

Global Markets Analysis Report

A MONTHLY PUBLICATION OF GINNIE MAE'S
OFFICE OF CAPITAL MARKETS



PREPARED FOR GINNIE MAE
BY STATE STREET GLOBAL ADVISORS
URBAN INSTITUTE, HOUSING FINANCE POLICY CENTER

CONTENTS

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

| | |
|--|-----|
| Barclays US Aggregate and Global Indices | 5 |
| Global 10-year treasury yields | 6 |
| Ginnie Mae yields and yield spreads—USD, JPY, Euro | 7-9 |
| Ginnie Mae yield spreads - Intermediate Credit | 10 |
| MBS yield per duration | 11 |
| Total return and Sharpe Ratios | 12 |

State of the US Housing Market

| | |
|---|-------|
| Serious delinquency rates | 13 |
| National HPI, HPI by state | 13-14 |
| Ginnie Mae Agency issuance and Agency outstanding by state | 15 |
| Size and value of the US Residential housing and mortgage markets | 16 |
| Outstanding Agency MBS | 17 |
| Outstanding Ginnie Mae MBS volume by vintage and coupon over time | 18 |
| Characteristics of Ginnie Mae loans in forbearance | 19-21 |
| Origination volume over time | 22 |

US Agency Market, Originations

| | |
|---|-------|
| Agency Gross and Net Issuance | 23-25 |
| Purchase versus refi: Refi Issuance Breakdown | 26 |

Credit Box

| | |
|--|-------|
| First time homebuyer share—purchase only loans | 27-28 |
| Credit box at a glance (FICO, LTV, DTI) | 29-31 |
| Historical credit box (FICO, LTV,DTI) | 32-33 |
| Cumulative Default Rates: FHA and VA | 34 |
| High LTV credit box | 35-36 |

Ginnie Mae Nonbank Originators

| | |
|---|-------|
| Nonbank originator share (All, Purchase, Refi) | 37-38 |
| Bank vs. nonbank originators historical credit box, Ginnie Mae vs. GSE (FICO, LTV, DTI) | 39-42 |

Holders of Ginnie Mae Mortgage Servicing Rights

| | |
|------------------------------------|-------|
| Top Holders of Ginnie Mae MSR | 43-44 |
| Non-bank Holders of Ginnie Mae MSR | 44 |

Prepayments

| | |
|--|-------|
| Aggregate | 45 |
| Select coupon/origination year cohorts | 46-48 |

Other Ginnie Mae Programs

| | |
|----------------------|----|
| HMBS and Multifamily | 49 |
|----------------------|----|

Market Conditions-Agency MBS

| | |
|---|----|
| Average daily trading volume and turnover by sector | 50 |
|---|----|

MBS Ownership

| | |
|---|-------|
| Ownership breakdown of total agency debt and commercial bank ownership of MBS | 51 |
| Bank and Thrift Residential MBS Holdings | 52 |
| Foreign ownership of MBS | 53-54 |
| Fed Ownership of MBS | 55 |

HIGHLIGHTS

Ginnie Mae enhances MBS disclosure by releasing new Environmental, Social, and Governance (ESG) data

With around \$2 trillion of Ginnie Mae MBS outstanding, the agency keeps a strong focus on maintaining deep liquidity for its securities, which attract a wide group of global investors. In May, Ginnie Mae added new Environmental, Social, and Governance (ESG) data to its Single-Family Supplemental File (*Record Type 25 Low and Moderate Income Area Record*), which investors use to analyze the agency's securities. The new ESG record provides pool-level aggregate information on loans that are in low- and moderate-income (LMI) areas. The inclusion of this data provides Ginnie Mae MBS investors with better information to support their sustainable investing decisions, as well as attract a more diverse group of investors.

The new dataset aggregates to the pool level the number of loans, percent of loans, unpaid principal balance (UPB) dollars, and percent UPB dollars across LMI areas applicable to the pool. LMI areas are defined by the Department of Housing and Urban Development (HUD), as delineated by HUD's Community Development Block Grant Program. Per the new data disclosure, over 1.7 million government loans outstanding were originated in LMI areas, comprising 15.9 percent of the roughly 10.7 million total. The UPB outstanding for LMI area loans is about \$259 billion, representing 13.5% of the \$2 trillion outstanding. Socially responsible investors could leverage this new data to better target their investment dollars into pools with higher concentrations of LMI area loans.

Loan & Credit Characteristics by LMI Pool Share (All Outstanding Loans)

| | LMI Pool Share 50%+ | LMI Pool Share <50% | All Pools |
|-------------------------|------------------------|------------------------|-----------|
| Total UPB (\$ billions) | 11.6 | 1909.2 | 1920.8 |
| Loan Amount (\$) | 101,647 | 134,737 | 129,561 |
| FHA Pool Share (%) | 87.7 | 73.9 | 76.0 |
| VA Pool Share (%) | 9.3 | 14.9 | 14.0 |
| Credit Score | 674 | 678 | 677 |
| DTI (%) | 40.0 | 39.3 | 39.4 |
| LTV (%) | 93.9 | 94.2 | 94.2 |
| Interest rate (%) | 6.1 | 5.1 | 5.3 |

Source: eMBS, Ginnie Mae and Urban Institute

Note: Loan Amount, Credit Score, DTI, LTV, and Interest Rate characteristics are weighted averages of loans in the pool.

The above table compares key characteristics of Ginnie Mae pools for which at least 50 percent of UPB is in LMI areas to pools where less than 50 percent of the UPB is in LMI areas. Pools with LMI share of 50% or greater have a lower average loan amount at \$101,647 compared to \$134,737 for pools with LMI share of less than 50%.

HIGHLIGHTS

Majority LMI pools also have a much higher FHA share, 87.7 percent, compared to 73.9 percent FHA share for pools that are less than 50 percent LMI. Conversely, the VA share, while much smaller than FHA's on average, is lower in majority LMI pools. These findings are consistent with FHA's mission of enabling homeownership for LMI households.

Further insights can be obtained by studying credit characteristics for the two LMI buckets. Pools with a at least 50 percent LMI area UPB have slightly lower average credit scores at 674 compared to pools with a lower LMI share at 678. The average debt-to-income (DTI) ratio for majority LMI area pools, at 40.0%, is slightly higher than the 39.3% share for non-majority LMI pools. Loan-to-value (LTV) ratio for LMI-heavy pools was slightly lower, at 93.9%, compared to 94.2% for the other group. Overall, credit characteristics for majority LMI pools are slightly worse compared to those for non-majority LMI pools. This can be a value add for investors as loans to LMI borrowers are less likely to prepay when rates fall. Even when these loans refinance, lower balances further mitigate the impact of prepayment risk on investment portfolios. The average note rate for pools with over 50 percent LMI share was one percent point higher, at 6.1%, compared to 5.1% for pools with under 50 percent LMI share.

This data can be sliced and diced other ways to focus on specific vintages, coupons, loan balances and other relevant attributes. Further analysis of this data can yield valuable insights for investors looking to enhance their EGS investments.

Disclosure:

For Ginnie Mae's Internal Use only. All the information contained in this document is as of date indicated unless otherwise noted. The information provided does not constitute investment advice and it should not be relied on as such. All information has been obtained from sources believed to be reliable, but its accuracy is not guaranteed. The views expressed in this material are the views of Urban Institute and Street Global Advisors as of December 15th, 2020 and are subject to change based on market and other conditions. This document contains certain statements that may be deemed forward-looking statements. Please note that any such statements are not guarantees of any future performance and actual results or developments may differ materially from those projected.

© 2021 State Street Corporation. All Rights Reserved.

United States: State Street Global Advisors, 1 Iron Street, Boston, MA 02210-1641.

Tracking Code: 3371663.1.1.AM.INST

Expiration Date: 12/31/2021

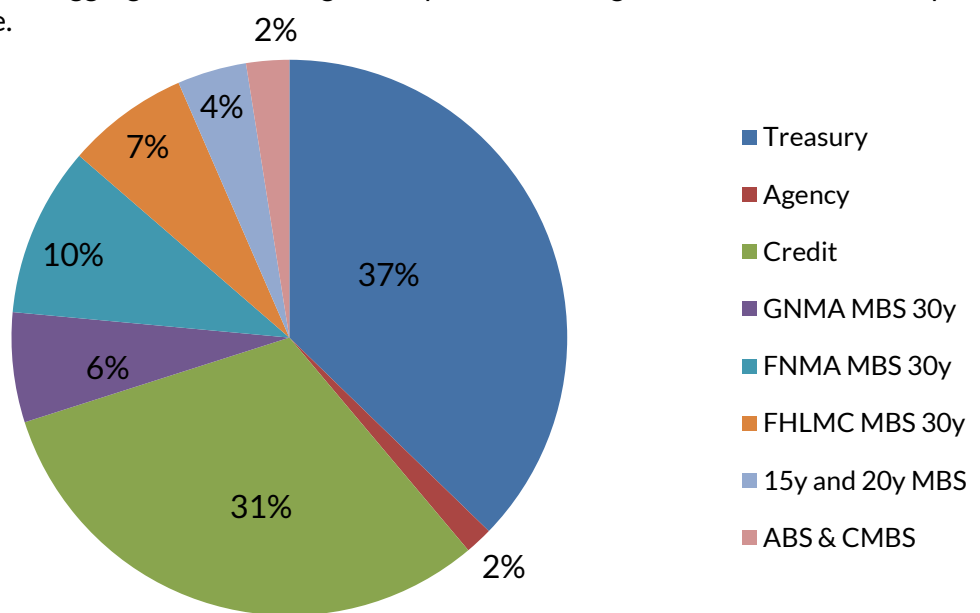
Highlights this month:

- After rising for most of 2019 and 2020, refinance FICO scores have started to come down in 2021, more so for Ginnie Mae than the GSEs (page 32).
- Total agency MBS held by banks and thrifts increased from \$2.52 trillion in Q4 2020 to \$2.69 trillion in Q1 2021, an increase of 6.7 percent in a single quarter (page 52).
- As of February 2021, foreign holdings of Agency MBS have declined by \$66.5 billion from the peak in spring 2020 (page 53).

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

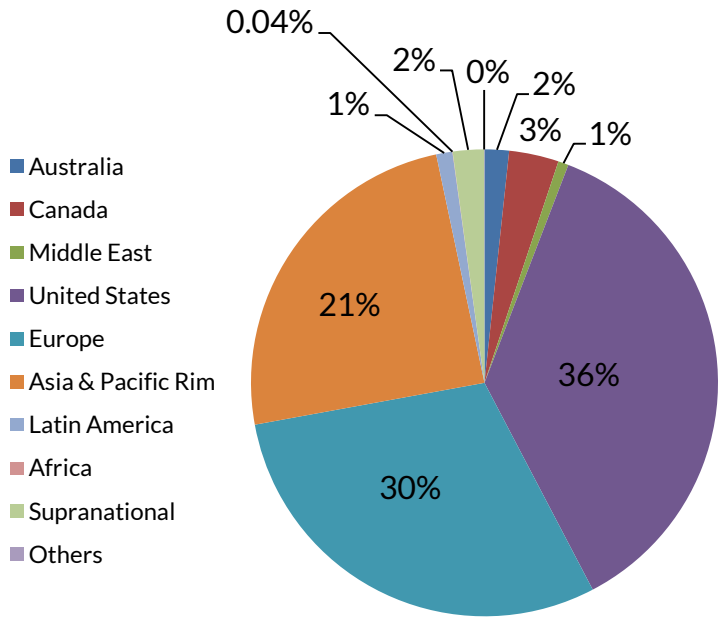
US MBS (Ginnie Mae, Fannie Mae, and Freddie Mac) comprise 27 percent of the Barclays US Aggregate Index—less than either the US Treasury share (37 percent) or the US Credit share (31 percent). Fannie Mae 30-year MBS accounts for 10 percent of the overall index, the largest MBS component, while Freddie Mac 30-year MBS and Ginnie Mae 30-year MBS comprise 7 and 6 percent of the market, respectively. Mortgages with terms of 15 and 20 years comprise the remaining balance (4 percent) of the Barclays US Aggregate Index. US securities are the single largest contributor to the Barclays Global Aggregate, accounting for 36 percent of the global total. US MBS comprises 10 percent of the global aggregate.

Barclays US Aggregate Index



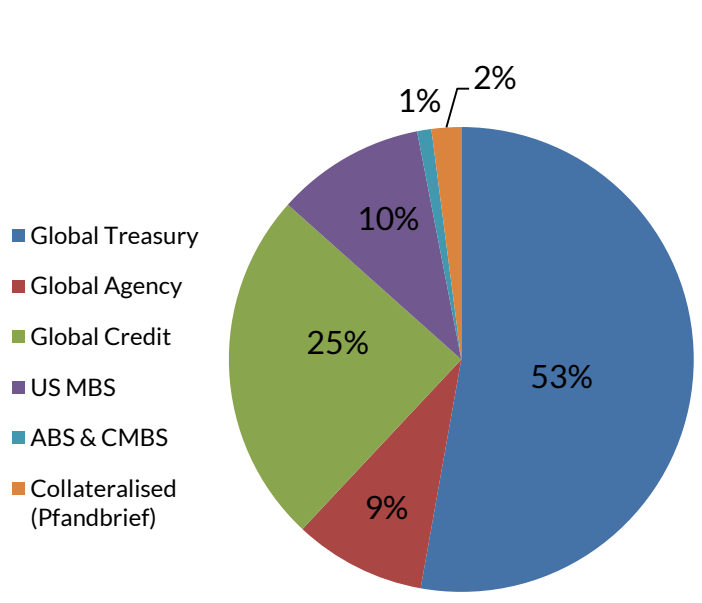
Sources: Bloomberg and State Street Global Advisors. Note: Data as of March 2021. Note: Numbers in chart may not add to 100 percent due to rounding.

Barclays Global Aggregate Index by Country



Sources: Bloomberg and State Street Global Advisors. Note: Data as of March 2021.

Barclays Global Aggregate Index by Sector

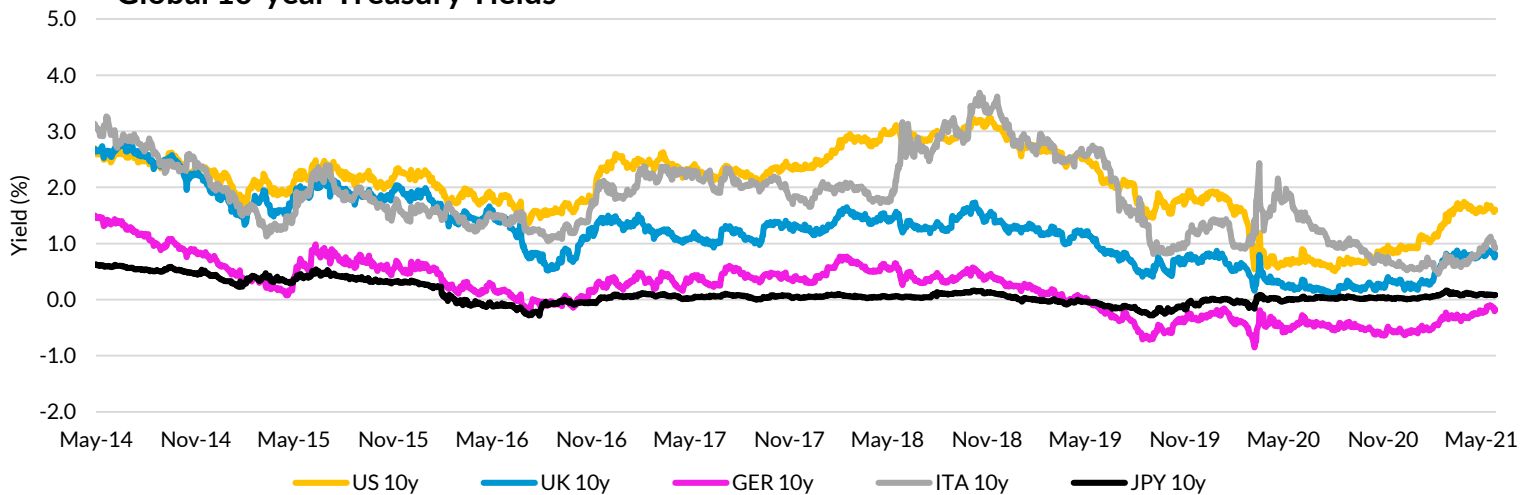


Sources: Bloomberg and State Street Global Advisors. Note: Data as of March 2021.

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

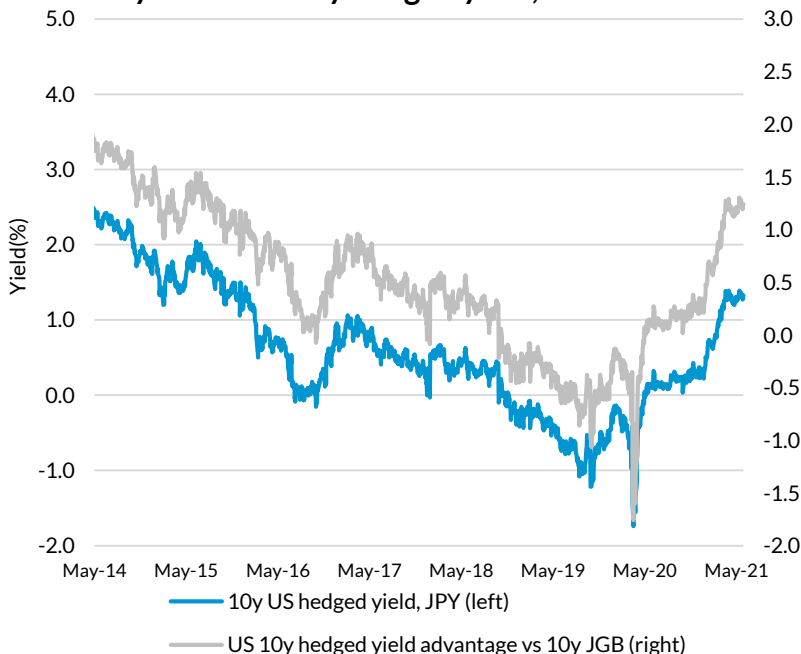
After experiencing COVID-19 related volatility in March and April of 2020, government bond yields across the globe gradually stabilized and have started trending up meaningfully in 2021. Yields on the 10-year treasury decreased by 3 bps to 1.59 percent in May 2021, after increasing by 83 bps in Q1, 2021, and remain the highest of the developed world. The yield on the Italian 10-year note, which was higher than the 10-year sovereign debt of the US, Japan, and Europe for much of 2020, increased by just 1 bp to 0.91 percent. The yields on the UK 10-year fell by 5 bps to 0.80 percent and Japanese 10-year government bonds decreased slightly by 1bp to 0.83 percent in April. The German 10-year yield increased by 2 bps to negative 0.18 percent in April. At the end of May 2021, the hedged yield differential between the 10-year Treasury and the 10-year JGB stood at 123 bps, an increase of 3 bps from the previous month. The hedged yield differential between the 10-year Treasury and the 10-year Bund stood at 108 bps, a slight increase of 1 bp since the end of April 2021.

Global 10-year Treasury Yields



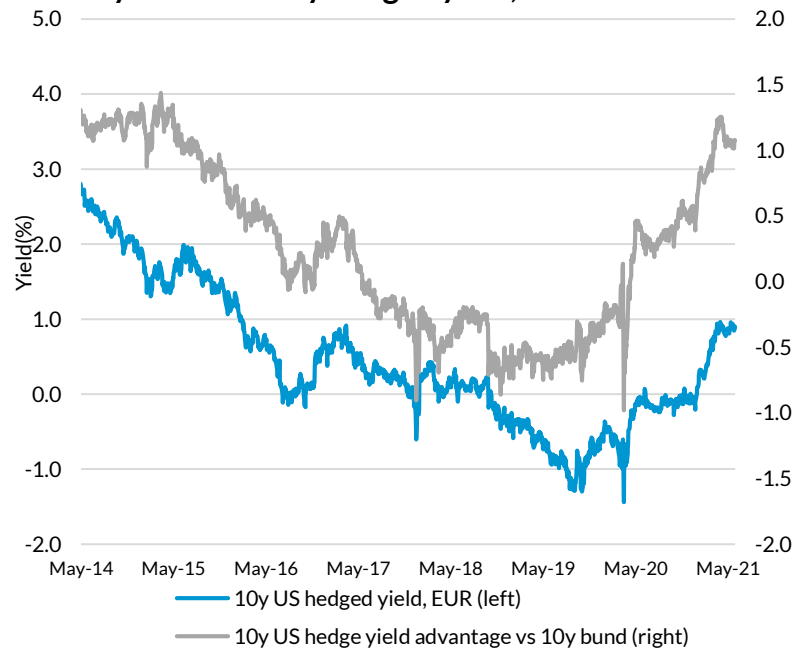
Sources: Bloomberg and State Street Global Advisors. Note: Data as of May 2021.

10yr US Treasury hedged yield, JPY



Sources: Bloomberg and State Street Global Advisors. Note: Data as of May 2021.

