HOUSING FINANCE POLICY CENTER

HOUSING FINANCE AT A GLANCE

A MONTHLY CHARTBOOK

December 2019

URBAN INSTITUTE · ELEVATE · THE · DEBATE

ABOUT THE CHARTBOOK

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

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

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

HOUSING FINANCE POLICY CENTER STAFF

Laurie Goodman
Center Vice President

Alanna McCargo
Center Vice President

Jim Parrott
Nonresident Fellow

Jun Zhu
Nonresident Fellow

Sheryl Pardo
Associate Director of Communications

Michael Neal
Senior Research Associate

Karan Kaul
Research Associate

Jung Choi
Research Associate

Sarah Strochak
Research Analyst

John Walsh
Research Assistant

Caitlin Young
Research Assistant

Alison Rincon
Director, Center Operations

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INTRODUCTION

Thank you for your support

As we publish our last chartbook of 2019, and our 75th chartbook overall, we wanted to say thank you to our chartbook readers for your continued support of our work. By using and sharing our data, you've helped us ensure that evidence and facts make their way into discussions about housing finance.

We also want to recognize the support of our original and continuing funders including the Citi Foundation, the John D. and Catherine T. MacArthur Foundation, the Ford Foundation, the Open Society Foundations and our Housing Finance Innovation Forum, a group of organizations and individuals that support high-quality independent research that informs evidence-based policy development. Without their support, this work would not be possible.

For your easy reference, here's a quick summary of the work of the Urban Institute's Housing Finance Policy Center in 2019 and a look ahead to the work we plan to focus on in 2020.

In 2019, we produced:

- 37 blog posts;
- 21 research papers;
- 12 monthly data chartbooks;
- 12 monthly Global Markets Analysis reports;
- An updated interactive US Home Mortgage Disclosure Act map;
- 6 data-focused public presentations and our 6th full-day symposium; and
- 4 updates to our Housing Credit Availability Index

Our focus was on critical matters in the mortgage market, including:

- Millennial and senior homeownership;
- The challenges of and opportunities for minority homeownership;
- Housing affordability from a renter's perspective;
- The performance characteristics of small mortgages;
- Enhancing loss mitigation tools at the Federal Housing Administration; and
- The role of fintech in the home purchase and finance market

We provided valuable evidence on emerging issues, including:

- Explaining the black-white homeownership gap;
- The Trump administration's plan for reforming the GSEs and Senator Crapo's plan for reforming the housing finance system;
- Efforts to revise the Community Reinvestment Act and basic data about the CRA including the importance of small business and multifamily lending and lending to higher income borrowers in lower-income areas;
- The improving finances of the Federal Housing Administration;
- The urgency of addressing the expiring GSE patch; and
- Insights on the strength of the housing market, the potential for negative mortgage rates, the low national debt service and the absence, nationally, of a housing bubble.

We also submitted three comment letters: one on Home Mortgage Disclosure Act data, a second on the qualified mortgage rule and a third one on changing the HMDA reporting threshold.
And we testified before Congress about reverse mortgages and barriers to minority homeownership;

We are looking ahead to 2020, when we will continue to analyze ongoing issues critical to the health of the housing market, and respond quickly to emerging trends. Among other things, expect to see work from us on these topics in 2020:

- Reducing the racial wealth gap through affordable housing and homeownership;
- In-depth data about and analysis of the housing supply shortage;
- Barriers to homeownership in particular communities; and
- The ongoing housing finance reform debate.

Please continue to use and share our work. Thank you for your support!

Laurie Goodman and Alanna McCargo, Co-Vice Presidents, Housing Finance Policy Center

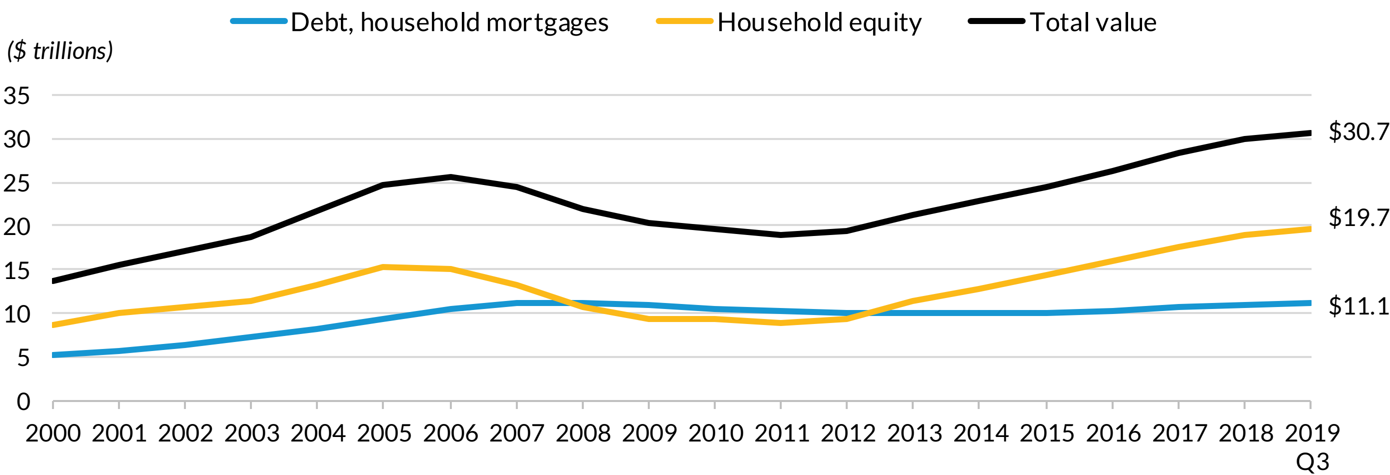
INSIDE THIS ISSUE

- The total value of the US housing market grew to $30.7 trillion in Q3 2019, according to the Federal Reserve's Flow of Funds report; household equity accounted for $19.7 trillion of total value while mortgage debt made up the remaining $11.1 trillion (Page 6).
- First lien origination volume $1.62 trillion during the Q1-Q3 2019 period is virtually identical to the full year 2018 origination volume of $1.63 trillion (Page 8).
- Ginnie Mae's nonbank origination share reached another historic high of 89 percent in Nov 2019 (Page 11).
- Special quarterly feature includes GSE default, composition, loss severity, and repurchase indicators (Pages 34-41).

MARKET SIZE OVERVIEW

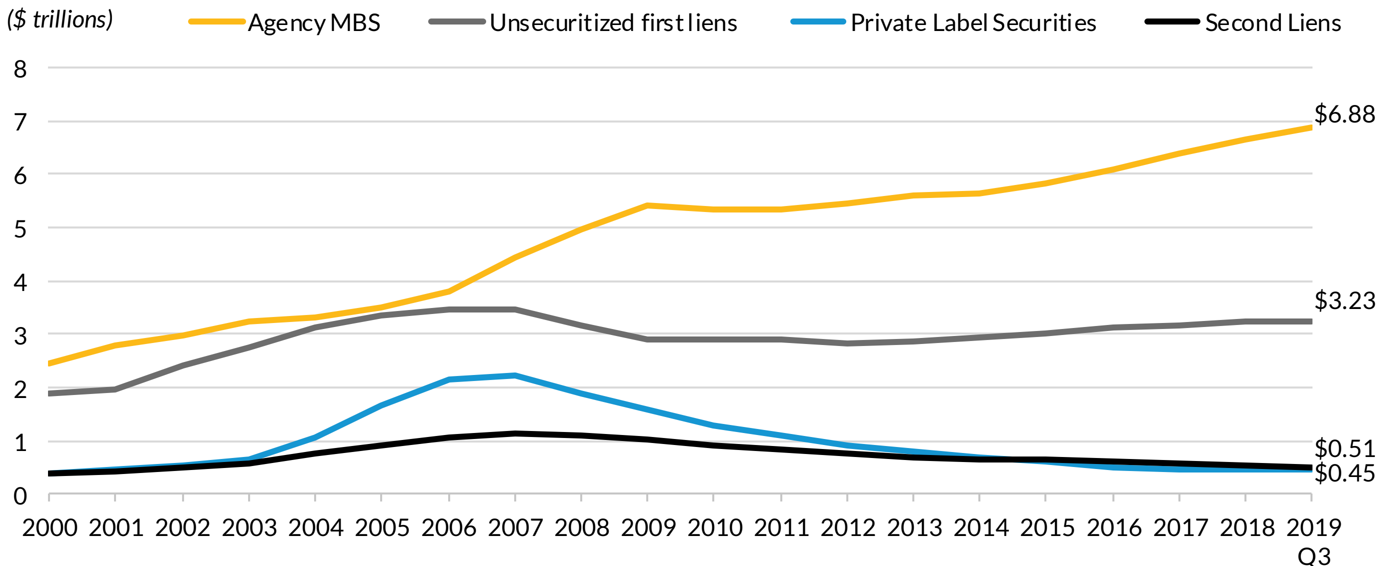
The Federal Reserve's Flow of Fund Report has indicated a gradually increasing total value of the housing market, driven primarily by growing home equity since 2012. The Q3 2020 numbers show that while total household equity was steady this quarter at $19.7 trillion, mortgage debt outstanding grew slightly from $11.0 trillion in Q2 to $11.1 trillion in Q3 2019, bringing the total value of the housing market to $30.7 trillion, 20.3 percent higher than the pre-crisis peak in 2006. Agency MBS account for 62.2 percent of the total mortgage debt outstanding, private-label securities make up 4.1 percent, and unsecuritized first liens make up 29.2 percent. Second liens comprise the remaining 4.6 percent of the total.

Value of the US Housing Market



Sources: Federal Reserve Flow of Funds and Urban Institute. *Last updated December 2019.*

Size of the US Residential Mortgage Market

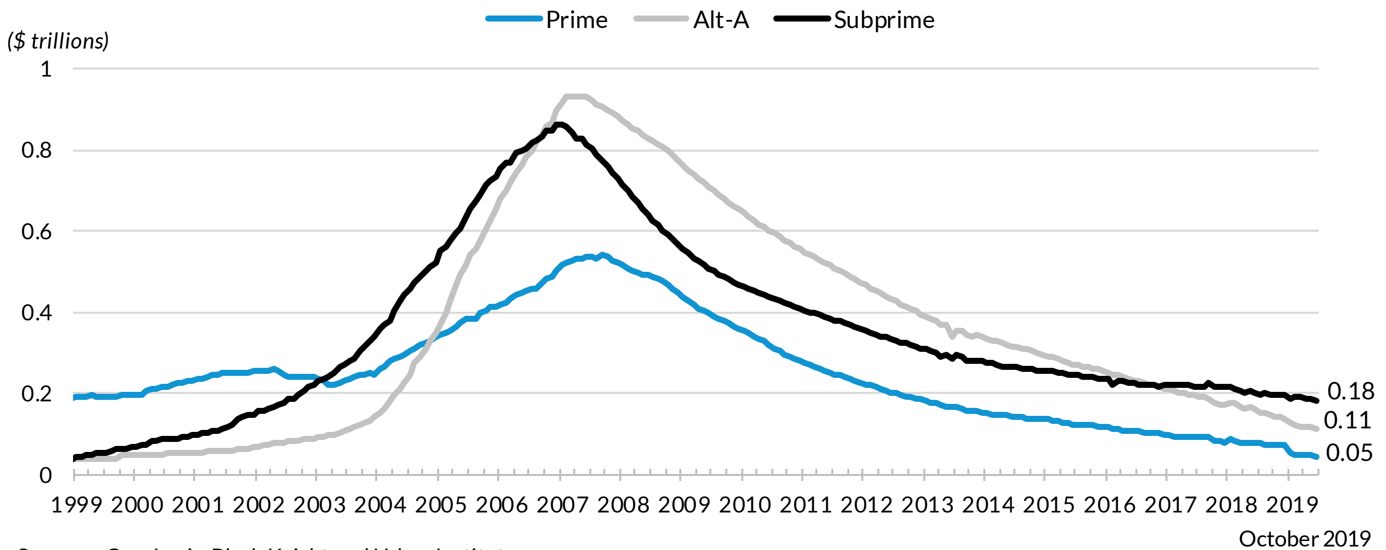


Sources: Federal Reserve Flow of Funds, Inside Mortgage Finance, eMBS and Urban Institute. *Last updated December 2019.*
Note: Unsecuritized first liens includes loans held by commercial banks, GSEs, savings institutions, and credit unions.

MARKET SIZE OVERVIEW

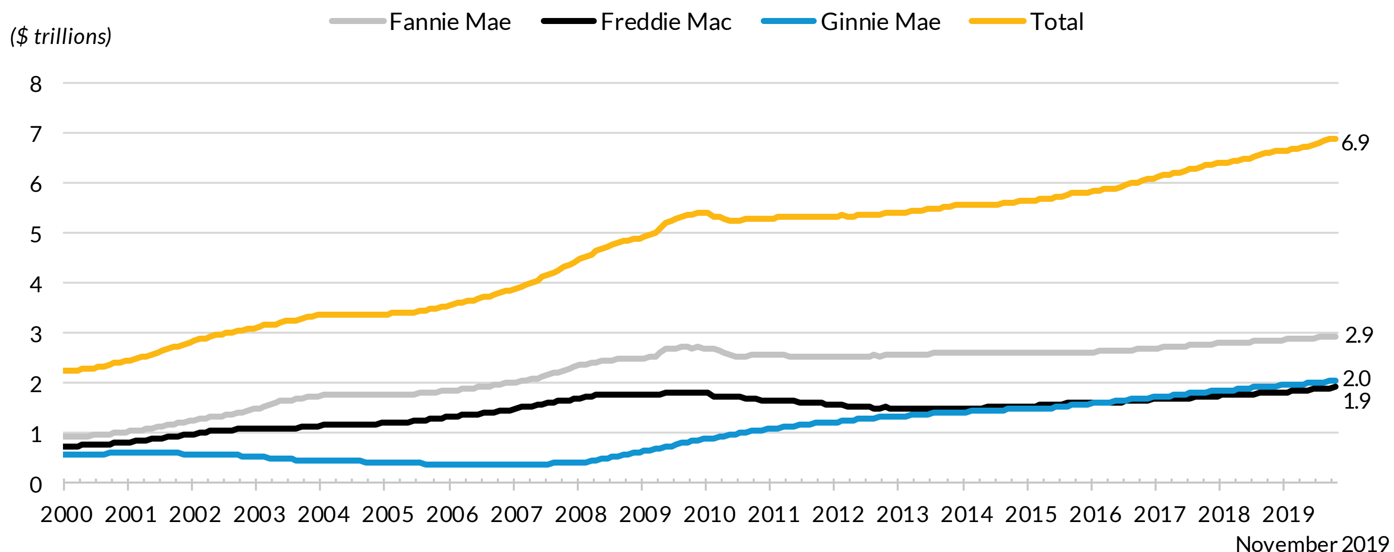
As of October 2019, debt in the private-label securitization market totaled $340 billion and was split among prime (13.3 percent), Alt-A (33.2 percent), and subprime (53.5 percent) loans. In November 2019, outstanding securities in the agency market totaled $6.9 trillion, 42.6 percent of which was Fannie Mae, 27.8 percent Freddie Mac, and 29.6 percent Ginnie Mae. Ginnie Mae has had more outstanding securities than Freddie Mac since May 2016.

Private-Label Securities by Product Type



Sources: CoreLogic, Black Knight and Urban Institute.

Agency Mortgage-Backed Securities



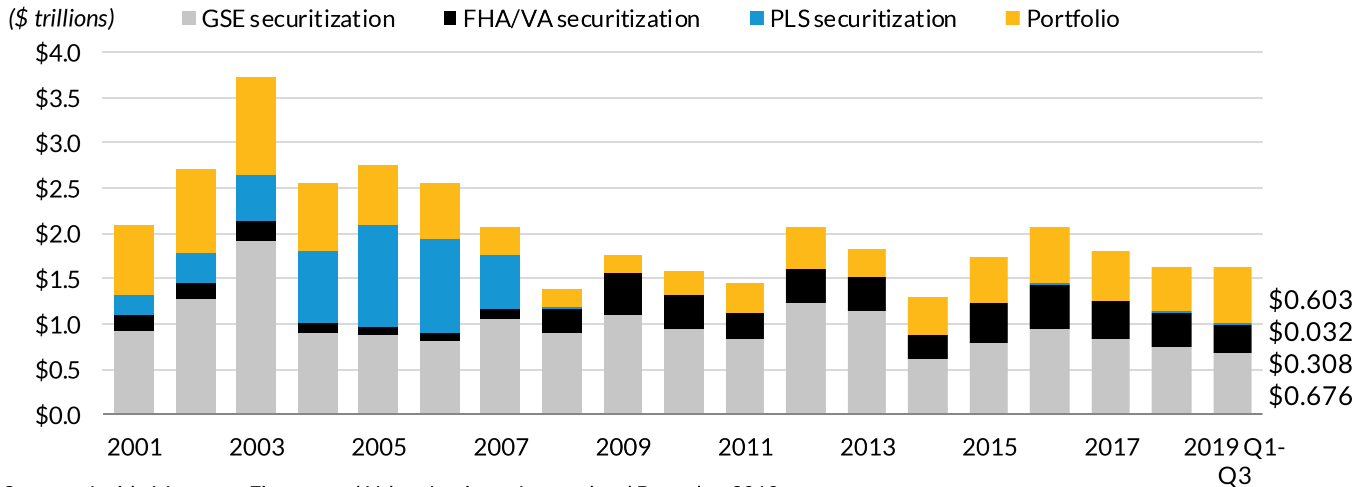
Sources: eMBS and Urban Institute.

OVERVIEW

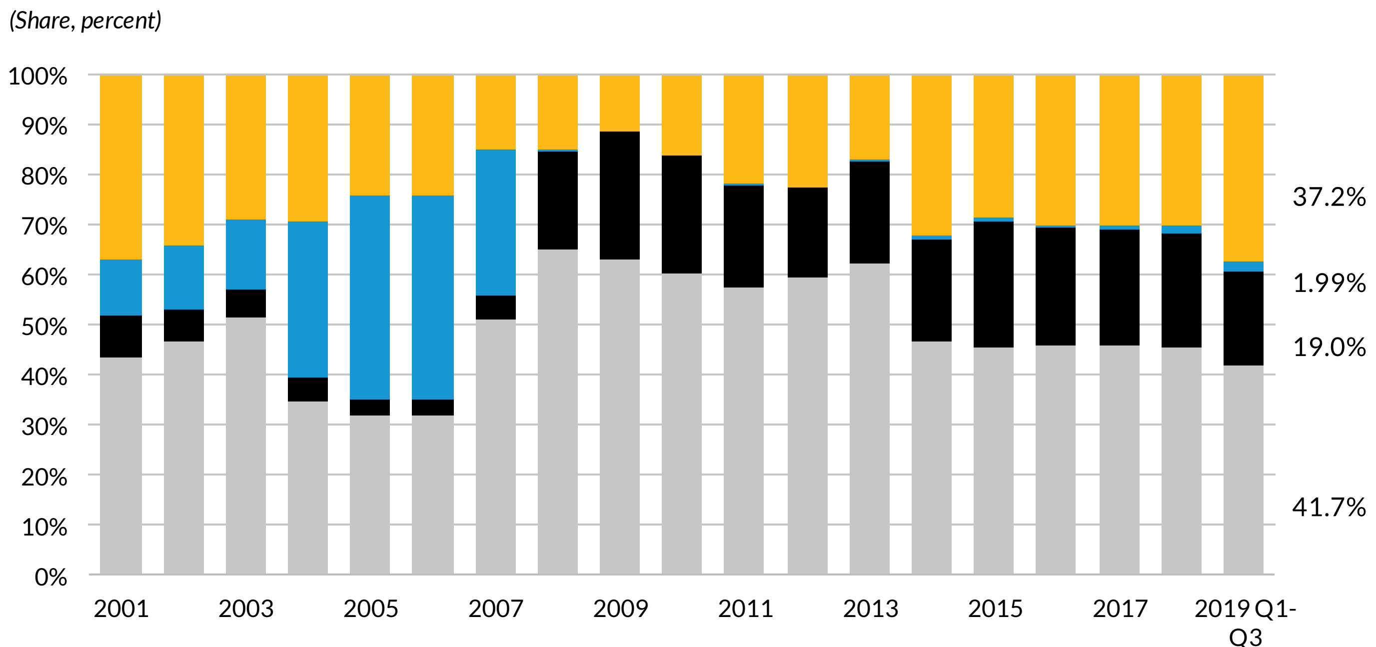
ORIGINATION VOLUME AND COMPOSITION

First Lien Origination Volume

At the end of Q3 2019, first lien originations totaled $1.62 trillion, up from $1.26 trillion in the same period of 2018 and slightly below the full year 2018 volume of $1.63 trillion. The share of portfolio originations was 37.2 percent through Q3 2019, up significantly from 30.9 percent in the same period of 2018. The GSE share was down at 41.7 percent, compared to 45.1 percent in the first three quarters of 2018. The FHA/VA share fell slightly, at 19.0 percent compared to 22.1 percent in the same period last year. Private-label securitization at 2.0 percent maintained the same share as one year ago, but remains a fraction of its share in the pre-bubble years.



