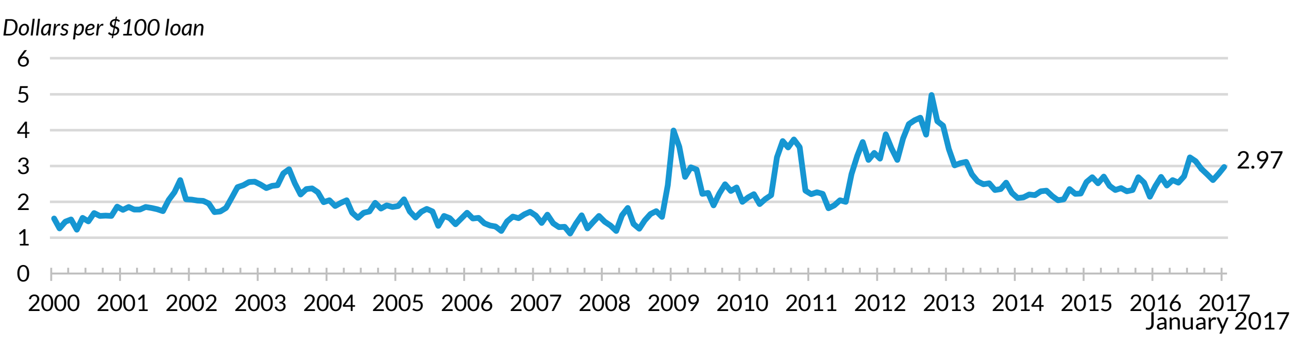
HFPC's Housing Credit Availability Index (HCAI) assesses lenders' tolerance for both borrower risk and product risk, calculating the share of owner-occupied purchase loans that are likely to default. The index shows that credit availability edged up from 5.0 to 5.1 in the third quarter of 2016 (Q3 2016), reversing the declining trend in the first half of 2016. The measure is less than half of the 2001-2003 standard of 12.5 percent. HCAI is likely to go up with the post-election spike in interest rates, as lender may expand the credit box when origination volumes drop. More information about the HCAI, including the breakdown by market segment, is available here.



Sources: eMBS, Corelogic, HMDA, IMF, and Urban Institute.
Note: All series measure the first-time homebuyer share of purchase loans for principal residences.

Originator Profitability and Unmeasured Costs

When originator profitability is high, mortgage rates tend to be less responsive to the general level of interest rates, as originators are capacity-constrained. The measure used here, Originator Profitability and Unmeasured Costs (OPUC), is formulated and calculated by the Federal Reserve Bank of New York. It looks at the price at which the originator actually sells the mortgage into the secondary market and adds the value of retained servicing (both base and excess servicing, net of g-fees) as well as points paid by the borrower. Driven by the post-Brexit decline in interest rates, this measure rose sharply to $3.21 in July 2016. Since then it has declined and stood at $2.97 in January 2017.



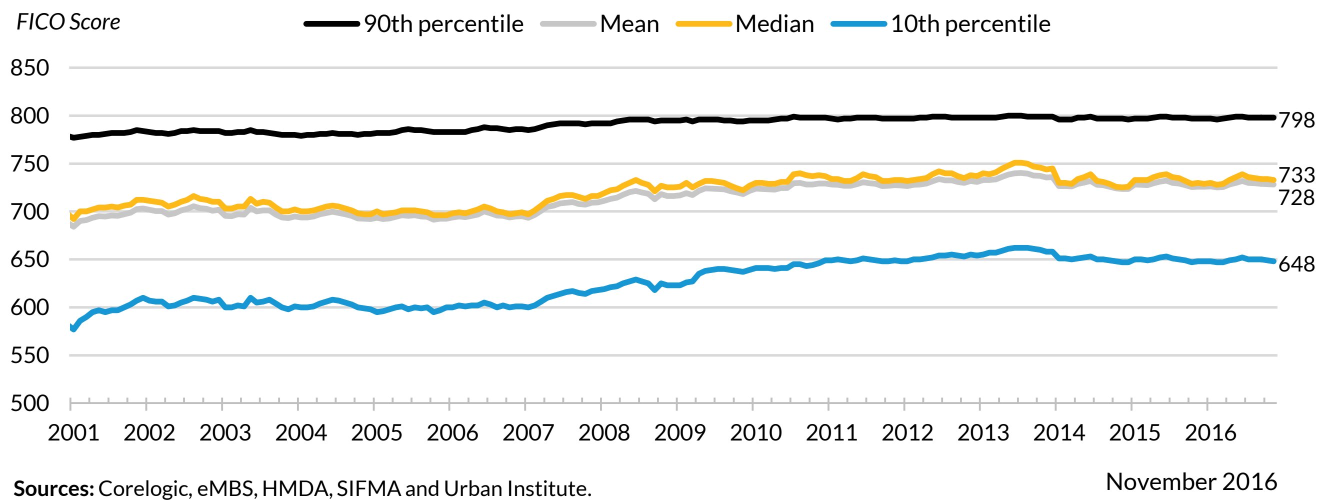
Sources: Federal Reserve Bank of New York, updated monthly and available at this link: http://www.ny.frb.org/research/epr/2013/1113fust.html and Urban Institute.
Note: OPUC stands for "originator profits and unmeasured costs" as discussed in Fuster et al. (2013).
The OPUC series is a monthly (4-week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

STATE OF THE MARKET

CREDIT AVAILABILITY FOR PURCHASE LOANS

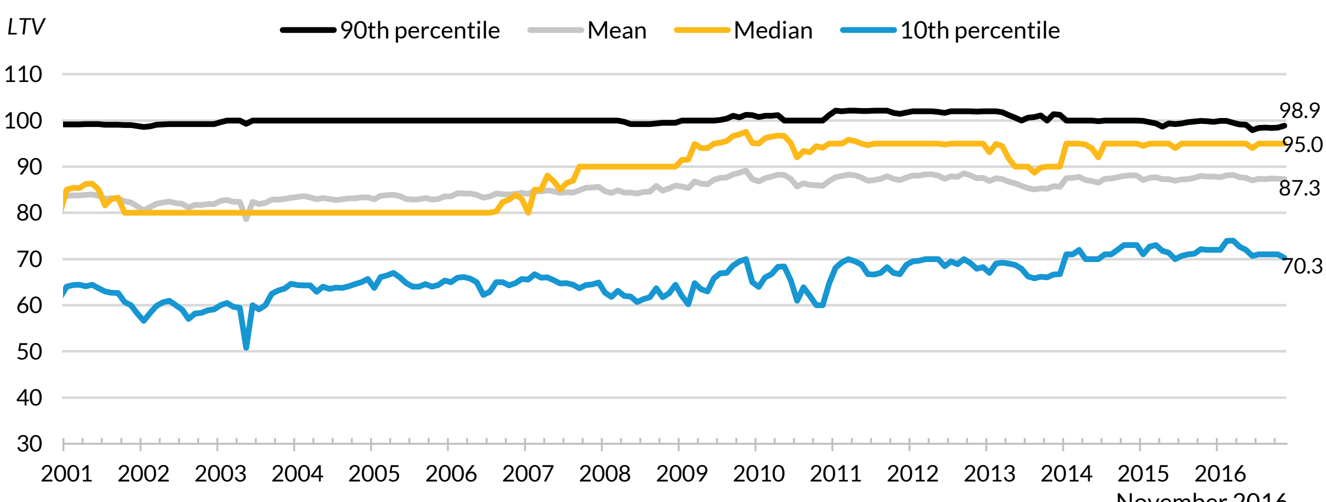
Access to credit has become extremely tight, especially for borrowers with low FICO scores. The mean and median FICO scores on new originations have both drifted up about 33 and 35 points over the last decade. The 10th percentile of FICO scores, which represents the lower bound of creditworthiness needed to qualify for a mortgage, stood at 648 as of November 2016. Prior to the housing crisis, this threshold held steady in the low 600s. LTV levels at origination remain relatively high, averaging 87, 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



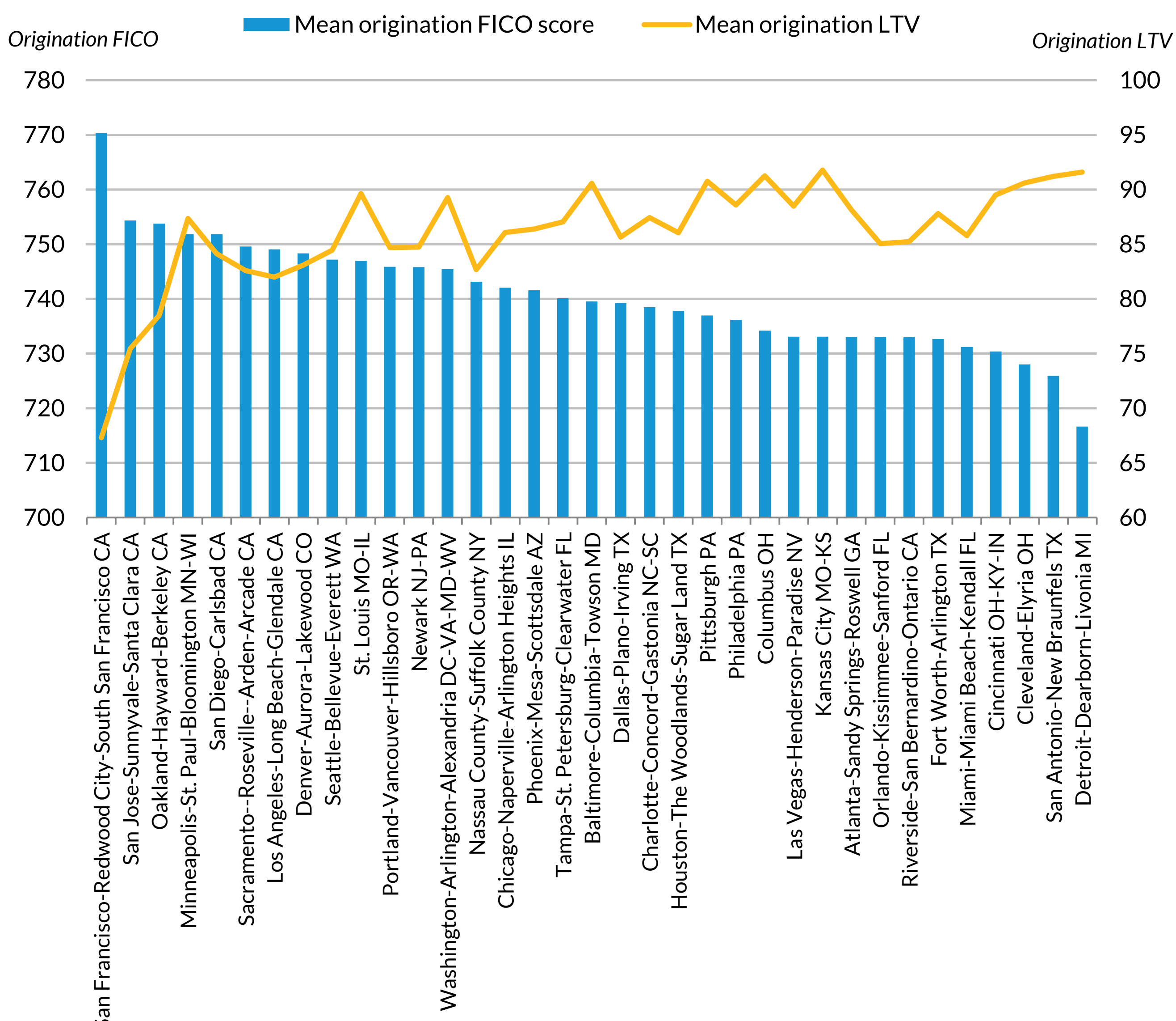
Sources: Corelogic, eMBS, HMDA, SIFMA and Urban Institute.
Note: Includes owner-occupied purchase loans only

STATE OF THE MARKET

CREDIT AVAILABILITY FOR PURCHASE LOANS

Credit has been tight for all borrowers with less-than-stellar credit scores--especially in metropolitan areas with high housing prices. For example, the mean origination FICO for borrowers in San Francisco- Redwood City- South San Francisco, CA is 770, while in Detroit-Dearborn-Livonia, MI it is 717. Across all MSAs, lower average FICO scores tend to be correlated with higher average LTVs, as these MSAs rely heavily on FHA/VA financing.

