HOUSING FINANCE POLICY CENTER

HOUSING FINANCE AT A GLANCE

A MONTHLY CHARTBOOK

September 2020

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.

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INTRODUCTION

Appraisal Waivers Help Borrowers Refinance their Mortgage

A home appraisal is a key part of the origination process because it provides an independent assessment of the loan's subject property. Appraisals are typically done in-person by a certified expert who assesses the referenced property, both inside and out, as well as the surrounding neighborhood and sales of similar properties. An appraisal helps a lender by providing a key input for assessing an applicant's loan-to-value (LTV) ratio, one key measure of mortgage risk.

But with the pandemic's onset, in-person appraisals risk worsening the health crisis. Amid these extraordinary circumstances, the Federal Housing Finance Agency announced on March 23, 2020 that it was directing Fannie Mae and Freddie Mac to grant flexibilities for appraisal and employment verifications on loans it intends to purchase, including encouraging lenders to accept appraisal waiver offers when eligible.

The likely role played by prepayment speeds is illustrated by comparing the speed of Fannie Mae 2013 pools with a 4.0 percent coupon in 2015-2016 to prepayment speeds of 2017 Fannie Mae pools with a 3.5 percent coupon in 2020. The graph below shows that the prepayment speed on these 2017 Fannie Mae pools began to rise noticeably in April 2020 and have soared to 47 percent as of September, exceeding the 2016 peak rate of 28 percent for 2013 Fannie Mae pools.

This is an apt comparison as the opportunity for a refinance was likely the same between 2013 originated pools in 2015-2016 and the 2017 originated pools today. That is, loans in the 2013 originated 4.0s are approximately the same amount above market rates (often referred to as "in-the-money") in 2015-2016 as the 2017 pools with a 3.5 percent coupon are in 2020. However, the opportunity for an appraisal waiver has greatly expanded today compared to four years ago. The timing of this change in policy suggests that today's fast prepayment speeds also reflect a more streamlined refinance process stemming from eased appraisal waiver standards.

GSE Mortgage Originations by Property Valuation Method

	Overall		Purchase		No/Limited Cashout Refinance		Cashout Refinance	
	March	August	March	August	March	August	March	August
Appraisal	76%	62%	95%	90%	50%	37%	86%	74%
Appraisal Waiver	24%	38%	5%	10%	49%	63%	13%	26%
Other	1%	0%	0%	0%	1%	0%	1%	0%

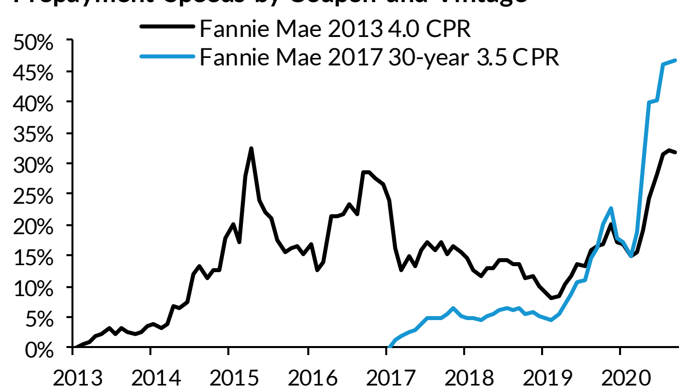
Note: *Other includes Onsite Property Collection, GSE-targeted Refinances and loans where the method is unavailable. The data covers one-unit principal residences excluding manufactured homes and cooperatives.*
Source: *Urban Institute calculations of data from Fannie Mae and Freddie Mac.*

An appraisal waiver allows a loan applicant to forego the traditional method of appraising a home. Instead the home's value is determined through automated underwriting findings. Fannie Mae and Freddie Mac have traditionally offered appraisal waivers for lower- LTV non-cashout refinance mortgages; a small proportion of purchase mortgages and cashout refinance mortgages have received appraisal waivers as well.

The table above indicates that in the months since this announcement, the share of mortgages on one-unit principal residences with an appraisal waiver has increased. The growth in waivers since March has been greater across refinance originations, which already had higher appraisal waiver shares to start.

The expansion in appraisal waivers has likely contributed to faster prepayments. While a homeowner can pay their mortgage early and own their home free and clear, typically, a prepayment occurs when a homeowner refinances their mortgage. Under a refinance, the original mortgage is fully paid before the loan term ends, and the borrower takes out a new mortgage with a lower rate. As lower mortgage rates have boosted refinances, prepayment speeds across vintages and coupon rates have accelerated in 2020.

Prepayment Speeds by Coupon and Vintage



Source: *Credit Suisse and Urban Institute.*

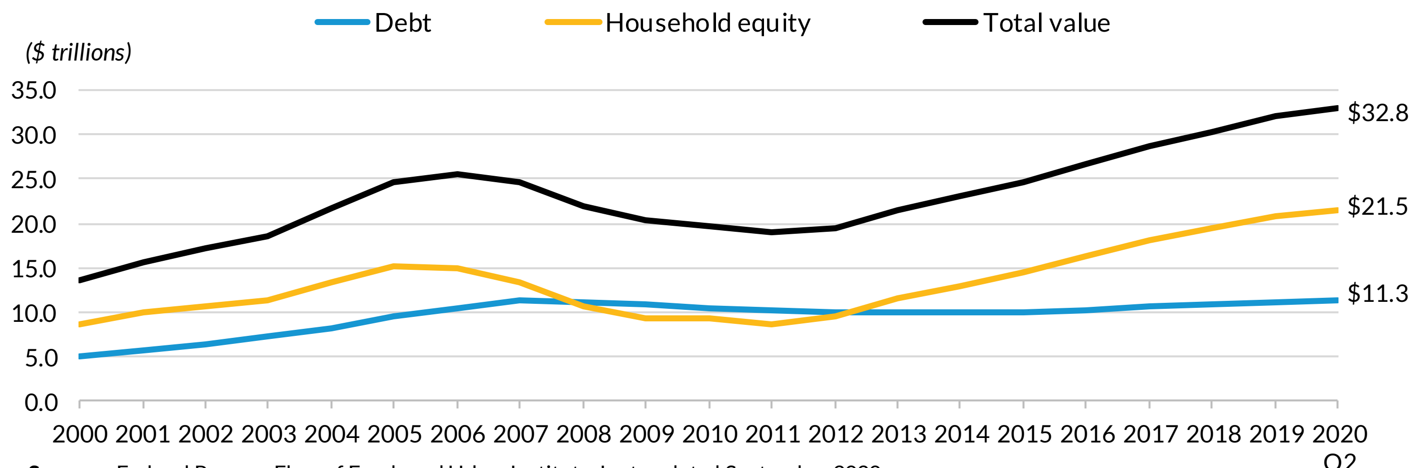
INSIDE THIS ISSUE

- Total home equity wealth increased from $21.1 trillion in Q1 2020 to $21.5 trillion in Q2 2020, the highest on record, even as household mortgage debt outstanding remained roughly steady at $11.3 trillion (Page 6).
- Originator Profitability and Unmeasured Costs (OPUC) grew to $5.88 per $100 loan in August 2020, the highest level on record (Page 19).
- Default rates for post-crisis GSE loans are tracking well below historical levels, reflecting the continued extraordinary tightening of credit after the Great Recession (Pages 35 & 37).

MARKET SIZE OVERVIEW

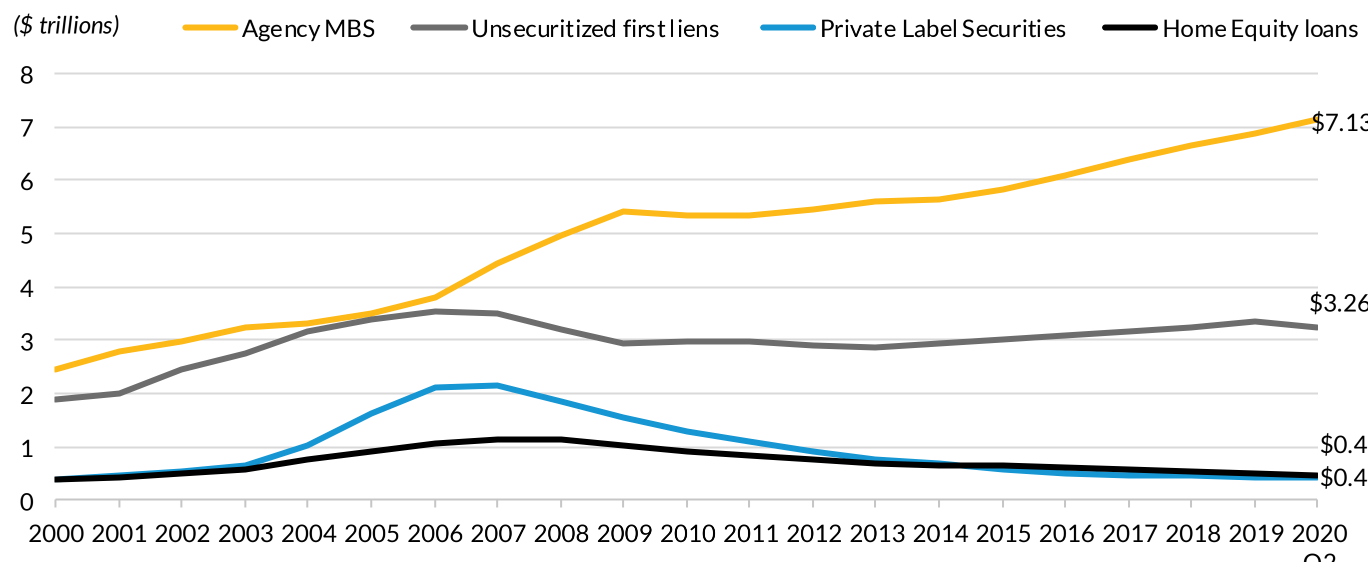
The Federal Reserve's Flow of Fund Report has indicated a gradually increasing total value of the housing market, driven primarily by growing home equity since 2012. The Q2 2020 numbers show that while mortgage debt outstanding remained steady at $11.3 trillion, total home equity grew slightly from $21.1 trillion in Q1 2020 to $21.5 trillion in the second quarter of 2020, bringing the total value of the housing market to $32.8 trillion, 28.4 percent higher than the pre-crisis peak in 2006. Agency MBS account for 63.1 percent of the total mortgage debt outstanding, private-label securities make up 3.9 percent, and unsecuritized first liens make up 28.8 percent. Home equity loans comprise the remaining 4.2 percent of the total.

Value of the US Single Family Housing Market



Sources: Federal Reserve Flow of Funds and Urban Institute. Last updated September 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

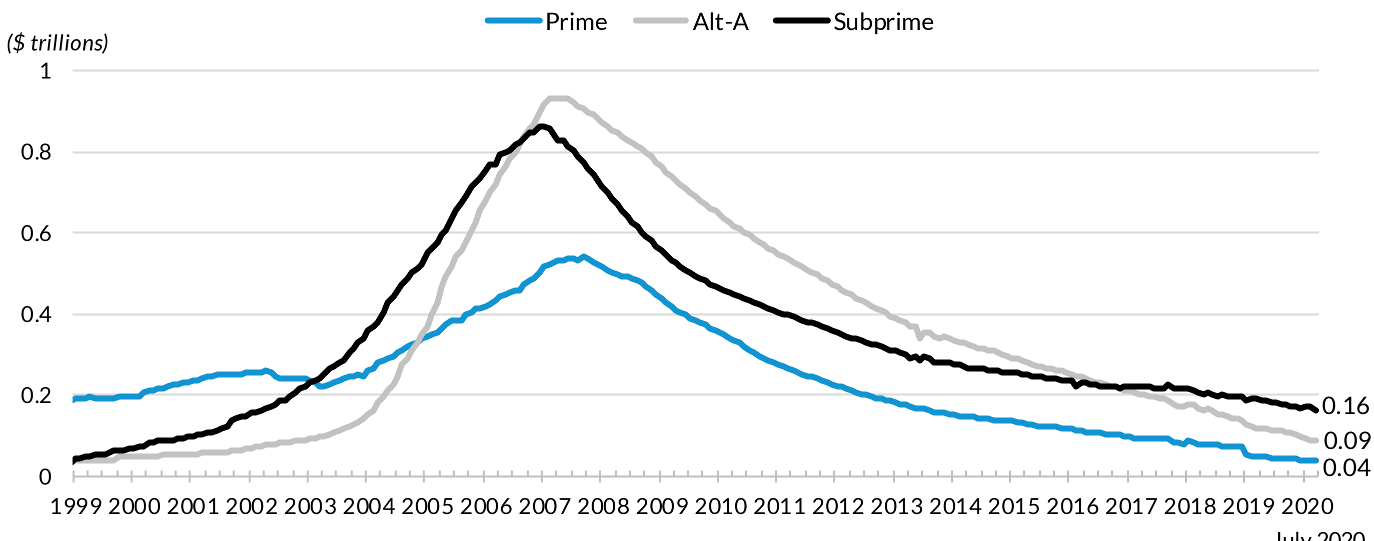


Sources: Federal Reserve Flow of Funds, eMBS and Urban Institute. *Last updated September 2020.*
Note: Unsecuritized first liens includes loans held by commercial banks, GSEs, savings institutions, credit unions and other financial companies

MARKET SIZE OVERVIEW

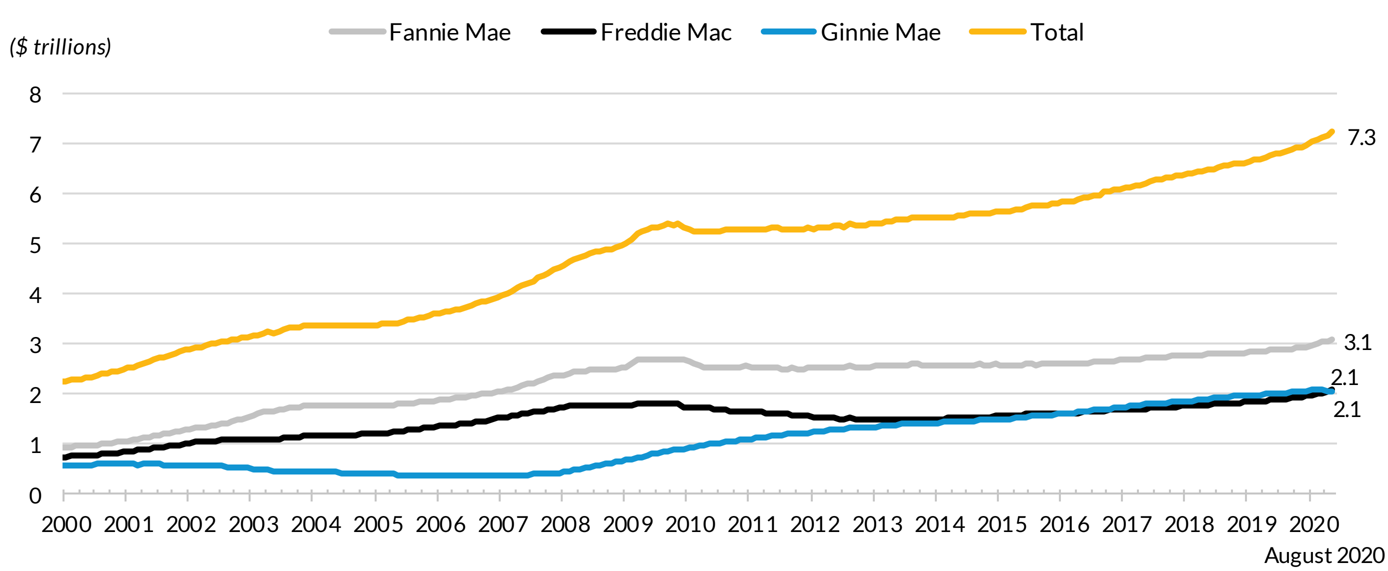
As of July 2020, our sample of first lien mortgage debt in the private-label securitization market totaled $287 billion and was split among prime (13.1 percent), Alt-A (30.1 percent), and subprime (56.8 percent) loans. In August 2020, outstanding securities in the agency market totaled $7.3 trillion, 42.7 percent of which was Fannie Mae, 28.8 percent Freddie Mac, and 28.4 percent Ginnie Mae. In August 2020, Freddie Mac had more outstanding securities than Ginnie Mae for the first time since June 2016.

Private-Label Securities by Product Type



Sources: CoreLogic, Black Knight and Urban Institute.

Agency Mortgage-Backed Securities



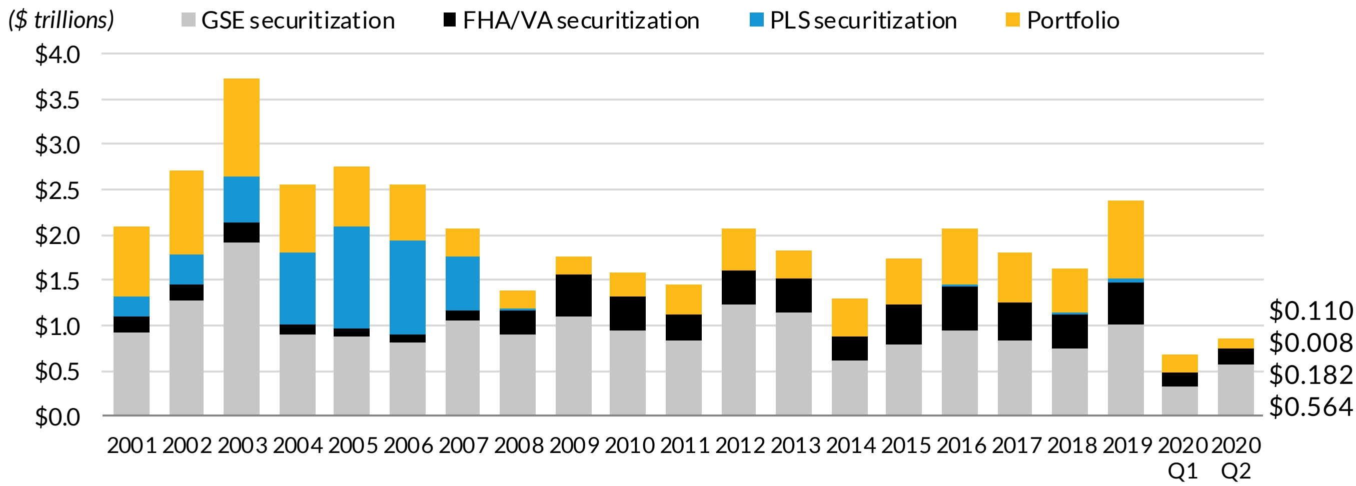
Sources: eMBS and Urban Institute.

