



HOUSING FINANCE AT A GLANCE

A MONTHLY CHARTBOOK

April 2022

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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Mortgage Origination Projections & Originator Profitability

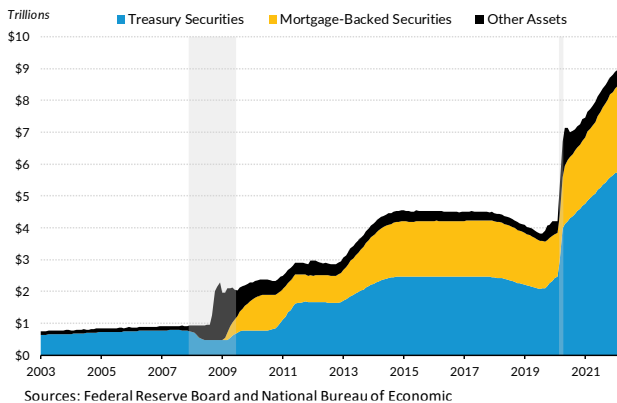
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INTRODUCTION

The Mortgage Market's Role in Shaping Monetary Policy Outcomes

In response to the pandemic-related recession, the Federal Open Markets Committee (FOMC), the policy arm of the Federal Reserve System (the Fed), took dramatic steps to support the economy. Two key actions echoing the playbook used during the Great Recession included [lowering the federal funds rate](#) to a range of 0 and 0.25 percent and purchasing both U.S. Treasury Securities and agency mortgage-backed securities (including commercial MBS). Between February 2020, the month prior to [official start](#) of the pandemic recession, and today, the Fed's [balance sheet](#) has expanded by \$4.8 trillion, 114 percent, to \$9.0 trillion.



These steps were intended to help the FOMC achieve its dual mandate of maximum employment and price stability in response to a steep decline in economic activity. As the economy has improved, the unemployment rate has fallen to a very low [3.6 percent](#) while inflation has accelerated to [6.4 percent](#) according to the FOMC's preferred measure, its highest level in over [40 years](#) and well above the 2.0 percent target associated with price stability.

Amid a broad recovery in economic output and historically elevated inflation, the FOMC plans to continue tightening policy. Following a 25-basis point increase at its [March meeting](#) to a range of 0.25-0.50 percent, Chairman Powell indicated that the FOMC may increase its policy rate by an additional [50 basis points](#) in May. And according to recent [projections](#), the voting members of the FOMC expect the federal funds rate to reach a mid-point of 1.9% by the end of 2022 and 2.8% by the end of 2023.

The Fed also plans to follow through on its [intent](#) to shrink its balance sheet. [Minutes](#) from the March meeting indicate that FOMC members discussed monthly runoffs capped at \$60 billion for Treasury securities and \$35 billion for agency MBS. Assuming that these caps are implemented as soon as May, as articulated in a recent [speech](#) by Fed Governor Lael Brainard, holdings of agency MBS and US Treasury securities would fall to \$2.03 trillion and \$4.56 trillion by the end of 2023 from their April 20 levels of \$2.73 and \$5.76 trillion respectively; larger than they were before the Fed started its pandemic buying.

However, the March minutes also noted that MBS principal prepayments would likely run under the proposed monthly cap under a "range of plausible interest rate scenarios". Stronger macroeconomic conditions as well as realized and expected [tightening](#) in monetary policy have [boosted](#) mortgage rates significantly. Higher mortgage rates will reduce the proportion of mortgaged homeowners that are economically incentivized to refinance, driving down prepayment speeds and slowing the pace at which agency MBS will run-off the Fed's balance sheet. In addition, higher mortgage rates also weigh on home sales. [Research](#) suggests that higher rates delay purchases by repeat buyers which slows the pace at which current loans run-off.

The potential for a strong economy resulting in slower run-off of agency MBS may result in a greater share of agency MBS holdings than what is desired by FOMC members. And this could lead to outright sales of agency MBS as opposed to just allowing the portfolio to run off. The Fed has never sold its holdings and these sales would be at a loss, as interest rates have risen. But the macroeconomic environment is far from clear. Geopolitical tensions, elevated oil prices or the possibility of another COVID outbreak may limit a sustained increase of longer-term Treasury rates and boost the runoff trajectory of agency MBS; eliminating the need for selling. One thing is clear: the Fed balance sheet will remain large for the foreseeable future, even allowing for aggressive run off. Looking forward, the Fed's balance sheet will likely be an important policy lever in its arsenal. However, the responsiveness of this form of government intervention remains unclear and will likely be tested by the private sector response as interest rates evolve.

INSIDE THIS ISSUE

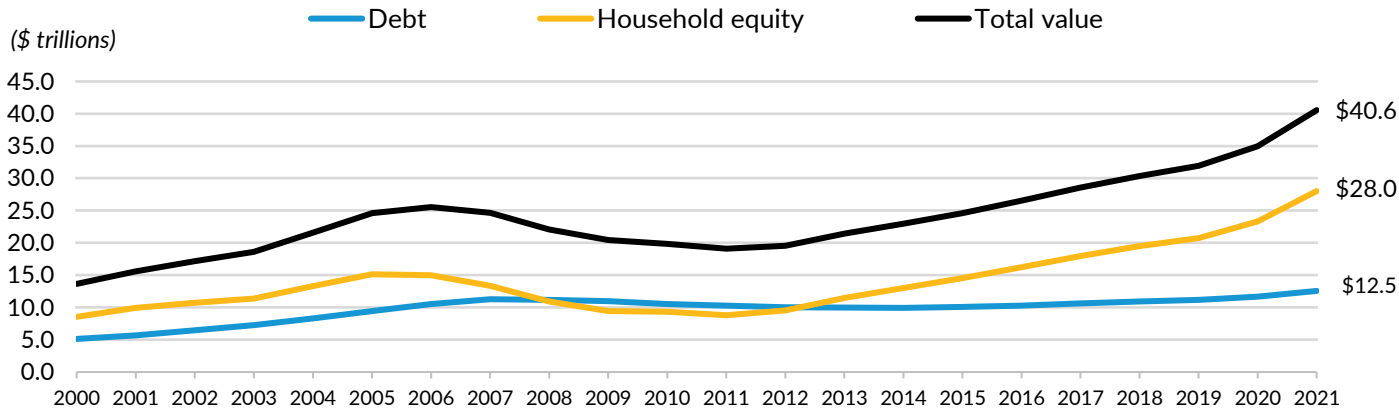
- The cash-out share of conventional refinances rose to 70 percent in March 2022, even as the cash-out volume declined. This reflects a steeper drop in the rate-refinances amidst rising rates (Page 10).
- After declining in 2019 and 2020 as rates fell, origination DTI ratios have been rising over the last year, reflecting steep increases in house prices and mortgage rates (Page 18).

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. Mortgage debt outstanding increased slightly from \$12.3 trillion in Q3 2021 to \$12.5 trillion in Q4 2021, while total household equity increased from \$26.9 trillion to \$28.0 trillion. The total value of the housing market reached \$40.6 trillion in the fourth quarter of 2021, 58.9 percent higher than the pre-crisis peak in 2006. Agency MBS account for 66.8 percent of the total mortgage debt outstanding, private-label securities make up 3.2 percent, and home equity loans make up 3.2 percent. Unsecuritized first liens comprise the remaining 26.8 percent with banks making up 18.6 percent, credit unions 4.7 percent, and other non-depositories accounting for 3.7 percent of the total.

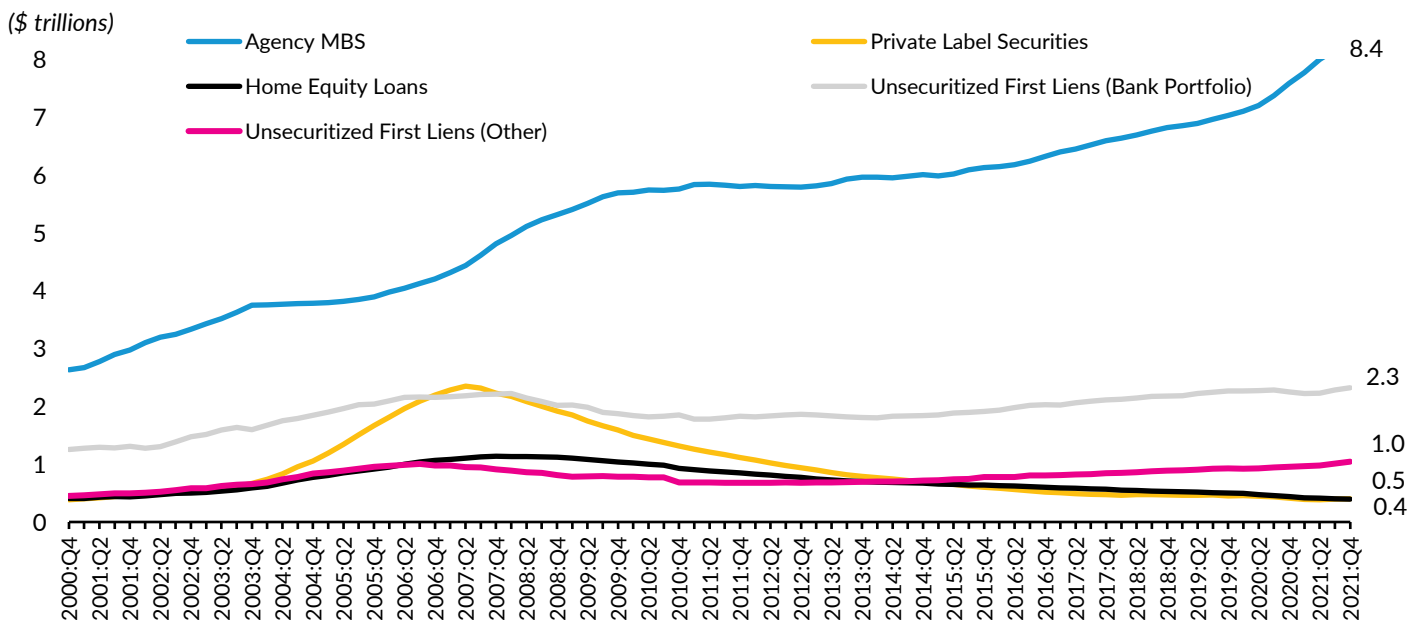
Value of the US Single Family Housing Market



Sources: Federal Reserve Flow of Funds and Urban Institute. Last updated March 2022.

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 and Urban Institute. Last updated March 2022.

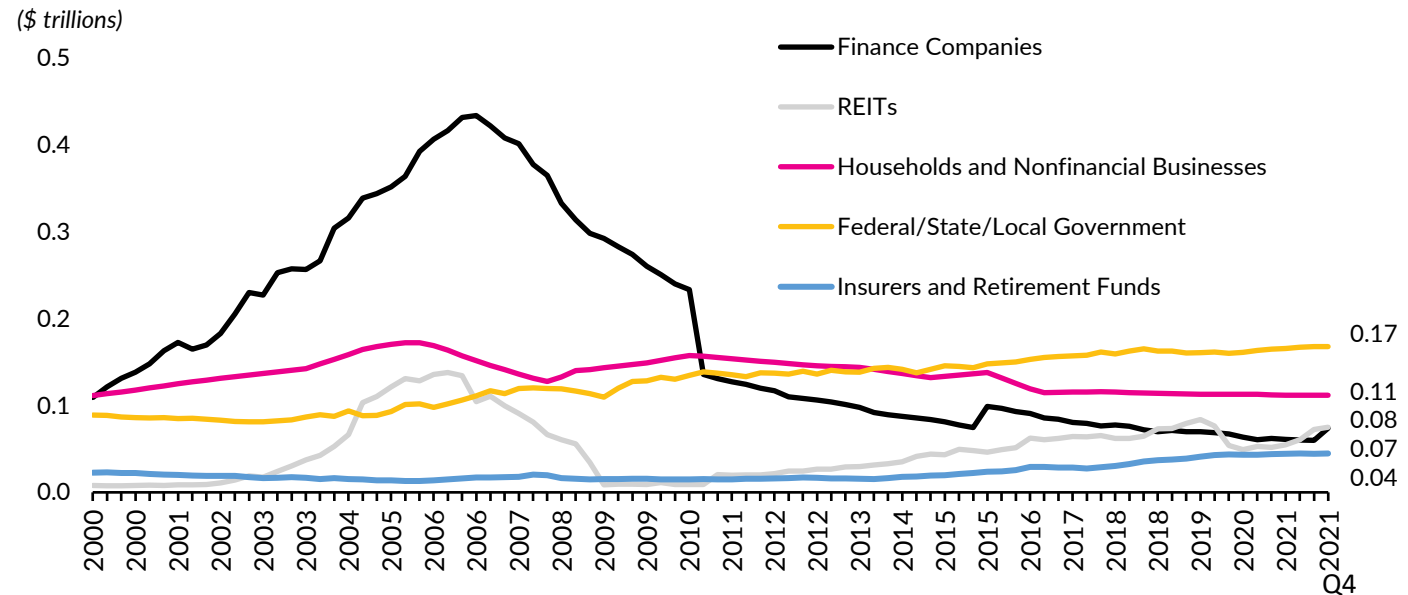
Notes: Unsecuritized First Liens (Other) includes mortgages not held on bank balance sheets.

OVERVIEW

MARKET SIZE OVERVIEW

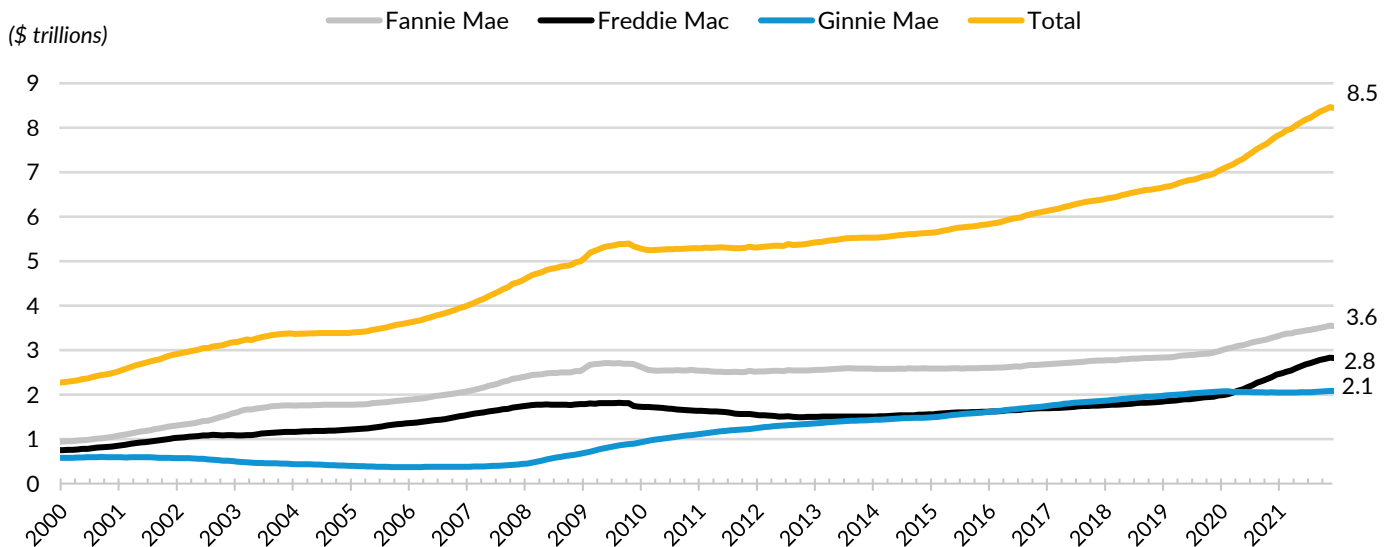
As of Q4 2021, unsecuritized first liens held outside banks and credit unions totaled \$ 0.47 trillion. In this space, REITs, insurers and retirements funds have experienced particularly robust percentage increases over the last decade. In March 2022, outstanding securities in the agency market totaled \$8.5 trillion, 41.9 percent of which was Fannie Mae, 33.5 percent Freddie Mac, and 24.6 percent Ginnie Mae.

Unsecuritized 1st Liens Held by Non-Depositories



Sources: Federal Reserve Flow of Funds and Urban Institute. Last updated March 2022.

Agency Mortgage-Backed Securities



Sources: eMBS and Urban Institute.