Origination FICO and LTV



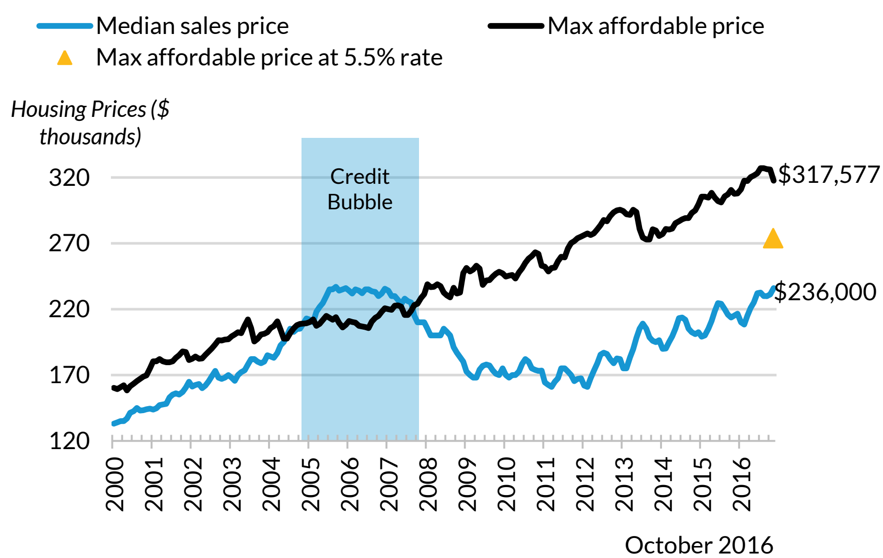
Sources: Corelogic, eMBS, HMDA, SIFMA and Urban Institute.
Note: Includes owner-occupied purchase loans only. Data as of November 2016.

HOUSING AFFORDABILITY

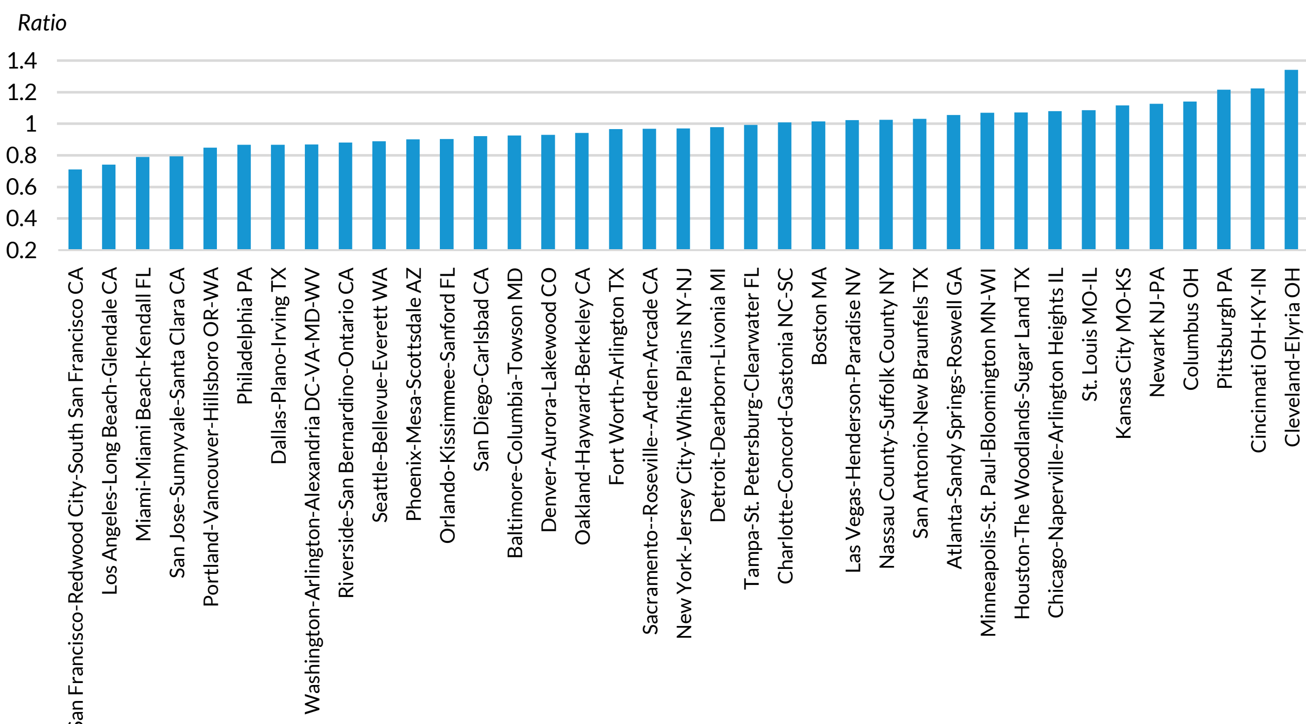
National Housing Affordability Over Time

Home prices are still very affordable by historic standards, despite increases over the last four years. Even if interest rates rise to 5.5 percent, affordability would still be at the long term historical average. The bottom chart shows that some areas are much more affordable than others.

Sources: CoreLogic, US Census, Freddie Mac and Urban Institute.
Note: The maximum affordable price is the house price that a family can afford putting 20 percent down, with a monthly payment of 28 percent of median family income, at the Freddie Mac prevailing rate for 30-year fixed-rate mortgage, and property tax and insurance at 1.75 percent of housing value.



Affordability Adjusted for MSA-Level DTI

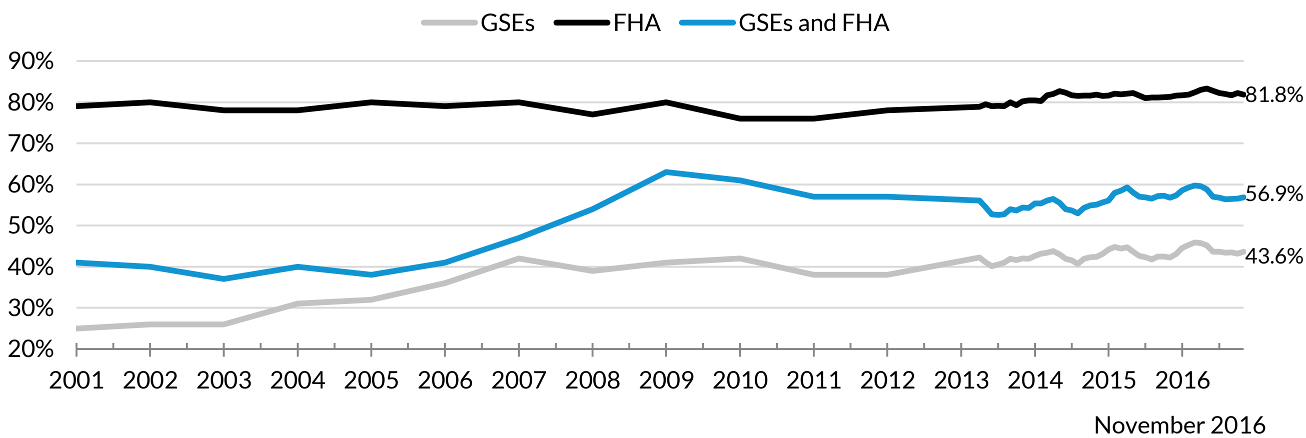


Sources: CoreLogic, US Census, Freddie Mac and Urban Institute calculations based on NAR methodology.
Note: Index is calculated relative to home prices in 2000-03. A ratio above 1 indicates higher affordability in October 2016 than in 2000-03.

FIRST-TIME HOMEBUYERS

First-Time Homebuyer Share

In November 2016, the first-time homebuyer share of GSE purchase loans stayed flat from previous month at 43.6 percent. The FHA, which has traditionally hovered around 80 percent first-time homebuyers, had an 81.8 percent share in November 2016, down from the peak of 83.3 percent in May 2016. The bottom table shows that based on mortgages originated in November 2016, 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.

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

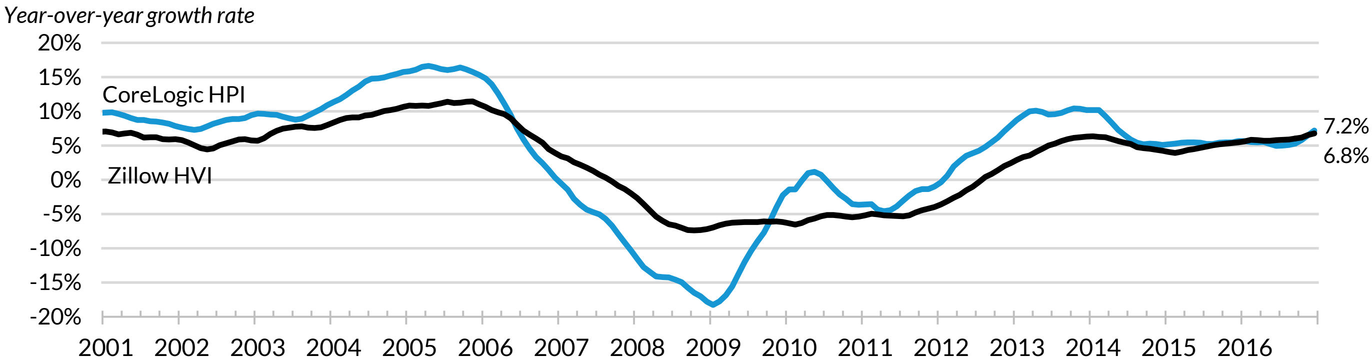
	GSEs		FHA		GSEs and FHA	
Characteristics	First-time	Repeat	First-time	Repeat	First-time	Repeat
Loan Amount ($)	230,621	251,235	202,722	220,769	216,545	244,460
Credit Score	740.0	755.0	679.1	685.6	709.3	739.5
LTV (%)	86.3	79.1	95.5	94.2	90.5	82.1
DTI (%)	34.2	35.0	42.0	43.0	38.1	36.8
Loan Rate (%)	3.97	3.87	3.91	3.86	3.94	3.86

Sources: eMBS and Urban Institute.
Note: Based on owner-occupied purchase mortgages originated in November 2016.