Sources: Inside Mortgage Finance and Urban Institute. *Last updated December 2019.*



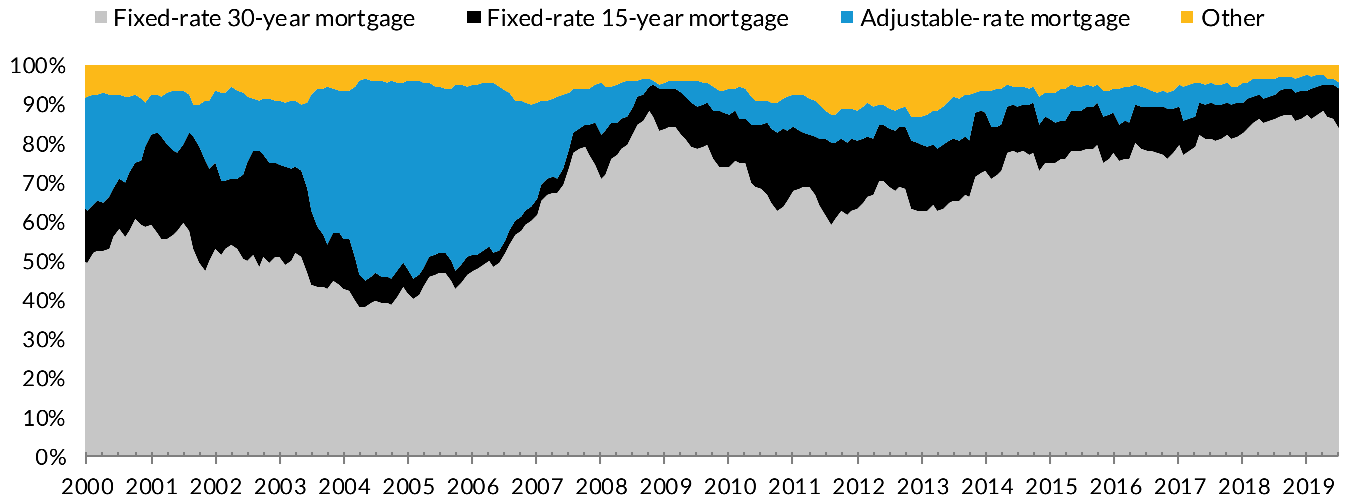
Sources: Inside Mortgage Finance and Urban Institute. *Last updated December 2019.*

OVERVIEW

PRODUCT COMPOSITION AND REFINANCE SHARE

Adjustable-rate mortgages (ARMs) accounted for as much as 52 percent of all new originations during the peak of the housing bubble (top chart). The ARM share fell to an historic low of 1 percent in 2009, and then slowly increased to a high of 12 percent in December 2013. The September 2019 share of 1.8 percent is only marginally above the historical low reached in 2009. The 15-year fixed-rate mortgage, predominantly a refinance product, accounted for 10.2 percent of new originations in September 2019. Since late 2018, while there has been some month-to-month variation, the refinance share (bottom chart) has generally grown for both the GSEs and Ginnie Mae as interest rates have dropped.

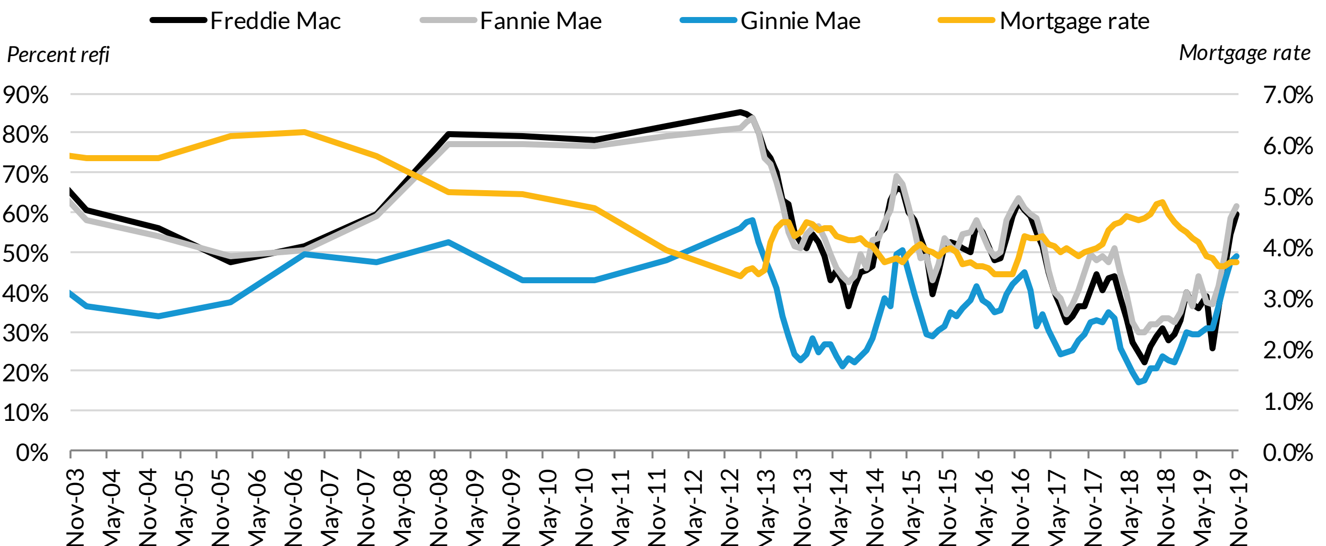
Product Composition



Sources: Black Knight, eMBS, HMDA, SIFMA and Urban Institute.
Note: Includes purchase and refinance originations.

September 2019

Percent Refi at Issuance



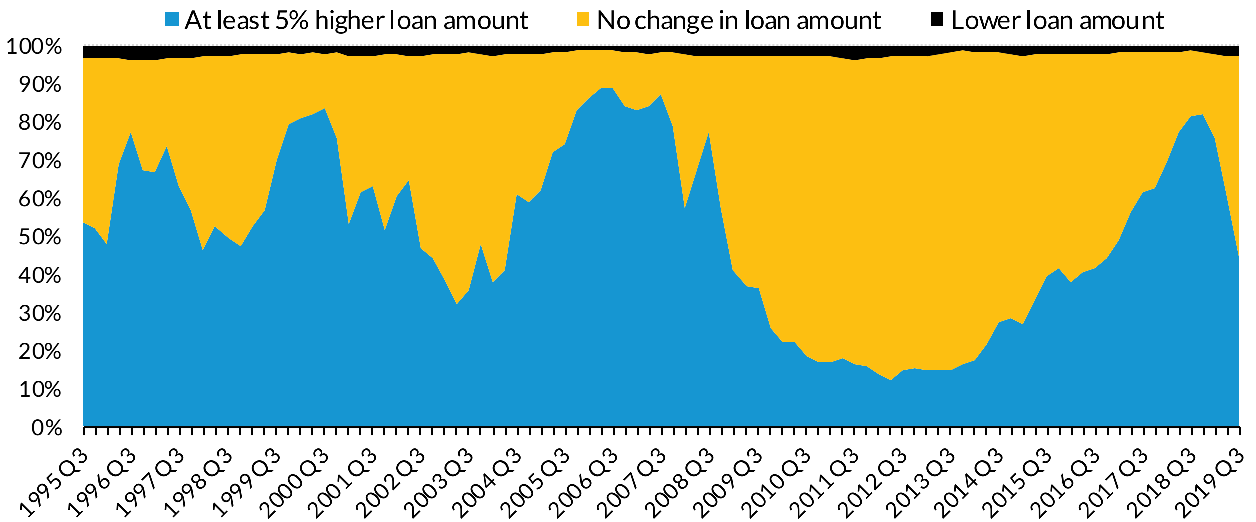
Sources: eMBS and Urban Institute.
Note: Based on at-issuance balance. Figure based on data from November 2019.

OVERVIEW

CASH-OUT REFINANCES

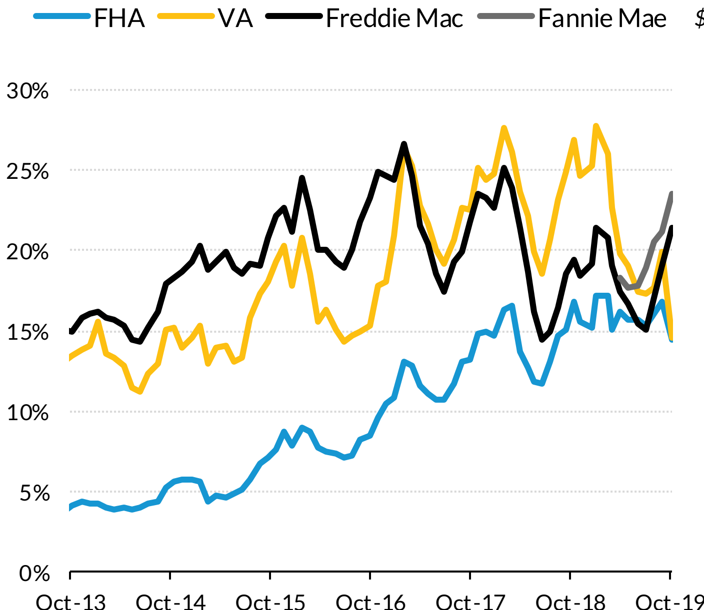
When mortgage rates are low, the share of cash-out refinances tends to be small, as refinancing allows borrowers to save money by taking advantage of lower rates. But when rates are high, the cash-out refinance share is higher since the rate reduction incentive is gone and the only reason to refinance is to take out equity. The cash-out share of all refinances fell from 61 percent in the second quarter of 2019 to 45 percent in the third quarter, reflecting increased rate-refi activity due to falling rates in 2019 Q3. While the cash-out refinance share for conventional mortgages may seem high at 45 percent, equity take-out volumes are substantially lower than during the bubble years.

Loan Amount after Refinancing



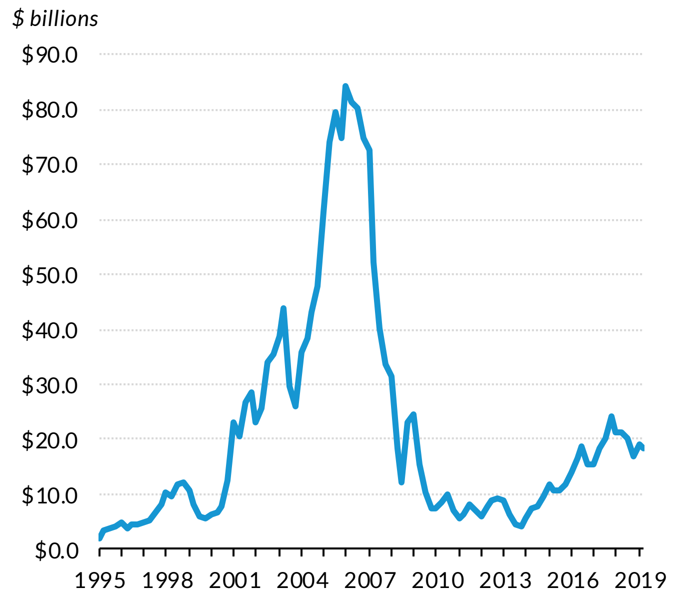
Sources: Freddie Mac and Urban Institute.
Note: Estimates include conventional mortgages only.

Cash-out Refi Share of All Originations



Sources: eMBS and Urban Institute.
Note: Data as of October 2019.

Equity Take-Out from Conventional Mortgage Refinance Activity



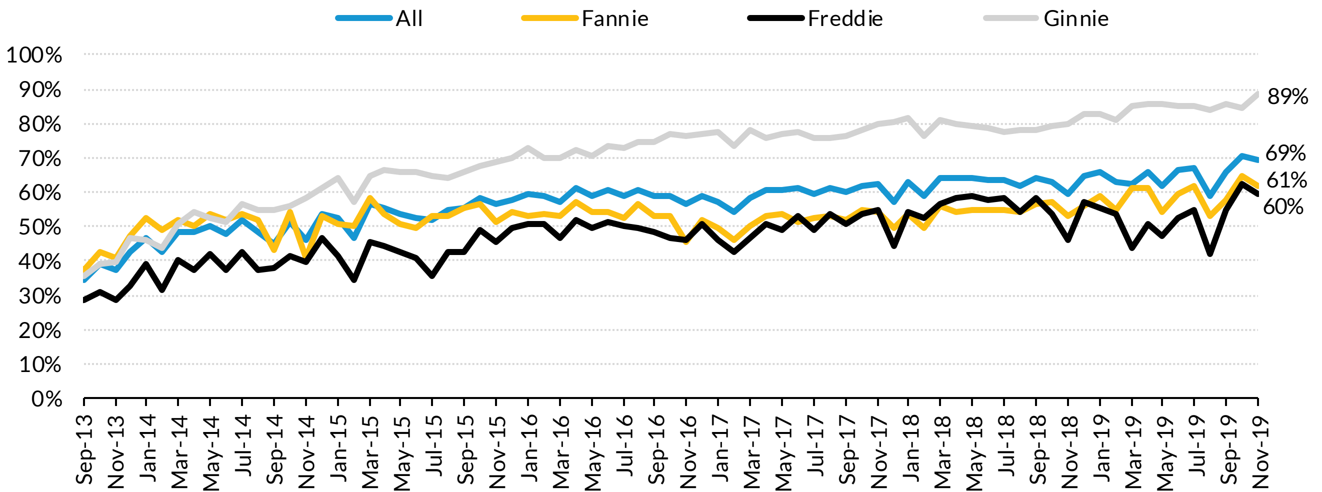
Sources: Freddie Mac and Urban Institute.
Note: Estimates include conventional mortgages only.

OVERVIEW

AGENCY NONBANK ORIGINATION SHARE

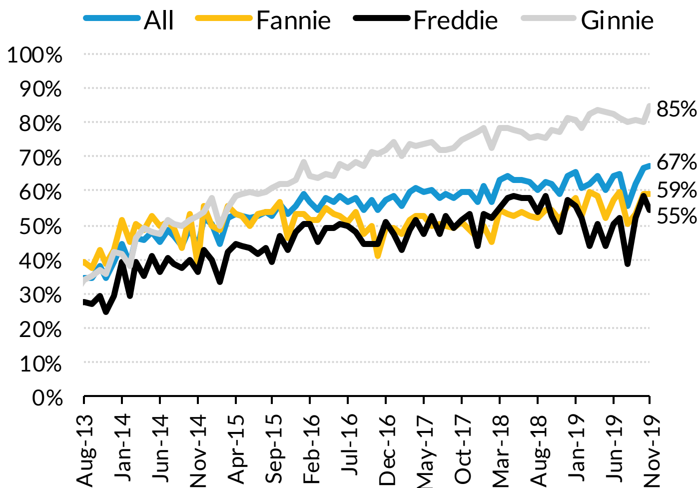
The nonbank origination share has been rising steadily for all three agencies since 2013. The Ginnie Mae nonbank share has been consistently higher than the GSEs, rising slightly to 89 percent in November, a new record. Freddie and Fannie's nonbank shares declined in November, to 60 and 61 percent respectively (note that these numbers can be volatile on a month-to-month basis.) Ginnie Mae, Fannie Mae and Freddie Mac all have higher nonbank origination shares for refi activity than for purchase activity.