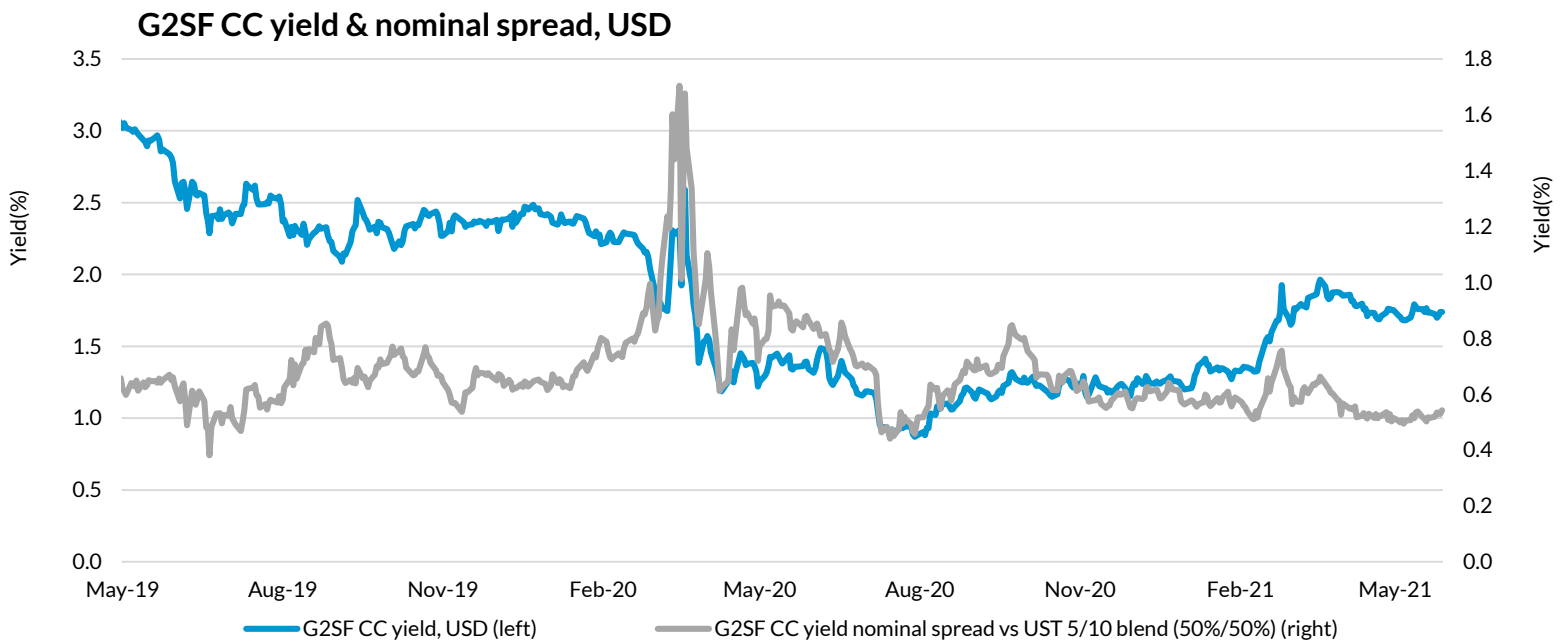
10yr US Treasury hedged yield, EUR



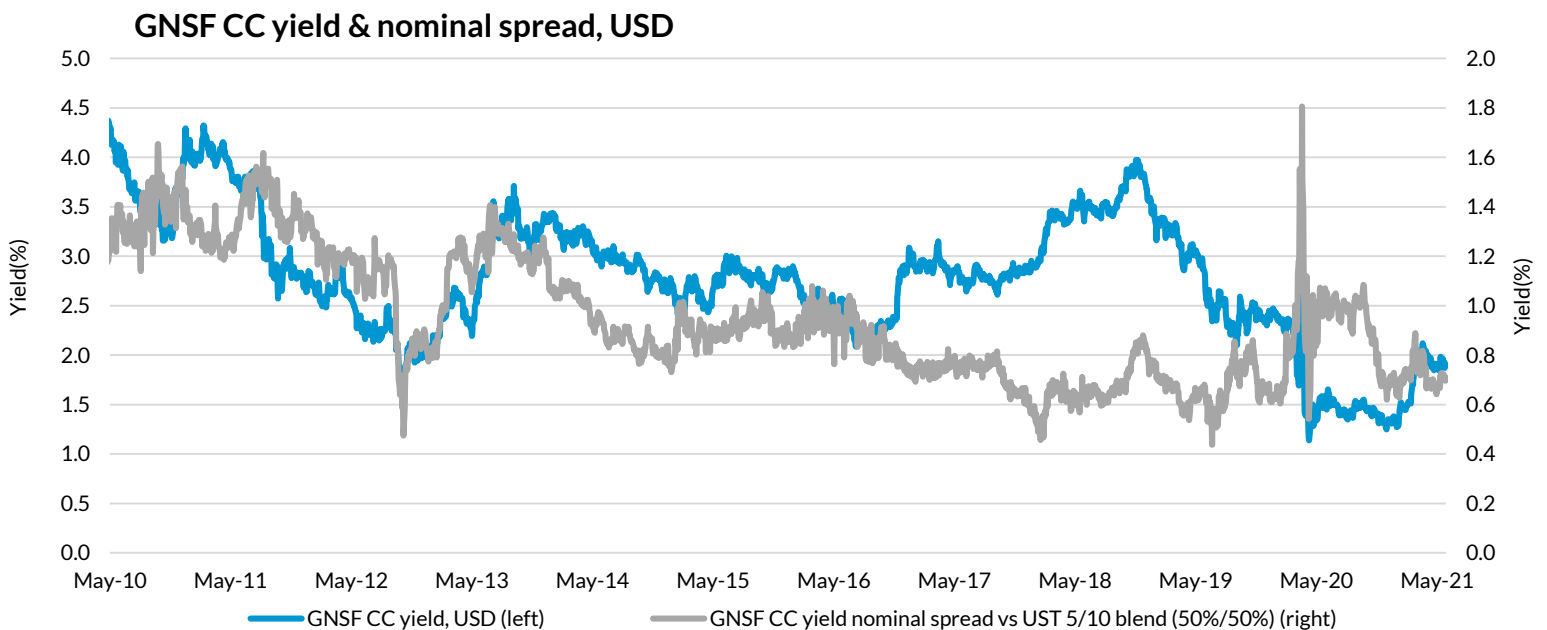
Sources: Bloomberg and State Street Global Advisors. Note: Data as of May 2021.

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

Nominal yields did not change much in May 2021, with GNMA II yields declining by just 1 bp to 1.74 percent and GNMA I yields up 3 bps to 1.91 percent. At the end of May, current coupon Ginnie Mae securities outyielded their Treasury counterparts (relative to the average of 5- and 10-year Treasury yields) by 54 bps on the G2SF and 71 bps on the GNSF, a widening of 2 and 7 bps, respectively, since last month.



Sources: Bloomberg and State Street Global Advisors. Note: Data as of May 2021.

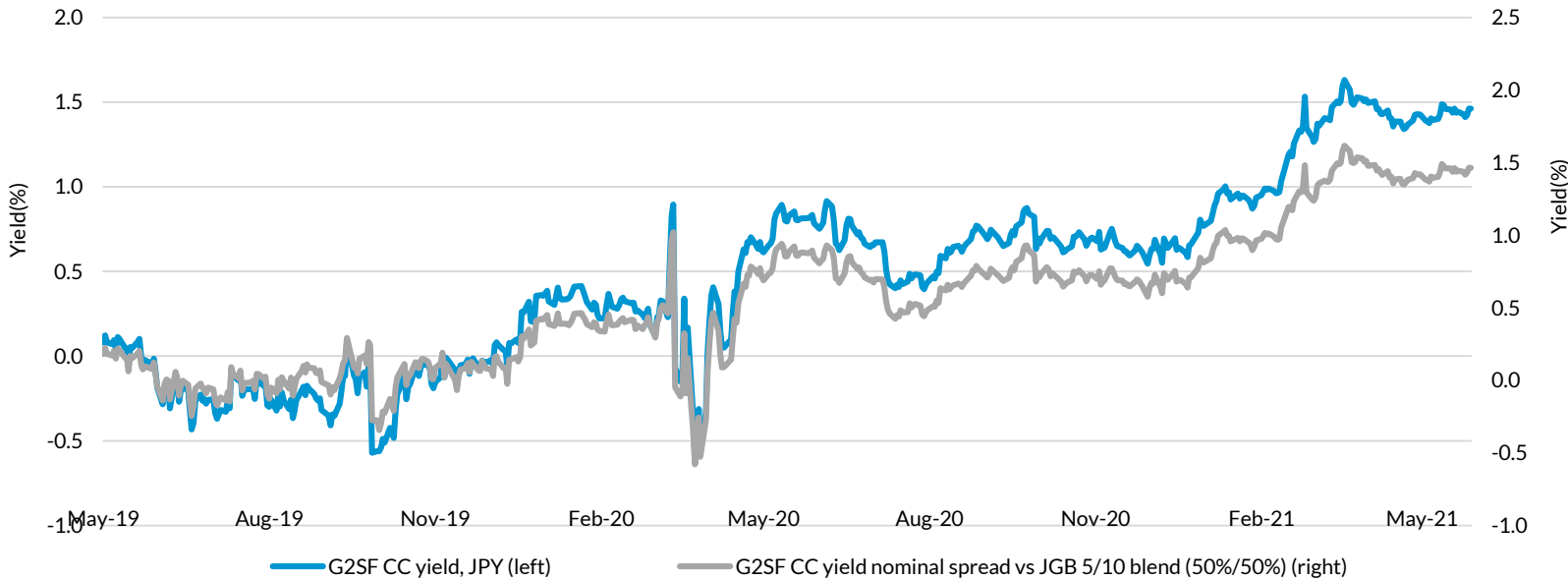


Sources: Bloomberg and State Street Global Advisors. Note: Data as of May 2021.

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

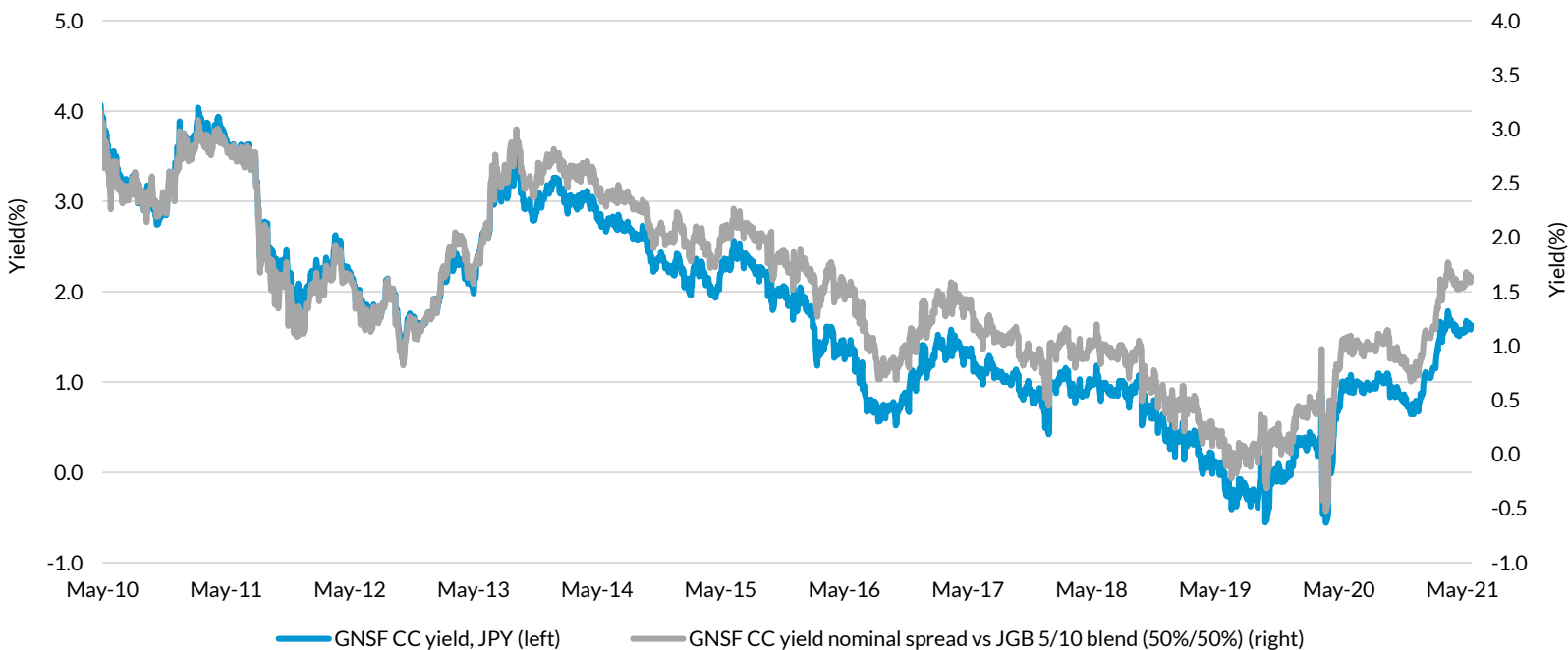
If Ginnie Mae securities are hedged into Japanese Yen, they look favorable on a yield basis versus the JGB 5/10 blend at the end of May 2021. More precisely, hedged into Japanese yen, the G2SF and GNSF have a 147 and 163 bp yield, respectively, versus the JGB 5/10 blend. This represents a 5 and 9 bp widening for the G2SF and GNSF, respectively, since the end of April 2021.

G2SF CC yield & nominal spread, JPY



Sources: Bloomberg and State Street Global Advisors. Note: Data as of May 2021.

GNSF CC yield & nominal spread, JPY

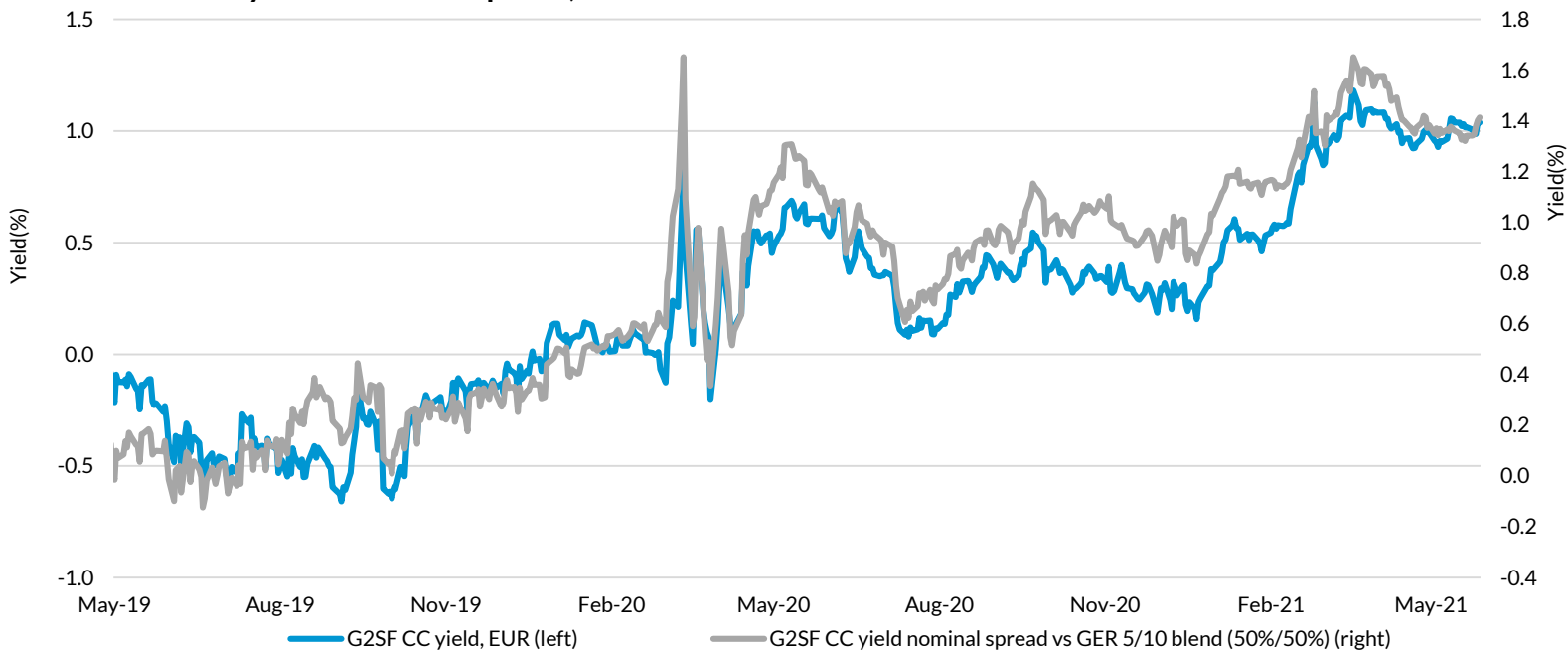


Sources: Bloomberg and State Street Global Advisors. Note: Data as of May 2021.

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

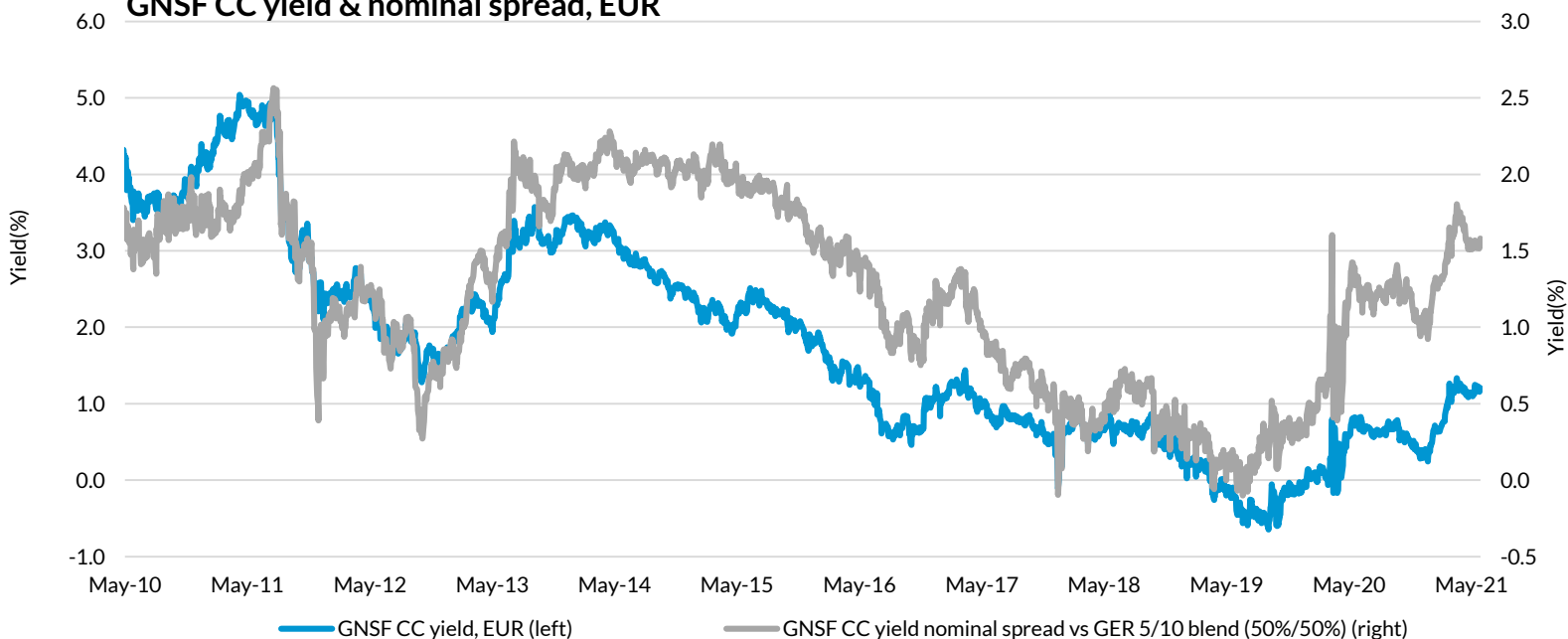
If Ginnie Mae securities are hedged into Euros, they look favorable on a yield basis versus the German 5/10 Blend. The figures below show that at the end of May 2021, the current coupon G2SF and GNSF hedged into euros have a 141 and 158 bp higher yield than the average of the German 5/10, respectively. This represents a 3 and 7 bp widening for the G2SF and GNSF, respectively, since the end of April 2021.

G2SF CC yield & nominal spread, EUR



Sources: Bloomberg and State Street Global Advisors. Note: Data as of May 2021.

GNSF CC yield & nominal spread, EUR

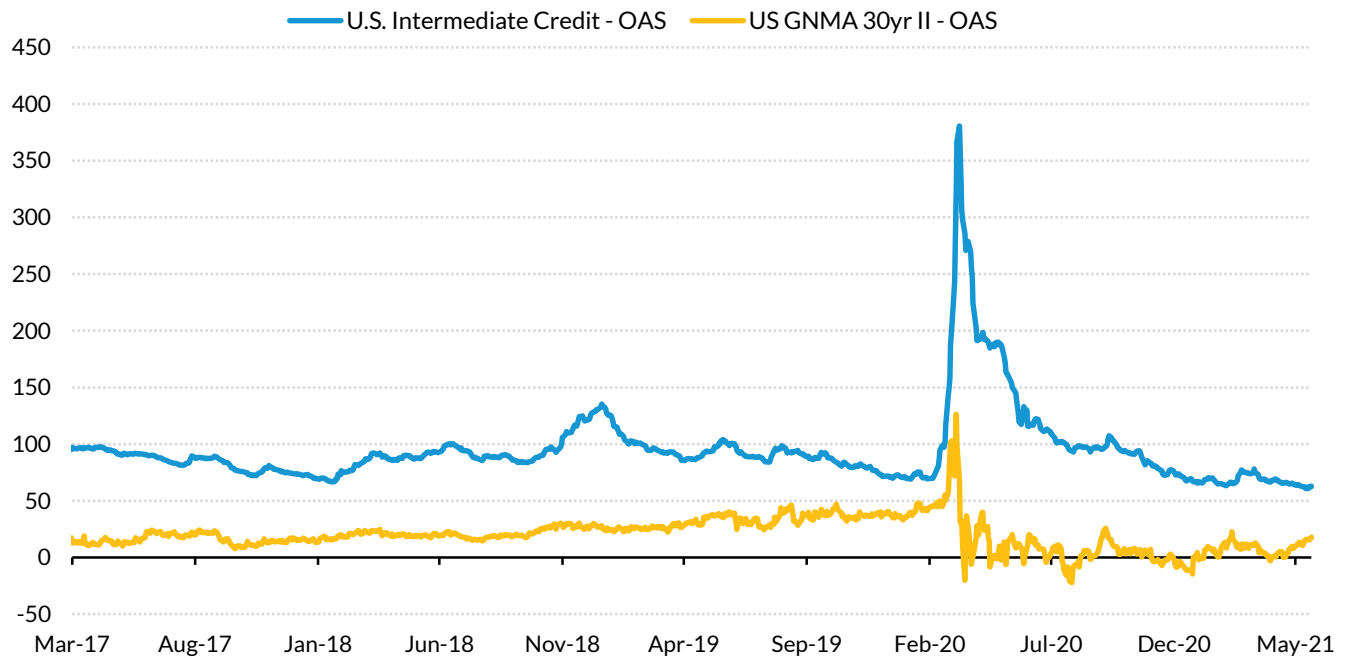


Sources: Bloomberg and State Street Global Advisors. Note: Data as of May 2021.

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

The spread between US Intermediate Credit and GNMA II 30 year OAS skyrocketed in February 2020 in response to the COVID-19 panic. This was followed by substantial tightening over the remainder of 2020 and into May of 2021. The OAS on intermediate credit fully recovered from its enormous widening in early 2020, while the Ginnie Mae II 30-year fell to multi-year lows. The spread between the two remains elevated, ending May 2021 at 45 bps, higher than the 21 bps in January 2020, but similar to levels in mid 2019.

G2 30 MBS versus Intermediate Credit



Sources: State Street Global Advisors. Note: Data as of May 2021.

Spread between Intermediate credit and 30-year GNMA MBS OAS

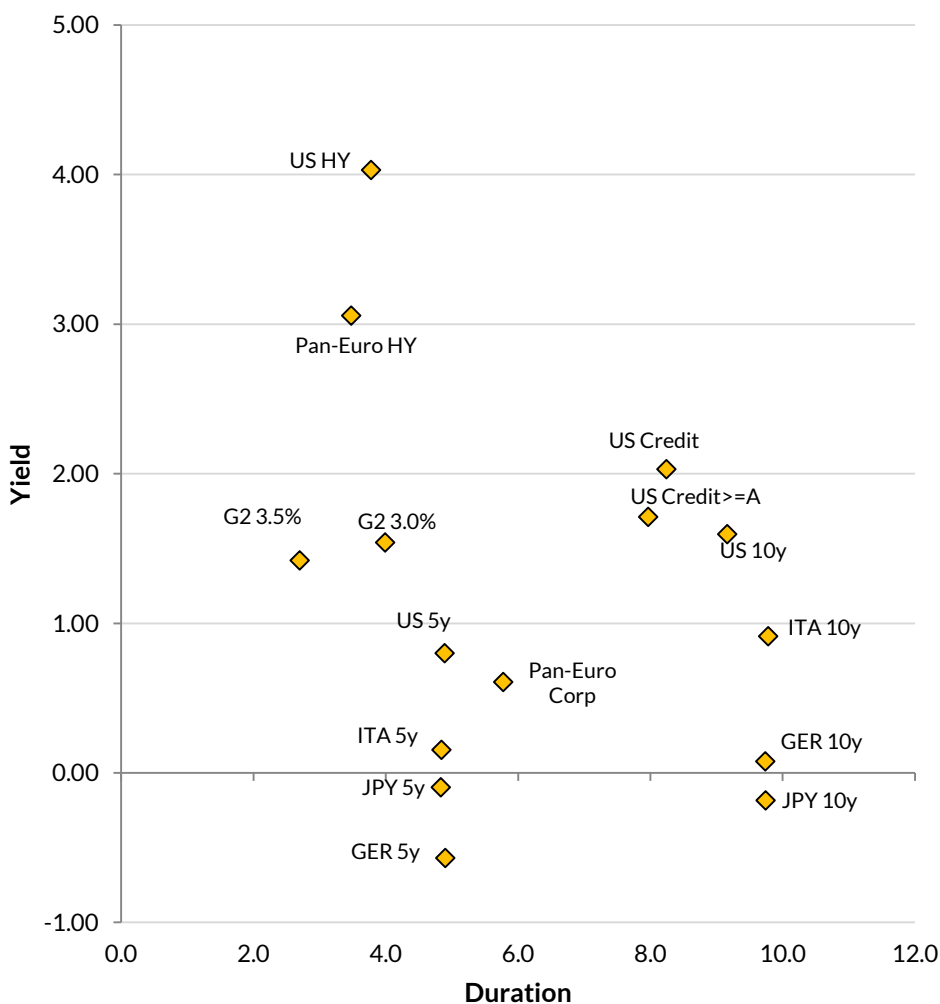


Sources: State Street Global Advisors. Note: Data as of May 2021.