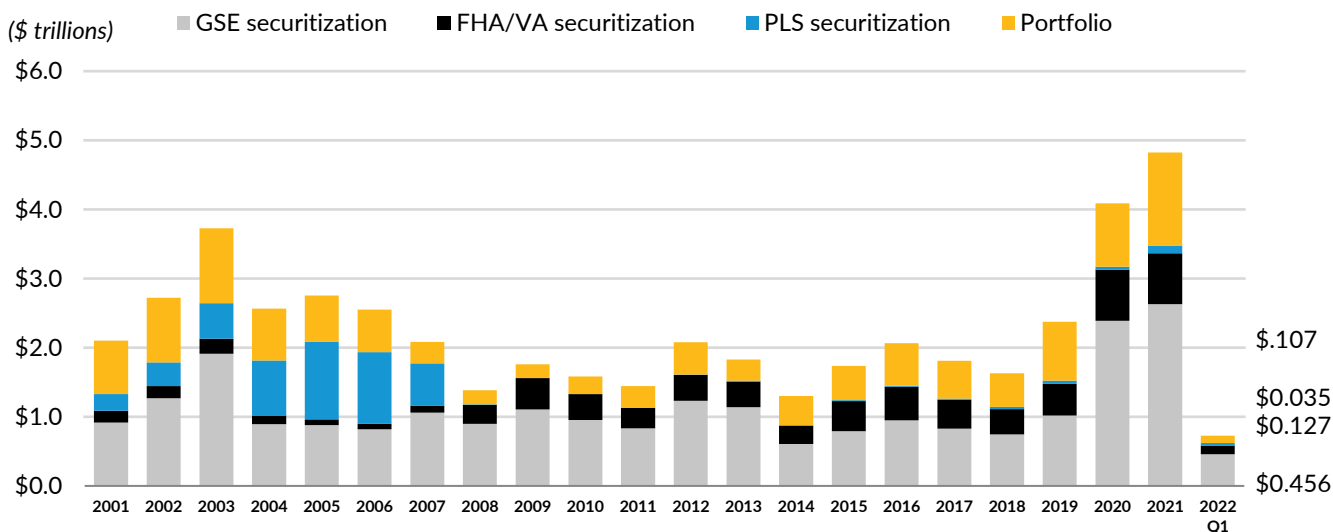
March 2022

OVERVIEW

ORIGINATION VOLUME AND COMPOSITION

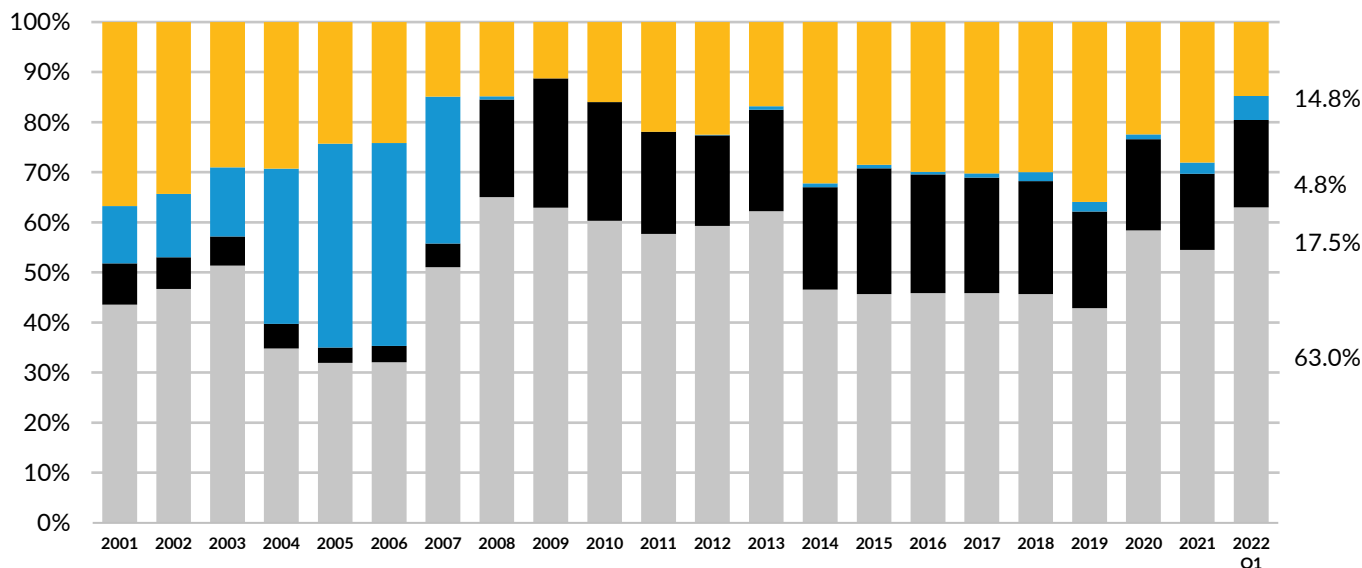
First Lien Origination Volume

Mortgage origination volume in Q1 2022 totaled \$.73 trillion, far lower than the \$1.35 trillion total in Q1 2021. The share of portfolio originations was 14.8 percent in Q1 2022, a decrease compared to the 25.6 percent share in Q1 2021. The GSE share was higher in Q1 2022 at 63.0 percent, compared to 57.4 percent in Q1 2021. The higher GSE share largely reflects the reduction in portfolio lending which had increased but since pulled back during the pandemic. The FHA/VA share in Q1 2022 stood at 17.5 percent, up from 15.9 percent in Q1 2021. The PLS share was also higher in Q1 2022 at 4.8 percent, compared to 1.1 percent in Q1 2021 but remains a fraction of its share pre-2008.



Sources: Inside Mortgage Finance and Urban Institute. Last updated April 2022.

(Share, percent)



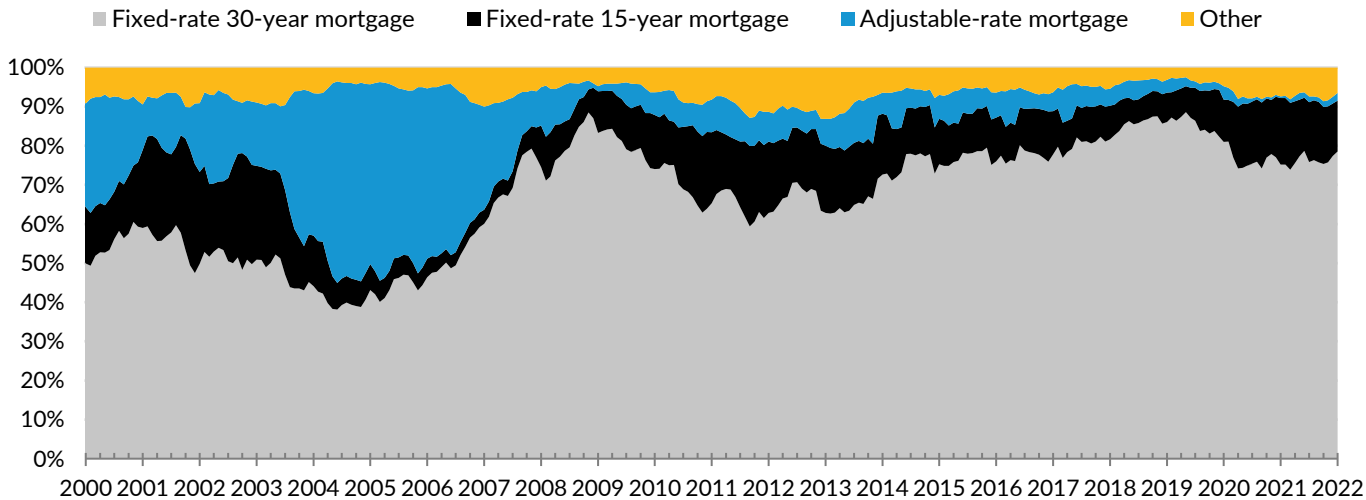
Sources: Inside Mortgage Finance and Urban Institute. Last updated April 2022.

OVERVIEW

PRODUCT COMPOSITION AND REFINANCE SHARE

The 30-year fixed-rate mortgage continues to remain the bedrock of the US housing finance system, accounting for 78.5 percent of new originations in February 2022. The share of 15-year fixed-rate mortgages, predominantly a refinance product, was 13.0 percent of new originations in February 2022. The ARM share accounted for 1.9 percent of new originations. From late 2018-though March 2021, while there was some month-to-month variation, the refi share (bottom chart) generally increased for both the GSEs and for Ginnie Mae as interest rates dropped. Since April 2021, in reaction to higher interest rates, the refi share has dropped significantly. In March 2022, the GSE refi shares are in the 58 to 59 percent range; the Ginnie Mae refi share was 32.9 percent. With interest rates continuing to rise, we expect further drops in the refinance shares in the months ahead.

Product Composition

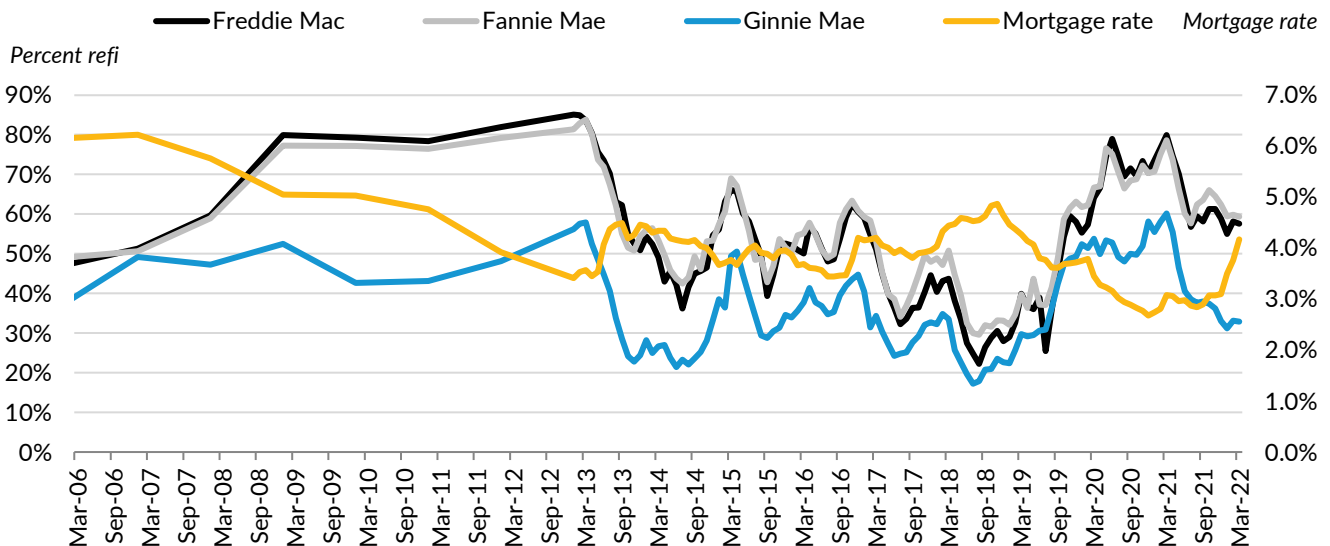


Sources: Black Knight, eMBS, HMDA, SIFMA and Urban Institute.

February 2022

Note: Includes purchase and refinance originations.

Percent Refi at Issuance



Sources: eMBS and Urban Institute.

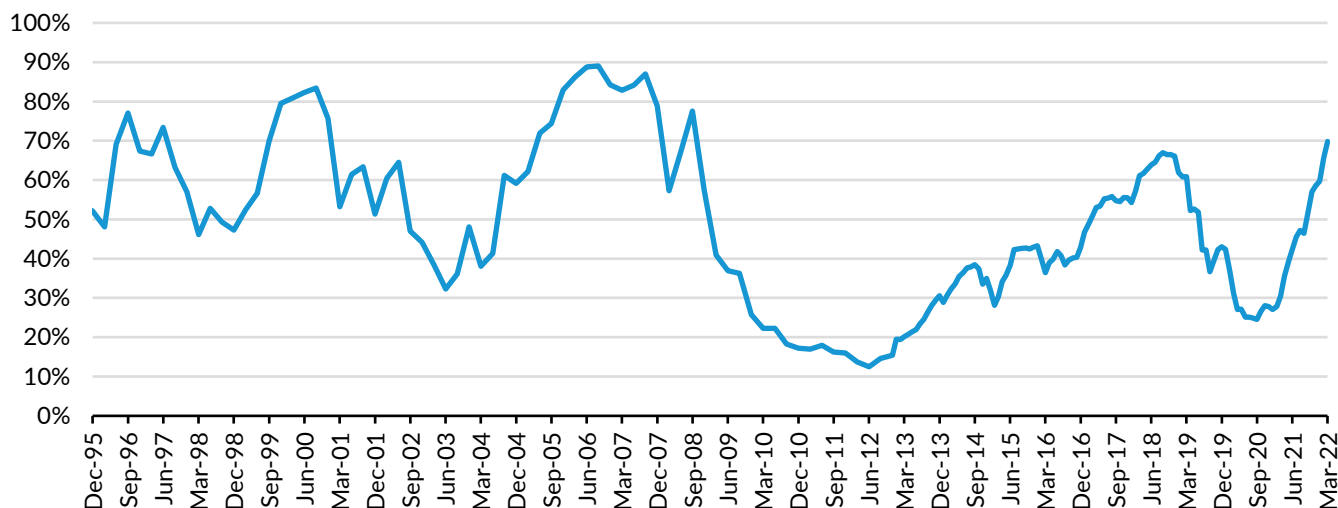
Note: Based on at-issuance balance. Figure based on data from March 2022.

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 share of refinances generally declined in 2020, reaching 25 percent in September 2020 due to increased rate refinances amidst historically low rates. With rates rising dramatically and the bulk of rate-refinance activity behind us, the cash-out share increased to 69.9 percent in March 2022. Despite the increase in the cash-out share, the absolute volume of cash-out refinances has come down sharply since the spring of 2021, when mortgage rates began to rise.

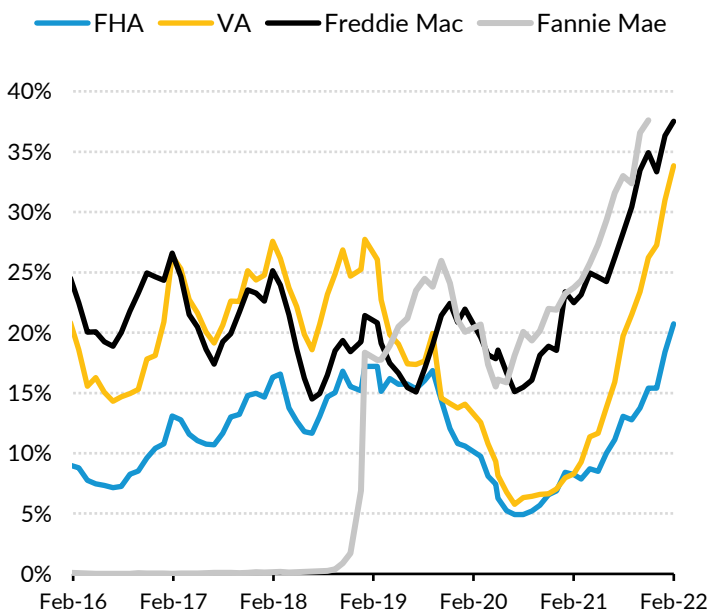
Cash-out Share of Conventional Refinances



Sources: Freddie Mac, eMBS and Urban Institute.

Note: The cashout share for conventional market is calculated using Freddie Mac's quarterly refinance statistics from 1995 to 2013. Post 2013 it is calculated monthly using eMBS. Data as of February 2022.

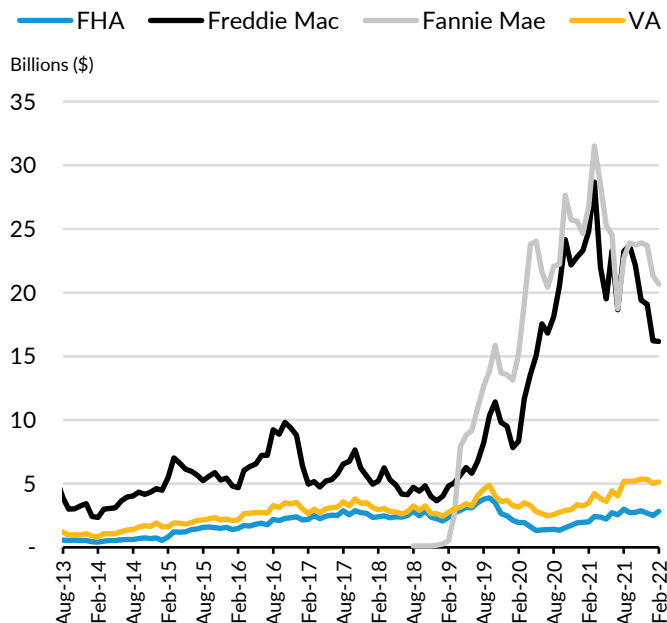
Cash-out Refi Share of All Originations



Sources: eMBS and Urban Institute.

Note: Data as of February 2022.

Cash-out Refinance Volume by Agency



Sources: eMBS and Urban Institute

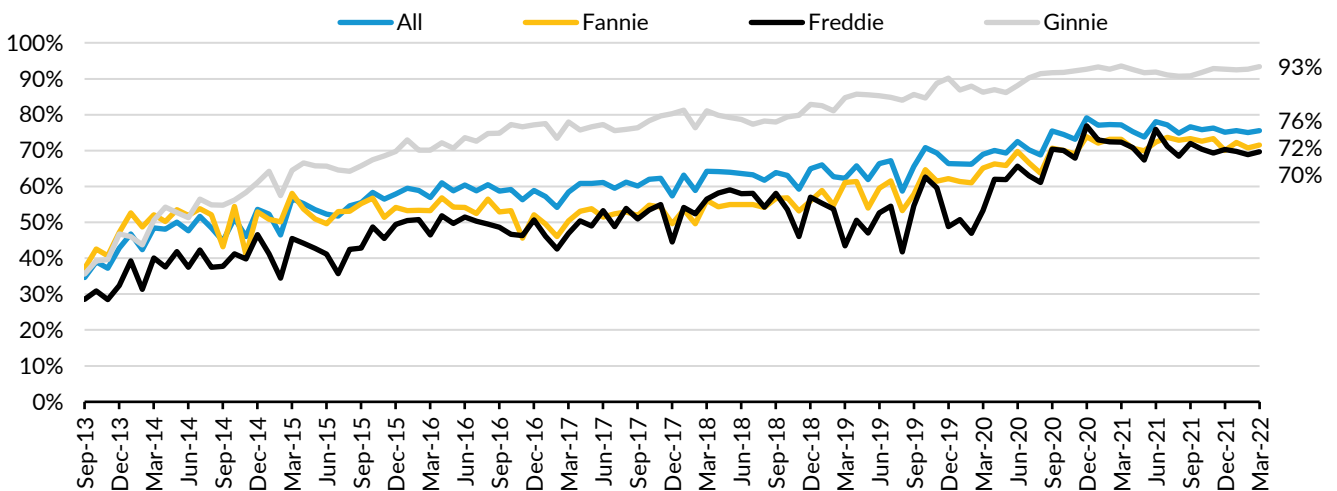
Note: Data as of February 2022.