Nonbank Origination Share: All Loans



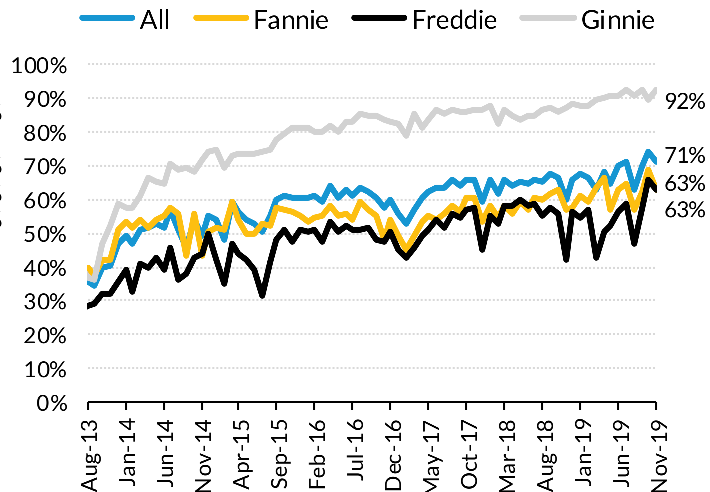
Sources: *eMBS and Urban Institute.*

Nonbank Origination Share: Purchase Loans



Sources: *eMBS and Urban Institute.*

Nonbank Origination Share: Refi Loans

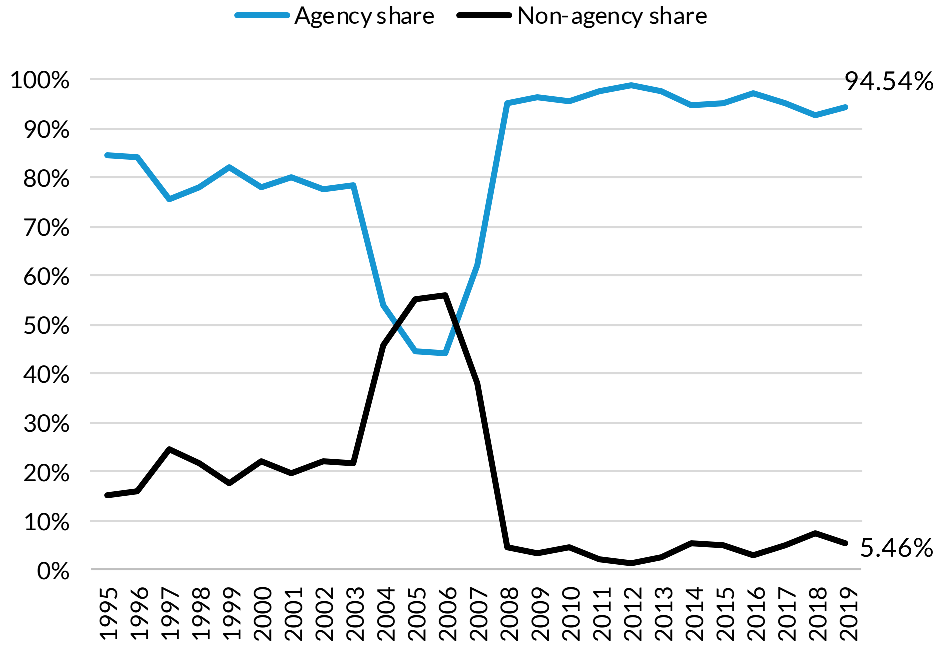


Sources: *eMBS and Urban Institute.*

SECURITIZATION VOLUME AND COMPOSITION

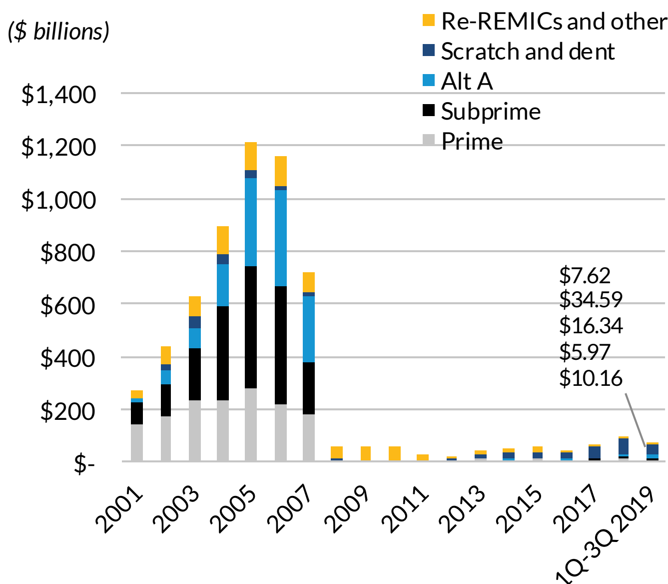
Agency/Non-Agency Share of Residential MBS Issuance

The non-agency share of mortgage securitizations has increased gradually over the post-crisis years, from 1.8 percent in 2016 to 7.4 percent in 2018. It fell to 5.46 percent for 2019 YTD (through November). Non-agency securitization volume totaled $74.69 billion in the first three quarters of 2019, slightly lower than the $77.83 billion over the same period in 2018. But there is a change in the mix. Alt-A and subprime securitizations have grown, while scratch and dent securitizations have fallen by over half their size since the same period last year. Non-agency securitizations continue to be tiny compared to pre-crisis levels.



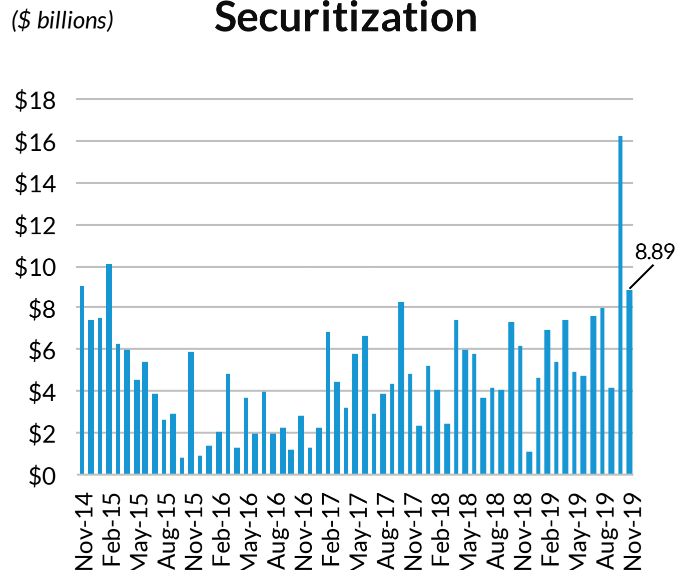
Sources: Inside Mortgage Finance and Urban Institute.
Note: Based on data from November 2019. Monthly non-agency volume is subject to revision.

Non-Agency MBS Issuance



Sources: Inside Mortgage Finance and Urban Institute.

Monthly Non-Agency Securitization



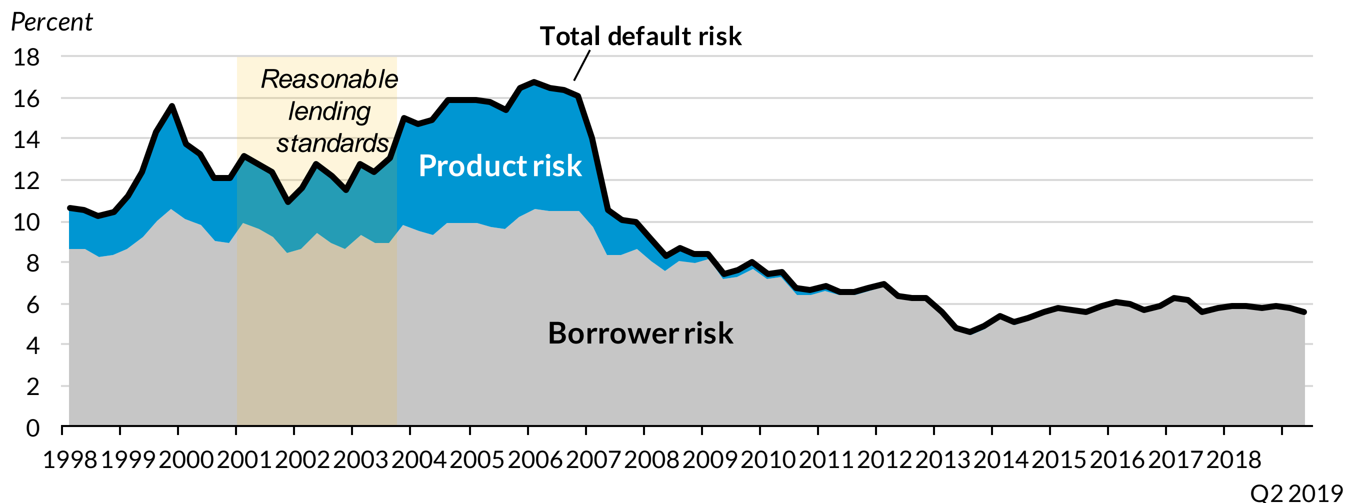
Sources: Inside Mortgage Finance and Urban Institute.

CREDIT BOX

HOUSING CREDIT AVAILABILITY INDEX

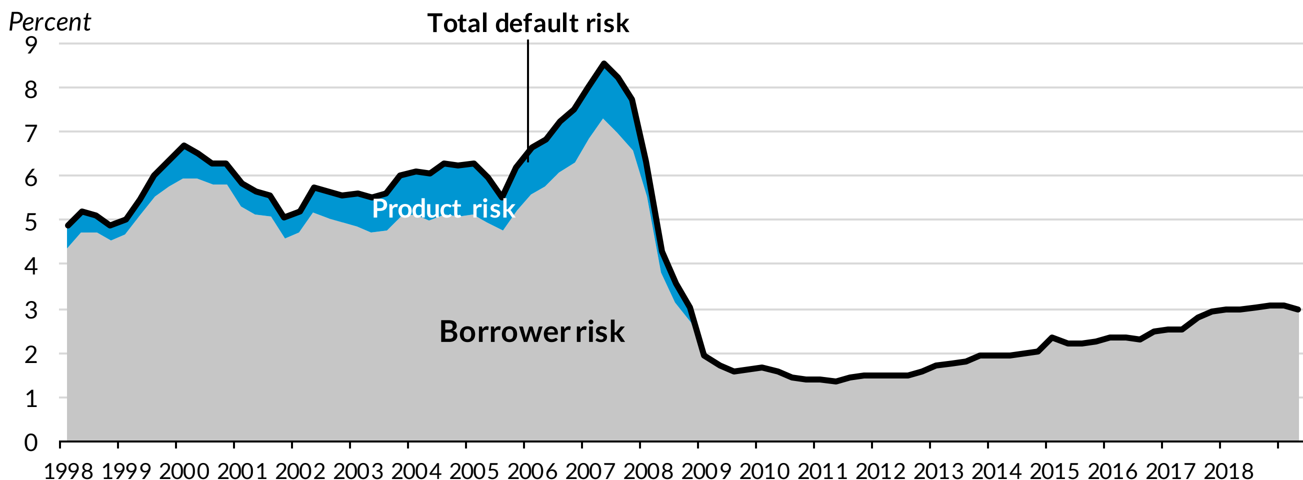
The Urban Institute's Housing Credit Availability Index (HCAI) assesses lenders' tolerance for both borrower risk and product risk, calculating the share of owner-occupied purchase loans that are likely to go 90+ days delinquent over the life of the loan. The latest HCAI shows that mortgage credit availability decreased slightly to 5.56 percent in the second quarter of 2019 (Q2 2019), down marginally from the previous quarter. The decline was driven by an increase in the portfolio and private label share of the mortgage market and a decrease in the government share, which is relatively higher risk. Credit availability fell slightly in the government and GSE channels, and increased in the portfolio and private-label security channels. More information about the HCAI is available here.

All Channels



GSE Channel

The GSE market has expanded the credit box proportionately more than the government channel in recent years, although the GSE box is still much narrower. In Q3 2018, the index reached 3 percent for the first time since 2008, and then continued to increase in the following two quarters, reaching 3.1 percent in Q1 2019. In Q2 2019, the index declined slightly, standing just under 3 percent.



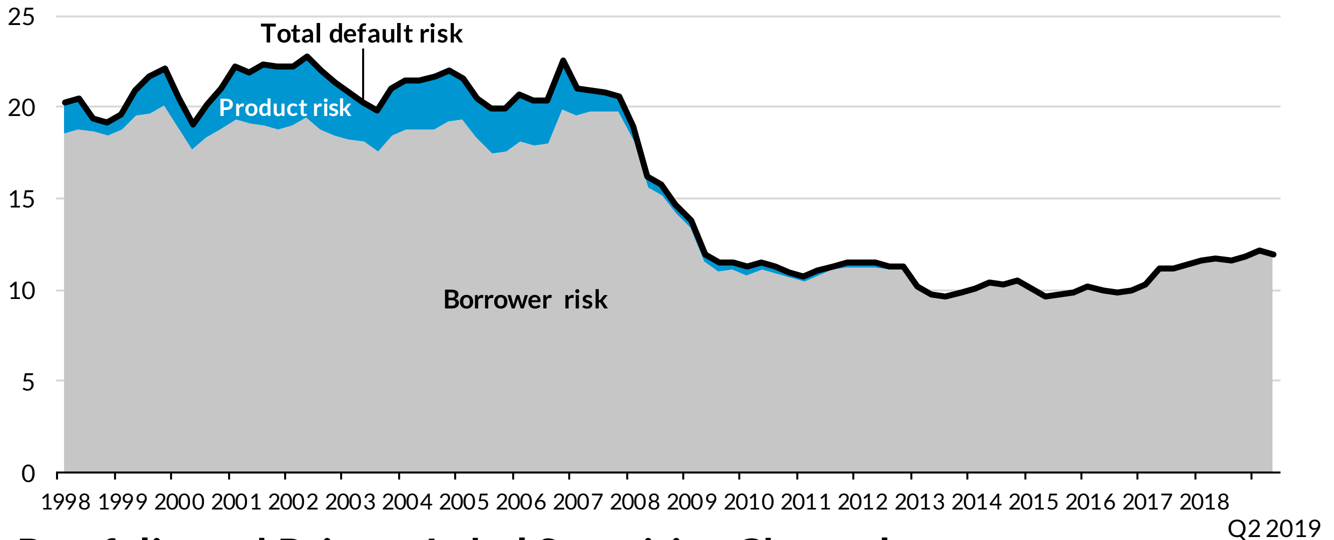
Sources: eMBS, CoreLogic, HMDA, IMF, and Urban Institute.
Note: Default is defined as 90 days or more delinquent at any point. *Last updated October 2019.*

CREDIT BOX

HOUSING CREDIT AVAILABILITY INDEX

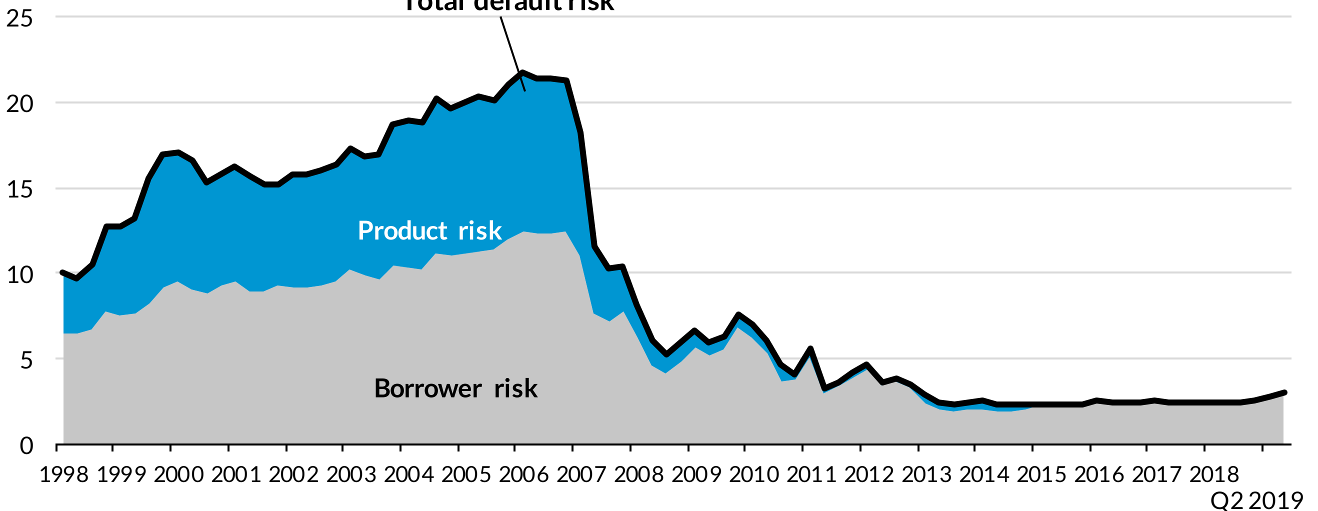
Government Channel

The total default risk the government channel is willing to take bottomed out at 9.6 percent in Q3 2013. It has gradually increased since then, reaching 12.0 percent in Q2 2019, down marginally from 12.1 percent in Q1 2019.



Portfolio and Private Label Securities Channels

The portfolio and private-label securities (PP) channel took on more product risk than the government and GSE channels during the bubble. After the crisis, PP channel's product and borrower risks dropped sharply. The numbers have stabilized since 2013, with product risk fluctuating below 0.6 percent and borrower risk in the 2.0-3.0 percent range. Borrower risk increased in the second quarter of 2019, after an increase in the previous quarter, reflecting the continued growth in the expanded credit market. Total risk in the PP channel was 3.1 percent in Q2 2019.



Sources: eMBS, CoreLogic, HMDA, IMF, and Urban Institute.
Note: Default is defined as 90 days or more delinquent at any point. *Last updated October 2019.*

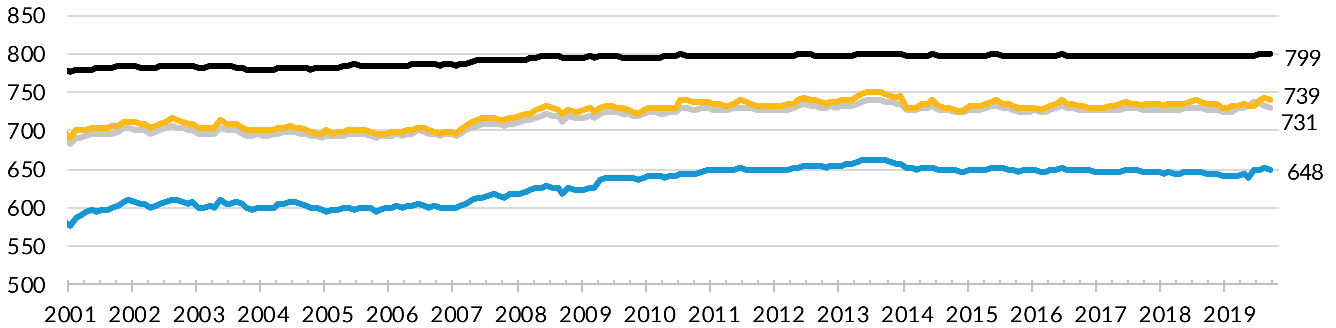
CREDIT AVAILABILITY FOR PURCHASE LOANS

Access to credit remains tight, especially for lower FICO borrowers. The median FICO for current purchase loans is about 39 points higher than the pre-crisis level of around 700. The 10th percentile, which represents the lower bound of creditworthiness to qualify for a mortgage, was 648 in September 2019, compared to low-600s pre-bubble. The median LTV at origination of 94 percent remains relatively high, reflecting the rise of FHA and VA lending. Although current median DTI of 40 percent exceeds the pre-bubble level of 36 percent, higher FICO scores serve as a strong compensating factor.