OVERVIEW

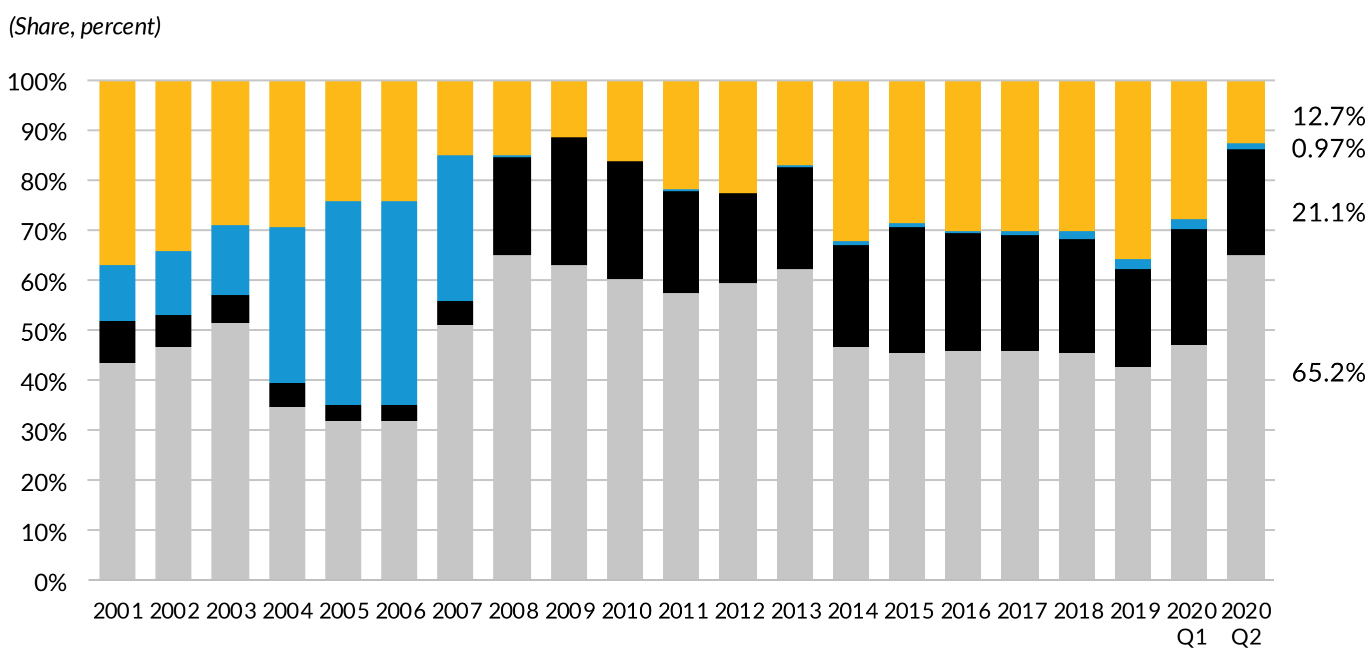
ORIGINATION VOLUME AND COMPOSITION

First Lien Origination Volume

In the second quarter of 2020, first lien originations totaled $865 billion, up 53.1 percent from the Q2 2019 volume of $565 billion. The share of portfolio originations was 12.7 percent in Q2 2020, a significant decline from the 38.6 percent share in the same period of 2019. The Q2 2020 GSE share stood at 65.2 percent, up from 42.1 percent in Q2 2019. The FHA/VA share grew to 21.1 percent, compared to 17.7 percent last year. Private-label securitization currently tallies 1.0 percent, down from 1.6 percent one year ago, and a fraction of its share in the pre-bubble years. 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 August 2020.*

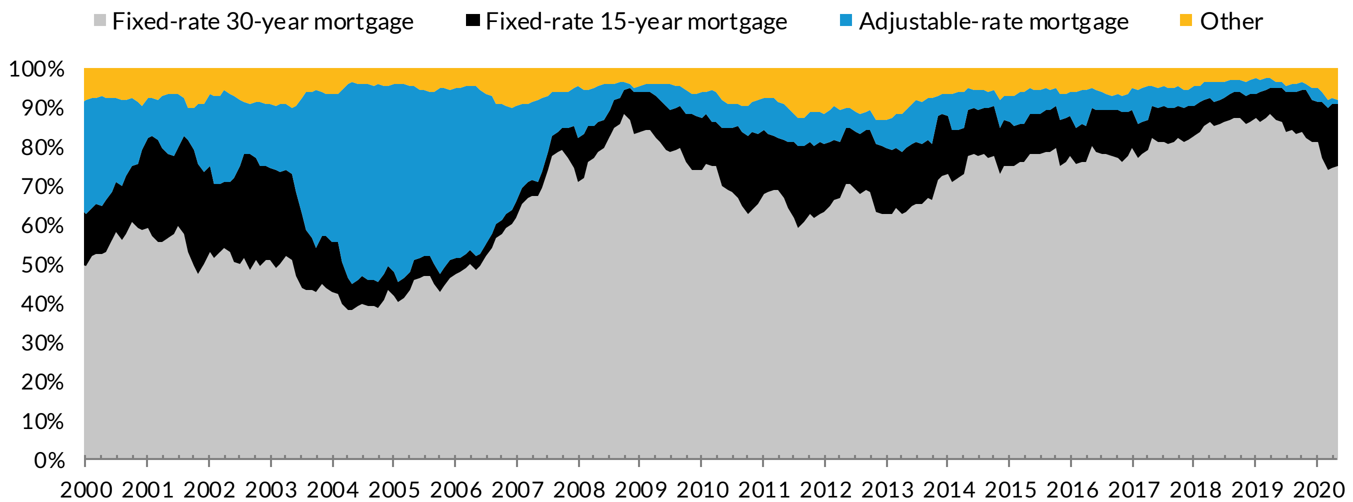


Sources: Inside Mortgage Finance and Urban Institute. *Last updated August 2020.*

PRODUCT COMPOSITION AND REFINANCE SHARE

The 30-year fixed-rate mortgage continues to remain the bedrock of the US housing finance system, accounting for 75.0 percent of new originations in July 2020. The share of 15-year fixed-rate mortgages, predominantly a refinance product, was 15.8 percent of new originations in July 2020, as refinances continue to boom due to record low interest rates. The ARM share accounted for 1.4 percent. 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. With rates at historic lows the refi share is very high; the GSEs are in the 67 to 70 percent range, Ginnie Mae at 47.8 percent.

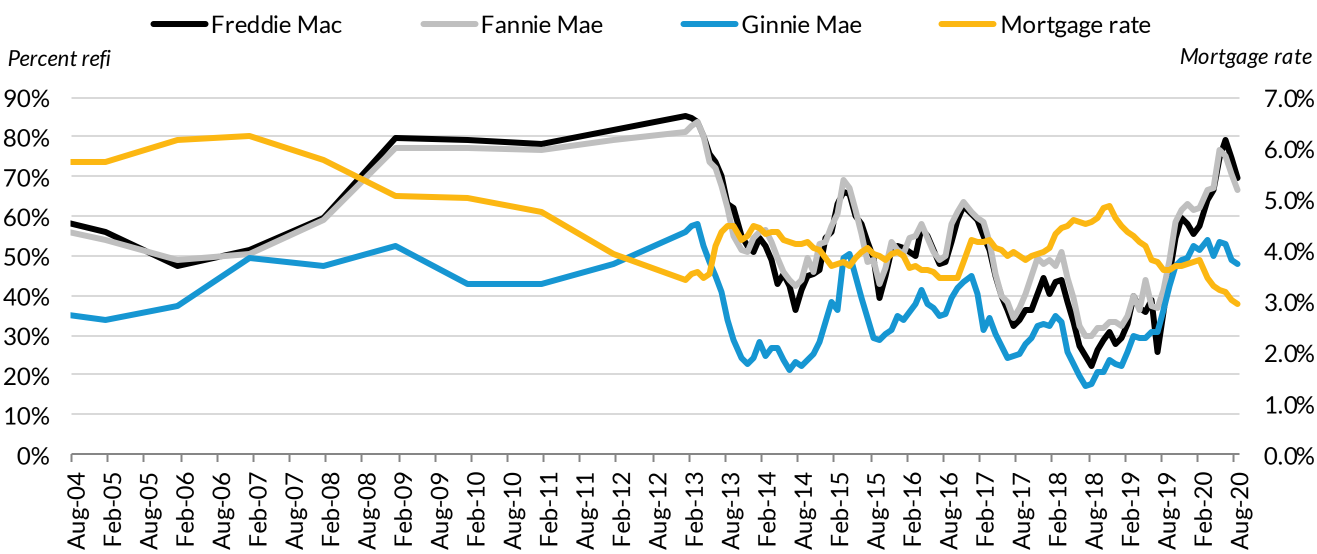
Product Composition



July 2020

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

Percent Refi at Issuance



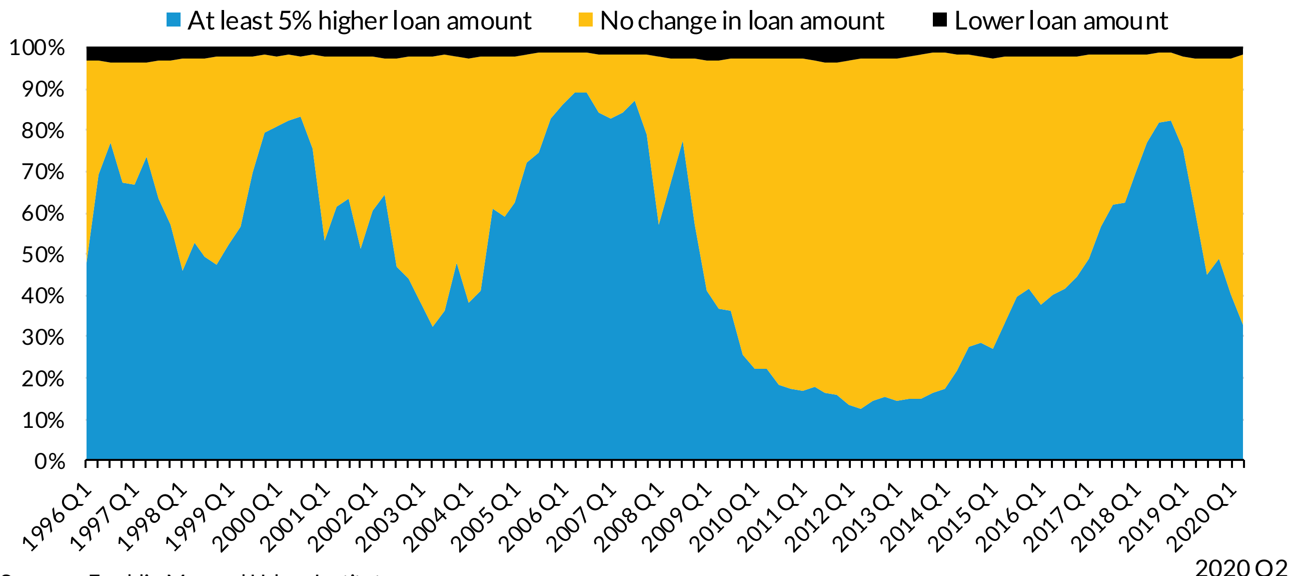
Sources: eMBS and Urban Institute.
Note: Based on at-issuance balance. Figure based on data from August 2020.

OVERVIEW

CASH-OUT REFINANCES

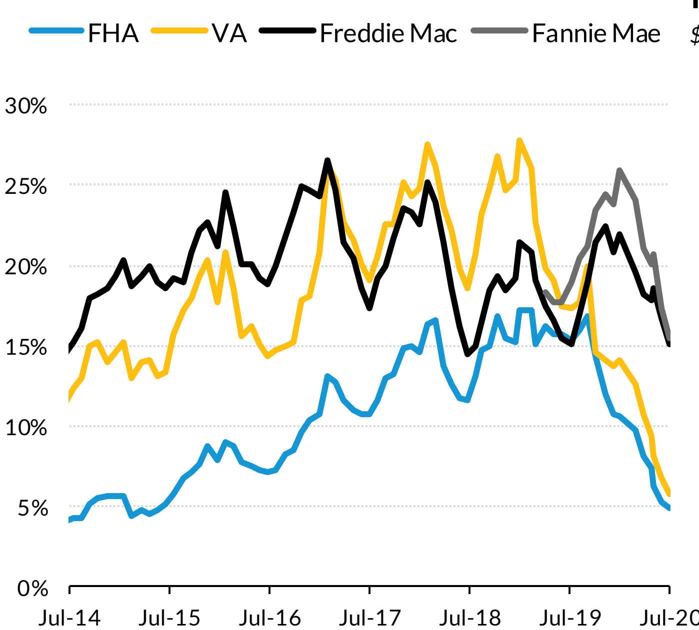
When mortgage rates are low, the share of cash-out refinances tends to be relatively smaller, as refinancing allows borrowers to save money by taking advantage of lower rates. But when rates are high, the cash-out refinance share is higher since the rate reduction incentive is gone and the only reason to refinance is to take out equity. The cash-out share of all refinances fell from 40 percent in the first quarter of 2020 to 33 percent in the second quarter. The cash-out refi share has fallen during 2020, due to increased rate refinance activity from borrowers taking advantage of historically low rates. Note that while home prices have risen, equity take-out volumes are substantially lower now than during the bubble years.

Loan Amount after Refinancing



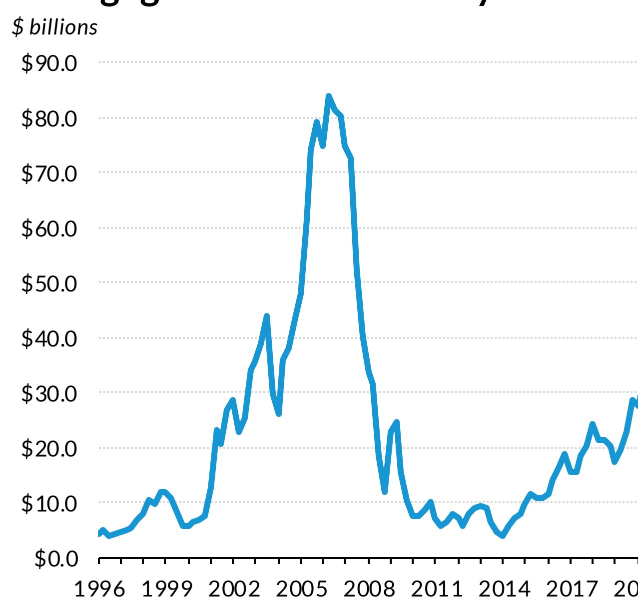
Sources: Freddie Mac and Urban Institute.
Note: Estimates include conventional mortgages only.

Cash-out Refi Share of All Originations



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

Equity Take-Out from Conventional Mortgage Refinance Activity



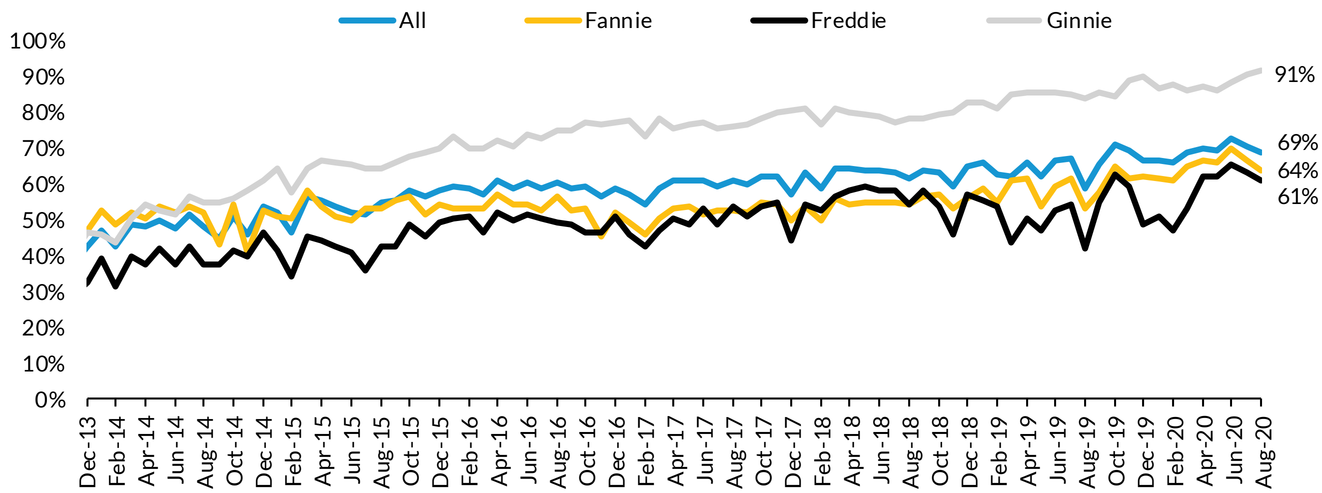
Sources: Freddie Mac and Urban Institute.
Note: These quarterly estimates include conventional mortgages only.

OVERVIEW

AGENCY NONBANK ORIGINATION SHARE

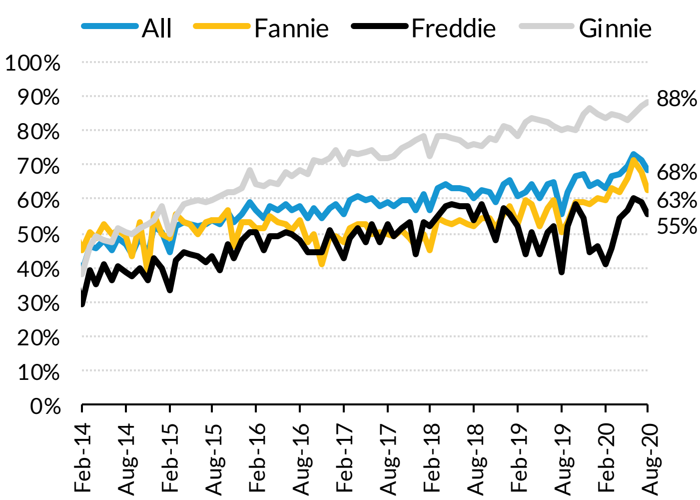
The nonbank share for agency originations has been rising steadily since 2013, standing at 69 percent in August 2020. The Ginnie Mae nonbank share has been consistently higher than the GSEs, rising in August 2020 to 91 percent. Fannie and Freddie's nonbank shares both fell slightly in August, to 64 and 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



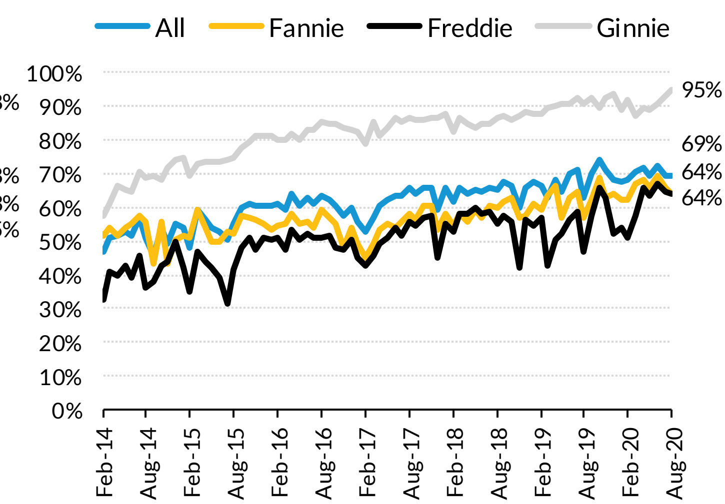
Sources: *eMBS and Urban Institute.*

Nonbank Origination Share: Purchase Loans



Sources: *eMBS and Urban Institute.*

Nonbank Origination Share: Refi Loans

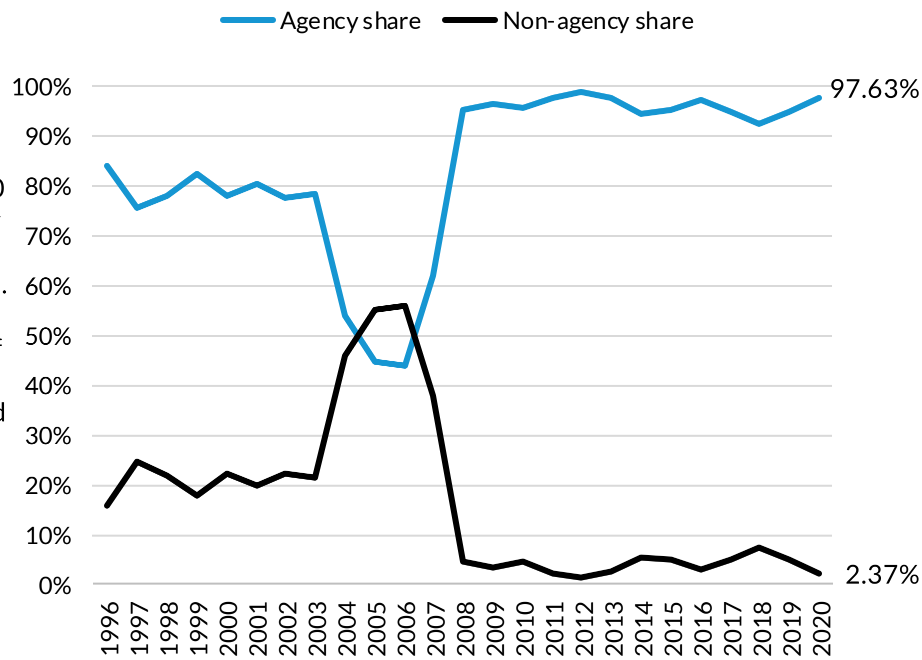


Sources: *eMBS and Urban Institute.*

SECURITIZATION VOLUME AND COMPOSITION

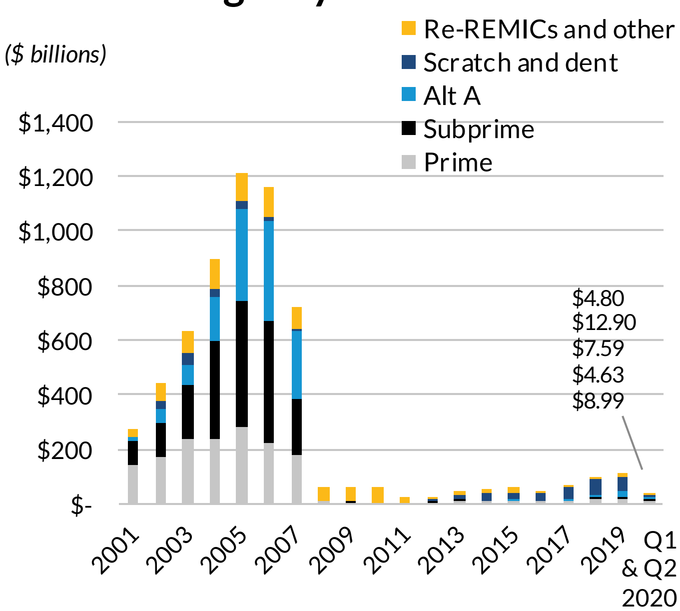
Agency/Non-Agency Share of Residential MBS Issuance

The non-agency share of mortgage securitizations has increased gradually over the post-crisis years, from 1.83 percent in 2012 to 5.0 percent in 2019. Through August of 2020, the non-agency share was 2.37 percent; the sharp drop in 2020 reflects the fact that the non-agency market production has been low due to dislocations caused by COVID-19. Non-agency securitization volume totaled $38.91 billion in the first half of 2020, a decrease relative to 1H 2019's $49.82 billion total. Alt-A and scratch and dent securitizations have both declined since the same period last year. Non-agency securitizations continue to be tiny compared to pre-housing market crisis levels.