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

US MBS yields are about the same or higher than most government securities with the same or longer durations. The only asset classes with significantly more yield and a similarly short duration are the US and Pan-Euro high yield. Duration, a measure of sensitivity to interest rate changes, does not fully capture the volatility of the high yield asset classes, as there is a large credit component, which has moved front and center in light of COVID-19.

Yield versus duration



| Security | Duration | Yield |
|----------------|----------|-------|
| US 5y | 4.9 | 0.80 |
| US 10y | 9.2 | 1.60 |
| GNMA II 3.0% | 4.0 | 1.54 |
| GNMA II 3.5% | 2.7 | 1.42 |
| JPY 5y | 4.8 | -0.10 |
| JPY 10y | 9.7 | 0.08 |
| GER 5y | 4.9 | -0.57 |
| GER 10y | 9.7 | -0.18 |
| ITA 5y | 4.8 | 0.15 |
| ITA 10y | 9.8 | 0.91 |
| US credit | 8.2 | 2.03 |
| US credit >= A | 8.0 | 1.71 |
| US HY | 3.8 | 4.03 |
| Pan-Euro Corp | 5.8 | 0.61 |
| Pan-Euro HY | 3.5 | 3.06 |

Sources: Bloomberg and State Street Global Advisors. Note: Yields are in base currency of security and unhedged. Data as of May 2021.

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

The average return on the Ginnie Mae index over the past decade is less than other indices. However, the standard deviation of the Ginnie Mae index is the lowest of any sector, as it has the least price volatility over a 1, 3, 5 and 10 year horizon. The result: The Sharpe Ratio, or excess return per unit of risk for the Ginnie Mae index is highest among all asset classes for the 3-year horizon and is higher than any of the other US indices (10-year Treasury, US Corporate Credit, US High Yield) in a 10-year horizon.

Average Return (Per Month)

| Time Period | US MBS Ginnie Mae | US Treasury | US Credit Corp | Pan Euro Credit Corp | US High Yield* | Pan Euro High Yield* |
|-------------|-------------------|-------------|----------------|----------------------|----------------|----------------------|
| 1 year | -0.09 | -0.31 | 0.31 | 0.41 | 1.18 | 1.07 |
| 3 year | 0.29 | 0.37 | 0.59 | 0.26 | 0.61 | 0.42 |
| 5 year | 0.18 | 0.21 | 0.42 | 0.19 | 0.62 | 0.39 |
| 10 year | 0.21 | 0.23 | 0.41 | 0.35 | 0.54 | 0.53 |

Average Excess Return (Per Month)

| Time Period | US MBS Ginnie Mae | US Treasury | US Credit Corp | Pan Euro Credit Corp | US High Yield* | Pan Euro High Yield* |
|-------------|-------------------|-------------|----------------|----------------------|----------------|----------------------|
| 1 year | -0.09 | -0.32 | 0.31 | 0.47 | 1.17 | 1.12 |
| 3 year | 0.19 | 0.27 | 0.49 | 0.31 | 0.51 | 0.47 |
| 5 year | 0.09 | 0.12 | 0.34 | 0.25 | 0.53 | 0.45 |
| 10 year | 0.16 | 0.18 | 0.36 | 0.38 | 0.49 | 0.57 |

Standard Deviation

| Time Period | US MBS Ginnie Mae | US Treasury | US Credit Corp | Pan Euro Credit Corp | US High Yield* | Pan Euro High Yield* |
|-------------|-------------------|-------------|----------------|----------------------|----------------|----------------------|
| 1 year | 0.25 | 0.94 | 1.72 | 0.73 | 1.62 | 1.22 |
| 3 year | 0.59 | 1.27 | 2.03 | 1.65 | 2.69 | 2.89 |
| 5 year | 0.59 | 1.17 | 1.71 | 1.37 | 2.15 | 2.31 |
| 10 year | 0.62 | 1.06 | 1.49 | 1.36 | 2.03 | 2.03 |

Sharpe Ratio

| Time Period | US MBS Ginnie Mae | US Treasury | US Credit Corp | Pan Euro Credit Corp | US High Yield | Pan Euro High Yield* |
|-------------|-------------------|-------------|----------------|----------------------|---------------|----------------------|
| 1 year | -0.37 | -0.34 | 0.18 | 0.65 | 0.72 | 0.92 |
| 3 year | 0.32 | 0.21 | 0.24 | 0.19 | 0.19 | 0.16 |
| 5 year | 0.16 | 0.10 | 0.20 | 0.18 | 0.25 | 0.19 |
| 10 year | 0.26 | 0.17 | 0.24 | 0.28 | 0.24 | 0.28 |

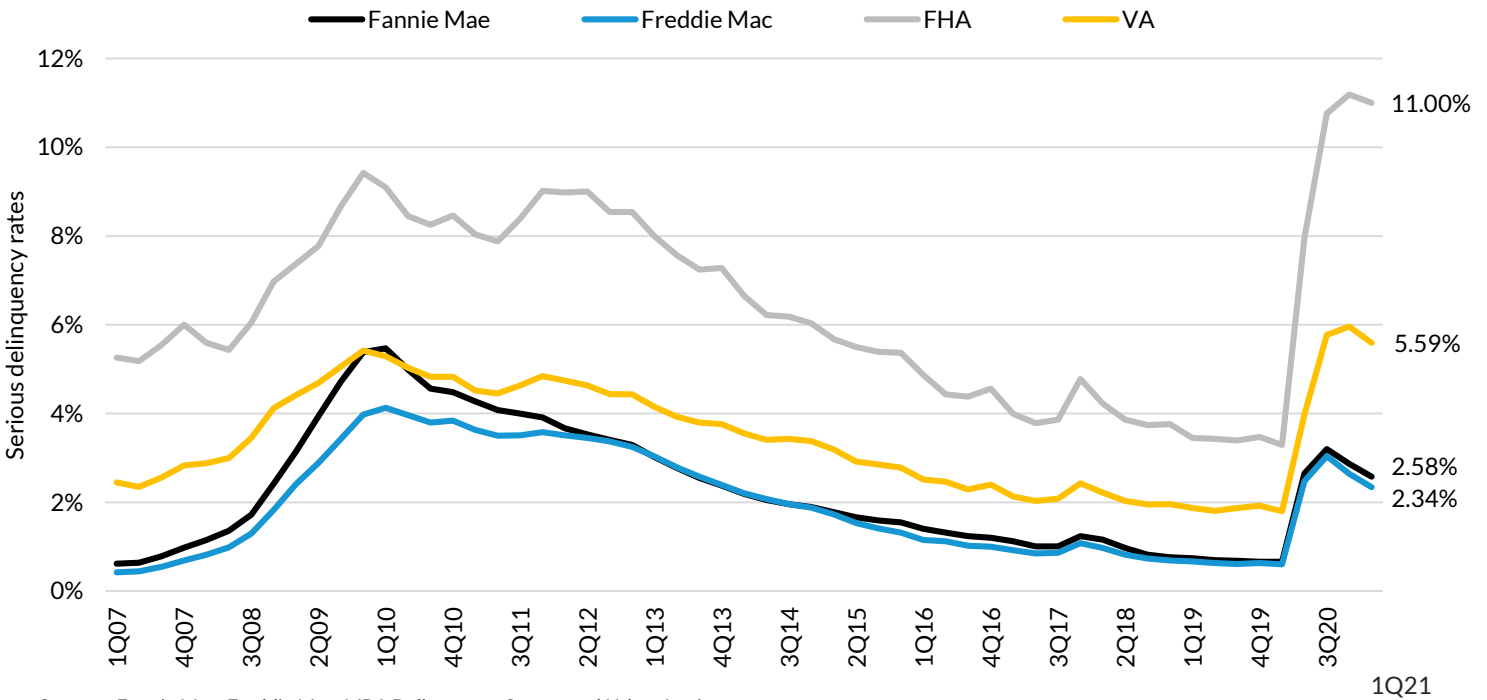
*Assumes 2% capitalization max per issuer on high yield indices

Sources: Barclays Indices, Bloomberg and State Street Global Advisors. Note: Data as of May 2021.

State of the US Housing Market

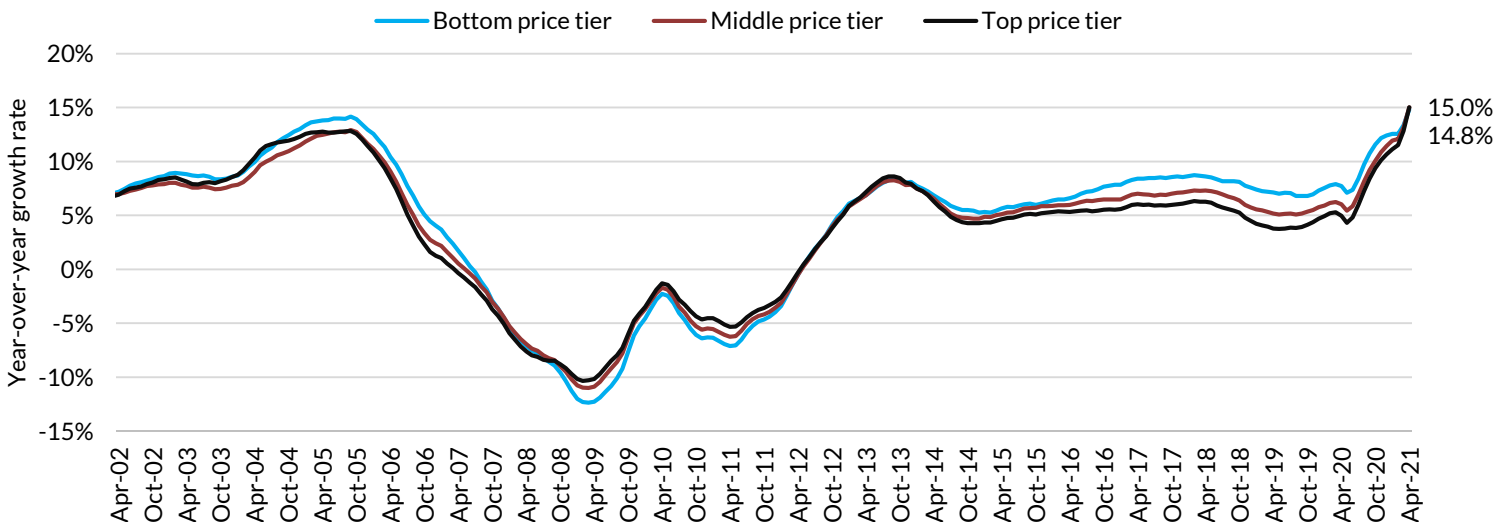
Serious delinquency rates for single-family GSE, FHA, and VA loans all fell slightly in Q1 2021. The increase in delinquencies from Q2 2020 to Q1 2021 reflects the impact of the pandemic on mortgage payments. The bottom chart shows nationwide house prices for the bottom, middle and the top quintiles by price. House prices escalated significantly in the second half of 2020, a trend that has remained in place in 2021. Prices have generally risen most at the lower end of the market where Ginnie Mae plays a major role, although this was not the case for April 2021. Prices at the lower end of the market rose by 14.8 percent for 12 months ended April 2021, lower than the 15.0 percent for the top end of the market. Year-over-year price growth in April 2021 was higher than in March 2021 for all price tiers.

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. Data as of Q1 2021.

National Year-Over-Year HPI Growth



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. Black Knight divides home prices in each region into quintiles; this figure shows the performance of the bottom, middle and top quintiles. Data as of April 2021.

State of the US Housing Market

Nationally, nominal home prices have increased by 81.9 percent since the trough, and now exceed their pre-crisis peak valuation on a nominal basis by 36.0 percent. The picture is very different across states, with most states well in excess of the prior peak; two states, Illinois and Connecticut, surpassed their 2007 peak only in March of 2021, currently 1.5 and 3.1 percent above the peak.

| State | 2000 to Peak | Peak to Trough | Trough to Current | HPI Changes | |
|----------------------|--------------|----------------|-------------------|-------------|--------------------------|
| | | | | YOY | Current HPI % Above Peak |
| National | 74.8% | -25.2% | 81.9% | 14.8% | 36.0% |
| Alabama | 35.9% | -15.5% | 51.0% | 11.9% | 27.6% |
| Alaska | 68.9% | -3.0% | 36.4% | 10.0% | 32.3% |
| Arizona | 110.1% | -47.9% | 138.4% | 23.7% | 24.2% |
| Arkansas | 41.5% | -9.8% | 42.0% | 13.9% | 28.1% |
| California | 154.5% | -43.3% | 129.7% | 17.8% | 30.3% |
| Colorado | 40.4% | -12.9% | 118.5% | 17.1% | 90.4% |
| Connecticut | 92.0% | -24.9% | 37.2% | 16.6% | 3.1% |
| Delaware | 93.7% | -23.6% | 49.6% | 13.9% | 14.3% |
| District of Columbia | 174.4% | -14.2% | 71.1% | 6.9% | 46.9% |
| Florida | 128.1% | -46.9% | 101.6% | 14.7% | 7.1% |
| Georgia | 38.2% | -31.5% | 96.8% | 14.9% | 34.9% |
| Hawaii | 163.2% | -22.7% | 71.6% | 11.9% | 32.5% |
| Idaho | 71.6% | -28.9% | 164.3% | 33.9% | 88.0% |
| Illinois | 61.5% | -34.4% | 54.6% | 9.2% | 1.5% |
| Indiana | 21.6% | -8.1% | 60.0% | 14.2% | 47.0% |
| Iowa | 28.6% | -4.8% | 40.6% | 9.3% | 33.9% |
| Kansas | 34.5% | -9.3% | 61.8% | 10.7% | 46.7% |
| Kentucky | 29.7% | -7.7% | 52.5% | 12.0% | 40.8% |
| Louisiana | 48.7% | -5.5% | 35.0% | 8.2% | 27.7% |
| Maine | 81.9% | -12.4% | 64.5% | 14.5% | 44.1% |
| Maryland | 129.5% | -28.9% | 49.3% | 13.9% | 6.2% |
| Massachusetts | 92.4% | -22.7% | 83.8% | 13.9% | 42.2% |
| Michigan | 23.8% | -39.5% | 109.6% | 14.3% | 26.8% |
| Minnesota | 66.7% | -28.1% | 79.4% | 10.8% | 29.1% |
| Mississippi | 41.2% | -13.8% | 43.3% | 9.6% | 23.6% |
| Missouri | 42.7% | -15.5% | 59.5% | 12.8% | 34.8% |
| Montana | 82.9% | -11.8% | 88.0% | 22.2% | 65.9% |
| Nebraska | 26.6% | -6.8% | 65.8% | 13.1% | 54.5% |
| Nevada | 127.0% | -59.0% | 164.8% | 15.9% | 8.6% |
| New Hampshire | 90.9% | -23.4% | 76.6% | 19.9% | 35.2% |
| New Jersey | 117.8% | -28.1% | 51.8% | 16.4% | 9.2% |
| New Mexico | 66.5% | -16.4% | 46.0% | 12.9% | 22.1% |
| New York | 98.4% | -15.2% | 57.8% | 10.3% | 33.7% |
| North Carolina | 40.6% | -16.2% | 65.1% | 15.8% | 38.4% |
| North Dakota | 53.4% | -3.8% | 65.0% | 8.0% | 58.7% |
| Ohio | 21.1% | -18.5% | 64.1% | 14.6% | 33.8% |
| Oklahoma | 37.4% | -2.7% | 37.3% | 10.8% | 33.5% |
| Oregon | 81.9% | -28.3% | 120.2% | 17.7% | 57.9% |
| Pennsylvania | 70.0% | -11.8% | 44.8% | 12.3% | 27.7% |
| Rhode Island | 130.2% | -34.7% | 86.4% | 18.9% | 21.8% |
| South Carolina | 44.9% | -19.6% | 58.0% | 12.8% | 27.0% |
| South Dakota | 45.2% | -3.6% | 61.5% | 8.6% | 55.7% |
| Tennessee | 34.9% | -11.9% | 76.3% | 16.7% | 55.3% |
| Texas | 33.6% | -5.8% | 74.3% | 13.1% | 64.2% |
| Utah | 55.1% | -22.2% | 124.3% | 22.1% | 74.5% |
| Vermont | 81.1% | -9.2% | 46.2% | 19.2% | 32.7% |
| Virginia | 100.1% | -23.0% | 48.0% | 12.2% | 14.0% |
| Washington | 84.7% | -28.6% | 138.6% | 20.9% | 70.3% |
| West Virginia | 40.5% | -5.6% | 36.4% | 11.5% | 28.8% |
| Wisconsin | 44.8% | -16.4% | 58.7% | 12.4% | 32.6% |
| Wyoming | 77.8% | -7.4% | 53.7% | 13.2% | 42.3% |

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. HPI data as of April 2021. Negative sign indicates that state is above earlier peak. Peak refers to the month when HPI reached the highest level for each state/US during the housing boom period, ranging from 09/2005 to 09/2008. Trough represents the month when HPI fell to the lowest level for each state/US after the housing bust, ranging from 01/2009 to 03/2012. Current is 4/2021, the latest HPI data period.

State of the US Housing Market

Ginnie Mae MBS constitute 22.7 percent of outstanding agency issuance by loan balance and 23.6 percent of new issuance over the past year. However, the Ginnie Mae share varies widely across states, with the share of outstanding (by loan balance) as low as 10.0 percent in the District of Columbia and as high as 44.2 percent in Mississippi. In general, the Ginnie Mae share is higher in states with lower home prices.