Mean   90th percentile   10th percentile   Median

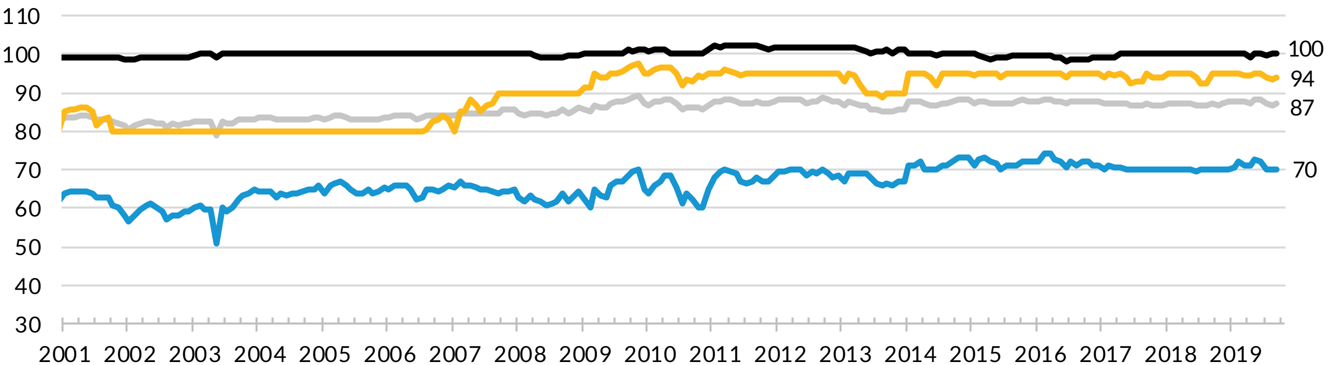
Borrower FICO Score at Origination

FICO Score



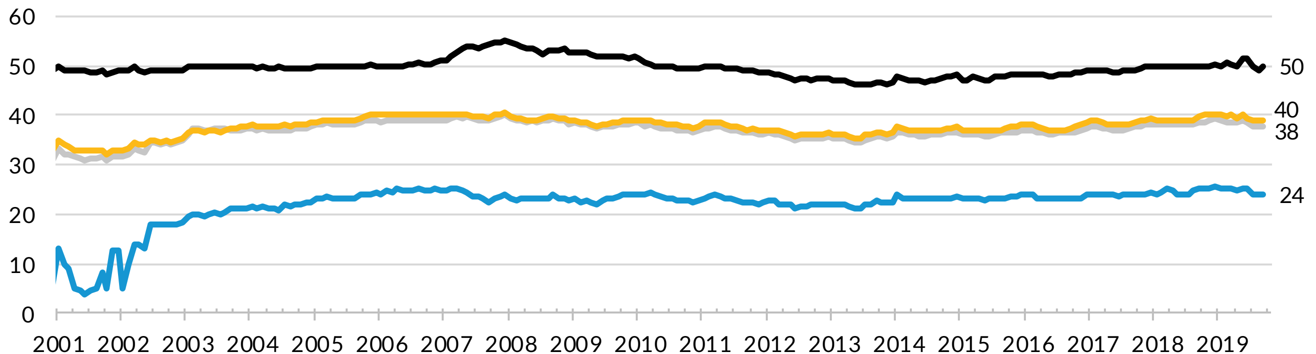
Combined LTV at Origination

LTV



DTI at Origination

DTI



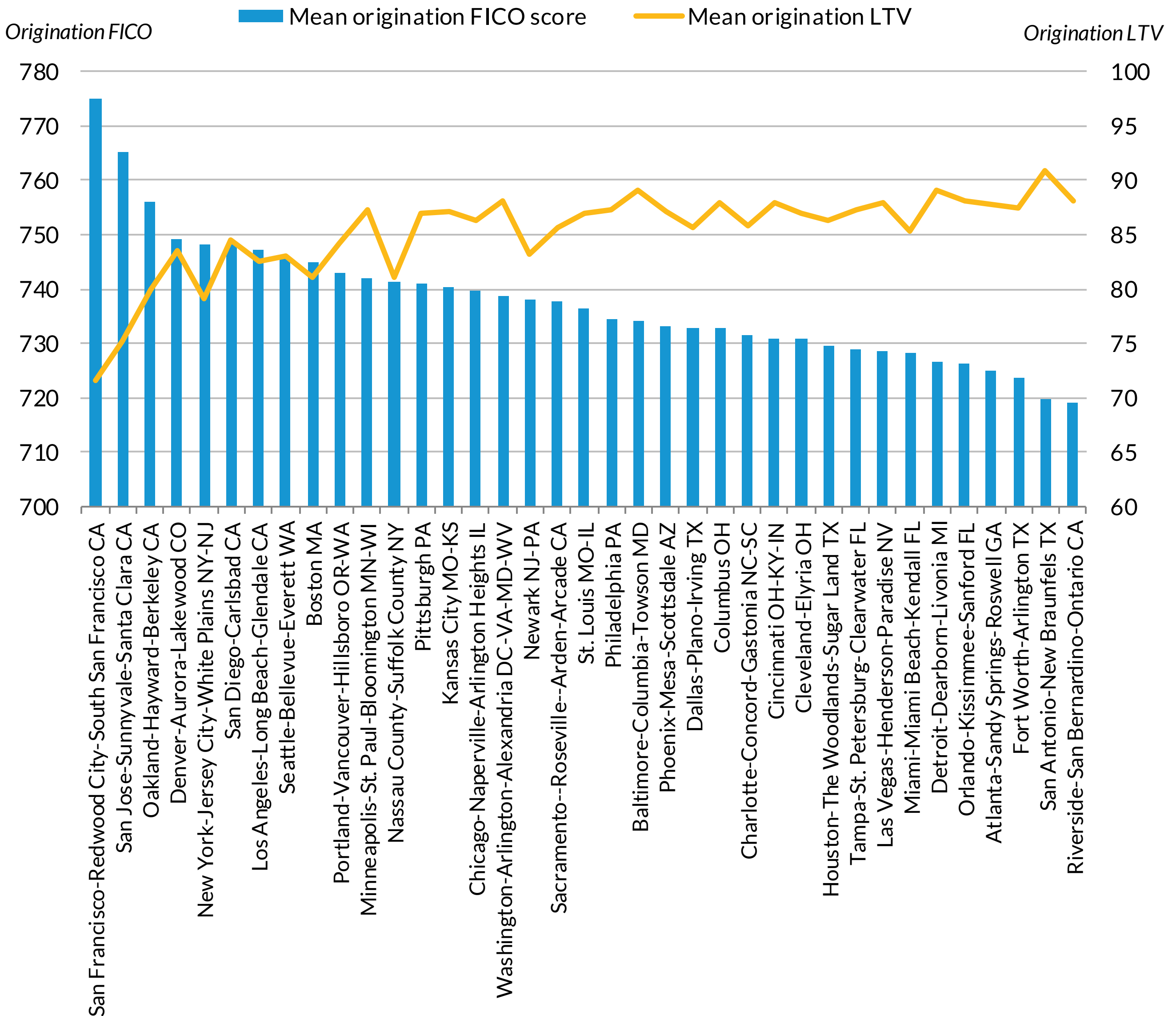
Sources: Black Knight, eMBS, HMDA, SIFMA, CoreLogic and Urban Institute.
Note: Includes owner-occupied purchase loans only. DTI data prior to April 2018 is from CoreLogic; after that date, it is from Black Knight. Data as of September 2019.

CREDIT BOX

CREDIT AVAILABILITY BY MSA 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 775. Across all MSAs, lower average FICO scores tend to be correlated with high average LTVs, as these MSAs rely heavily on FHA/VA financing.

Origination FICO and LTV

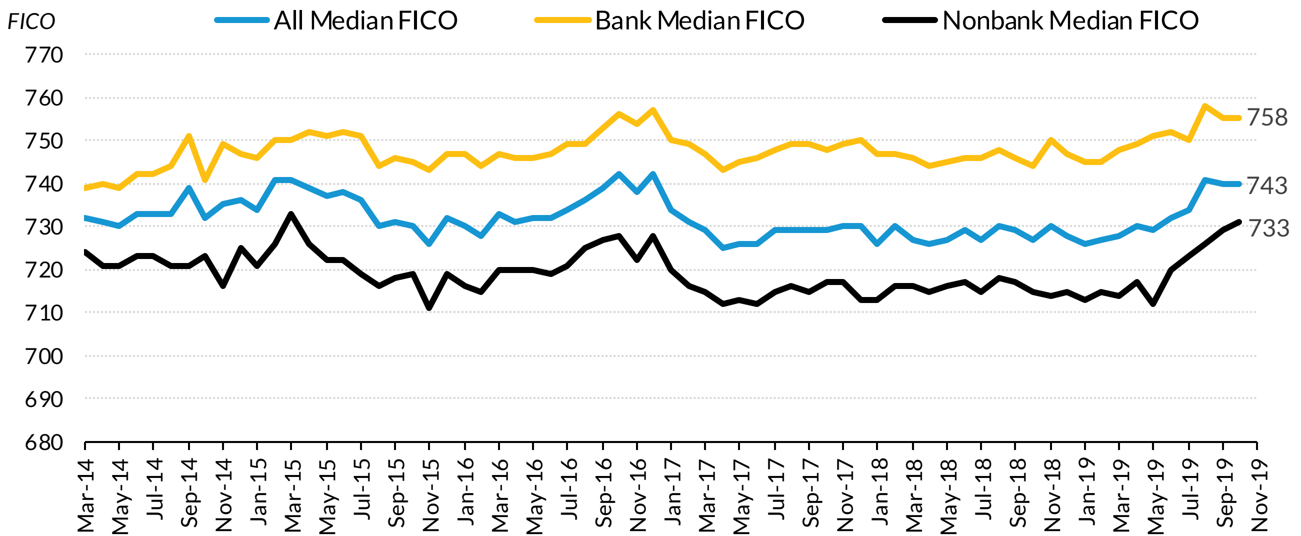


Sources: Black Knight, eMBS, HMDA, SIFMA and Urban Institute.
Note: Includes owner-occupied purchase loans only. Data as of October 2019.

AGENCY NONBANK CREDIT BOX

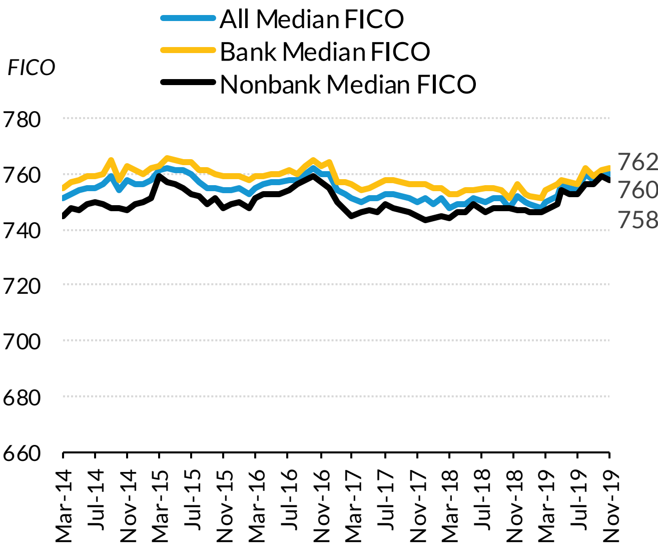
Nonbank originators have played a key role in expanding access to credit. Recently, in the GSE space, FICO scores for banks and nonbanks have nearly converged; the differential is much larger in the Ginnie Mae space. FICO scores for banks and nonbanks in both GSE and Ginnie Mae segments have increased over the course of 2019, due to increased refi activity; this activity is skewed toward higher FICO scores. Over the last five years since 2014, FICO scores for bank originations in the Ginnie Mae space rose while those for nonbanks fell, reflecting a sharp cut-back in FHA lending by many banks. As pointed out on page 11, banks comprise only about 11 percent of Ginnie Mae originations. In November '19, Ginnie Mae Bank FICOs decreased slightly to 702 from a record high of 705 in October.

Agency FICO: Bank vs. Nonbank



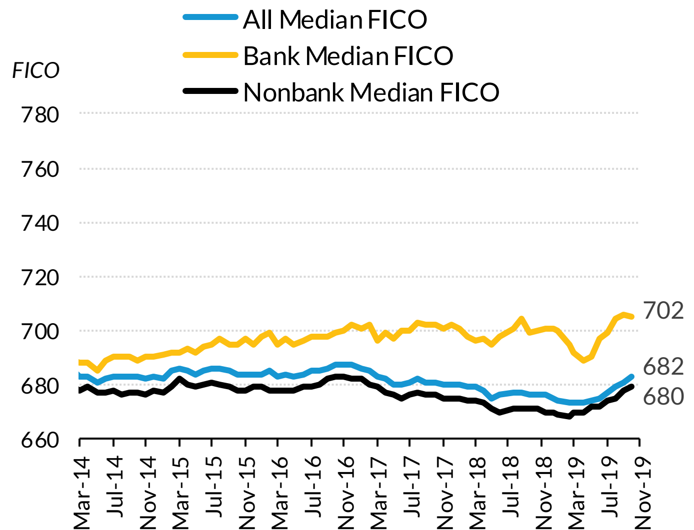
Sources: *eMBS and Urban Institute.*

GSE FICO: Bank vs. Nonbank



Sources: *eMBS and Urban Institute.*

Ginnie Mae FICO: Bank vs. Nonbank

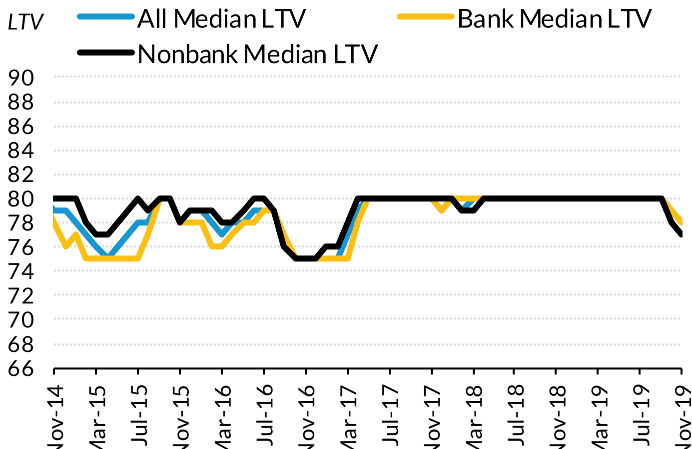


Sources: *eMBS and Urban Institute.*

AGENCY NONBANK CREDIT BOX

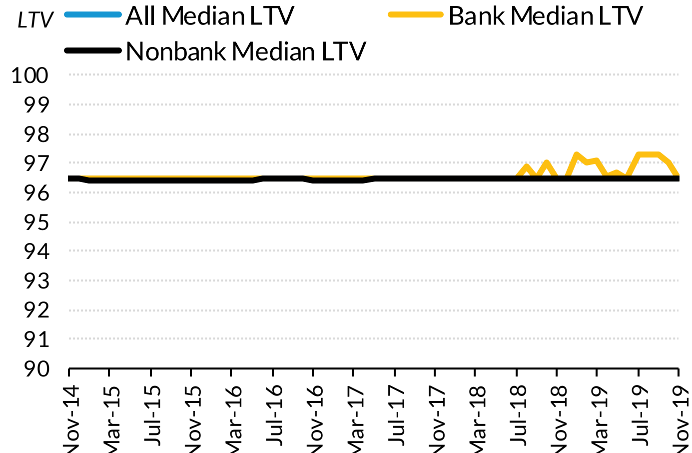
The median LTVs for nonbank and bank originations are comparable, while the median DTI for nonbank loans is higher than for bank loans. From early 2017 to early 2019, there was a sustained increase in DTIs, which has partially reversed beginning in the spring of 2019. This is true for both Ginnie Mae and the GSEs, for banks and nonbanks. As interest rates increased, DTIs rose, because borrower payments were driven up relative to incomes. With the fall in interest rates in 2019, DTIs have come down measurably.

GSE LTV: Bank vs. Nonbank



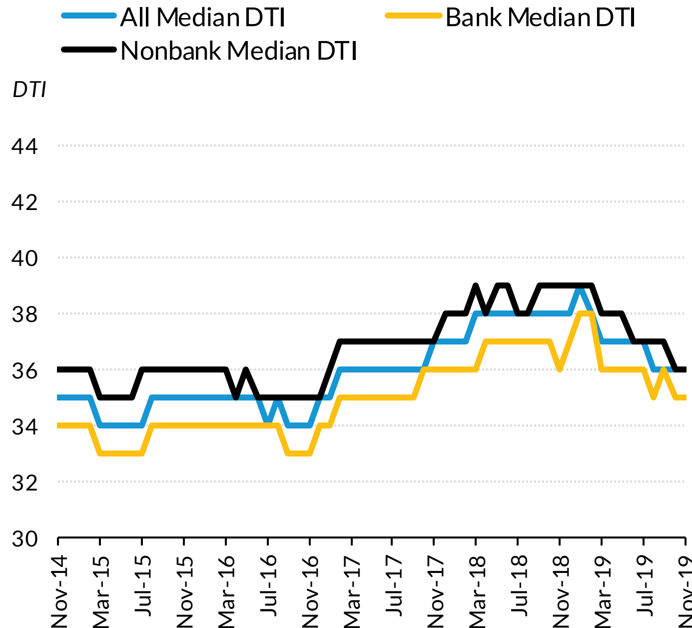
Sources: *eMBS and Urban Institute.*

Ginnie Mae LTV: Bank vs. Nonbank



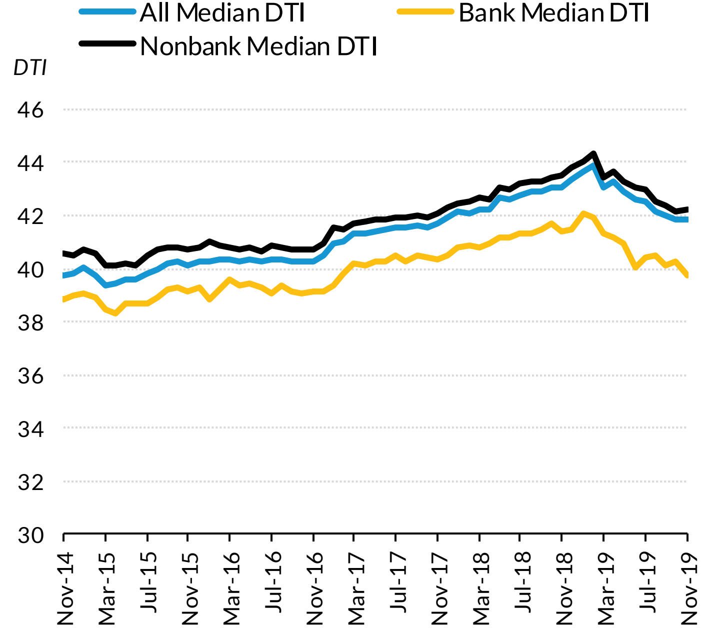
Sources: *eMBS and Urban Institute.*

GSE DTI: Bank vs. Nonbank



Sources: *eMBS and Urban Institute.*

Ginnie Mae DTI: Bank vs. Nonbank



Sources: *eMBS and Urban Institute.*

MORTGAGE ORIGINATION PROJECTIONS

With the drop in interest rates and concurrent rise in refinance activity in 2019, Fannie Mae, Freddie Mac and the MBA estimate 2019 volume to be between $2.0-$2.1 trillion, on par with 2016 and higher than the $1.68-$1.77 trillion in 2018. This increased origination estimate follows drops in origination volumes, due to declining refinancing activity, over the past few years: 2018 was down from $1.76-$1.83 trillion in 2017, and 2017 was down from $1.89-2.13 trillion in 2016.

Total Originations and Refinance Shares

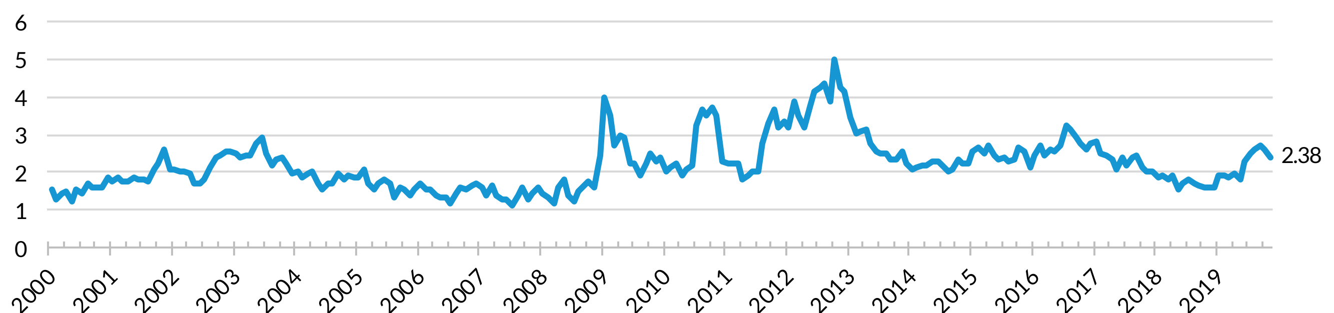
Period	Originations ($ billions)			Refi Share (percent)		
	Total, FNMA estimate	Total, FHLMC estimate	Total, MBA estimate	FNMA estimate	FHLMC estimate	MBA estimate
2018 Q1	410	377	342	38	40	37
2018 Q2	508	440	452	28	29	26
2018 Q3	465	435	457	26	25	24
2018 Q4	383	384	392	29	26	27
2019 Q1	371	355	325	32	37	30
2019 Q2	543	565	501	37	37	29
2019 Q3	654	700	605	42	43	38
2019 Q4	581	481	637	47	38	51
2015	1730	1750	1679	47	45	46
2016	2052	2125	1891	49	47	49
2017	1826	1810	1760	36	37	35
2018	1766	1700	1677	30	30	28
2019	2147	2101	2068	40	40	38
2020	2044	2132	1914	33	39	32

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. Regarding interest rates, the yearly averages for 2015, 2016, 2017 and 2018 were 3.9, 3.8, 4.0 and 4.6 percent. For 2019, the respective projections for Fannie, Freddie, and MBA are 3.9, 4.0, and 3.7 percent.

