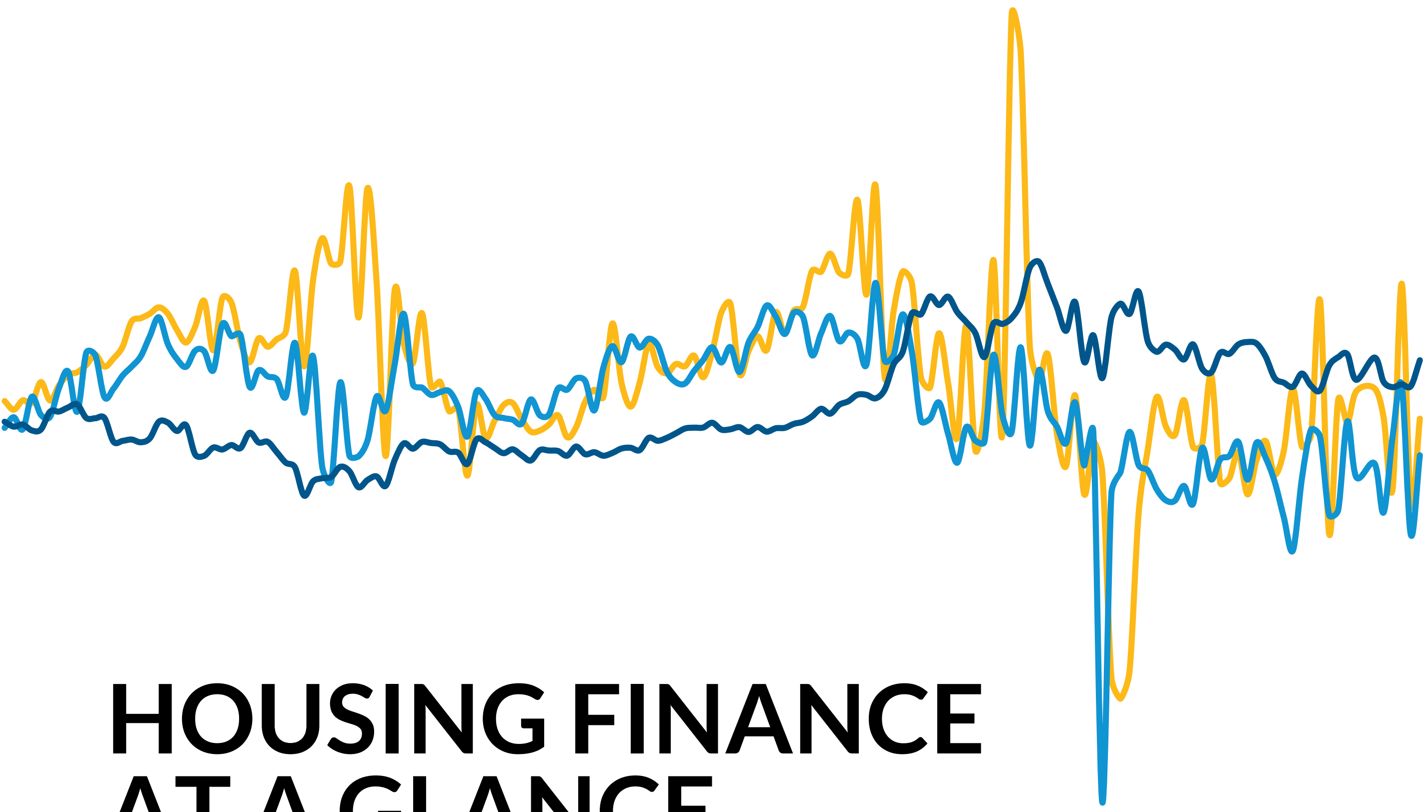
HOUSING FINANCE POLICY CENTER



HOUSING FINANCE AT A GLANCE

A MONTHLY CHARTBOOK

February 2021

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.

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INTRODUCTION

The GSE COVID-19 Payment Deferral Program Has Helped More Than 300,000 Homeowners

The Administration recently extended the mortgage forbearance period for federally-backed mortgages. Borrowers who entered forbearance prior to June 30, 2020 may now be in forbearance for up to 15 months, and new borrowers can enter forbearance as late as June 30, 2021. These actions were designed to help borrowers maintain homeownership by giving them more time to recover financially from pandemic-related disruptions.

Although borrowers with the highest score account for half of the COVID-19 Payment Deferral program's participants, the program has disproportionately helped homeowners with lower FICO scores. The typical deferred amount while in forbearance is small, $6,000, accounting for 2.1 percent of the implied home value at origination. This percentage likely represents an upper bound since the value of most homes has increased since closing.

Dollar Value of Deferred Amounts and As A Share of Implied Home Values at Origination

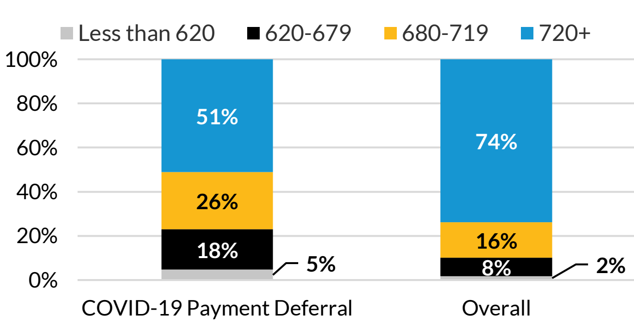
	Median Deferred Amount	Median Implied Home Value at Origination	Deferred Amount as Percent of Implied Home Value
Overall	$6,000	$287,778	2.1%
Less than 620	$5,000	$179,268	2.8%
620-679	$5,000	$254,217	2.0%
680-719	$6,000	$285,333	2.1%
720+	$6,000	$305,000	2.0%

Note: *Median implied home values at origination are calculated as the median of the original loan amount for borrowers in the COVID-19 Payment Deferral program divided by their combined loan-to-value ratio.*
Source: *Urban institute calculations of data from Fannie Mae and Freddie Mac.*

As borrowers exit forbearance, they need to determine, with their mortgage servicer, how to repay the forborne amount. The GSEs have created a loss mitigation waterfall with a first step of repaying the forborne amount in a lump sum or over a short period. If this is untenable, a borrower can revert to their original payment and move the forborne amount to the end of the mortgage with the mortgage term extended by the number of missed payments. This is, by far, the most popular exit option, and Fannie Mae and Freddie Mac refer to it as the COVID-19 Deferral Program. A mortgage modification will be considered for borrowers who cannot make their old payment, which would further reduce their payment.

Since reaching a peak of 6.4 percent in May 2020, the GSE forbearance rate has fallen to 3.0 percent in February 2021 (see page 24 of this chartbook). About two-thirds of the GSE loans that have been in forbearance have exited the program. Very few of those that have exited are still delinquent or in loss mitigation. A larger share of those that have exited forbearance prepaid their mortgage (14 percent of GSE loans ever in forbearance). The majority of those that have exited forbearance are current, accounting for 47 percent of all GSE loans ever in forbearance, with most of these, or 320,856 borrowers, enrolled in the COVID-19 Payment Deferral program as of January 2021; this accounts for 1.4 percent of all GSE loans.

Comparison of FICO Score Distribution: All GSE Loans v. Loans in the Payment Deferral Program



Source: *Urban institute calculations of Fannie Mae and Freddie Mac data.*

Across FICO score categories, the median deferred amount among borrowers with the lowest scores, was similar to those with higher scores. After adjusting for implied home values at origination, the median deferred amount for program participants with the lowest FICO scores is modestly above those with higher scores. However, at 2.8 percent, it is well below the pace of house price growth (see page 22 of this chartbook).

The early evidence suggests that the typical deferred amount should not significantly impact the housing equity accumulated by homeowners in the deferral program. However, with the unemployment rate stagnating, and those who are not back on their feet choosing to extend, it is likely that future entrants into the program may have larger amounts of deferred payments relative to the borrowers currently in the program. We will continue to closely track these borrowers, as they may be less likely to take advantage of the COVID-19 Deferral Program, and more likely to require a modification to retain their home.

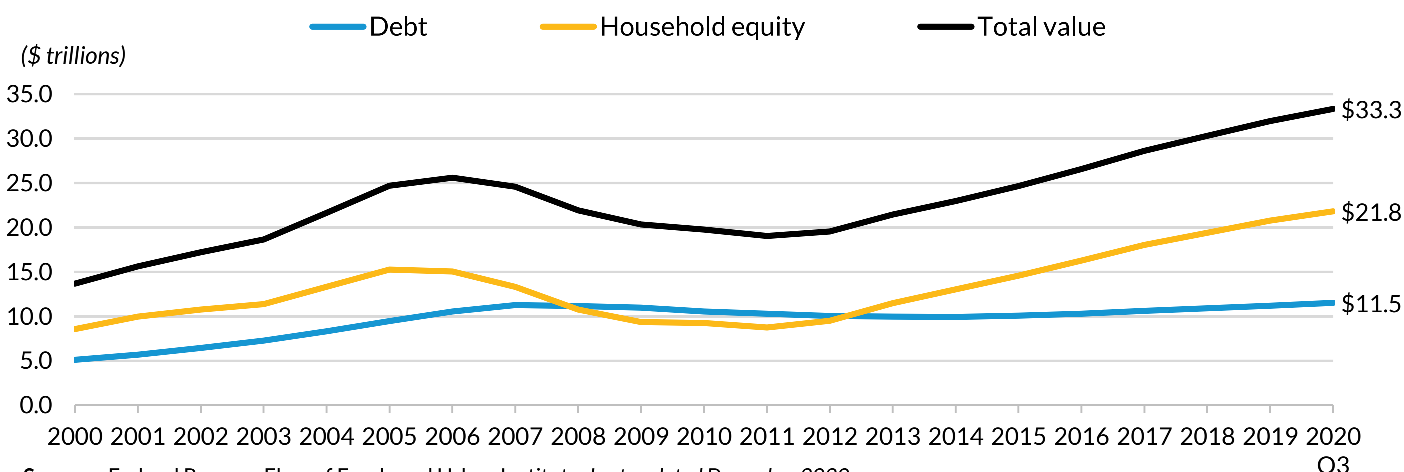
INSIDE THIS ISSUE

- 2020 was a record year for mortgage originations, with first lien origination volume totaling $4.04 trillion (Page 8).
- The share of loans that are 90 days or more delinquent or in foreclosure, while much elevated, fell marginally from 5.16 percent in Q3 2020 to 5.03 percent in Q4 2020 (Page 24).
- Although spreads on most GSE risk transfer securities remain above pre-COVID levels, spreads on 2018 and 2019 M indices have nearly reverted to pre-COVID levels (Page 28).
- This month, we have a special feature on GSE loan-level credit data (Pages 34-41).

OVERVIEW
MARKET SIZE OVERVIEW

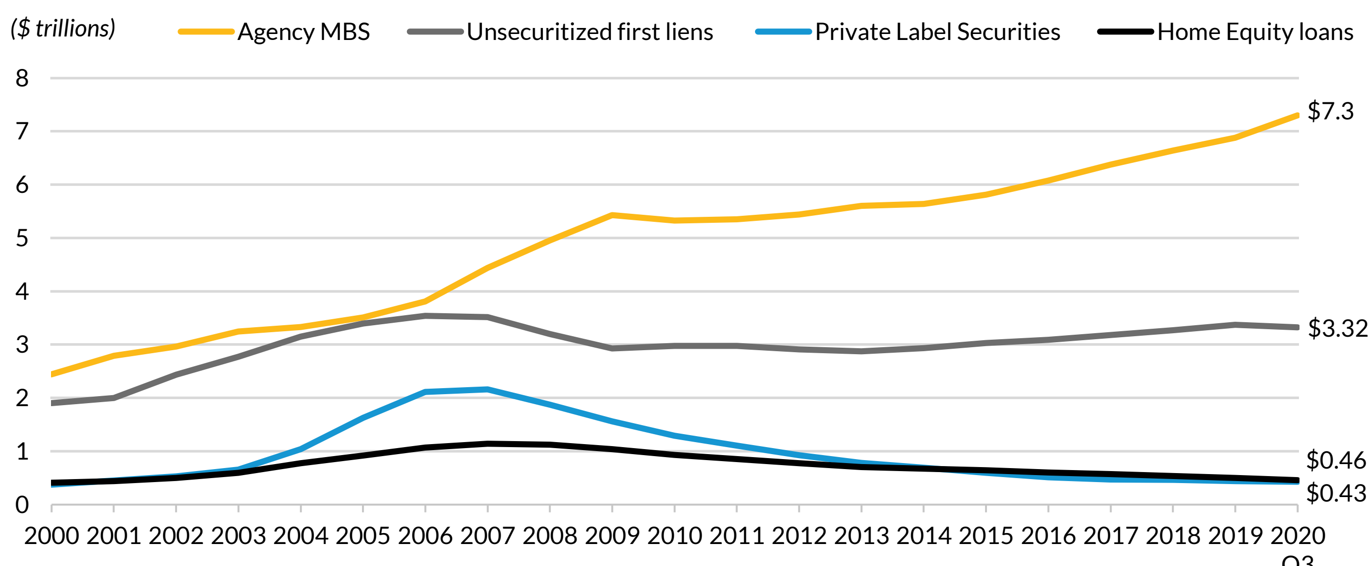
The Federal Reserve's Flow of Funds Report has indicated a gradually increasing total value of the housing market, driven primarily by growing home equity since 2012. The Q3 2020 numbers show that while mortgage debt outstanding remained steady at $11.5 trillion, total home equity grew slightly from $21.5 trillion in Q2 2020 to $21.8 trillion in the third quarter of 2020, bringing the total value of the housing market to $33.3 trillion. This is 30.3 percent higher than the pre-crisis peak in 2006. Agency MBS account for 63.4 percent of the total mortgage debt outstanding, private-label securities make up 3.7 percent, and unsecuritized first liens make up 28.9 percent. Home equity loans comprise the remaining 4.0 percent of the total.

Value of the US Single Family Housing Market



Sources: Federal Reserve Flow of Funds and Urban Institute. *Last updated December 2020.*
Note: Single family includes 1-4 family mortgages. The home equity number is grossed up from Fed totals to include the value of households and the non-financial business sector.

Composition of the US Single Family Mortgage Market

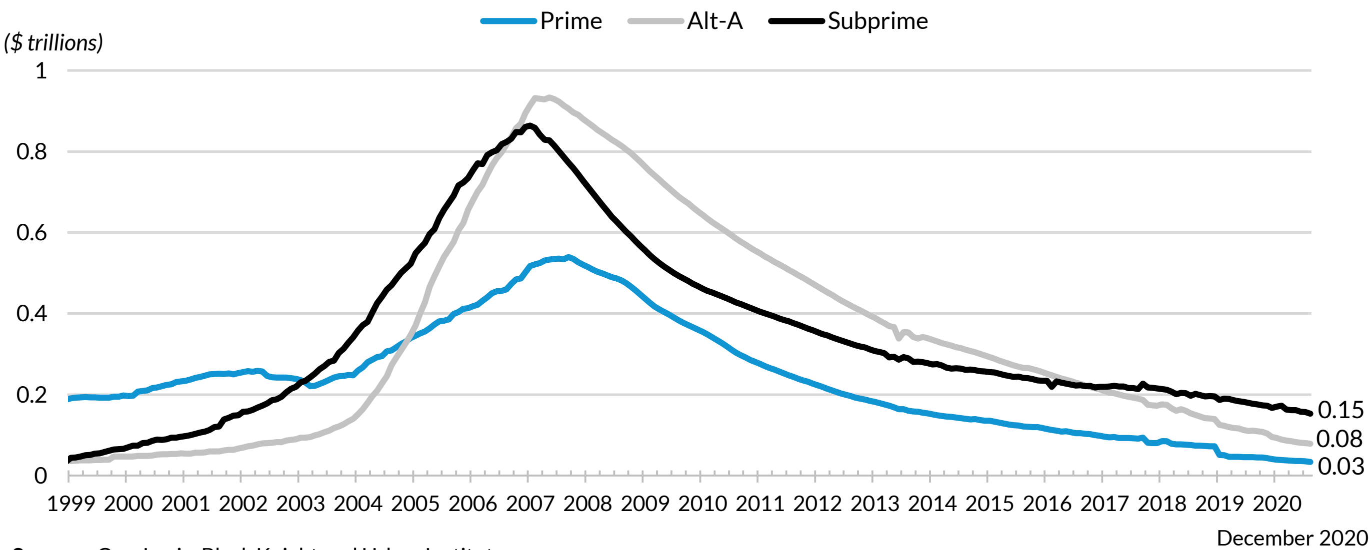


Sources: Federal Reserve Flow of Funds, eMBS and Urban Institute. *Last updated December 2020.*
Note: Unsecuritized first liens includes loans held by commercial banks, GSEs, savings institutions, credit unions and other financialcompanies.

MARKET SIZE OVERVIEW

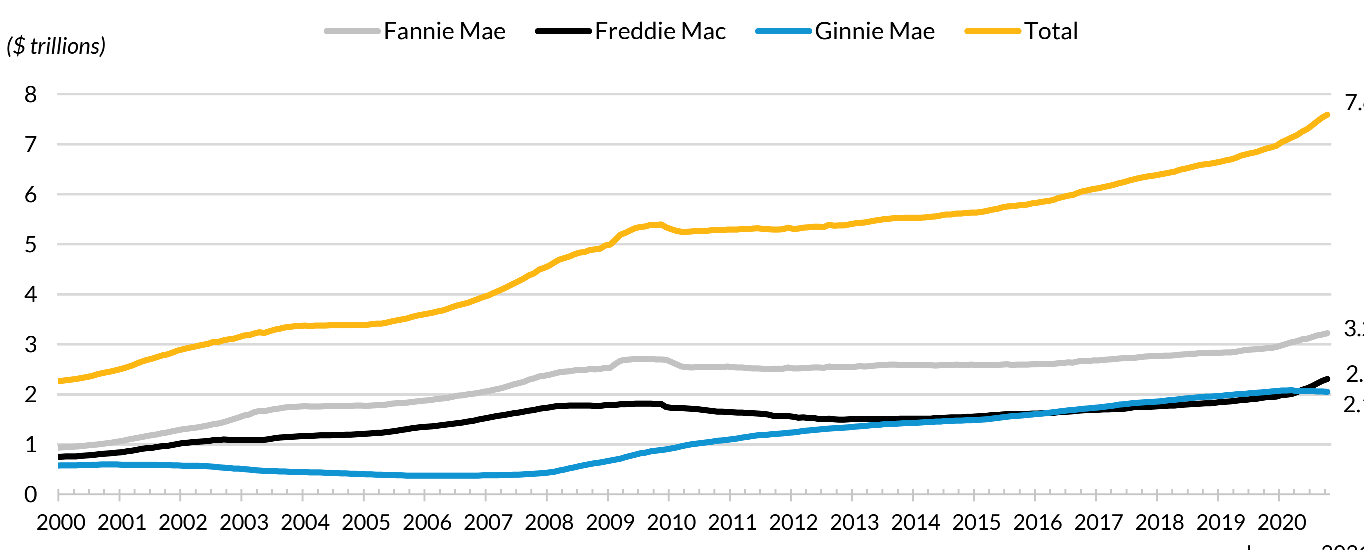
As of December 2020, our sample of first lien mortgage debt in the private-label securitization market totaled $264 billion and was split among prime (12.6 percent), Alt-A (29.6 percent), and subprime (57.8 percent) loans. In January 2021, outstanding securities in the agency market totaled $7.6 trillion, 42.5 percent of which was Fannie Mae, 30.4 percent Freddie Mac, and 27.1 percent Ginnie Mae.

Private-Label Securities by Product Type



Sources: CoreLogic, Black Knight and Urban Institute.

Agency Mortgage-Backed Securities

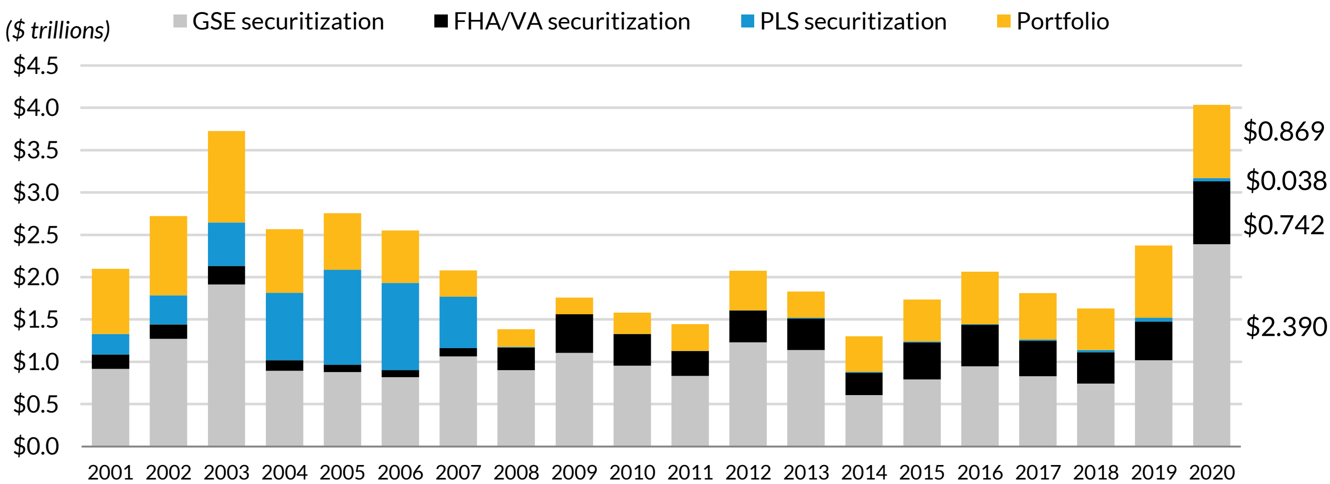


Sources: eMBS and Urban Institute.