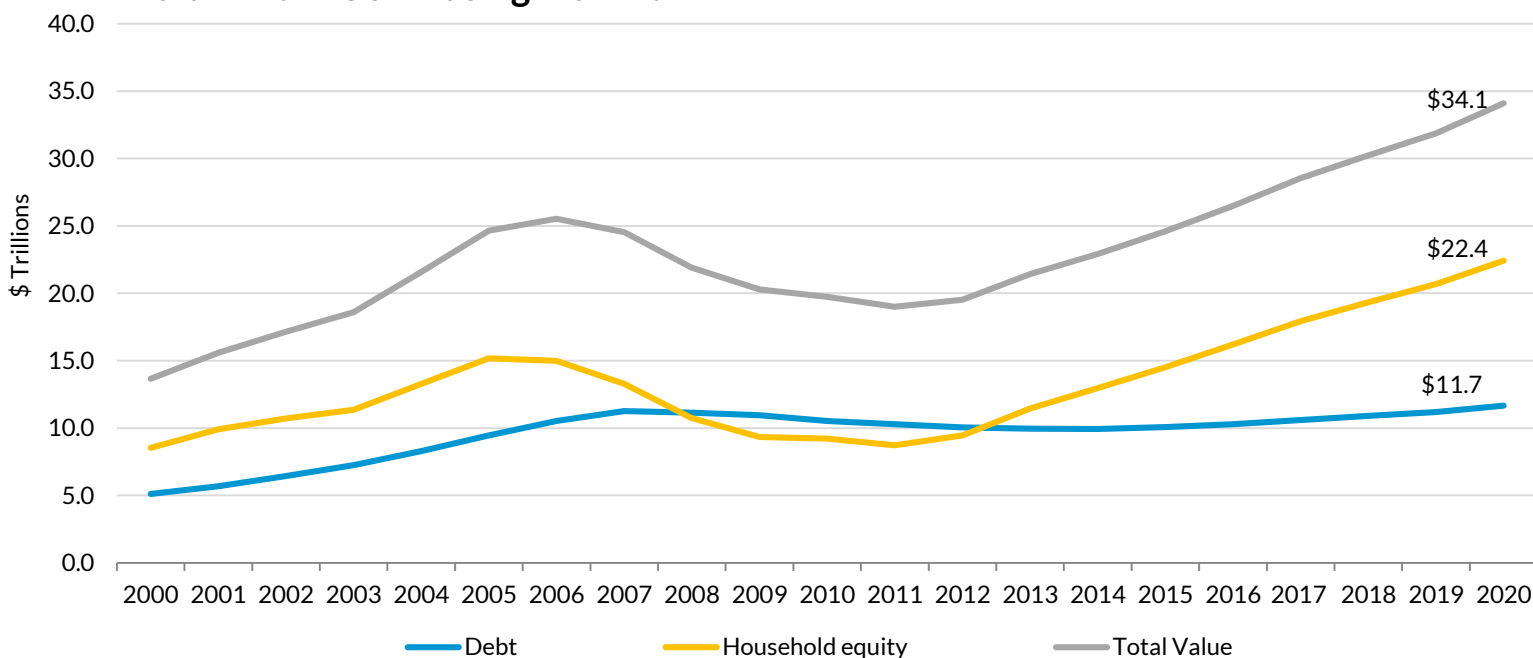
| State | Agency Issuance (past 1 year) | | | | Agency Outstanding | | | |
|----------------------|-------------------------------|-----------------|---------------------------|--------------------------|--------------------|-----------------|---------------------------|--------------------------|
| | GNMA Share | GNMA Loan Count | GNMA Avg. Loan Size (000) | GSE Avg. Loan Size (000) | GNMA Share | GNMA Loan Count | GNMA Avg. Loan Size (000) | GSE Avg. Loan Size (000) |
| National | 23.6% | 3,290,058 | 260.1 | 284.1 | 22.7% | 10,889,368 | 166.5 | 209.6 |
| Alabama | 37.0% | 61,762 | 201.6 | 223.1 | 37.0% | 234,415 | 130.7 | 165.5 |
| Alaska | 45.4% | 10,872 | 313.5 | 281.7 | 43.2% | 37,334 | 235.4 | 212.1 |
| Arizona | 25.1% | 122,459 | 255.2 | 258.9 | 21.1% | 294,187 | 172.7 | 203.1 |
| Arkansas | 34.4% | 32,961 | 172.2 | 202.0 | 36.6% | 137,316 | 112.5 | 149.7 |
| California | 15.9% | 296,288 | 400.3 | 394.0 | 13.3% | 716,834 | 271.2 | 304.5 |
| Colorado | 23.6% | 100,170 | 337.7 | 321.9 | 19.3% | 225,454 | 235.8 | 256.2 |
| Connecticut | 22.7% | 26,883 | 244.7 | 270.6 | 23.0% | 105,463 | 180.7 | 200.6 |
| Delaware | 29.3% | 14,765 | 245.3 | 260.7 | 28.8% | 51,012 | 180.4 | 197.9 |
| District of Columbia | 12.8% | 2,990 | 520.4 | 443.5 | 10.0% | 8,999 | 304.6 | 338.9 |
| Florida | 33.9% | 281,742 | 249.4 | 251.0 | 28.6% | 843,398 | 175.3 | 190.3 |
| Georgia | 32.0% | 150,238 | 222.8 | 253.4 | 30.8% | 503,736 | 148.5 | 187.9 |
| Hawaii | 40.3% | 16,672 | 554.8 | 441.3 | 23.2% | 32,909 | 390.6 | 340.1 |
| Idaho | 23.1% | 24,512 | 261.1 | 253.2 | 21.5% | 71,490 | 167.6 | 198.0 |
| Illinois | 16.8% | 90,327 | 207.1 | 236.8 | 19.0% | 354,196 | 140.4 | 171.6 |
| Indiana | 25.7% | 74,562 | 174.4 | 193.4 | 28.5% | 287,617 | 113.1 | 140.0 |
| Iowa | 16.3% | 19,254 | 178.0 | 197.2 | 19.6% | 83,605 | 115.0 | 143.1 |
| Kansas | 23.7% | 24,148 | 186.8 | 215.0 | 27.2% | 99,649 | 120.8 | 153.9 |
| Kentucky | 29.2% | 42,689 | 182.4 | 200.7 | 31.4% | 164,447 | 122.6 | 145.8 |
| Louisiana | 34.3% | 48,253 | 197.5 | 229.7 | 35.6% | 189,639 | 139.3 | 170.3 |
| Maine | 23.2% | 11,403 | 214.9 | 238.9 | 23.8% | 39,041 | 153.5 | 178.8 |
| Maryland | 33.0% | 97,462 | 329.7 | 316.6 | 29.3% | 289,381 | 230.1 | 237.8 |
| Massachusetts | 13.3% | 37,732 | 338.0 | 342.0 | 13.1% | 115,927 | 242.2 | 257.3 |
| Michigan | 15.7% | 69,968 | 176.7 | 205.3 | 18.6% | 286,439 | 114.4 | 148.0 |
| Minnesota | 15.5% | 46,045 | 235.8 | 248.2 | 16.5% | 168,777 | 158.1 | 187.4 |
| Mississippi | 41.9% | 27,073 | 183.4 | 206.1 | 44.2% | 117,285 | 123.0 | 151.9 |
| Missouri | 23.7% | 64,551 | 185.1 | 209.9 | 27.0% | 252,702 | 121.6 | 152.5 |
| Montana | 23.6% | 11,192 | 257.8 | 261.1 | 21.5% | 34,854 | 174.0 | 198.2 |
| Nebraska | 22.4% | 17,068 | 201.8 | 205.4 | 24.7% | 68,340 | 125.2 | 151.3 |
| Nevada | 33.1% | 56,973 | 290.2 | 269.8 | 25.8% | 135,457 | 202.4 | 213.6 |
| New Hampshire | 21.3% | 13,113 | 272.8 | 266.2 | 20.7% | 41,351 | 195.7 | 200.6 |
| New Jersey | 18.1% | 66,295 | 288.4 | 323.3 | 19.1% | 233,028 | 209.7 | 242.1 |
| New Mexico | 35.7% | 24,459 | 215.7 | 227.0 | 34.9% | 96,214 | 142.3 | 165.8 |
| New York | 16.3% | 52,566 | 285.7 | 321.9 | 19.0% | 311,790 | 183.7 | 233.0 |
| North Carolina | 27.7% | 127,661 | 222.5 | 250.7 | 26.2% | 424,512 | 145.2 | 184.6 |
| North Dakota | 20.7% | 5,123 | 238.3 | 232.2 | 19.9% | 16,593 | 169.8 | 178.4 |
| Ohio | 24.3% | 98,255 | 174.8 | 195.7 | 27.6% | 430,336 | 112.8 | 139.3 |
| Oklahoma | 38.5% | 42,721 | 186.9 | 206.2 | 40.6% | 191,719 | 121.6 | 151.0 |
| Oregon | 19.7% | 44,623 | 302.4 | 299.8 | 16.6% | 118,024 | 210.2 | 233.4 |
| Pennsylvania | 21.8% | 86,288 | 197.9 | 239.0 | 25.1% | 398,692 | 134.2 | 171.4 |
| Rhode Island | 25.7% | 10,587 | 270.6 | 261.7 | 25.7% | 35,414 | 196.2 | 201.0 |
| South Carolina | 33.3% | 74,177 | 223.6 | 236.6 | 30.3% | 229,949 | 152.0 | 177.0 |
| South Dakota | 23.8% | 9,045 | 214.9 | 218.5 | 26.4% | 29,937 | 146.8 | 168.0 |
| Tennessee | 30.3% | 83,262 | 224.7 | 246.3 | 30.1% | 285,437 | 144.0 | 185.2 |
| Texas | 31.0% | 312,720 | 236.2 | 258.8 | 29.0% | 1,074,922 | 151.9 | 192.7 |
| Utah | 17.7% | 43,587 | 297.3 | 291.1 | 17.1% | 109,115 | 206.4 | 239.3 |
| Vermont | 17.7% | 3,227 | 221.6 | 237.8 | 16.8% | 12,476 | 163.6 | 169.6 |
| Virginia | 34.9% | 153,058 | 328.9 | 323.3 | 30.6% | 440,720 | 217.0 | 239.1 |
| Washington | 21.3% | 98,981 | 340.8 | 348.6 | 18.2% | 249,080 | 231.4 | 267.5 |
| West Virginia | 40.3% | 14,034 | 185.4 | 190.7 | 39.9% | 56,398 | 126.5 | 136.8 |
| Wisconsin | 14.3% | 36,613 | 199.9 | 212.4 | 15.1% | 128,041 | 134.8 | 154.7 |
| Wyoming | 33.0% | 8,649 | 245.3 | 247.4 | 31.2% | 25,717 | 180.0 | 191.3 |

Sources: eMBS and Urban Institute. Note: Ginnie Mae outstanding share are based on loan balance as of March 2021. Ginnie Mae issuance is based on the last 12 months, from April 2020 to April 2021.

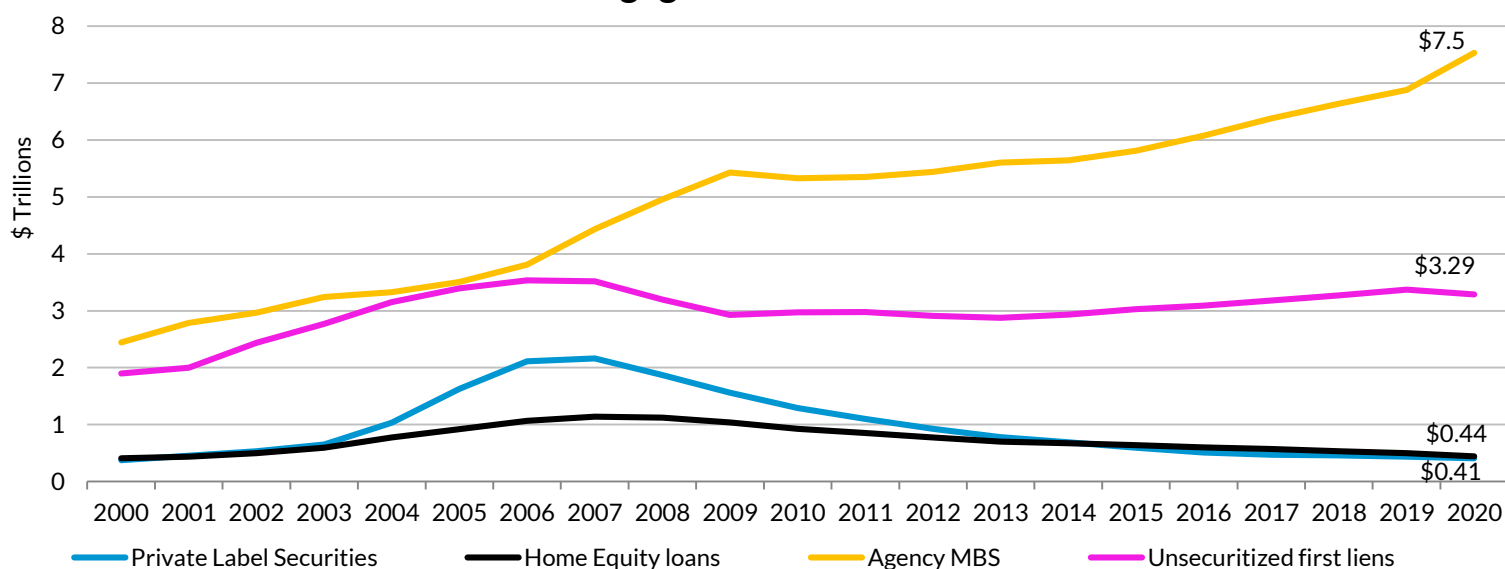
State of the US Housing Market

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 \$11.5 trillion in Q3 2020 to \$11.7 trillion in Q4 2020 while total household equity increased from \$21.7 trillion to \$22.4 trillion. The total value of the housing market reached \$34.1 trillion in Q4 2020, 33.5 percent higher than the pre-crisis peak in 2006. Agency MBS account for 64.5 percent of the total mortgage debt outstanding, private-label securities make up 3.5 percent, and unsecuritized first liens make up 28.2 percent. Home equity loans comprise the remaining 3.8 percent of the total.

Value of the US Housing Market



Size of the US Residential Mortgage Market



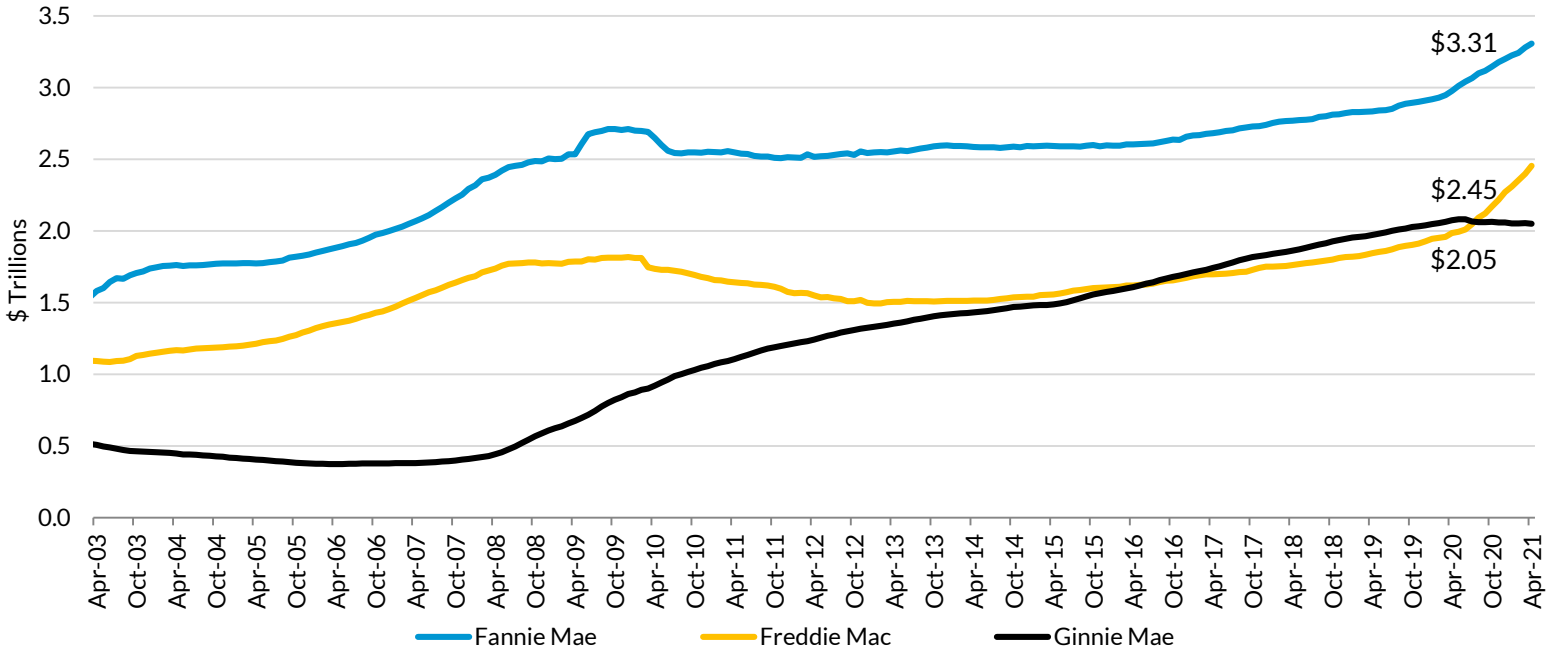
Sources: Federal Reserve Flow of Funds, eMBS and Urban Institute. Last updated April 2021.

Note Top: 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. Note Bottom: Unsecuritized first liens includes loans held by commercial banks, GSEs, savings institutions, credit unions and other financial companies.

State of the US Housing Market

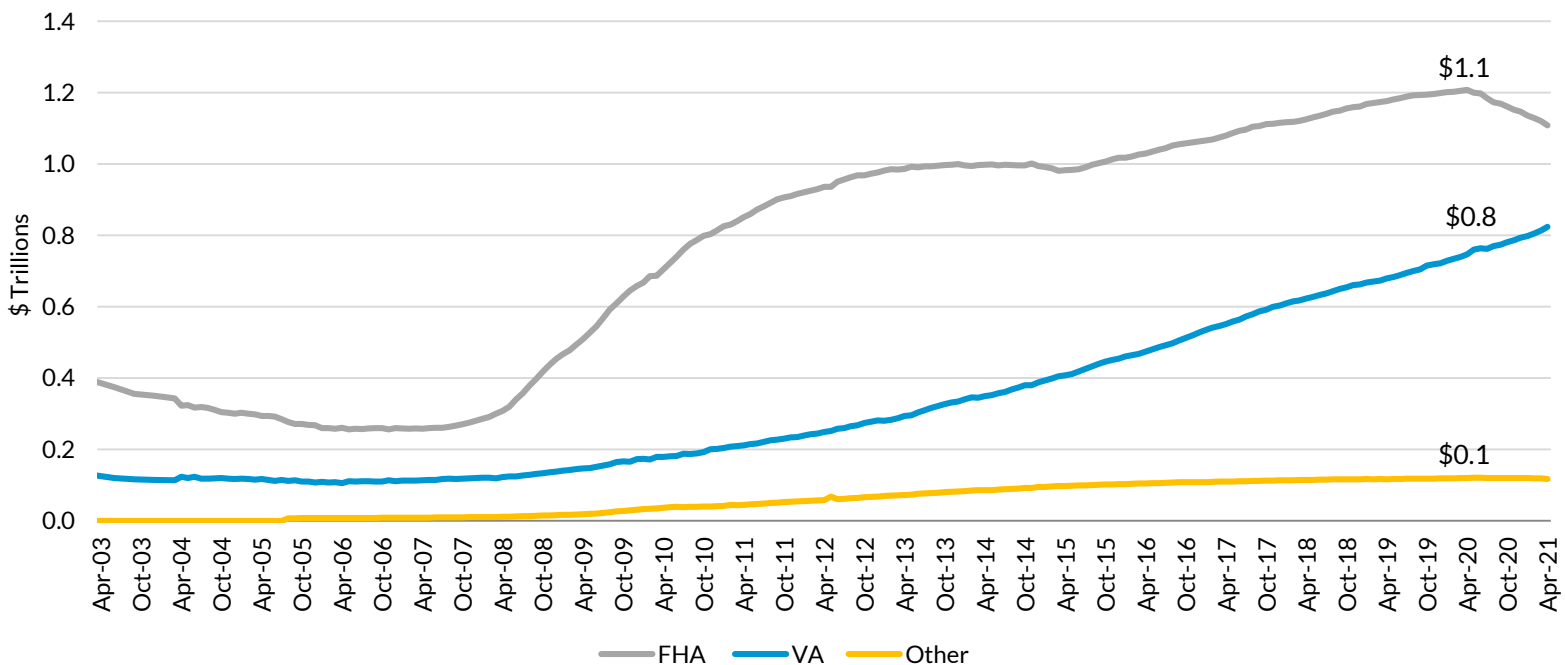
As of April 2021, outstanding securities in the agency market totaled \$7.81 trillion: 42.3 percent Fannie Mae, 31.4 percent Freddie Mac, and 26.2 percent Ginnie Mae MBS. Within the Ginnie Mae market, both FHA and VA have grown very rapidly since 2009, although since May 2020, FHA has contracted. FHA comprises 54.6 percent of total Ginnie Mae MBS outstanding, while VA comprises 39.6 percent. Note that during the pandemic the GSEs have been growing faster than Ginnie Mae, courtesy of borrowers with home price appreciation moving from FHA to conventional refinances and saving on the mortgage insurance premium.

Outstanding Agency Mortgage-Backed Securities



Sources: eMBS and Urban Institute Note: Data as of April 2021.

Outstanding Ginnie Mae Mortgage-Backed Securities

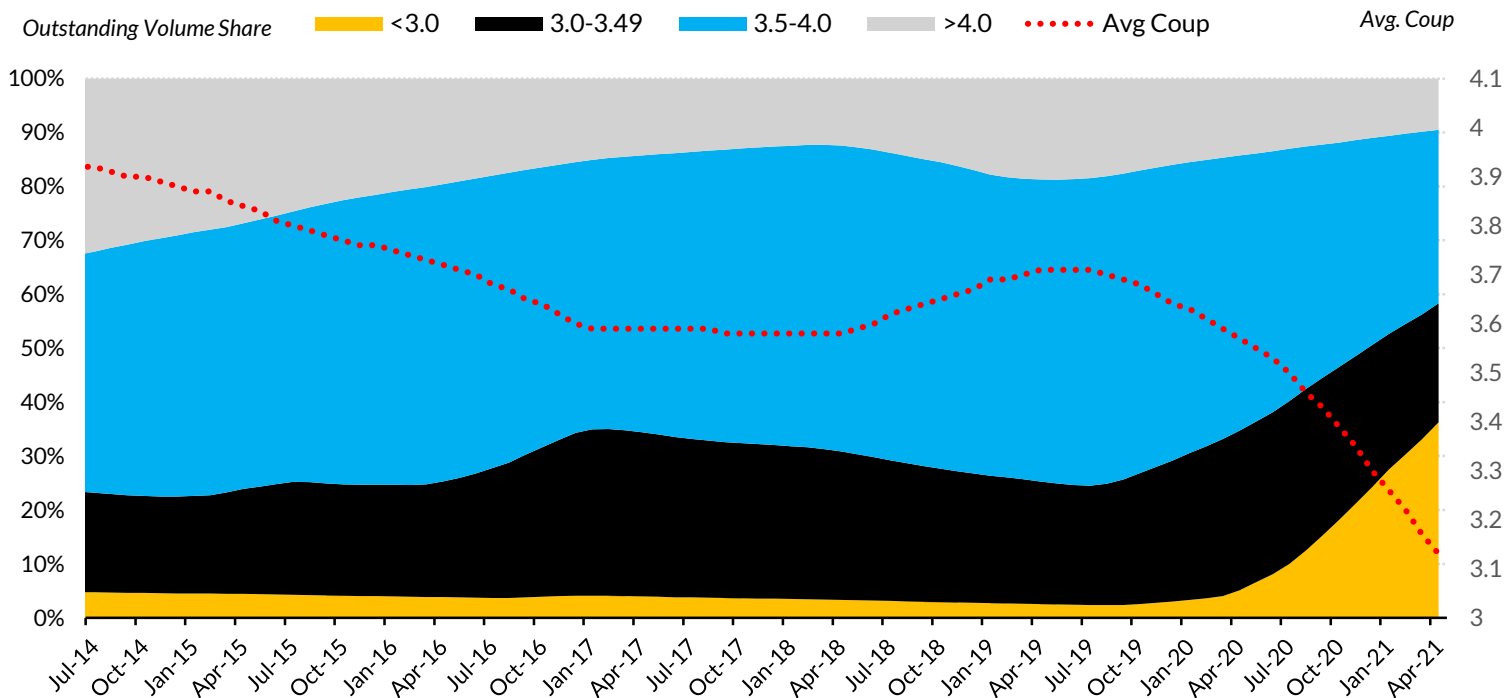


Sources: eMBS and Urban Institute. Note: Data as of April 2021.

State of the US Housing Market

As of April 2021, the average coupon on outstanding Ginnie Mae pools was 3.13 percent, declining steadily over time. The share of outstanding MBS pools with coupons below 3.0 percent has grown exponentially in 2020 and early 2021 due to plummeting rates. The bottom chart shows that loans originated since 2019 now comprise over half, 57.6 percent, of outstanding as older vintages continue to refinance in substantial numbers.

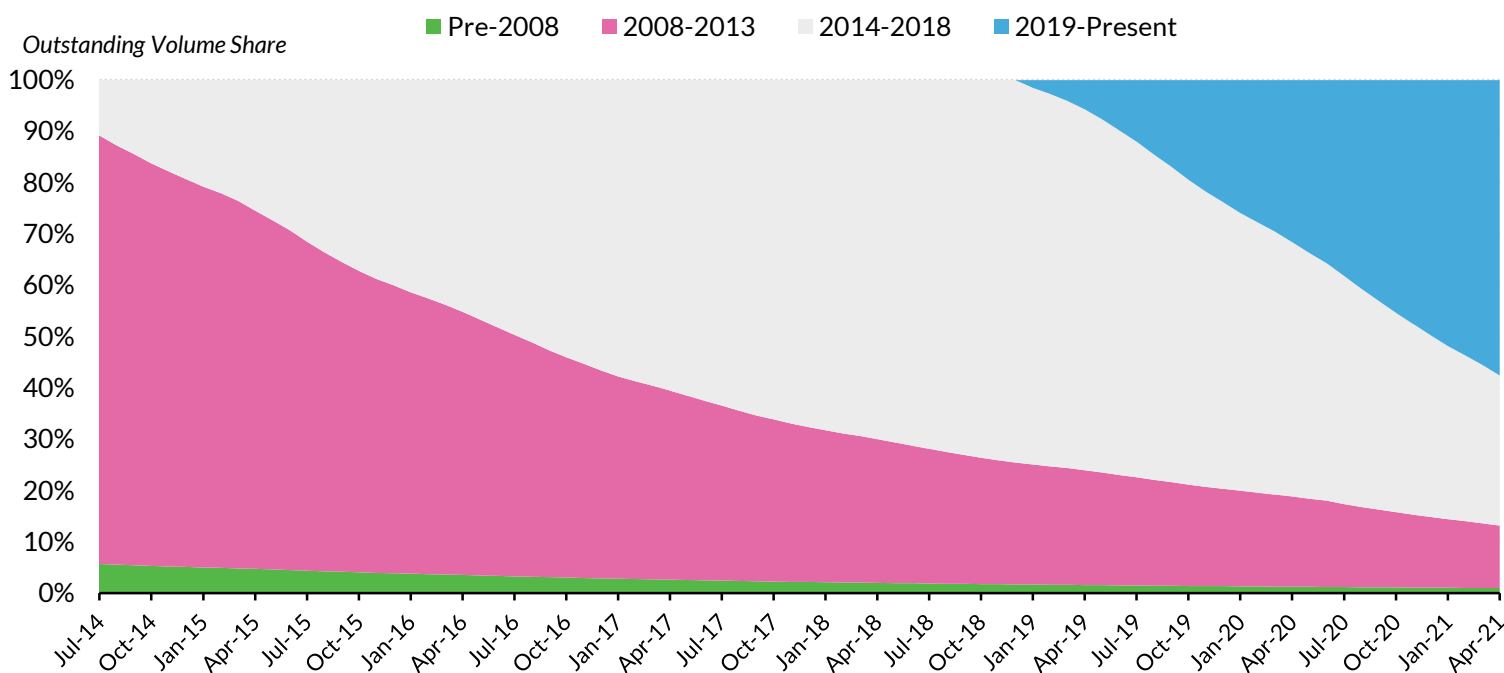
Outstanding Ginnie Balance, by Coupon



Sources: eMBS and Urban Institute

Note: Data as of April 2021. Average coupon is weighted by remaining principal balance.