Originator Profitability and Unmeasured Costs

In November 2019, Originator Profitability and Unmeasured Costs (OPUC) stood at $2.38 per $100 loan, much lower than the 2013 peak, but up from where it started in 2019. 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 a mortgage in the secondary market (less par) and adds two sources of profitability; retained servicing (both base and excess servicing, net of g-fees), and points paid by the borrower. OPUC is generally high when interest rates are low, as originators are capacity constrained due to refinance demand and have no incentive to reduce rates. Conversely, when interest rates are higher and refi activity low, competition forces originators to lower rates, driving profitability down.

Dollars per $100 loan



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

STATE OF THE MARKET
HOUSING SUPPLY

Strong demand for housing in recent years, coupled with historically low new home construction has led to a low, 3.7 months, supply of for-sale homes in November 2019. This level is below the 4.3 months in October 2018. Pre-crisis it averaged 4.6 months. Fannie Mae, Freddie Mac, the MBA and the NAHB forecast 2019 housing starts to be 1.24 to 1.27 million units, very similar to 2018. Fannie Mae, Freddie Mac and the MBA predict total home sales of 6.1-6.2 million units in 2019, slightly outpacing 2018 levels. The NAHB predicts homes sales to fall by about 64,000 units in 2019.

Months of Supply

November 2019

Source: National Association of Realtors and Urban Institute.

Housing Starts and Homes Sales

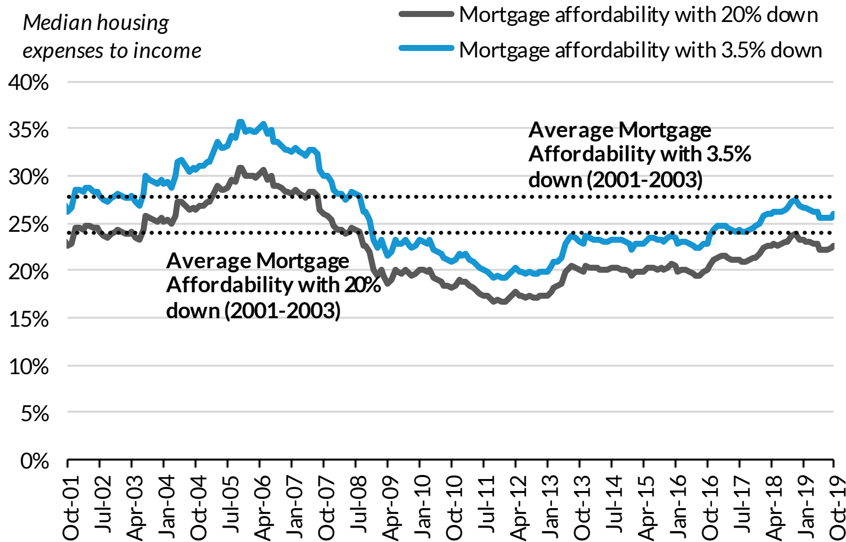
Year	Housing Starts, thousands				Home Sales. thousands			
	Total, FNMA estimate	Total, FHLMC estimate	Total, MBA estimate	Total, NAHB estimate	Total, FNMA estimate	Total, FHLMC estimate	Total, MBA estimate	Total, NAHB estimate*
2015	1112	1110	1108	1107	5751	5750	5740	5125
2016	1174	1170	1177	1177	6011	6010	6001	5385
2017	1203	1200	1208	1208	6123	6120	6158	5522
2018	1250	1250	1250	1249	5957	5960	5958	5359
2019	1270	1250	1263	1243	6029	6020	6053	5295
2020	1351	1280	1301	1286	6143	6100	6163	5330

Sources: Mortgage Bankers Association, Fannie Mae, Freddie Mac, National Association of Home Builders and Urban Institute.
Note: Shaded boxes indicate forecasted figures; column labels indicate source of estimate. *NAHB home sales estimate is for single-family structures only, it excludes condos and co-ops. Other figures include all single-family sales.

HOUSING AFFORDABILITY

National Mortgage Affordability Over Time

Home prices remain affordable by historic standards, despite price increases over the last 7 years, as interest rates remain relatively low in an historic context. As of October 2019, with a 20 percent down payment, the share of median income needed for the monthly mortgage payment stood at 22.7 percent; with 3.5 down, it is 26.0 percent. Since February, the median housing expenses to income ratio has been slightly lower than the 2001-2003 average. As shown in the bottom picture, mortgage affordability varies widely by MSA.



Mortgage Affordability by MSA

Mortgage affordability with 20% down
Mortgage affordability with 3.5% down

Mortgage affordability index

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%

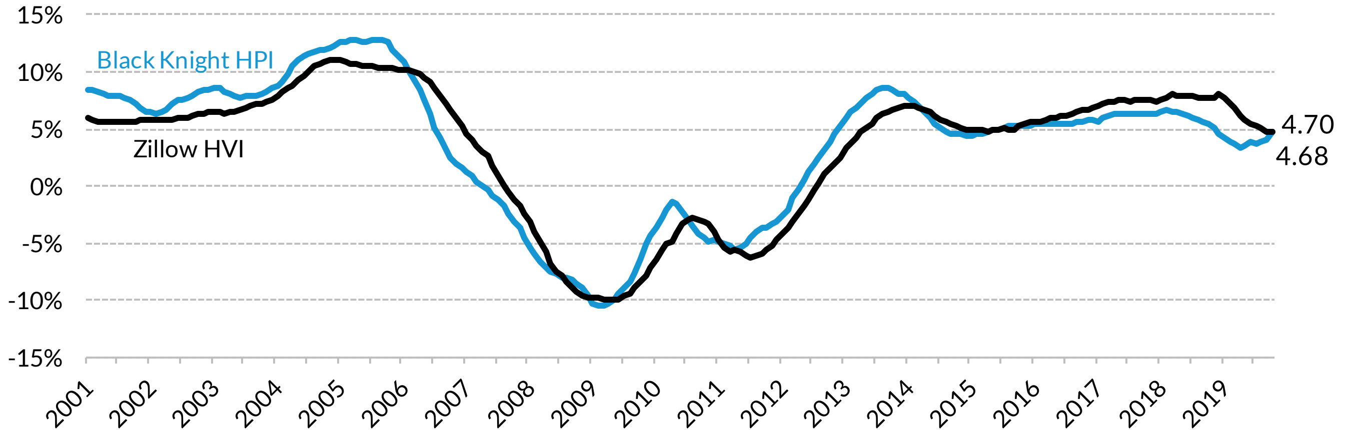
San Francisco-Redwood City-South San Francisco; CA
San Jose-Sunnyvale-Santa Clara; CA
San Diego-Carlsbad; CA
Oakland-Hayward-Berkeley; CA
Los Angeles-Long Beach-Glendale; CA
Miami-Miami Beach-Kendall; FL
Seattle-Bellevue-Everett; WA
Riverside-San Bernardino-Ontario; CA
Nassau County-Suffolk County; NY
Denver-Aurora-Lakewood; CO
Portland-Vancouver-Hillsboro; OR-WA
Sacramento--Roseville--Arden-Arcade; CA
Las Vegas-Henderson-Paradise; NV
Boston; MA
New York-Jersey City-White Plains; NY-NJ
Newark; NJ-PA
Orlando-Kissimmee-Sanford; FL
Phoenix-Mesa-Scottsdale; AZ
Washington-Arlington-Alexandria; DC-VA-MD-WV
Dallas-Plano-Irving; TX
Tampa-St. Petersburg-Clearwater; FL
Houston-The Woodlands-Sugar Land; TX
San Antonio-New Braunfels; TX
Chicago-Naperville-Arlington Heights; IL
Charlotte-Concord-Gastonia; NC-SC
Baltimore-Columbia-Towson; MD
Fort Worth-Arlington; TX
Atlanta-Sandy Springs-Roswell; GA
Minneapolis-St. Paul-Bloomington; MN-WI
Columbus; OH
Kansas City; MO-KS
St. Louis; MO-IL
Cincinnati; OH-KY-IN
Philadelphia; PA
Cleveland-Elyria; OH
Pittsburgh; PA
Detroit-Dearborn-Livonia; MI

Sources: National Association of Realtors, 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 *2018* for a 30-year fixed-rate mortgage and property tax and insurance at 1.75 percent of the housing value. Data for the bottom chart as of Q4 2018.

STATE OF THE MARKET
HOME PRICE INDICES

National Year-Over-Year HPI Growth

Year-over-year home price appreciation slowed slightly in October 2019, as measured by Zillow's hedonic index, but increased slightly according to Black Knight's repeat sales index. Although housing affordability remains constrained, especially at the lower end of the market, recent declines in rates serve as a partial offset. We would expect the lower end of the market to continue to appreciate more than the upper end, as low-end inventory is very tight.



Sources: Black Knight, Zillow, and Urban Institute. **Note:** Data as of October 2019.

Changes in Black Knight HPI for Top MSAs

After rising 55.5 percent from the trough, national house prices are now 15.9 percent higher than 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—Chicago, IL and Riverside, CA—are 9.3 and 8.7 percent, respectively, below peak values.

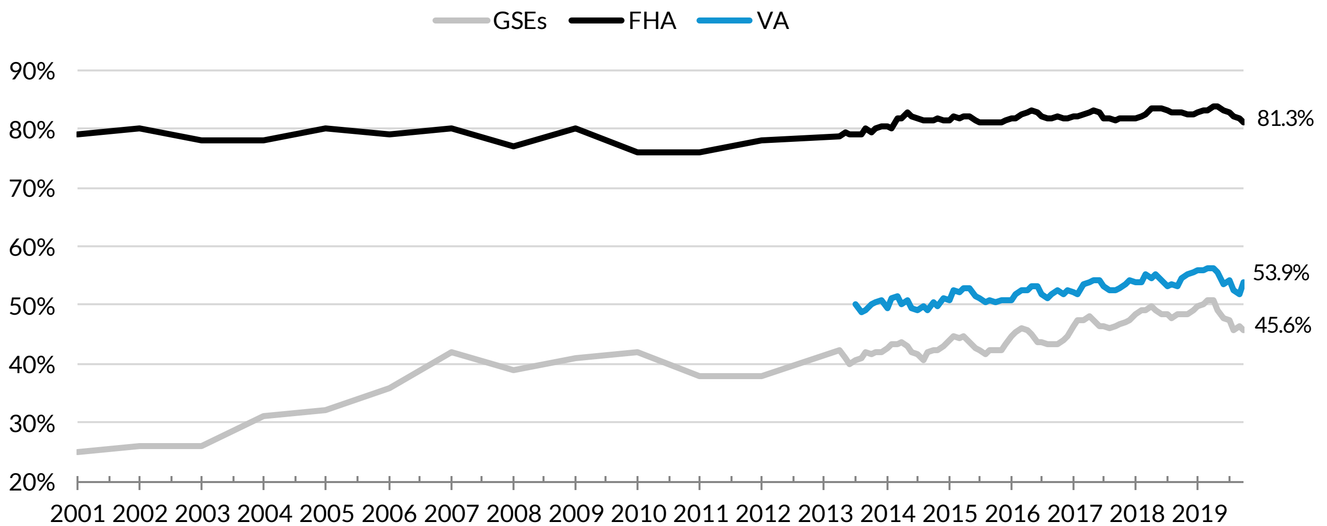
MSA	HPI changes (%)			% above peak
	2000 to peak	Peak to trough	Trough to current	
United States	75.5	-25.5	55.5	15.9
New York-Jersey City-White Plains, NY-NJ	127.9	-22.4	45.5	12.9
Los Angeles-Long Beach-Glendale, CA	179.9	-38.1	85.8	15.0
Chicago-Naperville-Arlington Heights, IL	67.0	-38.4	47.2	-9.3
Atlanta-Sandy Springs-Roswell, GA	32.5	-35.6	81.4	16.9
Washington-Arlington-Alexandria, DC-VA-MD-WV	149.4	-28.4	36.9	-1.9
Houston-The Woodlands-Sugar Land, TX	29.4	-6.6	48.9	39.1
Phoenix-Mesa-Scottsdale, AZ	113.2	-51.1	95.2	-4.5
Riverside-San Bernardino-Ontario, CA	175.3	-51.7	88.8	-8.7
Dallas-Plano-Irving, TX	26.4	-7.2	67.7	55.7
Minneapolis-St. Paul-Bloomington, MN-WI	69.3	-30.3	61.5	12.5
Seattle-Bellevue-Everett, WA	90.5	-33.1	102.2	35.3
Denver-Aurora-Lakewood, CO	34.0	-12.1	93.4	70.0
Baltimore-Columbia-Towson, MD	123.4	-24.3	23.5	-6.4
San Diego-Carlsbad, CA	148.4	-37.5	77.2	10.7
Anaheim-Santa Ana-Irvine, CA	163.3	-35.3	63.9	6.1

Sources: Black Knight HPI and Urban Institute. Data as of October 2019.
Note: This table includes the largest 15 Metropolitan areas by mortgage count.

FIRST-TIME HOMEBUYERS

First-Time Homebuyer Share

In October 2019, the FTHB share for FHA, which has always been more focused on first time homebuyers, fell very slightly to 81.3 percent. The FTHB share of VA lending increased slightly in October, to 53.9 percent. The GSE FTHB share in October was 45.6 percent. The bottom table shows that based on mortgages originated in October 2019, the average FTHB was more likely than an average repeat buyer to take out a smaller loan, have a lower credit score, and higher LTV and higher DTI, thus paying 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.

October 2019

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 ($)	249,104	272,890	223,905	238,626	238,592	267,486
Credit Score	744	757	671	675	714	744
LTV (%)	88	79	95	94	91	82
DTI (%)	35	36	43	44	38	37
Loan Rate (%)	3.88	3.79	3.96	3.87	3.92	3.8

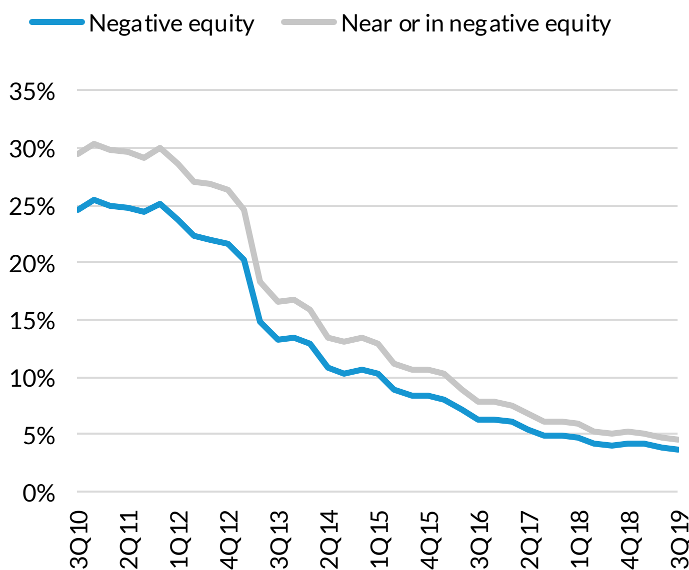
Sources: eMBS and Urban Institute.
Note: Based on owner-occupied purchase mortgages originated in October 2019.

STATE OF THE MARKET

DELINQUENCIES AND LOSS MITIGATION ACTIVITY

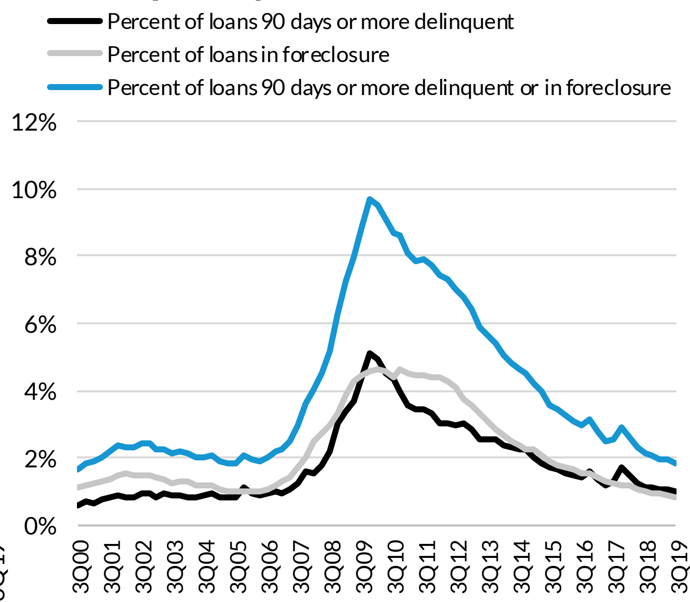
Loans in and near negative equity continued to decline in 3Q 2019; 3.7 percent now have negative equity, an additional 0.8 percent have less then 5 percent equity. Loans that are 90 days delinquent or in foreclosure have also been in a long decline, falling to 1.81 percent in the third quarter of 2019. New loan modifications and liquidations (bottom) have continued to decline. Since Q3, 2007, total loan modifications (HAMP and proprietary) are roughly equal to total liquidations. Hope Now reports show 8,616,341 borrowers received a modification from Q3 2007 to Q2 2019, compared with 8,842,251 liquidations in the same period.