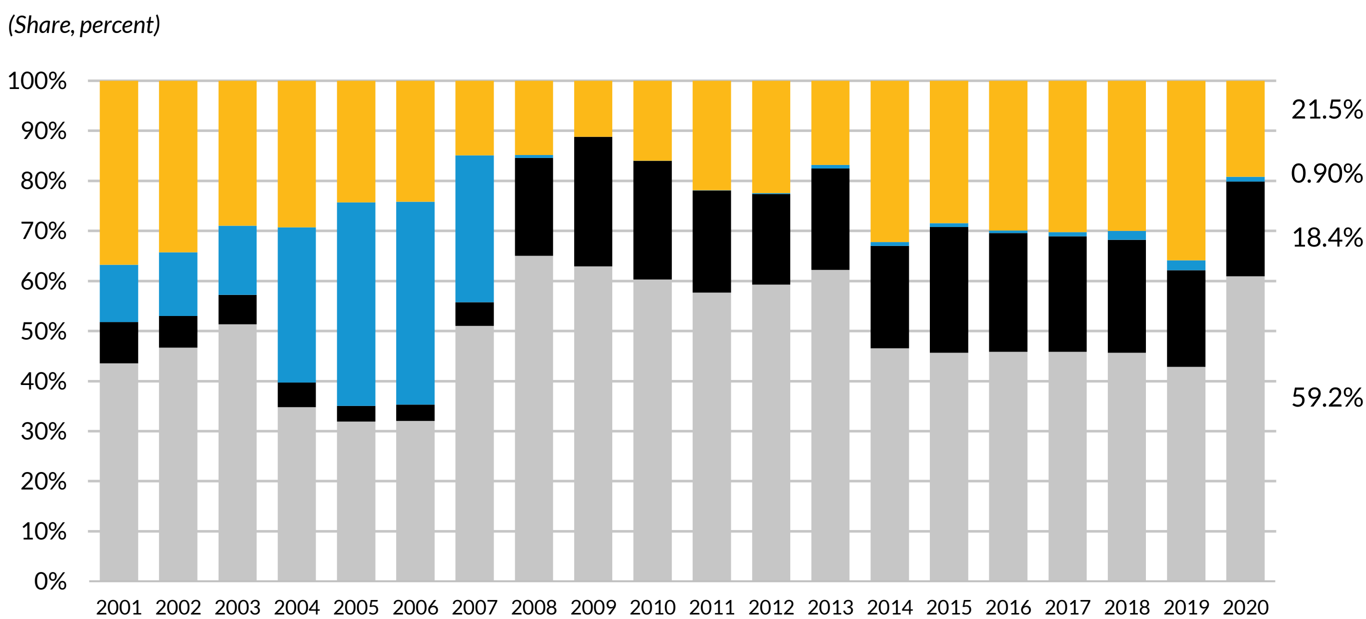
ORIGINATION VOLUME AND COMPOSITION

First Lien Origination Volume

2020 was a record year for first-lien originations with $4.04 trillion in mortgages originated during the year. This number exceeds the 2003 volume of $3.73 trillion, the previous record holder, by $315 billion. The share of portfolio originations was 21.5 percent in 2020, a substantial decline from the 35.9 percent share in 2019. The 2020 GSE share was up significantly at 59.2 percent, compared to 42.9 percent in 2019. The FHA/VA share at the end of 2020 was 18.4 percent, down one percentage point compared to last year. The PLS share was 0.9 percent in 2020, down from 1.9 percent one year ago, and a fraction of its share in the pre-bubble years. The smaller share of portfolio and PLS in 2020 reflects the impact of COVID-19, which made it difficult to originate mortgages without government support. The higher GSE share reflects the large amount of refinances done through this channel. With private capital pulling back significantly because of the economic downturn, the federal government is once again playing the dominant role in the mortgage market.



Sources: Inside Mortgage Finance and Urban Institute. *Last updated February 2021.*

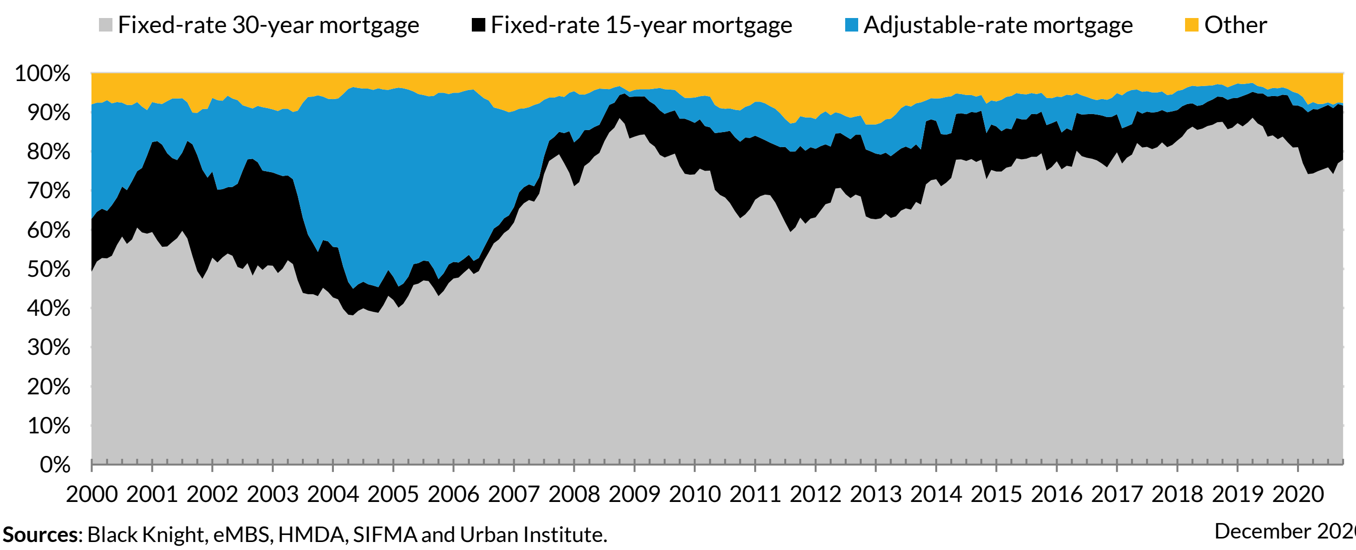


Sources: Inside Mortgage Finance and Urban Institute. *Last updated February 2021.*

PRODUCT COMPOSITION AND REFINANCE SHARE

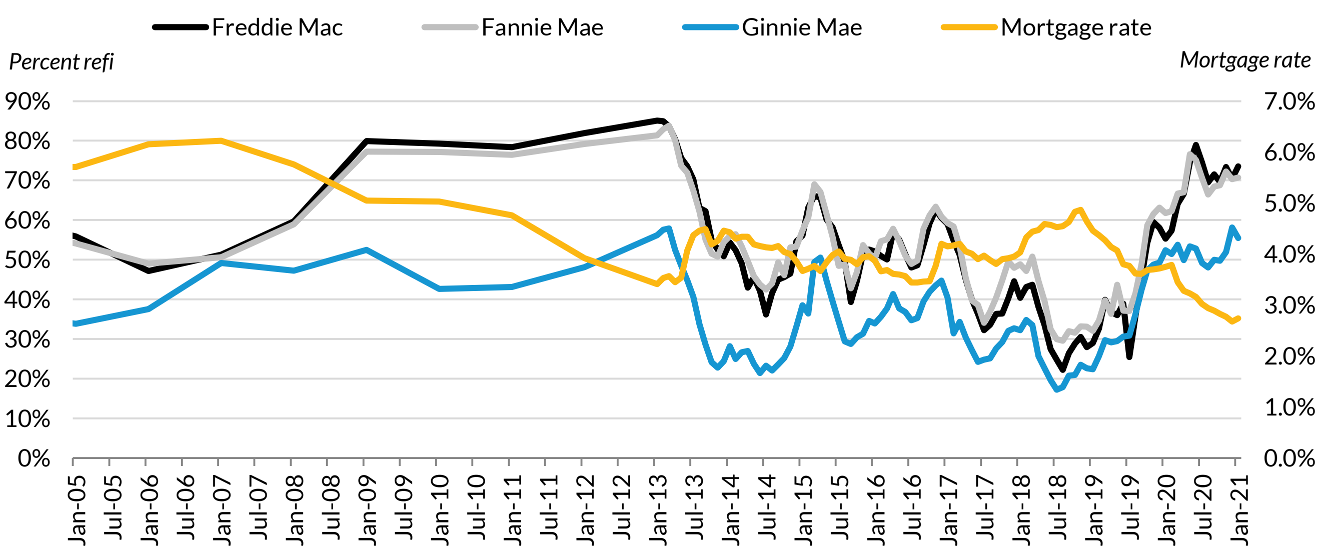
The 30-year fixed-rate mortgage continues to remain the bedrock of the US housing finance system, accounting for 77.8 percent of new originations in December 2020. The share of 15-year fixed-rate mortgages, predominantly a refinance product, was 13.8 percent of new originations in December 2020, up from 10.7 percent in December 2019, reflecting a refinance boom amidst record low rates. The ARM share accounted for 0.7 percent of new originations. 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 for Ginnie Mae as interest rates have dropped. The GSE refi shares are in the 71 to 74 percent range; the Ginnie Mae refi share was 55.5 percent in January 2021.

Product Composition



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

Percent Refi at Issuance

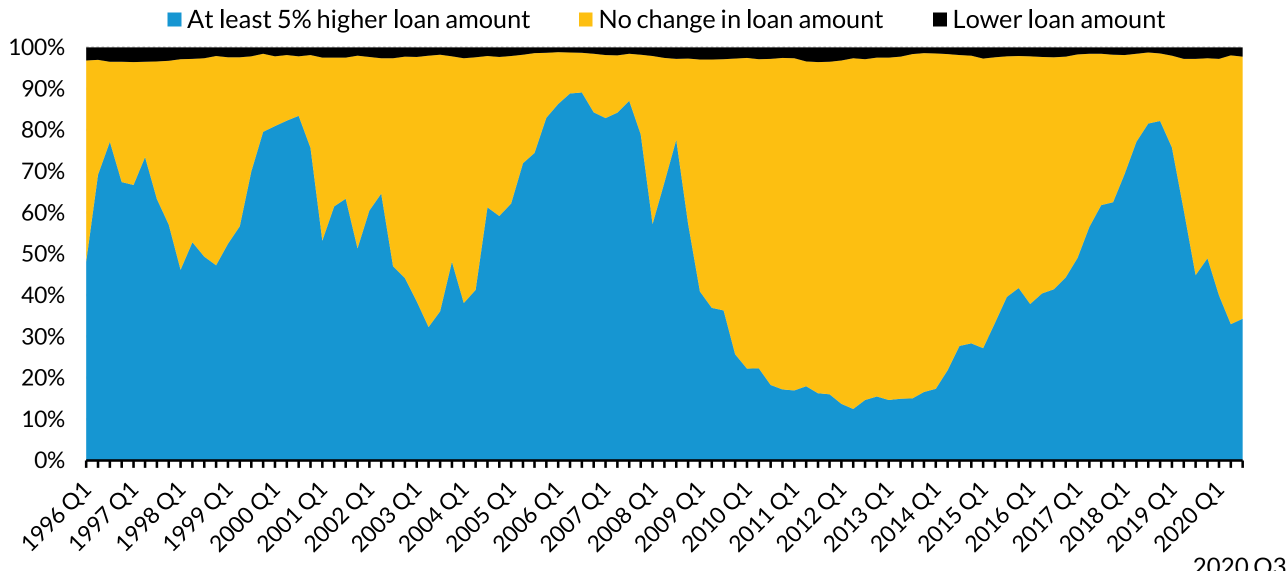


Sources: eMBS and Urban Institute.
Note: Based on at-issuance balance. Figure based on data from January 2021.

OVERVIEW
CASH-OUT REFINANCES

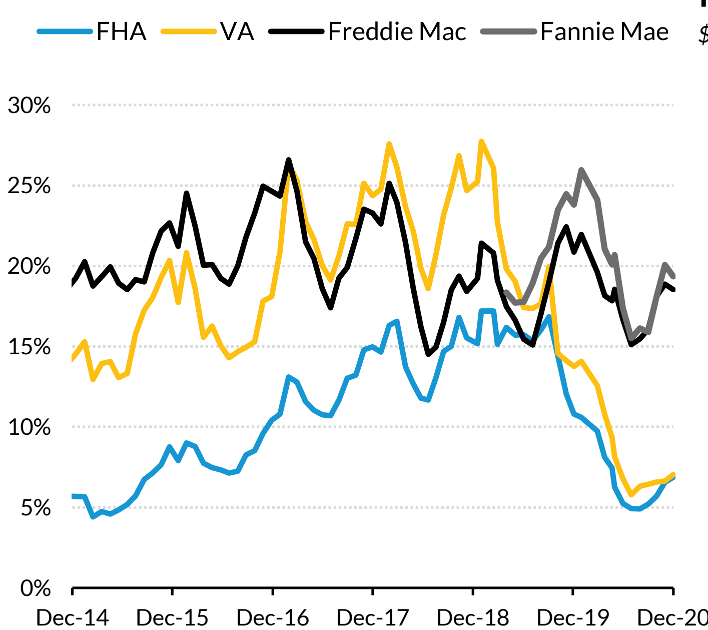
When mortgage rates are low, the share of cash-out refinances tends to be relatively smaller, as rate/term refinancing allows borrowers to save money by taking advantage of lower rates. But when rates are high, the cash-out refinance share is higher since the rate reduction incentive is gone and the only reason to refinance is to take out equity. The cash-out refi share has generally fallen during 2020, due to increased rate refinance activity from borrowers taking advantage of historically low rates, though Q3 showed a slight uptick to 34 percent, from 33 percent the previous quarter. Note that while home prices have risen, equity take-out volumes are still substantially lower now than during the bubble years.

Loan Amount after Refinancing



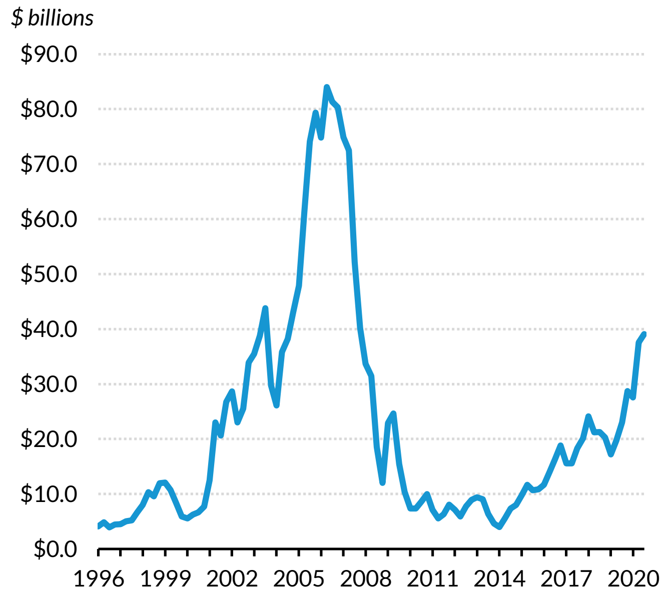
Sources: Freddie Mac and Urban Institute.
Note: Estimates include conventional mortgages only.

Cash-out Refi Share of All Originations



Sources: eMBS and Urban Institute.
Note: Data as of December 2020.

Equity Take-Out from Conventional Mortgage Refinance Activity



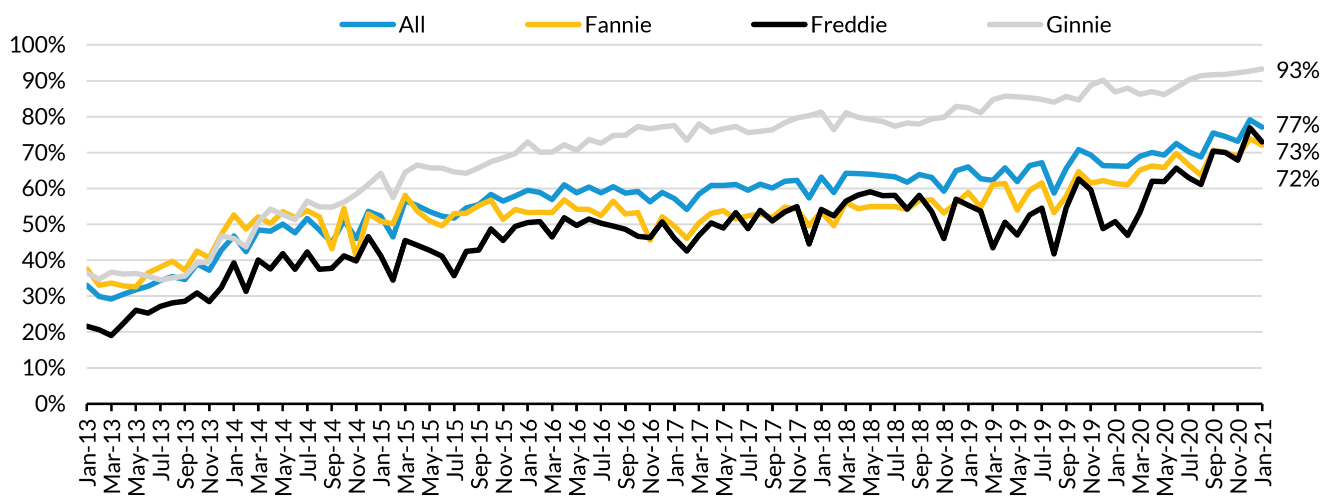
Sources: Freddie Mac and Urban Institute.
Note: These quarterly estimates include conventional mortgages only.