HOME PRICE INDICES

National Year-Over-Year HPI Growth

While the strong year-over-year house 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.

Changes in CoreLogic HPI for Top MSAs

Despite rising 44 percent from the trough, national house prices still must grow 4.1 percent to reach pre-crisis peak levels. At the MSA level, six of the top 15 MSAs have reached their peak HPI: New York, NY; Atlanta, GA; Houston, TX; Dallas, TX; Seattle, WA and Denver, CO. Two MSAs particularly hard hit by the boom and bust–Phoenix, AZ and Riverside, CA– would need to rise 27 and 30 percent to return to peak levels, respectively.

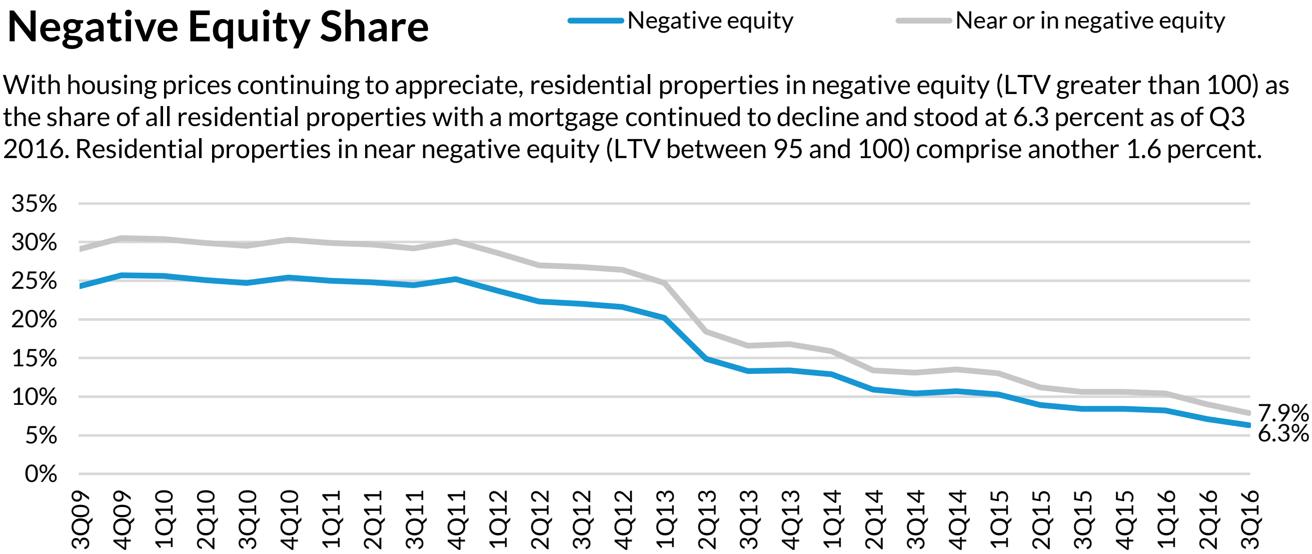
MSA	HPI changes (%)			% Rise needed to achieve peak
	2000 to peak	Peak to trough	Trough to current	
United States	93.7	-33.4	44.3	4.1
New York-Jersey City-White Plains NY-NJ	112.6	-16.6	28.3	-6.5
Los Angeles-Long Beach-Glendale CA	177.3	-38.5	60.2	1.5
Chicago-Naperville-Arlington Heights IL	66.1	-36.0	30.0	20.1
Atlanta-Sandy Springs-Roswell GA	37.9	-33.1	52.7	-2.1
Washington-Arlington-Alexandria DC-VA-MD-WV	155.5	-34.3	34.3	13.3
Houston-The Woodlands-Sugar Land TX	39.7	-14.1	43.5	-18.9
Phoenix-Mesa-Scottsdale AZ	123.8	-52.8	66.3	27.3
Riverside-San Bernardino-Ontario CA	186.3	-52.8	63.0	29.8
Dallas-Plano-Irving TX	34.2	-13.9	49.9	-22.5
Minneapolis-St. Paul-Bloomington MN-WI	73.1	-30.5	37.3	4.8
Seattle-Bellevue-Everett WA	91.0	-29.2	61.0	-12.3
Denver-Aurora-Lakewood CO	35.6	-13.4	63.6	-29.5
Baltimore-Columbia-Towson MD	122.8	-24.6	15.3	15.0
San Diego-Carlsbad CA	145.0	-37.6	52.3	5.3
Anaheim-Santa Ana-Irvine CA	160.9	-35.8	47.4	5.6

Sources: CoreLogic HPIs and Urban Institute. Data as of December 2016.
Note: This table includes the largest 15 Metropolitan areas by mortgage count.

NEGATIVE EQUITY & SERIOUS DELINQUENCY

Negative Equity Share

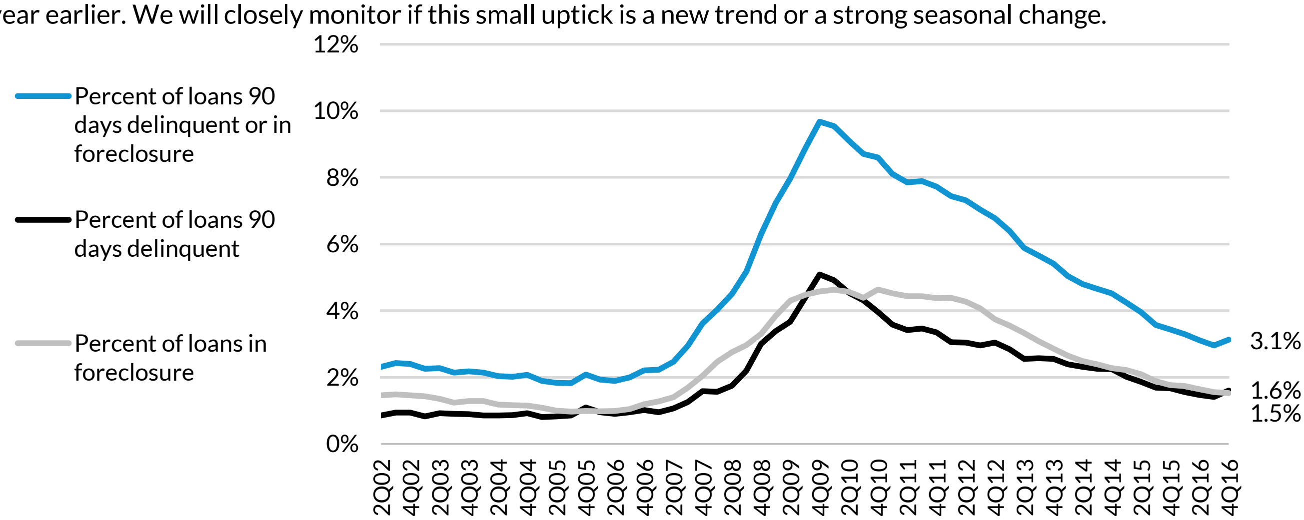
With housing prices continuing to appreciate, residential properties in negative equity (LTV greater than 100) as the share of all residential properties with a mortgage continued to decline and stood at 6.3 percent as of Q3 2016. Residential properties in near negative equity (LTV between 95 and 100) comprise another 1.6 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.

Loans in Serious Delinquency/Foreclosure

The Percent of loans 90 days delinquent jumped from 1.41 to 1.60 percent in Q4 2016, for the first time since Q3 2013, while the percent of loans in foreclosure continued to edge down. The combined delinquencies totaled 3.13 percent in Q4 2016, up from 2.96 percent in Q3 2016 but down from 3.44 percent for the same quarter a year earlier. We will closely monitor if this small uptick is a new trend or a strong seasonal change.



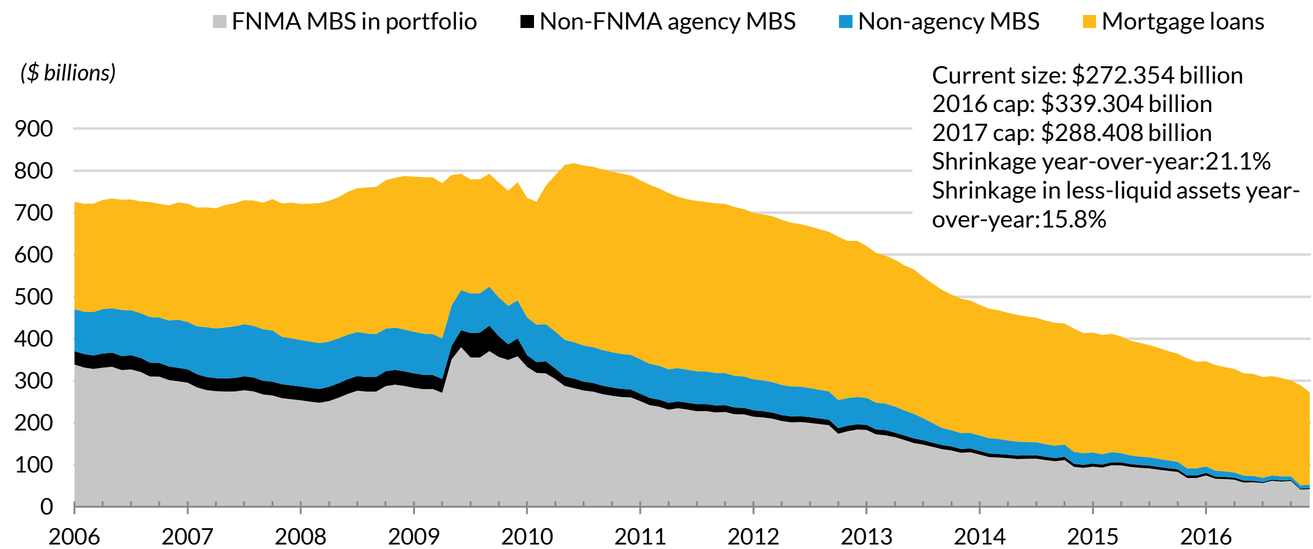
Sources: Mortgage Bankers Association and Urban Institute.