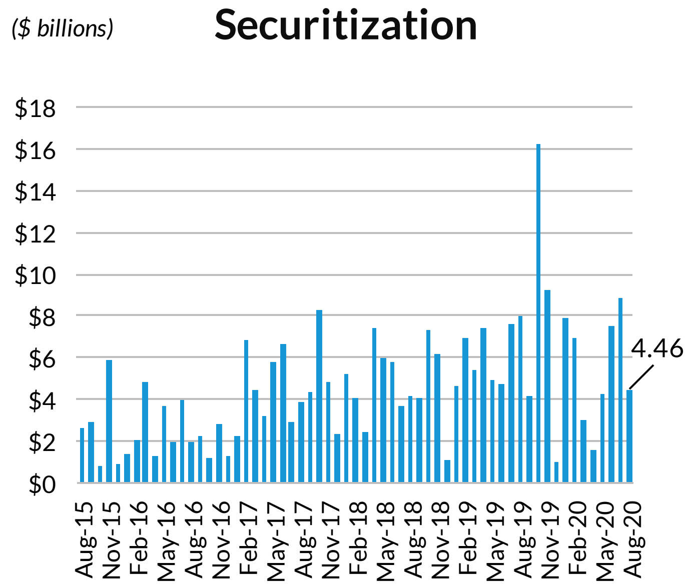
Sources: Inside Mortgage Finance and Urban Institute.
Note: Based on data from August 2020. Monthly non-agency volume is subject to revision.

Non-Agency MBS Issuance



Sources: Inside Mortgage Finance and Urban Institute.

Monthly Non-Agency Securitization



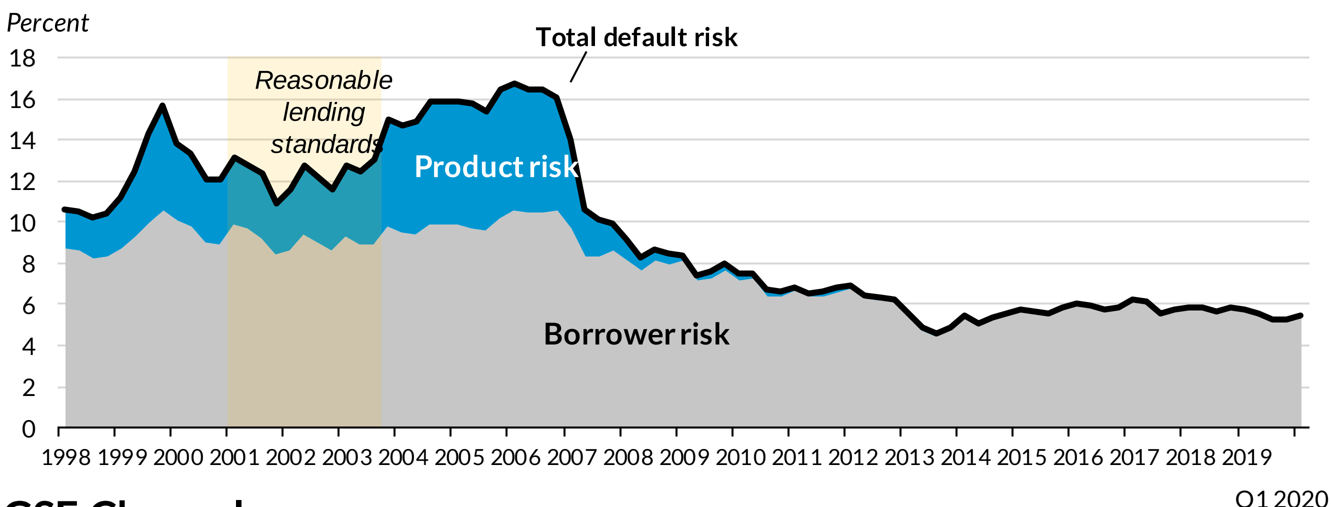
Sources: Inside Mortgage Finance and Urban Institute.

CREDIT BOX

HOUSING CREDIT AVAILABILITY INDEX

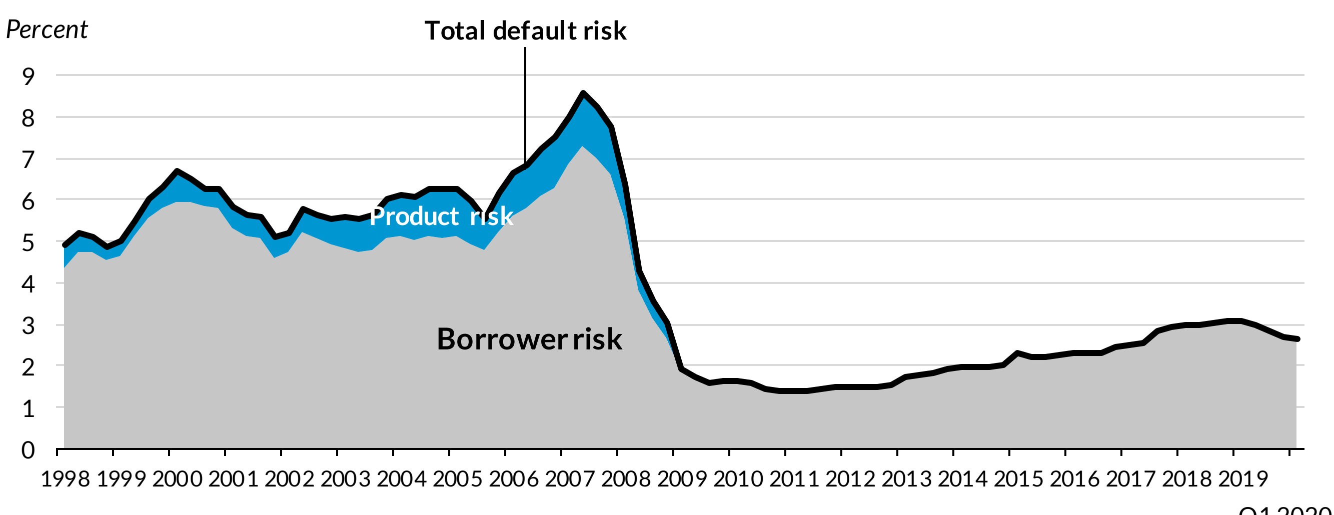
The Urban Institute's Housing Credit Availability Index (HCAI) assesses lenders' tolerance for both borrower risk and product risk, calculating the share of owner-occupied purchase loans that are likely to go 90+ days delinquent over the life of the loan. The HCAI Index stood at 5.5 percent in Q1 2020, up slightly from the end of 2019. The small increase was primarily driven by the increase in the government channel's market share; this may have been overstated as some of the portfolio and private label (PP) loans were stranded in the pipeline at quarter end due to COVID-19. This would exaggerate the shift to the FHA and GSE markets, and inflate credit availability, as the risk in the PP and GSE channels are similar and the risk in the government channel is higher. 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. From Q2 2011 to Q1 2020, the total risk taken by the GSE channel has nearly doubled, from 1.4 percent to 2.6 percent. However, over the past year, credit availability has trended down and we anticipate this trend will become more acute in the second quarter of 2020 in response to the COVID-19 crisis.



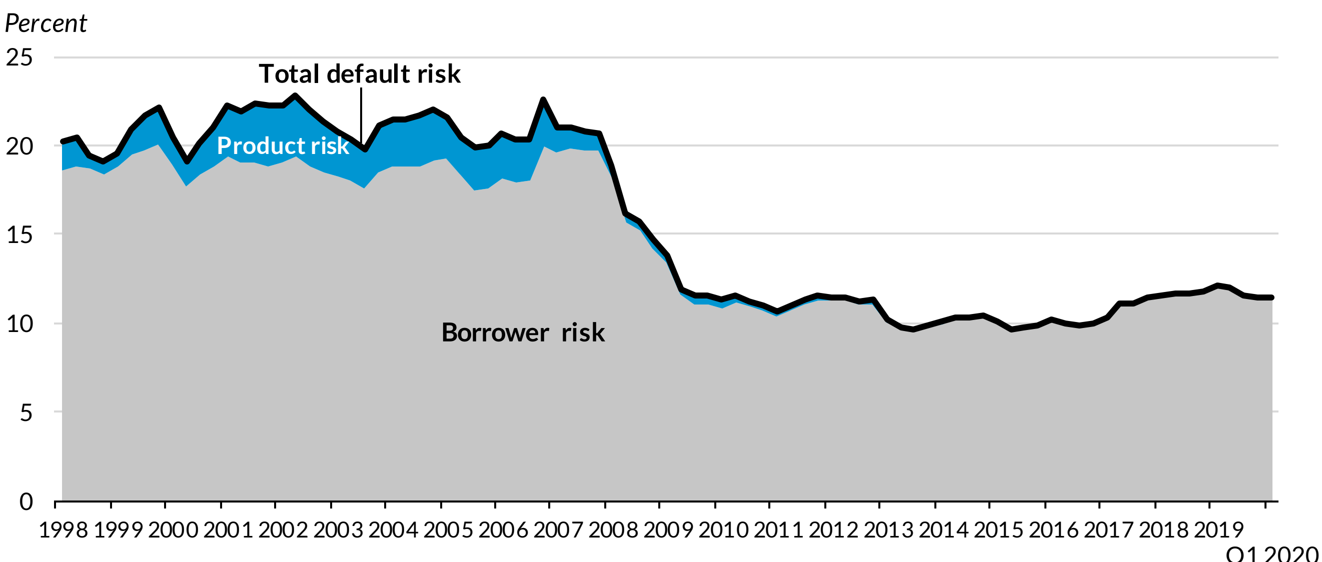
Sources: eMBS, CoreLogic, HMDA, IMF, and Urban Institute.
Note: Default is defined as 90 days or more delinquent at any point. *Last updated July 2020.*

CREDIT BOX

HOUSING CREDIT AVAILABILITY INDEX

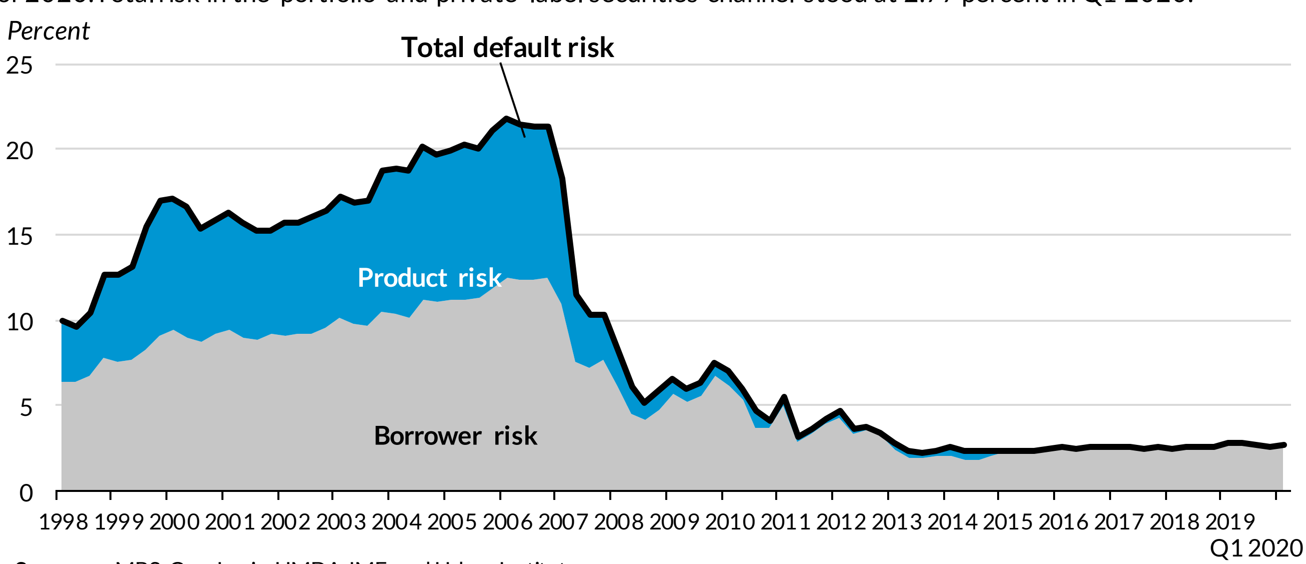
Government Channel

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, up to 11.49 percent in Q1 2020, from 11.46 percent at the end of 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 2008 housing 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. Total risk in the PP channel was 2.77 percent in Q1 2020, consisting of 2.76 percent borrower risk and 0.01 percent product risk. Note that there was a sizeable contraction in the market share for this channel over the course of the quarter, reflecting both a shift to the agency market since the beginning of the year as well as the fact that some PP loans were stranded in the pipeline when COVID-19 hit and did not close in March of 2020.Total risk in the portfolio and private-label securities channel stood at 2.77 percent in Q1 2020.



Sources: eMBS, CoreLogic, HMDA, IMF, and Urban Institute.
Note: Default is defined as 90 days or more delinquent at any point. *Last updated July 2020.*

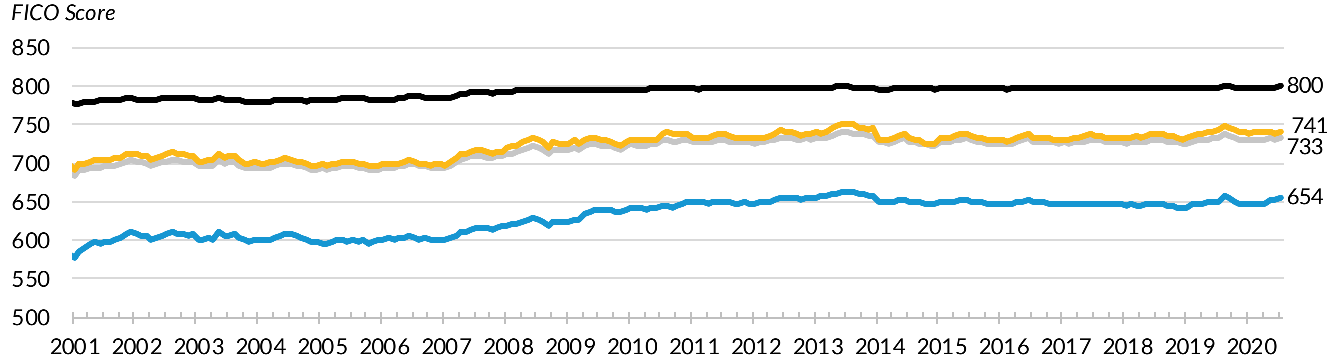
CREDIT BOX

CREDIT AVAILABILITY FOR PURCHASE LOANS

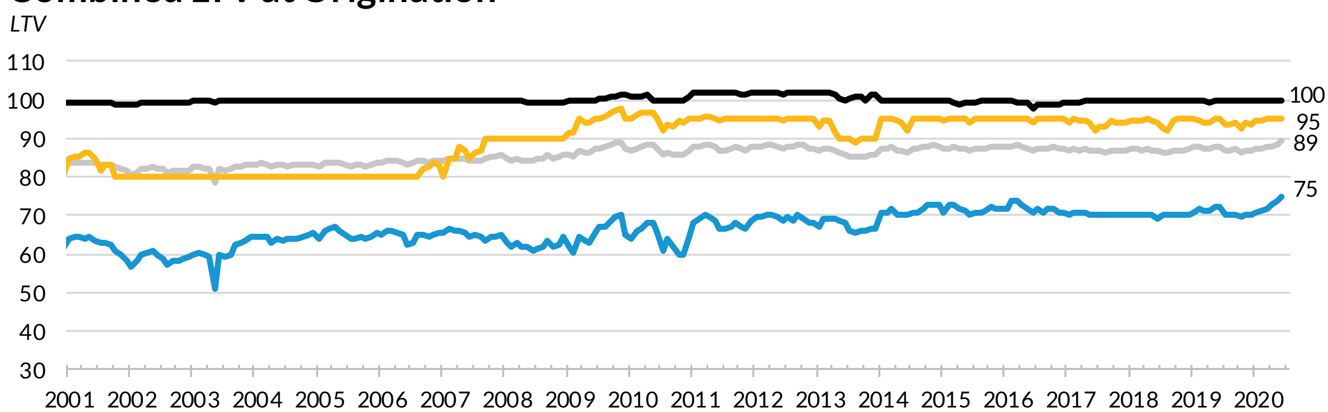
Access to credit remains tight, especially for lower FICO borrowers. The median FICO for current purchase loans is about 41 points higher than the pre-housing crisis level of around 700. The 10th percentile, which represents the lower bound of creditworthiness to qualify for a mortgage, was 654 in July 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. Although the current median DTI of 38 percent exceeds the pre-bubble level of 36 percent, higher FICO scores more than compensate.