Outstanding Ginnie Volume, by Vintage



Sources: eMBS and Urban Institute. Note: "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of April 2021.

State of the US Housing Market

In April 2021, a total of 401,336 Ginnie Mae loans were in forbearance, 21,686 of which were removed from pools (i.e. liquidated) during the month. Most liquidated loans (19,524) were FHA. Forborne loans removed from pools in April 2021 had slightly higher note rates and FICO scores than forborne loans that remain in pools.

All loans in forbearance – April 2021

| | <u>FICO Score*</u> | <u>Note Rate*</u> | <u>Current Principal Balance Median</u> | <u>FTHB Share</u> | <u>Purchase Share</u> | <u>Loan Count</u> |
|---------------|--------------------|-------------------|---|-------------------|-----------------------|-------------------|
| Ginnie | 659 | 3.9 | \$166,874 | 78.1% | 69.1% | 401,336 |
| Bank | 675 | 4.1 | \$130,379 | 73.7% | 77.2% | 53,859 |
| Nonbank | 657 | 3.9 | \$172,497 | 78.7% | 68.1% | 347,477 |
| FHA | 654 | 4.0 | \$162,711 | 78.8% | 71.6% | 286,654 |
| Bank | 668 | 4.2 | \$118,285 | 74.7% | 79.4% | 38,831 |
| Nonbank | 653 | 4.0 | \$169,901 | 79.3% | 70.7% | 247,823 |
| VA | 668 | 3.7 | \$215,228 | 70.6% | 49.2% | 79,721 |
| Bank | 687 | 3.7 | \$192,475 | 68.5% | 67.7% | 12,047 |
| Nonbank | 665 | 3.6 | \$219,039 | 71.2% | 45.9% | 67,674 |

Loans in forbearance and removed from pools – April 2021

| | <u>FICO Score*</u> | <u>Note Rate*</u> | <u>Current Principal Balance Median</u> | <u>FTHB Share</u> | <u>Purchase Share</u> | <u>Loan Count</u> |
|---------------|--------------------|-------------------|---|-------------------|-----------------------|-------------------|
| Ginnie | 662 | 4.1 | \$166,000 | 76.8% | 61.2% | 21,686 |
| Bank | 678 | 4.1 | \$146,489 | 73.7% | 82.7% | 4,656 |
| Nonbank | 658 | 4.0 | \$172,000 | 77.8% | 56.6% | 17,030 |
| FHA | 659 | 4.1 | \$164,000 | 77.6% | 61.2% | 19,524 |
| Bank | 673 | 4.2 | \$142,000 | 74.8% | 85.2% | 3,720 |
| Nonbank | 656 | 4.1 | \$170,000 | 78.4% | 56.9% | 15,804 |
| VA | 686 | 3.7 | \$222,000 | 63.4% | 51.7% | 1,680 |
| Bank | 695 | 3.8 | \$192,000 | 62.0% | 66.0% | 665 |
| Nonbank | 681 | 3.7 | \$237,000 | 64.4% | 43.0% | 1,015 |

Loans in forbearance that remain in pools – April 2021

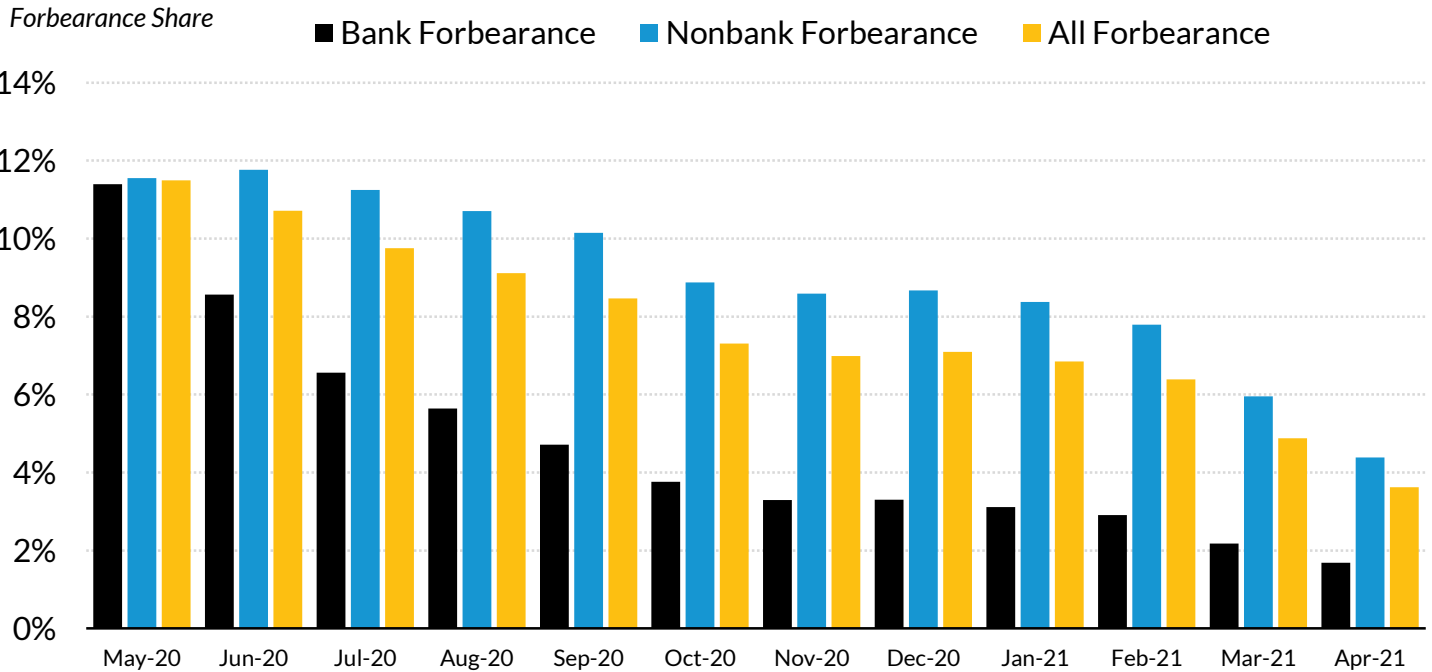
| | <u>FICO Score*</u> | <u>Note Rate*</u> | <u>Current Principal Balance Median</u> | <u>FTHB Share</u> | <u>Purchase Share</u> | <u>Loan Count</u> |
|---------------|--------------------|-------------------|---|-------------------|-----------------------|-------------------|
| Ginnie | 659 | 3.9 | \$167,555 | 78.1% | 69.6% | 379,637 |
| Bank | 675 | 4.0 | \$130,156 | 73.5% | 76.8% | 49,610 |
| Nonbank | 657 | 3.9 | \$173,036 | 78.7% | 68.7% | 330,027 |
| FHA | 654 | 4.0 | \$163,412 | 78.8% | 72.4% | 267,117 |
| Bank | 667 | 4.2 | \$117,411 | 74.5% | 79.0% | 35,408 |
| Nonbank | 653 | 4.0 | \$170,540 | 79.4% | 71.7% | 231,709 |
| VA | 668 | 3.6 | \$215,380 | 70.8% | 49.2% | 78,041 |
| Bank | 686 | 3.7 | \$193,220 | 68.8% | 67.8% | 11,427 |
| Nonbank | 664 | 3.6 | \$219,000 | 71.3% | 46.0% | 66,614 |

Sources: eMBS and Urban Institute. Note: Data as of April 2021. *Averages weighted by remaining principal balance of loans.

State of the US Housing Market

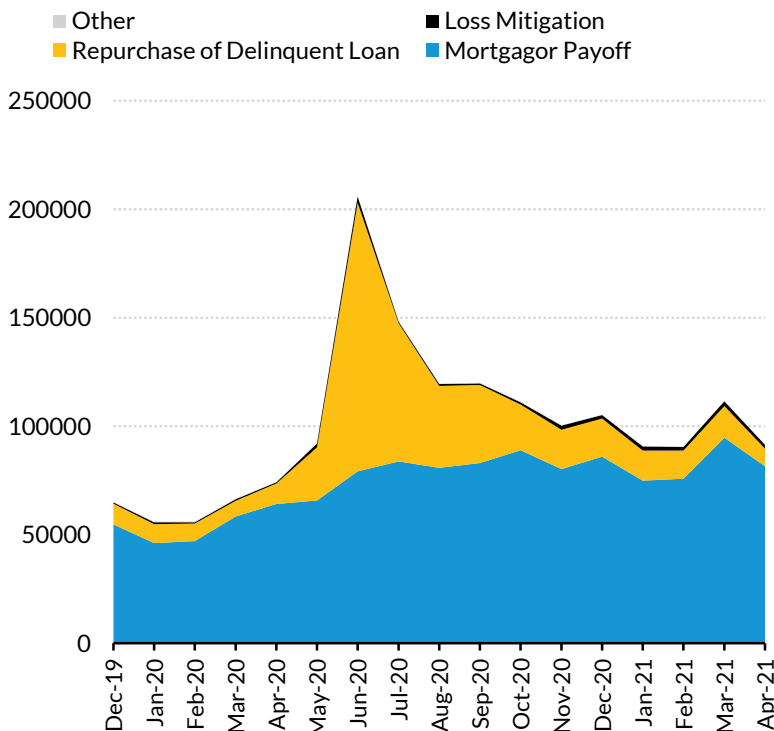
The share of Ginnie Mae loans in forbearance is higher for nonbank issuers than for bank issuers for two reasons: (1) more recent origination is more likely to be forborne and comprises a larger share of the non-bank servicing portfolio, and (2) banks have been more aggressive in buying forborne loans out of Ginnie Mae pools. Delinquent buyouts by nonbank issuers continue to remain muted relative to total nonbank loans removed from pools, but have edged up compared to delinquent buyouts by bank issuers (bottom charts, yellow areas).

Share of Ginnie Mae Loans in Forbearance



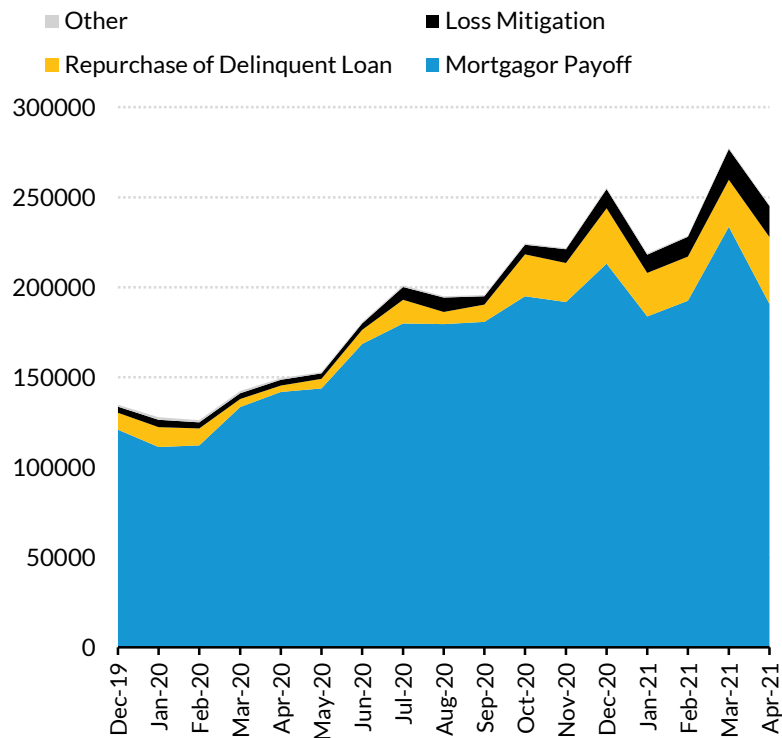
Sources: eMBS and Urban Institute. Note: Data as of April 2021.

Number of Loans Removed from Pools: Bank Issuers



Sources: eMBS and Urban Institute. Note: Data as of April 2021.

Number of Loans Removed from Pools: Nonbank Issuers

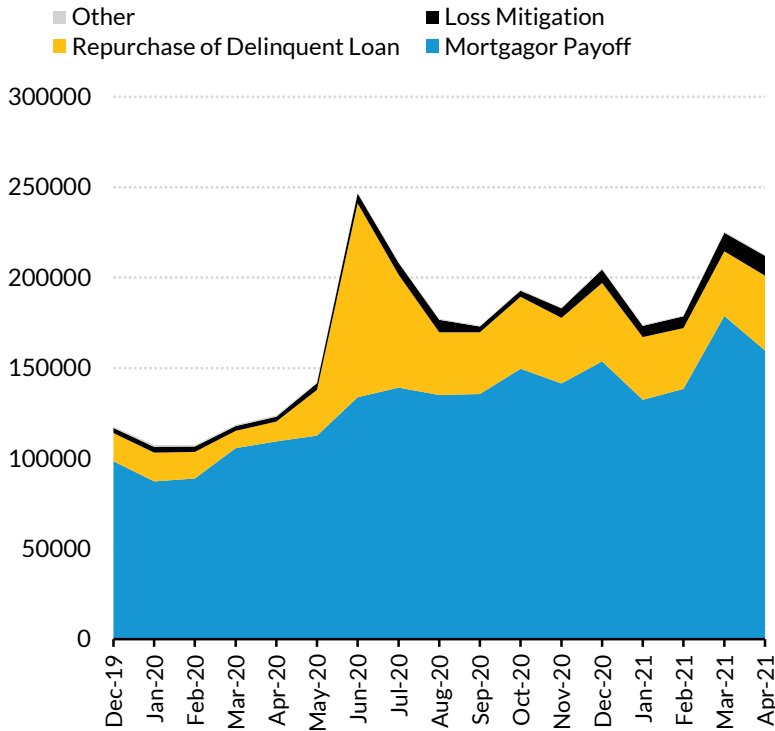


Sources: eMBS and Urban Institute. Note: Data as of April 2021.

State of the US Housing Market

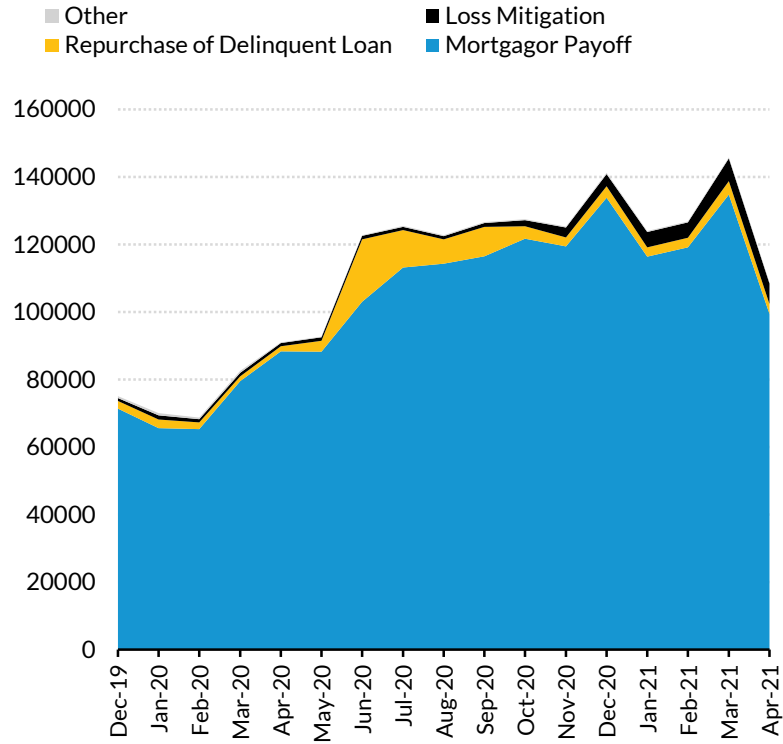
Ginnie Mae delinquent loans bought out of pools are more likely to be FHA than VA (top charts, yellow areas) and more likely to be higher coupons (bottom chart). In April 2021, 41,484 FHA and 2,943 VA loans were bought out. (These counts include all delinquent buyouts, regardless of forbearance status). Despite the increase in buyout activity during the pandemic, the vast majority of loans removed from pools have been payoffs triggered by ultra-low rates (blue areas).

Number of Loans Removed from Pools: FHA



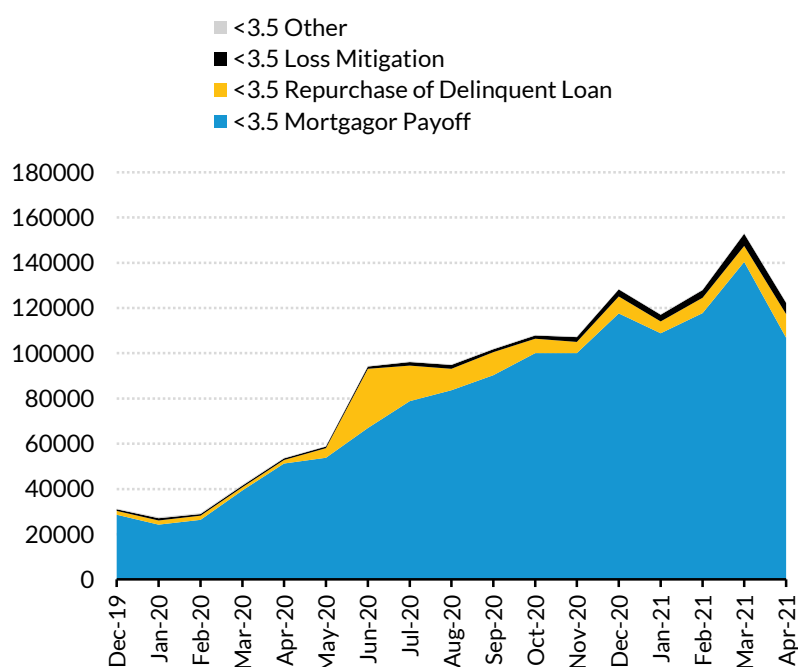
Sources: eMBS and Urban Institute. Note: Data as of April 2021.

Number of Loans Removed from Pools: VA

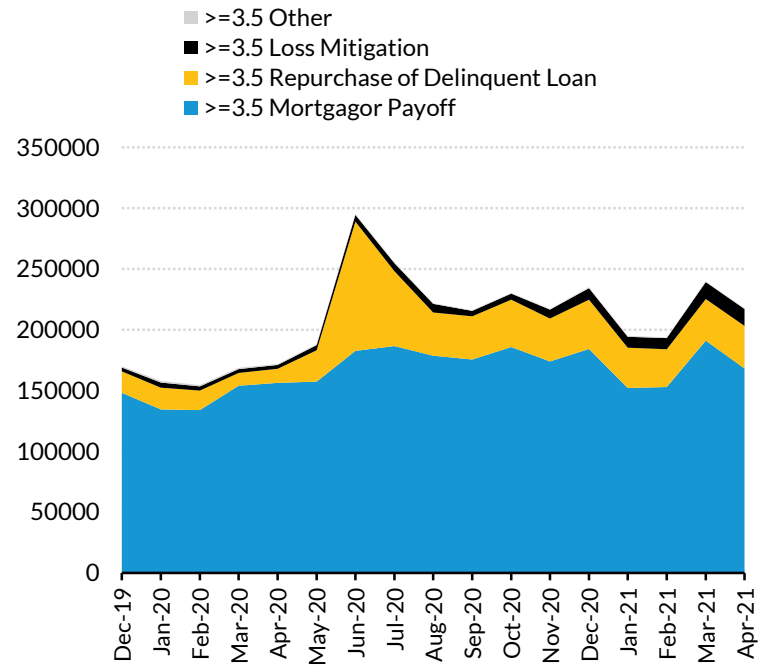


Sources: eMBS and Urban Institute. Note: Data as of April 2021.

Number of Loans Removed from Pools by Coupon



Sources: eMBS and Urban Institute. Note: Data as of April 2021.

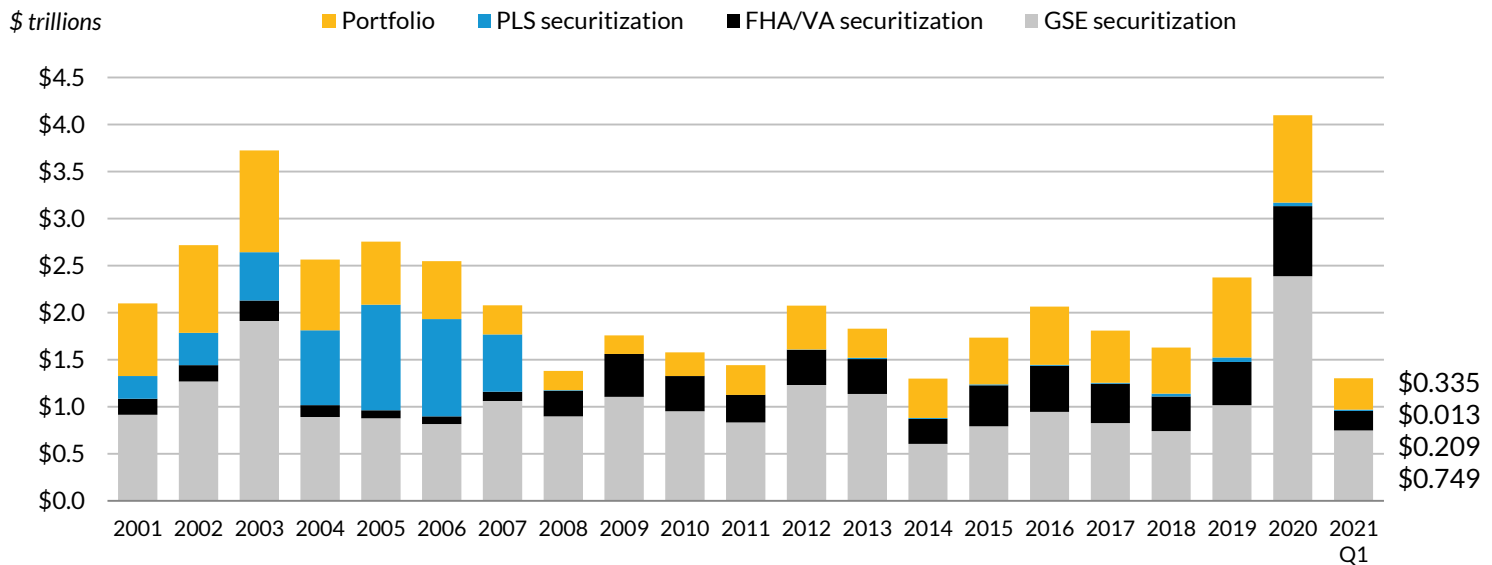


Sources: eMBS and Urban Institute. Note: Data as of April 2021.