Negative Equity Share



Sources: CoreLogic and Urban Institute.
Note: Loans with negative equity refer to loans above 100 percent LTV. Loans near negative equity refer to loans above 95 percent LTV. *Last updated December 2019.*

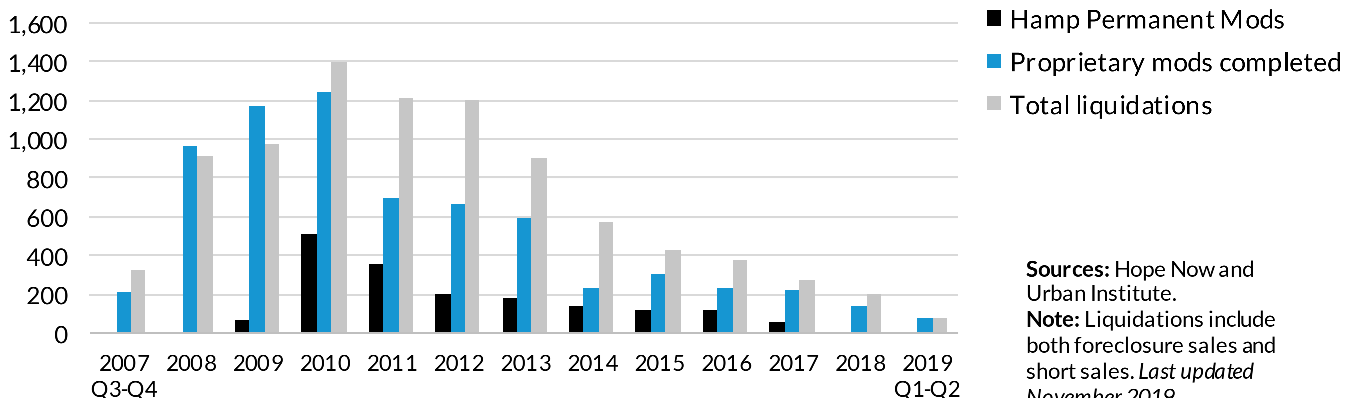
Loans in Serious Delinquency/Foreclosure



Sources: Mortgage Bankers Association and Urban Institute. *Last updated November 2019.*

Loan Modifications and Liquidations

Number of loans (thousands)



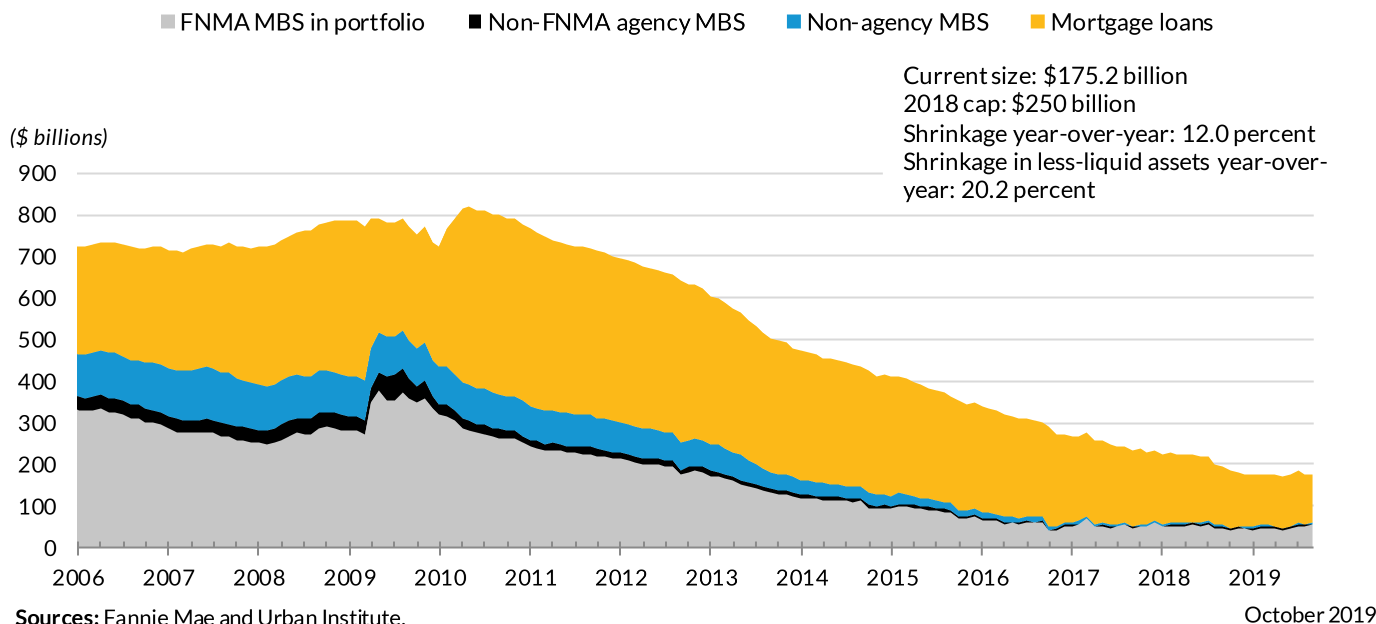
Sources: Hope Now and Urban Institute.
Note: Liquidations include both foreclosure sales and short sales. *Last updated November 2019.*

GSES UNDER CONSERVATORSHIP

GSE PORTFOLIO WIND-DOWN

Both GSEs continue to contract their retained portfolios. Since October 2018, Fannie Mae has contracted by 12.0 percent and Freddie Mac by 5.0 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 well 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.

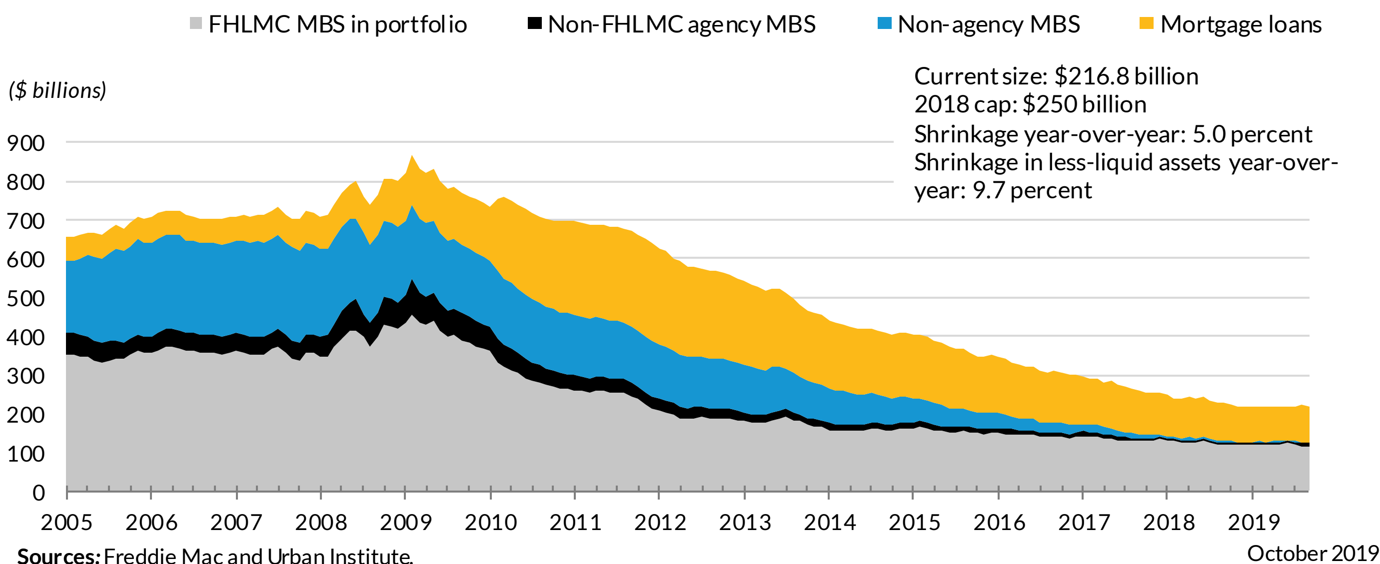
Fannie Mae Mortgage-Related Investment Portfolio Composition



Sources: Fannie Mae and Urban Institute.

October 2019

Freddie Mac Mortgage-Related Investment Portfolio Composition



Sources: Freddie Mac and Urban Institute.

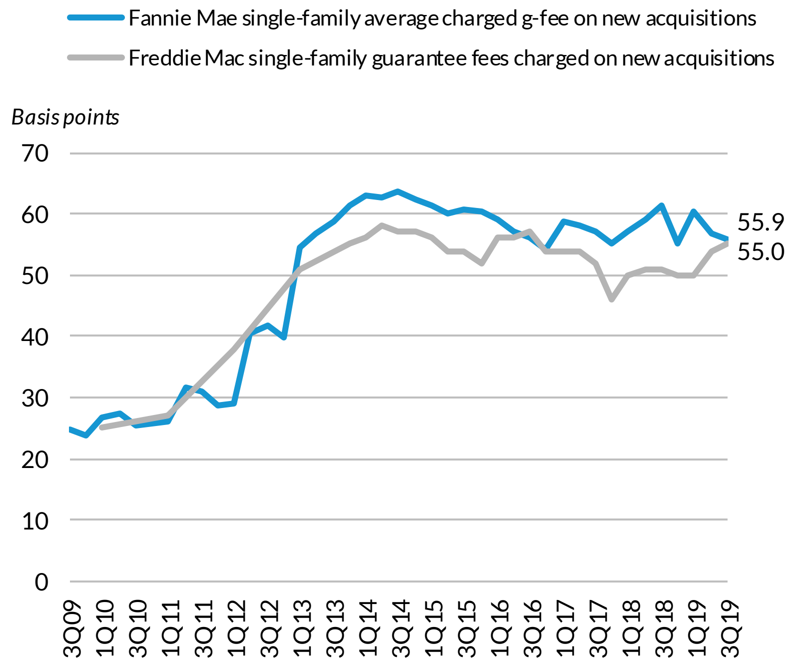
October 2019

GSES UNDER CONSERVATORSHIP

EFFECTIVE GUARANTEE FEES

Guarantee Fees Charged on New Acquisitions

Fannie Mae's average g-fees charged on new acquisitions fell from 56.7 bps in Q2 2019 to 55.9 bps in Q3, while Freddie's rose from 54.0 to 55.0 bps. This quarter is the first time in the last three years the g-fees have been less than 1 bp apart. Today's g-fees are markedly higher than g-fee levels in 2011 and 2012, and have contributed to the GSEs' earnings; the bottom table shows Fannie Mae LLPAs, which are expressed as upfront charges.



Sources: Fannie Mae, Freddie Mae and Urban Institute.
Last updated November 2019.

Fannie Mae Upfront Loan-Level Price Adjustments (LLPAs)

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

Sources: Fannie Mae and Urban Institute.
Last updated March of 2019.

GSE RISK-SHARING TRANSACTIONS

Fannie Mae and Freddie Mac have been laying off back-end credit risk through CAS and STACR deals and 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 2020 scorecard requires the GSEs to transfer a significant amount of credit risk to private markets. This is a departure from the 2019 scorecard, which required risk transfer specifically on 90% of new acquisitions. Fannie Mae's CAS issuances since inception total $1.46 trillion; Freddie's STACR totals $1.53 trillion.

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
2016	CAS 2016 deals	$236,459	$7,392	3.1
2017	CAS 2017 deals	$264,697	$8,707	3.3
February 2018	CAS 2018 – C01	$44,900	$1,494	3.3
March 2018	CAS 2018 - C02	$26,500	$1,007	3.8
May 2018	CAS 2018 - C03	$31,100	$1,050	3.4
June 2018	CAS 2018 - C04	$24,700	$940	3.8
July 2018	CAS 2018 - C05	$28,700	$983	3.4
October 2018	CAS 2018 - C06	$25,700	$918	3.6
October 2018	CAS 2018 - R07	$24,300	$922	3.8
January 2019	CAS 2019 - R01	$28,000	$960	3.4
February 2019	CAS 2019 - R02	$27,000	$1,000	3.7
April 2019	CAS 2019 - R03	$21,000	$857	4.1
June 2019	CAS 2019 - R04	$25,000	$1,000	4.0
July 2019	CAS 2019 - R05	$24,000	$993	4.1
October 2019	CAS 2019 - R06	$33,000	$1,300	3.9
October 2019	CAS 2019 - R07	$26,600	$998	3.8
November 2019	CAS 2019 - HRP1	$106,800	$963	0.9
Total		**$1,460,572**	**$43,471**	**3.0**

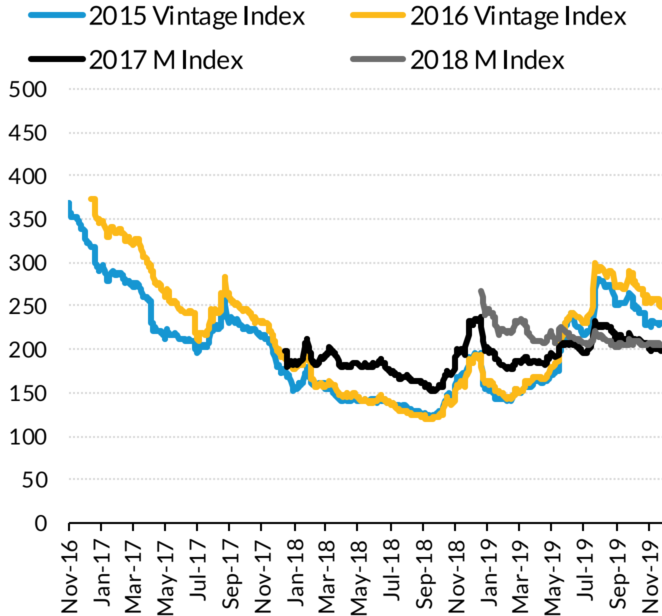
Freddie Mac – Structured Agency Credit Risk (STACR)

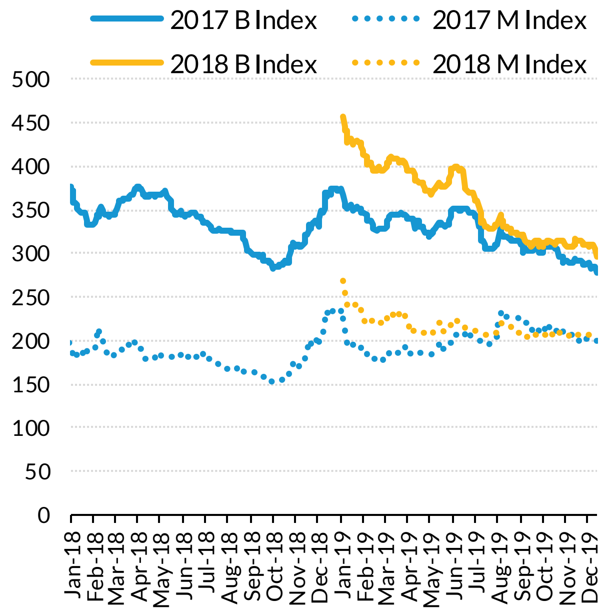
Date	Transaction	Reference Pool Size ($ m)	Amount Issued ($m)	% of Reference Pool Covered
2013	STACR 2013 deals	$57,912	$1,130	2.0
2014	STACR 2014 deals	$147,120	$4,916	3.3
2015	STACR 2015 deals	$209,521	$6,658	3.2
2016	STACR 2016 deals	$199,130	$5,541	2.8
2017	STACR 2017 deals	$248, 821	$5,663	2.3
January 2018	STACR Series 2018 – DNA1	$34,733	$900	2.6
March 2018	STACR Series 2018 – HQA1	$40,102	$985	2.5
June 2018	STACR Series 2018 – DNA2	$49,346	$1,050	2.1
September 2018	STACR Series 2018 – DNA3	$30,000	$820	2.7
October 2018	STACR Series 2018 – HQA2	$36,200	$1,000	2.8
November 2018	STACR Series 2018 – HRP2	$26,200	$1,300	5.0
January 2019	STACR Series 2019 – DNA1	$24,600	$714	2.9
February 2019	STACR Series 2019 – HQA1	$20,760	$640	3.1
March 2019	STACR Series 2019 – DNA2	$20,500	$608	3.0
May 2019	STACR Series 2019 – HQA2	$19,500	$615	3.2
May 2019	STACR Series 2019 – FTR1	$44,590	$140	0.3
June 2019	STACR Series 2019 – HRP1	$5,782	$281	4.9
July 2019	STACR Series 2019 – DNA3	$25,533	$756	3.0
August 2019	STACR Series 2019 – FTR2	$11,511	$284	2.5
September 2019	STACR Series 2019 – HQA3	$19,609	$626	3.2
October 2019	STACR Series 2019 – DNA4	$20,550	$589	2.9
November 2019	STACR Series 2019 – HQA4	$13,399	$432	3.2
December 2019	STACR Series 2019 – FTR3	$22,508	$151	0.7
December 2019	STACR Series 2019 – FTR4	$22,263	$111	0.5
Total		**$1,528,921**	**$35,910**	**2.3**

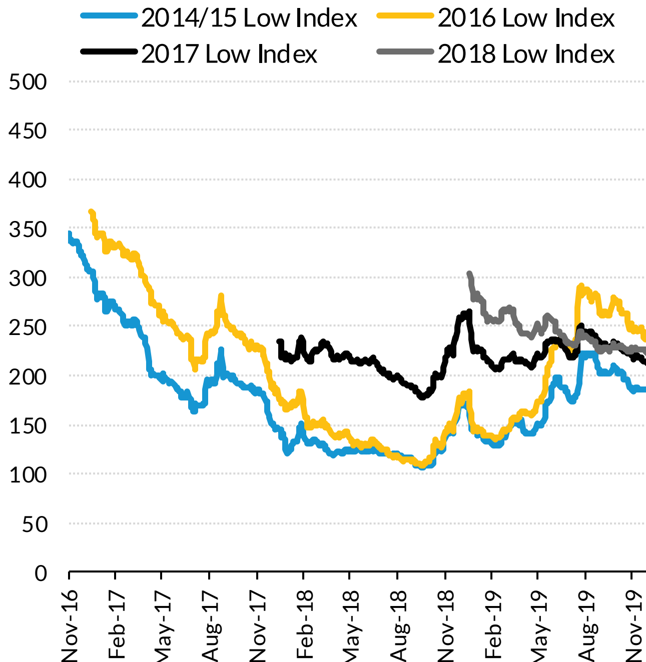
Sources: Fannie Mae, Freddie Mac and Urban Institute. **Note**: Classes A-H, M-1H, M-2H, and B-H are reference tranches only. These classes are not issued or sold. The risk is retained by Fannie Mae and Freddie Mac. "CE" = credit enhancement.

GSE RISK-SHARING INDICES

The figures below show the spreads on the 2015, 2016, 2017 and 2018 indices, as priced by dealers. Note that the older indices (2015 and 2016) skyrocketed this past summer, before stabilizing, while the newer indices have been quite stable. This reflects the fact that the older indices have narrowed since issuance, and hence are at considerable price premiums. The drop in interest rates has generated faster prepayment speeds; spreads have widened to compensate investors for a loss in the value of their premium bonds. Note that the 2015 and 2016 indices consist of the bottom mezzanine tranche in each deal, weighted by the original issuance amount; the equity tranches were not sold in these years. The 2017 and 2018 indices contain both the bottom mezzanine tranche as well as the equity tranche (the B tranche), in all deals when the latter was sold.