Mean 90th percentile 10th percentile Median

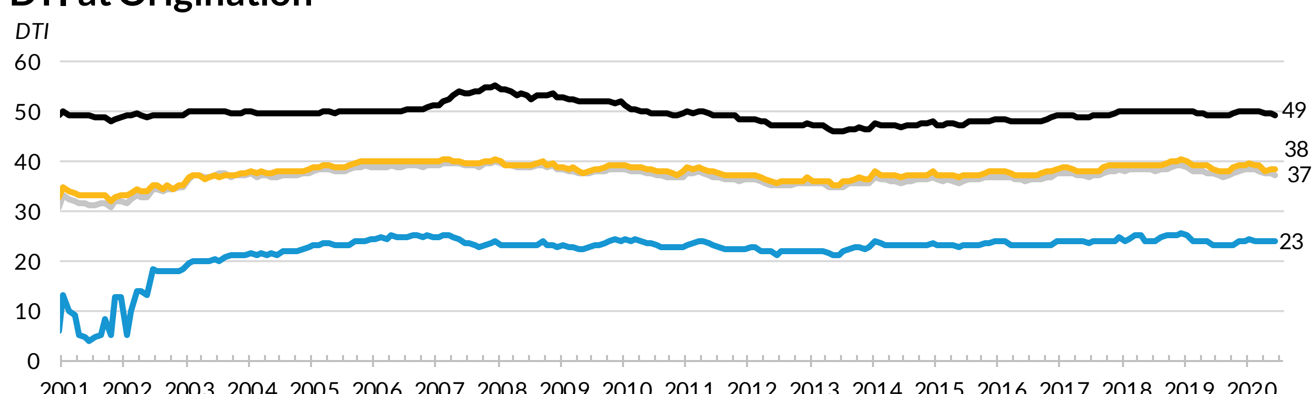
Borrower FICO Score at Origination



Combined LTV at Origination



DTI at Origination



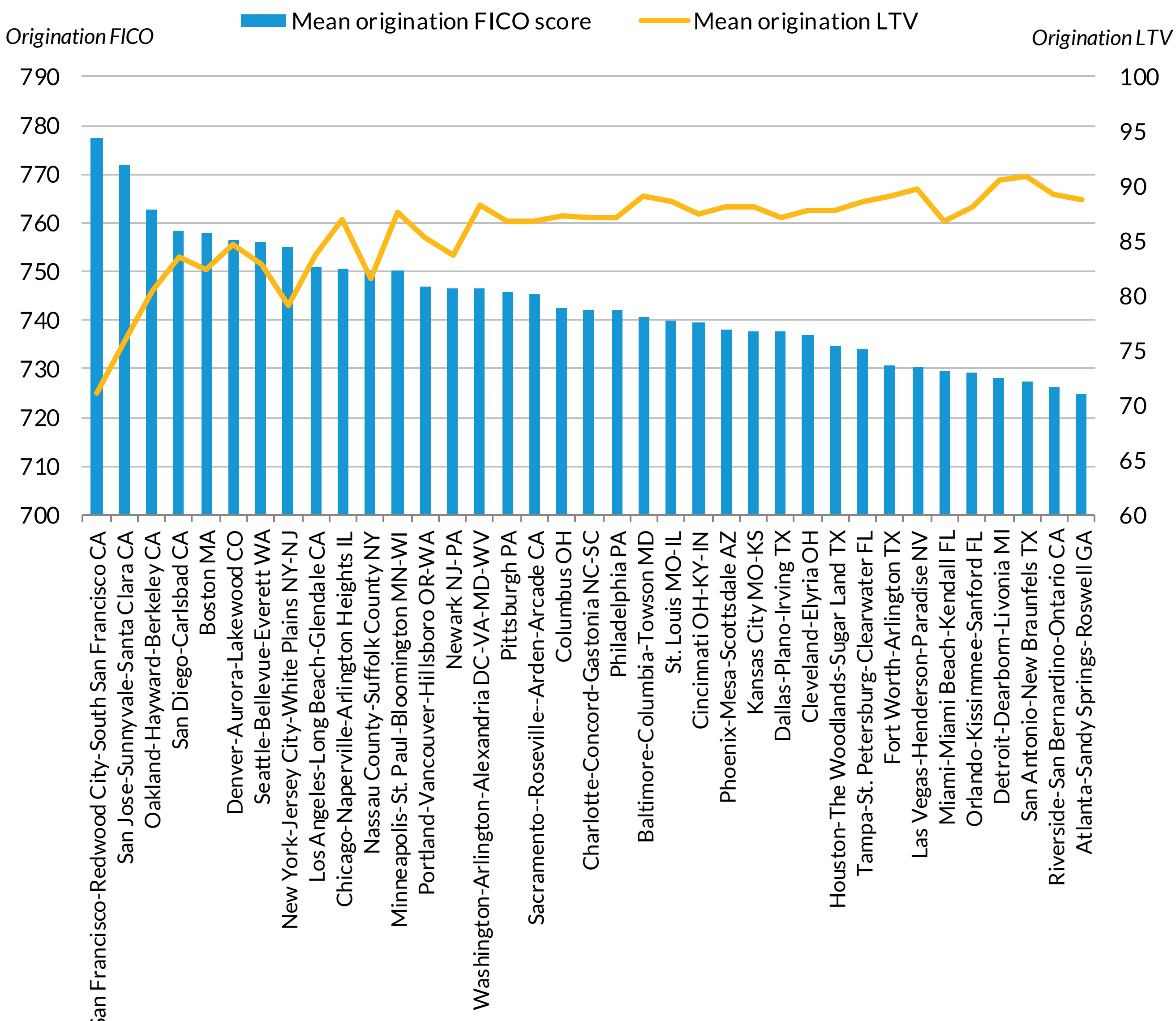
Sources: Black Knight, eMBS, HMDA, SIFMA, CoreLogic and Urban Institute.
Note: Includes owner-occupied purchase loans only. DTI data prior to April 2018 is from CoreLogic; after that date, it is from Black Knight. Data as of July 2020.

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 777. 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

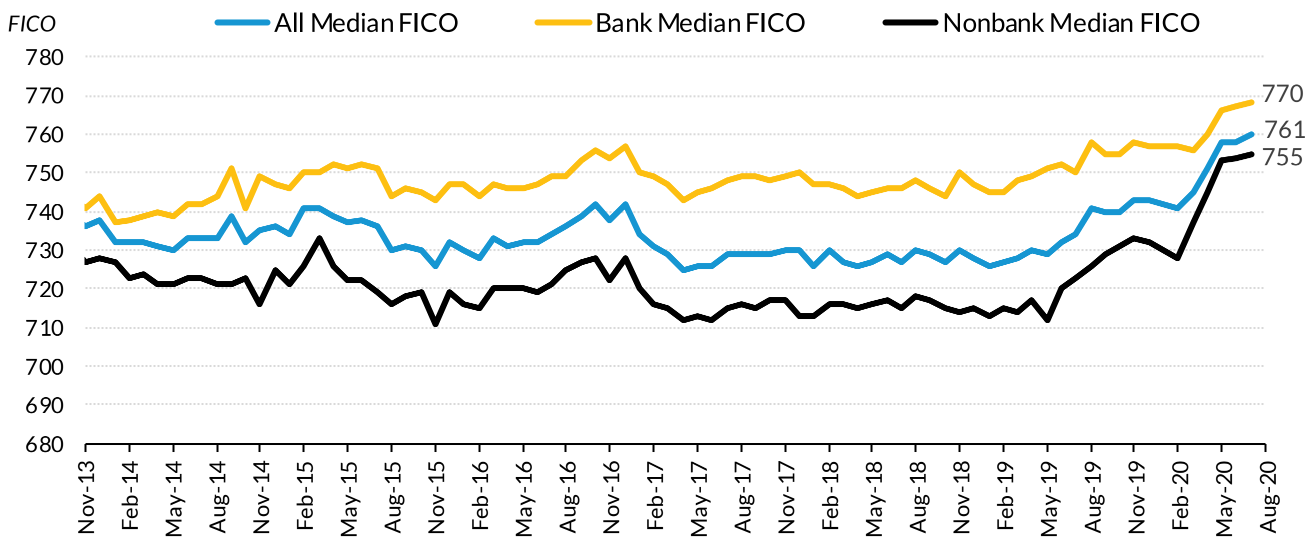


Sources: Black Knight, eMBS, HMDA, SIFMA and Urban Institute.
Note: Includes owner-occupied purchase loans only. Data as of July 2020.

AGENCY NONBANK CREDIT BOX

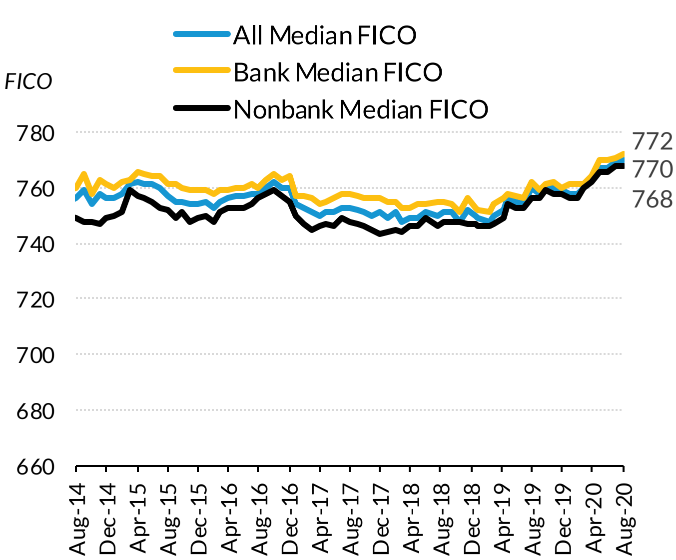
Nonbank originators have played a key role in expanding access to credit. In the GSE space, FICO scores for banks and nonbanks have nearly converged; the differential is much larger in the Ginnie Mae space. FICO scores for banks and nonbanks in both GSE and Ginnie Mae segments increased over the course of 2019 and the first eight months of 2020, due to increased refi activity; this activity is skewed toward higher FICO scores. This has been particularly pronounced the last six months: March through August of 2020. Comparing Ginnie Mae FICO scores today versus six years ago (late 2014), FICO scores have risen significantly for both banks and nonbanks, but more for banks. This partly reflects the sharp cut-back in FHA lending by banks post-2008. As pointed out on page 11, banks now comprise only about 9 percent of Ginnie Mae originations.

Agency FICO: Bank vs. Nonbank



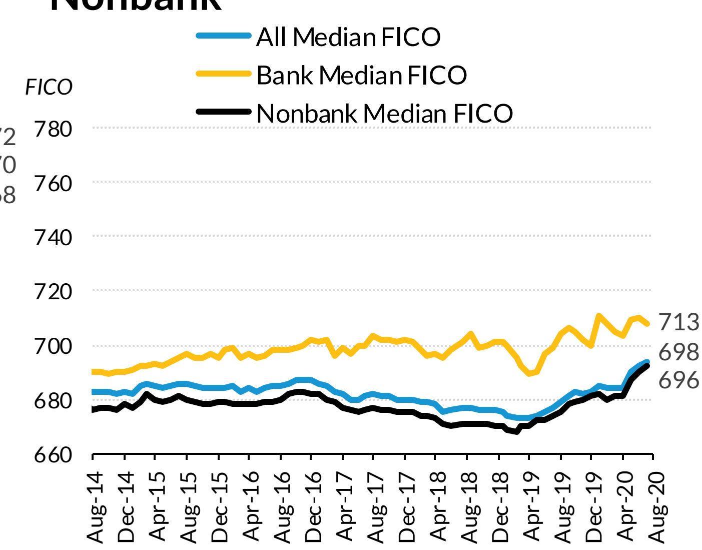
Sources: *eMBS and Urban Institute.*

GSE FICO: Bank vs. Nonbank



Sources: *eMBS and Urban Institute.*

Ginnie Mae FICO: Bank vs. Nonbank

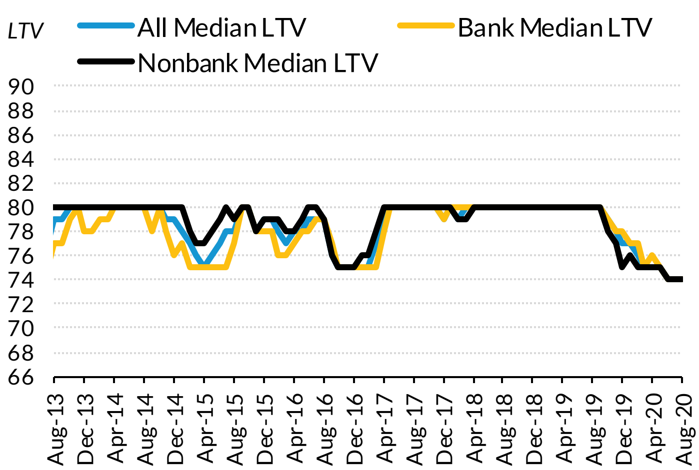


Sources: *eMBS and Urban Institute.*

AGENCY NONBANK CREDIT BOX

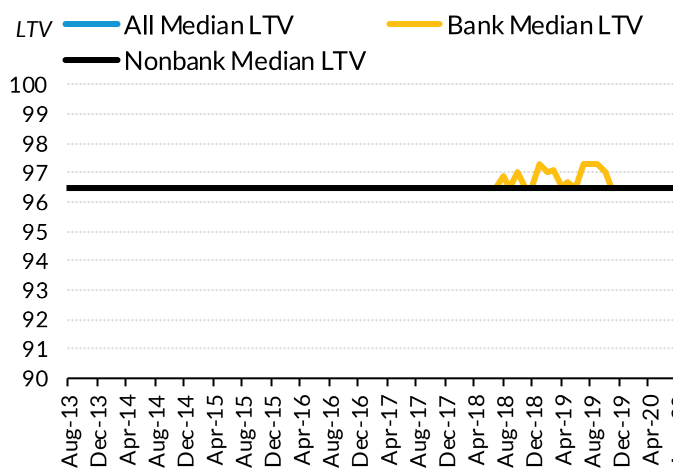
The median LTVs for nonbank and bank originations are comparable, while the median DTI for nonbank loans is higher than for bank loans, more so in the Ginnie Mae space. From early 2017 to early 2019, there was a sustained increase in DTIs, which has reversed beginning in the spring of 2019. This is true 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 thus far in 2020, DTIs fell as borrower payments declined relative to incomes.

GSE LTV: Bank vs. Nonbank



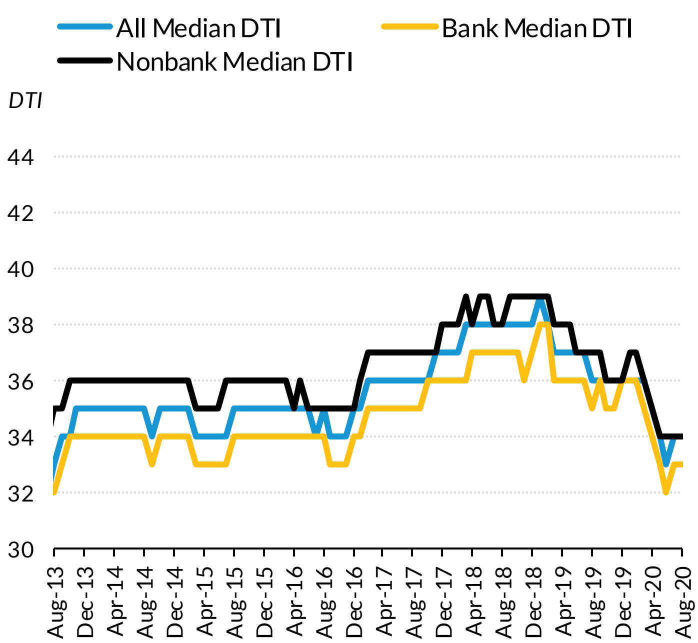
Sources: *eMBS and Urban Institute.*

Ginnie Mae LTV: Bank vs. Nonbank



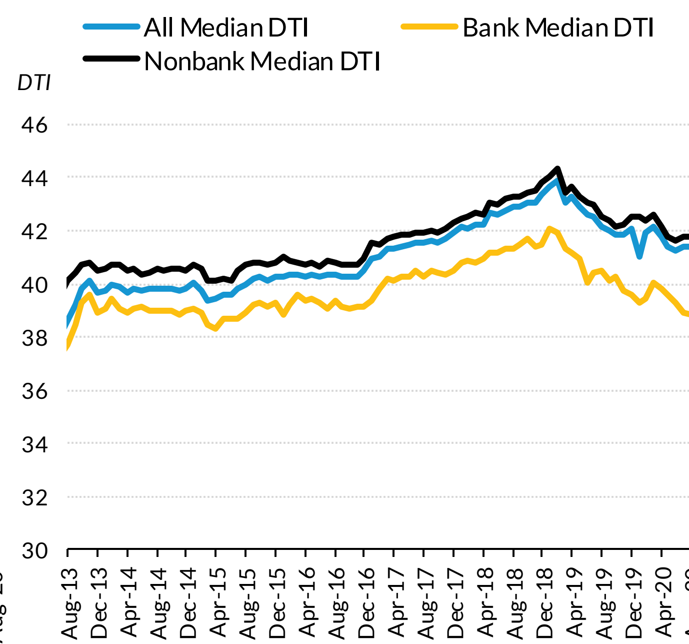
Sources: *eMBS and Urban Institute.*

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 2020 origination volume to be between $2.82 and $3.41 trillion, higher than the $2.17 to $2.33 trillion in 2019. The increase in the 2020 origination volume is due to expectations of very strong refinance activity. All three groups expect the refinance share to be 13 to 18 percentage points higher than in 2019, based on continued low rates in the wake of COVID-19.

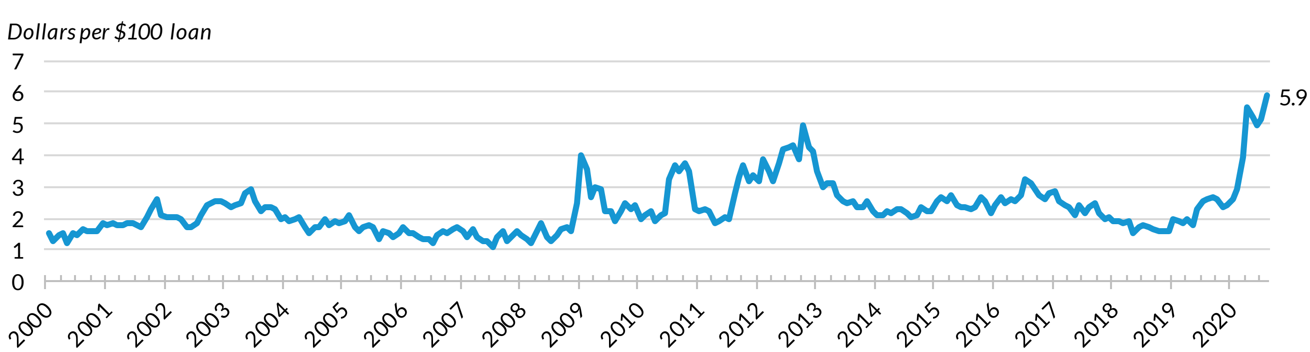
Total Originations and Refinance Shares

Period	Originations ($ billions)			Refi Share (percent)		
	Total, FNMA estimate	Total, FHLMC estimate	Total, MBA estimate	FNMA estimate	FHLMC estimate	MBA estimate
2019 Q1	359	350	325	34	35	30
2019 Q2	581	555	501	35	36	29
2019 Q3	752	695	651	50	47	42
2019 Q4	770	725	696	57	58	55
2020 Q1	787	670	563	64	60	54
2020 Q2	1144	770	928	72	66	63
2020 Q3	862	754	740	52	64	49
2020 Q4	615	723	585	48	66	46
2016	2052	2125	1891	49	47	49
2017	1826	1810	1760	36	37	35
2018	1766	1700	1677	30	32	28
2019	2305	2325	2173	44	46	41
2020	3407	2916	2816	61	64	54
2021	2478	2524	2115	45	51	34

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 2016, 2017, 2018 and 2019 were 3.8, 4.0, 4.6, and 3.9 percent. For 2020, the respective projections for Fannie, Freddie, and MBA are 3.1, 3.4, and 3.3 percent.