State of the US Housing Market

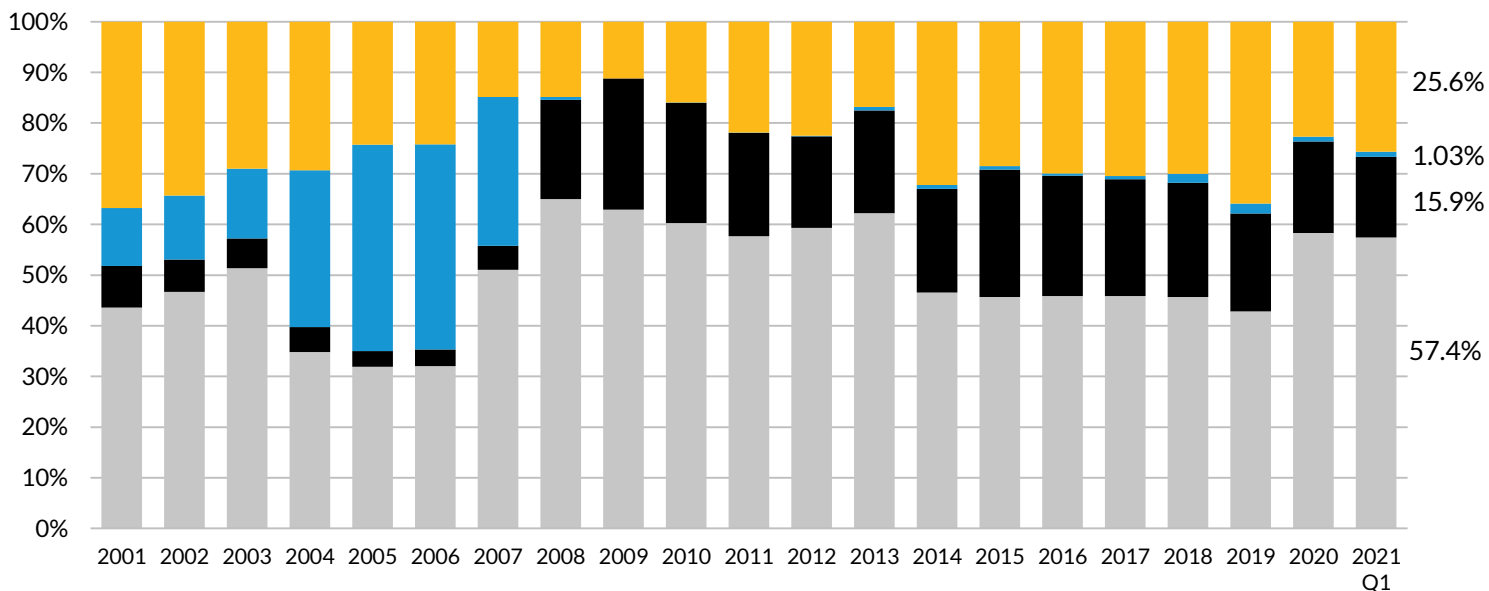
2021 is off to a strong start for first-lien originations with \$1.31 trillion in mortgages originated during the first quarter. The share of portfolio originations was 25.6 percent in Q1 2021, down from the 29.2 percent share in Q1 2020, but up from 23.0 percent for the full year 2020. The Q1 2021 GSE share was 57.4 percent, compared to 45.7 percent in Q1 2020. The FHA/VA share in Q1 2021 was 15.9 percent, down compared to 23.2 percent in the same quarter last year. The PLS share was 1.0 percent in Q1 2021, down from 1.9 percent in Q1 2020, and a fraction of its share in the pre-bubble years. The smaller share of portfolio and PLS in 2020 reflects the impact of COVID-19, which made it difficult to originate mortgages without government support. The higher GSE share reflects the large amount of refinances done through this channel.

First Lien Origination Volume



Sources: Inside Mortgage Finance and Urban Institute. Note: Data as of Q1 2021.

First Lien Origination Share



Sources: Inside Mortgage Finance and Urban Institute. Note: Data as of Q1 2021.

US Agency Market, Originations

Agency gross issuance in 2020 was historic at \$3.18 trillion, surpassing every full year of agency origination in the 21st century, including the previous high of \$2.09 trillion in 2003. 2020 agency issuance finished \$1.63 trillion dollars higher than 2019 full year volume of \$1.55 trillion, up 105.2 percent. Ginnie Mae gross issuance for the year was up by 52.5 percent and GSE gross issuance was up by 130.9 percent. Within the Ginnie Mae market, FHA was up by 22.5 percent and VA origination was up by 87.6 percent; 2020 was the first year VA production was higher than FHA production. Strong agency issuance continues in 2021, with a total of \$1.36 trillion issued through April, up 88.9 percent compared to the same period last year.

| Agency Gross Issuance | | | | | |
|-----------------------|------------|-------------|-----------|------------|-----------|
| Issuance Year | Fannie Mae | Freddie Mac | GSE Total | Ginnie Mae | Total |
| 2000 | \$202.8 | \$157.9 | \$360.6 | \$102.2 | \$462.8 |
| 2001 | \$506.9 | \$378.2 | \$885.1 | \$171.5 | \$1,056.6 |
| 2002 | \$710.0 | \$529.0 | \$1,238.9 | \$169.0 | \$1,407.9 |
| 2003 | \$1,174.4 | \$700.5 | \$1,874.9 | \$213.1 | \$2,088.0 |
| 2004 | \$517.5 | \$355.2 | \$872.6 | \$119.2 | \$991.9 |
| 2005 | \$514.1 | \$379.9 | \$894.0 | \$81.4 | \$975.3 |
| 2006 | \$500.2 | \$352.9 | \$853.0 | \$76.7 | \$929.7 |
| 2007 | \$633.0 | \$433.3 | \$1,066.2 | \$94.9 | \$1,161.1 |
| 2008 | \$562.7 | \$348.7 | \$911.4 | \$267.6 | \$1,179.0 |
| 2009 | \$817.1 | \$462.9 | \$1,280.0 | \$451.3 | \$1,731.3 |
| 2010 | \$626.6 | \$377.0 | \$1,003.5 | \$390.7 | \$1,394.3 |
| 2011 | \$578.2 | \$301.2 | \$879.3 | \$315.3 | \$1,194.7 |
| 2012 | \$847.6 | \$441.3 | \$1,288.8 | \$405.0 | \$1,693.8 |
| 2013 | \$749.9 | \$426.7 | \$1,176.6 | \$393.6 | \$1,570.2 |
| 2014 | \$392.9 | \$258.0 | \$650.9 | \$296.3 | \$947.2 |
| 2015 | \$493.9 | \$351.9 | \$845.7 | \$436.3 | \$1,282.0 |
| 2016 | \$600.5 | \$391.1 | \$991.6 | \$508.2 | \$1,499.8 |
| 2017 | \$531.3 | \$345.9 | \$877.3 | \$455.6 | \$1,332.9 |
| 2018 | \$480.9 | \$314.1 | \$795.0 | \$400.6 | \$1,195.3 |
| 2019 | \$597.4 | \$445.2 | \$1,042.6 | \$508.6 | \$1,551.2 |
| 2020 | \$1,343.4 | \$1,064.1 | \$2,407.5 | \$775.4 | \$3,182.9 |
| 2021 YTD | \$552.3 | \$494.0 | \$1,046.3 | \$313.0 | \$1,359.3 |
| 2021 % Change YOY | 90.9% | 136.9% | 110.2% | 41.2% | 88.9% |
| 2021 Ann. | \$1,657.0 | \$1,482.0 | \$3,139.0 | \$938.9 | \$4,077.8 |

| Ginnie Mae Breakdown: Agency Gross Issuance | | | | |
|---|---------|---------|--------|---------|
| Issuance Year | FHA | VA | Other | Total |
| 2000 | \$80.2 | \$18.8 | \$3.2 | \$102.2 |
| 2001 | \$133.8 | \$34.7 | \$3.1 | \$171.5 |
| 2002 | \$128.6 | \$37.9 | \$2.5 | \$169.0 |
| 2003 | \$147.9 | \$62.7 | \$2.5 | \$213.1 |
| 2004 | \$85.0 | \$31.8 | \$2.5 | \$119.2 |
| 2005 | \$55.7 | \$23.5 | \$2.1 | \$81.4 |
| 2006 | \$51.2 | \$23.2 | \$2.3 | \$76.7 |
| 2007 | \$67.7 | \$24.2 | \$3.0 | \$94.9 |
| 2008 | \$221.7 | \$39.0 | \$6.9 | \$267.6 |
| 2009 | \$359.9 | \$74.6 | \$16.8 | \$451.3 |
| 2010 | \$304.9 | \$70.6 | \$15.3 | \$390.7 |
| 2011 | \$216.1 | \$82.3 | \$16.9 | \$315.3 |
| 2012 | \$253.4 | \$131.3 | \$20.3 | \$405.0 |
| 2013 | \$239.2 | \$132.2 | \$22.2 | \$393.6 |
| 2014 | \$163.9 | \$111.4 | \$21.0 | \$296.3 |
| 2015 | \$261.5 | \$155.6 | \$19.2 | \$436.3 |
| 2016 | \$281.8 | \$206.5 | \$19.9 | \$508.2 |
| 2017 | \$257.6 | \$177.8 | \$20.2 | \$455.6 |
| 2018 | \$222.6 | \$160.8 | \$17.2 | \$400.6 |
| 2019 | \$266.9 | \$225.7 | \$16.0 | \$508.6 |
| 2020 | \$327.0 | \$423.5 | \$24.9 | \$775.4 |
| 2021 YTD | \$126.6 | \$178.0 | \$8.4 | \$313.0 |
| 2021 % Change YOY | 20.4% | 61.7% | 30.5% | 41.2% |
| 2021 Ann. | \$379.8 | \$534.0 | \$25.1 | \$938.9 |

Sources: eMBS and Urban Institute (top and bottom).

Note: Dollar amounts are in billions. "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. All data is as of April 2021.

US Agency Market, Originations

2020 proved to be very robust for agency net issuance, with \$652.7 billion of net new supply, up 122.4 percent over 2019. 2020 Ginnie Mae net issuance was \$19.9 billion, comprising 3.0 percent of total agency net issuance. This is down substantially from 2019 levels, reflecting a contraction in FHA securities outstanding; in the first four months of 2021 Ginnie Mae net issuance was -\$10.6 billion, driven by FHA contraction.

| Agency Net Issuance | | | | | |
|---------------------|------------|-------------|-----------|------------|----------|
| Issuance Year | Fannie Mae | Freddie Mac | GSE Total | Ginnie Mae | Total |
| 2000 | \$92.0 | \$67.8 | \$159.8 | \$29.3 | \$189.1 |
| 2001 | \$216.6 | \$151.8 | \$368.4 | -\$9.9 | \$358.5 |
| 2002 | \$218.9 | \$138.3 | \$357.2 | -\$51.2 | \$306.1 |
| 2003 | \$293.7 | \$41.1 | \$334.9 | -\$77.6 | \$257.3 |
| 2004 | \$32.3 | \$50.2 | \$82.5 | -\$40.1 | \$42.4 |
| 2005 | \$62.5 | \$111.7 | \$174.2 | -\$42.2 | \$132.0 |
| 2006 | \$164.3 | \$149.3 | \$313.6 | \$0.2 | \$313.8 |
| 2007 | \$296.1 | \$218.8 | \$514.9 | \$30.9 | \$545.7 |
| 2008 | \$213.0 | \$101.8 | \$314.8 | \$196.4 | \$511.3 |
| 2009 | \$208.1 | \$42.5 | \$250.6 | \$257.4 | \$508.0 |
| 2010 | -\$156.4 | -\$146.8 | -\$303.2 | \$198.3 | -\$105.0 |
| 2011 | -\$32.6 | -\$95.8 | -\$128.4 | \$149.6 | \$21.2 |
| 2012 | \$32.9 | -\$75.3 | -\$42.4 | \$119.1 | \$76.8 |
| 2013 | \$53.5 | \$11.8 | \$65.3 | \$89.6 | \$154.9 |
| 2014 | -\$4.0 | \$30.0 | \$26.0 | \$61.6 | \$87.7 |
| 2015 | \$3.5 | \$65.0 | \$68.4 | \$97.3 | \$172.5 |
| 2016 | \$60.5 | \$66.8 | \$127.4 | \$126.1 | \$261.6 |
| 2017 | \$83.7 | \$77.0 | \$160.7 | \$132.3 | \$293.0 |
| 2018 | \$81.9 | \$67.6 | \$149.4 | \$112.0 | \$261.5 |
| 2019 | \$87.4 | \$110.3 | \$197.8 | \$95.7 | \$293.5 |
| 2020 | \$289.3 | \$343.5 | \$632.8 | \$19.9 | \$652.7 |
| 2021 YTD | \$106.6 | \$183.2 | \$289.1 | -\$10.6 | \$279.2 |
| 2021 % Change YOY | 59.4% | 214.4% | 131.1% | -130.6% | 74.7% |
| 2021 Ann. | \$319.7 | \$549.6 | \$867.4 | -\$31.8 | \$837.5 |

| Ginnie Mae Breakdown: Net Issuance | | | | |
|------------------------------------|----------|---------|---------|---------|
| Issuance Year | FHA | VA | Other | Total |
| 2000 | \$29.0 | \$0.3 | \$0.0 | \$29.3 |
| 2001 | \$0.7 | -\$10.6 | \$0.0 | -\$9.9 |
| 2002 | -\$22.5 | -\$28.7 | \$0.0 | -\$51.2 |
| 2003 | -\$56.5 | -\$21.1 | \$0.0 | -\$77.6 |
| 2004 | -\$45.2 | \$5.1 | \$0.0 | -\$40.1 |
| 2005 | -\$37.3 | -\$12.1 | \$7.2 | -\$42.2 |
| 2006 | -\$4.7 | \$3.8 | \$1.2 | \$0.2 |
| 2007 | \$20.2 | \$8.7 | \$2.0 | \$30.9 |
| 2008 | \$173.3 | \$17.7 | \$5.4 | \$196.4 |
| 2009 | \$206.4 | \$35.1 | \$15.8 | \$257.4 |
| 2010 | \$158.6 | \$29.6 | \$10.0 | \$198.3 |
| 2011 | \$102.8 | \$34.0 | \$12.8 | \$149.6 |
| 2012 | \$58.9 | \$45.9 | \$14.3 | \$119.1 |
| 2013 | \$20.7 | \$53.3 | \$13.9 | \$87.9 |
| 2014 | -\$4.8 | \$53.9 | \$12.5 | \$61.6 |
| 2015 | \$22.5 | \$66.9 | \$7.9 | \$97.3 |
| 2016 | \$45.6 | \$73.2 | \$6.0 | \$124.9 |
| 2017 | \$50.1 | \$76.1 | \$5.0 | \$131.3 |
| 2018 | \$49.2 | \$61.2 | \$3.5 | \$113.9 |
| 2019 | \$35.9 | \$58.0 | \$1.9 | \$95.7 |
| 2020 | -\$52.5 | \$71.0 | \$1.3 | \$19.9 |
| 2021 YTD | -\$38.5 | \$30.4 | -\$2.5 | -\$10.6 |
| 2021 % Change YOY | -533.3% | 24.6% | -275.2% | -130.6% |
| 2021 Ann. | -\$115.4 | \$91.1 | -\$7.5 | -\$31.8 |

Sources: eMBS and Urban Institute. Note: Dollar amounts are in billions. "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. All data is as of April 2021.

US Agency Market, Originations

Agency gross issuance moves inversely to interest rates, generally declining as interest rates rise, increasing when interest rates fall, but the seasonal trend is also very strong. This table allows for a comparison with the same month in previous years. The April 2021 gross agency issuance of \$290.3 was higher than the same month in 2020, which is when the impact of lower rates began to sharply increase origination volume.

Monthly Agency Issuance

| Date | Gross Issuance | | | | Net Issuance | | | |
|--------|----------------|-------------|------------|---------|--------------|-------------|------------|--------|
| | Fannie Mae | Freddie Mac | Ginnie Mae | Total | Fannie Mae | Freddie Mac | Ginnie Mae | Total |
| Jan-19 | \$33.3 | \$19.2 | \$29.0 | \$81.6 | \$5.9 | \$2.5 | \$9.2 | \$17.6 |
| Feb-19 | \$27.3 | \$19.9 | \$23.5 | \$70.7 | \$1.4 | \$3.4 | \$4.6 | \$9.3 |
| Mar-19 | \$29.6 | \$27.3 | \$26.6 | \$83.5 | \$1.8 | \$10.3 | \$5.6 | \$17.6 |
| Apr-19 | \$33.1 | \$30.8 | \$32.9 | \$96.8 | \$1.3 | \$10.8 | \$8.3 | \$20.4 |
| May-19 | \$44.5 | \$34.3 | \$38.8 | \$117.6 | \$6.7 | \$9.8 | \$9.4 | \$26.0 |
| Jun-19 | \$44.6 | \$34.0 | \$43.3 | \$121.9 | \$1.9 | \$5.9 | \$9.0 | \$16.8 |
| Jul-19 | \$51.7 | \$36.9 | \$45.9 | \$134.5 | \$10.9 | \$10.1 | \$11.0 | \$32.0 |
| Aug-19 | \$71.1 | \$50.4 | \$51.2 | \$172.6 | \$20.8 | \$17.1 | \$8.7 | \$46.6 |
| Sep-19 | \$67.1 | \$43.0 | \$52.0 | \$162.1 | \$14.1 | \$7.5 | \$6.5 | \$28.0 |
| Oct-19 | \$65.0 | \$46.2 | \$58.4 | \$169.6 | \$7.4 | \$7.1 | \$11.9 | \$26.5 |
| Nov-19 | \$68.1 | \$50.7 | \$54.3 | \$173.1 | \$5.2 | \$8.6 | \$4.1 | \$18.0 |
| Dec-19 | \$62.1 | \$52.5 | \$52.7 | \$167.3 | \$10.1 | \$17.3 | \$7.4 | \$34.7 |
| Jan-20 | \$61.7 | \$51.4 | \$56.0 | \$169.0 | \$9.1 | \$16.5 | \$8.6 | \$34.2 |
| Feb-20 | \$56.5 | \$39.5 | \$51.2 | \$147.2 | \$9.4 | \$7.9 | \$7.1 | \$24.4 |
| Mar-20 | \$69.5 | \$41.1 | \$53.0 | \$163.9 | \$17.9 | \$6.3 | \$8.8 | \$33.0 |
| Apr-20 | \$101.6 | \$76.3 | \$61.4 | \$239.3 | \$30.5 | \$27.5 | \$10.2 | \$68.2 |
| May-20 | \$124.3 | \$70.6 | \$60.8 | \$255.7 | \$35.2 | \$8.2 | \$5.7 | \$49.1 |
| Jun-20 | \$118.9 | \$78.1 | \$58.5 | \$255.4 | \$30.0 | \$15.9 | \$1.3 | \$47.2 |
| Jul-20 | \$125.0 | \$108.1 | \$66.5 | \$299.5 | \$23.4 | \$38.0 | -\$15.5 | \$45.9 |
| Aug-20 | \$137.6 | \$113.6 | \$73.6 | \$324.8 | \$34.2 | \$43.4 | -\$4.1 | \$73.5 |
| Sep-20 | \$122.9 | \$102.1 | \$72.4 | \$297.5 | \$16.5 | \$29.9 | \$1.0 | \$47.5 |
| Oct-20 | \$142.3 | \$124.8 | \$72.6 | \$339.7 | \$28.9 | \$48.3 | -\$0.3 | \$76.9 |
| Nov-20 | \$152.4 | \$131.5 | \$72.6 | \$356.5 | \$31.4 | \$48.4 | -\$4.5 | \$75.3 |
| Dec-20 | \$130.8 | \$126.7 | \$76.9 | \$334.4 | \$22.8 | \$53.1 | \$1.7 | \$77.5 |
| Jan-21 | \$141.6 | \$117.3 | \$78.2 | \$337.1 | \$25.9 | \$37.9 | -\$6.5 | \$57.3 |
| Feb-21 | \$118.8 | \$115.5 | \$72.3 | \$306.6 | \$16.8 | \$44.3 | -\$0.9 | \$60.2 |
| Mar-21 | \$143.9 | \$118.9 | \$76.9 | \$339.7 | \$37.6 | \$44.0 | \$1.0 | \$82.6 |
| Apr-21 | \$148.0 | \$142.3 | \$85.6 | \$290.3 | \$26.2 | \$57.0 | -\$4.2 | \$79.0 |

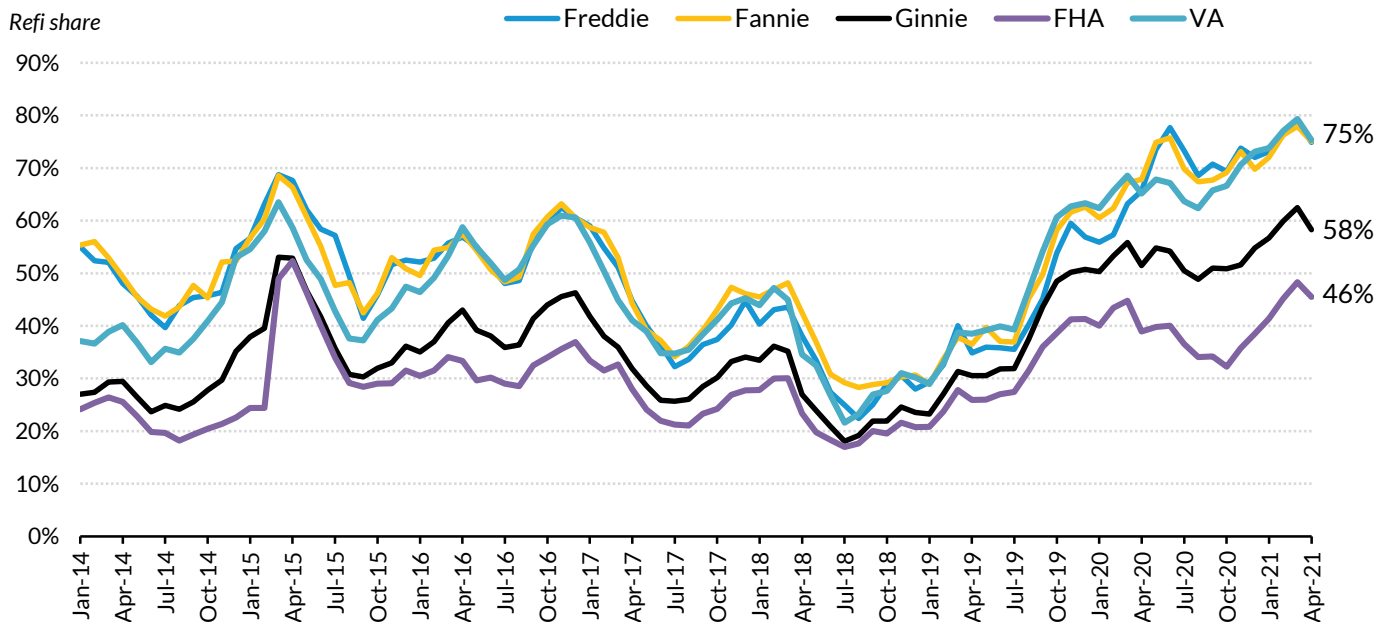
Sources: eMBS and Urban Institute.