GSES UNDER CONSERVATORSHIP

GSE PORTFOLIO WIND-DOWN

Both GSEs continue to contract their portfolios; In 2016, Fannie Mae contracted by 21.1 percent and Freddie Mac by 15.8 percent. They are shrinking their less liquid assets (mortgage loans and non-agency MBS) at close to the same pace that they are shrinking their entire portfolio. Both GSEs finished the year well under their 2016 caps; Fannie Mae is actually under its year-end 2017 cap, and Freddie Mac is just above it.

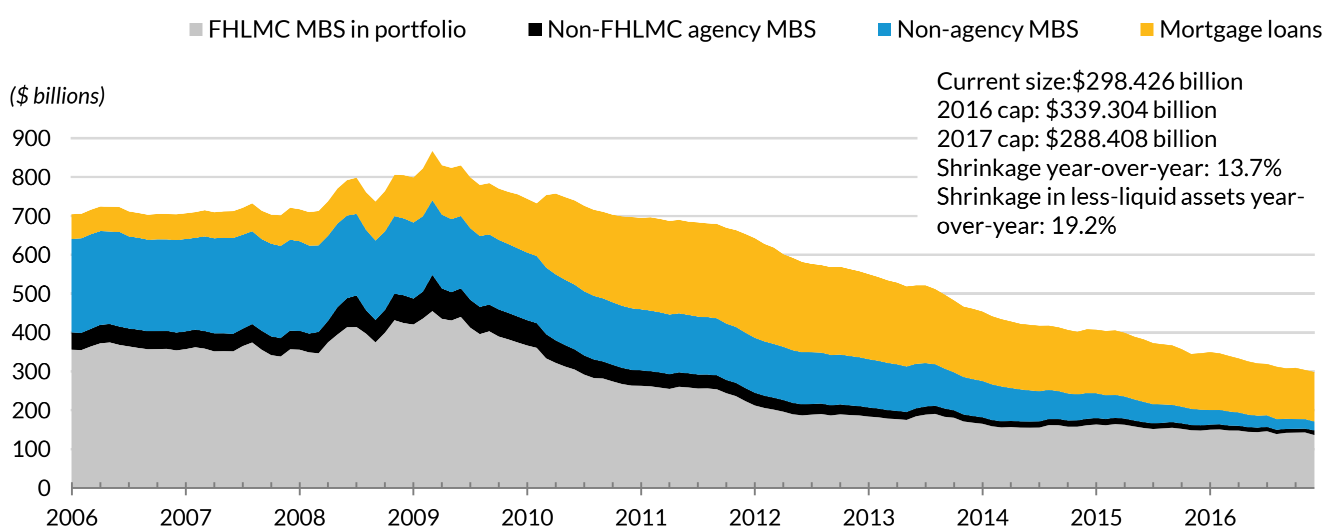
Fannie Mae Mortgage-Related Investment Portfolio Composition



Sources: Fannie Mae and Urban Institute.

December 2016

Freddie Mac Mortgage-Related Investment Portfolio Composition



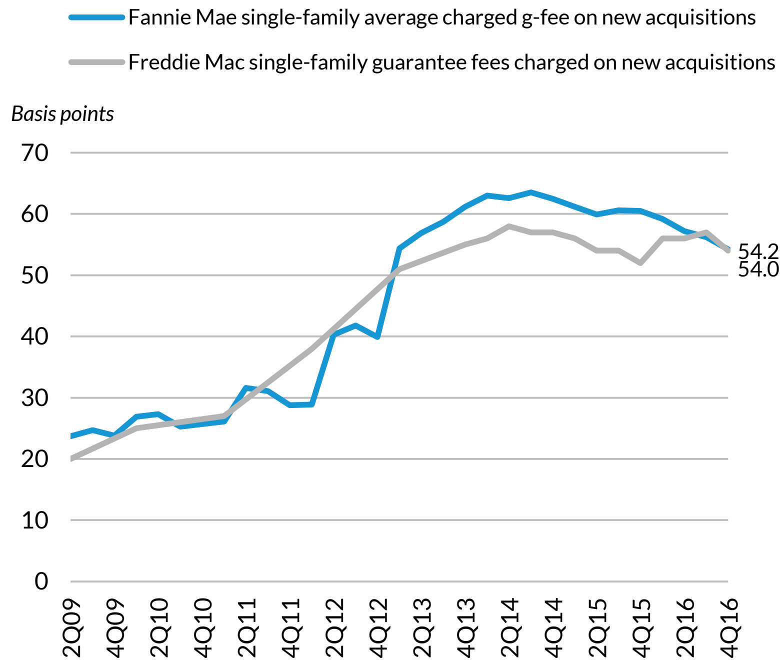
Sources: Freddie Mac and Urban Institute.

December 2016

EFFECTIVE GUARANTEE FEES

Guarantee Fees Charged on New Acquisitions

The newly released 10K reports reveal that both Fannie and Freddie's average g-fees on new acquisitions edged down in Q4 2016. Fannie's fee decreased from 56.2 to 54.2 bps and Freddie was down from 57 to 54 bps. This is still a marked increase over 2012 and 2011, and has contributed to the GSEs' profits. Fannie's new Loan-Level Price Adjustments (LLPAs), effective September 2015, are shown in the second table. The Adverse Market Delivery Charge (AMDC) of 0.25 percent has been eliminated, and LLPAs for some borrowers have been slightly increased to compensate for the revenue lost from the AMDC. As a result, the new LLPAs have had a modest impact on GSE pricing.



Sources: Fannie Mae, Freddie Mae and Urban Institute.

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 as well as through reinsurance transactions. They have also done a few front-end transactions with originators and experimented with deep MI coverage with private mortgage insurers. FHFA's 2017 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 26.0 percent of its outstanding guarantees, while Freddie's STACR covers 38.5 percent.

Fannie Mae – Connecticut Avenue Securities (CAS)

Date	Transaction	Reference Pool Size ($ m)	Amount Issued ($m)	% of Reference Pool Covered
January 2014	CAS 2014 – C01	$29,309	$750	2.6%
May 2014	CAS 2014 – C02	$60,818	$1,600	2.6%
July 2014	CAS 2014 – C03	$78,234	$2,050	2.6%
November 2014	CAS 2014 – C04	$58,873	$1,449	2.5%
February 2015	CAS 2015 – C01	$50,192	$1,469	2.9%
May 2015	CAS 2015 – C02	$45,009	$1,449	3.2%
June 2015	CAS 2015 – C03	$48,326	$1,100	2.3%
October 2015	CAS 2015 – C04	$43,599	$1,446	3.3%
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%
Total		**$721,333**	**$20,730**	**2.9%**
Percent of Fannie Mae's Total Book of Business		**26.04%**		

Freddie Mac – Structured Agency Credit Risk (STACR)

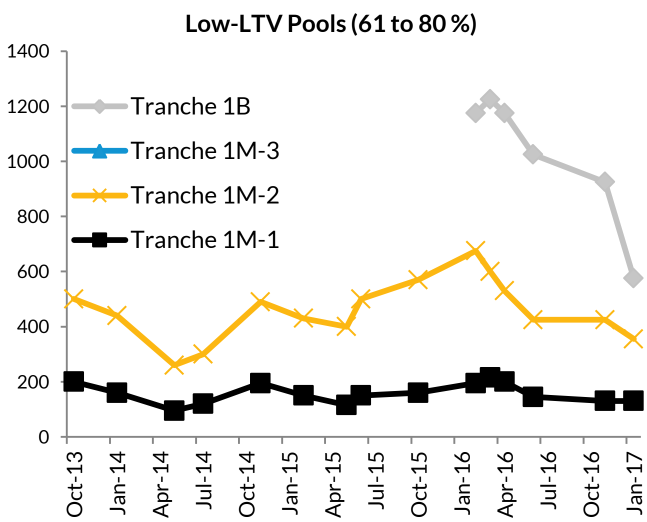
Date	Transaction	Reference Pool Size ($ m)	Amount Issued ($m)	% of Reference Pool Covered
February 2014	STACR Series 2014 – DN1	$32,077	$1,008	3.1%
April 2014	STACR Series 2014 – DN2	$28,147	$966	3.4%
August 2014	STACR Series 2014 – DN3	$19,746	$672	3.4%
August 2014	STACR Series 2014 – HQ1	$9,975	$460	4.6%
September 2014	STACR Series 2014 – HQ2	$33,434	$770	2.3%
October 2014	STACR Series 2014 – DN4	$15,741	$611	3.9%
October 2014	STACR Series 2014 – HQ3	$8,001	$429	5.4%
February 2015	STACR Series 2015 – DN1	$27,600	$880	3.2%
March 2015	STACR Series 2015 – HQ1	$16,552	$860	5.2%
April 2015	STACR Series 2015 – DNA1	$31,876	$1,010	3.2%
May 2015	STACR Series 2015 – HQ2	$30,325	$426	1.4%
June 2015	STACR Series 2015 – DNA2	$31,986	$950	3.0%
September 2015	STACR Series 2015 – HQA1	$19,377	$872	4.5%
November 2015	STACR Series 2015 – DNA3	$34,706	$1,070	3.1%
December 2015	STACR Series 2015 – HQA2	$17,100	$590	3.5%
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%
Total		**$677,348**	**$19,800**	**2.9%**
Percent of Freddie Mac's Total Book of Business		**38.49%**		

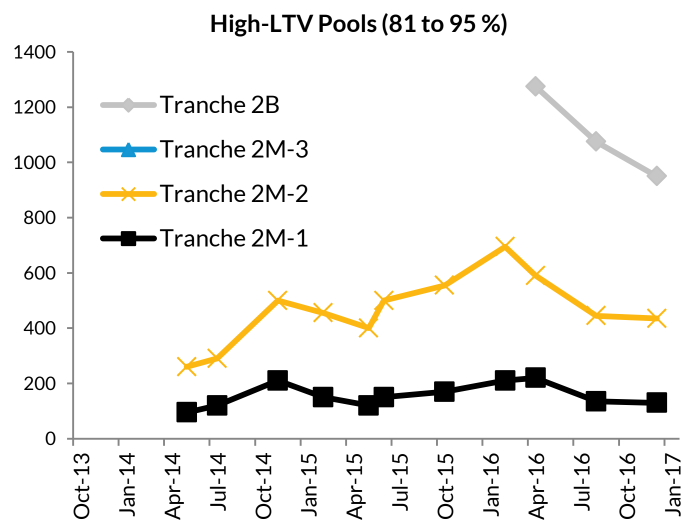
Sources: Fannie Mae, Freddie Mac and Urban Institute.
Note: Classes A-H, M-1H, M-2H, and B-H are reference tranches only. These classes are not issued or sold. The risk is retained by Fannie Mae and Freddie Mac. "CE" = credit enhancement.