OVERVIEW

AGENCY NONBANK ORIGATION SHARE

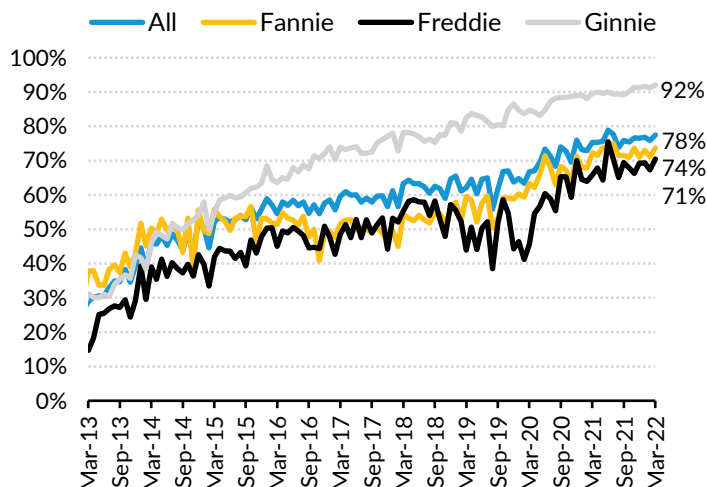
The nonbank share for agency originations has been rising steadily since 2013, standing at 75.5 percent in March 2022. The Ginnie Mae nonbank share has been consistently higher than the GSEs, standing at 93.4 percent in March 2022. Fannie and Freddie had nonbank shares of 71.6 percent and 69.8 percent respectively in March 2022. Fannie and Freddie had higher nonbank origination shares for purchase activity than for refi activity in February 2022, while Ginnie had a slightly higher share for refi activity.

Nonbank Origination Share: All Loans



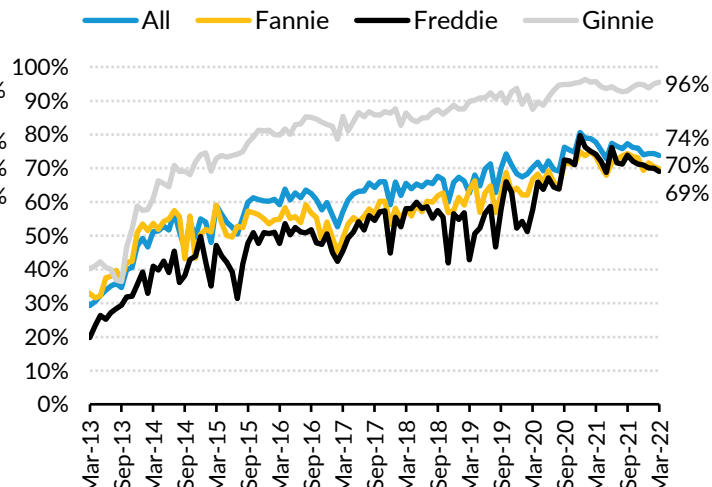
Sources: eMBS and Urban Institute.

Nonbank Origination Share: Purchase Loans



Sources: eMBS and Urban Institute.

Nonbank Origination Share: Refi Loans



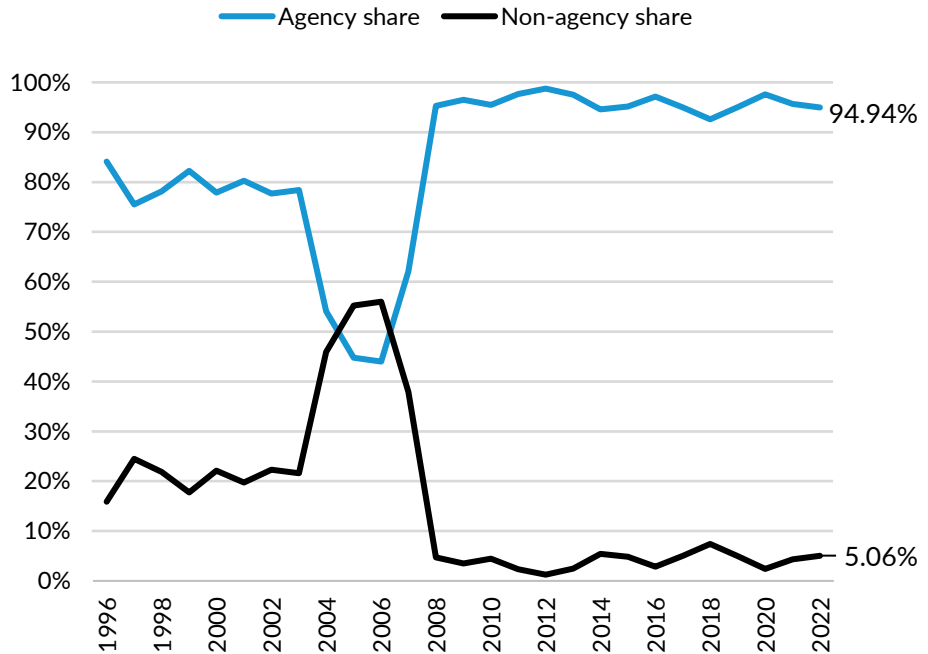
Sources: eMBS and Urban Institute.

OVERVIEW

SECURITIZATION VOLUME AND COMPOSITION

Agency/Non-Agency Share of Residential MBS Issuance

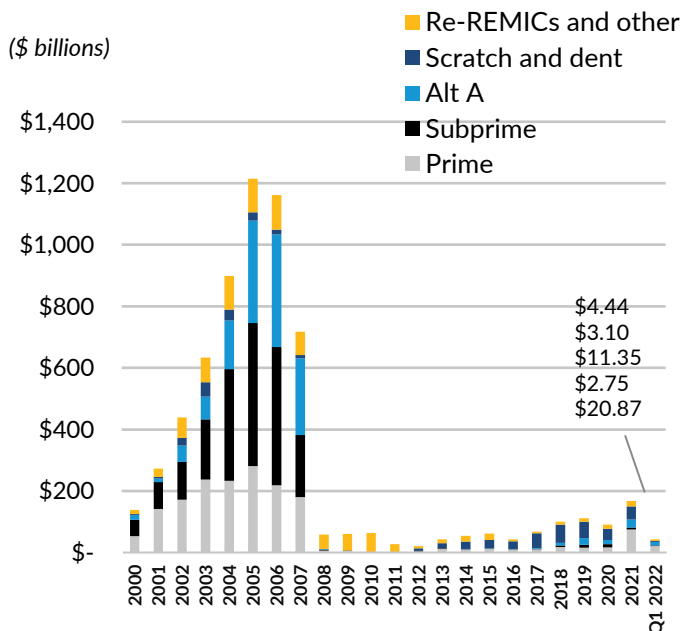
The non-agency share of mortgage securitizations increased gradually from 1.83 percent in 2012 to 5.0 percent in 2019. In 2020, the non-agency share dropped to 2.44 percent, reflecting increased agency refinances and less non-agency production due to COVID-19 related dislocation. The market recovered in 2021, and in February 2022 stands at 5.06 percent, marginally higher than 2019 levels. Note that 2021 was the largest year of non-agency securitization since 2008. This trend continued in 2022, with securitization volume reaching \$42.52 billion in Q1 2022, a significant increase relative to the \$28.65 billion in Q1 2021 and \$29.46 billion in Q1 2020. Non-agency securitization volume totaled a robust \$15.98 billion in January 2022 and \$12.23 billion in February 2022. These numbers remain small compared to pre-housing market crisis levels.



Sources: Inside Mortgage Finance and Urban Institute.

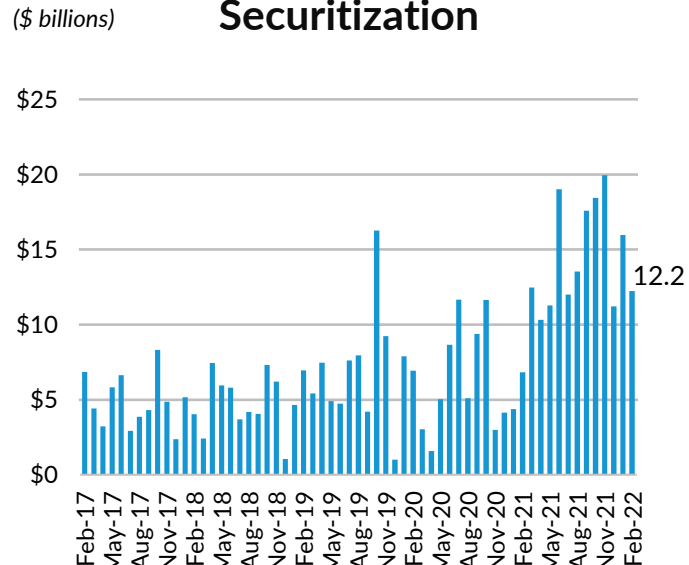
Note: Based on data from April 2022. Monthly non-agency volume is subject to revision.

Non-Agency MBS Issuance



Sources: Inside Mortgage Finance and Urban Institute.

Monthly Non-Agency Securitization



Sources: Inside Mortgage Finance and Urban Institute.

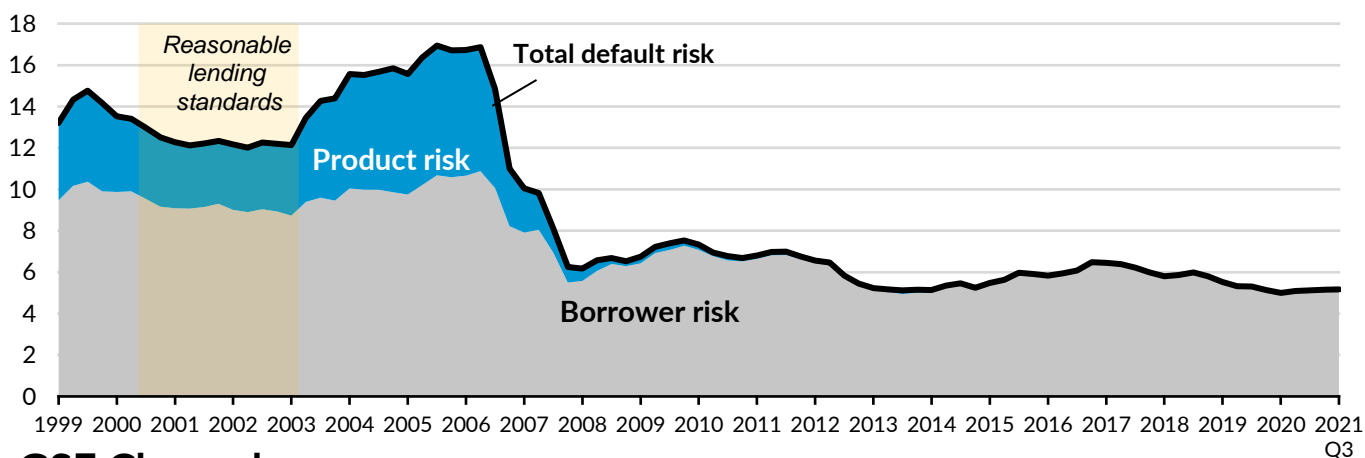
CREDIT BOX

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 5.2 percent in Q3 2021, unchanged from Q2 2021, and up from a historic low in Q3 2020 of just below 5.0 percent. Note that we updated the methodology as of Q2 2020, see new methodology [here](#). The slight credit loosening from Q1 2021 to Q3 2021 was primarily led by increased borrower default risk in the government channel. More information about the HCAI is available [here](#).

All Channels

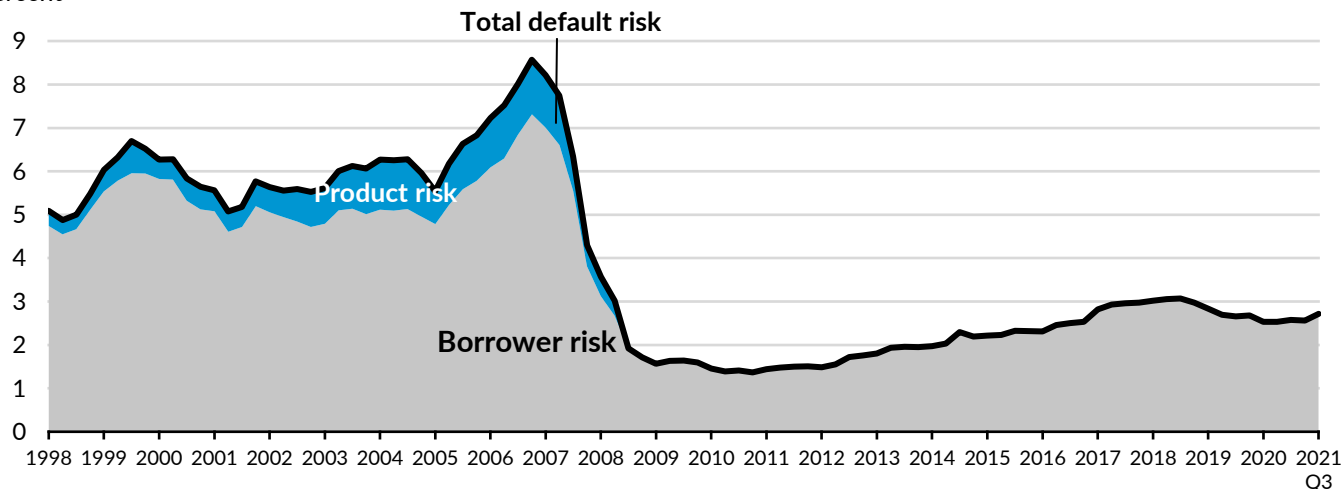
Percent



GSE Channel

The trend toward greater credit availability in the GSE channel began in Q2 2011. From Q2 2011 to Q1 2020, the total risk taken by the GSE channel doubled, from 1.4 percent to 2.7 percent. This is still very modest by pre-crisis standards. However, accelerated tightening throughout 2020 induced by market conditions due to COVID-19 drove down credit risk to 2.5 percent in Q4 2020. The increase in Q1 2021, to 2.58 percent, marked the first expansion of credit availability in the GSE channel since Q1 2019. In Q3 2021, credit availability increased again back up to 2.70 percent compared to 2.56 percent in Q2 2021.

Percent



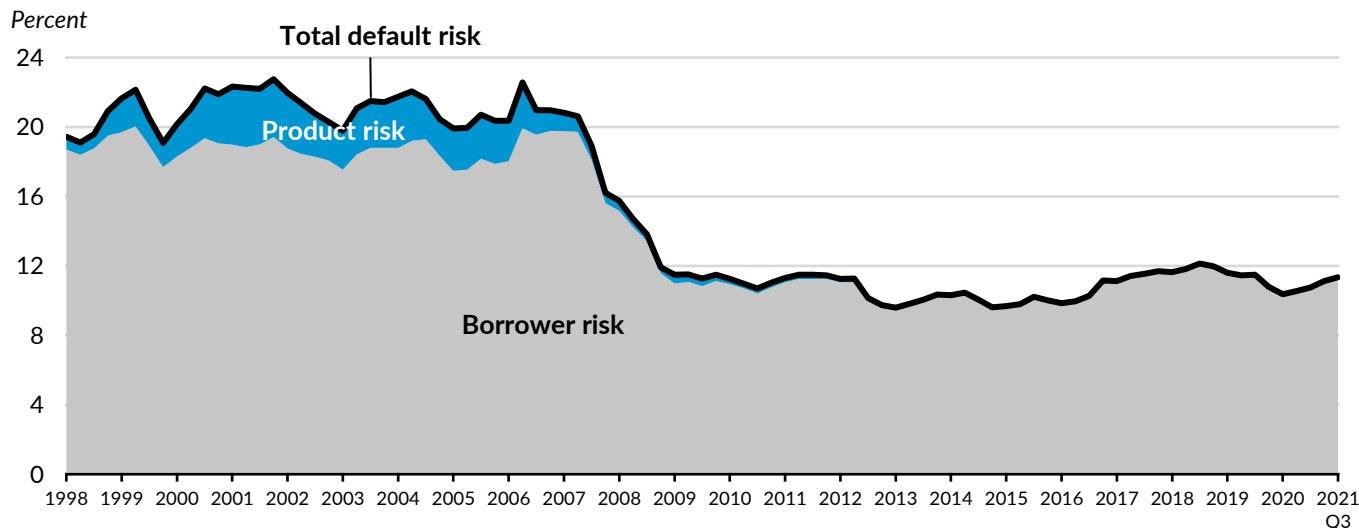
Sources: eMBS, CoreLogic, HMDA, IMF, and Urban Institute.

Note: Default is defined as 90 days or more delinquent at any point. Last updated February 2022.