Originator Profitability and Unmeasured Costs

In August 2020, Originator Profitability and Unmeasured Costs (OPUC) stood at $5.88 per $100 loan, the highest level on record. 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.



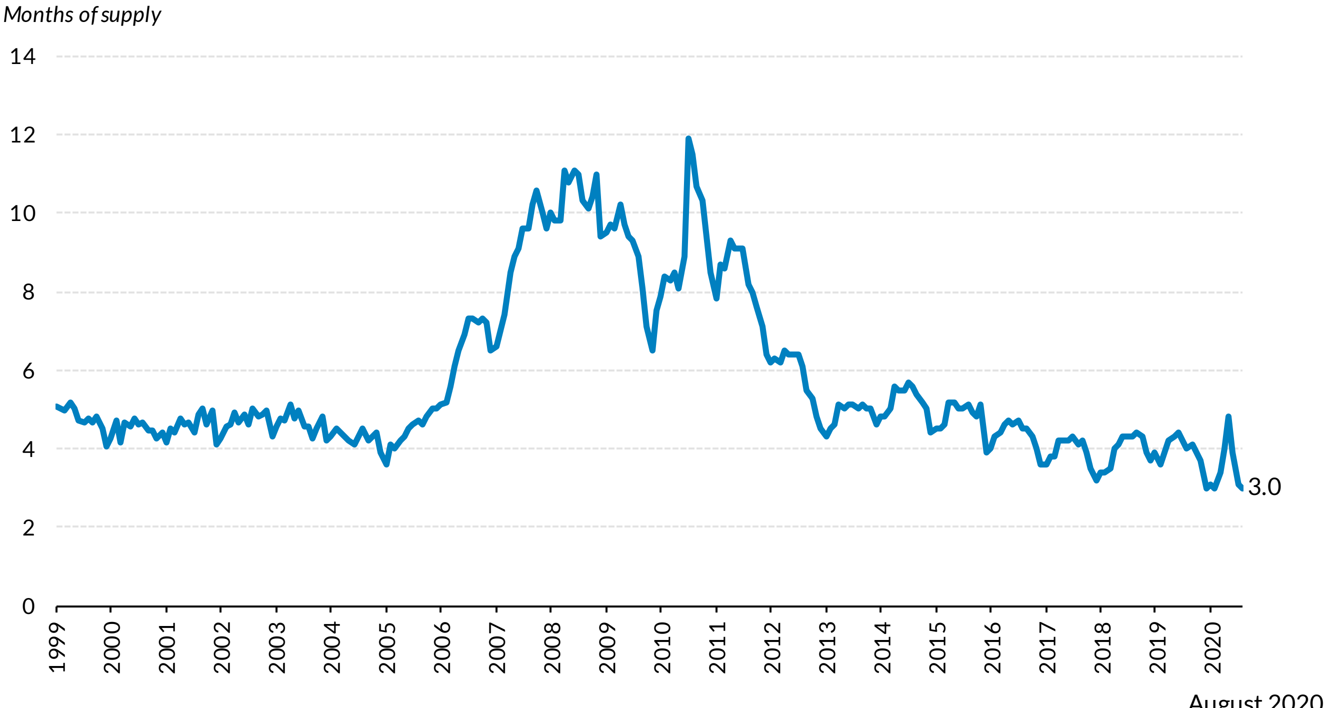
Sources: Federal Reserve Bank of New York, updated monthly and available at this link: http://www.ny.frb.org/research/epr/2013/1113fust.html and Urban Institute. Last updated August 2020.
Note: OPUC is a is a monthly (4-week moving) average as discussed in Fuster et al. (2013).

STATE OF THE MARKET

HOUSING SUPPLY

Months of supply in August 2020 was 3.0, one month lower than it was in August 2019. Strong demand for housing in recent years, fueled by low mortgage rates, has kept the months supply limited. Fannie Mae, Freddie Mac, the MBA, and the NAHB forecast 2020 housing starts to be 1.25 to 1.35 million units; these 2020 forecasts from Fannie Mae, Freddie Mac, and the MBA are above 2019 levels. Fannie Mae, Freddie Mac, and the MBA predict total home sales of 4.80 to 6.1 million units in 2020, forecasts for Fannie Mae and the MBA are the same and also above 2019 levels.

Months of Supply



Source: National Association of Realtors and Urban Institute. Data as of August 2020.

Housing Starts and Home Sales

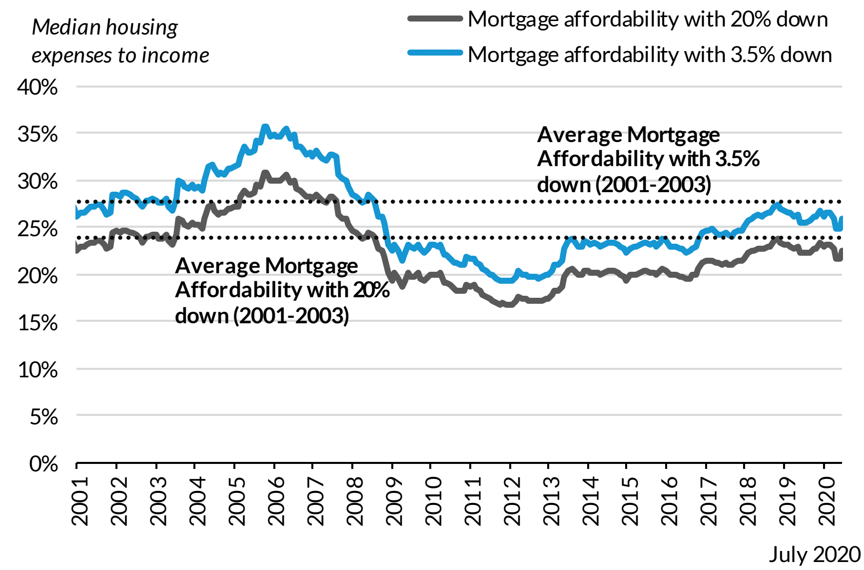
Year	Housing Starts, thousands				Home Sales. thousands			
	Total, FNMA estimate	Total, FHLMC estimate	Total, MBA estimate	Total, NAHB estimate	Total, FNMA estimate	Total, FHLMC estimate	Total, MBA estimate	Total, NAHB estimate*
2016	1174	1170	1177	1177	6011	6010	6001	5385
2017	1203	1200	1208	1208	6123	6120	6158	5522
2018	1250	1250	1250	1250	5957	5960	5956	5357
2019	1290	1250	1295	1295	6023	6000	6016	5439
2020	1344	1280	1345	1251	6098	4800	6098	5611
2021	1435	N/A	1387	1244	6242	5600	6443	5845

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 numbers are now updated quarterly instead of monthly, with the last update in June 2020. *NAHB home sales estimate is for single-family structures only, it excludes condos and co-ops. Other figures include all single-family sales.

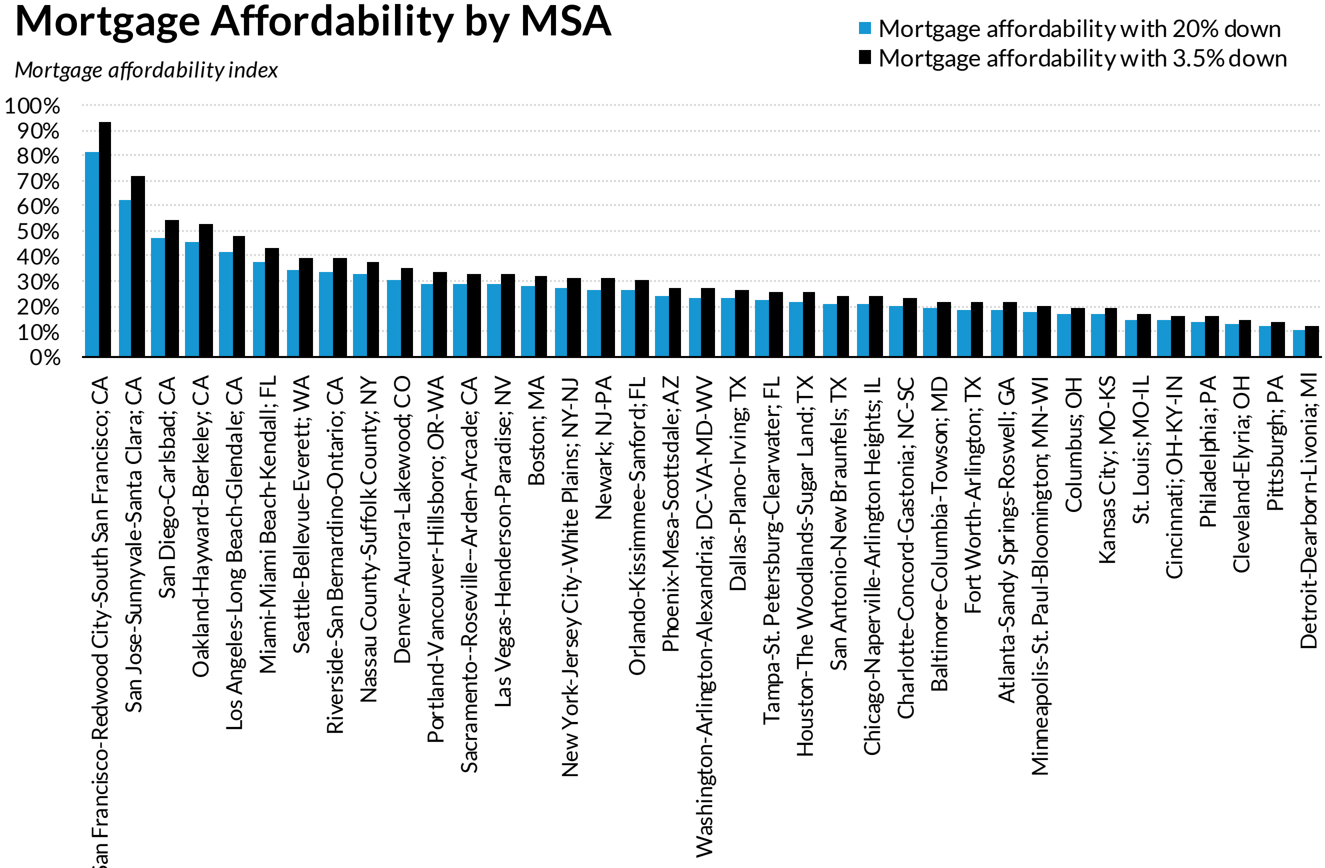
HOUSING AFFORDABILITY

National Mortgage Affordability Over Time

Home prices remain affordable by historic standards, despite price increases over the last 8 years, as interest rates are now near generational lows. As of July 2020, with a 20 percent down payment, the share of median income needed for the monthly mortgage payment stood at 22.6 percent; with 3.5 down, it is 25.8 percent. Since February 2019, 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

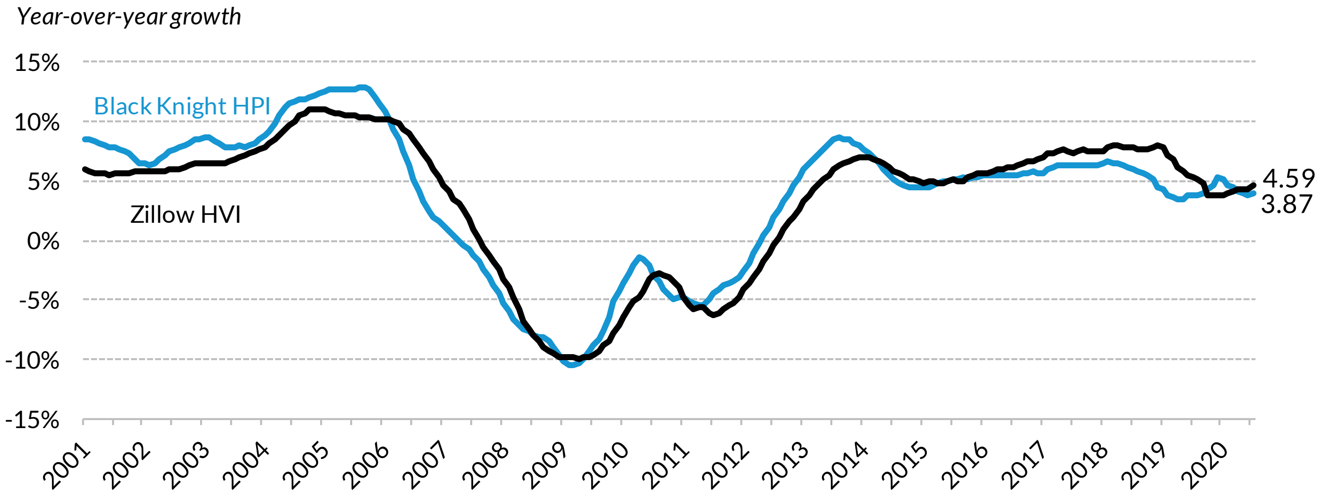


Sources: National Association of Realtors, US Census Bureau, Current Population Survey, American Community Survey, Moody's Analytics, Freddie Mac Primary Mortgage Market Survey, and the Urban Institute.
Note: Mortgage affordability is the share of median family income devoted to the monthly principal, 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.

STATE OF THE MARKET
HOME PRICE INDICES

National Year-Over-Year HPI Growth

According to Black Knight's repeat sales index, year-over-year home price appreciation grew very slightly to 3.87 percent in July 2020, compared to 3.86 percent last month. Year-over-year home price appreciation as measured by Zillow's hedonic index was 4.59 percent in July 2020, up from June. Although housing affordability remains constrained, especially at the lower end of the market, recent declines in rates serve as a partial offset.



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

Changes in Black Knight HPI for Top MSAs

After rising 59.9 percent from the trough, national house prices are now 19.5 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 8.2, 4.8, and 5.5 percent, respectively, below peak values.

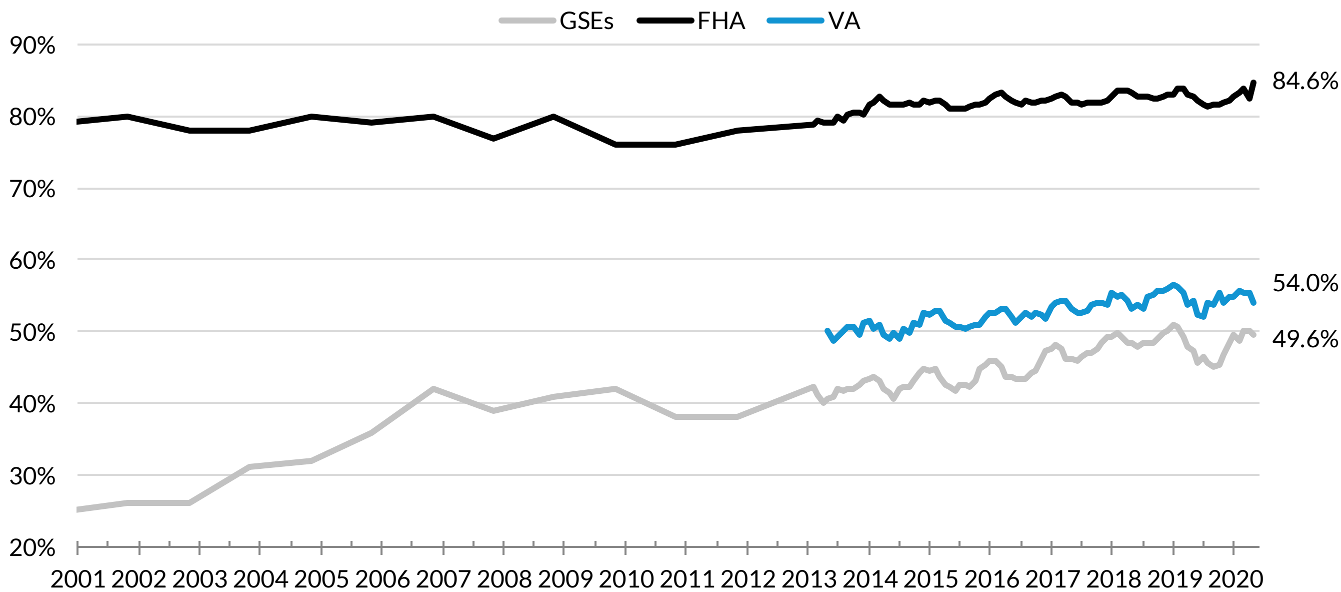
MSA	HPI changes (%)			% above peak
	2000 to peak	Peak to trough	Trough to current	
United States	75.0	-25.3	59.9	19.5
New York-Jersey City-White Plains, NY-NJ	127.8	-22.5	50.1	16.3
Los Angeles-Long Beach-Glendale, CA	179.5	-38.1	95.4	20.9
Chicago-Naperville-Arlington Heights, IL	67.2	-38.4	49.1	-8.2
Atlanta-Sandy Springs-Roswell, GA	32.4	-35.0	85.7	20.7
Washington-Arlington-Alexandria, DC-VA-MD-WV	149.0	-28.3	42.5	2.2
Houston-The Woodlands-Sugar Land, TX	29.3	-6.6	52.3	42.2
Phoenix-Mesa-Scottsdale, AZ	113.1	-51.0	107.1	1.4
Riverside-San Bernardino-Ontario, CA	174.8	-51.7	97.0	-4.8
Dallas-Plano-Irving, TX	26.3	-7.3	72.7	60.2
Minneapolis-St. Paul-Bloomington, MN-WI	69.2	-30.6	67.3	16.2
Seattle-Bellevue-Everett, WA	90.3	-33.1	114.6	43.5
Denver-Aurora-Lakewood, CO	34.1	-12.2	97.6	73.4
Baltimore-Columbia-Towson, MD	123.3	-24.4	25.0	-5.5
San Diego-Carlsbad, CA	148.3	-37.5	85.9	16.2
Anaheim-Santa Ana-Irvine, CA	163.2	-35.2	70.8	10.6

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

FIRST-TIME HOMEBUYERS

First-Time Homebuyer Share

In July 2020, the FTHB share for FHA, which has always been more focused on first time homebuyers, increased slightly to 84.6 percent. The FTHB share of VA lending declined in July to 54.0 percent. The GSE FTHB share in July was slightly down from June to 49.6 percent. The bottom table shows that based on mortgages originated in July 2020, 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, 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.