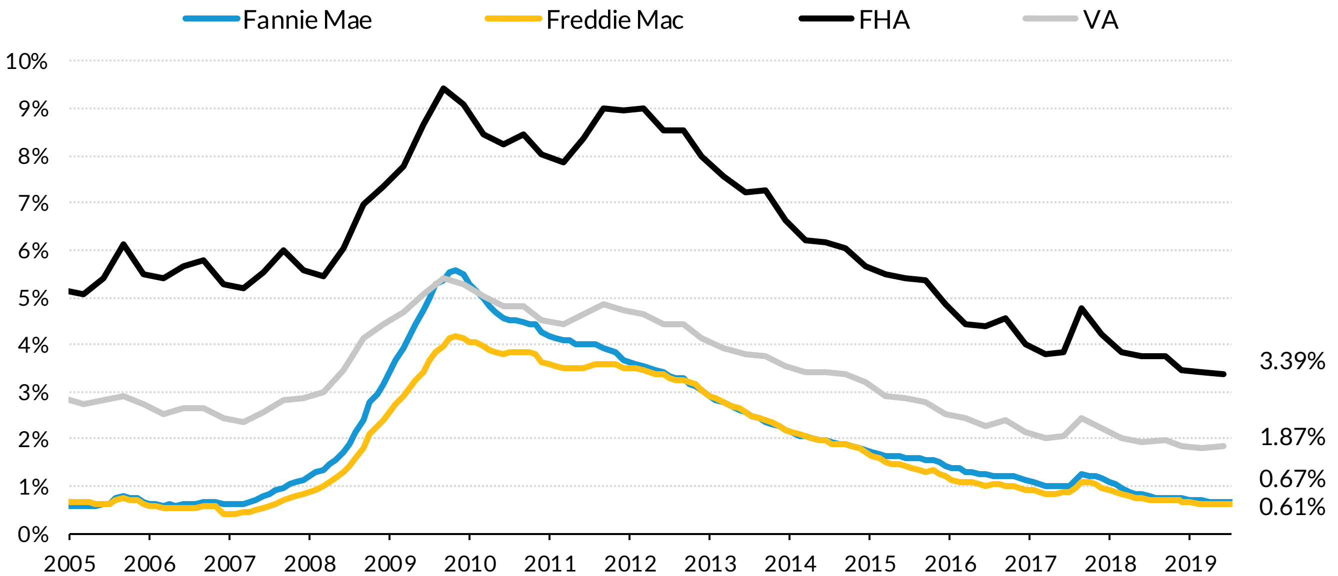
Sources: Vista Data Services and Urban Institute.
Note: Data as of December 13, 2019.

GSES UNDER CONSERVATORSHIP

SERIOUS DELINQUENCY RATES

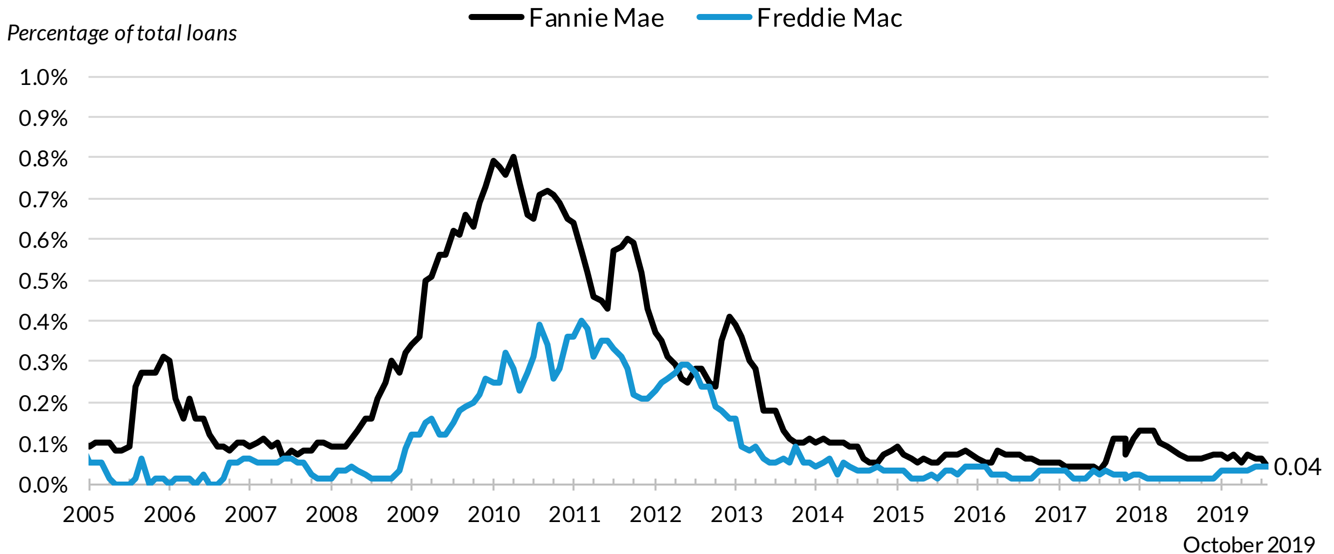
Serious delinquencies rates for single-family GSE loans and FHA loans continued to decline in Q3 2019, while the rate grew slightly for VA loans. GSE delinquencies remain slightly higher relative to 2006-2007, while FHA and VA delinquencies (which are higher than their GSE counterparts) are well below 2006-2007 levels. GSE multifamily delinquencies have declined post-crisis and remain very low.

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. FHA and VA delinquencies are reported on a quarterly basis, last updated November 2019. GSE delinquencies are reported monthly, last updated December 2019.

Serious Delinquency Rates–Multifamily GSE Loans



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

AGENCY ISSUANCE

AGENCY GROSS AND NET ISSUANCE

Agency gross issuance was $1.38 trillion in the first eleven months of 2019, up 25.1 percent from the same period in 2018. Issuance in January and February 2019 was much lower than in January and February 2018, however April through November has outpaced the previous year. Net issuance (which excludes repayments, prepayments, and refinances on outstanding mortgages) totaled $259.1 billion in the first eleven months of 2019, or $282.7 billion on an annualized basis, up 8.6 percent from the same period in 2018.

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	$795.0	$400.6	$1,195.3
2019 YTD	$928.0	$455.9	$1,383.9
2019 YTD % Change YOY	26.4%	22.5%	25.1%
2019 Ann.	$1,012.3	$497.3	$1,509.7

Agency Net Issuance

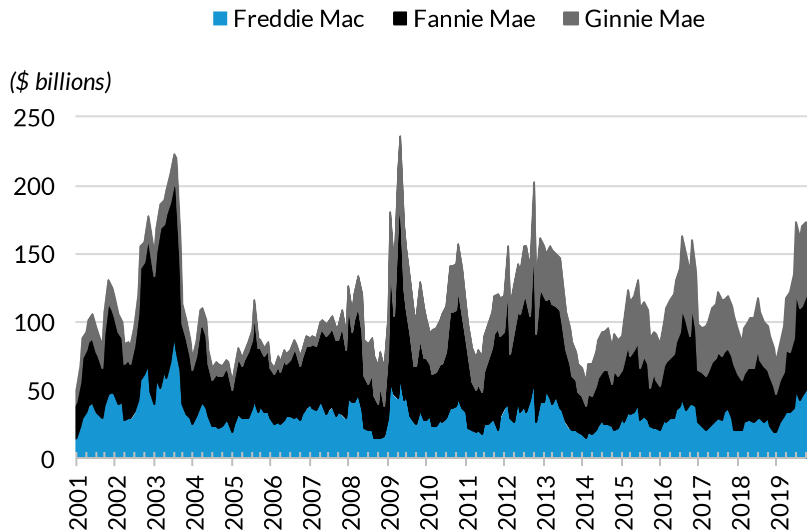
Issuance Year	GSEs	Ginnie Mae	Total
2000	$159.80	$29.30	$189.10
2001	$368.40	-$9.90	$358.50
2002	$357.20	-$51.20	$306.10
2003	$334.90	-$77.60	$257.30
2004	$82.50	-$40.10	$42.40
2005	$174.20	-$42.20	$132.00
2006	$313.60	$0.20	$313.80
2007	$514.90	$30.90	$545.70
2008	$314.80	$196.40	$511.30
2009	$250.60	$257.40	$508.00
2010	-$303.20	$198.30	-$105.00
2011	-$128.40	$149.60	$21.20
2012	-$42.40	$119.10	$76.80
2013	$69.10	$87.90	$157.00
2014	$30.50	$61.60	$92.10
2015	$75.10	$97.30	$172.50
2016	$135.50	$126.10	$261.60
2017	$168.50	$131.30	$299.70
2018	$147.70	$113.90	$261.60
2019 YTD	$169.0	$90.1	$259.1
2019 YTD % Change YOY	27.0%	-14.5%	8.6%
2019 Ann.	$184.4	$98.3	$282.7

Sources: eMBS and Urban Institute.
Note: Dollar amounts are in billions. Data as of November 2019.

AGENCY GROSS ISSUANCE & FED PURCHASES

Monthly Gross Issuance

While FHA, VA and GSE lending have dominated the mortgage market since the crisis, there has been a change in the mix. The Ginnie Mae share of new issuances has risen from a precrisis level of 10-12 percent to 31.4 percent in November 2019. This share increase reflected both increases in the purchase share and in the refi share; it is down from a high mark over the past two years of 34.4 percent in October.

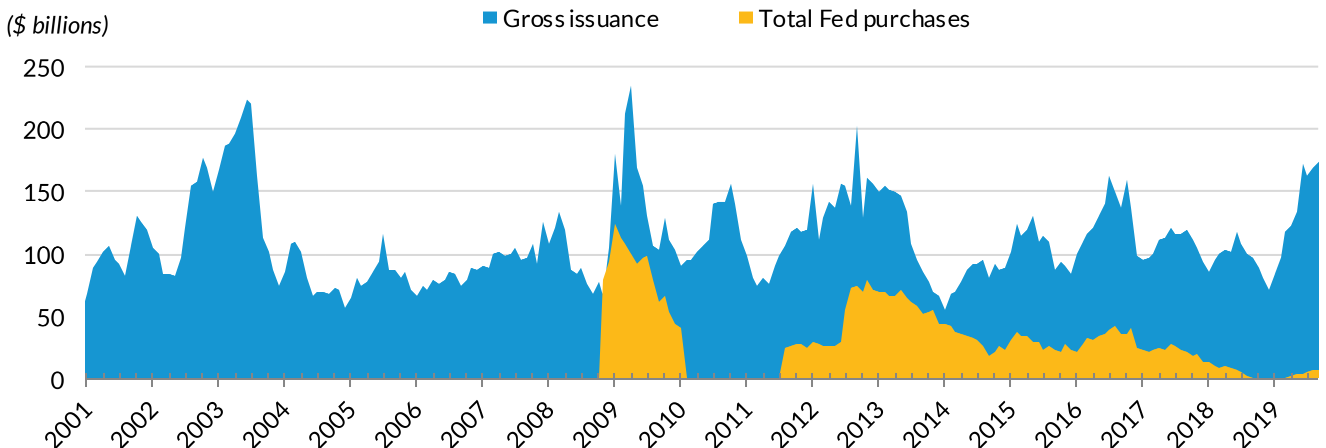


Sources: eMBS, Federal Reserve Bank of New York, and Urban Institute.

November 2019

Fed Absorption of Agency Gross Issuance

The Fed is winding down its MBS portfolio; new MBS purchases are minimal. During the period October 2014 to September 2017, the Fed 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. The portfolio wind down started in October 2017, with the Fed allowing a pre-established amount of MBS to run off each month. From October 2017 to September 2018, the Fed was still reinvesting, but by less than the prepayments and repayments. In October 2018, the amount of MBS permitted to run off each month (MBS taper) hit the $20 billion cap. Since then the amount of Fed purchases has been tiny; in November 2019 Fed purchases totaled $7.4 billion, corresponding to Fed absorption of gross issuance of 4.26 percent.



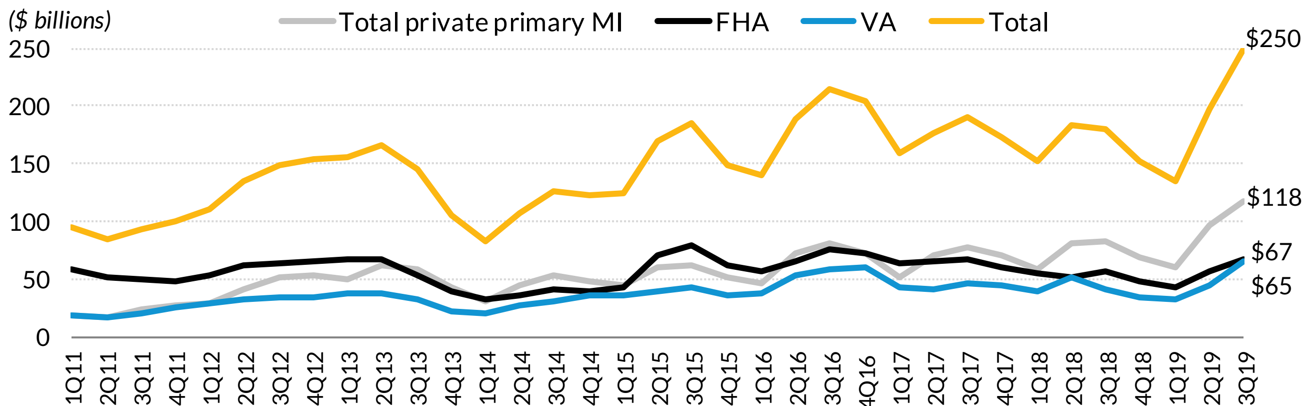
November 2019

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

MORTGAGE INSURANCE ACTIVITY

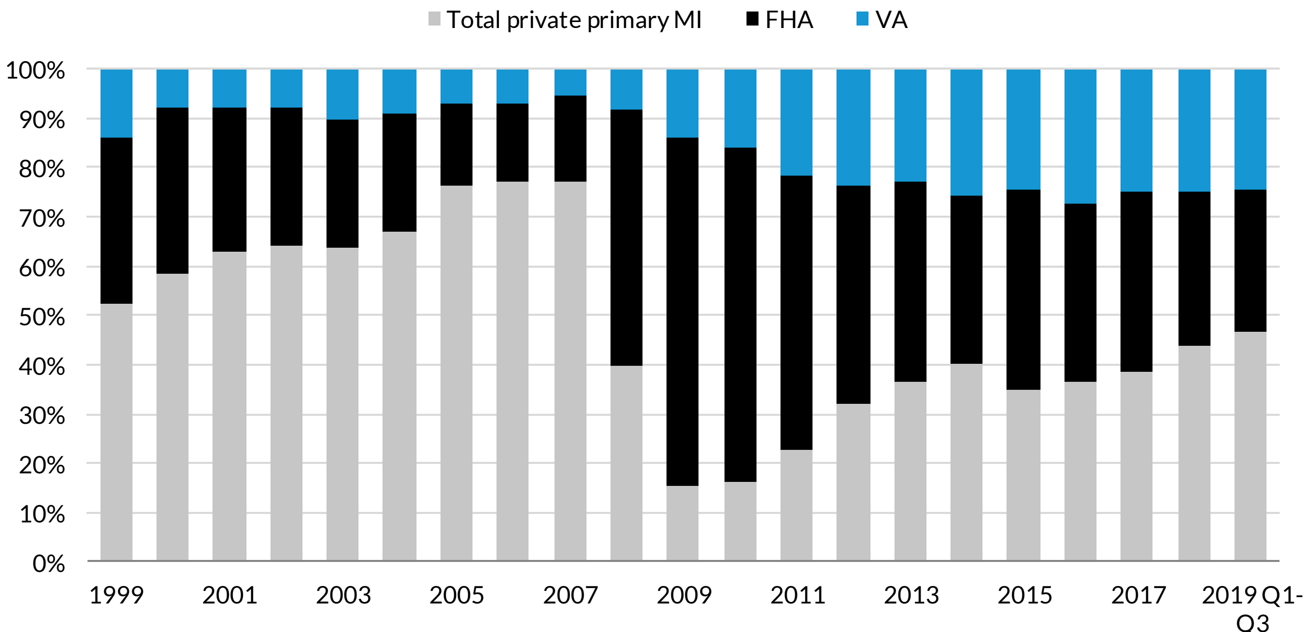
MI Activity

Mortgage insurance activity via the FHA, VA and private insurers increased from $180 billion in Q3 2018 to $250 billion in Q3 2019, a 39.0 percent increase. In the third quarter of 2019, private mortgage insurance written increased by $21.60 billion, FHA increased by $10.5 billion and VA increased by $20.96 billion from the previous quarter, driven by increased homebuying during the summer season as well as a high level of refinance activity. During this period, the VA share grew from 22.4 to 26.1 percent while the FHA share fell slightly from 28.5 to 26.6 percent. The private mortgage insurers share also fell, from 49.1 to 47.3 percent compared to the previous quarter.



Sources: Inside Mortgage Finance and Urban Institute. *Last updated November 2019.*

MI Market Share



Sources: Inside Mortgage Finance and Urban Institute. *Last updated November 2019.*

MORTGAGE INSURANCE ACTIVITY

FHA premiums rose significantly in the years following the housing crash, with annual premiums rising from 50 to 135 basis points between 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 the overwhelming majority of borrowers putting down less than 5%. The April 2016 reduction in PMI rates for borrowers with higher FICO scores and April 2018 reduction for lower FICO borrowers has partially offset that. As shown in the bottom table, a borrower putting 3.5 percent down with a FICO of less than 720 will find FHA financing to be more financially attractive, borrowers with FICOs of 720 and above will find GSE execution with PMI to be more attractive.

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	3.70
FHA	3.81

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	1.86	1.65	1.54	1.21	0.99	0.87	0.70	0.58
Monthly Payment								
FHA	$1,316	$1,316	$1,316	$1,316	$1,316	$1,316	$1,316	$1,316
PMI	$1,582	$1,519	$1,482	$1,395	$1,351	$1,313	$1,272	$1,248
PMI Advantage	-$266	-$202	-$166	-$79	-$35	$3	$44	$68

Sources: Genworth Mortgage Insurance, Ginnie Mae, and Urban Institute.
Note: Rates as of November 2019.
Mortgage insurance premiums listed in percentage points. Grey shade indicates FHA monthly payment is more favorable, while 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, 63.6 percent of loans originated from 2011 to Q3 2018 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%
2011-3Q18	≤700	3.7%	5.1%	1.3%	2.2%	12.4%
	700 to 750	5.7%	10.0%	3.2%	5.1%	24.0%
	>750	19.8%	27.7%	7.3%	8.8%	63.6%
	Total	29.2%	42.9%	11.8%	16.1%	100.0%
Total		33.5%	44.7%	10.5%	11.3%	100.0%

Sources: Fannie Mae and Urban Institute.
Note: Fannie Mae loan level credit data includes loans originated from Q1 1999 to Q3 2018. 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	3.8%	4.6%	6.1%	7.1%	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	1.6%	2.4%	3.9%	4.6%	2.5%
2005	≤700	14.0%	17.6%	20.2%	21.8%	16.8%
	700 to 750	6.4%	9.8%	12.8%	13.3%	9.0%
	>750	2.2%	4.5%	7.2%	8.2%	3.8%
	Total	7.0%	10.3%	14.5%	15.7%	9.6%
2006	≤700	18.3%	22.5%	25.9%	27.4%	21.6%
	700 to 750	8.7%	13.3%	16.1%	16.9%	12.1%
	>750	2.9%	5.9%	9.2%	9.6%	5.0%
	Total	9.5%	13.3%	18.3%	19.5%	12.6%
2007	≤700	19.8%	23.7%	31.1%	31.4%	24.3%
	700 to 750	8.4%	13.5%	19.3%	18.6%	13.0%
	>750	2.8%	5.8%	11.0%	10.9%	5.3%
	Total	9.5%	13.5%	22.3%	22.1%	13.7%
2008	≤700	14.6%	17.3%	23.3%	23.4%	17.8%
	700 to 750	5.1%	8.1%	12.9%	12.7%	8.4%
	>750	1.3%	2.8%	6.3%	6.9%	2.9%
	Total	5.1%	6.5%	12.3%	13.0%	7.3%
2009-2010	≤700	4.1%	5.4%	5.1%	6.5%	4.7%
	700 to 750	1.1%	2.1%	2.5%	3.1%	1.8%
	>750	0.2%	0.6%	1.1%	1.5%	0.5%
	Total	0.7%	1.2%	1.7%	2.3%	1.1%
2011-3Q18	≤700	1.2%	1.6%	1.9%	2.4%	1.6%
	700 to 750	0.3%	0.5%	0.6%	0.9%	0.5%
	>750	0.1%	0.1%	0.2%	0.3%	0.1%
	Total	0.3%	0.4%	0.5%	0.8%	0.4%
Total		1.9%	2.7%	3.9%	3.1%	2.6%

Sources: Fannie Mae and Urban Institute.
Note: Fannie Mae loan level credit data includes loans originated from Q1 1999 to Q3 2018, withmoperformance information on these loans through Q2 2019. 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 nths.