HOUSING CREDIT AVAILABILITY INDEX

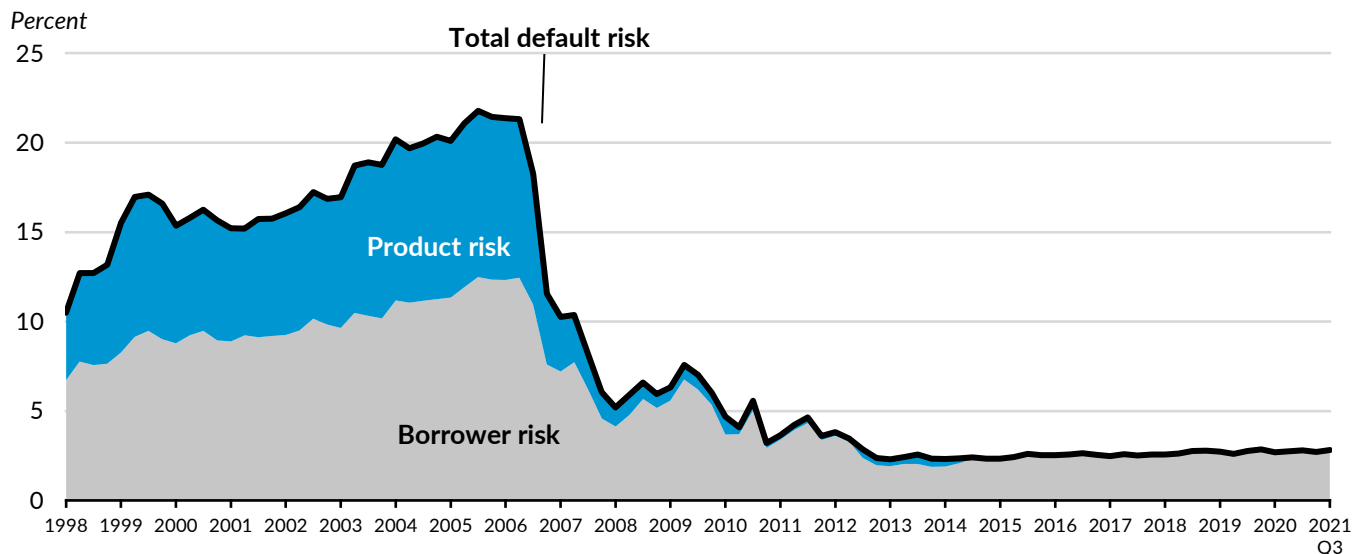
Government Channel

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 above that number for three years. In the eleven quarters from Q4 2016 to Q1 2019, the risk in the government channel increased significantly from 9.9 to 12.1 percent but has since receded. After declining to 10.4 percent in Q3 2020 due to the pandemic, the government channel has since increased risk to 11.3 percent in Q3 2021; still far below the pre-bubble level of 19 – 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 last housing 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 2.3–3.0 percent; it was 2.8 percent in Q3 2021. 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. The PP share has since increased very marginally from Q4 2020 to Q3 2021 but remains a shadow of what it once was.



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

Note: Default is defined as 90 days or more delinquent at any point. Last updated February 2022.

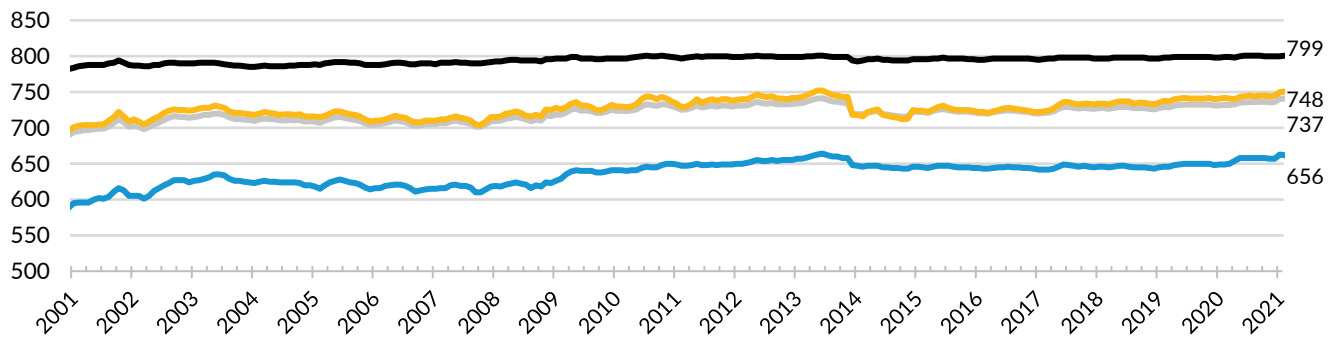
CREDIT AVAILABILITY FOR PURCHASE LOANS

Access to credit remains tight, especially for lower FICO borrowers. The median FICO for current purchase loans is about 26 points higher than the pre-housing crisis level of around 722. The 10th percentile, which represents the lower bound of creditworthiness to qualify for a mortgage, was 656 in February 2022, which is still high compared to low-600s pre-bubble. The median LTV at origination of 90 percent also remains high, reflecting the rise of FHA and VA lending. Origination DTIs trended lower over the course of 2020 and early 2021, reflecting the sharp decline in mortgage rates; this has reversed, with a concurrent rise in DTIs.

— Mean — 90th percentile — 10th percentile — Median

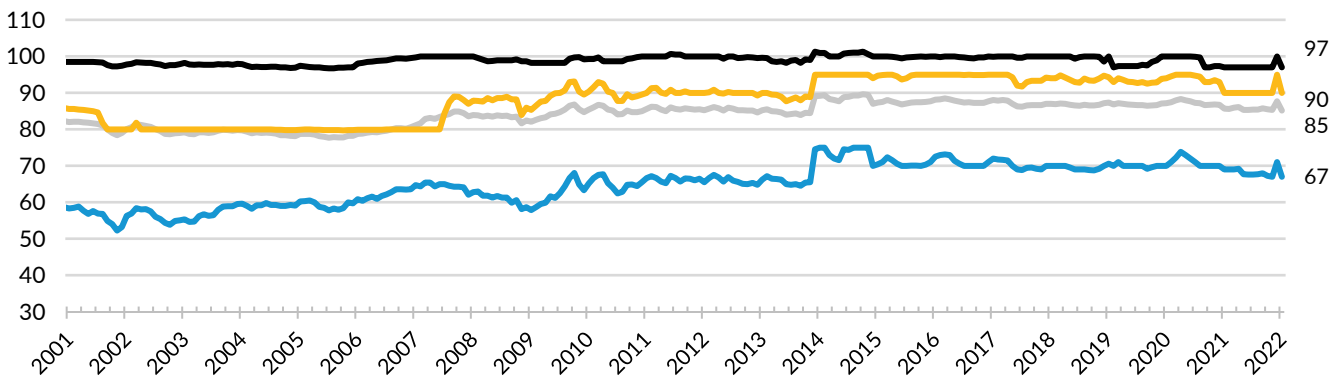
Borrower FICO Score at Origination

FICO Score



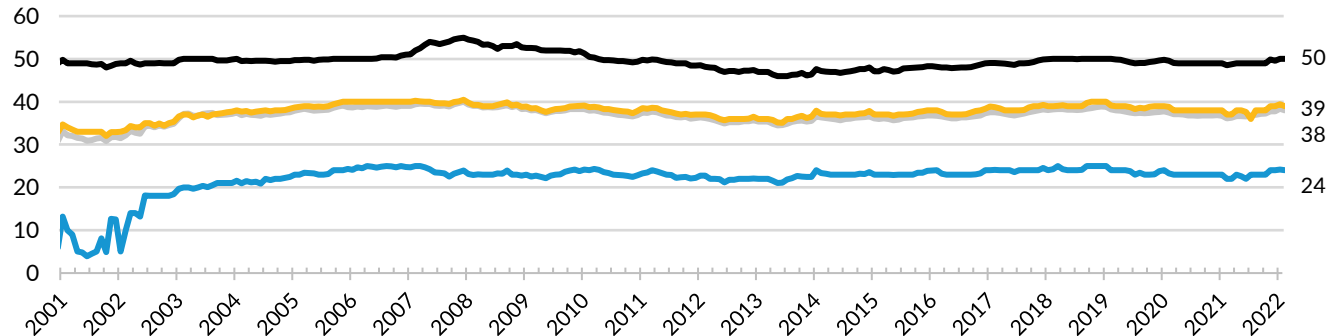
Combined LTV at Origination

LTV



DTI at Origination

DTI



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

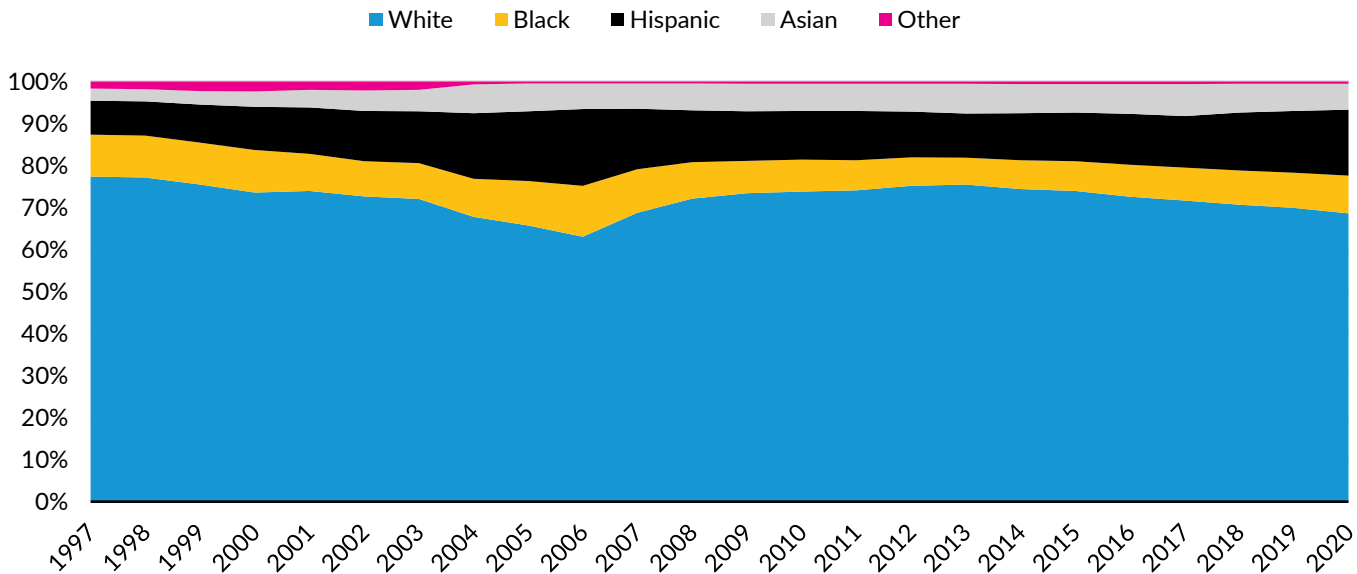
Note: Includes owner-occupied purchase loans only. DTI data prior to April 2018 is from CoreLogic; after that date, it is from Black Knight. A back-update to the Black Knight historical series was made in September 2021 for data starting from 2001 onward. Data as of February 2022.

OVERVIEW

RACIAL & ETHNIC COMPOSITION

Across all channels, the share of purchase lending to minorities reached a peak of 37.0% in 2006. Following the Great Recession and amidst a period of very tight credit, the minority share of purchase lending declined to a low of 24.5% in 2013. Since then, it has slowly recovered – it stood at 31.4% in 2020. The share of purchase lending to Black borrowers varied widely by channel in 2020. 16.3 percent of FHA loans were originated to Black borrowers compared with 12.8 percent of VA loans, 4.8 percent for GSEs and 4.0 percent of portfolio loans. Similarly, 26.5 percent of FHA purchase loans were originated to Hispanic borrowers in 2020 compared to 13.3 percent of VA loans, 11.2 percent for GSEs, and 10.1 percent of portfolio loans.

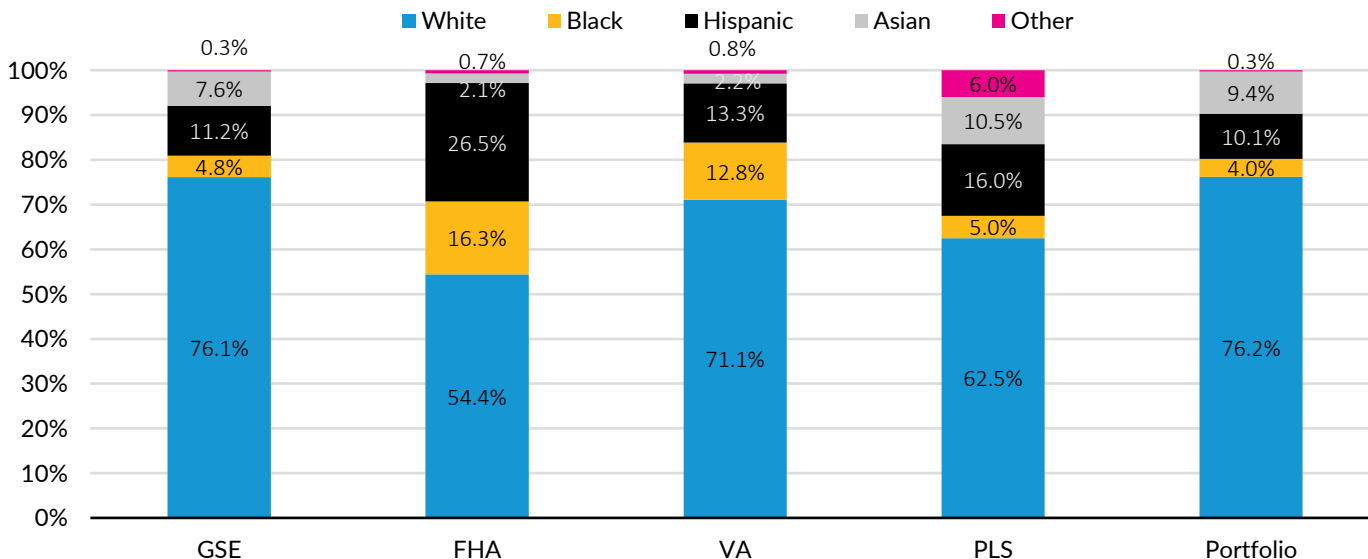
Purchase Loan Shares by Race



Source: 2020 Home Mortgage Disclosure Act (HMDA).

Note: Includes purchase loans only.

2020 Purchase Loan Channel Shares by Race



Source: 2020 Home Mortgage Disclosure Act (HMDA).

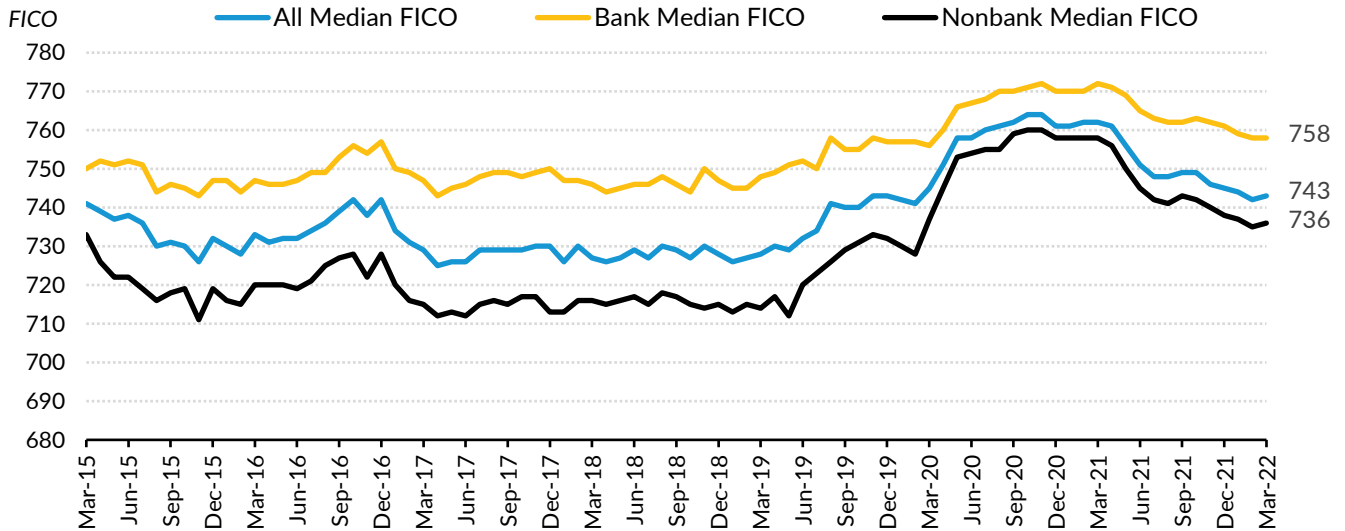
Note: Includes purchase loans only.