July 2020

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

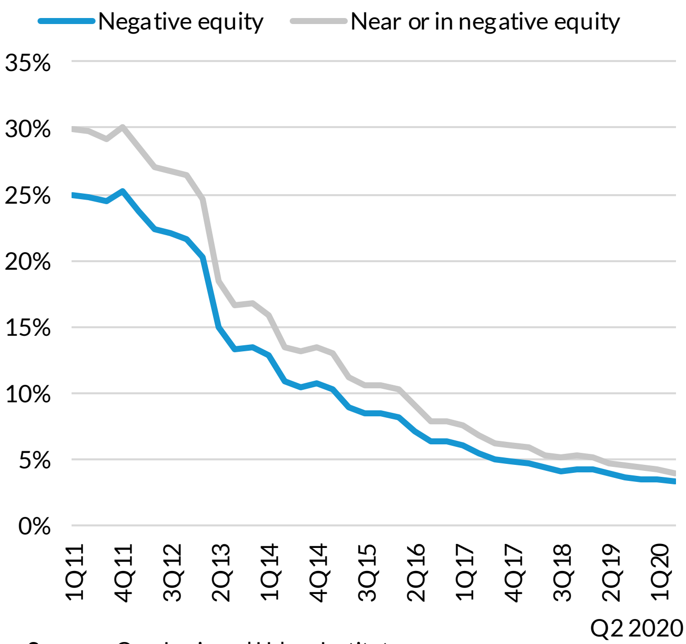
	GSEs		FHA		GSEs and FHA	
Characteristics	First-time	Repeat	First-time	Repeat	First-time	Repeat
Loan Amount ($)	274,041	302,614	230,342	249,747	258,399	295,426
Credit Score	747	759	679	683	723	748
LTV (%)	89	80	96	95	91	82
DTI (%)	34	35	43	44	37	37
Loan Rate (%)	3.31	3.24	3.39	3.33	3.34	3.25

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

DELINQUENCIES AND LOSS MITIGATION ACTIVITY

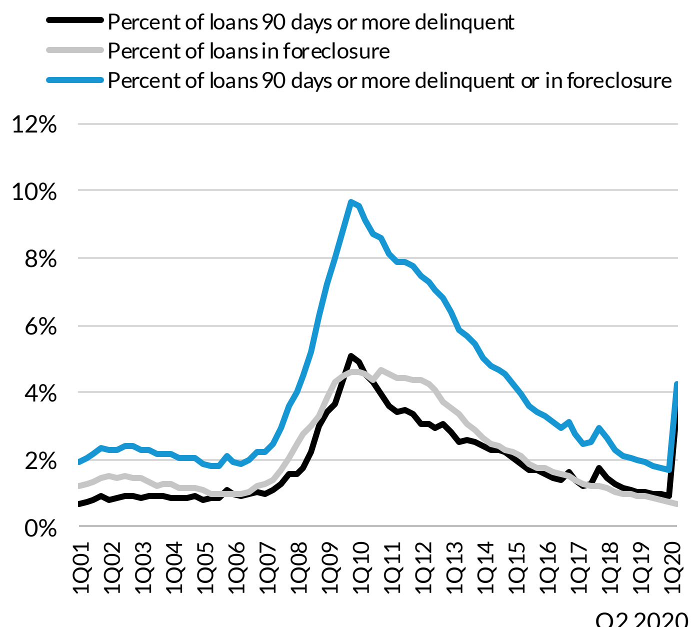
Loans in and near negative equity continued to decline in Q2 2020; 3.2 percent now have negative equity, an additional 0.7 percent have less then 5 percent equity. Due to the effects of COVID-19, loans that are 90 days or more delinquent or in foreclosure spiked significantly in Q2 2020, to4.26 percent. This number includes loans where borrowers have missed their payments, including loans in COVID-19 forbearance. 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 8,644,182 borrowers received a modification from Q3 2007 to Q3 2019, compared with 8,871,863 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 September 2020.*

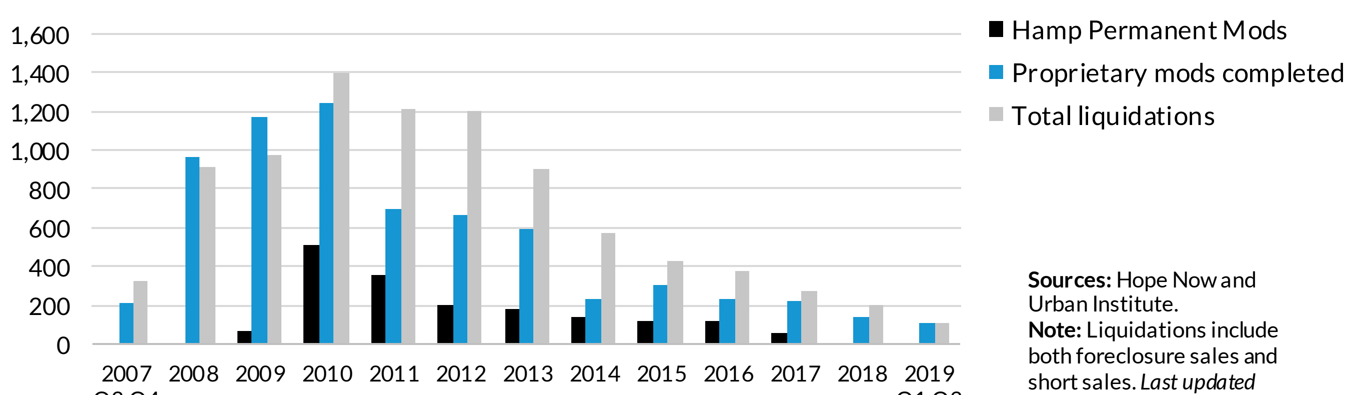
Loans in Serious Delinquency/Foreclosure



Sources: Mortgage Bankers Association and Urban Institute. *Last updated August 2020.*

Loan Modifications and Liquidations

Number of loans (thousands)

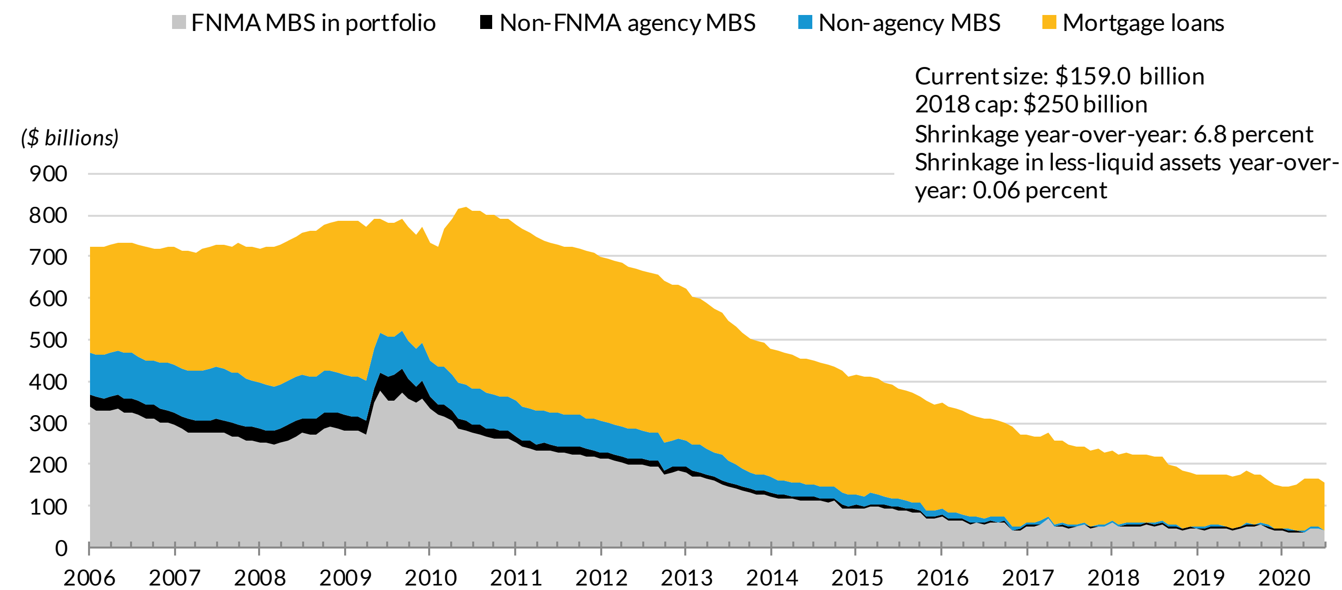


Sources: Hope Now and Urban Institute.
Note: Liquidations include both foreclosure sales and short sales. *Last updated March 2020.*

GSE PORTFOLIO WIND-DOWN

Even though the Fannie Mae and Freddie Mac portfolios are well below the $250 billion size they were required to reach by year-end 2018, the portfolios have continued to shrink. From July 2019 to July 2020, the Fannie portfolio contracted by 6.8 percent, and the Freddie portfolio contracted by 11.7 percent. Within the portfolio, Freddie Mac and Fannie Mae held their less liquid assets (mortgage loans, non-agency MBS), relatively constant from the year prior.

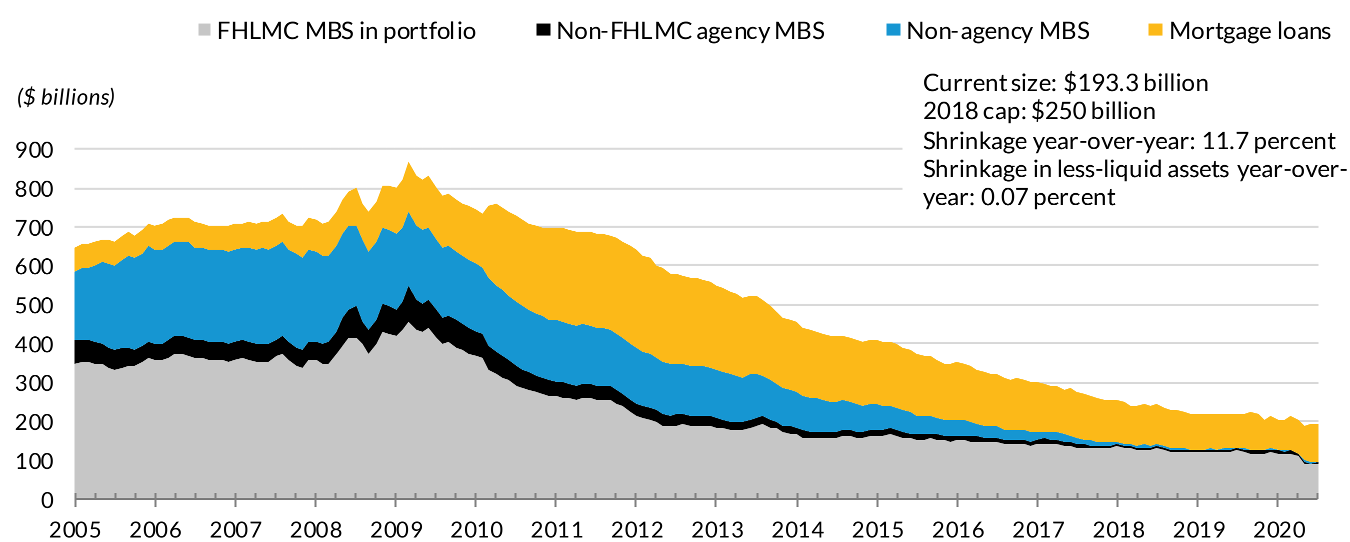
Fannie Mae Mortgage-Related Investment Portfolio Composition



Sources: Fannie Mae and Urban Institute.

July 2020

Freddie Mac Mortgage-Related Investment Portfolio Composition



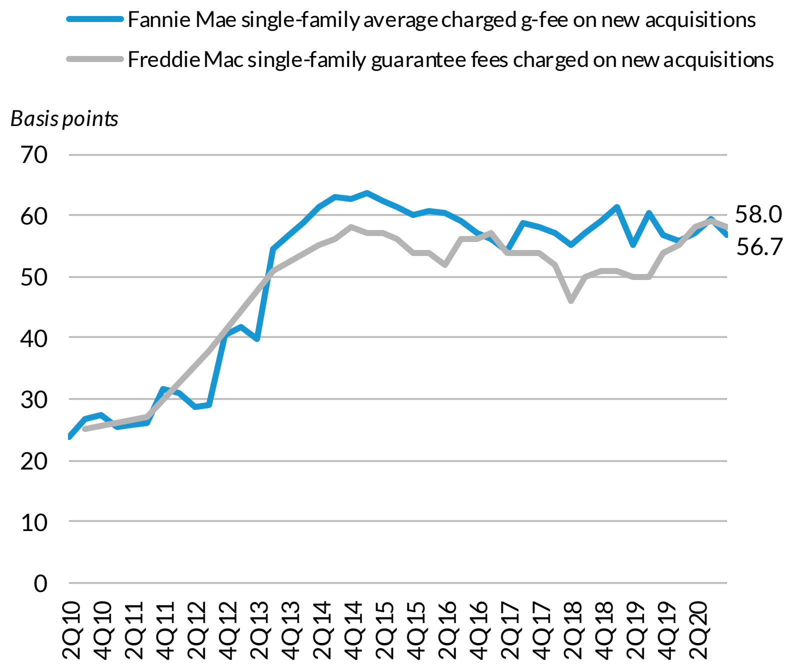
Sources: Freddie Mac and Urban Institute.

July 2020

EFFECTIVE GUARANTEE FEES

Guarantee Fees Charged on New Acquisitions

Fannie Mae's average g-fees charged on new acquisitions fell from 59.4 bps in Q1 2020 to 56.7 bps in Q2 2020. Freddie's also fell slightly from 59.0 bps to 58.0 bps. The gap between the two g-fees was 3.2 bps in Q2 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.



Sources: Fannie Mae, Freddie Mae and Urban Institute.
Last updated August 2020.

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 percent of new acquisitions. Fannie Mae's CAS issuances since inception total $1.65 trillion; Freddie's STACR totals $1.61 trillion. Since the COVID-19 induced spread widening in March 2020, Freddie Mac has issued four 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
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
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**

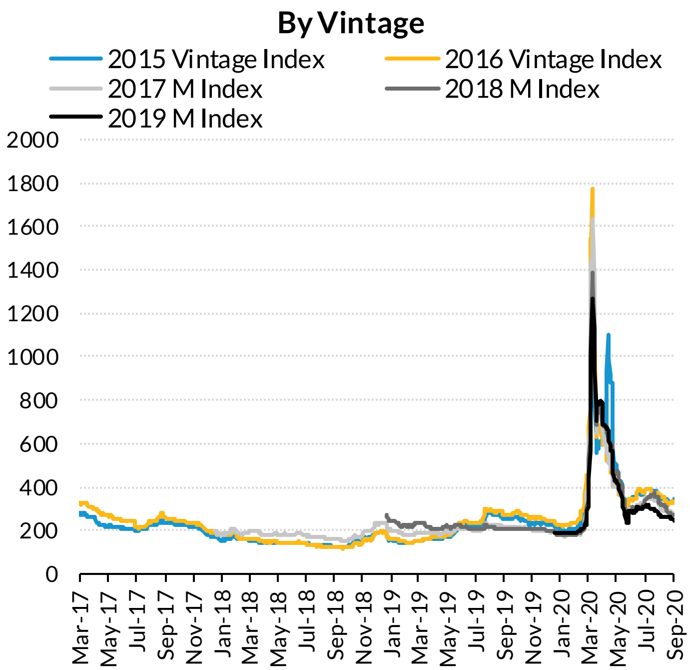
Freddie Mac – Structured Agency Credit Risk (STACR)

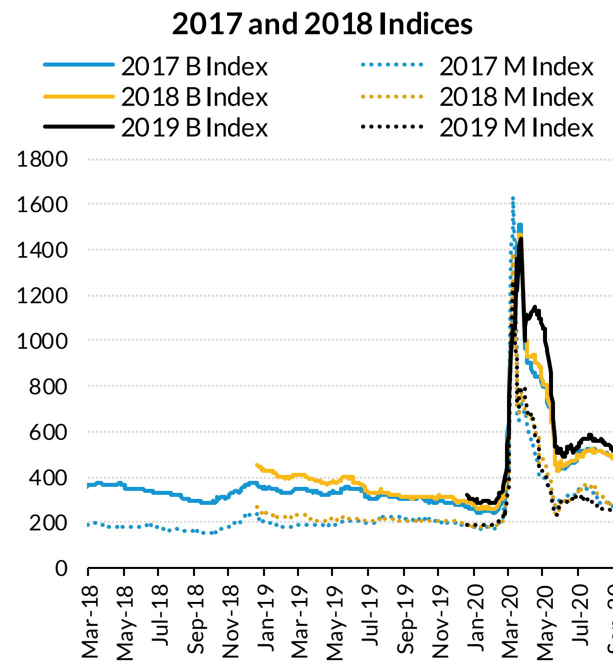
Date	*Transaction*	*Reference Pool Size ($ m)*	*Amount Issued ($m)*	*% of Reference Pool Covered*
2013	STACR 2013 deals	$57,912	$1,130	2.0
2014	STACR 2014 deals	$147,120	$4,916	3.3
2015	STACR 2015 deals	$209,521	$6,658	3.2
2016	STACR 2016 deals	$183,421	$5,541	2.8
2017	STACR 2017 deals	$248, 821	$5,663	2.3
2018	STACR 2018 deals	$216,581	$6,055	2.8
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
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	$25,000	$680	2.7
Total		**$1,613,590**	**$43,326**	**2.7**

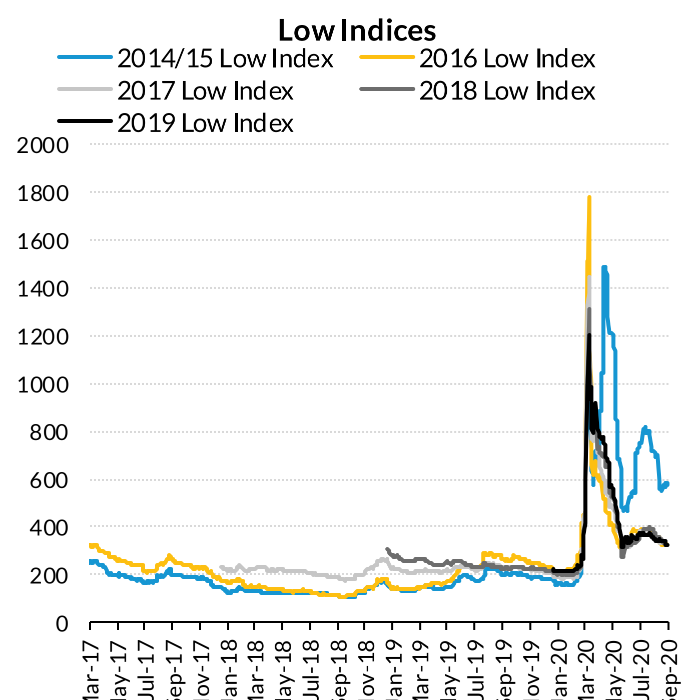
Sources: Fannie Mae, Freddie Mac and Urban Institute. **Note**: Classes A-H, M-1H, M-2H, and B-H are reference tranches only. These classes are not issued or sold. The risk is retained by Fannie Mae and Freddie Mac. "CE" = credit enhancement.

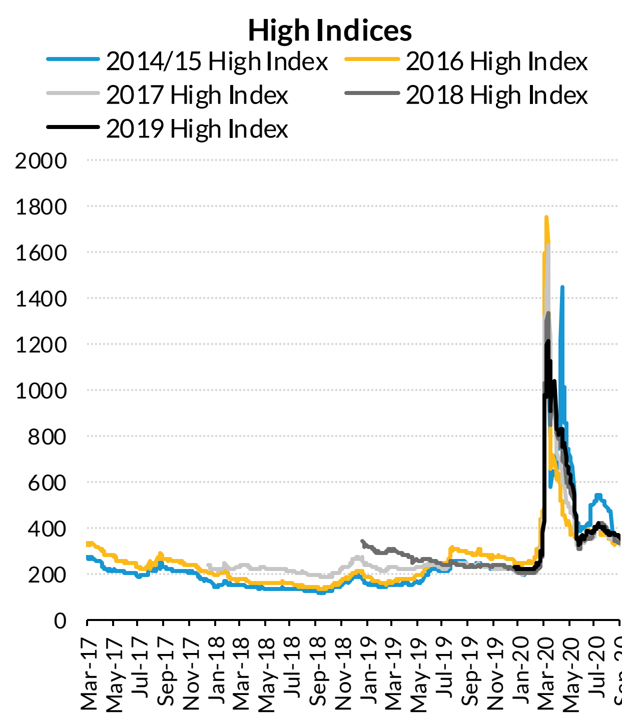
GSE RISK-SHARING INDICES

The figures below show the spreads on the 2015, 2016, 2017, 2018, and 2019 indices, as priced by dealers. Note the substantial spread widening in March 2020. This reflected investor expectations of higher defaults and potential credit losses owing to COVID-19, as well as some forced selling. Spreads have tightened considerably since then, but remain well above pre-COVID levels. 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, 2018, and 2019 indices contain both the bottom mezzanine tranche as well as the equity tranche (the B tranche), in all deals when the latter was sold.