OVERVIEW

AGENCY NONBANK ORIGINATION SHARE

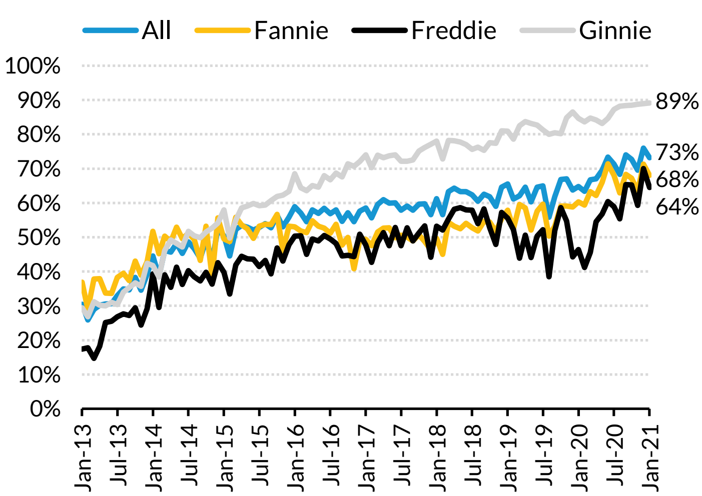
The nonbank share for agency originations has been rising steadily since 2013, standing at 77 percent in January 2021. The Ginnie Mae nonbank share has been consistently higher than the GSEs, remaining flat in January 2021 at 93 percent. Fannie and Freddie had nonbank shares of 72 and 73 percent, respectively, in January 2021. 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



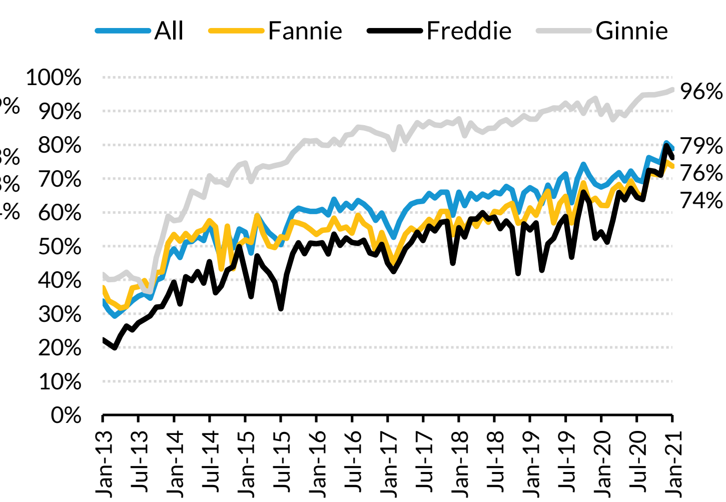
Sources: *eMBS and Urban Institute.*

Nonbank Origination Share: Purchase Loans



Sources: *eMBS and Urban Institute.*

Nonbank Origination Share: Refi Loans



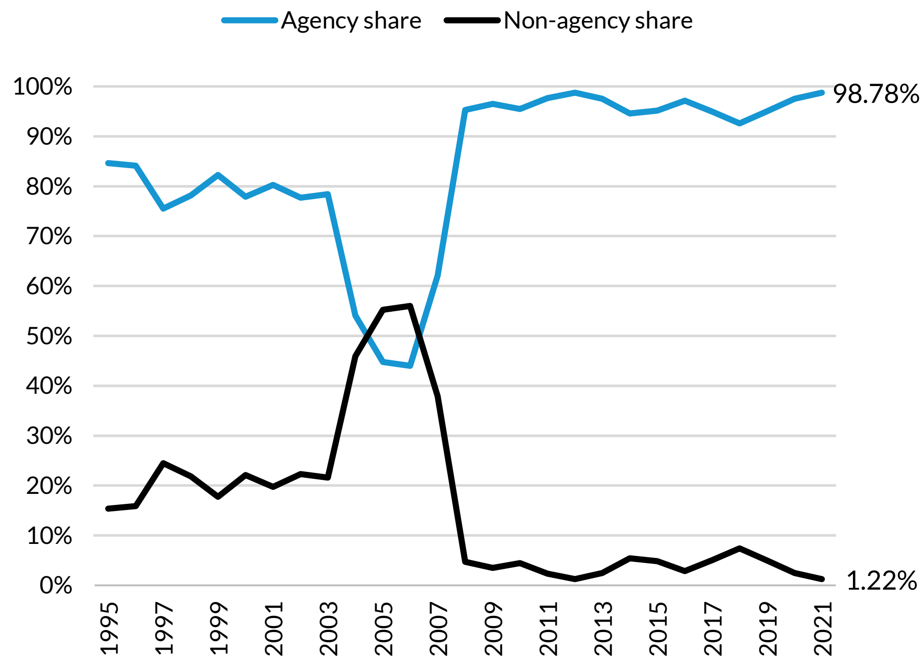
Sources: *eMBS and Urban Institute.*

OVERVIEW

SECURITIZATION VOLUME AND COMPOSITION

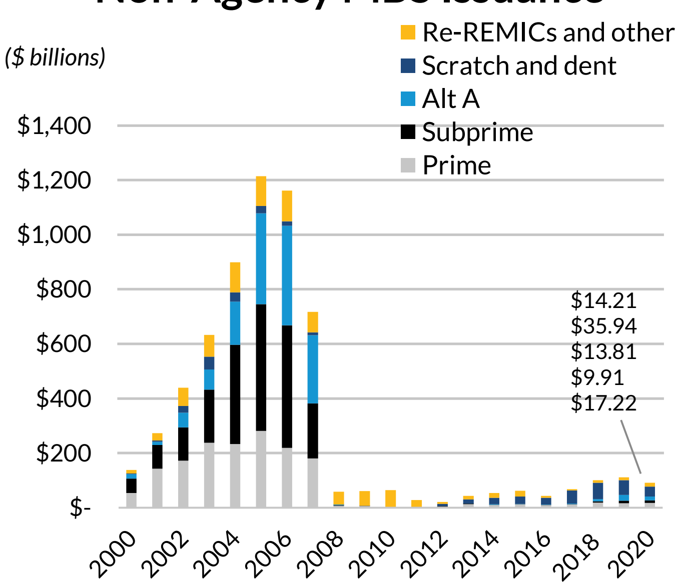
Agency/Non-Agency Share of Residential MBS Issuance

The non-agency share of mortgage securitizations increased gradually over the post-crisis years, from 1.83 percent in 2012 to 5.0 percent in 2019. In 2020, the non-agency share dropped to 2.44 percent, and in January 2021, it stood at 1.22 percent. The sharp drop in 2020 reflects less non-agency production due to dislocations caused by COVID-19. Non-agency securitization volume totaled $91.09 billion in 2020, a decrease relative to the $111.52 billion total from 2019. Non-agency securitizations continue to be tiny compared to pre-housing market crisis levels.



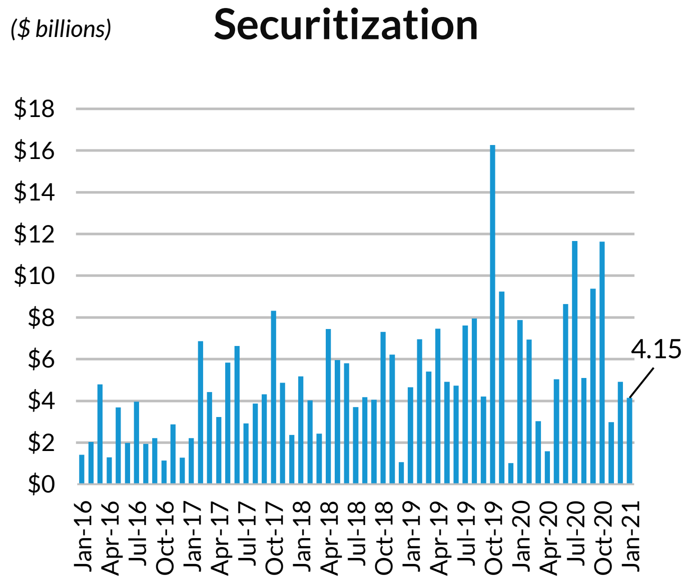
Sources: Inside Mortgage Finance and Urban Institute.
Note: Based on data from January 2021. Monthly non-agency volume is subject to revision.

Non-Agency MBS Issuance



Sources: Inside Mortgage Finance and Urban Institute.

Monthly Non-Agency Securitization

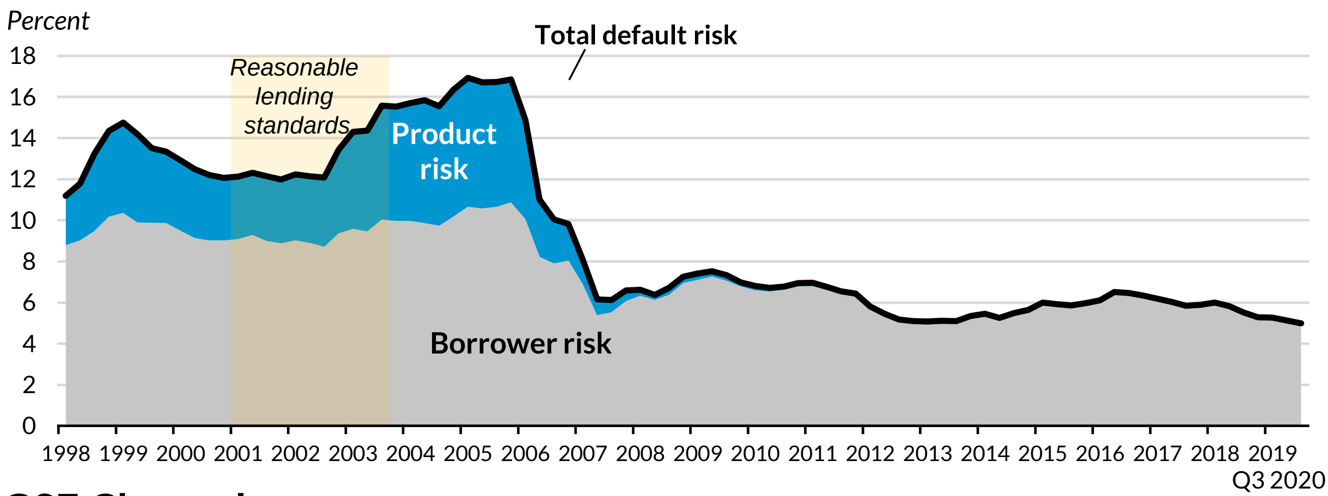


Sources: Inside Mortgage Finance and Urban Institute.

CREDIT BOX
HOUSING CREDIT AVAILABILITY INDEX

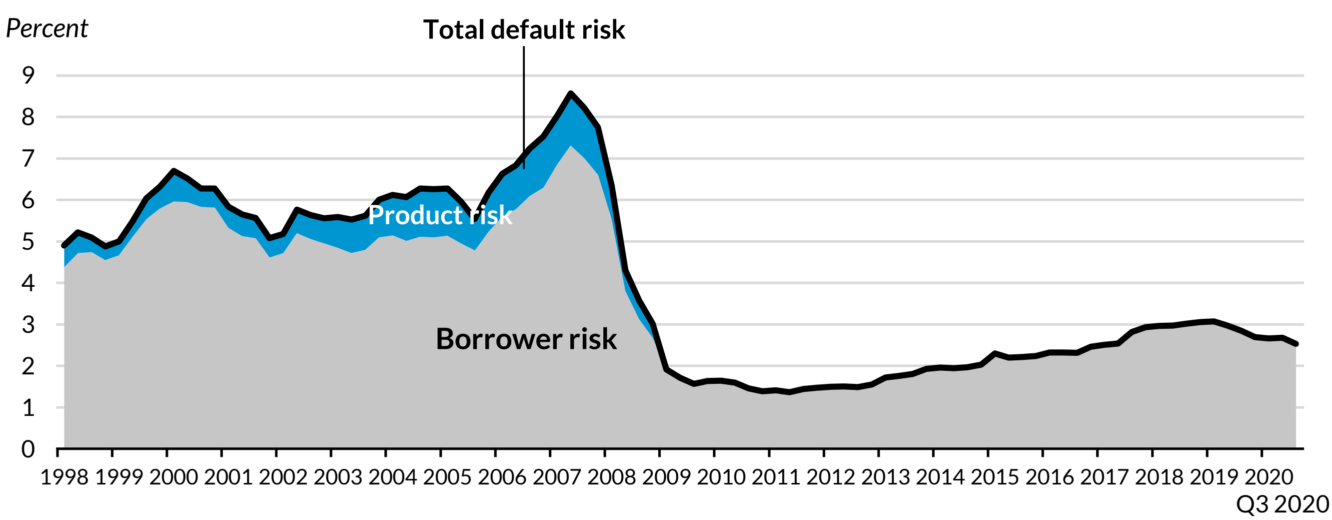
The Urban Institute's Housing Credit Availability Index (HCAI) assesses lenders' tolerance for both borrower risk and product risk, calculating the share of owner-occupied purchase loans that are likely to go 90+ days delinquent over the life of the loan. The HCAI stood at 5.0 percent in Q3 2020, down very slightly from 5.1 percent in Q1 2020. Note that we updated the methodology as of Q2 2020, see new methodology here. Tightening in the GSE and government channels has driven a retraction of credit availability through the first three quarters of 2020, as the risk in the portfolio and private-label securitization market remains a shadow of what it once was. More information about the HCAI is available here.

All Channels



GSE Channel

The credit box has expanded proportionately more in the GSE channel than in the government channel in recent years, although the GSE box is still much narrower. From Q2 2011 to Q1 2019, the total risk taken by the GSE channel more than doubled, from 1.4 percent to 3.0 percent. This is still very modest by pre-crisis standards. However, over the past year, credit availability has trended down and tightened further throughout 2020 in response to changing market conditions due to COVID-19, standing at 2.5 percent in Q3 2020.

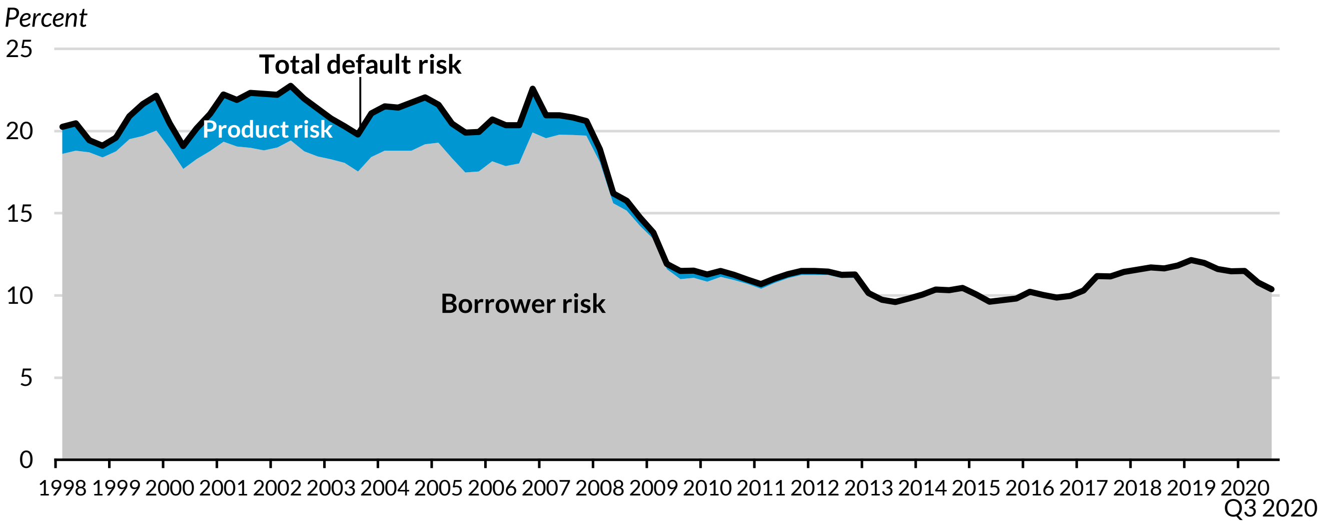


Sources: eMBS, CoreLogic, HMDA, IMF, and Urban Institute.
Note: Default is defined as 90 days or more delinquent at any point. *Last updated January 2021.*

HOUSING CREDIT AVAILABILITY INDEX

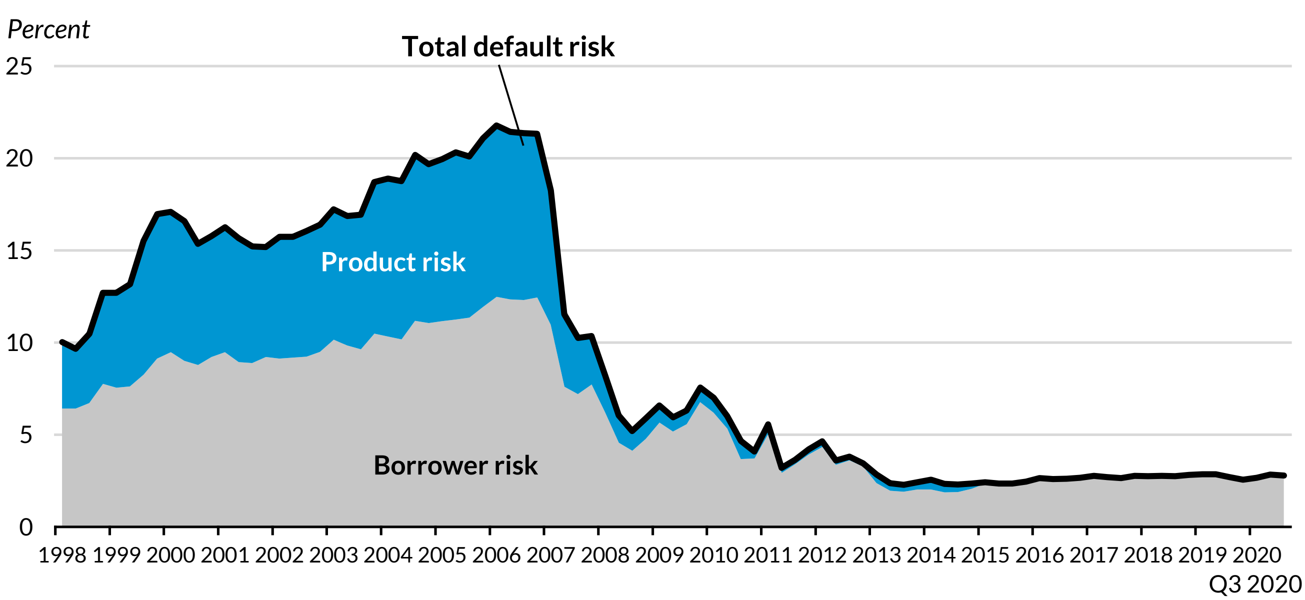
Government Channel

The total default risk the government loan channel is willing to take bottomed out at 9.6 percent in Q3 2013. It fluctuated in a narrow range at or above that number for three years. In the nine quarters from Q4 2016 to Q1 2019, the risk in the government channel had risen significantly from 9.9 to 12.1 percent. The risk in the government channel has been reduced since then, notably in quarters two and three of 2020, declining to 10.4 percent in Q3 and moving closer to 2016 levels, still far below the pre-bubble level of 19 to 23 percent.



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, the channel's product and borrower risks dropped sharply. The numbers have stabilized since 2013, with product risk well below 0.5 percent and total risk largely in the range of 2.5 to 3.0 percent; it was 2.8 percent in Q3 2020. However, the PP market share plummeted during the COVID-19 crisis, as borrowers increasingly used government or GSE channels or could not obtain a mortgage at all.



Sources: eMBS, CoreLogic, HMDA, IMF, and Urban Institute.
Note: Default is defined as 90 days or more delinquent at any point. *Last updated January 2021.*

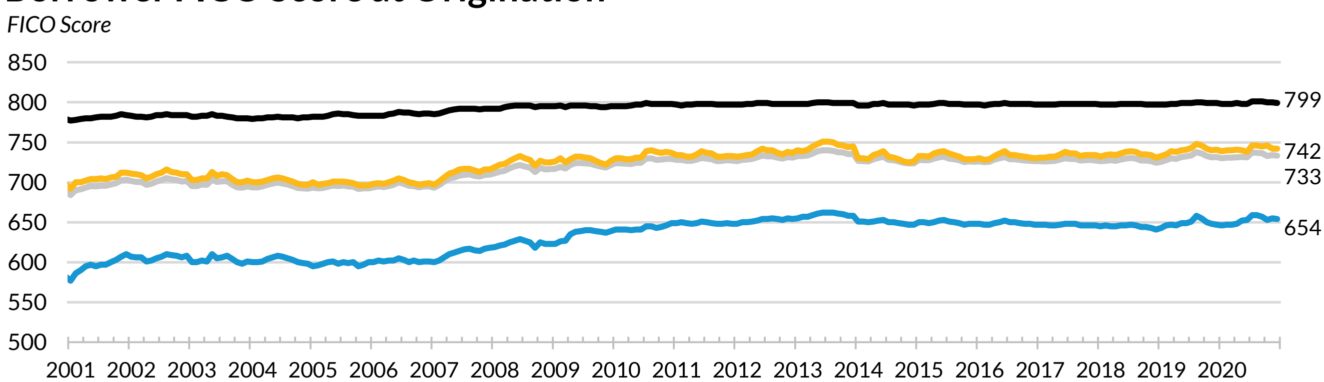
CREDIT BOX

CREDIT AVAILABILITY FOR PURCHASE LOANS

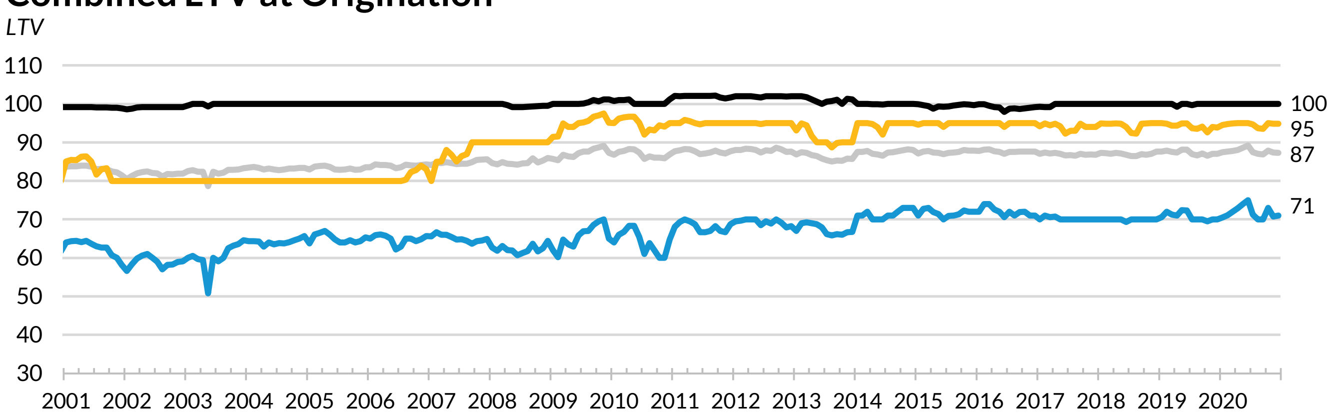
Access to credit remains tight, especially for lower FICO borrowers. The median FICO for current purchase loans is about 42 points higher than the pre-housing crisis level of around 700. The 10th percentile, which represents the lower bound of creditworthiness to qualify for a mortgage, was 654 in December 2020, which is high compared to low-600s pre-bubble. The median LTV at origination of 95 percent also remains high, reflecting the rise of FHA and VA lending. Origination DTIs have trended lower over the course of 2020, reflecting the sharp decline in mortgage rates.