GSES UNDER CONSERVATORSHIP
GSE RISK-SHARING SPREADS

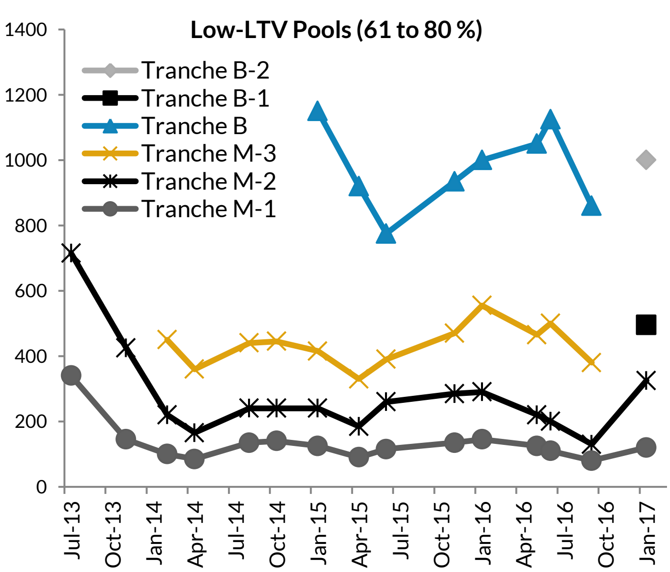
CAS and STACR spreads have moved around considerably since 2013, with the bottom mezzanine tranche and the first loss bonds experiencing considerably more volatility than the top mezzanine bonds (the M-1 in two tranche deals, the M-1 and M-2 in three tranche deals). Tranche B in particular has been highly 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.

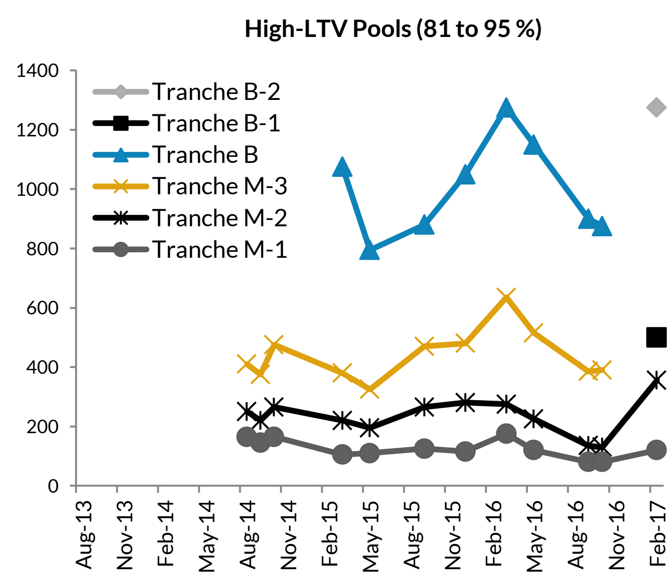
Fannie Mae CAS Spreads at-issuance (basis points over 1-month LIBOR)





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



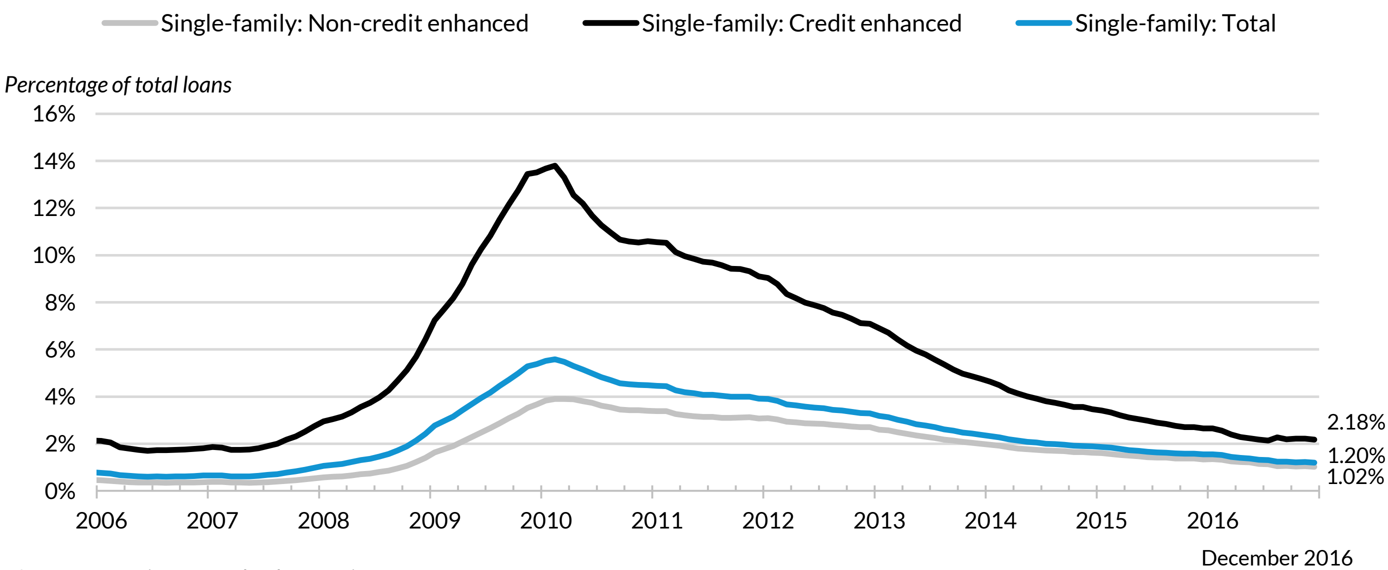


Sources: Fannie Mae, Freddie Mac Press Releases and Urban Institute.

SERIOUS DELINQUENCY RATES

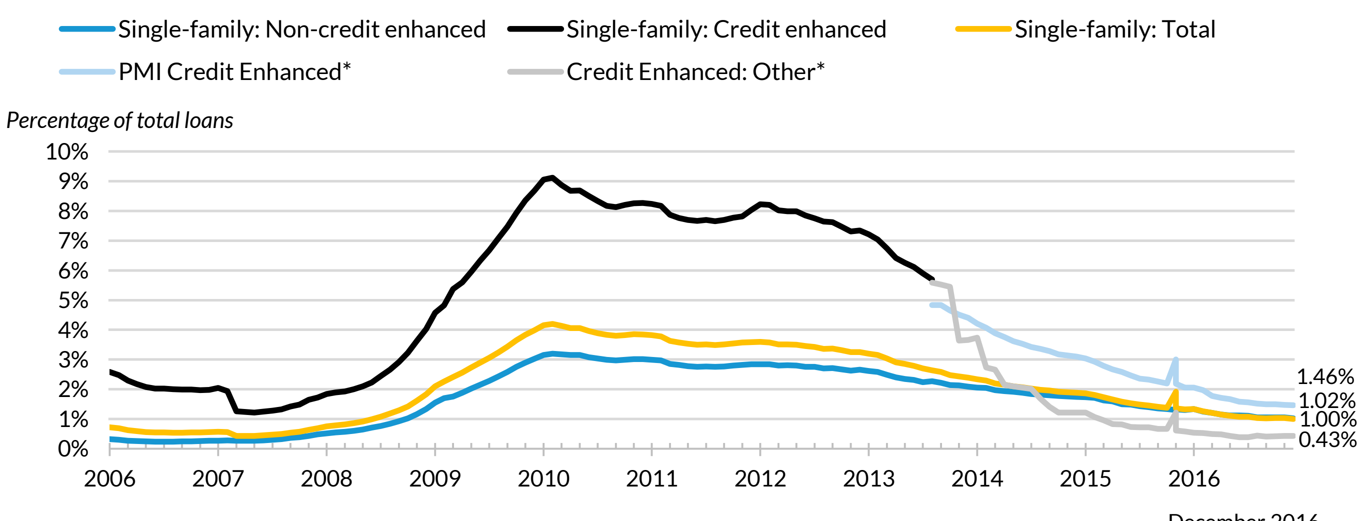
Serious delinquency rates of GSE loans continue to decline as the legacy portfolio is resolved and the pristine, post-2009 book of business exhibits very low default rates. As of December 2016, 1.20 percent of the Fannie portfolio and 1.00 percent of the Freddie portfolio were seriously delinquent, down from 1.55 percent for Fannie and 1.32 percent for Freddie in December 2015.

Serious Delinquency Rates–Fannie Mae



Sources: Fannie Mae and Urban Institute.

Serious Delinquency Rates–Freddie Mac



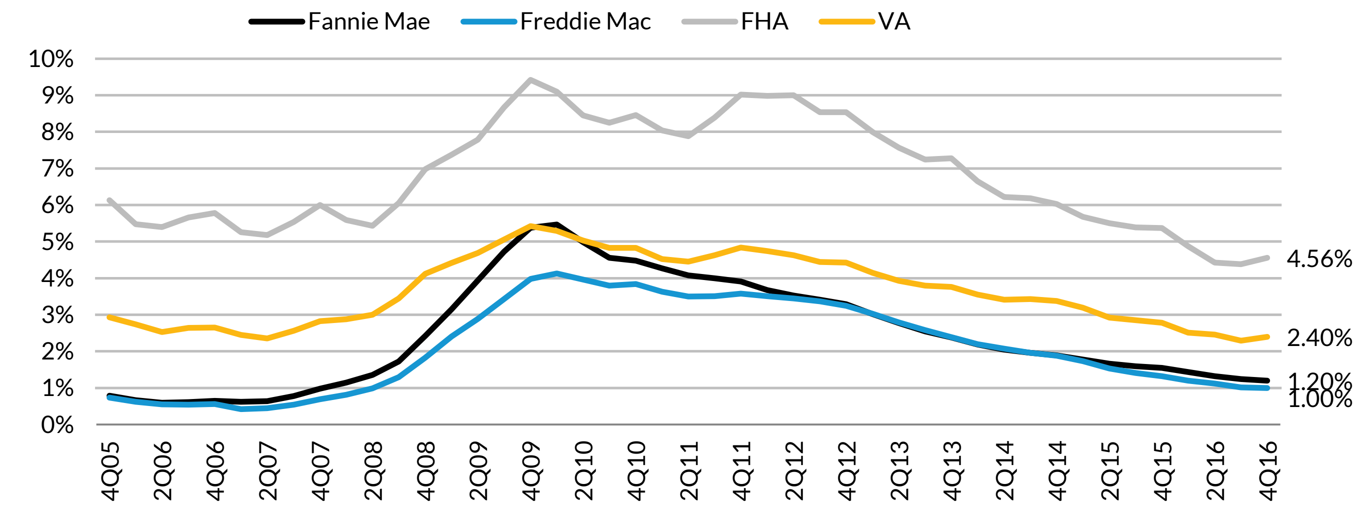
Sources: Freddie Mac and Urban Institute.