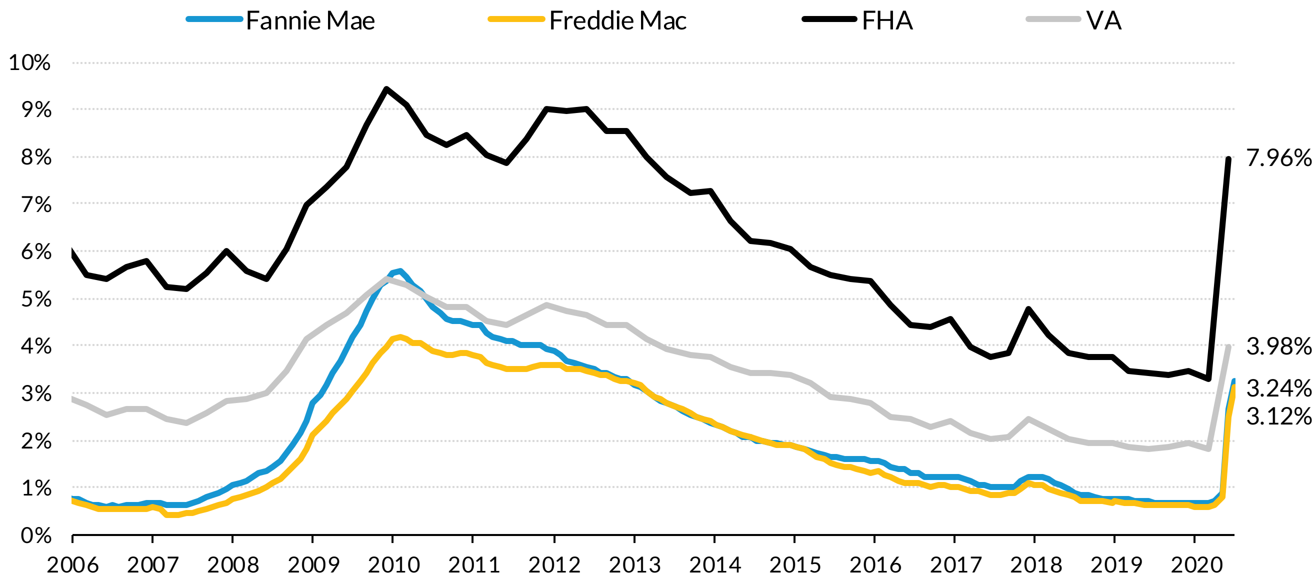


Sources: Vista Data Services and Urban Institute.
Note: Data as of September 15, 2020.

SERIOUS DELINQUENCY RATES

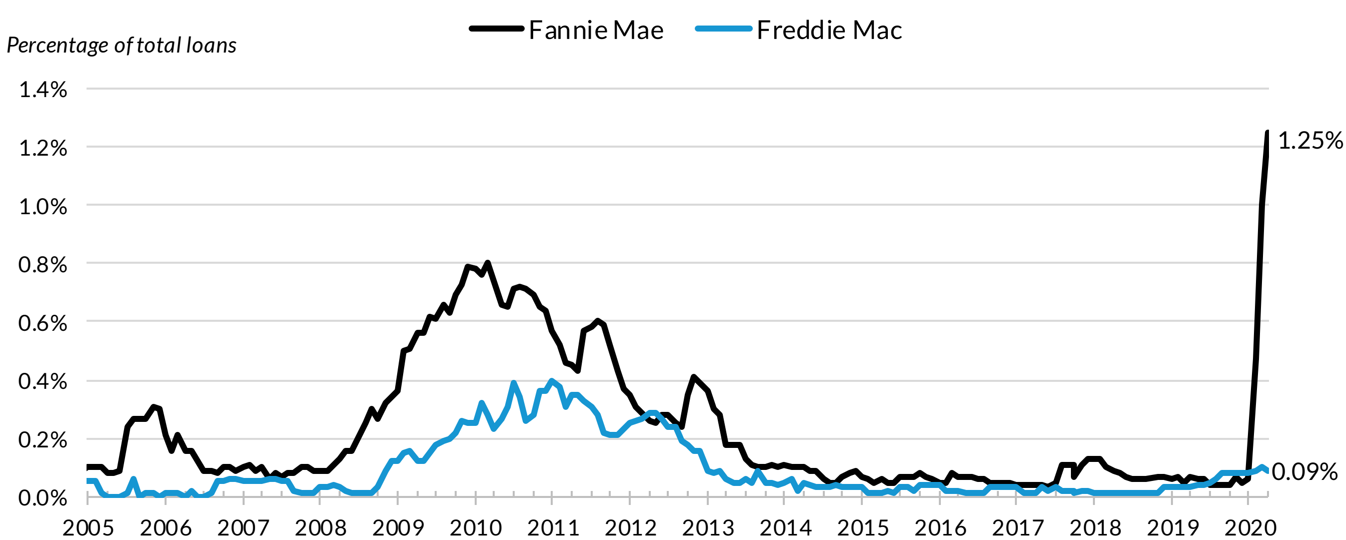
Serious delinquency rates for single-family GSE loans have grown since the start of the pandemic; GSE data is shown through July, FHA and VA data through June. Note that loans that are in forbearance are counted as delinquent for the purpose of measuring delinquency rates. Even so, these delinquency levels are mostly lower than 2009-2011. Fannie multifamily delinquencies grew to 1.25 percent in July, due to complications from COVID-19. Freddie multifamily delinquencies declined very slightly to 0.09 percent.

Serious Delinquency Rates–Single-Family Loans



Sources: Fannie Mae, Freddie Mac, MBA Delinquency Survey and Urban Institute. **Note:** Serious delinquency is defined as 90 days or more past due or in the foreclosure process. Not seasonally adjusted. FHA and VA delinquencies are reported on a quarterly basis, last updated June 2020. GSE delinquencies are reported monthly, last updated July 2020.

Serious Delinquency Rates–Multifamily GSE Loans



Sources: Fannie Mae, Freddie Mac and Urban Institute.

July 2020

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 $2.12 trillion through the first eight months of 2020, more than the volume for full year 2019. 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 $375.4 billion in the first eight months of 2020, up 168.8 percent from the same period in 2019.

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 YTD	$1,374.1	$480.9	$2,117.5
2020 YTD % Change YOY	194.5%	100.4%	199.7%
2020 Ann.	$2,061.1	$721.3	$3,176.3

Agency Net Issuance

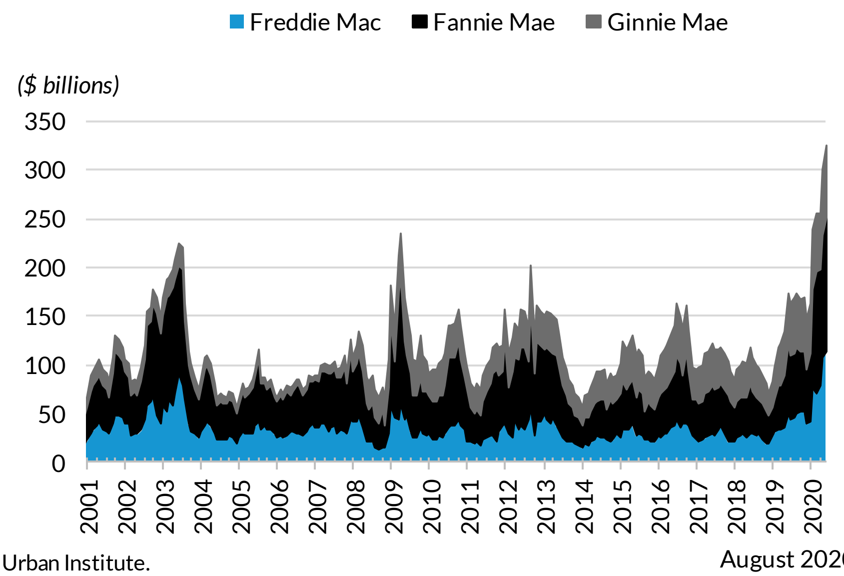
Issuance Year	GSEs	Ginnie Mae	Total
2001	$368.40	-$9.90	$358.50
2002	$357.20	-$51.20	$306.10
2003	$334.90	-$77.60	$257.30
2004	$82.50	-$40.10	$42.40
2005	$174.20	-$42.20	$132.00
2006	$313.60	$0.20	$313.80
2007	$514.90	$30.90	$545.70
2008	$314.80	$196.40	$511.30
2009	$250.60	$257.40	$508.00
2010	-$303.20	$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 YTD	$353.5	$22.0	$375.4
2020 YTD % Change YOY	328.0%	-61.5%	168.8%
2020 Ann.	$530.2	$32.9	$563.2

Sources: eMBS and Urban Institute.
Note: Dollar amounts are in billions. Data as of August 2020.

AGENCY GROSS ISSUANCE & FED PURCHASES

Monthly Gross Issuance

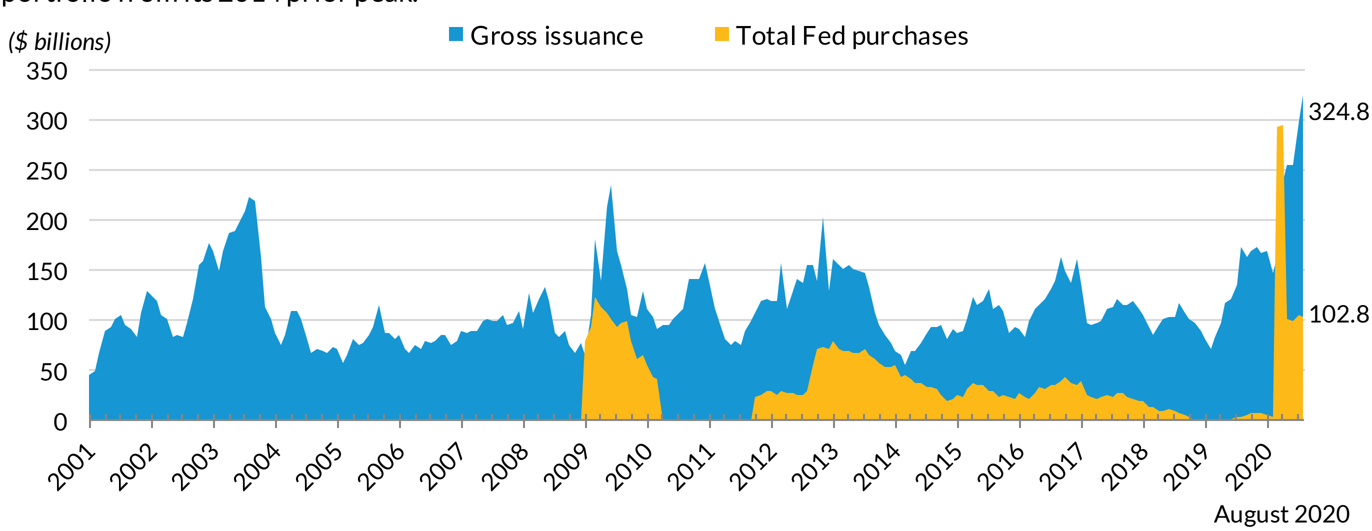
While FHA, VA and GSE lending have dominated the mortgage market since the 2008 housing crisis, there has been a change in the mix. The Ginnie Mae share of new issuances has risen from a pre-crisis level of 10-12 percent to 34.8 percent in February 2020, reflecting gains in both purchase and refinance shares. Since then, the Ginnie share had declined, reaching 22.6 percent in August 2020; 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.

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 the Fed bought $292.2 billion in agency MBS, and April 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 -$104 billion per month in May, June, July, and August. Fed purchases in August were $102.8 billion, 32 percent of monthly issuance, still sizeable from a historical perspective. Prior to the COVID-19 intervention, the Fed was winding down its MBS portfolio from its 2014 prior peak.



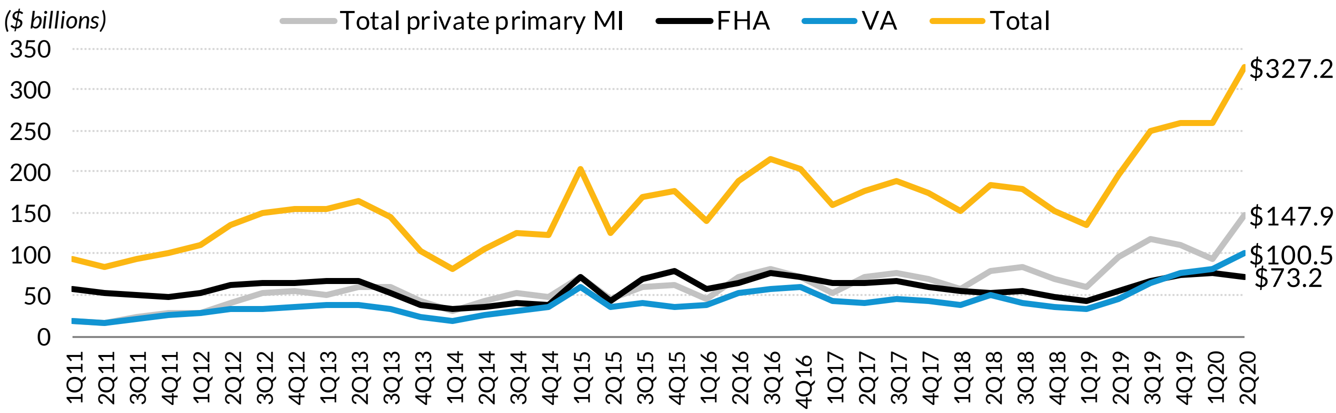
Sources: eMBS, Federal Reserve Bank of New York and Urban Institute.

AGENCY ISSUANCE

MORTGAGE INSURANCE ACTIVITY

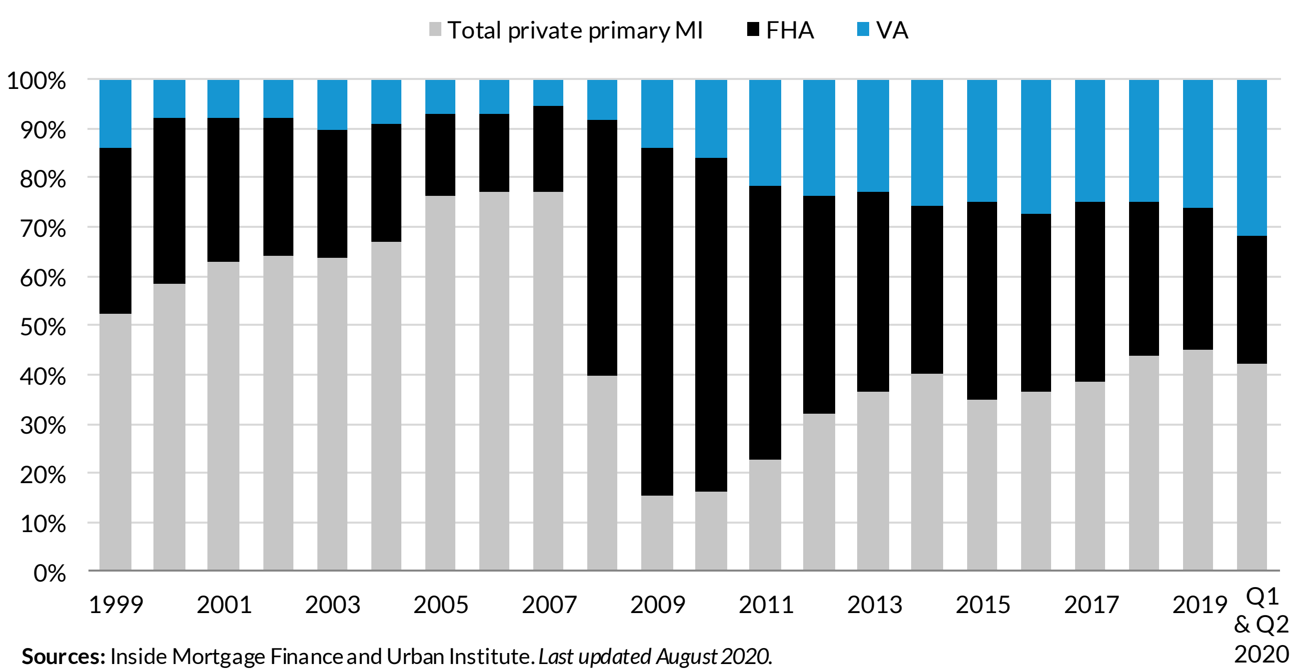
MI Activity

Mortgage insurance activity via the FHA, VA and private insurers increased from $197 billion in Q2 2019 to $327 billion in Q2 2020, a 57.4 percent increase. In the second quarter of 2020, private mortgage insurance written increased by $51.3 billion, FHA increased by $17.2 billion and VA increased by $56.4 billion relative to Q2 2019. During this period, the VA share increased from 22.4 to 30.7 percent while the FHA share fell from 28.5 to 22.4 percent. The private mortgage insurers share also fell, from 49.1 to 45.2 percent compared to the same period a year ago.



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

MI Market Share



Sources: Inside Mortgage Finance and Urban Institute. *Last updated August 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	2.94
FHA	3.19

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	$1,238	$1,238	$1,238	$1,238	$1,238	$1,238	$1,238	$1,238
PMI	$1,487	$1,424	$1,389	$1,302	$1,258	$1,221	$1,180	$1,156
PMI Advantage	-$249	-$187	-$151	-$65	-$20	$17	$58	$82

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 August 2020.
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.

FANNIE MAE COMPOSITION

Since 2008, the composition of loans purchased by Fannie Mae has shifted towards borrowers with higher FICO scores. For example, 62.9 percent of loans originated from 2011 to Q2 2019 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 ≤70	LTV 70 to 80	LTV 80 to 90	LTV >90	Total
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%
2011-2Q19	≤700	3.8%	5.1%	1.4%	2.4%	12.7%
	700 to 750	5.7%	10.0%	3.3%	5.5%	24.4%
	>750	19.2%	27.1%	7.4%	9.2%	62.9%
	Total	28.7%	42.2%	12.1%	17.1%	100.0%
Total		33.1%	44.3%	10.7%	11.9%	100.0%

Sources: Fannie Mae and Urban Institute.
Note: Fannie Mae loan level credit data includes loans originated from Q1 1999 to Q2 2019. 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.