Mean | 90th percentile | 10th percentile | Median

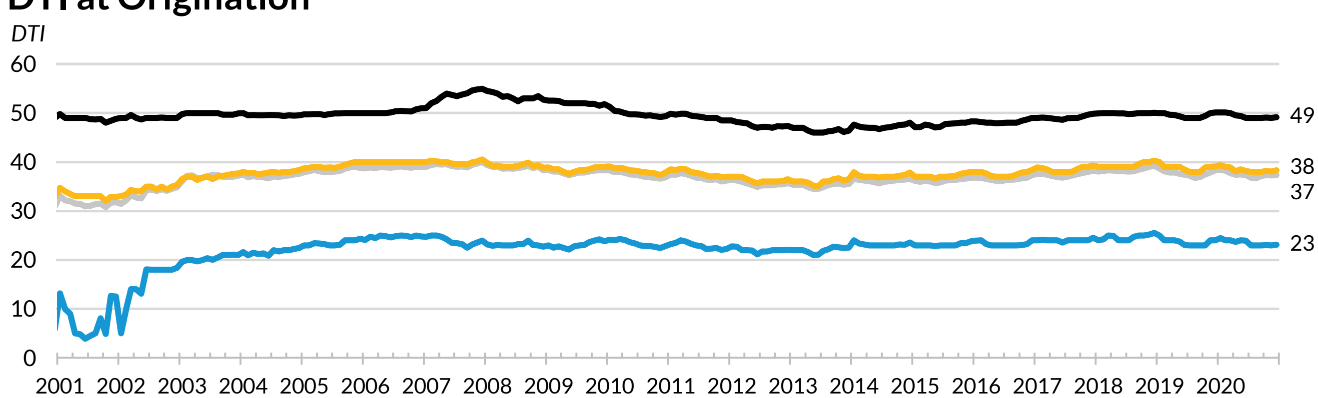
Borrower FICO Score at Origination



Combined LTV at Origination



DTI at Origination

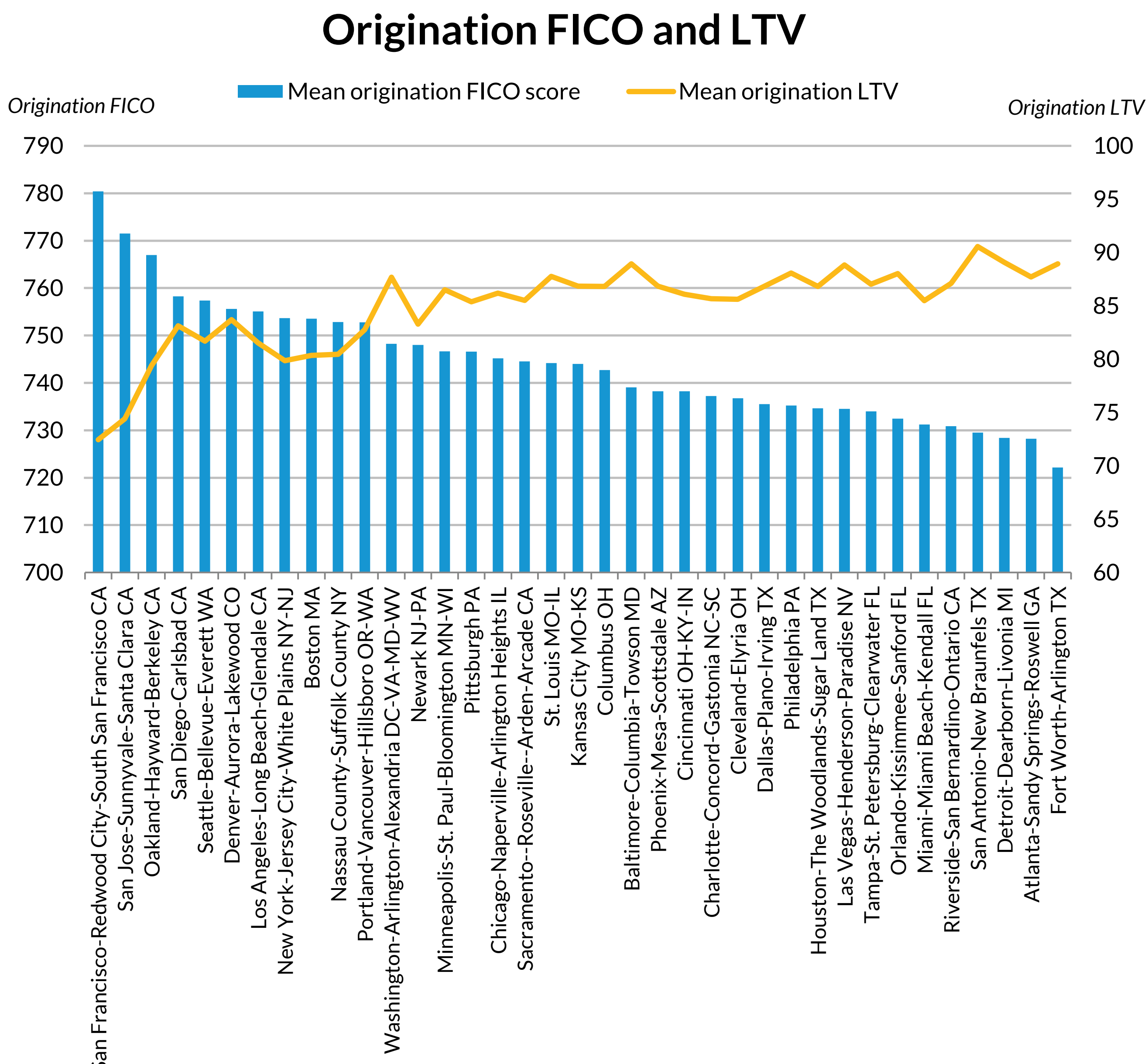


Sources: Black Knight, eMBS, HMDA, SIFMA, CoreLogic and Urban Institute.
Note: Includes owner-occupied purchase loans only. DTI data prior to April 2018 is from CoreLogic; after that date, it is from Black Knight. Data as of December 2020.

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 approximately 780 in December 2020. Across all MSAs, lower average FICO scores tend to be correlated with high average LTVs, as these MSAs rely heavily on FHA/VA financing.



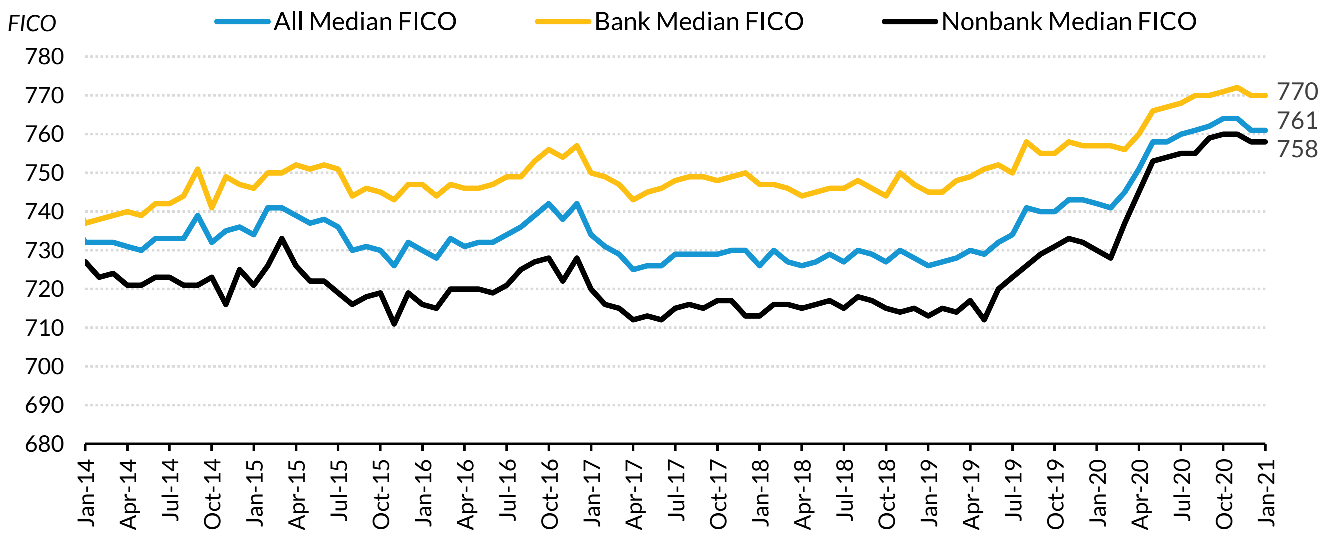
Sources: Black Knight, eMBS, HMDA, SIFMA and Urban Institute.
Note: Includes owner-occupied purchase loans only. Data as of December 2020.

CREDIT BOX

AGENCY NONBANK CREDIT BOX

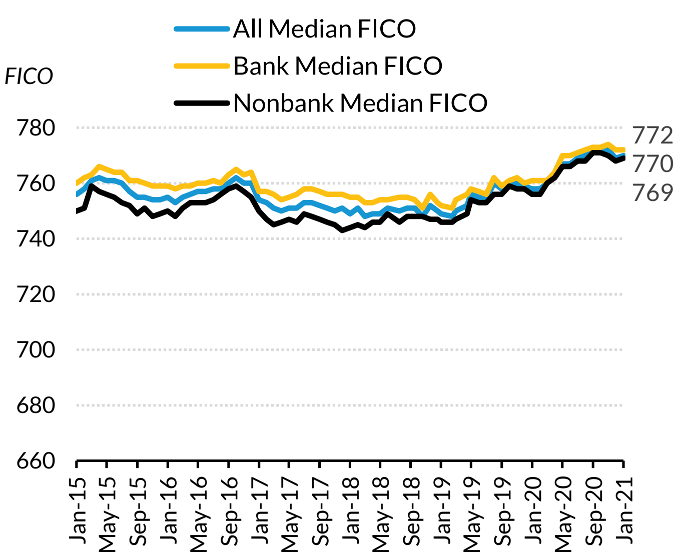
Nonbank originators have played a key role in expanding access to credit. In the GSE space, FICO scores for banks and nonbanks have nearly converged; the differential is much larger in the Ginnie Mae space. FICO scores for banks and nonbanks in both GSE and Ginnie Mae segments increased over the course of 2019-2020, due to increased refi activity; this activity is skewed toward higher FICO scores. This was particularly pronounced over the last ten months of available data: March through December of 2020. Note that there has been a sharp cut-back in FHA lending by banks post-2008. As pointed out on page 11, banks now comprise only about 7 percent of Ginnie Mae originations.

Agency FICO: Bank vs. Nonbank



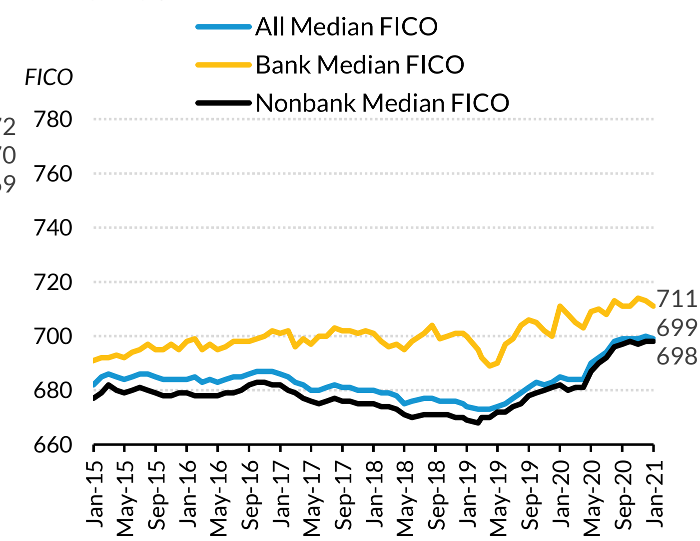
Sources: *eMBS and Urban Institute.*

GSE FICO: Bank vs. Nonbank



Sources: *eMBS and Urban Institute.*

Ginnie Mae FICO: Bank vs. Nonbank

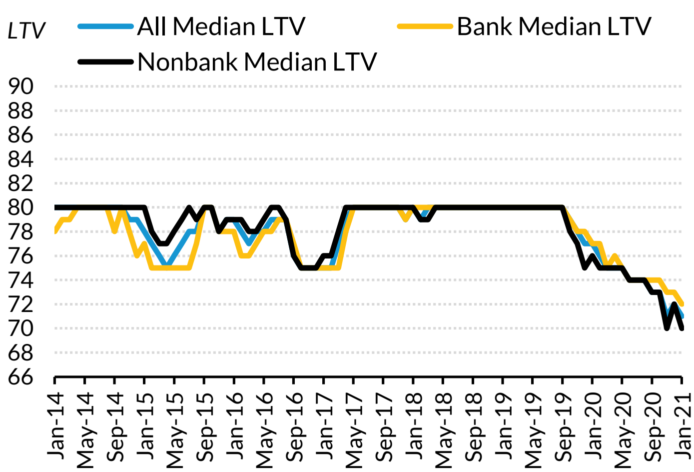


Sources: *eMBS and Urban Institute.*

AGENCY NONBANK CREDIT BOX

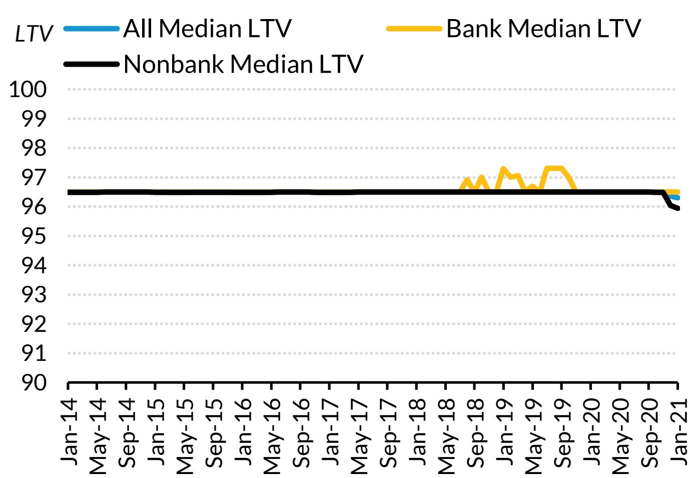
The median LTVs for nonbank and bank originations are comparable, while the median DTI for nonbank loans is higher than for bank loans, more so in the Ginnie Mae space. From early 2017 to early 2019, there was a sustained increase in DTIs, which has reversed beginning in the spring of 2019. This is true for both Ginnie Mae and the GSEs, for banks and nonbanks. As interest rates in 2017 and 2018 increased, DTIs rose, because borrower payments were driven up relative to incomes. As rates fell during most of 2019 and 2020, DTIs fell as borrower payments declined relative to incomes.

GSE LTV: Bank vs. Nonbank



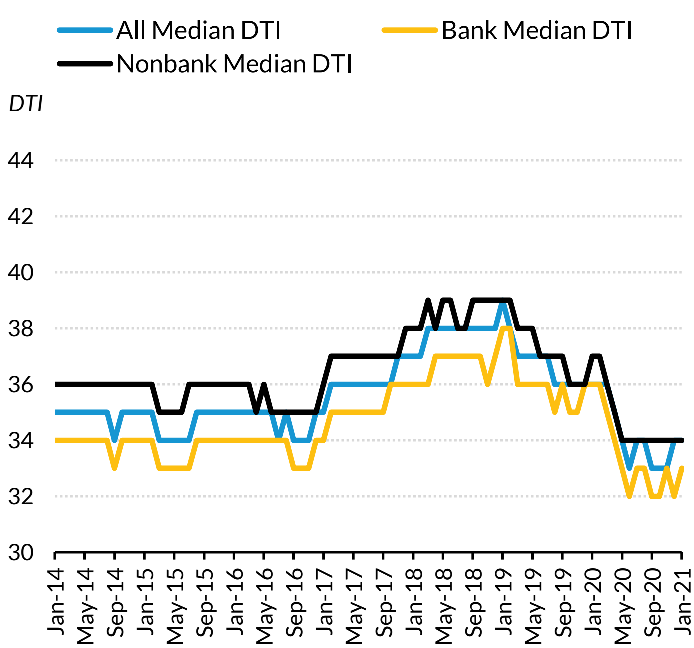
Sources: *eMBS and Urban Institute.*

Ginnie Mae LTV: Bank vs. Nonbank



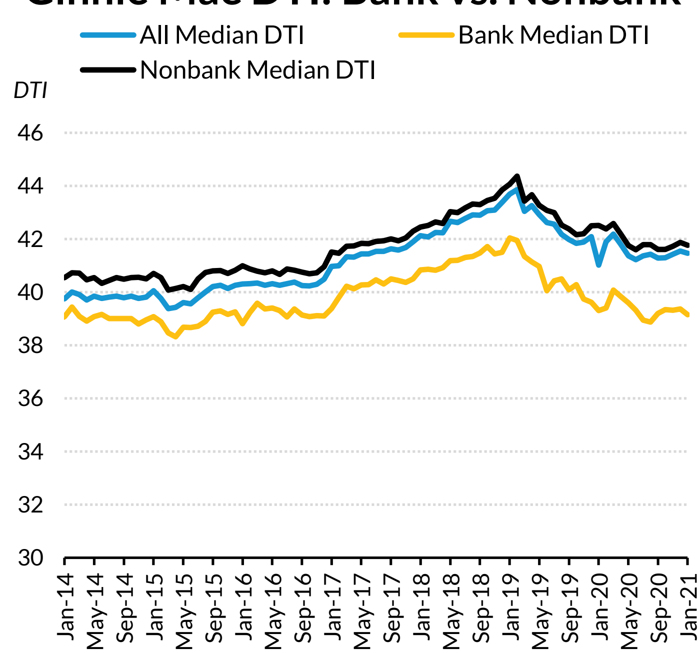
Sources: *eMBS and Urban Institute.*

GSE DTI: Bank vs. Nonbank



Sources: *eMBS and Urban Institute.*

Ginnie Mae DTI: Bank vs. Nonbank



Sources: *eMBS and Urban Institute.*

MORTGAGE ORIGINATION PROJECTIONS

Fannie Mae, Freddie Mac and the MBA estimate 2021 origination volume to be between $2.72 and $4.41 trillion, lower than the $3.57 to $4.48 trillion in 2020. 2020 was the highest origination year in the 21st century; page 8 top provides the longer historical time series. The very robust 2020 origination volume is due to very strong refinance activity. All three groups expect the 2021 refinance share to be 9 to 18 percentage points lower than in 2020.

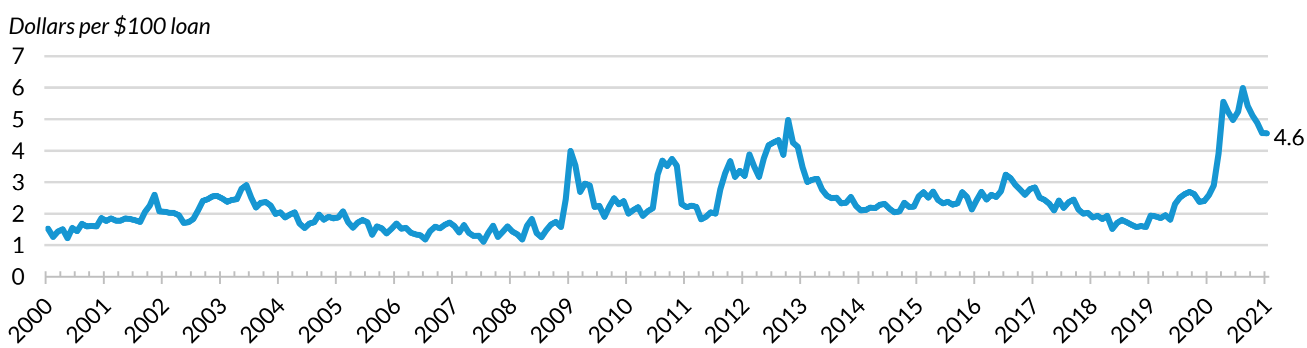
Total Originations and Refinance Shares

Period	Originations ($ billions)			Refi Share (percent)		
	Total, FNMA estimate	Total, FHLMC estimate	Total, MBA estimate	FNMA estimate	FHLMC estimate	MBA estimate
2020 Q1	752	675	563	61	60	54
2020 Q2	1096	975	928	68	68	63
2020 Q3	1345	1140	1076	62	65	61
2020 Q4	1285	1214	1006	65	64	60
2021 Q1	1214	965	820	71	67	61
2021 Q2	1091	958	683	53	53	45
2021 Q3	929	759	638	45	48	31
2021 Q4	822	612	578	48	37	25
2017	1826	1810	1760	36	37	35
2018	1766	1700	1677	30	32	28
2019	2462	2432	2253	46	46	44
2020	4478	4004	3573	64	65	60
2021	4405	3294	2719	55	53	42
2022	3170	2416	2201	44	37	26

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 2017, 2018, 2019 and 2020 were 4.0, 4.6, 3.9, and 3.0 percent. For 2021, the respective projections for Fannie, Freddie, and MBA are 2.8, 2.9, and 3.4 percent. Freddie Mac forecasts are now released quarterly, last updated January 2021.

Originator Profitability and Unmeasured Costs

In January 2021, Originator Profitability and Unmeasured Costs (OPUC) stood at $4.55 per $100 loan, roughly equivalent to last month's $4.56, and still high by historical standards. Increased profitability reflects lender capacity constraints amidst strong refi demand. Additionally, the Fed's massive purchases of agency MBS since March pushed down secondary yields, thus widening the spread to primary rates. We would expect OPUC to remain elevated for some time, declining as the backlog of refinance activity is processed, volumes ebb and originators begin to compete more aggressively on price. 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.