CREDIT BOX

AGENCY NONBANK CREDIT BOX

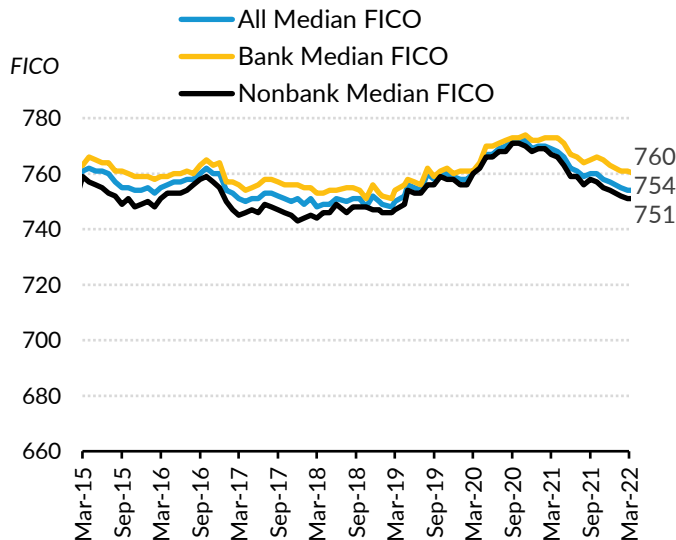
In the GSE space, FICO scores for banks and nonbanks dipped in 2021 and the beginning of 2022, although they remain elevated. The difference between the two stood at 9 points in March 2022, compared to the 26 point gap between bank and nonbank FICOs in the Ginnie space. FICO scores for banks and nonbanks in both GSE and Ginnie Mae segments increased during the Q1 2019 to Q1 2021 period, due to increased refi activity; with refi activity now waning, originators, particularly nonbank originators, have been aggressively competing for new business, and are now more accommodating to borrowers with lower credit scores. 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



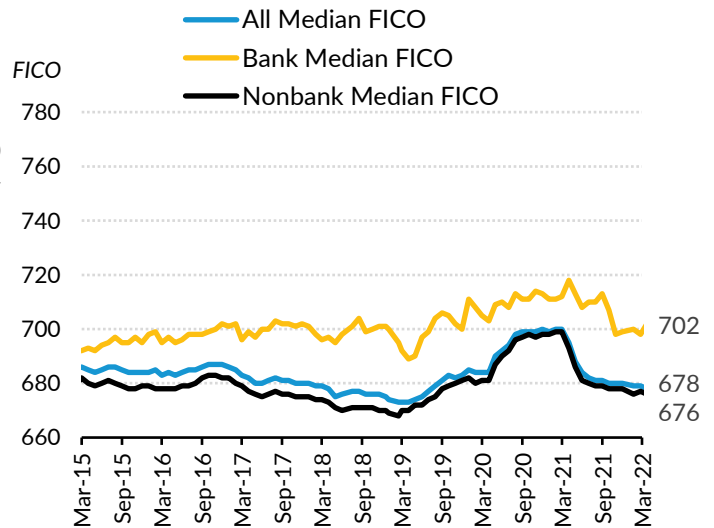
Sources: eMBS and Urban Institute.

GSE FICO: Bank vs. Nonbank



Sources: eMBS and Urban Institute.

Ginnie Mae FICO: Bank vs. Nonbank



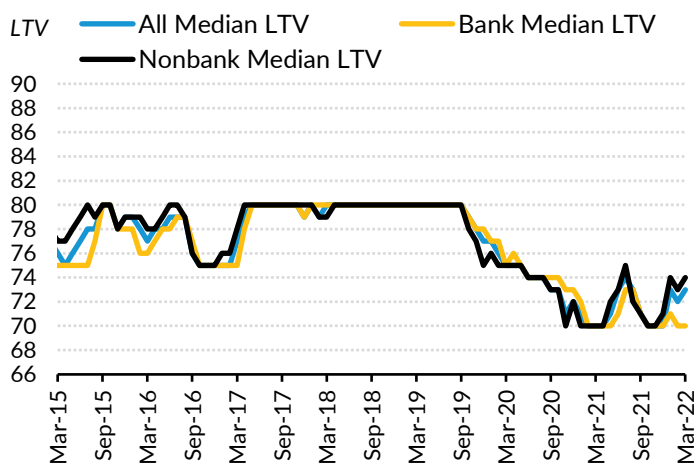
Sources: eMBS and Urban Institute.

CREDIT BOX

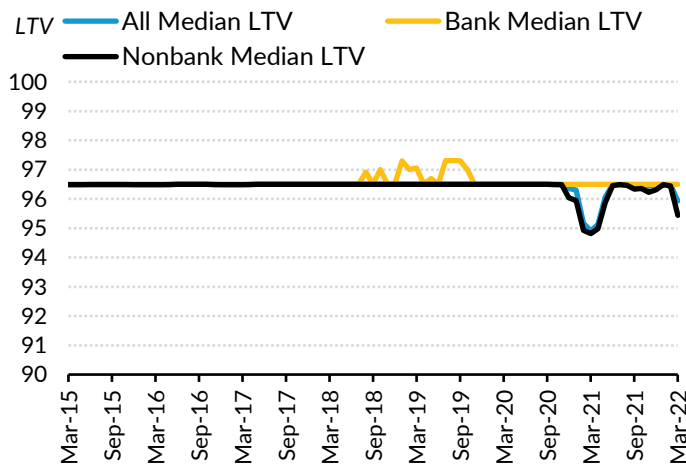
AGENCY NONBANK CREDIT BOX

Non-banks are more expansive in their lending than their bank counterparts, as indicated both by higher LTVs (particularly in the GSE market) and higher DTIs (more pronounced in the Ginnie Mae market). 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. Since March 2021, DTIs have increased, reflecting the rise in rates and steep house price increases, both of which force households to borrow more in relation to income.

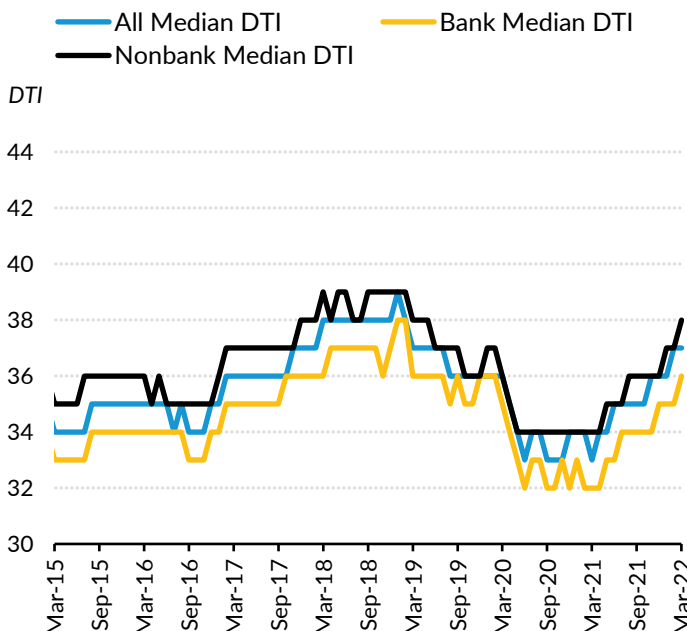
GSE LTV: Bank vs. Nonbank



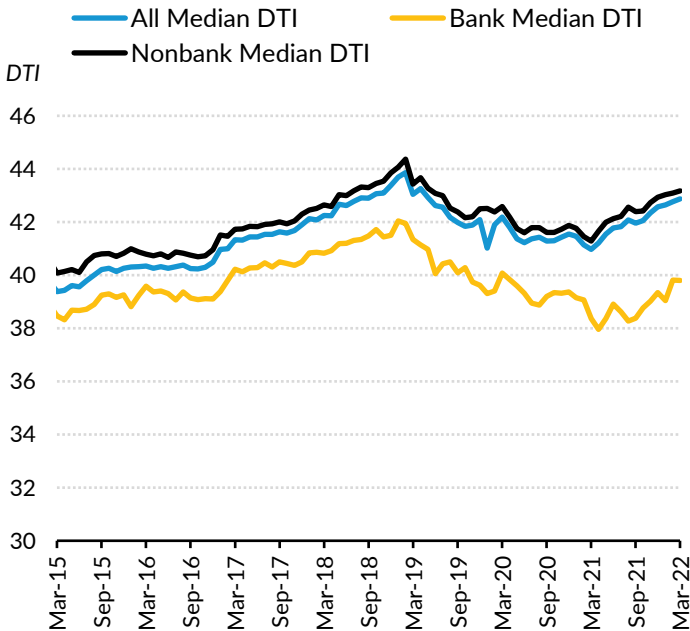
Ginnie Mae LTV: Bank vs. Nonbank



GSE DTI: Bank vs. Nonbank



Ginnie Mae DTI: Bank vs. Nonbank



STATE OF THE MARKET

MORTGAGE ORIGINATION PROJECTIONS

Fannie Mae, Freddie Mac and the MBA estimate 2022 origination volume to be between \$2.56 and \$3.06 trillion, down from \$3.99 to \$4.76 trillion in 2021, representing declines of 1.4 to 1.7 trillion. By most estimates, 2021 was the highest origination year of the 21st century, with volumes surpassing 2020, the year with the previous record. The very robust origination volume in 2020 and 2021 is due to very strong refinance activity. All three groups expect the 2022 refinance share to be 24 to 29 percentage points lower than in 2021.

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	736	751	563	61	60	54
2020 Q2	1069	1090	928	67	68	63
2020 Q3	1287	1279	1076	63	62	61
2020 Q4	1282	1321	1261	65	66	67
2021 Q1	1239	1305	1094	70	71	69
2021 Q2	1123	1230	1050	55	58	54
2021 Q3	1103	1195	954	53	54	52
2021 Q4	1012	1026	893	52	54	50
2017	1826	1810	1760	36	37	35
2018	1766	1700	1677	30	32	28
2019	2462	2432	2253	46	46	44
2020	4374	4441	4108	64	64	64
2021	4477	4756	3991	58	60	57
2022	2816	3055	2562	32	31	33
2023	2411	2757	2449	23	19	28

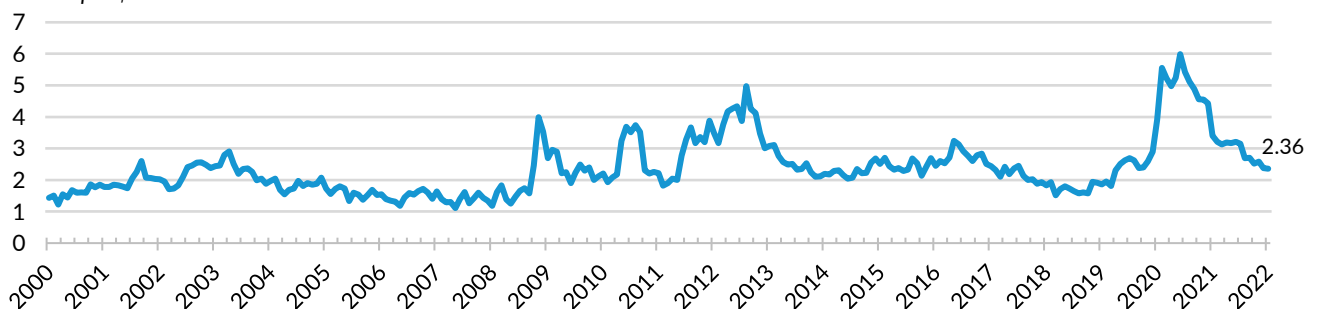
Sources: Fannie Mae, Freddie Mac, Mortgage Bankers Association and Urban Institute.

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 3.0, 3.0, and 3.1 percent. Freddie Mac forecasts are now released quarterly, last updated April 2022.

Originator Profitability and Unmeasured Costs

In March 2022, Originator Profitability and Unmeasured Costs (OPUC) stood at \$2.36 per \$100 loan, a marginal decrease from last month. Increased profitability reflects lender capacity constraints amidst strong refi demand. The continued decline reflects the fact that the backlog of refinance has been processed, and originators are competing 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.

Dollars per \$100 loan



Sources: Federal Reserve Bank of New York, updated monthly and available at this link:

<http://www.ny.frb.org/research/epr/2013/1113fust.html> and Urban Institute. Last updated March 2022.

Note: OPUC is a monthly (4-week moving) average as discussed in [Fuster et al. \(2013\)](#).

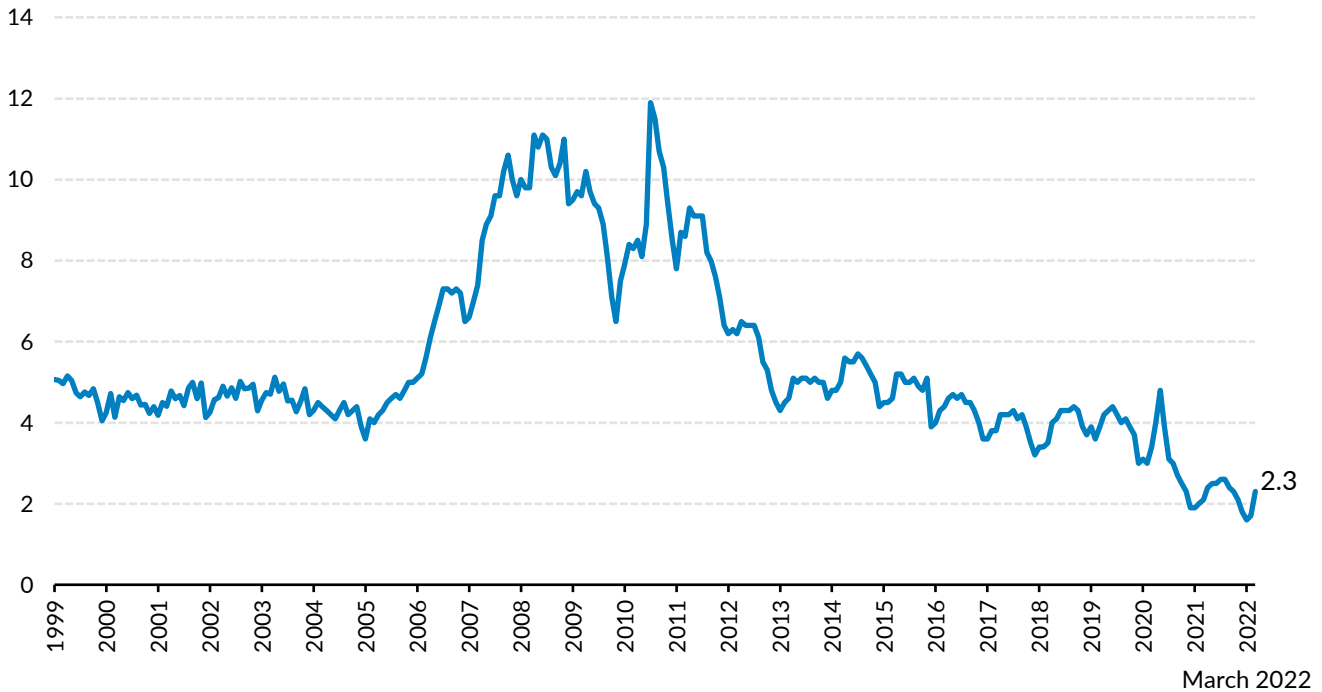
STATE OF THE MARKET

HOUSING SUPPLY

Months of supply in March 2022 rose to 2.3, up from a near record low of 1.7 the previous 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 2022 housing starts to be between 1.61 and 1.71 million units; these 2022 forecasts are above 2021 levels. Fannie Mae, Freddie Mac, the MBA, and the NAHB predict total home sales of 6.10 to 6.93 million units in 2022. Fannie, Freddie, and NAHB project fewer sales in 2022 compared to 2021, while MBA projects higher sales.

Months of Supply

Months of supply



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	1205	6123	6120	6158	5520
2018	1250	1250	1247	5957	5960	5956	5350
2019	1290	1295	1292	6023	6000	6016	5432
2020	1380	1397	1397	6462	6500	6506	5903
2021	1597	1605	1605	6890	6900	6898	6192
2022	1607	1713	1677	6380	6700	6925	6077
2023	1377	1772	1586	5761	6600	7122	5954

Sources: Mortgage Bankers Association, Fannie Mae, Freddie Mac, National Association of Home Builders and Urban Institute.

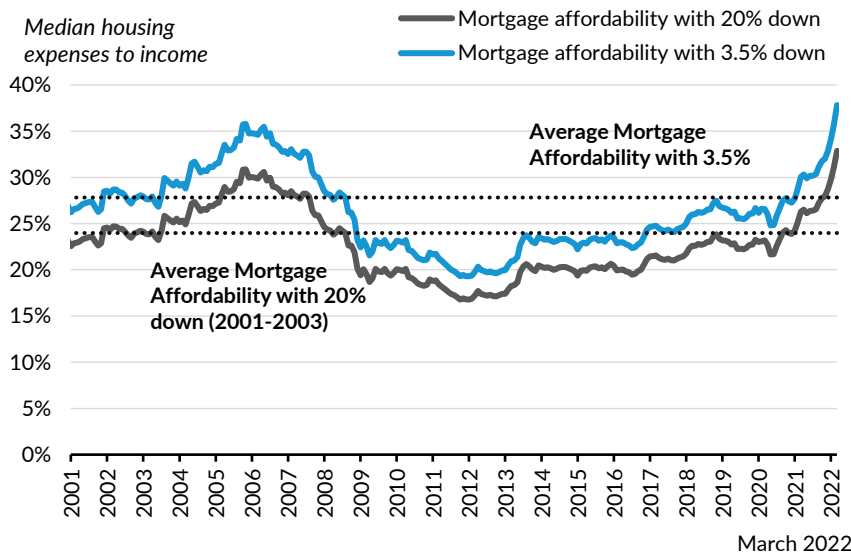
Note: Shaded boxes indicate forecasted figures; column labels indicate source of estimate. Freddie Mac home sales are now updated quarterly instead of monthly, with the last update in March 2022. *NAHB home sales estimate is for single-family structures only, it excludes condos and co-ops. Other figures include all single-family sales.