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%	4.7%	6.1%	7.1%	4.9%
	700 to 750	1.2%	1.9%	2.9%	3.0%	2.0%
	>750	0.4%	0.8%	1.5%	1.7%	0.8%
	Total	1.6%	2.5%	3.9%	4.6%	2.5%
2005	≤700	14.0%	17.6%	20.3%	21.9%	16.8%
	700 to 750	6.5%	9.8%	12.8%	13.3%	9.0%
	>750	2.3%	4.5%	7.2%	8.3%	3.8%
	Total	7.0%	10.3%	14.6%	15.8%	9.6%
2006	≤700	18.4%	22.6%	26.0%	27.5%	21.7%
	700 to 750	8.7%	13.3%	16.2%	16.9%	12.1%
	>750	3.0%	5.9%	9.2%	9.6%	5.0%
	Total	9.6%	13.3%	18.4%	19.6%	12.6%
2007	≤700	19.9%	23.7%	31.1%	31.5%	24.3%
	700 to 750	8.5%	13.5%	19.3%	18.7%	13.0%
	>750	2.8%	5.8%	11.0%	10.9%	5.3%
	Total	9.5%	13.5%	22.3%	22.1%	13.8%
2008	≤700	14.7%	17.3%	23.4%	23.5%	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	4.2%	5.5%	5.2%	6.6%	4.8%
	700 to 750	1.1%	2.1%	2.6%	3.2%	1.8%
	>750	0.3%	0.6%	1.1%	1.5%	0.5%
	Total	0.7%	1.3%	1.7%	2.4%	1.1%
2011-2Q19	≤700	1.3%	1.8%	2.1%	2.7%	1.9%
	700 to 750	0.4%	0.5%	0.7%	0.9%	0.6%
	>750	0.1%	0.1%	0.2%	0.3%	0.2%
	Total	0.3%	0.4%	0.6%	0.9%	0.5%
Total		1.9%	2.6%	3.7%	2.9%	2.5%

Sources: Fannie Mae and Urban Institute.
Note: Fannie Mae loan level credit data includes loans originated from Q1 1999 toQ2 2019, with performance information on these loans through Q1 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, 58.4 percent of loans originated from 2011 to Q2 2019 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%	5.7%	35.5%
	700 to 750	8.9%	15.9%	3.4%	3.2%	31.4%
	>750	13.6%	15.5%	2.3%	1.8%	33.1%
	Total	30.2%	48.0%	11.2%	10.7%	100.0%
2005	≤700	10.6%	16.9%	3.3%	3.0%	33.9%
	700 to 750	9.4%	15.4%	2.0%	1.7%	28.5%
	>750	15.8%	18.8%	1.7%	1.4%	37.7%
	Total	35.9%	51.1%	7.0%	6.0%	100.0%
2006	≤700	10.0%	17.3%	3.4%	3.3%	34.0%
	700 to 750	8.3%	16.1%	1.9%	1.5%	27.8%
	>750	14.4%	20.6%	1.7%	1.4%	38.1%
	Total	32.8%	54.0%	7.1%	6.2%	100.0%
2007	≤700	9.2%	15.5%	4.6%	4.8%	34.1%
	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%	49.3%	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%	43.2%	11.4%	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%
2011-2Q19	≤700	4.0%	5.1%	1.6%	2.3%	13.0%
	700 to 750	6.7%	12.0%	3.9%	6.1%	28.6%
	>750	17.1%	25.8%	6.9%	8.6%	58.4%
	Total	27.8%	42.8%	12.4%	17.0%	100.0%
Total		31.8%	45.9%	10.6%	11.8%	100.0%

Sources: Freddie Mac and Urban Institute.
Note: Freddie Mac loan level credit data includes loans originated from Q1 1999 to Q2 2019. 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	3.3%	4.4%	6.8%	7.3%	5.0%
	700 to 750	1.1%	1.8%	2.9%	3.0%	1.8%
	>750	0.4%	0.9%	1.6%	1.9%	0.8%
	Total	1.4%	2.4%	4.5%	5.1%	2.6%
2005	≤700	12.7%	17.2%	20.4%	21.9%	16.5%
	700 to 750	6.1%	9.8%	13.1%	13.4%	9.0%
	>750	2.1%	4.7%	7.5%	8.6%	3.9%
	Total	6.3%	10.4%	15.2%	16.5%	9.6%
2006	≤700	16.7%	21.9%	25.5%	27.9%	21.3%
	700 to 750	8.3%	13.1%	16.0%	16.2%	12.0%
	>750	2.8%	6.1%	9.2%	10.1%	5.2%
	Total	8.5%	13.2%	18.9%	21.1%	12.6%
2007	≤700	18.1%	23.6%	29.9%	32.3%	24.2%
	700 to 750	8.2%	14.0%	18.8%	19.1%	13.3%
	>750	2.8%	6.6%	10.6%	11.8%	5.8%
	Total	8.6%	14.1%	21.9%	23.6%	14.1%
2008	≤700	14.1%	18.1%	24.6%	23.7%	18.2%
	700 to 750	5.0%	8.9%	13.7%	12.3%	8.5%
	>750	1.5%	3.5%	7.1%	6.7%	3.1%
	Total	4.7%	8.0%	13.9%	13.7%	7.9%
2009-2010	≤700	3.8%	5.4%	5.5%	5.8%	4.6%
	700 to 750	1.0%	2.1%	2.4%	2.9%	1.7%
	>750	0.3%	0.7%	1.2%	1.4%	0.5%
	Total	0.7%	1.4%	1.8%	2.3%	1.1%
2011-2Q19	≤700	1.0%	1.1%	1.3%	1.7%	1.2%
	700 to 750	0.3%	0.4%	0.5%	0.7%	0.4%
	>750	0.1%	0.1%	0.2%	0.3%	0.1%
	Total	0.3%	0.3%	0.4%	0.6%	0.4%
Total		2.0%	3.3%	4.3%	3.9%	3.0%

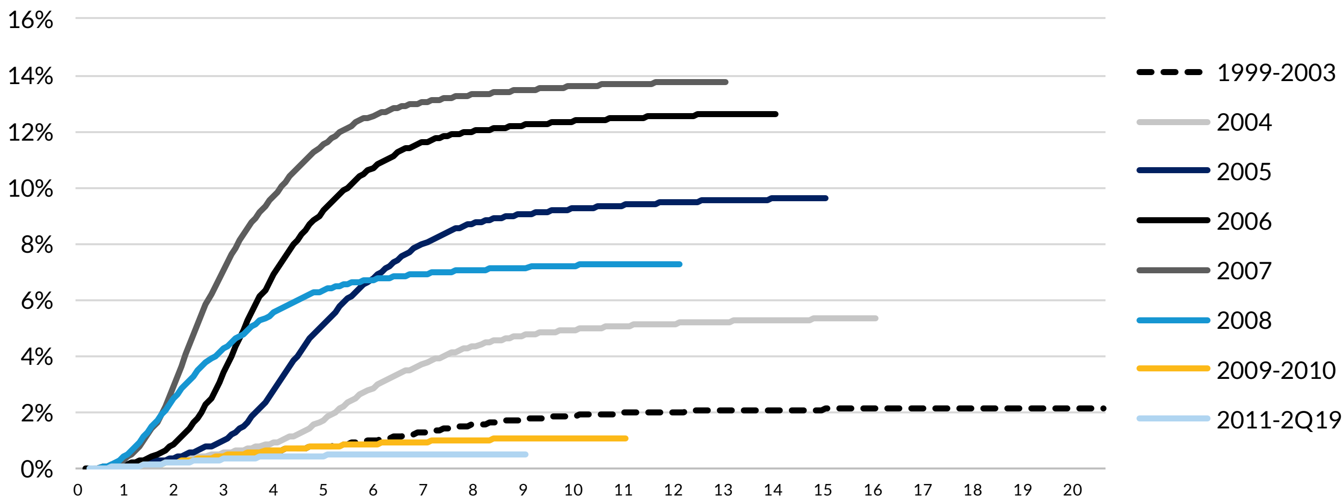
Sources: Freddie Mae and Urban Institute.
Note: Freddie Mac loan level credit data includes loans originated from Q1 1999 to Q2 2019, with performance information on these loans through Q4 2019. Default is defined as six months delinquent or disposed of via short sales, third-party sales, deeds-in-lieu 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

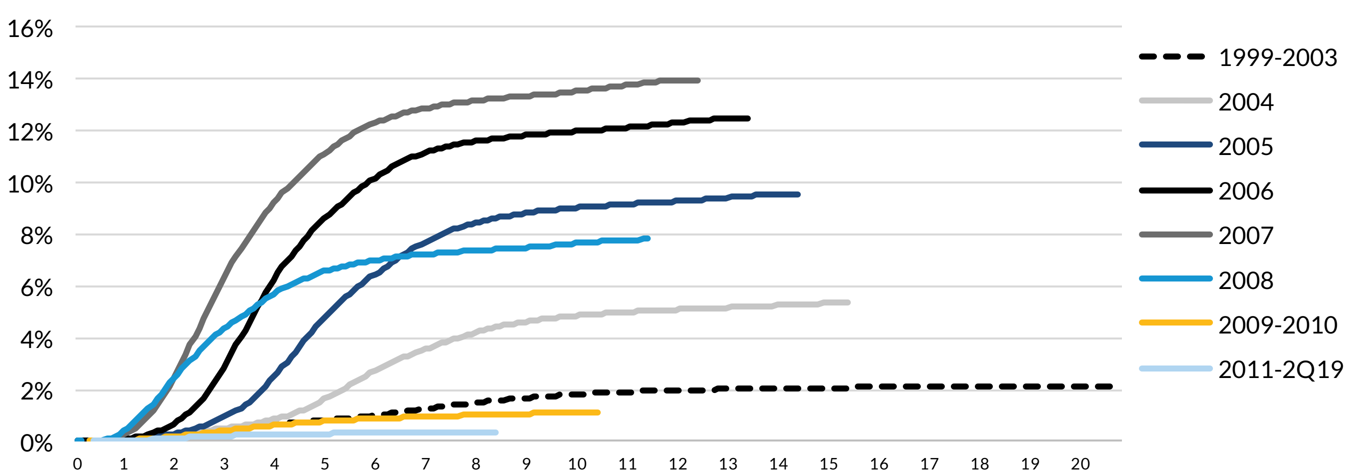
With pristine books of business and a strong housing market, default rates for the GSEs are much lower than they were historically. For Fannie Mae and Freddie Mac's 1999-2003 vintages, cumulative defaults total around 2.1 percent, while cumulative defaults for the 2007 vintage are around 14 percent. 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- Q2 2019 are about 1.01 and 0.50 percent, respectively, compared to the cumulative default rate from 1999-2003 of 1.59 percent. For Freddie loans 100 months after origination, the cumulative default rates total 1.03 percent from 2009-10 and 0.33 percent from 2011-Q2 2019, compared to the rate from 1999-2003 of 1.55 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

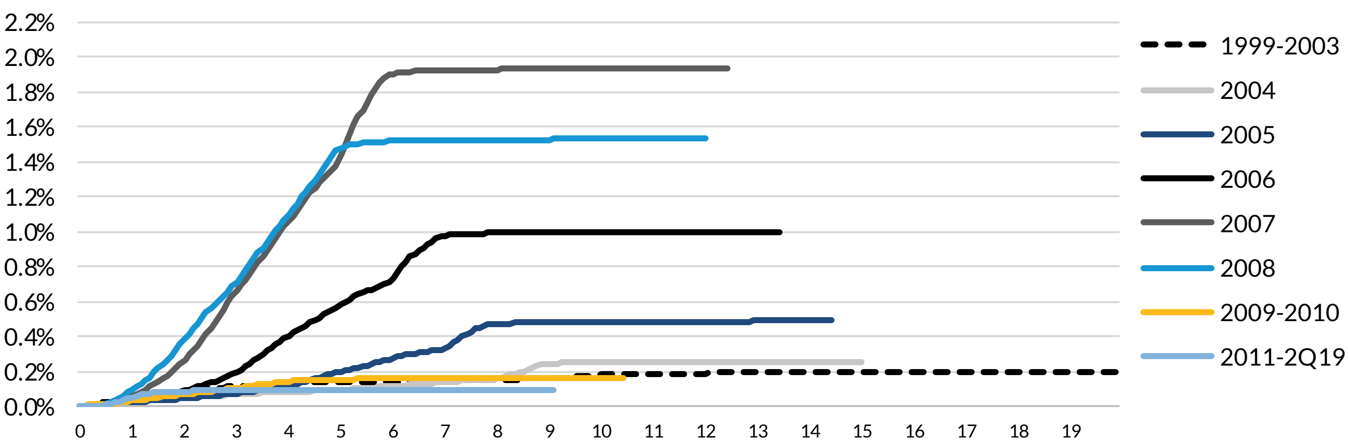


Sources: Freddie Mac and Urban Institute.
Note: The analysis included only mortgages with original terms of 241-420 months. A default is defined as a delinquency of 180 days or more, a deed-in-lieu, short sale, foreclosure sale or REO sale.

REPURCHASE RATE BY VINTAGE

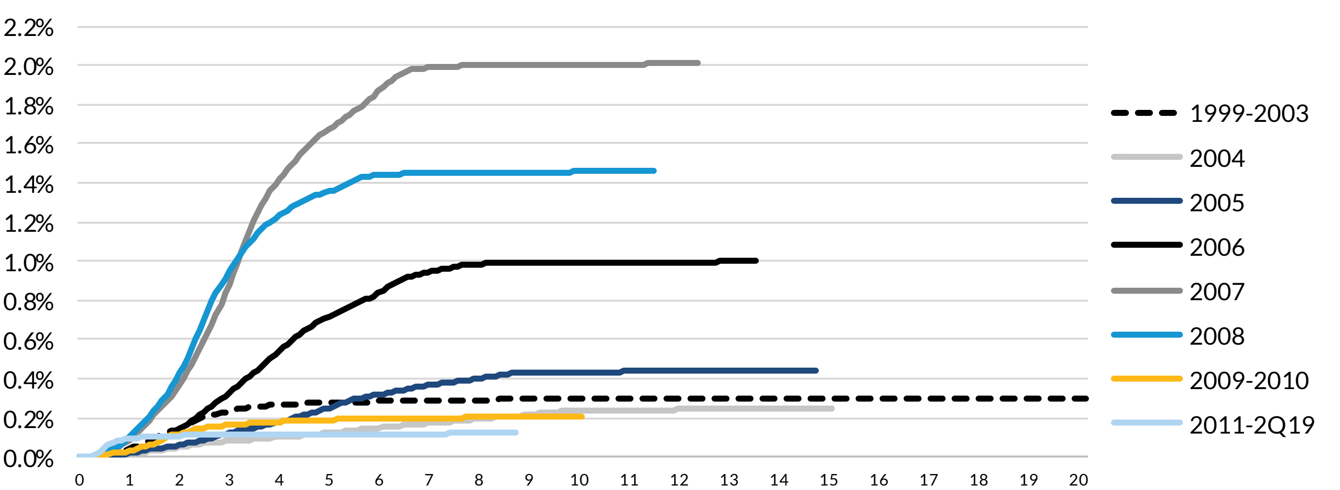
These figures show the cumulative percentage of fixed-rate, full documentation, amortizing 30-year loans of a given vintage that Fannie and Freddie have put back to lenders due to reps and warrants violations. Bubble era vintages were significantly more likely to be put back than either pre- or post-bubble 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) 11.8 percent are current, 18.5 percent are prepaid, 7.5 percent are still in the pipeline (not current, not prepaid, not liquidated) and 57.8 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	10.05%	23.92%	4.89%	61.14%	24.7%	39.7%	24.5%	32.8%
2005	10.64%	14.57%	4.78%	70.01%	33.7%	48.4%	35.5%	44.6%
2006	10.43%	12.58%	4.53%	72.46%	42.3%	54.4%	38.3%	50.1%
2007	11.22%	13.56%	4.88%	70.34%	41.4%	53.7%	36.3%	47.3%
2008	12.27%	17.01%	5.58%	65.14%	35.3%	49.0%	28.6%	40.0%
2009-2010	14.85%	22.70%	10.38%	52.07%	23.8%	35.2%	17.6%	30.6%
2011-2Q19	22.56%	19.15%	34.92%	23.37%	12.5%	21.7%	5.7%	12.7%
Total	11.77%	18.53%	7.46%	62.24%	34.4%	47.6%	29.3%	40.9%

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	6.87%	22.06%	4.55%	66.52%	23.8%	37.3%	27.4%	32.4%
2005	7.35%	12.84%	4.16%	75.66%	29.4%	43.6%	34.3%	40.6%
2006	6.64%	10.51%	3.91%	78.94%	34.2%	47.7%	36.1%	44.3%
2007	6.93%	10.57%	4.46%	78.04%	37.1%	47.2%	35.0%	42.7%
2008	8.08%	13.91%	5.34%	72.68%	31.6%	43.7%	31.3%	38.6%
2009-2010	10.89%	21.75%	10.66%	56.70%	23.1%	35.2%	18.2%	31.1%
2011-2Q19	20.59%	19.83%	36.68%	22.90%	9.7%	21.5%	7.5%	14.0%
Total	7.75%	15.83%	6.01%	70.41%	30.9%	43.7%	31.3%	39.1%

Sources: Fannie Mae, Freddie Mac, and Urban Institute.
Note: Fannie Mae loan level credit data includes loans originated from Q1 1999 to Q2 2019, with performance information on these loans through Q1 2020. Freddie Mac loan level credit data includes loans originated from Q1 1999 to Q2 2019, with performance information on these loans through Q4 2019. The analysis included only mortgages with original terms of 241-420 months.

SPECIAL FEATURE: LOAN LEVEL GSE CREDIT DATA

LOSS SEVERITY BY CHANNEL

The table below shows the severity of Fannie and Freddie loans that have liquidated, broken down by liquidation channel and vintage year. Foreclosure alternatives, including short sales, note sales, and third party sales have higher defaulted unpaid principal balance (UPB) and much lower loss severities than REO sales. For example, for 2011-2Q 2019 originations, Fannie Mae foreclosure alternatives had a mean defaulted UPB of $168,952 and a loss severity of 9.3 percent, versus a mean defaulted UPB of $152,110 and a loss severity of 13.9 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	205,506	147,706	57,800	112,416.8	105,686.4	129,610.2	31.14%	37.37%	18.15%
2005	81,354	49,631	31,723	169,714.0	156,818.0	189,887.0	40.89%	49.02%	30.40%
2006	83,925	50,727	33,198	184,708.2	169,628.0	207,745.2	45.17%	54.82%	33.13%
2007	104,894	61,666	43,228	195,094.9	178,542.2	218,700.0	41.55%	52.15%	29.22%
2008	61,644	36,417	25,227	192,688.4	174,862.2	218,406.4	35.43%	45.04%	24.33%
2009-2010	22,248	13,043	9,205	172,744.6	160,705.8	189,796.2	28.54%	35.64%	20.02%
2011-2Q19	16,617	9,643	6,974	159,181.4	152,109.6	168,951.9	11.85%	13.91%	9.30%
Total	576,188	368,833	207,355	158,359.2	143,535.5	184,717.0	37.23%	45.20%	26.21%

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	185,897	116,416	69,481	112,723.0	105,798.8	124,324.5	32.42%	40.69%	20.62%
2005	102,078	48,961	53,117	170,887.5	155,451.5	185,115.6	40.63%	52.12%	31.74%
2006	108,067	51,202	56,865	184,064.6	165,073.2	201,164.7	44.31%	57.23%	34.75%
2007	116,095	55,030	61,065	186,697.4	166,939.3	204,502.8	42.65%	56.56%	32.42%
2008	59,289	26,560	32,729	197,208.6	176,835.6	213,741.5	38.61%	53.73%	28.47%
2009-2010	18,459	8,300	10,159	177,244.0	165,643.9	186,721.4	31.14%	42.86%	22.65%
2011-2Q19	8,014	3,030	4,984	172,124.1	153,619.3	183,374.0	13.96%	22.63%	9.55%
Total	597,899	309,499	288,400	161,077.5	142,499.8	181,014.4	39.11%	50.40%	29.57%

Sources: Fannie Mae, Freddie Mac and Urban Institute.
Note: Fannie Mae loan level credit data includes loans originated from Q1 1999 to Q2 2019, with performance information on these loans through Q1 2020. Freddie Mac loan level credit data includes loans originated from Q1 1999 to Q2 2019, with performance information on these loans through Q4 2019. The analysis included only mortgages with original terms of 241-420 months.

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Blog Posts

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Date: July 24, 2020

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