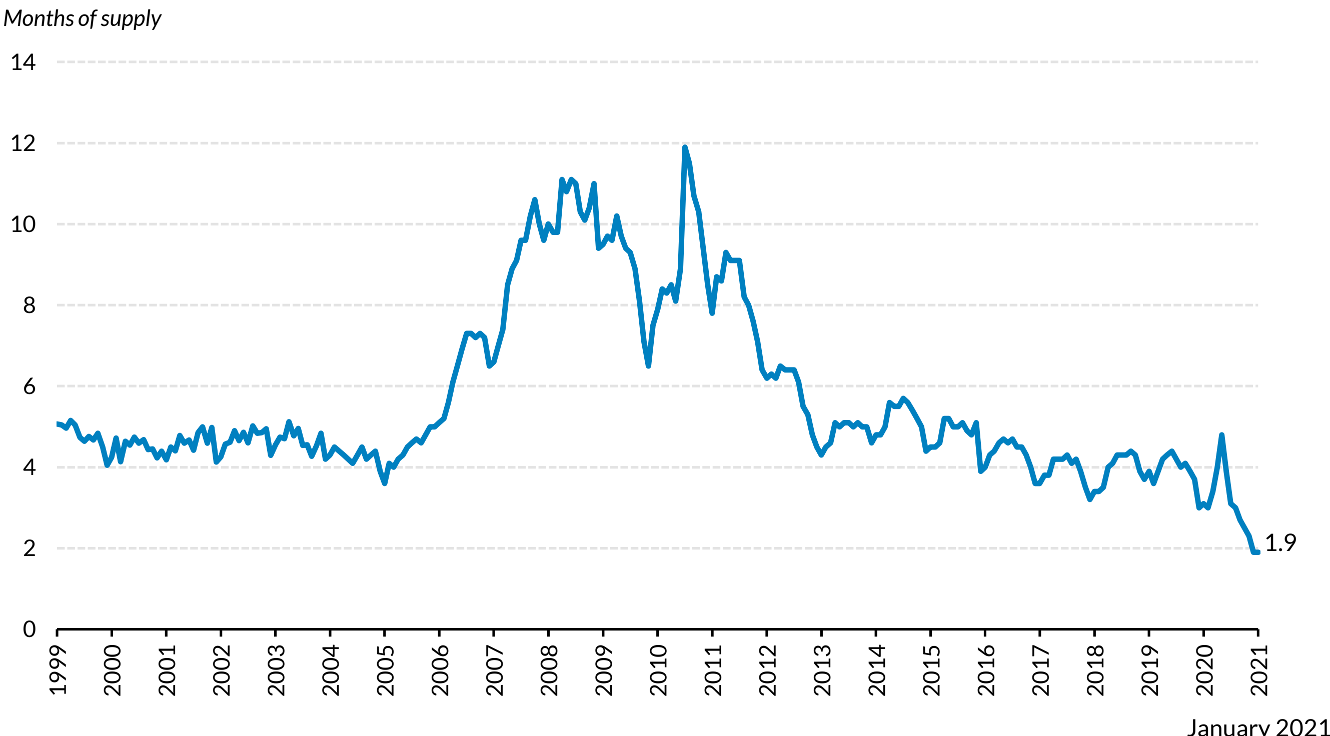


Sources: Federal Reserve Bank of New York, updated monthly and available at this link: http://www.ny.frb.org/research/epr/2013/1113fust.html and Urban Institute. Last updated January 2021.
Note: OPUC is a is a monthly (4-week moving) average as discussed in Fuster et al. (2013).

STATE OF THE MARKET
HOUSING SUPPLY

Months of supply in January 2021 was 1.9, 1.2 months lower than it was in January 2020 and maintaining the record low from last month. Strong demand for housing in recent years, fueled by low mortgage rates, has kept the months supply limited. Fannie Mae, the MBA, and the NAHB forecast 2021 housing starts to be 1.38 to 1.51 million units; these 2021 forecasts are above 2020 levels. Fannie Mae, Freddie Mac, and the MBA predict total home sales of 6.50 to 7.19 million units in 2021; Fannie and the MBA's predictions are above 2020 levels, while Freddie's are equivalent to 2020 sales.

Months of Supply



Source: National Association of Realtors and Urban Institute. Data as of January 2021.

Housing Starts and Home Sales

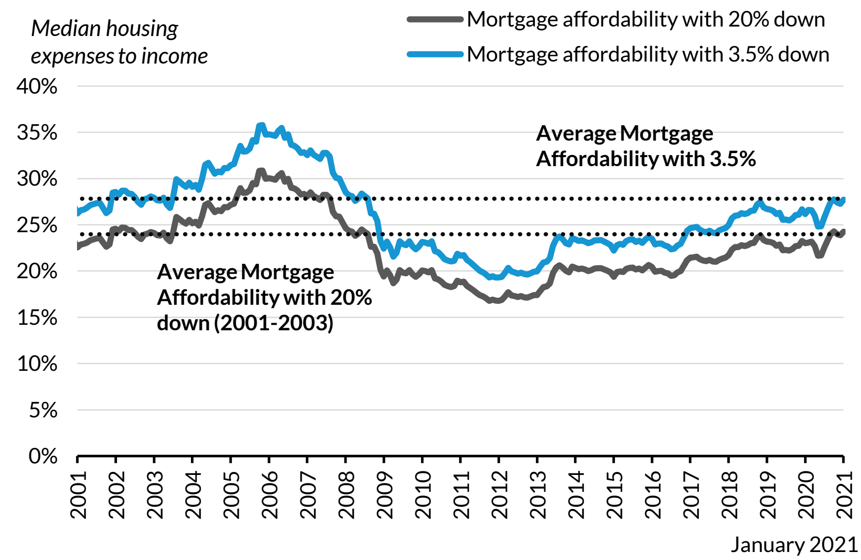
Year	Housing Starts, thousands			Home Sales. thousands			
	Total, FNMA estimate	Total, MBA estimate	Total, NAHB estimate	Total, FNMA estimate	Total, FHLMC estimate	Total, MBA estimate	Total, NAHB estimate*
2017	1203	1208	1208	6123	6120	6158	5520
2018	1250	1250	1250	5957	5960	5956	5351
2019	1290	1295	1295	6023	6000	6016	5439
2020	1380	1382	1380	6451	6500	6467	5785
2021	1514	1481	1383	6893	6500	7189	6304
2022	1471	1496	1433	6590	6200	7308	6364

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. Freddie Mac home sales are now updated quarterly instead of monthly, with the last update in January 2021. *NAHB home sales estimate is for single-family structures only, it excludes condos and co-ops. Other figures include all single-family sales.

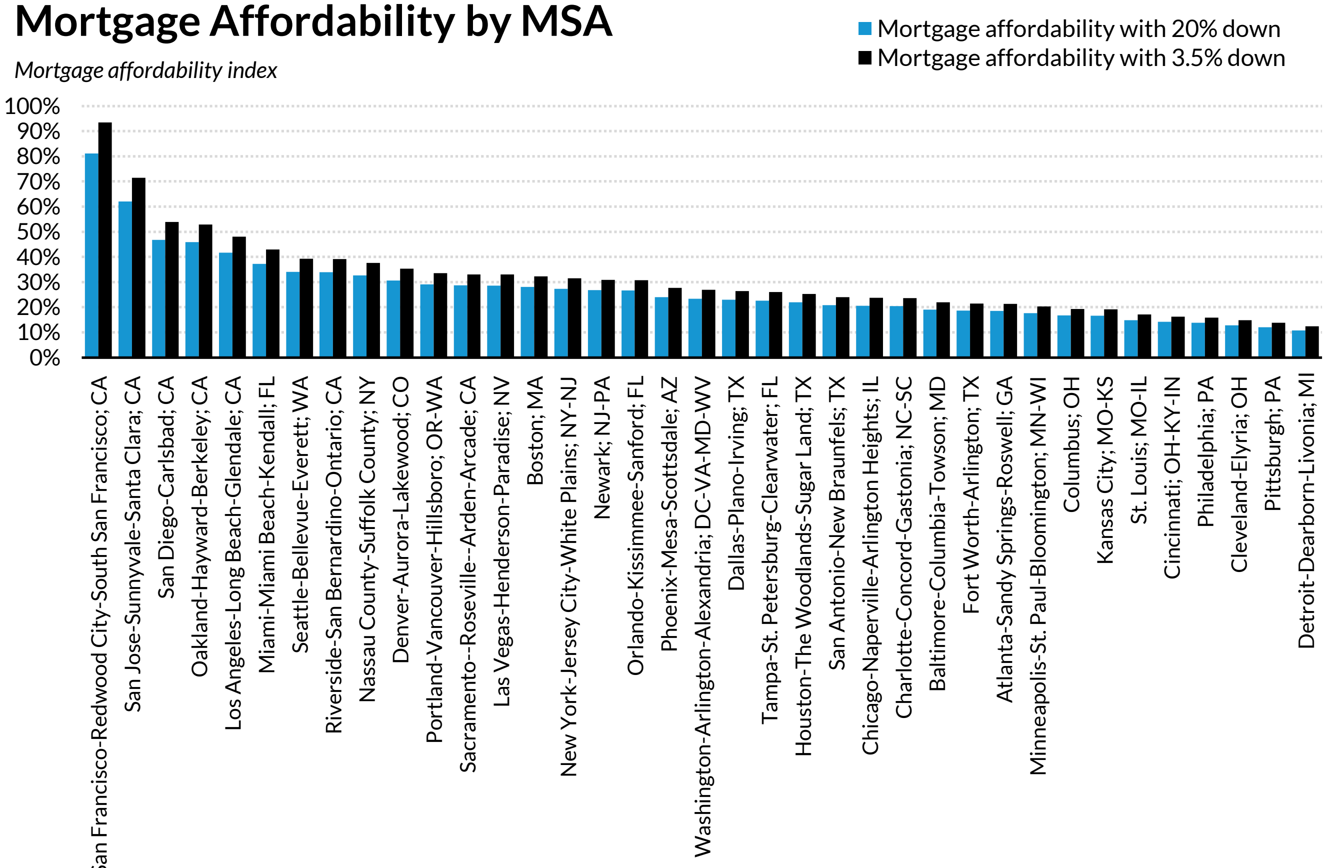
HOUSING AFFORDABILITY

National Mortgage Affordability Over Time

Despite price increases over the last 8 years, home prices remain affordable by historic standards, as interest rates are now near generational lows. As of January 2021, with a 20 percent down payment, the share of median income needed for the monthly mortgage payment stood at 24.3 percent; with 3.5 down, it is 27.7 percent. These numbers are very close to the 2001-2003 median, and represent a sharp decrease in affordability in recent months. The last time we were at this affordability level was in February of 2019, and before that, in 2008. As shown in the bottom picture, mortgage affordability varies widely by MSA.



Mortgage Affordability by MSA



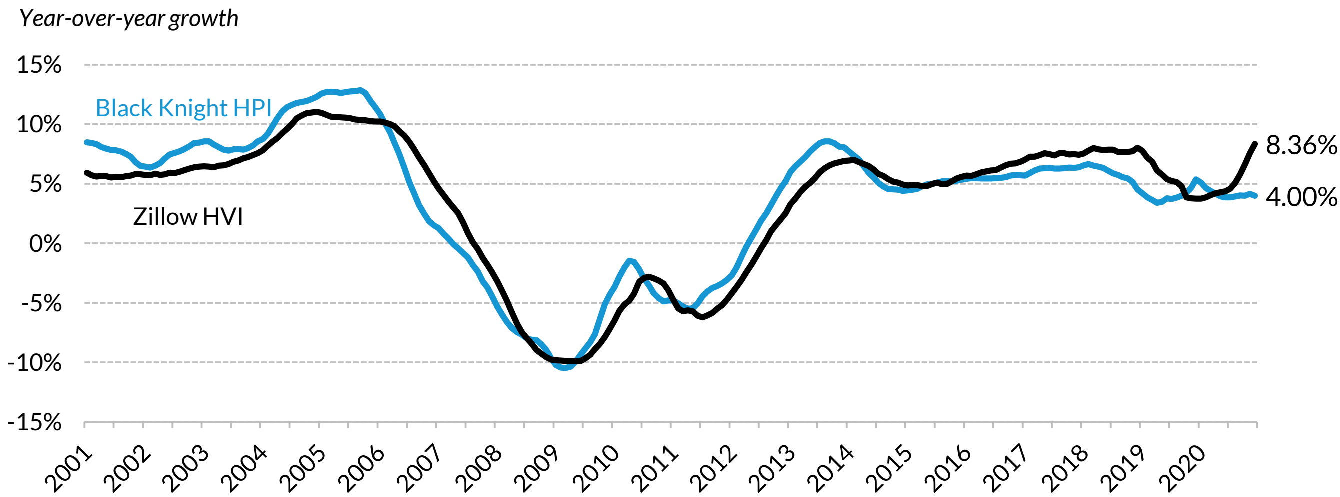
Sources: National Association of Realtors, US Census Bureau, Current Population Survey, American Community Survey, Moody's Analytics, Freddie Mac Primary Mortgage Market Survey, and the Urban Institute.

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 Q2 2019.

HOME PRICE INDICES

National Year-Over-Year HPI Growth

According to Black Knight's repeat sales index, year-over-year home price appreciation decreased to 4.00 percent in December 2020, compared to 4.15 percent the previous month. Year-over-year home price appreciation as measured by Zillow's hedonic index was 8.36 percent in December 2020, up from 7.53 in November. Although housing affordability remains constrained, especially at the lower end of the market, low rates serve as a partial offset.



Sources: Black Knight, Zillow, and Urban Institute. **Note:** Data as of December 2020.

Changes in Black Knight HPI for Top MSAs

After rising 60.0 percent from the trough, national house prices are now 19.7 percent higher than pre-crisis peak levels. At the MSA level, twelve of the top 15 MSAs have exceeded their pre-crisis peak HPI: New York, NY; Los Angeles, CA; Atlanta, GA; Washington, DC; Houston, TX; Phoenix, AZ; Dallas, TX; Minneapolis, MN; Seattle, WA; Denver, CO; San Diego, CA; and Anaheim, CA. Three MSAs particularly hard hit by the boom and bust—Chicago, IL; Riverside, CA; and Baltimore, MD—are 9.2, 4.3, and 5.9 percent, respectively, below peak values.

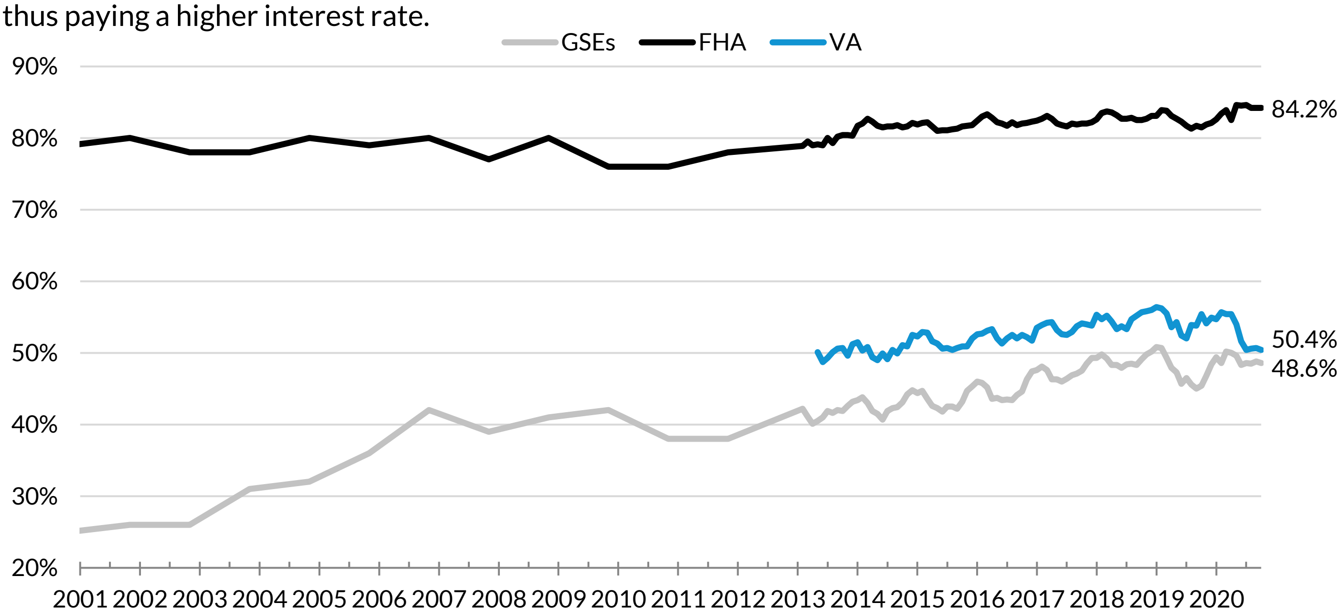
MSA	HPI changes (%)			% above peak
	2000 to peak	Peak to trough	Trough to current	
United States	74.9	-25.2	60.0	19.7
New York-Jersey City-White Plains, NY-NJ	127.7	-22.5	50.7	16.8
Los Angeles-Long Beach-Glendale, CA	179.3	-38.1	97.0	22.0
Chicago-Naperville-Arlington Heights, IL	67.2	-38.4	47.5	-9.2
Atlanta-Sandy Springs-Roswell, GA	32.3	-35.0	85.6	20.6
Washington-Arlington-Alexandria, DC-VA-MD-WV	148.9	-28.3	43.2	2.7
Houston-The Woodlands-Sugar Land, TX	29.2	-6.6	52.8	42.7
Phoenix-Mesa-Scottsdale, AZ	113.0	-51.0	109.4	2.5
Riverside-San Bernardino-Ontario, CA	174.5	-51.6	97.7	-4.3
Dallas-Plano-Irving, TX	26.3	-7.3	72.3	59.7
Minneapolis-St. Paul-Bloomington, MN-WI	69.2	-30.6	66.4	15.5
Seattle-Bellevue-Everett, WA	90.3	-33.1	115.0	43.8
Denver-Aurora-Lakewood, CO	34.1	-12.3	97.8	73.6
Baltimore-Columbia-Towson, MD	123.2	-24.4	24.4	-5.9
San Diego-Carlsbad, CA	148.0	-37.4	86.9	17.0
Anaheim-Santa Ana-Irvine, CA	163.1	-35.2	72.1	11.5

Sources: Black Knight HPI and Urban Institute. Data as of December 2020.
Note: This table includes the largest 15 Metropolitan areas by mortgage count.

FIRST-TIME HOMEBUYERS

First-Time Homebuyer Share

In December 2020, the FTHB share for FHA, which has always been more focused on first time homebuyers, was 84.2 percent. The FTHB share of VA lending in December was 50.4 percent. The GSE FTHB share in December was down slightly relative to November, at 48.6 percent. The bottom table shows that based on mortgages originated in December 2020, the average FTHB was more likely than an average repeat buyer to take out a smaller loan, have a lower credit score, and have a higher LTV, thus paying a higher interest rate.



December 2020

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

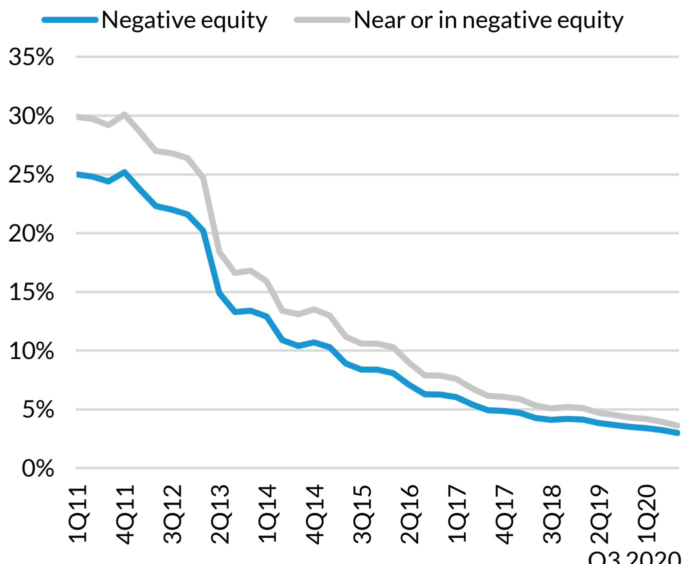
	GSEs		FHA		GSEs and FHA	
Characteristics	First-time	Repeat	First-time	Repeat	First-time	Repeat
Loan Amount ($)	293,832	312,207	242,761	256,668	276,669	305,187
Credit Score	748	758	678	678	724	748
LTV (%)	87	79	96	94	90	81
DTI (%)	34	35	43	44	37	36
Loan Rate (%)	2.89	2.83	3.00	2.98	2.93	2.85

Sources: eMBS and Urban Institute.
Note: Based on owner-occupied purchase mortgages originated in December 2020.