STATE OF THE MARKET

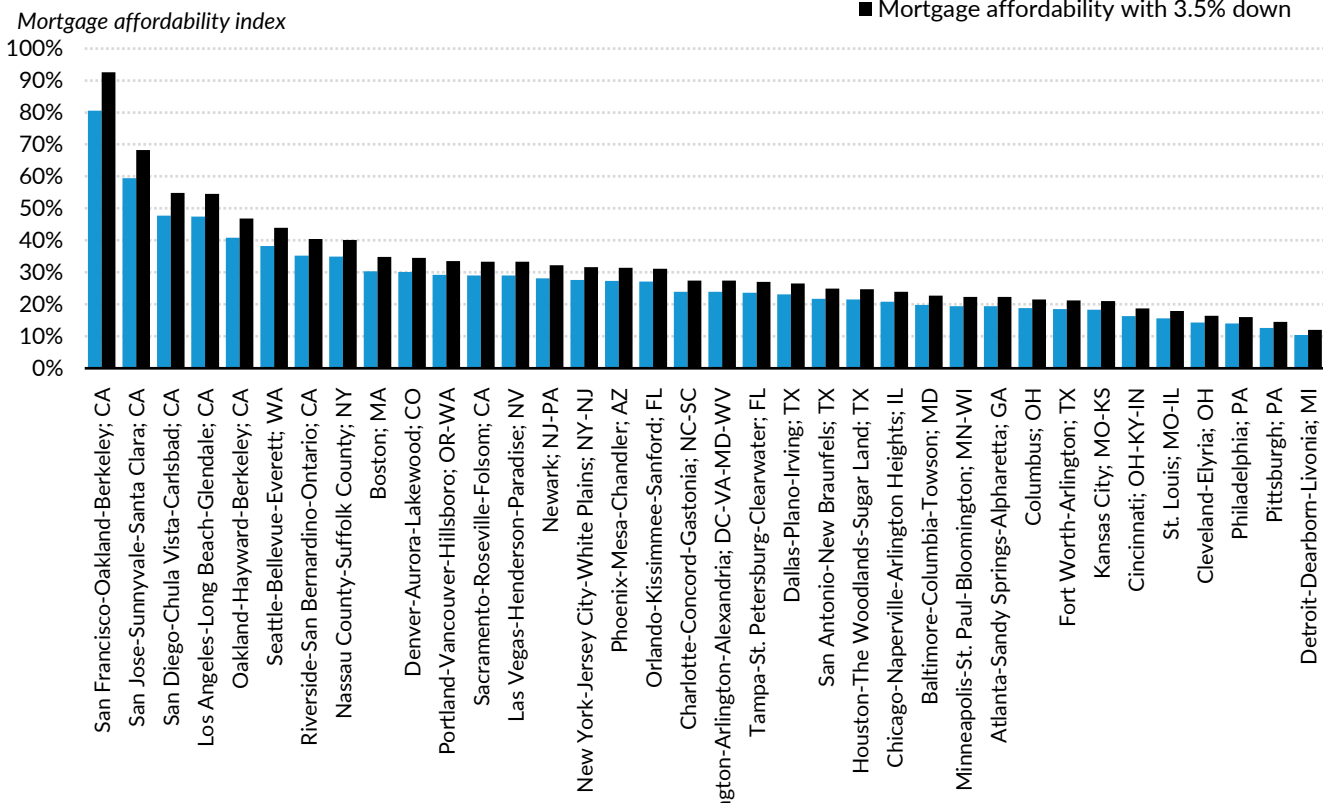
HOUSING AFFORDABILITY

National Mortgage Affordability Over Time

With the rise in interest rates, and continued increases in home prices, affordability is now comparable to what it was in 2005. As of March 2022, with a 20 percent down payment, the share of median income needed for the monthly mortgage payment stood at 32.0 percent, compared to 30.9 percent at the peak of the housing bubble in November 2005; with 3.5 percent down it is 37.9 percent, compared to a 35.8 prior peak in November 2005. These numbers represent a sharp worsening in affordability over the past year. 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.

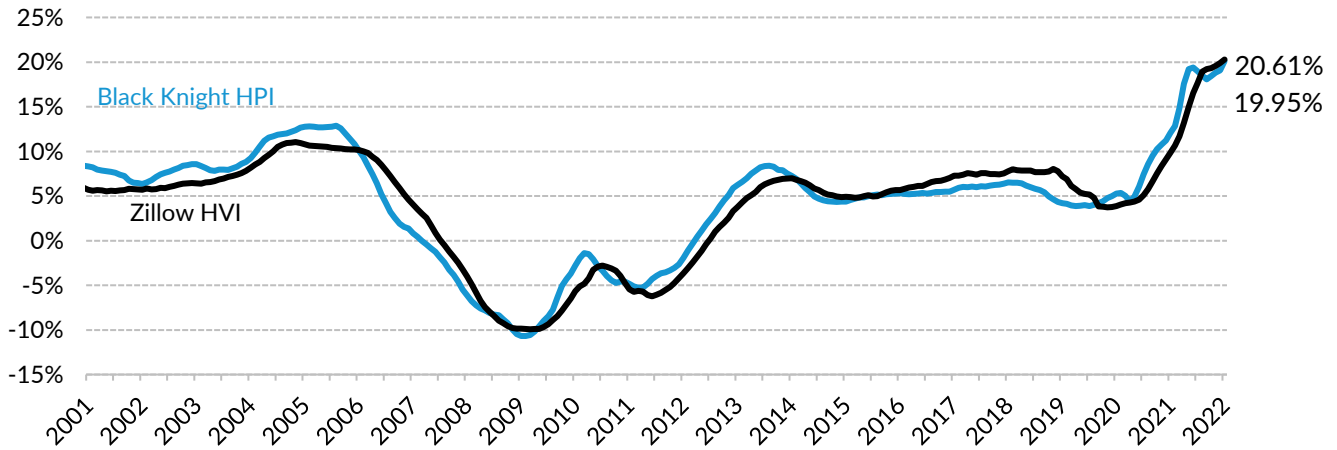
Note: Mortgage affordability is the share of median family income devoted to the monthly principal, interest, taxes, and insurance payment required to buy the median home at the Freddie Mac prevailing rate 2018 for a 30-year fixed-rate mortgage and property tax and insurance at 1.75 percent of the housing value. Data for the bottom chart as of Q3 2020.

HOME PRICE INDICES

National Year-Over-Year HPI Growth

According to Black Knight's updated repeat sales index, year-over-year home price appreciation increased to 20.61 percent in February 2022, compared to 19.09 percent the previous month. Year-over-year home price appreciation as measured by Zillow's hedonic index was 19.95 percent in February 2021, up from 19.89 in December. With the sharp rise in both home prices and interest rates, affordability is constrained.

Year-over-year growth

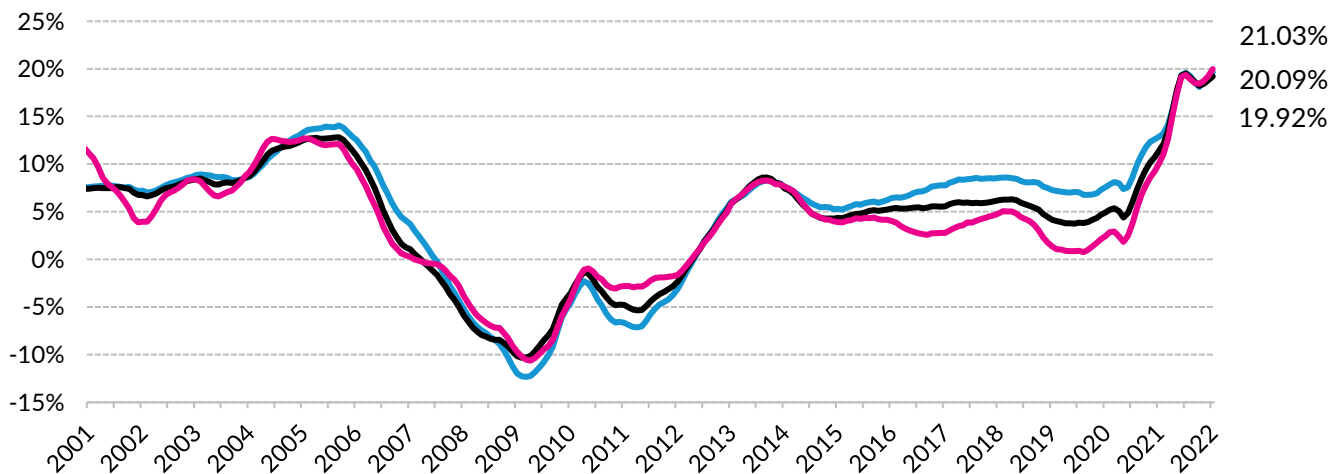


Sources: Black Knight, Zillow, and Urban Institute. **Note:** Black Knight modified the methodology behind their HPI in February 2021, resulting in changes to historic price estimates. Data as of February 2022.

National Year-Over-Year HPI Growth by Price Tier

House prices escalated significantly in the second half of 2020 and into 2021 across all price tiers. Before the pandemic, lower priced homes appreciated much more than higher priced homes. With higher priced homes also experiencing steep appreciation last year, the gap has disappeared.

— Lowest-tier — Middle-tier — Highest-tier



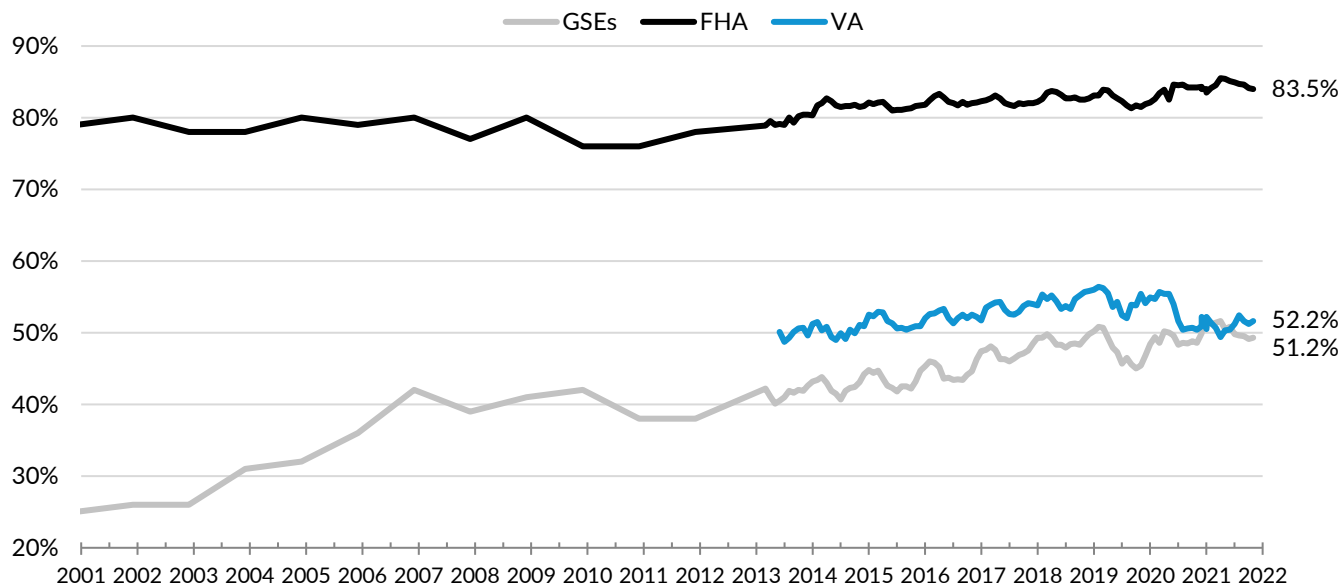
Sources: Black Knight and Urban Institute. **Note:** Black Knight modified the methodology behind their HPI in February 2021, resulting in changes to historic price estimates. Data as of February 2022.

STATE OF THE MARKET

FIRST-TIME HOMEBUYERS

First-Time Homebuyer Share

In February 2022, the FTHB share for FHA, which has always been more focused on first time homebuyers, was 83.5 percent. The FTHB share of VA lending in February was 52.2 percent. The GSE FTHB share slightly increased in February relative to January, to 51.2 percent. The bottom table shows that based on mortgages originated in February 2022, 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.



Sources: eMBS, Federal Housing Administration (FHA), and Urban Institute.

February 2022

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

Characteristics	GSEs		FHA		GSEs and FHA	
	First-time	Repeat	First-time	Repeat	First-time	Repeat
Loan Amount (\$)	321,505	339,532	262,770	276,185	305,527	340,263
Credit Score	744	754	670	668	719	741
LTV (%)	87	79	95	93	91	83
DTI (%)	36	36	44	45	39	38
Loan Rate (%)	3.25	3.18	3.36	3.28	3.26	3.16

Sources: eMBS and Urban Institute.

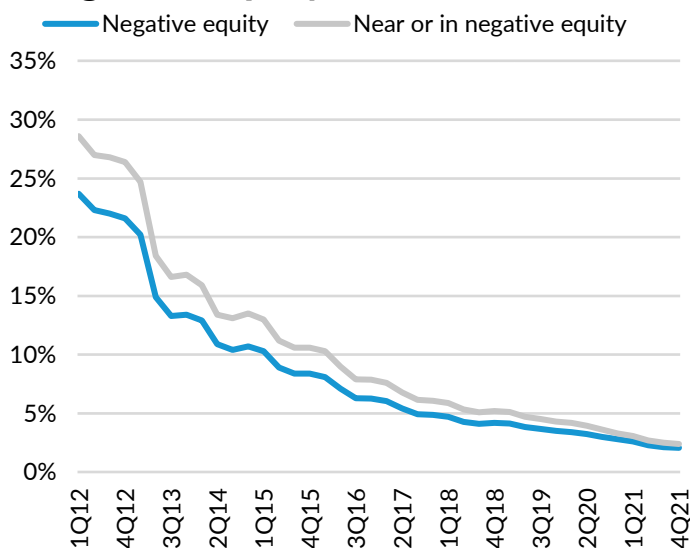
Note: Based on owner-occupied purchase mortgages originated in February 2022.

STATE OF THE MARKET

DELINQUENCIES AND LOSS MITIGATION ACTIVITY

Loans in and near negative equity continued to decline in Q4 2021; 2.08 percent now have negative equity, an additional 0.33 percent have less than 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 but declined again by 57 basis points, from 3.40 in Q3 2021 to 2.83 percent in Q4 2021. 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 2020, the total forbearance rate has declined to 2.06 percent as of October 31st, 2021, the final week of the call survey. The MBA has since moved to conducting a monthly survey with the most recent forbearance rate dropping to 1.05% as of March 31, 2022. GSE loans have consistently had the lowest forbearance rates, standing at 0.49 percent at the end of March. The most recent forbearance rate for Ginnie Mae loans was 1.38 percent; other (e.g., portfolio and PLS) loans had the highest forbearance rate at 2.44 percent.

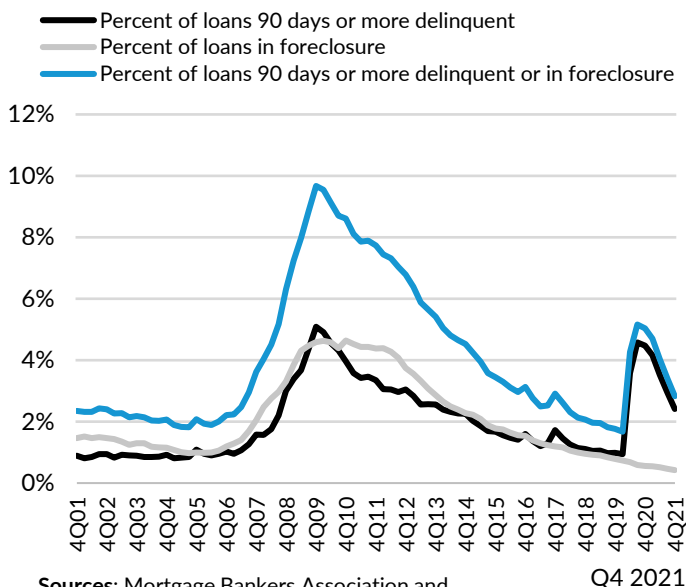
Negative Equity Share



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 March 2022.

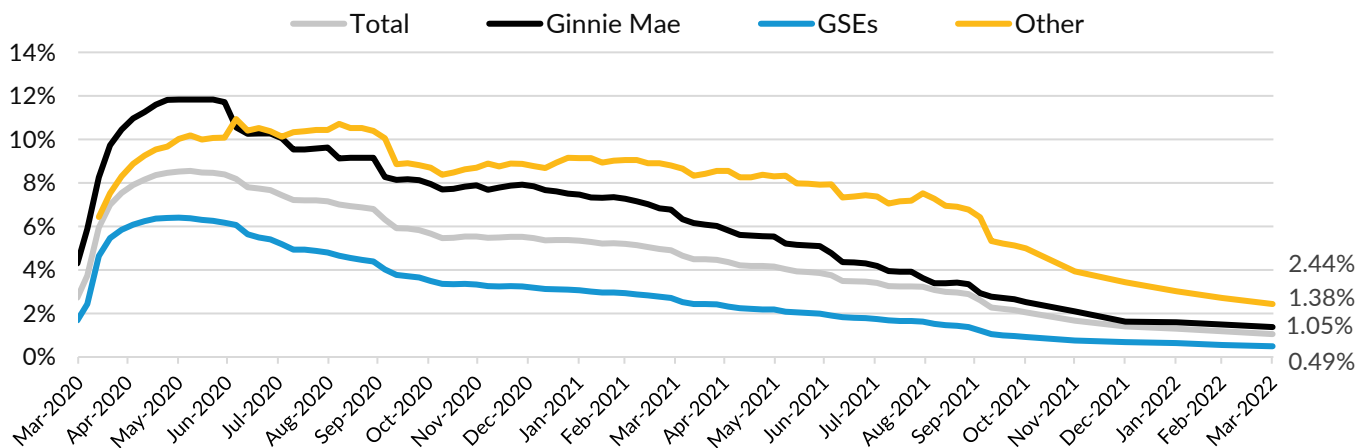
Loans in Serious Delinquency/Foreclosure



Sources: Mortgage Bankers Association and Urban Institute. Last updated February 2022.