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.

SERIOUS DELINQUENCY RATES

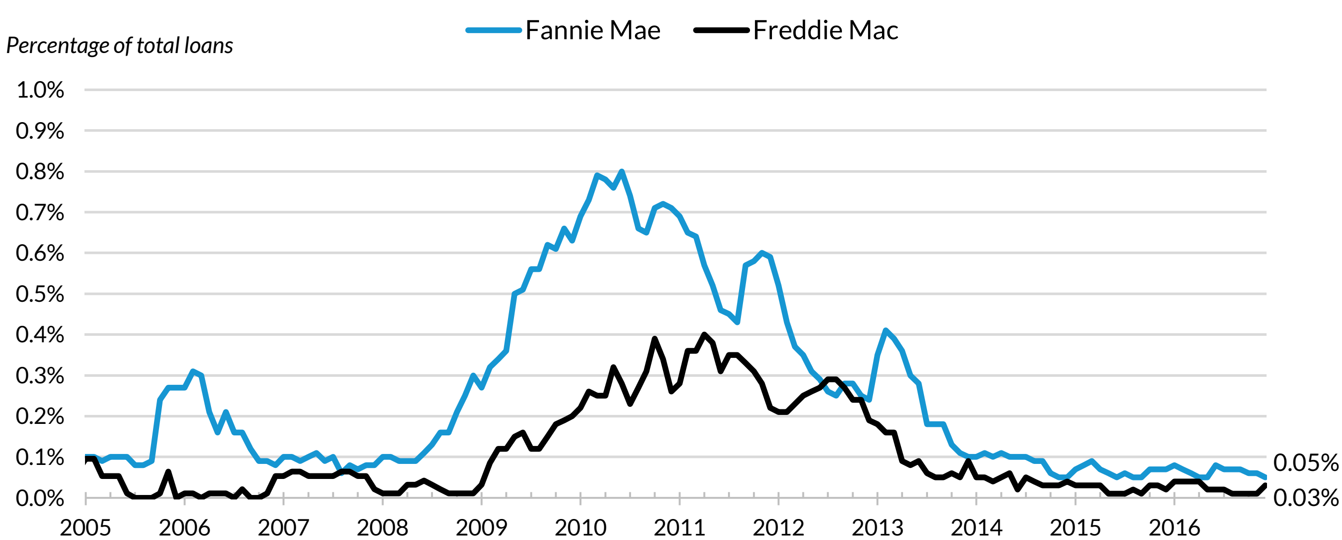
Serious delinquencies for GSE single-family loans continue to decline, while FHA, VA recorded their first uptick since Q2 2012 and Q4 2011, respectively . GSE delinquencies remain higher relative to 2005-2007. Despite the small increases, FHA and VA delinquencies (which are higher than their GSE counterparts) are still at levels lower than 2005-2007. We will monitor closely to see if this small uptick is a new trend or the reflection of a strong seasonal pattern. GSE multifamily delinquencies have declined to pre-crisis levels, although they did not reach problematic levels even in the worst years of the crisis.

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.

Serious Delinquency Rates–Multifamily GSE Loans



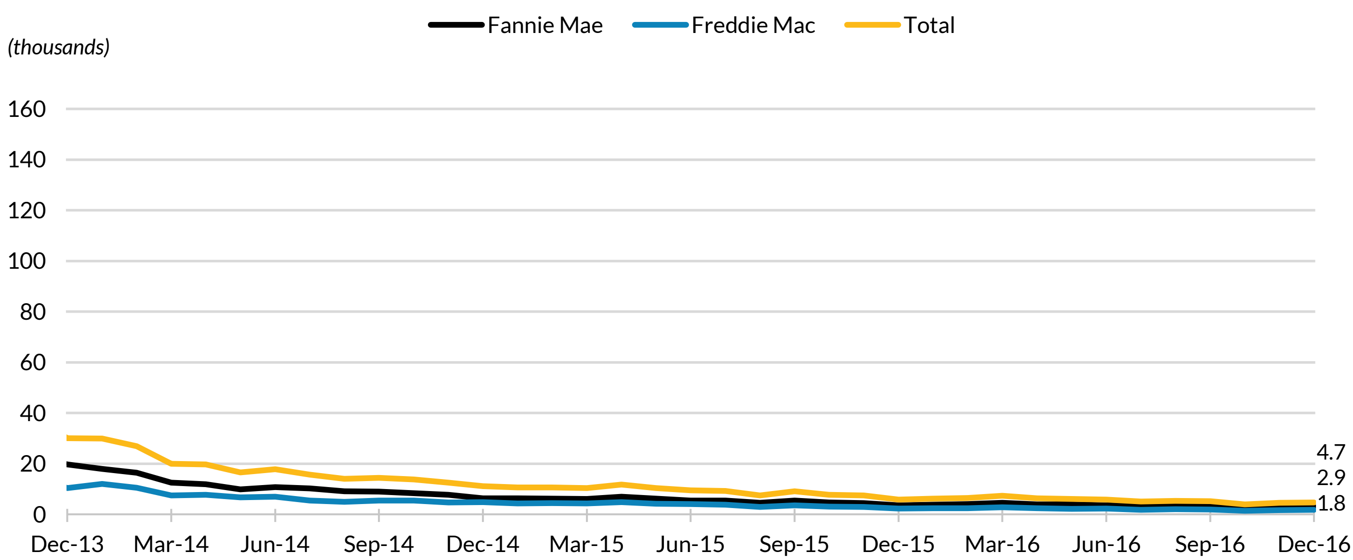
December 2016

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.

REFINANCE ACTIVITY

The Home Affordable Refinance Program (HARP) refinances have slowed considerably, reflecting the considerable number of borrowers who have already refinanced. The trend is likely to continue especially with the recent rate increases. Since the program's Q2 2009 inception, HARP refinances total 3.4 million, accounting for 14 percent of all GSE refinances in this period. In December 2016, the latest month for which data is available, HARP refinances accounted for 1.9 percent of total refinances.

Total HARP Refinance Volume



Sources: FHFA Refinance Report and Urban Institute.

HARP Refinances

	December 2016	Year-to-date 2016	Inception to date	2015	2014	2013
Total refinances	251,903	2,325,671	24,819,644	2,084,936	1,536,788	4,081,911
Total HARP refinances	4,704	67,114	3,447,671	110,111	212,488	892,914
Share 80–105 LTV	77.6%	79.4%	70.3%	76.5%	72.5%	56.4%
Share 105–125 LTV	15.3%	14.2%	17.1%	15.6%	17.2%	22.4%
Share >125 LTV	7.1%	6.5%	12.6%	8.0%	10.3%	21.2%
All other streamlined refinances	12,160	159,793	3,889,281	218,243	268,026	735,210

Sources: FHFA Refinance Report and Urban Institute.

GSE LOANS: POTENTIAL REFINANCES

To qualify for HARP, a loan must have been originated before the June 2009 cutoff date, have a marked-to-market loan-to-value (MTM LTV) ratio above 80, and have no more than one delinquent payment in the past year and none in the past six months. There are 236,266 eligible loans, but 52 percent are out-of-the-money because the closing cost would exceed the long-term savings, leaving 112,409 loans where a HARP refinance is both permissible and economically advantageous for the borrower. Loans below the LTV minimum but meeting all other HARP requirements are eligible for GSE streamlined refinancing. Of the 4,706,681 loans in this category, 3,372,922 are in-the-money.

Over 80 percent of the GSE book of business that meets the pay history requirements was originated after the June, 2009 cutoff date. FHFA extended the deadline for the HARP program until Sept 30, 2017 to create a transition period for a new high LTV refi product planned to launch toward the end of 2017.

Total loan count	27,283,101
Loans that do not meet pay history requirement	1,216,963
Loans that meet pay history requirement:	26,066,138
Pre-June 2009 origination	4,942,947
Post-June 2009 origination	21,123,191

Loans Meeting HARP Pay History Requirements

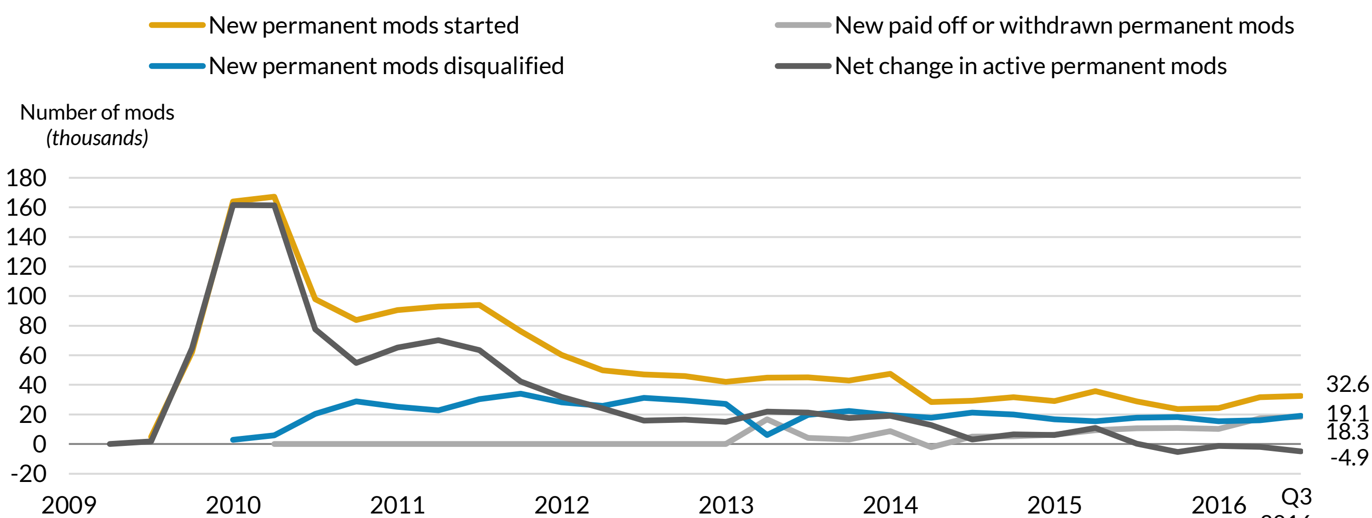
Pre-June 2009			
LTV category	*In-the-money*	*Out-of-the-money*	*Total*
≤80	3,372,922	1,333,759	4,706,681
>80	112,409	123,857	236,266
Total	3,485,332	1,457,616	4,942,947
Post-June 2009			
LTV category	*In-the-money*	*Out-of-the-money*	*Total*
≤80	1,236,767	17,354,516	18,591,283
>80	159,132	2,372,776	2,531,908
Total	1,395,899	19,727,292	21,123,191

Sources: CoreLogic Prime Servicing as of December 2016 and Urban Institute.
Note: Figures are scaled up from source data to account for data coverage of the GSE active loan market (based on MBS data from eMBS). Shaded box indicates HARP-eligible loans that are in-the-money. The January PMMS rate of 4.15 percent was used to calculate this table.