SPECIAL FEATURE: LOAN LEVEL GSE CREDIT DATA

FREDDIE MAC COMPOSITION

Since 2008, the composition of loans purchased by Freddie Mac has shifted towards borrowers with higher FICO scores. For example, 59.3 percent of loans originated from 2011 to Q3 2018 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%	1.7%	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%	7.2%	100.0%
2009-2010	≤700	3.9%	3.2%	0.3%	0.3%	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	45.7%	46.1%	5.6%	2.6%	100.0%
2011- 3Q18	≤700	4.1%	5.1%	1.5%	1.9%	12.6%
	700 to 750	7.0%	12.4%	3.7%	5.1%	28.1%
	>750	18.1%	26.8%	6.7%	7.7%	59.3%
	Total	29.2%	44.2%	11.9%	14.7%	100.0%
Total		32.6%	46.6%	10.3%	10.5%	100.0%

Sources: Freddie Mac and Urban Institute.
Note: Freddie Mac loan level credit data includes loans originated from Q1 1999 to Q3 2018. 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. 2009 and later originations 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	3.1%	4.3%	6.6%	7.1%	4.9%
	700 to 750	1.1%	1.7%	2.8%	2.9%	1.8%
	>750	0.4%	0.8%	1.5%	1.8%	0.8%
	Total	1.3%	2.3%	4.4%	5.0%	2.5%
2005	≤700	12.4%	16.9%	20.0%	21.5%	16.2%
	700 to 750	6.0%	9.7%	13.0%	13.3%	8.9%
	>750	2.1%	4.6%	7.4%	8.5%	3.8%
	Total	6.2%	10.2%	15.0%	16.3%	9.5%
2006	≤700	16.4%	21.6%	25.2%	27.6%	21.0%
	700 to 750	8.2%	12.9%	15.8%	16.0%	11.9%
	>750	2.8%	6.1%	9.1%	10.0%	5.1%
	Total	8.3%	13.1%	18.7%	20.8%	12.4%
2007	≤700	17.7%	23.2%	29.5%	32.0%	23.8%
	700 to 750	8.1%	13.8%	18.6%	18.9%	13.2%
	>750	2.7%	6.5%	10.5%	11.7%	5.7%
	Total	8.4%	13.9%	21.6%	23.3%	13.9%
2008	≤700	13.7%	17.7%	24.3%	23.4%	17.9%
	700 to 750	4.9%	8.7%	13.5%	12.1%	8.4%
	>750	1.4%	3.4%	7.0%	6.6%	3.1%
	Total	4.6%	7.9%	13.7%	13.5%	7.7%
2009-2010	≤700	3.6%	5.1%	5.3%	5.5%	4.4%
	700 to 750	0.9%	2.0%	2.3%	2.8%	1.6%
	>750	0.2%	0.7%	1.1%	1.3%	0.5%
	Total	0.7%	1.3%	1.7%	2.2%	1.1%
2011-3Q18	≤700	0.8%	0.9%	1.1%	1.6%	1.0%
	700 to 750	0.2%	0.3%	0.4%	0.6%	0.4%
	>750	0.1%	0.1%	0.1%	0.2%	0.1%
	Total	0.2%	0.3%	0.4%	0.5%	0.3%
Total		1.9%	3.3%	4.5%	4.4%	3.1%

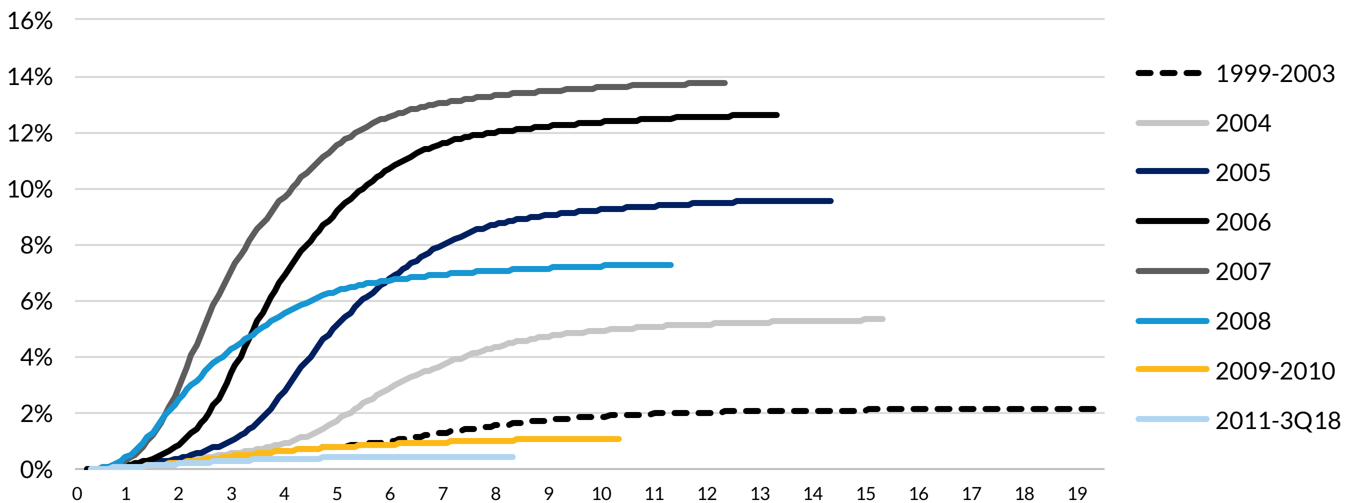
Sources: Freddie Mae and Urban Institute.
Note: Freddie Mac loan level credit data includes loans originated from Q1 1999 to Q3 2018, with performance information on these loans through Q1 2019. Default is defined as six months delinquent or disposed of via short sales, third-party sales, deeds-in-lieu 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

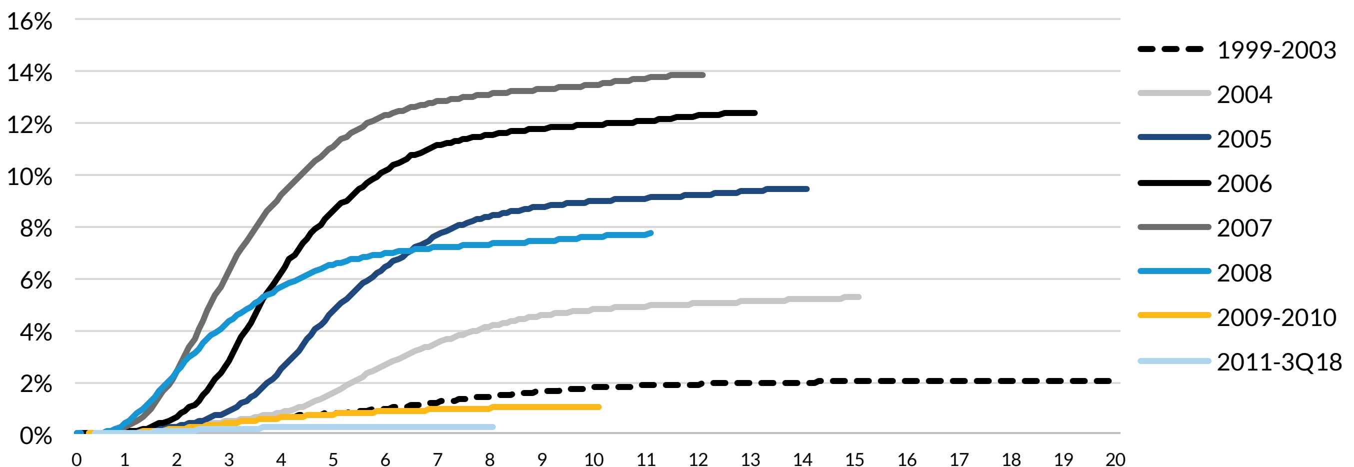
With pristine books of business and a strong housing market, default rates for the GSEs are much lower than they were historically. For Fannie Mae and Freddie Mac's 1999-2003 vintages, cumulative defaults total around 2 percent, while cumulative defaults for the 2007 vintage are around 14 percent. For both Fannie Mae and Freddie Mac, cumulative defaults for post-2009 vintages are on pace to fall below pre-2003 levels. For Fannie loans 100 months after origination, the cumulative default rate from 2009-10 and 2011- Q3 2018 are about 1.01 and 0.42 percent, respectively, compared to the cumulative default rate from 1999-2003 of 1.59 percent. For Freddie loans 97 months after origination, the cumulative default rates total 1.05 percent from 2009-10 and 0.30 percent from 2011-Q3 2018, compared to the rate from 1999-2003 of 1.43 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. A default is defined as a delinquency of 180 days or more, a deed-in-lieu, short sale, foreclosure sale or REO sale.

Freddie Mac Cumulative Default Rate by Vintage Year

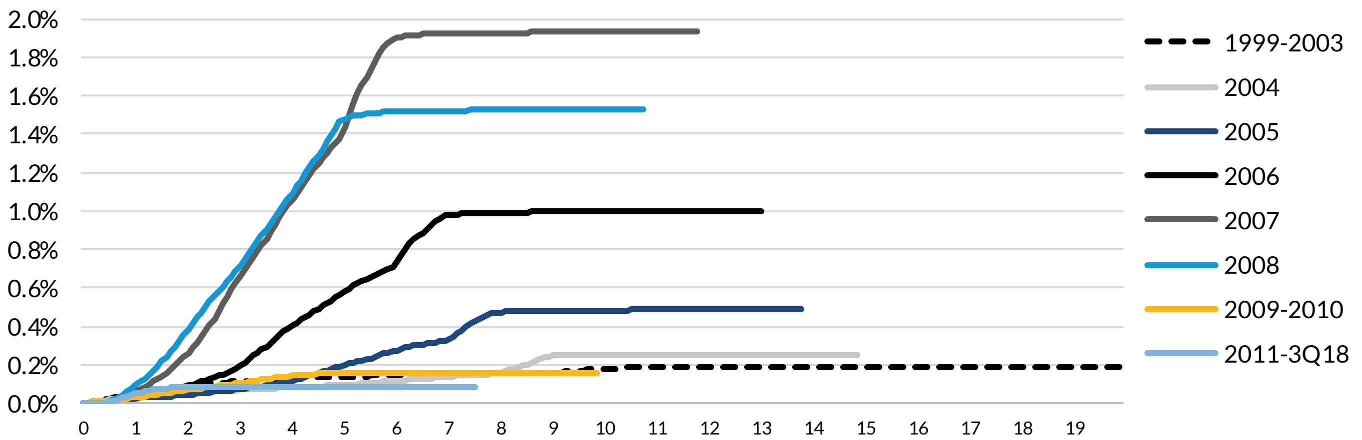


Sources: Freddie Mac and Urban Institute.
Note: The analysis included only mortgages with original terms of 241-420 months. A default is defined as a delinquency of 180 days or more, a deed-in-lieu, short sale, foreclosure sale or REO sale.

REPURCHASE RATE BY VINTAGE

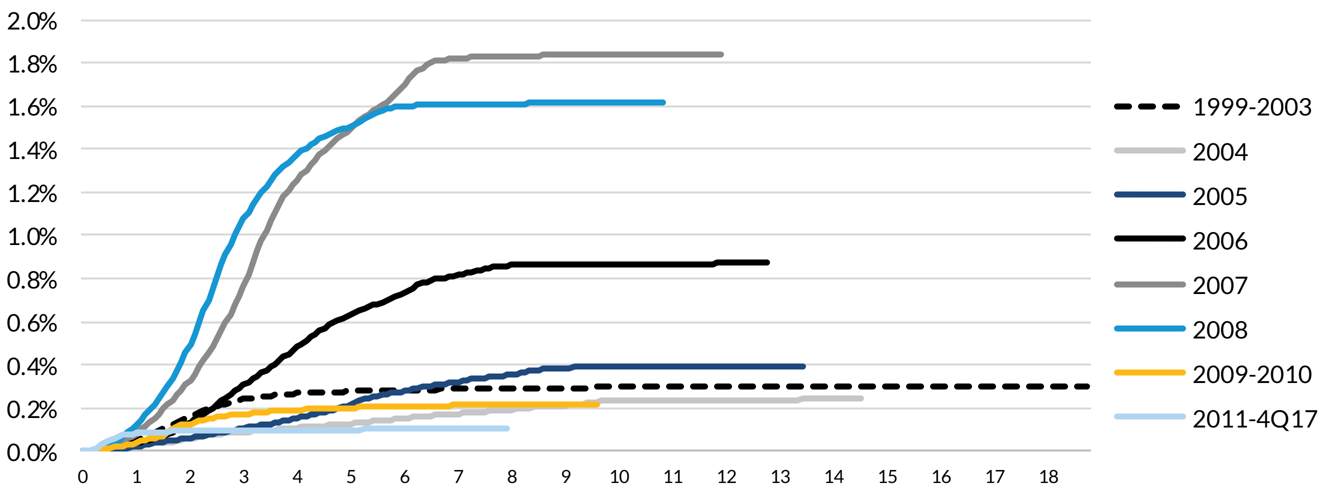
These figures show the cumulative percentage of fixed-rate, full documentation, amortizing 30-year loans of a given vintage that Fannie and Freddie have put back to lenders due to reps and warrants violations. Bubble era vintages were significantly more likely to be put back than either pre- or post-bubble vintages. Note that 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.

LOSS SEVERITY

Both Fannie Mae and Freddie Mac's credit data include the status of loans after they experience 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 loan that has experienced a credit event and categorize it based on present status — for Fannie Mae loans (top table) 13.0 percent are current, 17.5 percent are prepaid, 8.2 percent are still in the pipeline (not current, not prepaid, not liquidated) and 58.0 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 41-43 percent.

Fannie Mae - Liquidation Rates and Severities for D180+ loans

Origination 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	11.09%	23.03%	5.97%	58.36%	24.8%	39.8%	24.5%	32.8%
2005	11.95%	13.53%	6.00%	64.64%	33.9%	48.5%	35.5%	44.6%
2006	11.64%	11.69%	5.68%	65.97%	42.4%	54.4%	38.3%	50.1%
2007	12.70%	12.68%	6.19%	62.61%	41.6%	53.7%	36.2%	47.3%
2008	13.95%	15.88%	6.96%	58.38%	35.4%	49.0%	28.5%	40.0%
2009-2010	16.60%	21.09%	12.27%	48.63%	23.9%	35.3%	17.6%	30.6%
2011-3Q18	25.88%	17.19%	34.90%	21.77%	13.5%	22.6%	6.1%	13.5%
Total	13.03%	17.48%	8.21%	58.04%	34.7%	47.7%	29.5%	41.1%

Freddie Mac - Liquidation Rates and Severities for D180+ loans

Origination 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	8.74%	20.05%	6.06%	65.16%	25.4%	39.1%	28.1%	33.7%
2005	9.73%	11.60%	5.79%	72.87%	31.7%	45.7%	35.6%	42.6%
2006	9.04%	9.62%	5.44%	75.90%	36.8%	49.8%	37.3%	46.3%
2007	9.46%	9.70%	6.05%	74.79%	40.1%	49.7%	36.3%	44.7%
2008	10.82%	12.69%	7.18%	69.31%	34.9%	46.4%	32.5%	40.8%
2009-2010	13.17%	19.06%	12.99%	54.78%	26.3%	37.3%	18.7%	33.1%
2011-3Q18	23.21%	16.94%	37.85%	22.01%	15.6%	26.0%	8.5%	17.2%
Total	11.63%	13.60%	8.32%	66.44%	36.7%	48.0%	33.5%	42.9%

Sources: Fannie Mae, Freddie Mac, and Urban Institute.
Note: Fannie Mae loan level credit data includes loans originated from Q1 1999 to Q3 2018, with performance information on these loans through Q2 2019. Freddie Mac loan level credit data includes loans originated from Q1 1999 to Q3 2018, with performance information on these loans through Q1 2019. The analysis included only mortgages with original terms of 241-420 months.

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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-Q3 2018 originations, Fannie Mae foreclosure alternatives had a mean defaulted UPB of $164,316 and a loss severity of 11.4 percent, versus a mean defaulted UPB of $150,267 and a loss severity of 14.8 percent for REO sales.

Fannie Mae - Loss Severity for Already Liquidated Loans

Origination Year	Number of Loans			Mean defaulted UPB ($)			Severity		
	All	REO	Foreclosure Alternatives	All	REO	Foreclosure Alternatives	All	REO	Foreclosure Alternatives
1999-2004	194,981	147,068	47,913	111,507.5	105,796.4	129,032.9	32.82%	37.28%	21.61%
2005	74,759	49,394	25,365	168,053.3	156,997.5	189,579.5	44.62%	48.92%	37.70%
2006	76,113	50,465	25,648	182,292.0	169,798.3	206,869.1	50.13%	54.77%	42.65%
2007	92,971	61,352	31,619	191,723.6	178,718.3	216,951.5	47.28%	52.00%	39.73%
2008	54,939	36,186	18,753	189,174.0	175,117.2	216,281.3	39.96%	44.77%	32.44%
2009-2010	20,216	12,777	7,439	172,153.1	161,288.9	190,806.6	30.58%	35.26%	23.80%
2011-3Q18	12,632	8,014	4,618	155,406.0	150,267.4	164,316.9	13.48%	14.82%	11.37%
Total	526,611	365,256	161,355	155,416.4	143,600.5	182,155.0	41.07%	45.24%	33.61%

Freddie Mac - Loss Severity for Already Liquidated Loans

Origination Year	Number of Loans			Mean defaulted UPB ($)			Severity		
	All	REO	Foreclosure Alternatives	All	REO	Foreclosure Alternatives	All	REO	Foreclosure Alternatives
1999-2004	176,096	115,577	60,519	112,492.8	106,028.6	124,838.0	33.69%	40.47%	22.70%
2005	96,164	48,571	47,593	170,969.1	155,757.2	186,493.6	42.58%	52.05%	34.50%
2006	102,004	50,746	51,258	184,216.7	165,410.6	202,835.1	46.32%	57.16%	37.57%
2007	109,142	54,482	54,660	186,696.4	167,360.3	205,969.6	44.73%	56.49%	35.21%
2008	55,234	26,206	29,028	196,811.8	177,338.0	214,392.5	40.77%	53.60%	31.18%
2009-2010	16,701	7,995	8,706	177,751.9	166,777.3	187,830.3	33.05%	42.51%	25.34%
2011-3Q18	5,432	2,248	3,184	165,838.0	152,082.5	175,549.8	17.18%	23.81%	13.12%
Total	560,773	305,825	254,948	160,774.6	142,743.0	182,404.5	41.11%	50.36%	32.42%

Sources: Fannie Mae, Freddie Mac and Urban Institute.
Note: Fannie Mae loan level credit data includes loans originated from Q1 1999 to Q4 2017, with performance information on these loans through Q3 2018. Freddie Mac loan level credit data includes loans originated from Q1 1999 to Q4 2017, with performance information on these loans through Q2 2018. The analysis included only mortgages with original terms of 241-420 months.

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