Q4 2021

Forbearance Rates by Channel



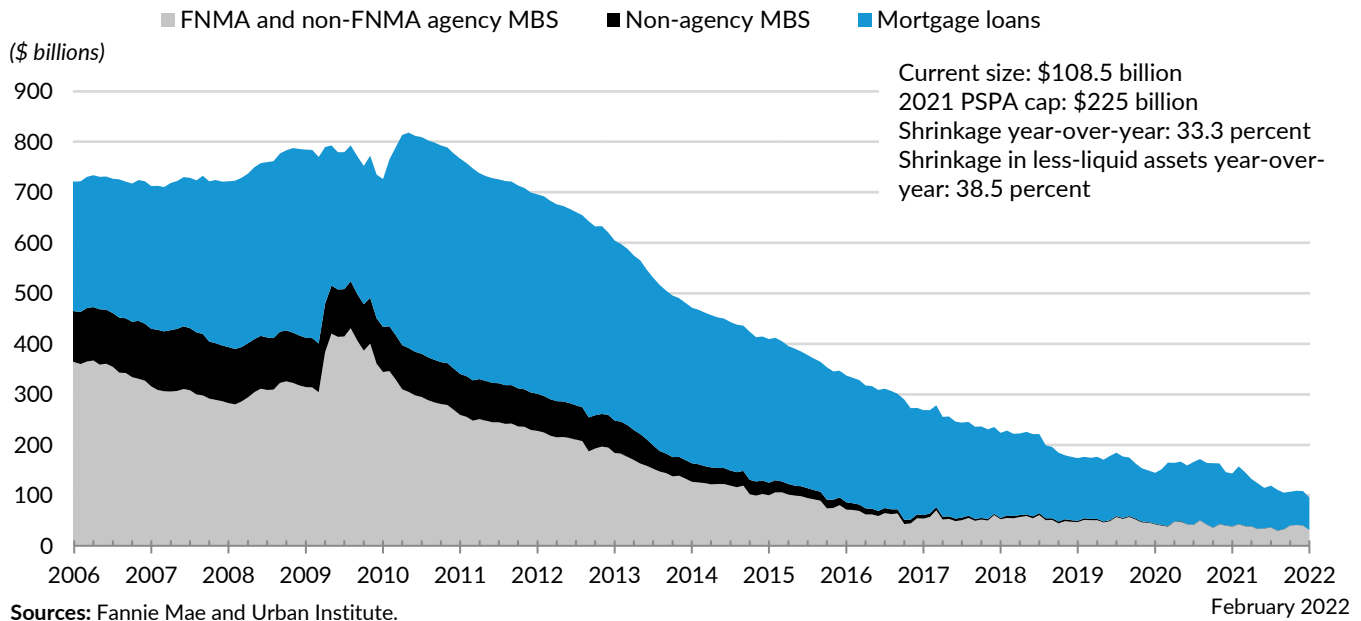
Source: MBA Weekly Forbearance and Call Volume Survey. Forbearance rates as of March 31st, 2022..

GSES UNDER CONSERVATORSHIP

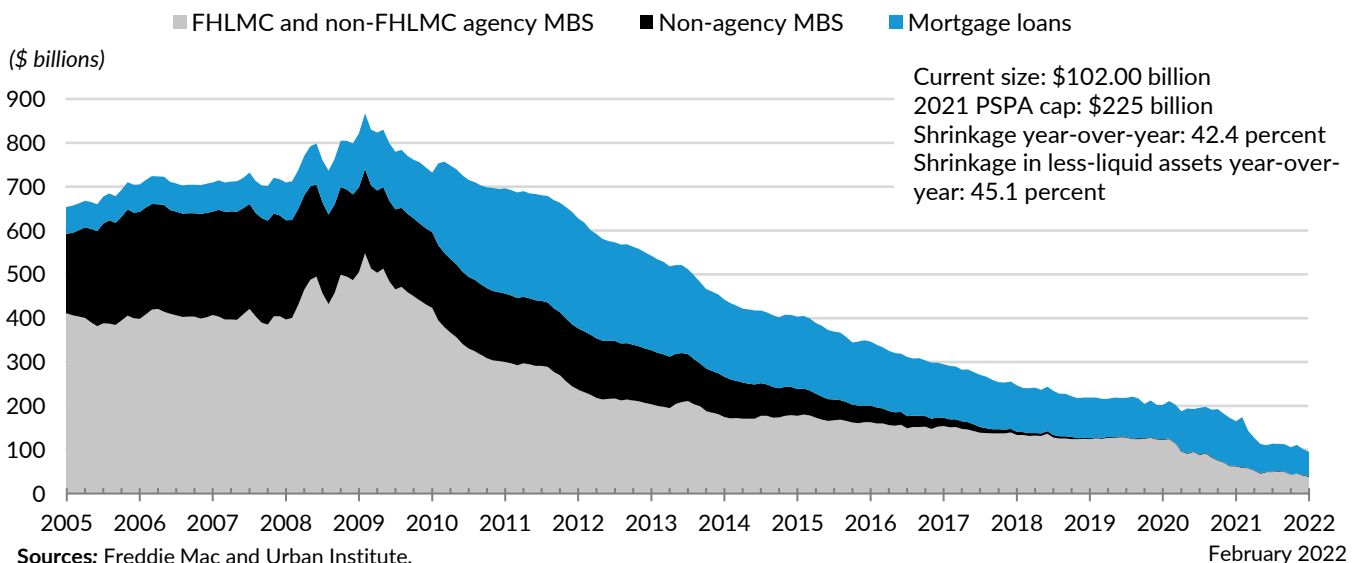
GSE PORTFOLIO WIND-DOWN

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 February 2021 to February 2022, the Fannie portfolio contracted year-over-year by 33.3 percent, and the Freddie portfolio contracted by 42.4 percent. Within the portfolio, both Fannie Mae and Freddie Mac contracted their less-liquid assets (mortgage loans, non-agency MBS), by 38.5 percent and 45.1 percent, respectively, over the same 12 month period.

Fannie Mae Mortgage-Related Investment Portfolio Composition



Freddie Mac Mortgage-Related Investment Portfolio Composition



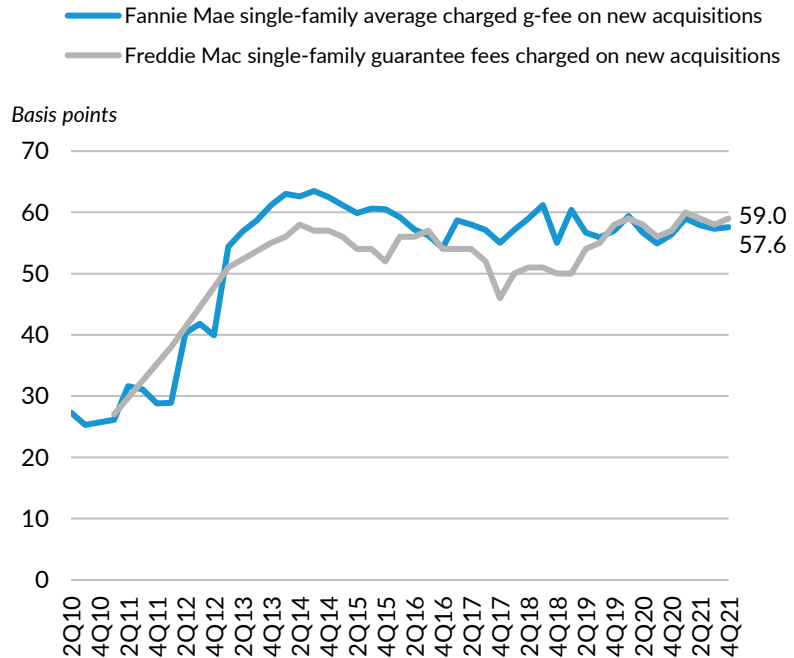
Note: Effective March 2021, Freddie Mac doesn't provide FHLMC/non-FHLMC breakout of agency MBS. The above charts were updated in May 2021 to reflect this.

GSES UNDER CONSERVATORSHIP

EFFECTIVE GUARANTEE FEES

Guarantee Fees Charged on New Acquisitions

Fannie Mae and Freddie Mac's average g-fees charged have largely converged since the first quarter of 2020. Fannie Mae's average g-fees charged on new acquisitions increased from 57.3 bps in Q3 2021 to 57.6 bps in Q4 2021. Freddie's also increased from 58.0 bps to 59.0 bps. The gap between the two g-fees was 1.4 bps in Q4 2021. 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 Mac and Urban Institute.
Last updated February 2022.

Fannie Mae Upfront Loan-Level Price Adjustments (LLPAs)

Credit Score	LTV (%)								
	≤60	60.01 – 70	70.01 – 75	75.01 – 80	80.01 – 85	85.01 – 90	90.01 – 95	95.01 – 97	>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 2021.

GSES UNDER CONSERVATORSHIP

GSE RISK-SHARING TRANSACTIONS

Fannie Mae and Freddie Mac have been laying off back-end credit risk through CAS and STACR deals and reinsurance transactions. They have also done front-end transactions with originators and reinsurers and experimented with deep mortgage insurance coverage. Historically, the GSEs have transferred a majority of their credit risk to private markets. Fannie Mae's CAS issuances since inception total \$1.96 trillion; Freddie's STACR totals \$2.48 trillion. After the COVID-19 induced spread widening in March 2020, and the repropose capital rules released by FHFA shortly thereafter, Fannie Mae did not issue any deals from Mar 2020 to Sep 2021, while Freddie Mac continued to issue. With the proposed changes in the Capital Rule, and the more positive attitude toward CRT at FHFA, Fannie Mae resumed CAS issuance in October 2021.

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
2020	CAS 2020 deals	\$210,000	\$3,130	1.5
2021	CAS 2021 deals	\$142,202	\$3,095	2.2
January 2022	CAS 2022 – R01	\$53,747	\$1,506	2.8
February 2022	CAS 2022 – R02	\$44,278	\$1,241	2.8
March 2022	CAS 2022 – R03	\$44,382	\$1,242	2.8
April 2022	CAS 2022 – R04	\$36,440	\$1,142	3.1
Total		\$1,958,621	\$54,829	2.8

Freddie Mac – Structured Agency Credit Risk (STACR)

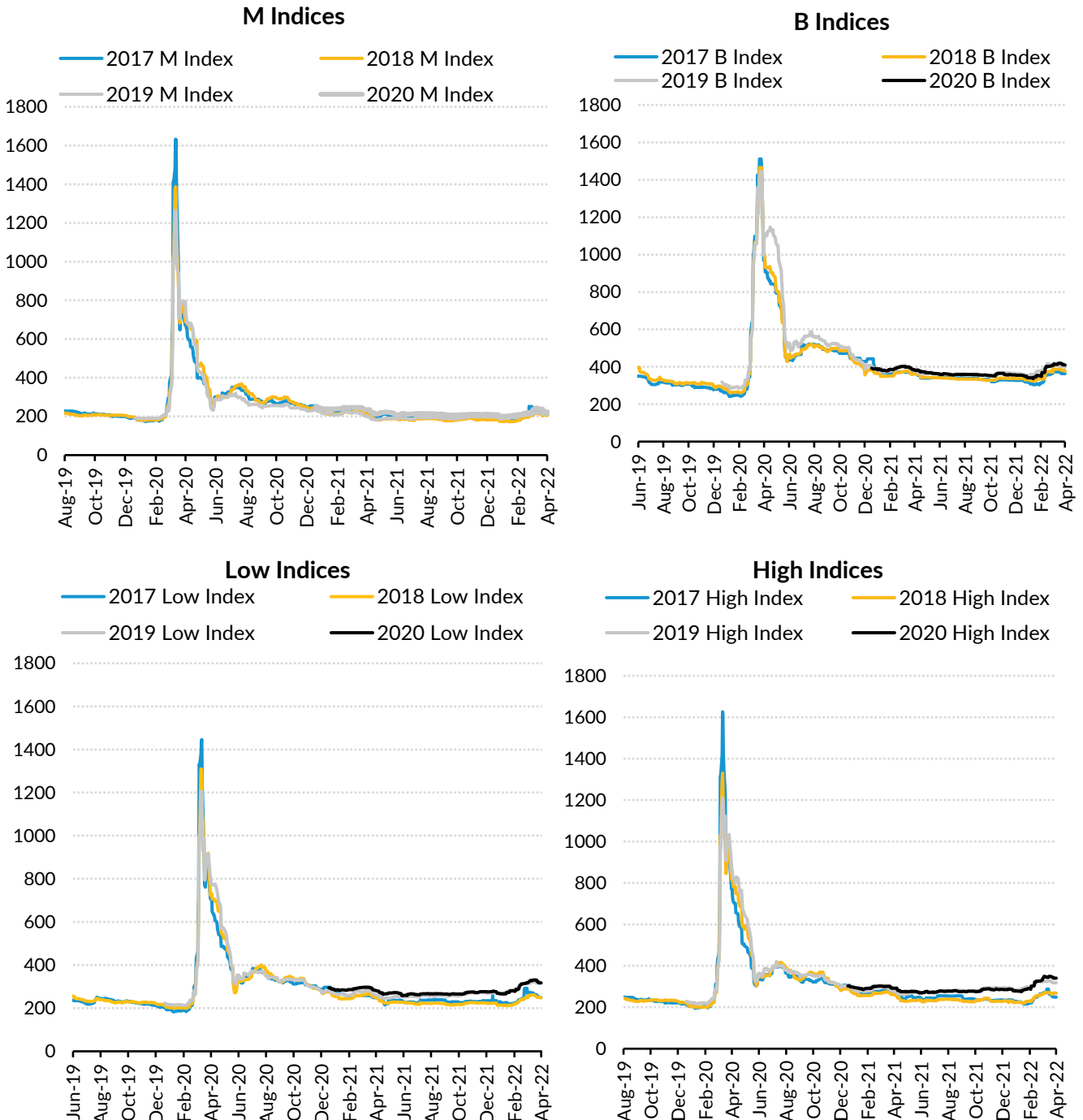
Date	Transaction	Reference Pool Size (\$ m)	Amount Issued (\$m)	% of Reference Pool Covered
2013	STACR 2013 deals	\$57,912	\$1,130	2.0
2014	STACR 2014 deals	\$147,120	\$4,916	3.3
2015	STACR 2015 deals	\$209,521	\$6,658	3.2
2016	STACR 2016 deals	\$183,421	\$5,541	2.8
2017	STACR 2017 deals	\$248,821	\$5,663	2.3
2018	STACR 2018 deals	\$216,581	\$6,055	2.8
2019	STACR 2019 deals	\$271,105	\$5,947	2.2
2020	STACR 2020 deals	\$403,591	\$10,372	2.6
2021	STACR 2021 deals	\$574,706	\$11,024	1.9
January 2022	STACR Series 2022 – DNA1	\$33,573	\$1,353	4.0
February 2022	STACR Series 2022 – DNA2	\$44,961	\$1,919	4.3
March 2022	STACR Series 2022 – HQA1	\$45,831	\$1,816	4.0
April 2022	STACR Series 2022 – DNA3	\$42,886	\$1,842	4.3
Total		\$2,480,031	\$64,236	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.

GSES UNDER CONSERVATORSHIP

GSE RISK-SHARING INDICES

The figures below show the spreads on 2017, 2018, 2019, and 2020 indices, as priced by dealers. Note the substantial spread widening in March 2020. This reflected expectations of higher defaults and potential credit losses owing to COVID-19, as well as forced selling. Spreads are not only slightly wider than pre-COVID levels for the M tranches, but also considerably wider for the B tranches. 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 did not issue any new deals in the last three quarters of 2020.

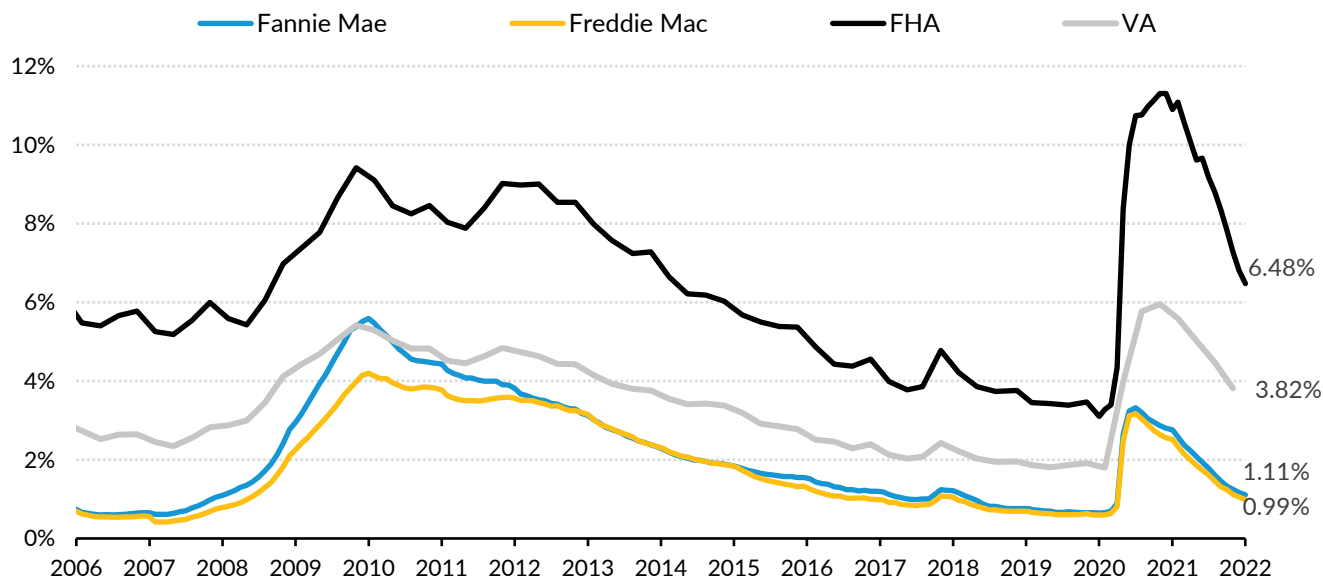


Sources: Vista Data Services and Urban Institute.
Note: Data as of April 14, 2022.