Note: Dollar amounts are in billions. "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. All data is as of April 2021.

US Agency Market, Originations

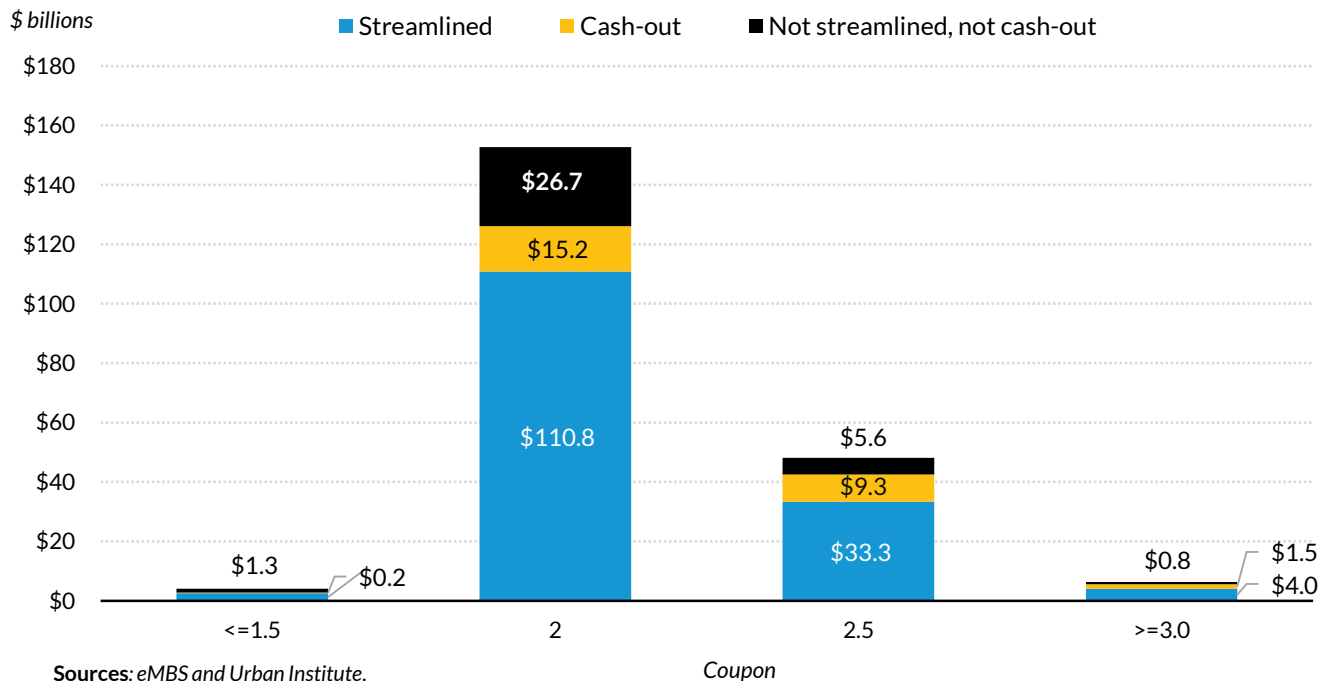
The FHA refinance share stood at 45.5 percent in April 2021, below the 74.9 percent refi share for Freddie originations, the 75.1 percent share for Fannie, and the 75.3 percent share for the VA. The total Ginnie refinance share stood at 58.3 percent in April. Refinances as a share of all originations grew during 2019 and 2020 as interest rates fell. The bottom section shows that most of 2021 Ginnie Mae refinances YTD, predominantly streamlined, were securitized in 2-2.5 coupon pools. Cash-out refinance volume remains muted due to restrictions Ginnie Mae put in place in late 2019, to combat the “churning” problem.

Percent Refi at Issuance



Sources: eMBS and Urban Institute. Note: Based on at-issuance balance. Data as of April 2021.

Ginnie Mae Refinance Issuance by Type: YTD 2021

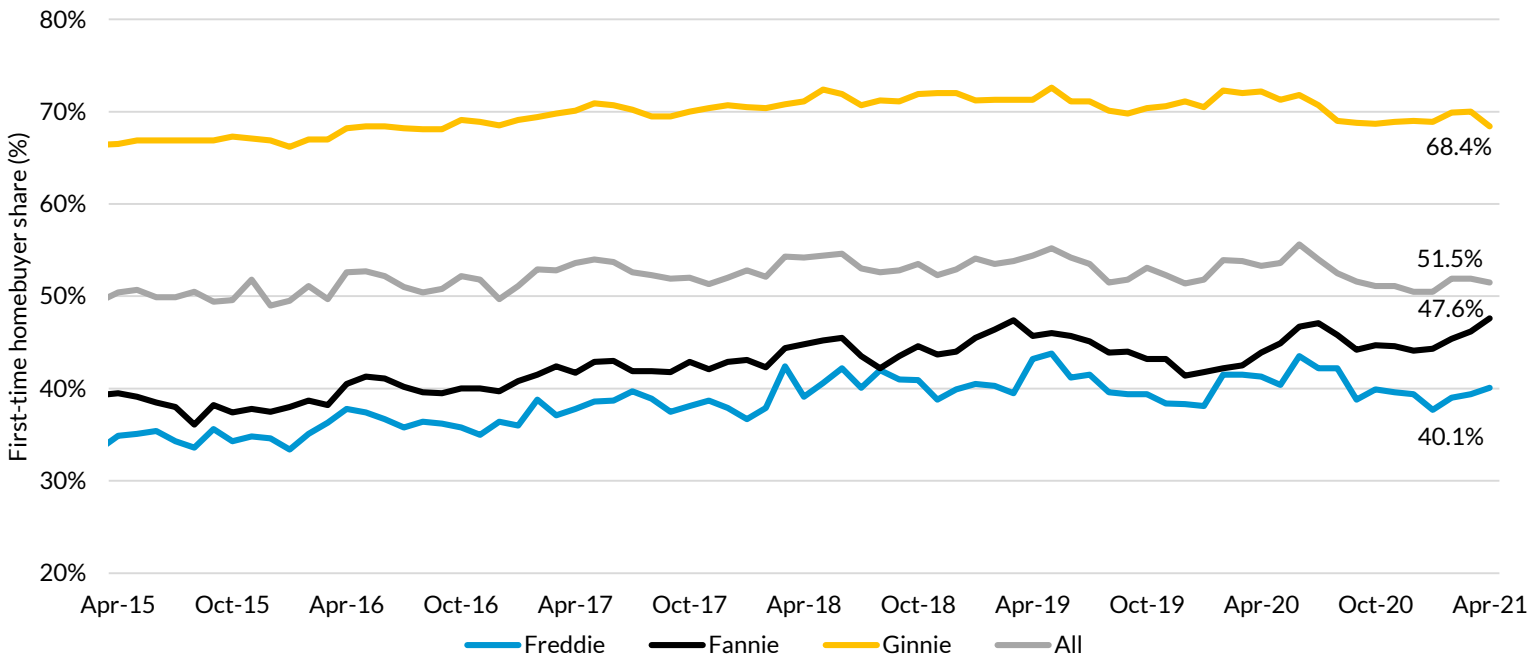


Sources: eMBS and Urban Institute. Note: Based on at-issuance balance. Data as of April 2021.

Credit Box

The first time homebuyer share of Ginnie Mae purchase loans was 68.4 percent in April 2021, down from 72.2 percent in April 2020. First time homebuyers comprise a significantly higher share of the Ginnie Mae purchase market than of the GSE purchase market, with first time homebuyers accounting for 47.6 percent and 40.1 percent of Fannie Mae and Freddie Mac purchase originations, respectively. The bottom table shows that based on mortgages originated in April 2021, the average first-time homebuyer was more likely than an average repeat buyer to take out a smaller loan, have a lower credit score, a higher LTV, and pay a similar rate.

First Time Homebuyer Share: Purchase Only Loans



Sources: eMBS and Urban Institute. Note: Data as of April 2021.

| | Fannie Mae | | Freddie Mac | | Ginnie Mae | | All | |
|------------------|------------|---------|-------------|---------|------------|---------|------------|---------|
| | First-Time | Repeat | First-Time | Repeat | First-Time | Repeat | First-Time | Repeat |
| Loan Amount (\$) | 294,614 | 315,097 | 282,882 | 301,532 | 243,494 | 298,899 | 267,247 | 305,997 |
| Credit Score | 749.3 | 759.1 | 746.3 | 755.5 | 688.6 | 704.0 | 720.1 | 742.8 |
| LTV (%) | 87.1 | 79.5 | 87.7 | 78.9 | 96.8 | 95.9 | 91.8 | 83.8 |
| DTI (%) | 34.2 | 35.0 | 34.7 | 35.6 | 41.3 | 41.9 | 37.6 | 37.1 |
| Loan Rate (%) | 2.8 | 2.8 | 2.8 | 2.8 | 2.9 | 2.8 | 2.8 | 2.8 |

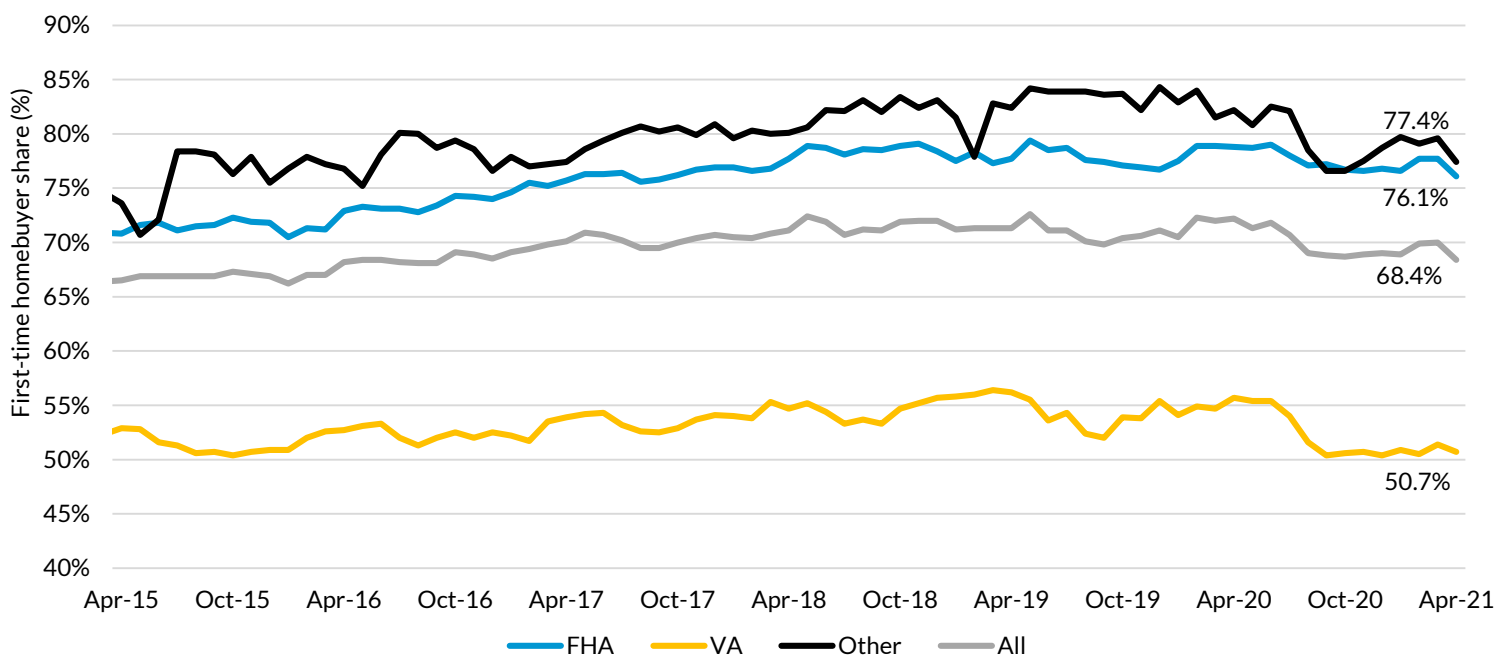
Sources: eMBS and Urban Institute.

Note: In May 2017 Ginnie Mae began disclosing issuer-reported LTV for FHA loans, which includes the financed upfront mortgage insurance premium. To make it consistent with the previously reported LTV, we removed the financed upfront mortgage insurance premium by subtracting 169 bps from this new issuer-reported LTV. Data as of April 2021.

Credit Box

Within the Ginnie Mae purchase market, 76.1 percent of FHA loans, 50.7 percent of VA loans, and 77.4 percent of other loans represent financing for first-time home buyers in April 2021. The bottom table shows that based on mortgages originated in March 2021, the average first-time homebuyer was more likely than an average repeat buyer to take out a smaller loan, have a lower credit score, a higher LTV, and pay a slightly higher rate. Note that FHA's average credit score for FTHBs was slightly higher compared to the same for repeat buyers (679.4 vs. 676.6)

First Time Homebuyer Share: Ginnie Mae Breakdown



Sources: eMBS and Urban Institute. Note: Includes only purchase loans. Data as of April 2021.

| | FHA | | VA | | Other | | Ginnie Mae Total | |
|------------------|------------|---------|------------|---------|------------|---------|------------------|---------|
| | First-Time | Repeat | First-Time | Repeat | First-Time | Repeat | First-Time | Repeat |
| Loan Amount (\$) | 238,340 | 253,193 | 294,921 | 358,093 | 175,865 | 185,179 | 243,494 | 298,899 |
| Credit Score | 679.4 | 676.6 | 712.8 | 730.2 | 700.2 | 701.4 | 688.6 | 704.0 |
| LTV (%) | 95.5 | 94.1 | 99.7 | 97.1 | 99.4 | 99.1 | 96.8 | 95.9 |
| DTI (%) | 42.8 | 43.7 | 39.6 | 41.1 | 34.9 | 35.3 | 41.3 | 41.9 |
| Loan Rate (%) | 2.9 | 2.9 | 2.7 | 2.6 | 2.8 | 3.0 | 2.9 | 2.8 |

Sources: eMBS and Urban Institute.

Note: "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. In May 2017 Ginnie Mae began disclosing issuer-reported LTV for FHA loans, which includes the financed upfront mortgage insurance premium. To make it consistent with the previously reported LTV, we removed the financed upfront mortgage insurance premium by subtracting 169 bps from this new issuer-reported LTV. Data as of April 2021.

April 2021 Credit Box at a Glance

In April 2021, the median Ginnie Mae FICO score was 695 versus 770 for Fannie Mae and 767 for Freddie Mac. Note that the FICO score for the 10th percentile was 633 for Ginnie Mae, versus 696 for both Fannie Mae and Freddie Mac. Within the Ginnie Mae market, FHA loans have a median FICO score of 669, VA loans have a median FICO score of 736 and other loans have a median FICO score of 697.

| Purchase FICO | | | | | | | |
|---------------|-----------------|-----|-----|--------|-----|-----|------|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 367,278 | 655 | 714 | 745 | 782 | 800 | 736 |
| Fannie | 131,197 | 693 | 733 | 762 | 793 | 802 | 754 |
| Freddie | 123,018 | 699 | 731 | 765 | 790 | 802 | 757 |
| Ginnie | 113,063 | 630 | 651 | 681 | 727 | 772 | 691 |

| Refi FICO | | | | | | | |
|-----------|-----------------|-----|-----|--------|-----|-----|------|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 882,680 | 682 | 722 | 766 | 792 | 806 | 753 |
| Fannie | 395,943 | 697 | 736 | 772 | 795 | 808 | 761 |
| Freddie | 366,854 | 695 | 729 | 767 | 792 | 805 | 758 |
| Ginnie | 119,883 | 639 | 667 | 710 | 766 | 796 | 714 |

| All FICO | | | | | | | |
|----------|-----------------|-----|-----|--------|-----|-----|------|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 1,249,958 | 672 | 714 | 760 | 790 | 804 | 748 |
| Fannie | 527,140 | 696 | 733 | 770 | 793 | 806 | 759 |
| Freddie | 489,872 | 696 | 730 | 767 | 791 | 804 | 757 |
| Ginnie | 232,946 | 633 | 658 | 695 | 750 | 788 | 703 |

| Purchase FICO: Ginnie Mae Breakdown By Source | | | | | | | |
|---|-----------------|-----|-----|--------|-----|-----|------|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 113,063 | 630 | 651 | 681 | 727 | 772 | 691 |
| FHA | 68,877 | 625 | 644 | 668 | 700 | 739 | 675 |
| VA | 34,550 | 644 | 672 | 721 | 770 | 795 | 720 |
| Other | 9,636 | 644 | 663 | 694 | 733 | 766 | 699 |

| Refi FICO: Ginnie Mae Breakdown By Source | | | | | | | |
|---|-----------------|-----|-----|--------|-----|-----|------|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 119,883 | 639 | 667 | 710 | 766 | 796 | 714 |
| FHA | 42,056 | 624 | 645 | 671 | 702 | 742 | 677 |
| VA | 76,342 | 656 | 693 | 742 | 782 | 802 | 734 |
| Other | 1,485 | 649 | 675 | 707 | 746 | 776 | 709 |

| All FICO: Ginnie Mae Breakdown By Source | | | | | | | |
|--|-----------------|-----|-----|--------|-----|-----|------|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 232,946 | 633 | 658 | 695 | 750 | 788 | 703 |
| FHA | 110,933 | 625 | 645 | 669 | 701 | 740 | 676 |
| VA | 110,892 | 651 | 686 | 736 | 779 | 800 | 730 |
| Other | 11,121 | 644 | 664 | 697 | 735 | 768 | 701 |

Sources: eMBS and Urban Institute. Note: "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of April 2021.

April 2021 Credit Box at a Glance

In April 2021, the median loan-to-value ratio (LTV) was 95.2 percent for Ginnie Mae, compared to 69 percent for Fannie Mae and 71 percent for Freddie Mac. The 90th percentile was 100 percent for Ginnie Mae, versus 90 percent for both Fannie and Freddie. Within the Ginnie Mae market, the median LTV was 96.1 for FHA, 91.7 for VA and 101 for other programs.

| Purchase LTV | | | | | | | |
|--------------|-----------------|------|------|--------|-------|-------|------|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 367,504 | 71.0 | 80.0 | 93.0 | 96.5 | 99.3 | 86.9 |
| Fannie | 131,282 | 65.0 | 80.0 | 85.0 | 95.0 | 95.0 | 82.9 |
| Freddie | 123,049 | 66.0 | 80.0 | 80.0 | 95.0 | 95.0 | 82.3 |
| Ginnie | 113,173 | 94.0 | 96.5 | 96.5 | 100.0 | 101.0 | 96.5 |

| Refi LTV | | | | | | | |
|----------|-----------------|------|------|--------|------|------|------|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 928,646 | 41.0 | 55.0 | 69.0 | 80.0 | 90.0 | 66.6 |
| Fannie | 395,950 | 38.0 | 50.0 | 63.0 | 75.0 | 80.0 | 61.4 |
| Freddie | 366,862 | 41.0 | 54.0 | 67.0 | 75.0 | 80.0 | 63.9 |
| Ginnie | 165,834 | 65.2 | 78.8 | 89.1 | 96.3 | 99.1 | 85.1 |

| All LTV | | | | | | | |
|---------|-----------------|------|------|--------|------|-------|------|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 1,296,150 | 45.0 | 60.0 | 75.0 | 89.0 | 96.5 | 72.4 |
| Fannie | 527,232 | 41.0 | 54.0 | 69.0 | 80.0 | 90.0 | 66.8 |
| Freddie | 489,911 | 44.0 | 58.0 | 71.0 | 80.0 | 90.0 | 68.5 |
| Ginnie | 279,007 | 72.1 | 84.5 | 95.2 | 97.3 | 100.0 | 89.7 |

| Purchase LTV: Ginnie Mae Breakdown By Source | | | | | | | |
|--|-----------------|------|-------|--------|-------|-------|------|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 113,173 | 94.0 | 96.5 | 96.5 | 100.0 | 101.0 | 96.5 |
| FHA | 68,939 | 93.8 | 95.0 | 96.5 | 96.5 | 96.5 | 95.2 |
| VA | 34,568 | 92.9 | 100.0 | 100.0 | 100.0 | 102.3 | 98.3 |
| Other | 9,666 | 96.2 | 99.5 | 101.0 | 101.0 | 101.0 | 99.4 |

| Refi LTV: Ginnie Mae Breakdown By Source | | | | | | | |
|--|-----------------|------|------|--------|------|-------|------|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 165,834 | 65.2 | 78.8 | 89.1 | 96.3 | 99.1 | 85.1 |
| FHA | 64,208 | 73.0 | 81.4 | 90.9 | 96.3 | 97.6 | 87.3 |
| VA | 100,098 | 60.8 | 75.5 | 87.5 | 96.2 | 100.0 | 83.6 |
| Other | 1,528 | 77.6 | 87.4 | 95.6 | 99.7 | 101.0 | 91.9 |

| All LTV: Ginnie Mae Breakdown By Source | | | | | | | |
|---|-----------------|------|------|--------|-------|-------|------|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 279,007 | 72.1 | 84.5 | 95.2 | 97.3 | 100.0 | 89.7 |
| FHA | 133,147 | 79.7 | 89.8 | 96.1 | 96.5 | 96.9 | 91.4 |
| VA | 134,666 | 64.7 | 80.0 | 91.7 | 100.0 | 100.6 | 87.3 |
| Other | 11,194 | 92.7 | 98.7 | 101.0 | 101.0 | 101.0 | 98.4 |

Sources: eMBS and Urban Institute. Note: "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. In May 2017 Ginnie Mae began disclosing issuer-reported LTV for FHA loans, which includes the financed upfront mortgage insurance premium. To make it consistent with the previously reported LTV, we removed the financed upfront mortgage insurance premium by subtracting 169 bps from this new issuer-reported LTV. Data as of April 2021.

April 2021 Credit Box at a Glance

In April 2021, the median Ginnie Mae debt-to-income ratio (DTI) was 41.2 percent, considerably higher than the 34.0 percent median DTI for both Fannie Mae and Freddie Mac. The 90th percentile for Ginnie Mae was 53.7 percent, also much higher than the 46.0 percent DTI for Fannie Mae and 45.0 percent for Freddie Mac. Within the Ginnie Mae market, the median FHA DTI ratio was 43.7 percent, versus 38.3 percent for VA and 35.5 percent for other lending programs.