HAMP ACTIVITY

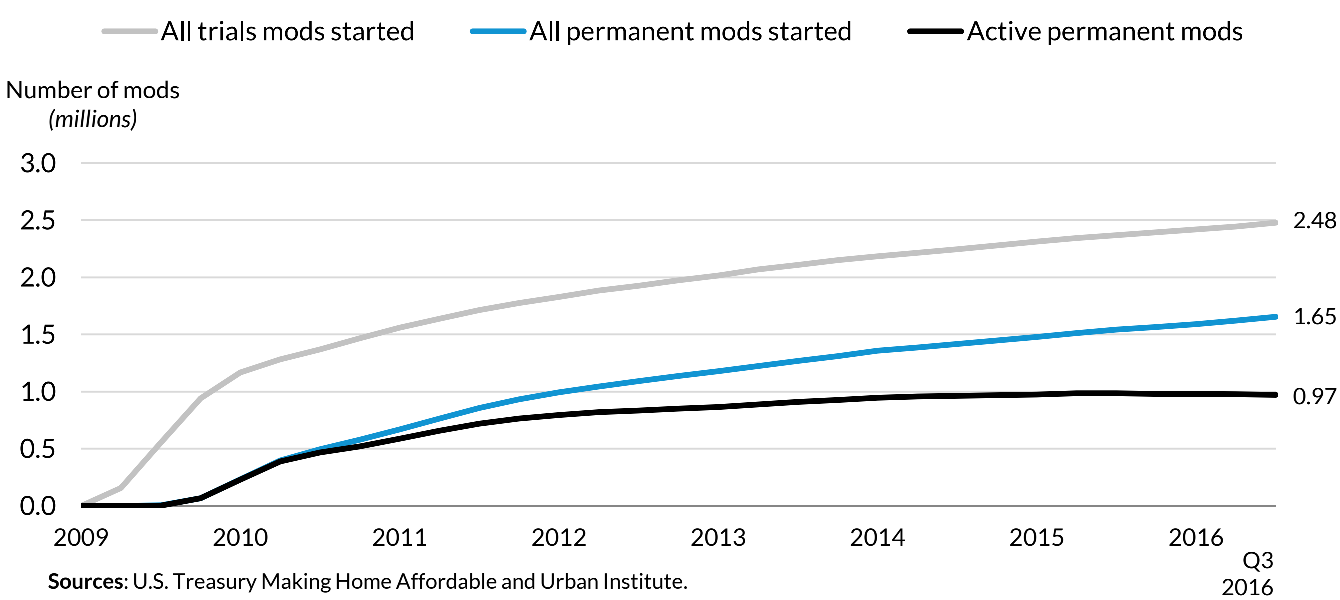
In Q3 2016, the number of active permanent modifications continued to fall by 4,870 mortgages, the third consecutive quarter with a decline since Q4 2015. There are three factors behind this change: Fewer new permanent modifications were made, some modifications failed because the borrowers did not make their payments, and a small number of borrowers either paid off their mortgage or withdrew their application. As a result, active permanent mods declined to 0.97 million. HAMP sunset at year-end 2016; no new loans will be considered. Borrowers who submitted an initial package or were in a trial modification at the time of the sunset may still receive a HAMP mod.

New HAMP Modications



Sources: U.S. Treasury Making Home Affordable and Urban Institute.

Cumulative HAMP Modifications



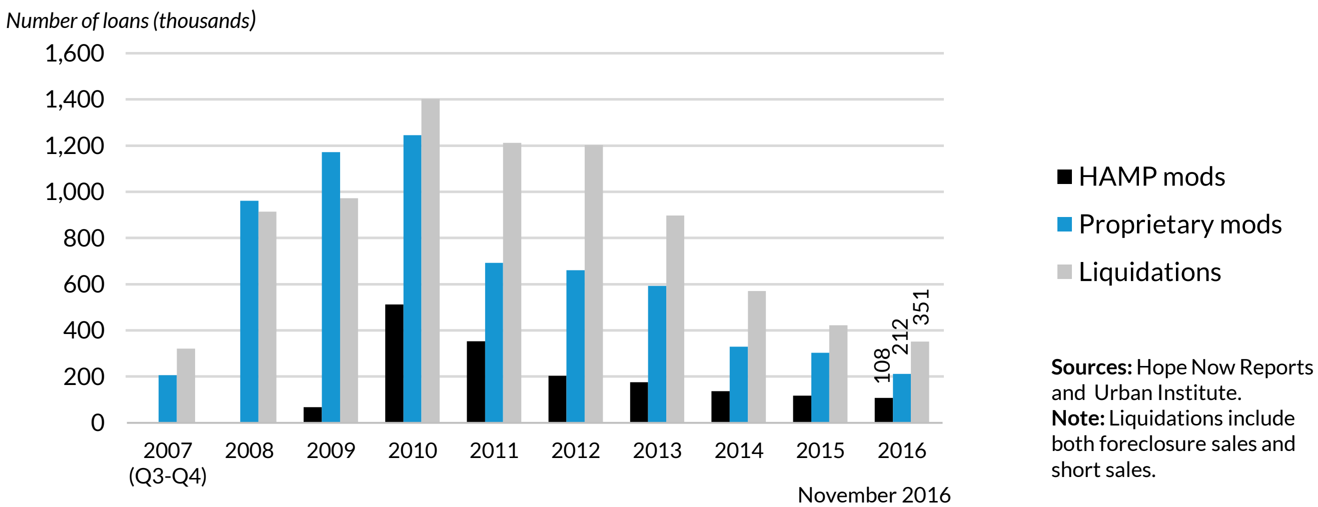
Sources: U.S. Treasury Making Home Affordable and Urban Institute.

MODIFICATION ACTIVITY

MODIFICATIONS AND LIQUIDATIONS

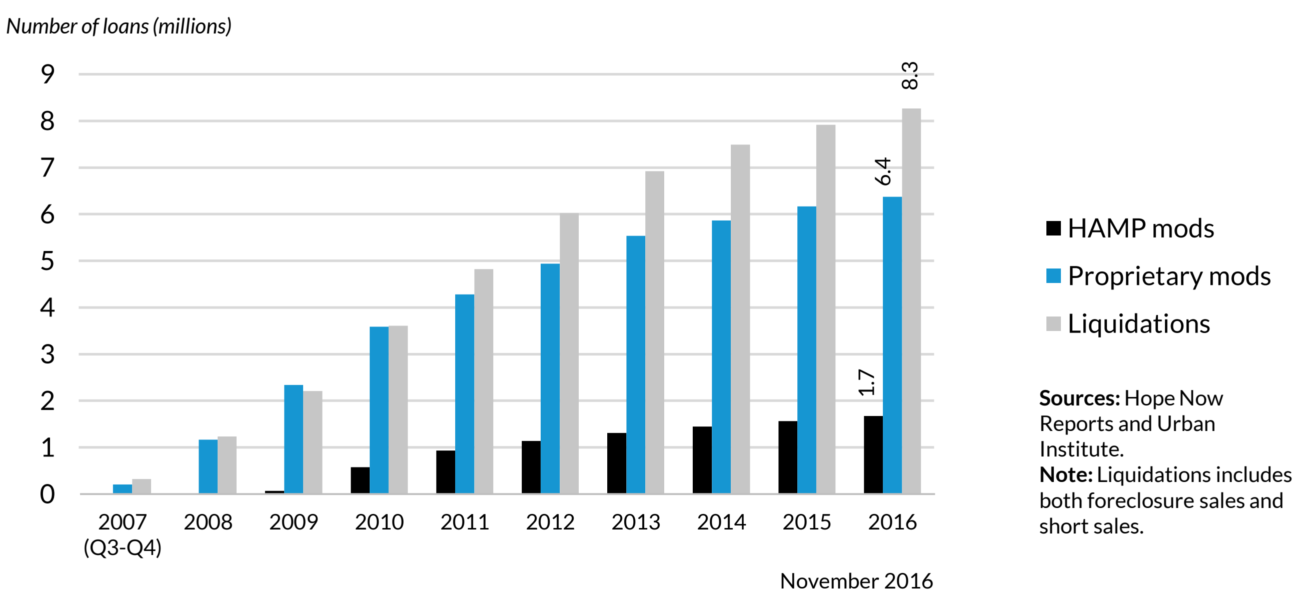
Total modifications (HAMP and proprietary) are now roughly equal to total liquidations. Hope Now reports show 8,049,841borrowers have received a modification since Q3 2007, compared with 8,266,859 liquidations in the same period. Averaging 31,621 modifications per month in the first eleven months of 2016, modification activity has slowed significantly over the past few years. Liquidations have also continued to decline, averaging 31,918 per month in the first eleven months of 2016 compared to 35,580 per month in the same period a year ago.

Loan Modifications and Liquidations



Sources: Hope Now Reports and Urban Institute.
Note: Liquidations include both foreclosure sales and short sales.

Cumulative Modifications and Liquidations



Sources: Hope Now Reports and Urban Institute.
Note: Liquidations includes both foreclosure sales and short sales.

AGENCY GROSS AND NET ISSUANCE

Agency gross issuance totaled $136.6 billion in the first month of 2017, a 57 percent increase from January 2016. Net issuance (which excludes repayments, prepayments, and refinances on outstanding mortgages) remained low, but was up 245 percent compared to January 2016. Agency issuance is expected to decline in the next few months, as the sharp increase in interest rates since Election Day will significantly slash the refinance originations, which account for 55 percent of GSE gross issuance volume and 39 percent of Ginnie Mae's volume in 2016.