GSES UNDER CONSERVATORSHIP SERIOUS DELINQUENCY RATES

Serious delinquency rates for single-family GSE loans decreased in February 2022, to 1.11 percent for Fannie Mae and 0.99 percent for Freddie Mac. Serious delinquency rates for FHA loans also decreased in February 2022, to 6.48 percent. In Q4 2021, VA serious delinquency rates declined to 3.82 percent. Note that loans that are in forbearance are counted as delinquent for the purpose of measuring delinquency rates. Fannie multifamily delinquencies increased marginally in February to 0.40 percent, while Freddie multifamily delinquencies also increased marginally at 0.08 percent.

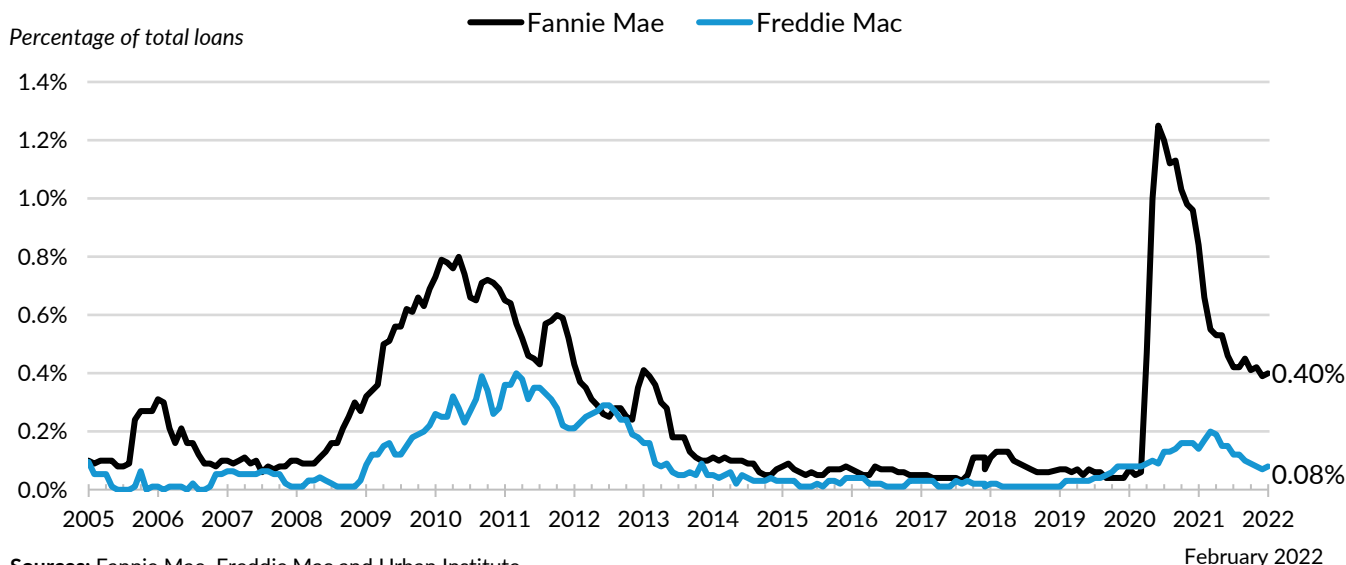
Serious Delinquency Rates–Single-Family Loans



Sources: Fannie Mae, Freddie Mac, Federal Housing Administration, 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. VA delinquencies are reported on a quarterly basis, last updated for Q3 2021. GSE and FHA delinquencies are reported monthly, last updated for February 2022.

Serious Delinquency Rates–Multifamily GSE Loans



Sources: Fannie Mae, Freddie Mac and Urban Institute.

Note: Multifamily serious delinquency rate is the unpaid balance of loans 60 days or more past due, divided by the total unpaid balance.

AGENCY ISSUANCE

AGENCY GROSS AND NET ISSUANCE

Agency gross issuance was \$623.8 billion YTD in March 2022, a 36.6 percent decrease from YTD March 2021. This reflects a 46.4 percent YTD decline in refinance activity and an 8.1 percent YTD increase in purchase activity. Net issuance (new securities issued less the decline in outstanding securities due to principal pay-downs or prepayments) totaled \$178.3 billion in YTD March 2022, a 10.9 percent decrease compared to YTD March 2021.

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	\$2,650.8	\$855.3	\$3,506.1
2022	\$464.0	\$159.8	\$623.8
2022 % Change Over 2021	-38.6%	-29.7%	-36.6%
2022 Annualized	\$1,856.0	\$639.2	\$2495.2

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	\$753.5	\$5.6	\$759.1
2022	\$157.8	\$20.6	\$178.3
2022 % Change Over 2021	-23.6%	427.1%	-10.9%
2022 Annualized	\$631.0	\$82.4	\$713.4

Sources: eMBS and Urban Institute.

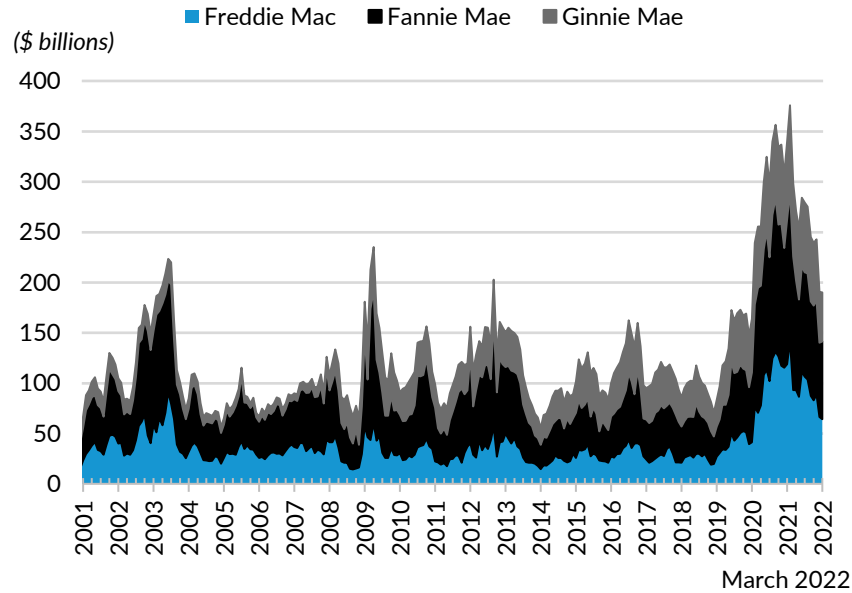
Note: Dollar amounts are in billions. Data as of March 2022.

AGENCY ISSUANCE

AGENCY GROSS ISSUANCE & FED PURCHASES

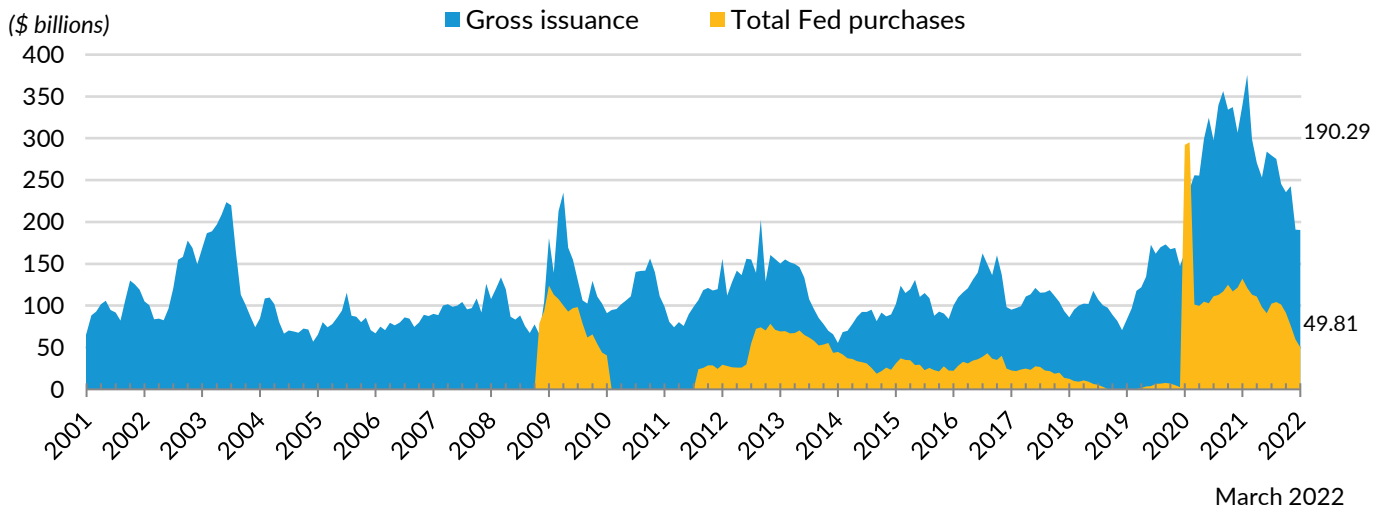
Monthly Gross Issuance

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. The Ginnie share then declined to a low of 20.4 percent in November 2020, reflecting the more robust ramp up in GSE refinances relative to Ginnie Mae refinances. As the refi share has waned, the Ginnie share has risen to 25.6 percent in March 2022.



Fed Absorption of Agency Gross Issuance

MBS on the Fed balance sheet totaled \$2.74 trillion in March 2022, the highest level ever. The Fed is currently holding its MBS holdings constant, buying to replace runoff. The Fed's March purchases totaled \$49.8 billion, 26.2 percent of monthly gross issuance. In the March FOMC meeting, the Federal Reserve announced that they would soon begin to trim the size of the portfolio, allowing up to \$35 billion in agency MBS to run off each month. Portfolio trimming could be phased in beginning as early as May 2022. The Federal Reserve's portfolio was a critical policy tool during the pandemic. In March of 2020, the Fed announced they would buy mortgages in an amount necessary to support smooth functioning markets; March and April of 2020 were the largest two months of mortgage purchases ever. Once the market stabilized, the Fed began to purchase \$40 billion net of MBS each month; this buying plus runoff replacements equated to Fed purchases of \$100=\$125 billion per month. In November of 2021, the Fed began to reduce purchases, with these purchases ending in early March of 2022.

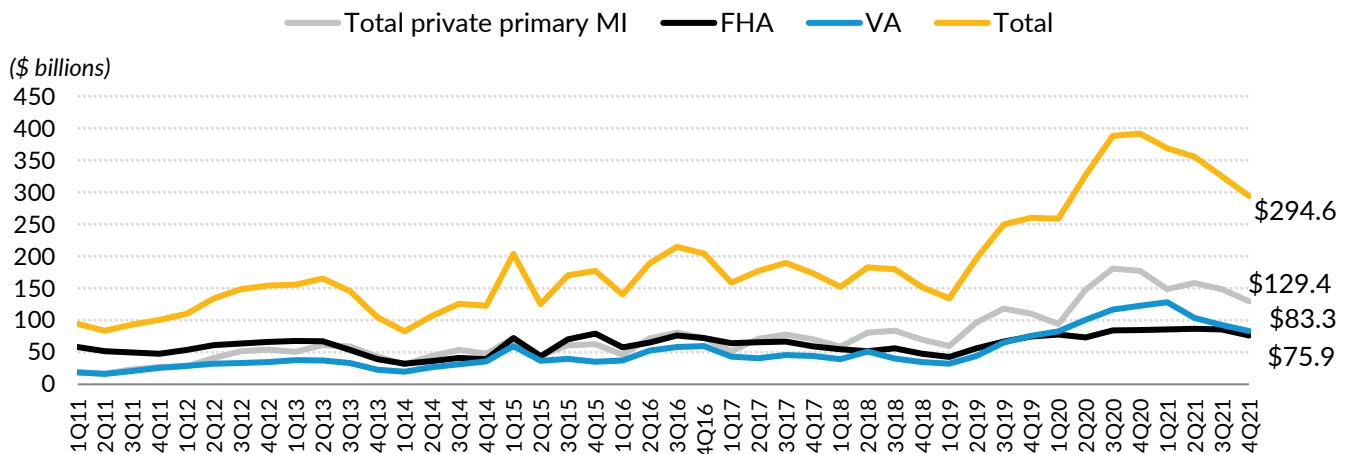


AGENCY ISSUANCE

MORTGAGE INSURANCE ACTIVITY

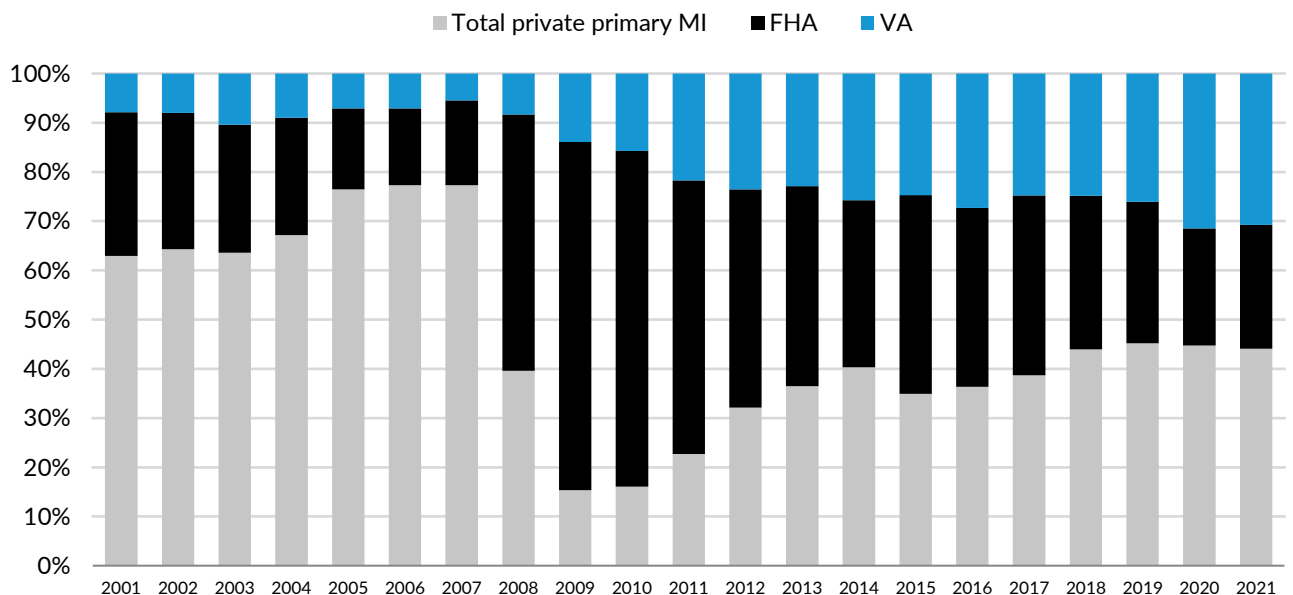
MI Activity

In the fourth quarter of 2021, private mortgage insurance written decreased by \$47.9 billion, FHA decreased by \$8.8 billion, and VA decreased by \$39.4 billion relative to Q4 2020. Over the same period (i.e. from Q4 2020 to Q4 2021), the private mortgage insurers share decreased from 45.2 to 43.9 percent, FHA's share increased from 21.6 to 25.8 percent, and VA's share decreased from 31.3 to 28.3 percent. For full year 2021, the private mortgage insurers share stood at 44.1 percent, a slight decrease from 44.7 percent in 2020. During this same period, the FHA share increased from 23.8 percent to 25.2 percent, while the VA share decreased from 31.5 percent in 2020 to 30.7 percent in 2021.



Sources: Inside Mortgage Finance and Urban Institute. Last updated February 2022.

MI Market Share



Sources: Inside Mortgage Finance and Urban Institute. Last updated February 2022.

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 700 will find FHA financing to be more financially attractive, borrowers with FICO of 740 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	5.11							
FHA	5.11							

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	\$1,505	\$1,505	\$1,505	\$1,505	\$1,505	\$1,505	\$1,505	\$1,505
PMI	\$1,791	\$1,726	\$1,688	\$1,599	\$1,555	\$1,516	\$1,474	\$1,450
PMI Advantage	-\$286	-\$221	-\$183	-\$94	-\$50	-\$11	\$31	\$55

Sources: Enact 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 April 22, 2022.

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 33 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.

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Date: February 17, 2022

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