DELINQUENCIES AND LOSS MITIGATION ACTIVITY

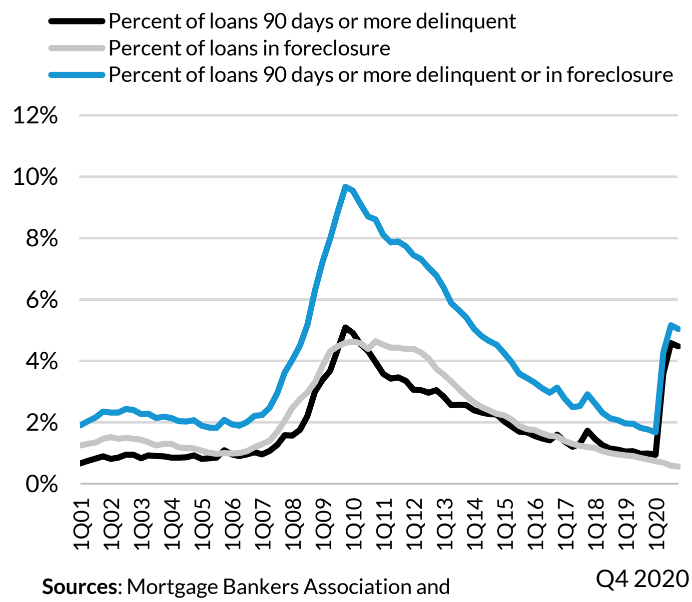
Loans in and near negative equity continued to decline in Q3 2020; 3.0 percent now have negative equity, an additional 0.6 percent have less then 5 percent equity. Due to the effects of COVID-19, the share of loans that are 90 days or more delinquent or in foreclosure remained high in Q4 2020, at 5.03 percent. This number includes loans where borrowers have missed their payments, including loans in COVID-19 forbearance. The bottom chart shows the share of loans in forbearance according to the MBA Weekly Forbearance and Call Volume Survey, launched in March 2020. After peaking at 8.55 percent in early June, the total forbearance rate has declined to 5.29 percent as of February 7, 2021. GSE loans have consistently had the lowest forbearance rates, standing at 3.01 percent as of February. The most recent forbearance rate for Ginnie Mae loans was 7.34 percent; other (e.g., portfolio and PLS) loans had the highest forbearance rate at 9.14 percent.

Negative Equity Share



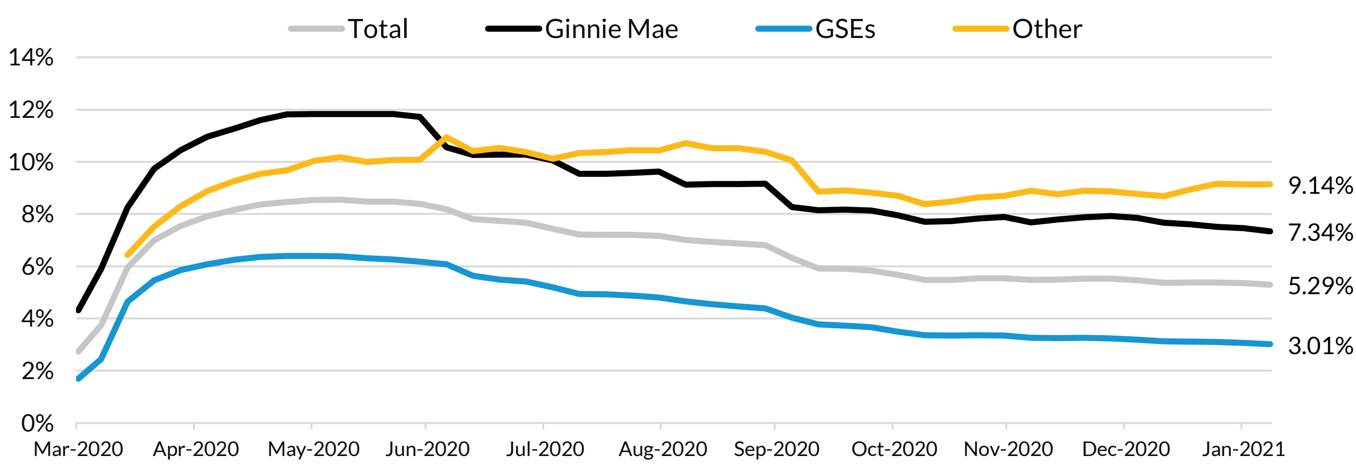
Sources: CoreLogic and Urban Institute.
Note: Loans with negative equity refer to loans above 100 percent LTV. Loans near negative equity refer to loans above 95 percent LTV. *Last updated December 2020.*

Loans in Serious Delinquency/Foreclosure



Sources: Mortgage Bankers Association and Urban Institute. *Last updated February 2021.*

Forbearance Rates by Channel



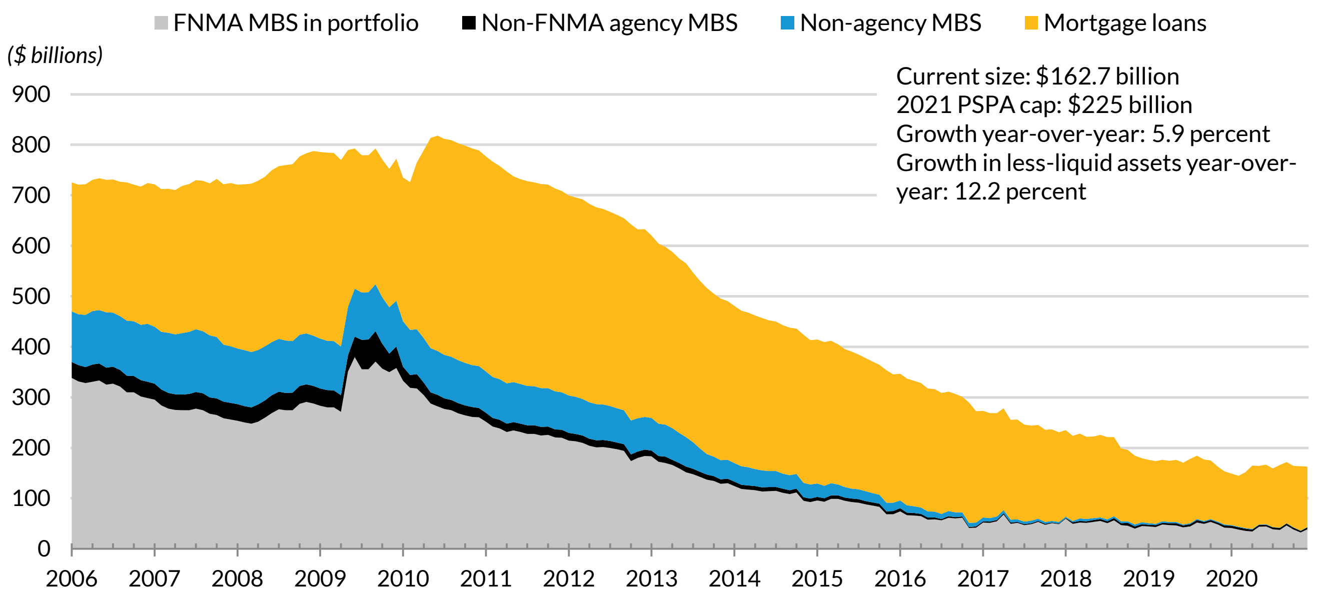
Source: MBA Weekly Forbearance and Call Volume Survey. *Forbearance rates as of February 7, 2021.*

GSES UNDER CONSERVATORSHIP

GSE PORTFOLIO WIND-DOWN

The Fannie Mae and Freddie Mac portfolios remain well below the $250 billion size they were required to reach by year-end 2018, or the $225 billion cap mandated in January 2021 by the new Preferred Stock Purchase Agreements (PSPAs). From December 2019 to December 2020, the Fannie portfolio grew year-over-year by 5.9 percent, while the Freddie portfolio contracted by 14.3 percent. Within the portfolio, both Fannie Mae and Freddie Mac increased their less-liquid assets (mortgage loans, non-agency MBS) by 12.2 percent and 31.5 percent, respectively, over the same 12 month period. These changes reflect both a smaller overall portfolio and the increased need to hold loans in portfolio for loss mitigation purposes.

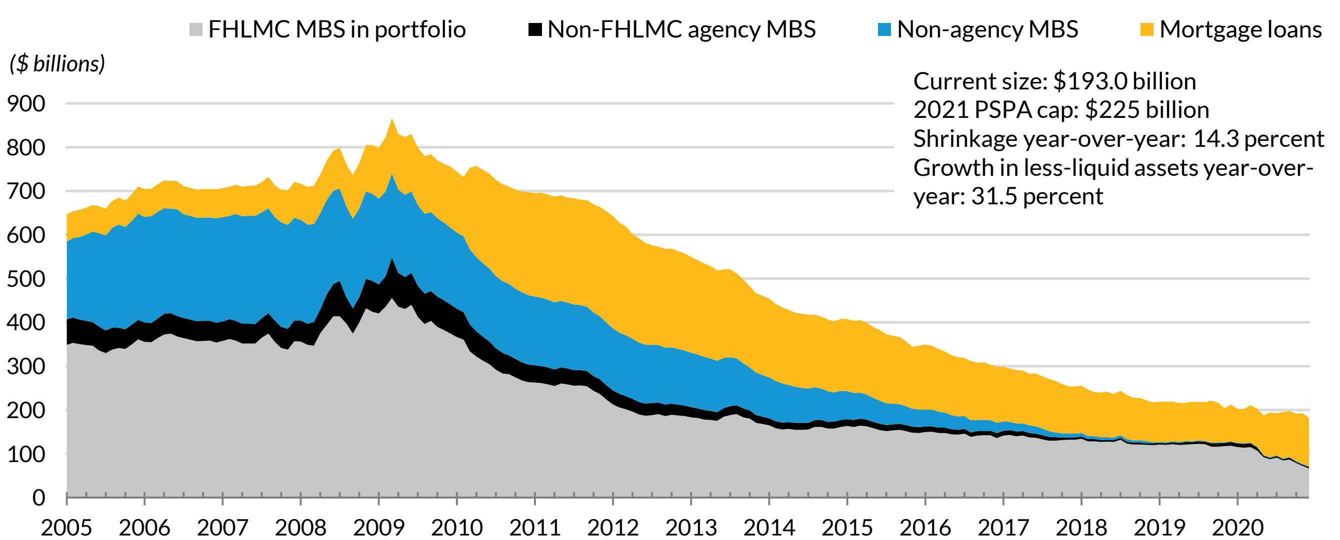
Fannie Mae Mortgage-Related Investment Portfolio Composition



Sources: Fannie Mae and Urban Institute.

December 2020

Freddie Mac Mortgage-Related Investment Portfolio Composition



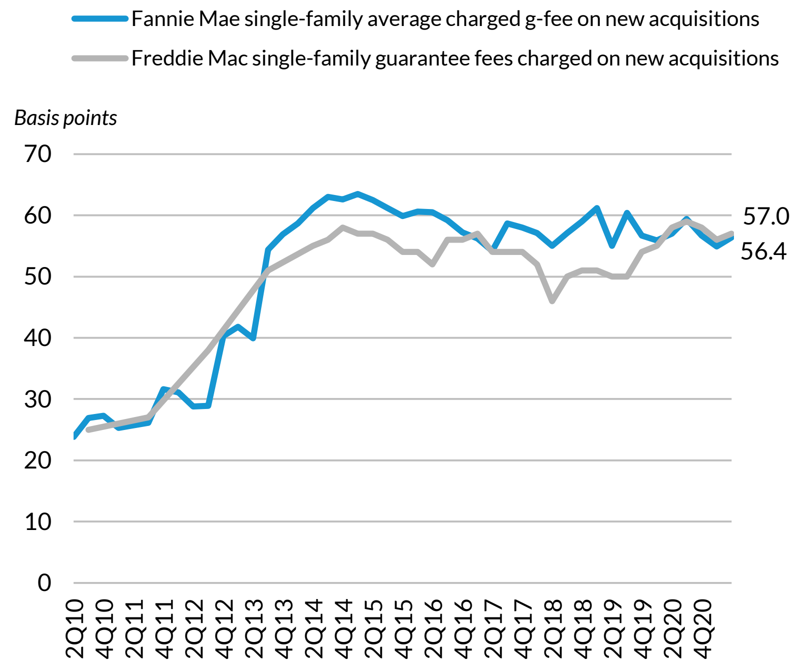
Sources: Freddie Mac and Urban Institute.

December 2020

EFFECTIVE GUARANTEE FEES

Guarantee Fees Charged on New Acquisitions

Fannie Mae's average g-fees charged on new acquisitions increased from 54.9 bps in Q3 2020 to 56.4 bps in Q4 2020. Freddie's also increased from 56.0 bps to 57.0 bps. The gap between the two g-fees was 0.6 bps in Q4 2020. 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. Note: The GSEs instituted a new LLPA of 50.0 basis points on most refinances, effective Dec 1, 2020.



Sources: Fannie Mae, Freddie Mae and Urban Institute.
Last updated February 2021.

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. Historically, the GSEs have transferred vast majority of their credit risk to private markets. Fannie Mae's CAS issuances since inception total $1.65 trillion; Freddie's STACR totals $1.80 trillion. Since the COVID-19 induced spread widening in March 2020, Freddie Mac has issued eight deals, while Fannie has issued none.

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
2018	CAS 2018 deals	$205,900	$7,314	3.6
2019	CAS 2019 deals	$291,400	$8,071	2.8
January 2020	CAS 2020 - R01	$29,000	$1,030	3.6
February 2020	CAS 2020 - R02	$29,000	$1,134	3.9
March 2020	CAS 2020 - SBT1	$152,000	$966	0.6
Total		**$1,649,572**	**$46,601**	**2.8**

Freddie Mac – Structured Agency Credit Risk (STACR)

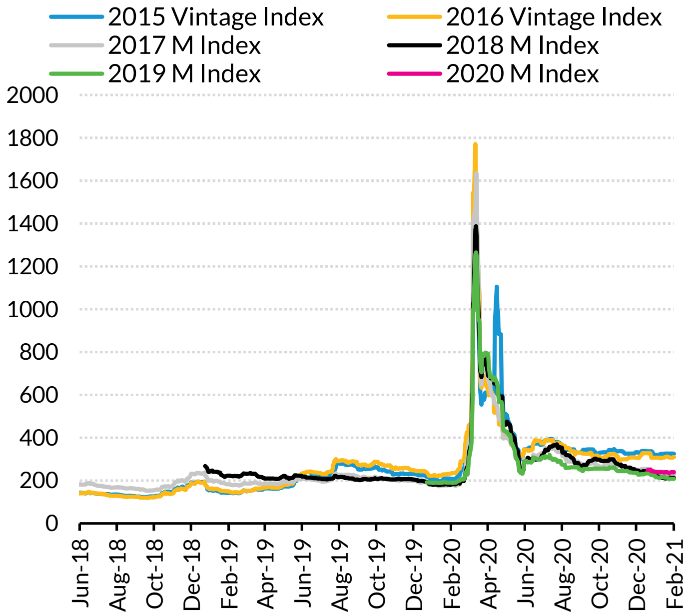
Date	*Transaction*	*Reference Pool Size ($ m)*	*Amount Issued ($m)*	*% of Reference Pool Covered*
2013	STACR 2013 deals	$57,912	$1,130	2.0
2014	STACR 2014 deals	$147,120	$4,916	3.3
2015	STACR 2015 deals	$209,521	$6,658	3.2
2016	STACR 2016 deals	$183,421	$5,541	2.8
2017	STACR 2017 deals	$248, 821	$5,663	2.3
2018	STACR 2018 deals	$216,581	$6,055	2.8
2019	STACR 2019 deals	$271,105	$5,947	2.2
January 2020	STACR Series 2020 – DNA1	$29,641	$794	2.7
February 2020	STACR Series 2020 – HQA1	$24,268	$738	3.0
February 2020	STACR Series 2020 – DNA2	$43,596	$1,169	2.7
March 2020	STACR Series 2020 – HQA2	$35,066	$1,006	2.9
July 2020	STACR Series 2020 – DNA3	$48,328	$1,106	2.3
July 2020	STACR Series 2020 – HQA3	$31,278	$835	2.7
August 2020	STACR Series 2020 – DNA4	$41,932	$1,088	2.6
September 2020	STACR Series 2020 – HQA4	$25,009	$680	2.7
October 2020	STACR Series 2020 – DNA5	$43,406	$1,086	2.5
November 2020	STACR Series 2020 - HQA5	$42,257	$1,080	2.6
December 2020	STACR Series 2020 – DNA6	$38,810	$790	2.0
January 2021	STACR Series 2021 – DNA1	$58.041	$970	1.7
Total		**$1,796,113**	**$47,252**	**2.6**

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.

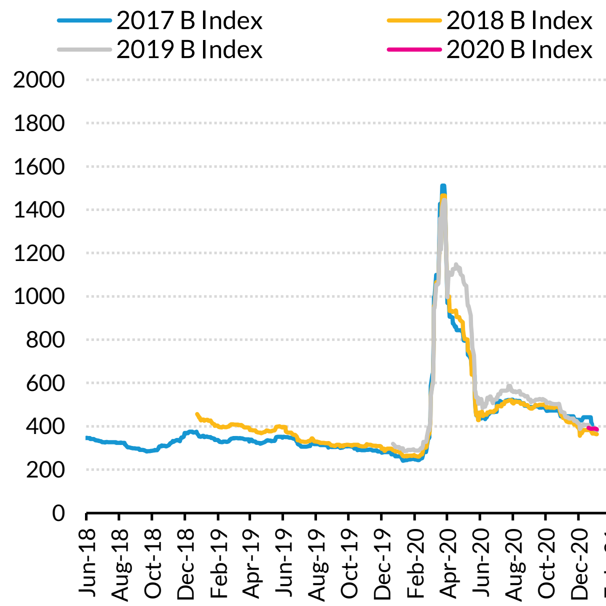
GSE RISK-SHARING INDICES

The figures below show the spreads on the 2015, 2016, 2017, 2018, 2019, and 2020 indices, as priced by dealers. Note the substantial spread widening in March 2020. This reflects expectations of higher defaults and potential credit losses owing to COVID-19, as well as forced selling. Spreads have tightened considerably since then but remain above pre-COVID levels, especially for B tranches. The 2015 and 2016 indices consist of the bottom mezzanine, i.e. M tranche in each deal, weighted by the original issuance amount (equity, i.e. B tranches were not sold in these years.) The 2017, 2018, 2019, and 2020 indices contain both the bottom mezzanine tranche as well as the equity tranche, in all deals when the latter was sold. 2020 indices are heavily Freddie Mac as Fannie hasn't issued any new deals since March 2020.

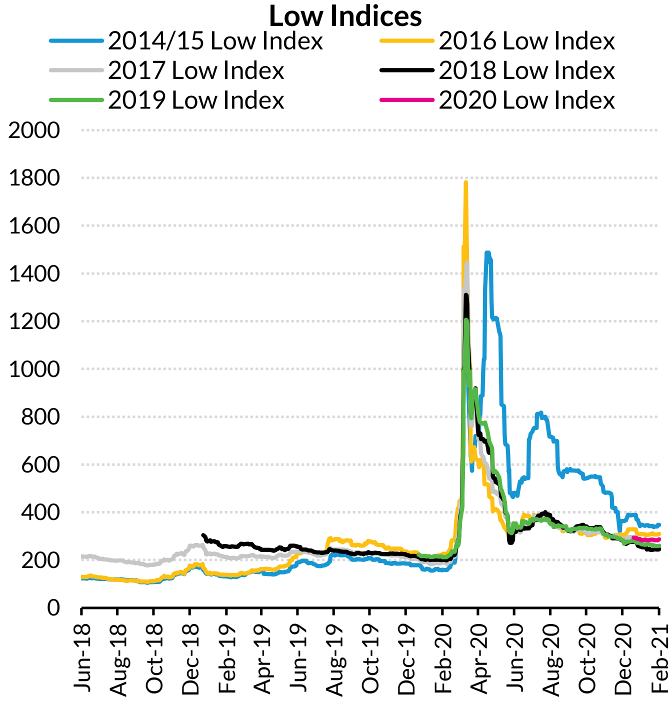
M Indices



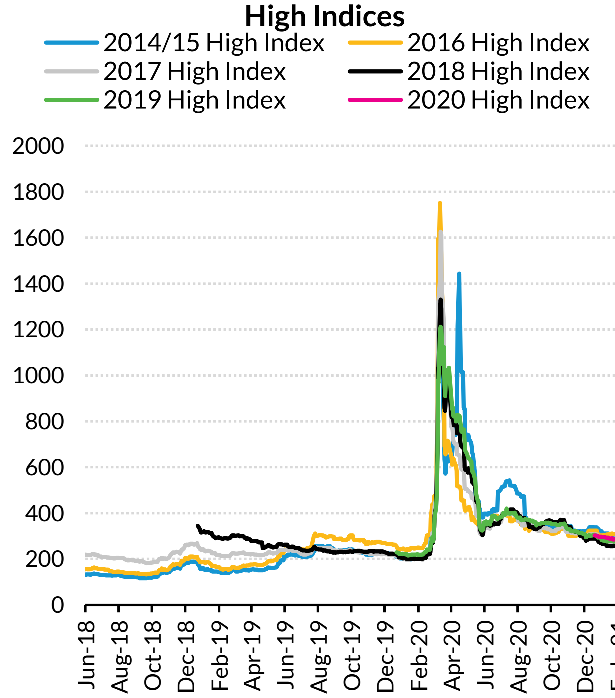
B Indices



Low Indices



High Indices



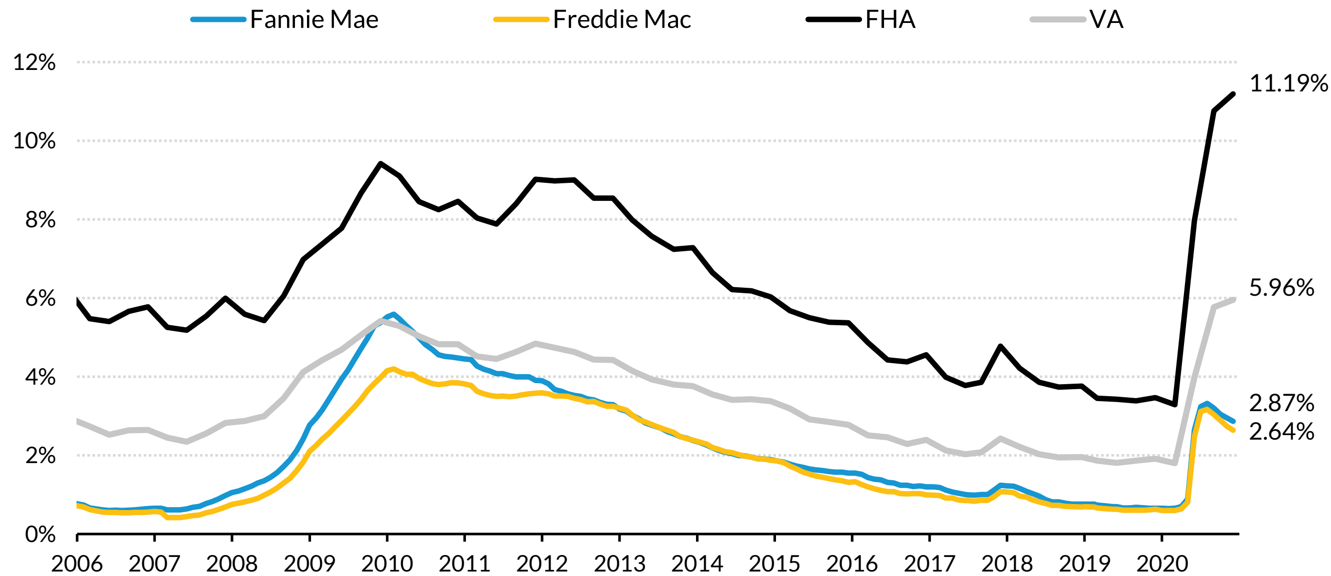
Sources: Vista Data Services and Urban Institute.
Note: Data as of February 12, 2021.