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	$991.59	$508.18	$1,499.77
2017 YTD	$94.07	$42.57	$136.64
2017% Change year-over-year	57.7%	54.7%	56.8%
2017 Ann.	$1,128.84	$510.84	$1,639.68

Agency Net Issuance

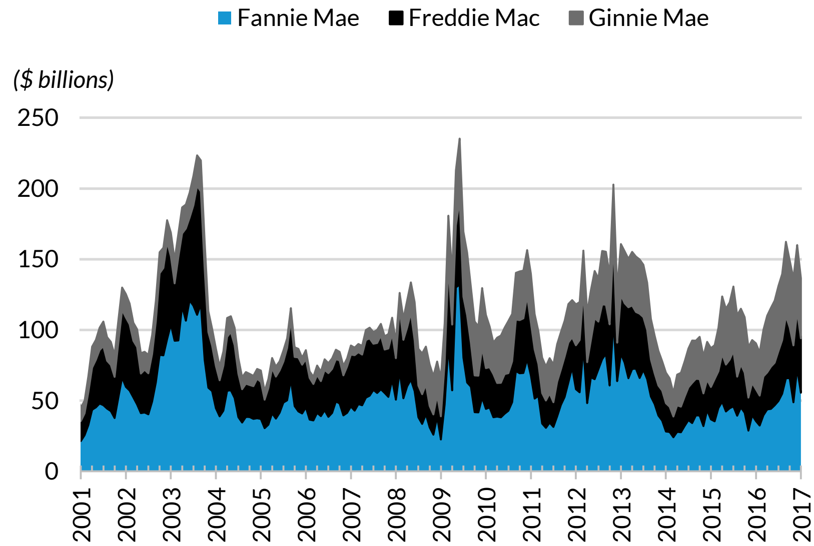
Issuance Year	GSEs	Ginnie Mae	Total
2000	$159.8	$29.3	$189.1
2001	$367.8	-$9.9	$357.9
2002	$357.6	-$51.2	$306.4
2003	$335.0	-$77.6	$257.4
2004	$83.3	-$40.1	$43.2
2005	$174.4	-$42.2	$132.1
2006	$313.6	$0.3	$313.8
2007	$514.7	$30.9	$545.5
2008	$314.3	$196.4	$510.7
2009	$249.5	$257.4	$506.8
2010	-$305.5	$198.2	-$107.3
2011	-$133.4	$149.4	$16.0
2012	-$46.5	$118.4	$71.9
2013	$66.5	$85.8	$152.3
2014	$30.3	$59.8	$90.1
2015	$75.0	$94.5	$169.5
2016	$135.4	$125.4	$260.9
2017 YTD	$21.0	$10.2	$31.2
2017% Change year-over-year	4604.4%	19.1%	245.1%
2017 Ann.	$251.8	$122.9	$374.8

Sources: eMBS and Urban Institute.
Note: Dollar amounts are in billions. Annualized figure based on data from January 2017.

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 reached a peak of 28 percent of total agency issuance in 2010, declined to 25 percent in 2013, and has bounced back sharply since then. The Ginnie Mae issuance stood at 31 percent in January 2017, driven by the surge in FHA refinance activity with the reduction in the FHA insurance premium, and increased VA volumes. The sharp interest rate increase since Election Day is expected to drive the Ginnie Mae share even higher, since 39 percent of Ginnie Mae's volumes were refinance in 2016, compared to the GSEs' 55 percent.

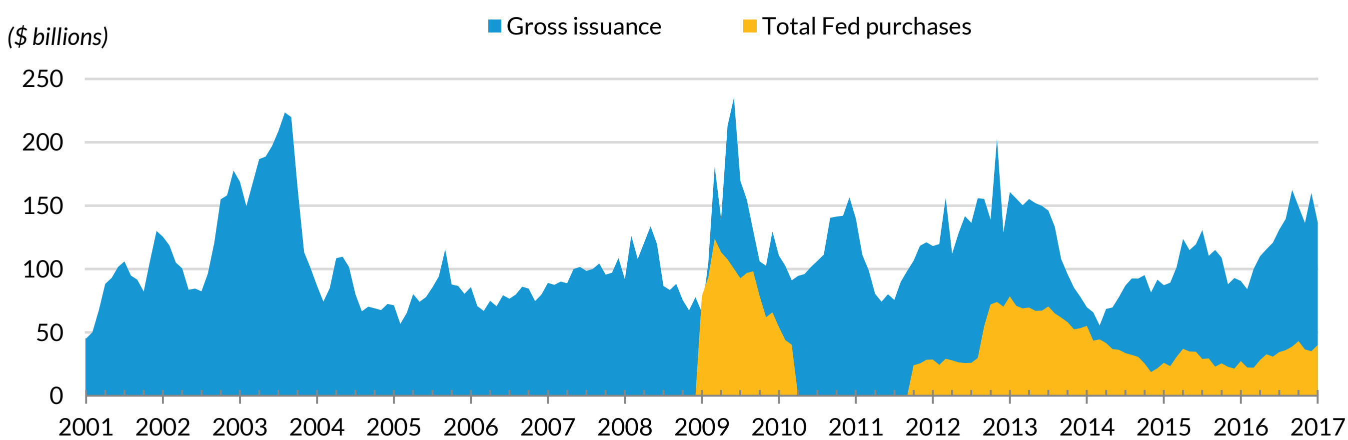


Sources: eMBS, Federal Reserve Bank of New York, and Urban Institute.

January 2017

Fed Absorption of Agency Gross Issuance

In October 2014, the Fed ended its purchase program, but continued buying at a much reduced level, reinvesting funds from pay downs on mortgages and agency debentures into the mortgage market. Since then, the Fed's absorption of gross issuance has been between 20 and 30 percent. In January 2017, total Fed purchase rose to $40.1 billion while agency gross issuance dropped to $136.6 billion, yielding Fed absorption of gross issuance of 29.3 percent, up from 22.0 percent last month.



January 2017

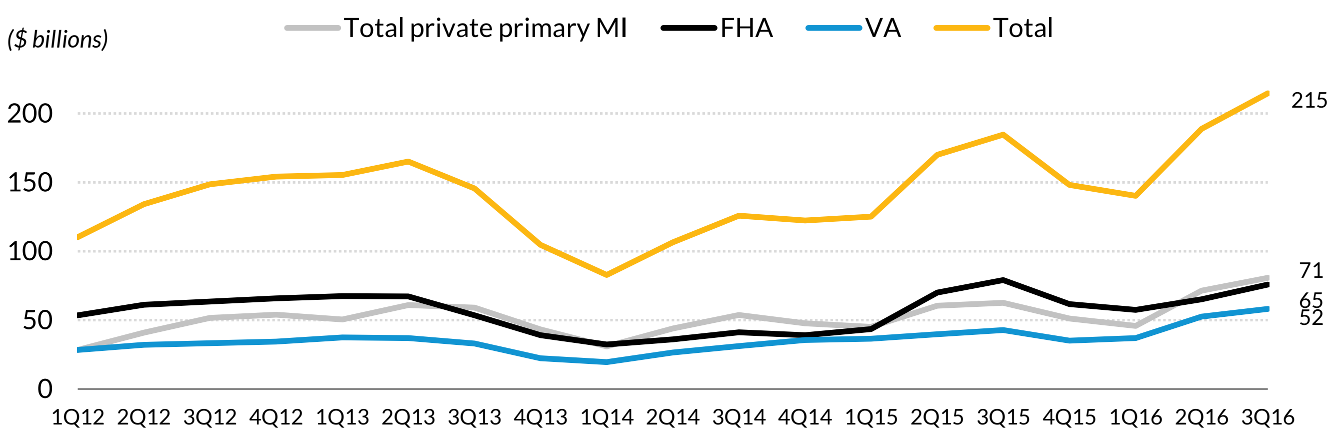
Sources: eMBS, Federal Reserve Bank of New York and Urban Institute.

AGENCY ISSUANCE

MORTGAGE INSURANCE ACTIVITY

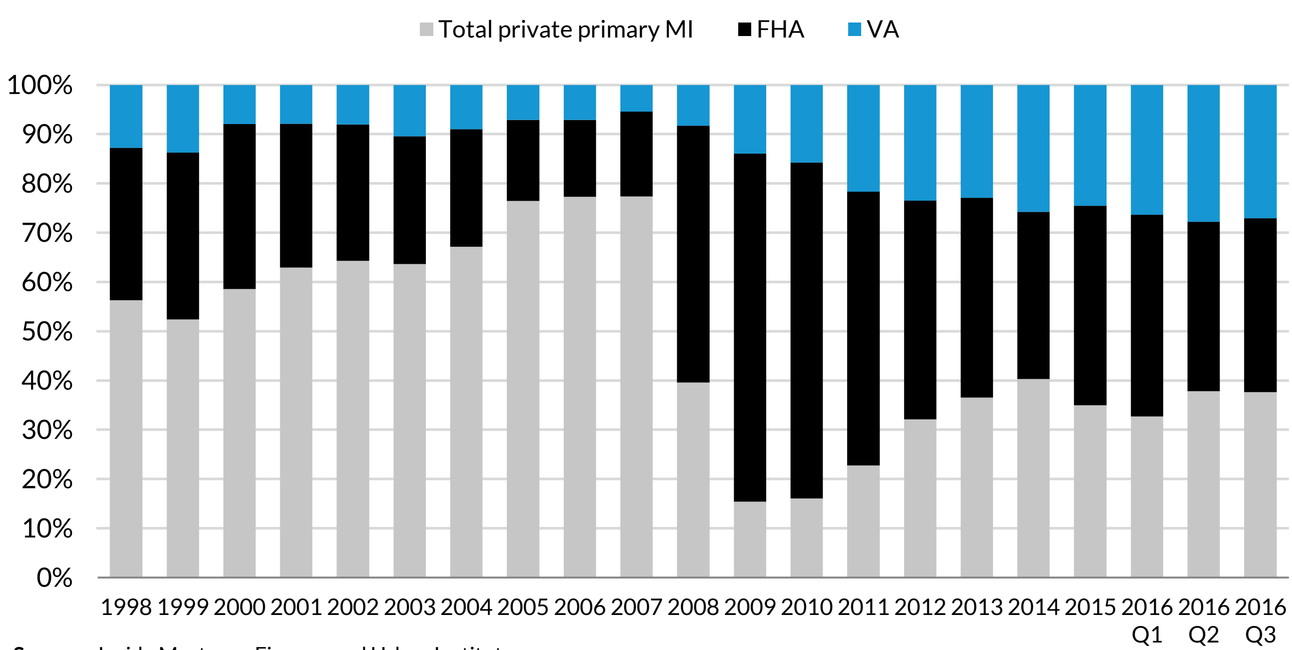
MI Activity

In Q3 2016, mortgage insurance activity via the FHA, VA and private insurers rose significantly to $215 billion, up from last quarter's $189 billion and up 11 percent year-over-year from the same quarter in 2015. FHA's Q3 2016 market share (35 percent) remained largely unchanged from last quarter, and the private insurance market's share remained steady as well (38 percent).



Sources: Inside Mortgage Finance and Urban Institute.

MI Market Share



Sources: Inside Mortgage Finance and Urban Institute.

AGENCY ISSUANCE
MORTGAGE INSURANCE ACTIVITY

FHA premiums rose significantly in the years following the housing crash, with annual premiums rising 170% 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 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 of 760 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	4.39%
FHA	4.22%

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	$1,374	$1,374	$1,374	$1,374	$1,374	$1,374	$1,374	$1,374
PMI	$1,761	$1,698	$1,654	$1,531	$1,481	$1,426	$1,379	$1,339
PMI Advantage	($387)	($324)	($280)	($157)	($107)	($52)	($5)	$35

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 21.

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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.

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