GSES UNDER CONSERVATORSHIP

SERIOUS DELINQUENCY RATES

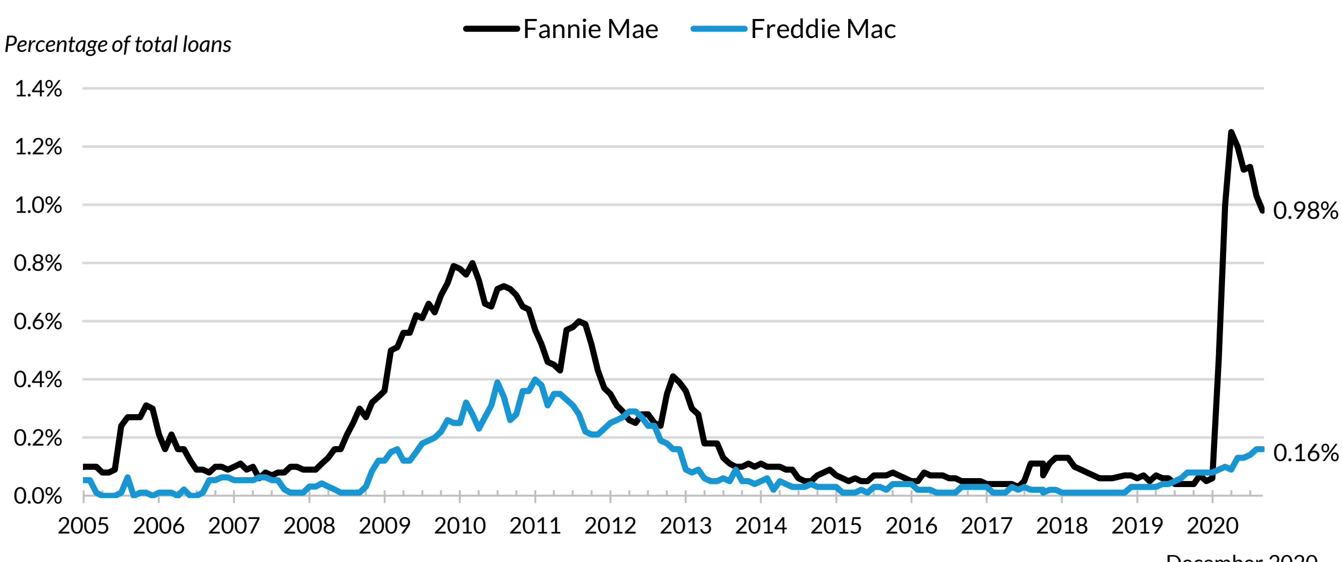
Serious delinquency rates for single-family GSE loans decreased in December 2020, to 2.87 percent for Fannie Mae and 2.64 percent for Freddie Mac. In Q4 2020, serious delinquency rates for FHA and VA loans rose again after spiking significantly in Q3. Note that loans that are in forbearance are counted as delinquent for the purpose of measuring delinquency rates. Fannie multifamily delinquencies decreased in December 2020 to 0.98 percent, while Freddie multifamily delinquencies remained at 0.16 percent, same as last month.

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 February 2021. GSE delinquencies are reported monthly, last updated December 2020.

Serious Delinquency Rates–Multifamily GSE Loans



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

AGENCY GROSS AND NET ISSUANCE

Agency gross issuance was $337.1 billion for the first month of 2021, nearly double the volume in January 2020. The sharp increase is due to the refinance wave, which accelerated significantly in 2020. Net issuance (new securities issued less the decline in outstanding securities due to principal pay-downs or prepayments) totaled $57.3 in the first month of 2021, a 67.5 percent increase from the volume in January 2020.

Agency Gross Issuance

Issuance Year	GSEs	Ginnie Mae	Total
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	$1,042.6	$508.6	$1,551.2
2020	$2,407.5	$775.4	$3,182.9
2021 YTD	$258.9	$78.2	$337.1
2021 % Change Over 2020	129.0%	39.6%	99.4%
2021 Annualized	$3,107.0	$937.8	$4,044.8

Agency Net Issuance

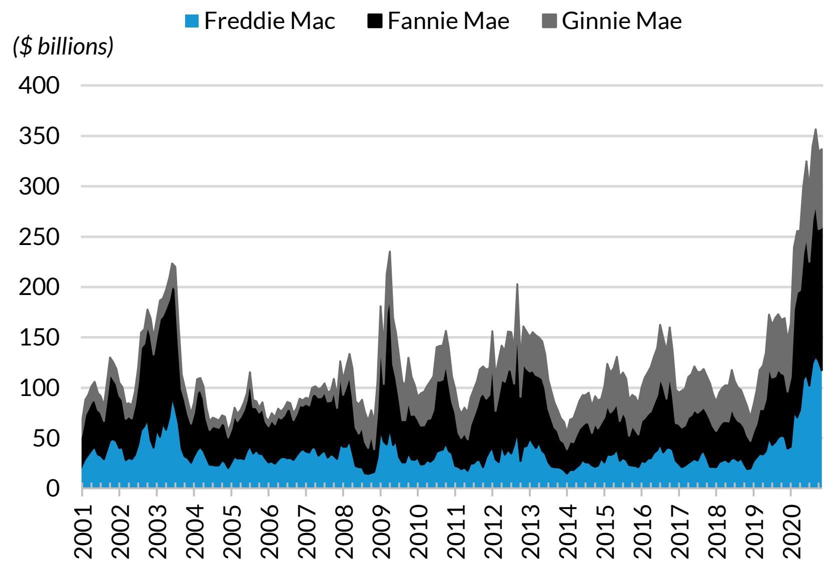
Issuance Year	GSEs	Ginnie Mae	Total
2001	$368.40	-$9.90	$358.50
2002	$357.20	-$51.20	$306.10
2003	$334.90	-$77.60	$257.30
2004	$82.50	-$40.10	$42.40
2005	$174.20	-$42.20	$132.00
2006	$313.60	$0.20	$313.80
2007	$514.90	$30.90	$545.70
2008	$314.80	$196.40	$511.30
2009	$250.60	$257.40	$508.00
2010	-$303.20	$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	$30.5	$61.6	$92.1
2015	$75.1	$97.3	$172.5
2016	$127.4	$125.8	$253.1
2017	$168.5	$131.3	$299.7
2018	$149.4	$112.0	$261.5
2019	$197.8	$95.7	$293.5
2020	$632.8	$19.9	$652.7
2021 YTD	$63.8	-$6.5	$57.3
2021 % Change Over 2020	149.1%	-175.8%	67.5%
2021 Annualized	$765.2	-$78.0	$687.1

Sources: eMBS and Urban Institute.
Note: Dollar amounts are in billions. Data as of January 2021.

AGENCY GROSS ISSUANCE & FED PURCHASES

Monthly Gross Issuance

While FHA, VA and GSE lending have dominated the mortgage market since the 2008 housing crisis, there has been a change in the mix. The Ginnie Mae share of new issuances has risen from a pre-crisis level of 10-12 percent to 34.8 percent in February 2020, reflecting gains in both purchase and refinance shares. Since then, the Ginnie share had declined, reaching 23.2 percent in January 2021; the drop reflects the more robust ramp up in GSE refinances relative to Ginnie Mae refinances.

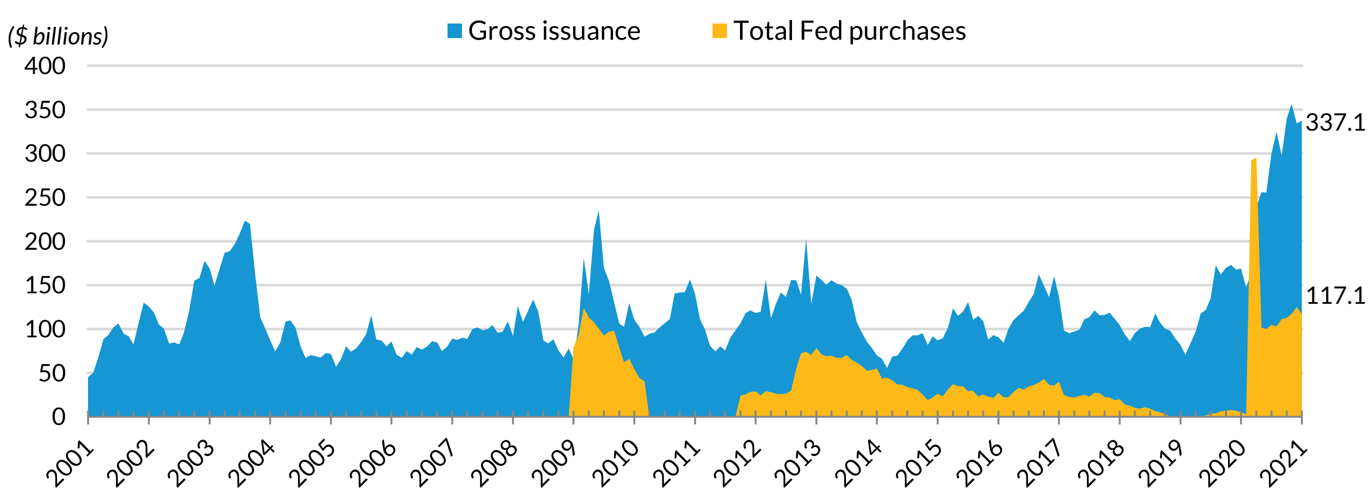


Sources: eMBS, Federal Reserve Bank of New York, and Urban Institute.

January 2021

Fed Absorption of Agency Gross Issuance

On March 23, 2020, in response to the market dislocations caused by the coronavirus pandemic, the Fed announced they would purchase Treasuries and agency MBS in an amount necessary to support smooth functioning markets. In March 2020 the Fed bought $292.2 billion in agency MBS, and April 2020 clocked in at $295.1 billion, the largest two months of mortgage purchases ever; and well over 100 percent of gross issuance for each of those two months. After the market stabilized, the Fed slowed its purchases to around $100 billion per month in May through August of 2020. Recently, Fed purchases have ramped up again slightly; purchases totaled $117.1 billion in January 2021. January Fed purchases totaled 35 percent of monthly issuance. As of December 2020, total agency MBS owned by the Fed equaled $2.07 trillion. Prior to the COVID-19 intervention, the Fed was winding down its MBS portfolio from its 2014 prior peak.



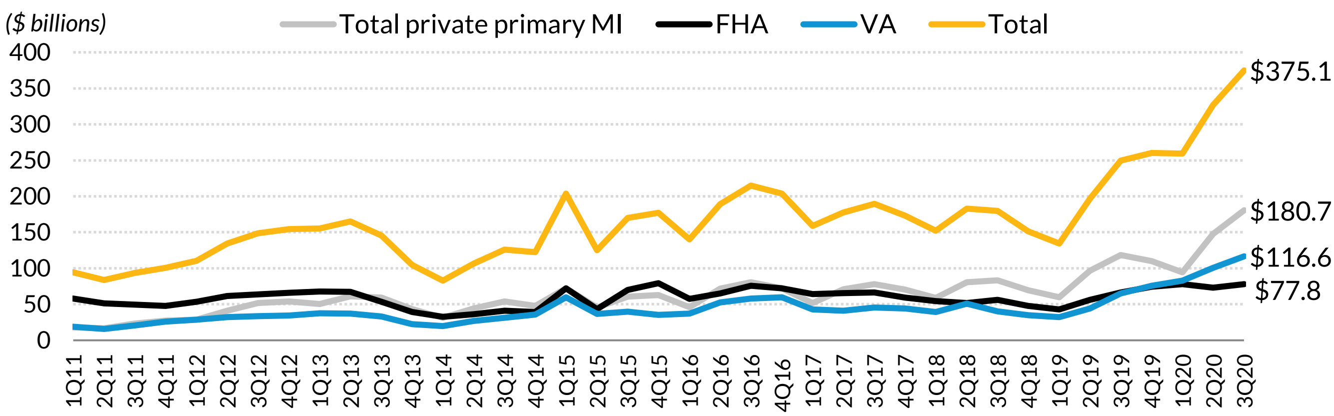
January 2021

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

MORTGAGE INSURANCE ACTIVITY

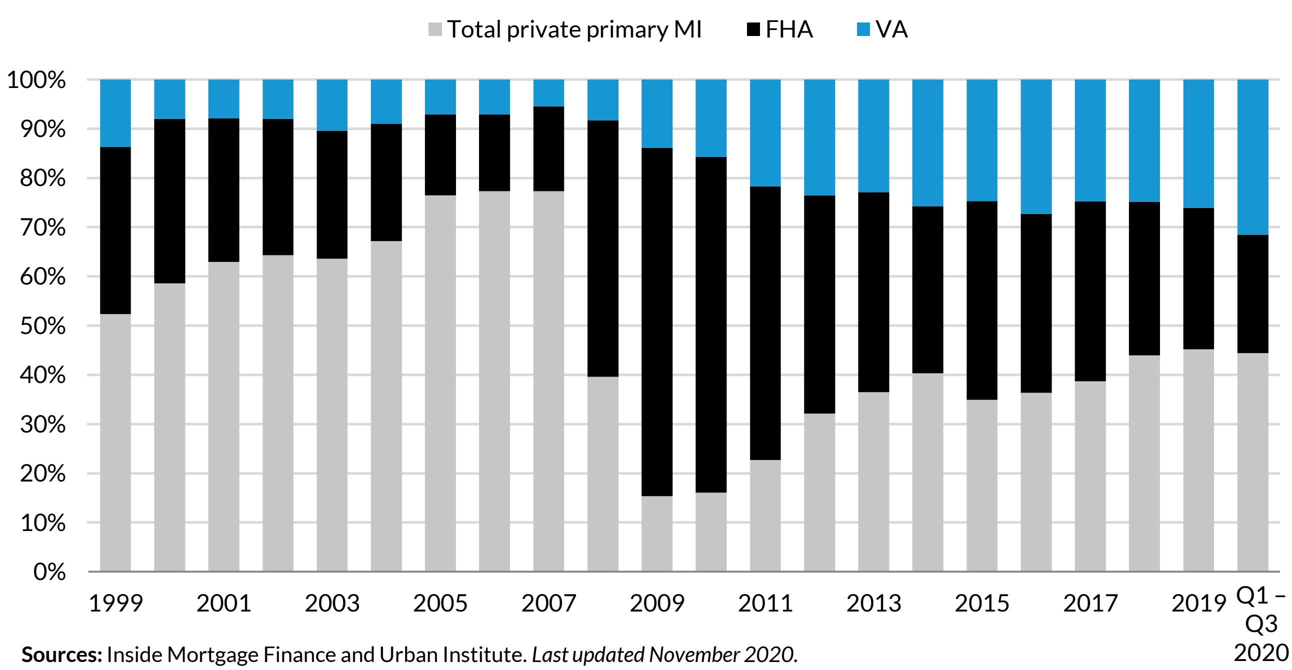
MI Activity

Mortgage insurance activity via the FHA, VA and private insurers increased from $250 billion in Q3 2019 to $375 billion in Q3 2020, a 50.2 percent increase. In the third quarter of 2020, private mortgage insurance written increased by $62.5 billion, FHA increased by $11.3 billion, and VA increased by $51.6 billion relative to Q3 2019. During this period, the VA share increased from 26.0 to 31.0 percent, the highest on record, while the FHA share fell from 26.6 to 20.7 percent. The private mortgage insurers share increased, from 47.3 to 48.2 percent compared to the same period a year ago.



Sources: Inside Mortgage Finance and Urban Institute. *Last updated November 2020.*

MI Market Share



Sources: Inside Mortgage Finance and Urban Institute. *Last updated November 2020.*

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	2.74
FHA	2.93

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	$1,197	$1,197	$1,197	$1,197	$1,197	$1,197	$1,197	$1,197
PMI	$1,449	$1,387	$1,352	$1,266	$1,221	$1,184	$1,144	$1,119
PMI Advantage	-$253	-$190	-$155	-$69	-$25	$12	$53	$77

Sources: Genworth Mortgage Insurance, Ginnie Mae, and Urban Institute. FHA rate from MBA Weekly Applications Survey. Conforming rate from Freddie Mac Primary Mortgage Market Survey.
Note: Rates as of January 2021.
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, 63.3 percent of loans originated from 2011 to Q3 2020 were for borrowers with FICO scores above 750, compared to 40.7 percent of borrowers in 2007 and 36.7 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	9.3%	15.0%	4.5%	4.5%	33.3%
	700 to 750	9.2%	14.2%	3.4%	3.2%	30.0%
	>750	15.6%	16.1%	2.7%	2.3%	36.7%
	Total	34.0%	45.4%	10.7%	10.0%	100.0%
2005	≤700	12.6%	15.5%	3.4%	2.3%	33.8%
	700 to 750	9.7%	13.4%	2.1%	1.4%	26.6%
	>750	17.3%	18.7%	2.1%	1.4%	39.6%
	Total	39.6%	47.6%	7.7%	5.1%	100.0%
2006	≤700	12.6%	16.2%	3.5%	2.2%	34.5%
	700 to 750	8.9%	13.6%	2.2%	1.2%	25.9%
	>750	15.8%	20.1%	2.4%	1.4%	39.6%
	Total	37.3%	49.8%	8.1%	4.8%	100.0%
2007	≤700	10.8%	15.2%	5.3%	3.1%	34.3%
	700 to 750	7.8%	12.5%	3.0%	1.7%	25.0%
	>750	15.2%	20.1%	3.3%	2.0%	40.7%
	Total	33.8%	47.8%	11.6%	6.8%	100.0%
2008	≤700	7.5%	7.2%	2.9%	2.0%	19.6%
	700 to 750	7.8%	11.9%	4.1%	2.6%	26.4%
	>750	19.1%	25.7%	5.8%	3.4%	54.1%
	Total	34.4%	44.8%	12.8%	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%	71.6%
	Total	44.1%	47.2%	6.0%	2.7%	100.0%
2011-3Q20	≤700	3.6%	4.6%	1.4%	2.3%	11.9%
	700 to 750	5.8%	9.6%	3.5%	5.8%	24.8%
	>750	19.9%	26.1%	7.9%	9.4%	63.3%
	Total	29.4%	40.3%	12.8%	17.6%	100.0%
Total		32.7%	42.9%	11.3%	13.1%	100.0%

Sources: Fannie Mae and Urban Institute.
Note: Fannie Mae loan level credit data includes loans originated from Q1 1999 to Q3 2020. 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 Great Recession. Post-2009 originations have pristine credit characteristics and a more favorable home price environment, contributing to very low default rates. Even so, due to COVID-19, delinquencies on new origination, while still low, have recently jumped dramatically.

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

Origination Year	Origination FICO	LTV ≤70	LTV 70 to 80	LTV 80 to 90	LTV >90	Total
1999-2004	≤700	3.8%	4.7%	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	14.2%	17.7%	20.3%	22.0%	17.0%
	700 to 750	6.5%	9.8%	12.9%	13.3%	9.1%
	>750	2.3%	4.5%	7.1%	8.2%	3.8%
	Total	7.1%	10.3%	14.6%	15.8%	9.7%
2006	≤700	18.4%	22.6%	26.1%	27.5%	21.7%
	700 to 750	8.8%	13.3%	16.2%	16.7%	12.1%
	>750	2.9%	5.8%	9.2%	9.6%	5.0%
	Total	9.6%	13.3%	18.4%	19.5%	12.6%
2007	≤700	19.8%	23.8%	31.2%	31.4%	24.4%
	700 to 750	8.5%	13.5%	19.3%	18.4%	13.0%
	>750	2.8%	5.7%	11.0%	10.8%	5.3%
	Total	9.5%	13.5%	22.4%	22.0%	13.8%
2008	≤700	14.7%	17.3%	23.3%	23.5%	17.8%
	700 to 750	5.0%	8.1%	12.9%	12.6%	8.4%
	>750	1.3%	2.8%	6.3%	6.9%	2.9%
	Total	5.1%	6.5%	12.2%	12.9%	7.2%
2009-2010	≤700	4.5%	5.9%	5.5%	6.8%	5.2%
	700 to 750	1.3%	2.3%	2.8%	3.3%	2.0%
	>750	0.3%	0.7%	1.2%	1.6%	0.6%
	Total	0.8%	1.4%	1.8%	2.5%	1.2%
2011-3Q20	≤700	2.7%	3.3%	3.6%	4.7%	3.4%
	700 to 750	1.1%	1.3%	1.5%	2.0%	1.5%
	>750	0.3%	0.4%	0.5%	0.8%	0.5%
	Total	0.8%	1.0%	1.1%	1.7%	1.1%
Total		1.9%	2.6%	3.4%	3.1%	2.5%

Sources: Fannie Mae and Urban Institute.
Note: Fannie Mae loan level credit data includes loans originated from Q1 1999 to Q3 2020, with performance information on these loans also through Q3 2020. Default is defined as more than six months delinquent or disposed of via short sales, third-party sales, deeds-in-lieu of foreclosure, or real estate owned (REO acquisitions). The analysis included only mortgages with original terms of 241-420 months.

FREDDIE MAC COMPOSITION

Since 2008, the composition of loans purchased by Freddie Mac has shifted towards borrowers with higher FICO scores. For example, 58.8 percent of loans originated from 2011 to Q2 2020 were for borrowers with FICO scores above 750, compared to 38.8 percent of borrowers in 2007 and 32.9 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%	16.7%	5.5%	5.7%	35.6%
	700 to 750	8.8%	16.0%	3.5%	3.2%	31.5%
	>750	13.4%	15.4%	2.3%	1.8%	32.9%
	Total	29.9%	48.1%	11.3%	10.7%	100.0%
2005	≤700	10.6%	17.0%	3.4%	3.0%	34.0%
	700 to 750	9.4%	15.5%	2.0%	1.7%	28.5%
	>750	15.7%	18.7%	1.7%	1.4%	37.5%
	Total	35.7%	51.3%	7.0%	6.0%	100.0%
2006	≤700	10.0%	17.4%	3.5%	3.3%	34.2%
	700 to 750	8.3%	16.2%	1.9%	1.5%	27.9%
	>750	14.3%	20.5%	1.7%	1.4%	37.9%
	Total	32.6%	54.1%	7.1%	6.2%	100.0%
2007	≤700	9.1%	15.6%	4.6%	4.8%	34.2%
	700 to 750	7.5%	14.4%	2.6%	2.6%	27.1%
	>750	14.2%	19.4%	2.5%	2.6%	38.8%
	Total	30.8%	49.4%	9.7%	10.0%	100.0%
2008	≤700	7.3%	8.7%	3.1%	2.2%	21.3%
	700 to 750	9.1%	13.1%	3.7%	2.5%	28.4%
	>750	21.5%	21.4%	4.7%	2.6%	50.3%
	Total	37.9%	43.3%	11.5%	7.3%	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- 2Q20	≤700	4.0%	4.8%	1.6%	2.2%	12.6%
	700 to 750	6.8%	11.7%	4.0%	6.1%	28.6%
	>750	17.6%	25.4%	7.2%	8.7%	58.8%
	Total	28.4%	41.8%	12.8%	17.0%	100.0%
Total		31.6%	45.1%	11.0%	12.4%	100.0%

Sources: Freddie Mac and Urban Institute.
Note: Freddie Mac loan level credit data includes loans originated from Q1 1999 to Q2 2020. The percentages are weighted by origination balance. The analysis included only mortgages with original terms of 241-420 months.

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. Even so, due to COVID-19, delinquencies on new origination, while still low, have recently jumped dramatically.

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	3.3%	4.5%	6.8%	7.3%	5.1%
	700 to 750	1.1%	1.8%	2.9%	3.0%	1.9%
	>750	0.4%	0.9%	1.6%	1.9%	0.8%
	Total	1.4%	2.4%	4.6%	5.1%	2.6%
2005	≤700	12.9%	17.4%	20.6%	22.1%	16.7%
	700 to 750	6.1%	9.9%	13.3%	13.5%	9.1%
	>750	2.1%	4.7%	7.5%	8.6%	3.9%
	Total	6.4%	10.5%	15.4%	16.6%	9.7%
2006	≤700	16.9%	22.1%	25.9%	28.2%	21.5%
	700 to 750	8.4%	13.1%	16.1%	16.2%	12.1%
	>750	2.8%	6.1%	9.2%	10.1%	5.2%
	Total	8.6%	13.3%	19.2%	21.2%	12.7%
2007	≤700	18.2%	23.7%	30.2%	32.7%	24.4%
	700 to 750	8.3%	14.0%	18.9%	19.1%	13.4%
	>750	2.8%	6.6%	10.5%	11.8%	5.8%
	Total	8.7%	14.2%	22.1%	23.8%	14.2%
2008	≤700	14.3%	18.3%	24.9%	24.0%	18.5%
	700 to 750	5.1%	9.0%	13.9%	12.4%	8.7%
	>750	1.5%	3.5%	7.0%	6.7%	3.1%
	Total	4.8%	8.1%	14.0%	13.8%	8.0%
2009-2010	≤700	4.2%	5.9%	5.9%	6.2%	5.1%
	700 to 750	1.2%	2.3%	2.6%	3.1%	1.9%
	>750	0.3%	0.8%	1.2%	1.4%	0.6%
	Total	0.8%	1.5%	1.9%	2.5%	1.3%
2011-2Q20	≤700	2.6%	3.0%	3.4%	4.2%	3.1%
	700 to 750	1.2%	1.3%	1.5%	2.0%	1.5%
	>750	0.4%	0.5%	0.6%	0.8%	0.5%
	Total	0.9%	1.0%	1.2%	1.7%	1.1%
Total		2.1%	3.3%	4.2%	4.1%	3.1%

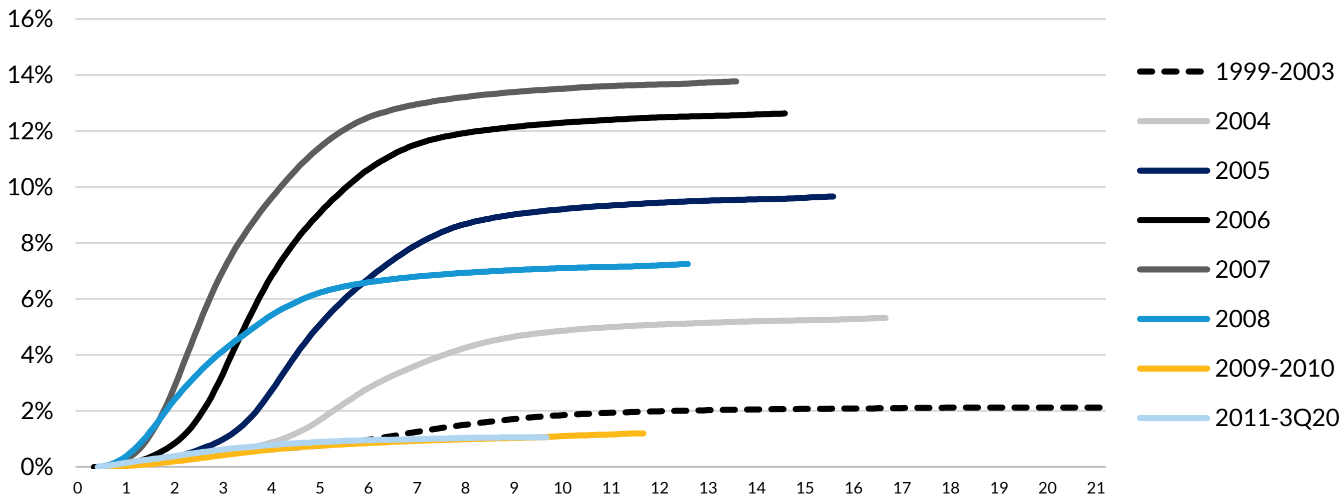
Sources: Freddie Mae and Urban Institute.
Note: Freddie Mac loan level credit data includes loans originated from Q1 1999 to Q2 2020, with performance information on these loans through Q3 2020. Default is defined as six months delinquent or disposed of via short sales, third-party sales, deeds-in-lieu 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

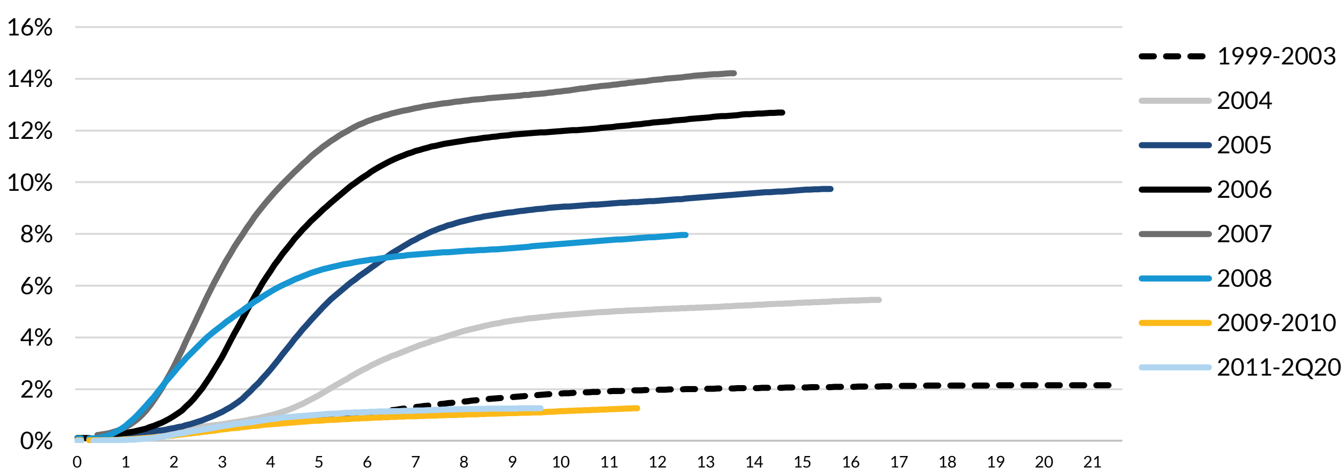
As a result of pristine books of business and a strong housing market, the effect of COVID-19 on GSE delinquencies is a fraction of what it was in the Great Financial Crisis. These charts show cumulative D180 (default) rates as of the end of Q3, 2020. For Fannie Mae and Freddie Mac's 1999-2003 vintages, cumulative defaults total around 2.0-2.1 percent, while cumulative defaults for the 2007 vintage are around 14.2 percent for Freddie originations and 13.8 percent for Fannie originations. Cumulative default rates on more recent (i.e. post-2011) originations are slightly below those on the 1999-2003 vintages, but the default rates on these vintages are likely to rise as more recent performance data are released. We will continue to monitor this closely.

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



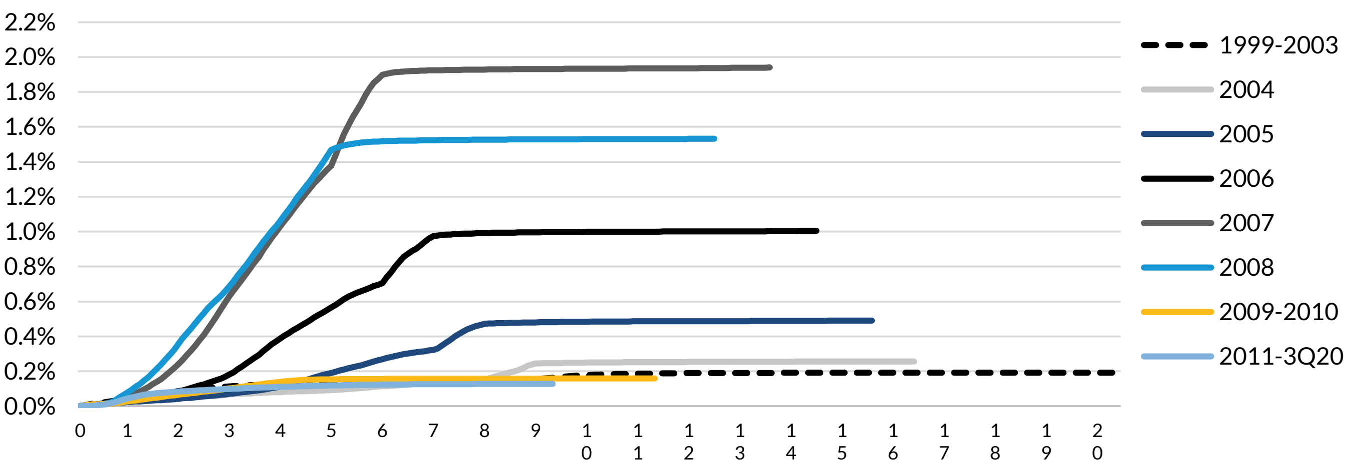
Sources: Freddie Mac and Urban Institute.
Note: The analysis included only mortgages with original terms of 241-420 months. A default is defined as a delinquency of 180 days or more, a deed-in-lieu, short sale, foreclosure sale or REO sale.

SPECIAL FEATURE: LOAN LEVEL GSE CREDIT DATA

REPURCHASE RATE BY VINTAGE

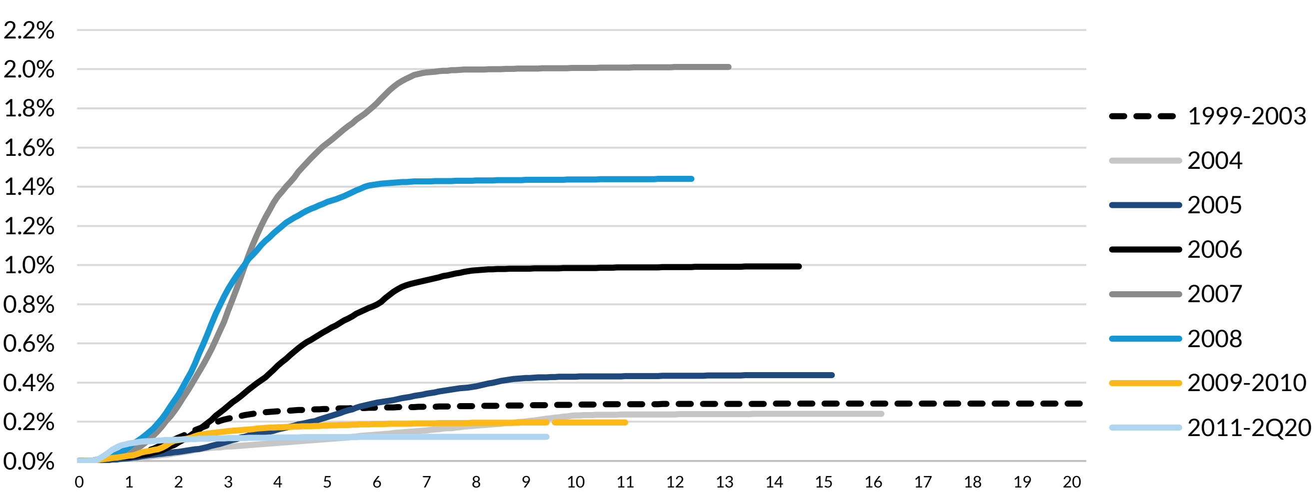
These figures show the cumulative percentage of fixed-rate, full documentation, amortizing 30-year loans of a given vintage that Fannie and Freddie have put back to lenders due to reps and warrants violations. Bubble era vintages were significantly more likely to be put back than either pre- or post-bubble 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) 9.34 percent are current, 17.32 percent are prepaid, 18.59 percent are still in the pipeline (not current, not prepaid, not liquidated) and 54.75 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 37-38 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	8.93%	24.22%	5.92%	60.93%	22.8%	37.5%	23.6%	31.1%
2005	9.23%	15.13%	5.73%	69.91%	30.3%	44.8%	33.0%	41.2%
2006	9.18%	13.15%	5.10%	72.58%	37.7%	48.8%	35.2%	45.2%
2007	9.65%	14.19%	5.61%	70.55%	35.6%	47.3%	32.5%	41.8%
2008	10.08%	17.59%	7.26%	65.06%	30.6%	43.3%	25.8%	35.5%
2009-2010	11.60%	21.68%	19.50%	47.23%	21.3%	32.8%	19.0%	29.0%
2011-3Q20	9.01%	9.47%	78.42%	3.11%	8.9%	18.0%	4.0%	11.6%
Total	9.34%	17.32%	18.59%	54.75%	30.7%	43.5%	28.0%	37.9%

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	5.63%	22.28%	4.76%	67.33%	23.2%	36.3%	26.7%	31.6%
2005	5.67%	13.35%	4.30%	76.68%	28.3%	42.4%	33.3%	39.5%
2006	4.87%	10.92%	3.91%	80.30%	32.7%	46.2%	34.8%	42.9%
2007	5.06%	10.98%	4.43%	79.53%	35.1%	45.7%	33.6%	41.1%
2008	5.64%	14.31%	5.79%	74.25%	29.4%	41.9%	30.0%	36.9%
2009-2010	7.74%	17.87%	15.50%	58.89%	20.1%	32.1%	26.2%	28.7%
2011-2Q20	6.60%	8.73%	62.97%	21.70%	8.7%	19.8%	21.8%	20.9%
Total	5.71%	14.82%	14.01%	65.46%	28.7%	42.0%	29.6%	37.0%

Sources: Fannie Mae, Freddie Mac, and Urban Institute.
Note: Fannie Mae loan level credit data includes loans originated from Q1 1999 to Q3 2020, with performance information on these loans also through Q3 2020. Freddie Mac loan level credit data includes loans originated from Q1 1999 to Q2 2020, with performance information on these loans through Q3 2020. The analysis included only mortgages with original terms of 241-420 months.

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 2011-3Q 2020 originations, Fannie Mae foreclosure alternatives had a mean defaulted UPB of $ 172,947 and a loss severity of 8.9 percent, versus a mean defaulted UPB of $148,213 and a loss severity of 13.7 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	207,272	147,687	59,585	112,526.4	105,660.3	129,544.5	31.14%	37.57%	18.15%
2005	82,089	49,647	32,442	169,821.8	156,777.2	189,784.3	41.23%	49.23%	31.11%
2006	84,645	50,737	33,908	184,761.7	169,591.5	207,461.2	45.16%	55.15%	32.94%
2007	105,978	61,680	44,298	195,186.2	178,489.6	218,434.3	41.80%	52.60%	29.51%
2008	62,455	36,412	26,043	192,806.6	174,779.7	218,010.8	35.54%	45.44%	24.45%
2009-2010	22,520	13,072	9,448	172,837.7	160,570.0	189,811.0	29.00%	35.93%	20.89%
2011-3Q20	5,395	3,230	2,165	158,138.4	148,212.7	172,946.7	11.60%	13.68%	8.94%
Total	570,354	362,465	207,889	158,455.7	143,307.0	184,868.4	37.87%	46.09%	26.76%

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	191,484	116,880	74,604	112,632.4	105,694.2	123,502.4	31.60%	40.42%	19.76%
2005	105,256	49,237	56,019	170,459.6	155,245.0	183,832.2	39.49%	51.81%	30.35%
2006	111,544	51,455	60,089	183,657.3	164,897.0	199,722.0	42.90%	56.81%	33.07%
2007	120,362	55,409	64,953	186,230.1	166,724.8	202,869.3	41.13%	56.08%	30.65%
2008	62,102	26,810	35,292	196,566.4	176,525.5	211,790.7	36.94%	53.27%	26.61%
2009-2010	33,590	13,005	20,585	187,661.0	170,463.5	198,525.9	28.69%	42.99%	20.93%
2011-2Q20	32,872	9,899	22,973	172,360.8	150,431.3	181,810.1	20.87%	34.81%	15.90%
Total	657,210	322,695	334,515	162,180.5	143,041.6	180,643.1	36.97%	49.72%	27.24%

Sources: Fannie Mae, Freddie Mac and Urban Institute.
Note: Fannie Mae loan level credit data includes loans originated from Q1 1999 to Q3 2020, with performance information on these loans through Q3 2020. Freddie Mac loan level credit data includes loans originated from Q1 1999 to Q2 2020, with performance information on these loans through Q3 2020. The analysis included only mortgages with original terms of 241-420 months. Because the 2011-3Q20 liquidated loan count for Fannie Mae (i.e. 5,395 loans) is a small sample, results may not be representative.

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