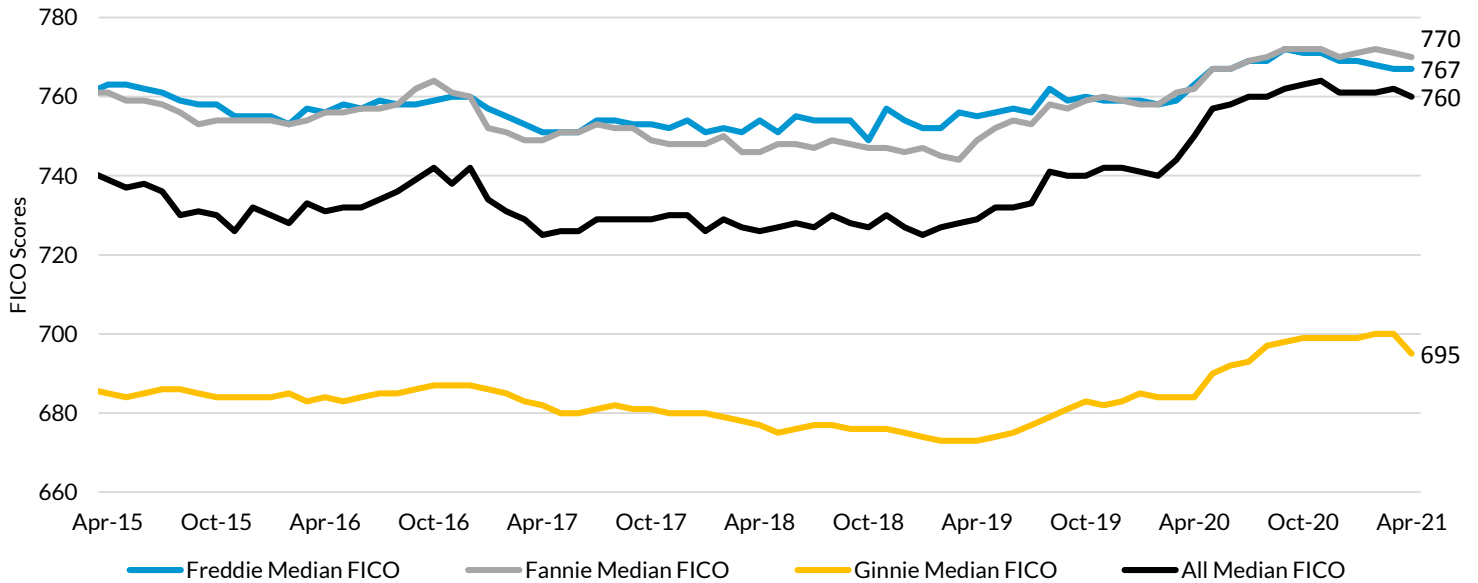
| Purchase DTI | | | | | | | |
|--|-----------------|------|------|--------|------|------|------|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 366,699 | 23.0 | 30.0 | 38.0 | 44.0 | 49.0 | 36.8 |
| Fannie | 131,279 | 21.0 | 28.0 | 36.0 | 43.0 | 47.0 | 35.0 |
| Freddie | 123,046 | 21.0 | 28.0 | 35.0 | 42.0 | 46.0 | 34.4 |
| Ginnie | 112,374 | 28.4 | 35.1 | 42.3 | 48.8 | 53.9 | 41.6 |
| Refi DTI | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 808,813 | 19.0 | 25.0 | 33.0 | 41.0 | 46.0 | 32.8 |
| Fannie | 395,936 | 18.0 | 25.0 | 33.0 | 41.0 | 46.0 | 32.4 |
| Freddie | 366,826 | 19.0 | 25.0 | 33.0 | 41.0 | 45.0 | 32.6 |
| Ginnie | 46,051 | 21.8 | 30.0 | 37.6 | 46.2 | 52.7 | 37.4 |
| All DTI | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 1,175,512 | 20.0 | 26.0 | 35.0 | 42.0 | 47.0 | 34.0 |
| Fannie | 527,215 | 19.0 | 25.0 | 34.0 | 41.0 | 46.0 | 33.1 |
| Freddie | 489,872 | 19.0 | 26.0 | 34.0 | 41.0 | 45.0 | 33.1 |
| Ginnie | 158,425 | 26.2 | 33.2 | 41.2 | 48.2 | 53.7 | 40.4 |
| Purchase DTI: Ginnie Mae Breakdown By Source | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 112,374 | 28.4 | 35.1 | 42.3 | 48.8 | 53.9 | 41.6 |
| FHA | 68,662 | 30.7 | 37.5 | 44.1 | 49.8 | 54.4 | 43.1 |
| VA | 34,073 | 26.0 | 33.0 | 40.7 | 47.9 | 53.6 | 40.3 |
| Other | 9,639 | 25.4 | 30.4 | 35.8 | 40.4 | 43.3 | 35.1 |
| Refi DTI: Ginnie Mae Breakdown By Source | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 46,051 | 21.8 | 30.0 | 37.6 | 46.2 | 52.7 | 37.4 |
| FHA | 20,679 | 26.8 | 33.0 | 41.7 | 48.8 | 53.9 | 40.7 |
| VA | 24,590 | 19.2 | 26.9 | 34.2 | 43.3 | 50.7 | 35.0 |
| Other | 782 | 16.3 | 21.7 | 29.2 | 36.3 | 41.3 | 29.2 |
| All DTI: Ginnie Mae Breakdown By Source | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 158,425 | 26.2 | 33.2 | 41.2 | 48.2 | 53.7 | 40.4 |
| FHA | 89,341 | 29.7 | 36.5 | 43.7 | 49.6 | 54.3 | 42.6 |
| VA | 58,663 | 22.9 | 30.5 | 38.3 | 46.3 | 52.7 | 38.0 |
| Other | 10,421 | 24.5 | 29.9 | 35.5 | 40.2 | 43.3 | 34.6 |

Sources: eMBS and Urban Institute. Note: "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of April 2021.

Credit Box: Historical

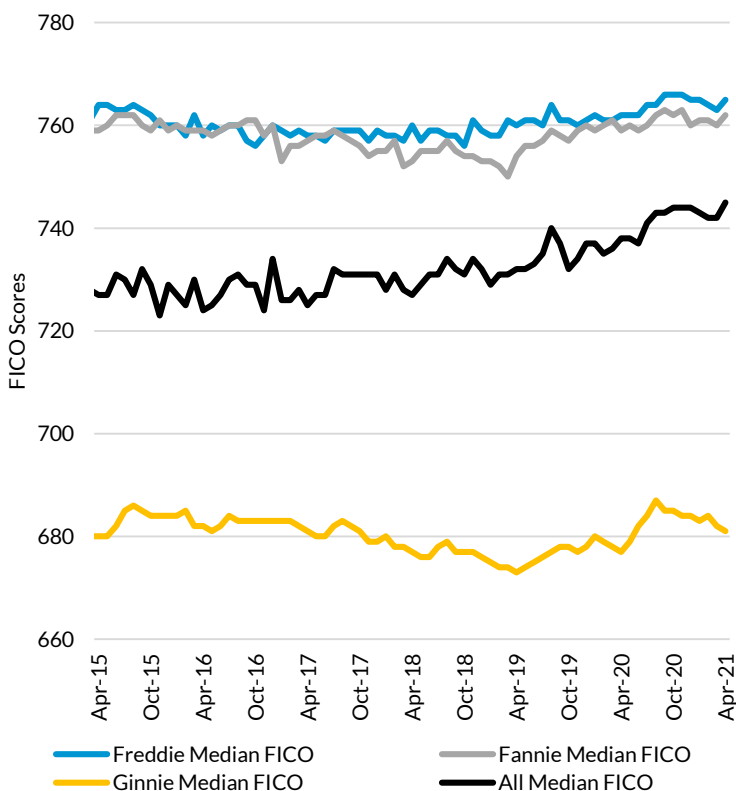
The median FICO score for all agency loans originated in April 2021 was 760, up considerably since the start of 2019, owing to the refinance wave, which higher FICO borrowers take advantage of with greater frequency. In addition, the increases in refinance activity have been much more dramatic at the GSEs than at Ginnie Mae, shifting the composition toward higher FICO score borrowers. Note since early 2019, the median FICO scores for Fannie, Freddie and Ginnie borrowers have moved up for both purchase and refinance loans, although refinance FICOs have started to dip a bit. The difference between Ginnie Mae and GSE borrower FICOs is considerably wider for purchase loans than for refi loans.

FICO Scores for All Loans



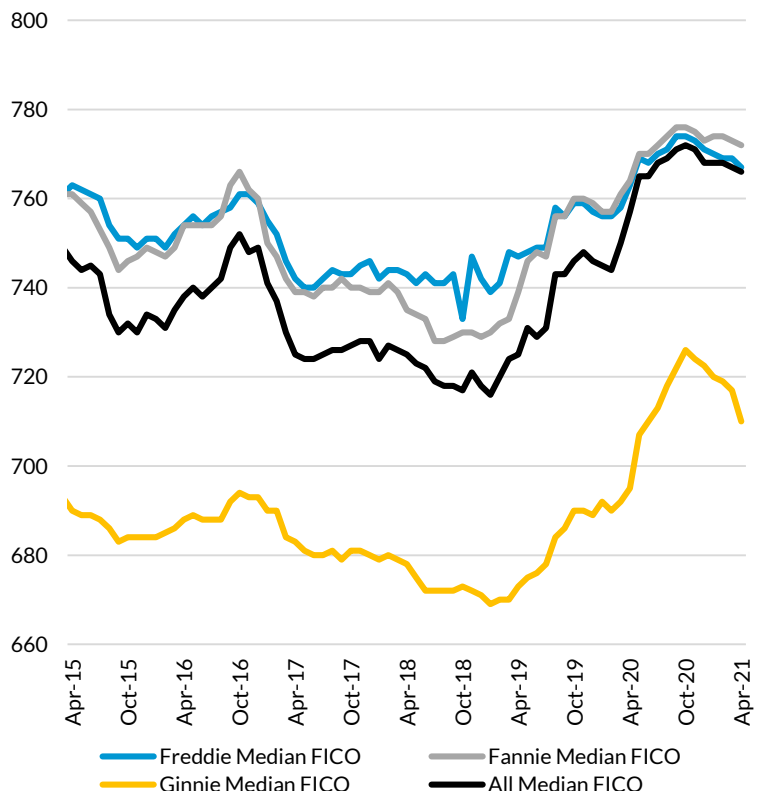
Sources: eMBS and Urban Institute. Note: Data as of April 2021.

FICO Scores for Purchase Loans



Sources: eMBS and Urban Institute. Note: Data as of April 2021.

FICO Scores for Refinance Loans

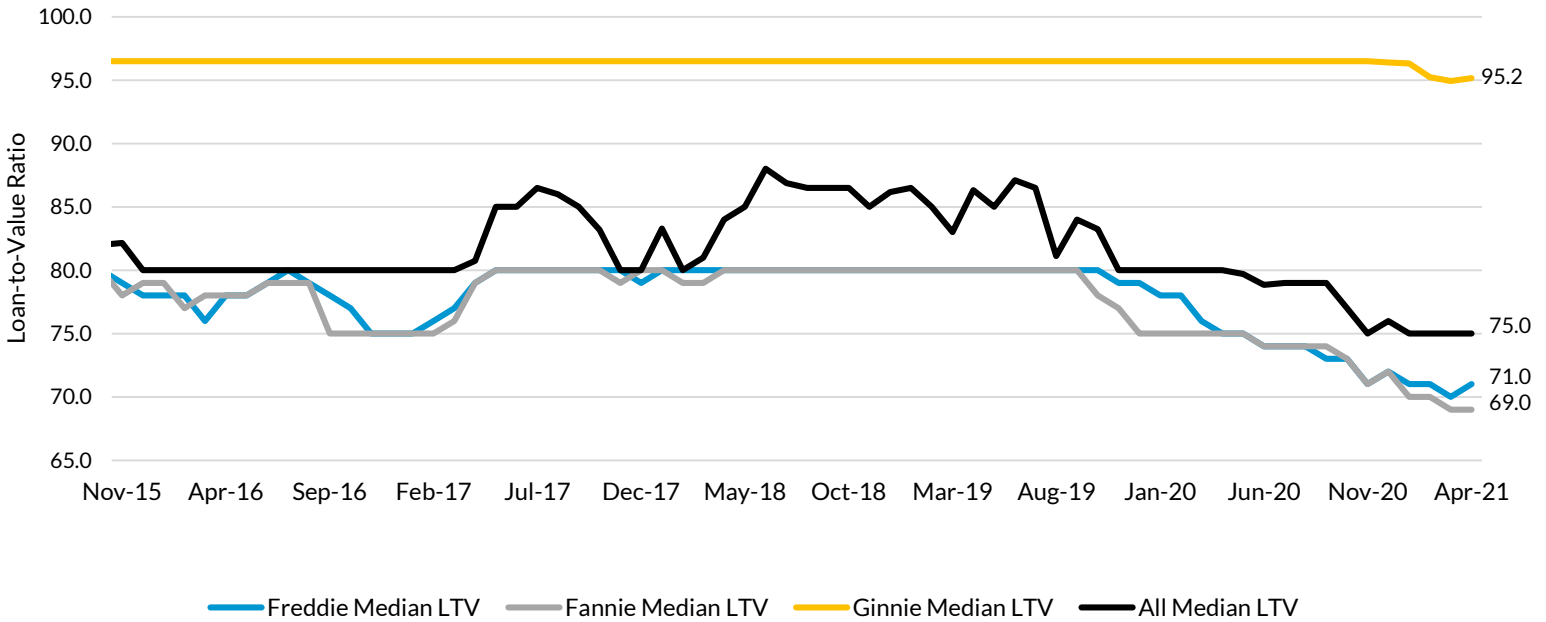


Sources: eMBS and Urban Institute. Note: Data as of April 2021.

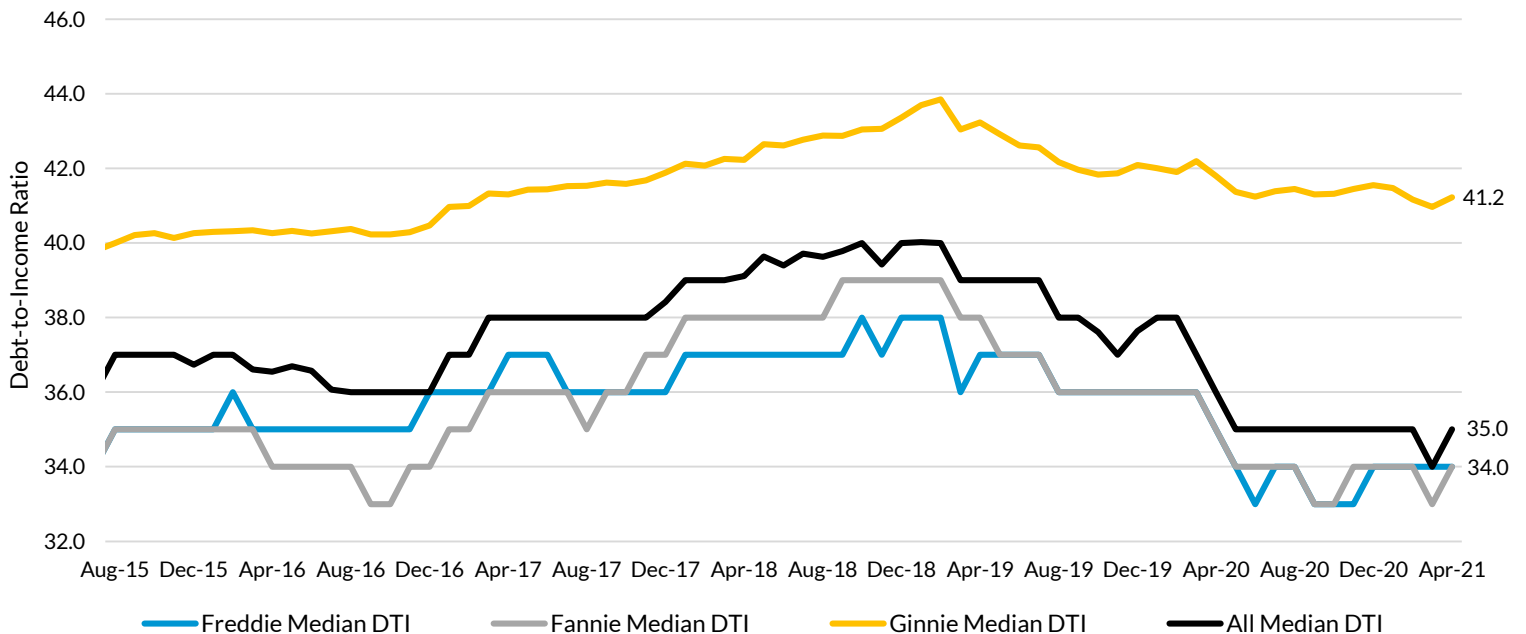
Credit Box: Historical

The median LTV for Ginnie Mae loans was 95.2 percent in April 2021, much higher than the 71 percent LTV for Freddie Mac and 69 percent for Fannie Mae. Median debt-to-income ratios for Ginnie Mae loans have historically been in the low 40s, considerably higher than for the GSEs. DTIs increased in the 2017-2018 period for both Ginnie Mae and GSE loans, with the movement more pronounced for Ginnie Mae. Increases in DTI are very typical in an environment of rising interest rates and rising home prices. All three agencies witnessed measurable declines in DTI, beginning in early 2019, driven by lower interest rates, with larger declines in GSE securities.

LTV Ratio for All Loans



DTI Ratio for All Loans

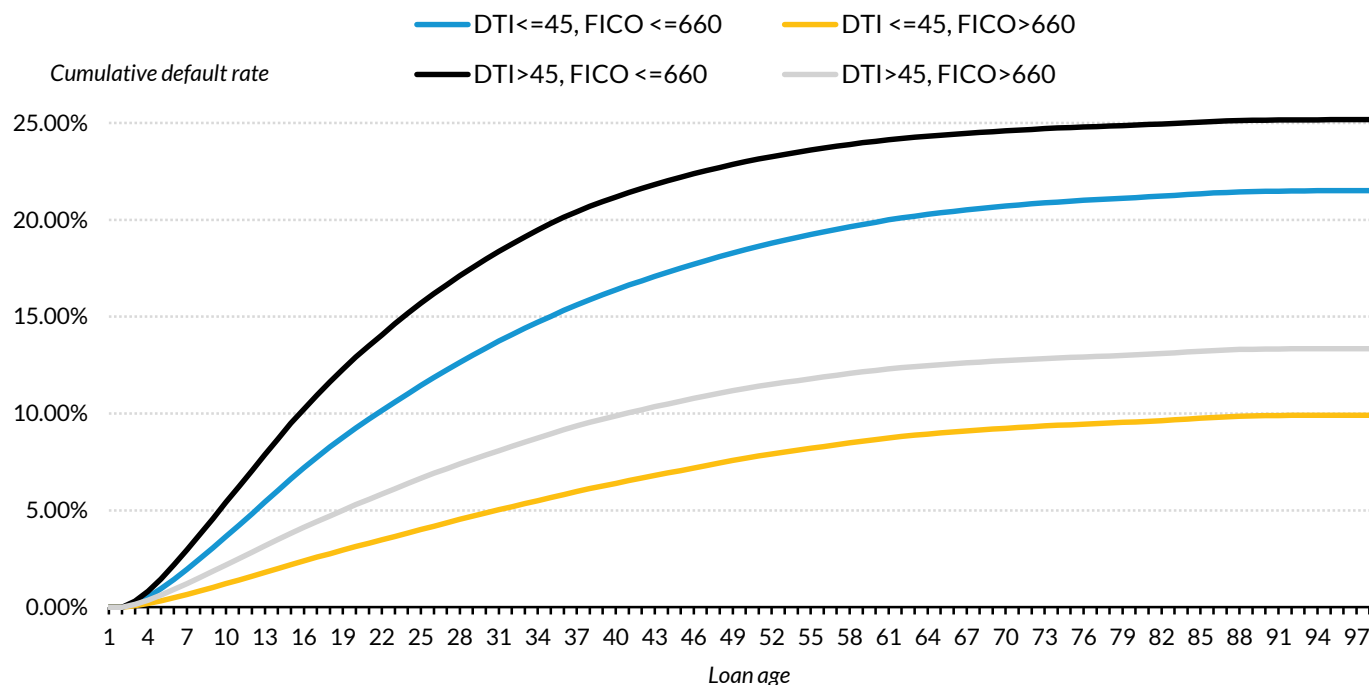


Sources: eMBS and Urban Institute. **Note:** In May 2017 Ginnie Mae began disclosing issuer-reported LTV for FHA loans, which includes the financed upfront mortgage insurance premium. To make it consistent with the previously reported LTV, we removed the financed upfront mortgage insurance premium by subtracting 169 bps from this new issuer-reported LTV. Sources and note apply to all three graphs. Data as of April 2021.

Credit Box: Historical

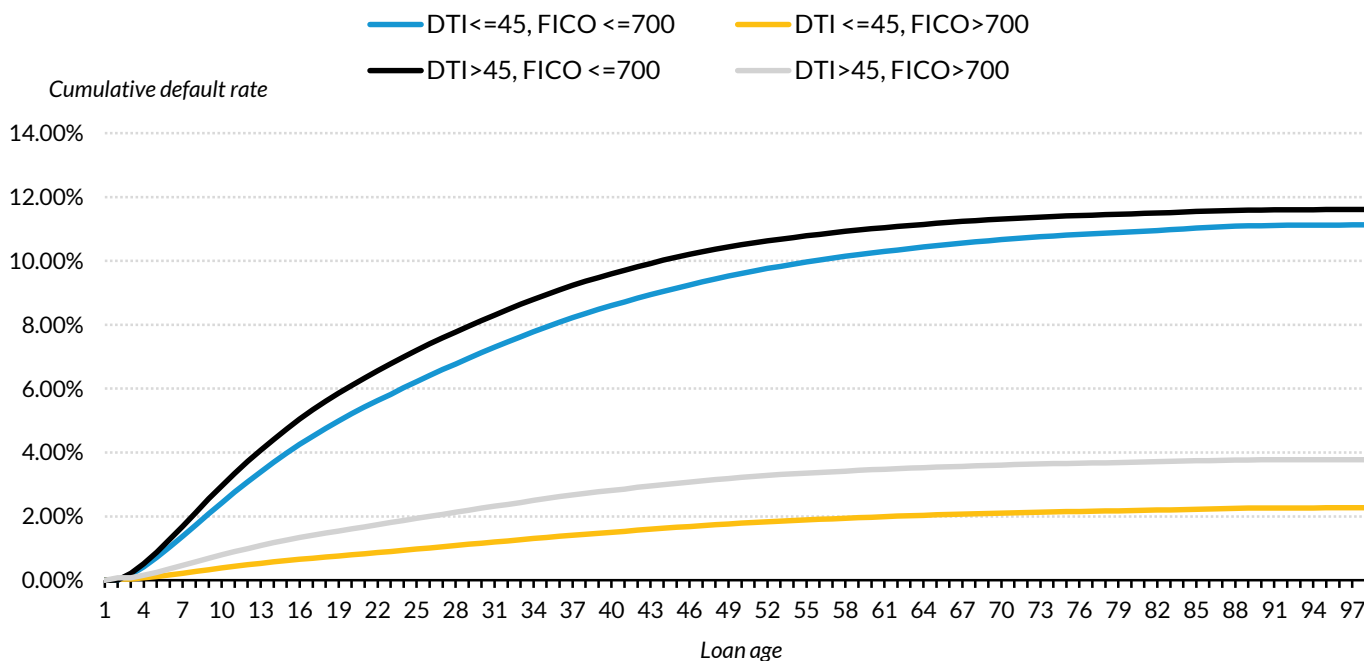
DTI is a much weaker predictor of performance than FICO score. The top chart shows FHA borrowers with higher DTIs do default more than those with lower DTIs, but the differences are modest, as evidenced by the fact that the black line is very close to the blue line and the grey line is not that much above the yellow line. By contrast, FICO makes a much larger difference, as can be seen by comparing the blue line to the yellow line or the black line to the gray line. And low DTI/low FICO borrowers default much less than high DTI/high FICO borrowers, as can be seen by comparing the blue line to the gray line. The bottom chart, for VA borrowers illustrates the same point; DTI is a much weaker predictor of loan performance than credit score.

FHA Cumulative Default Rate by DTI and FICO



Sources: eMBS and Urban Institute. Note: Defaults = 180 days delinquent. Data as of May 2021.

VA Cumulative Default Rate by DTI and FICO

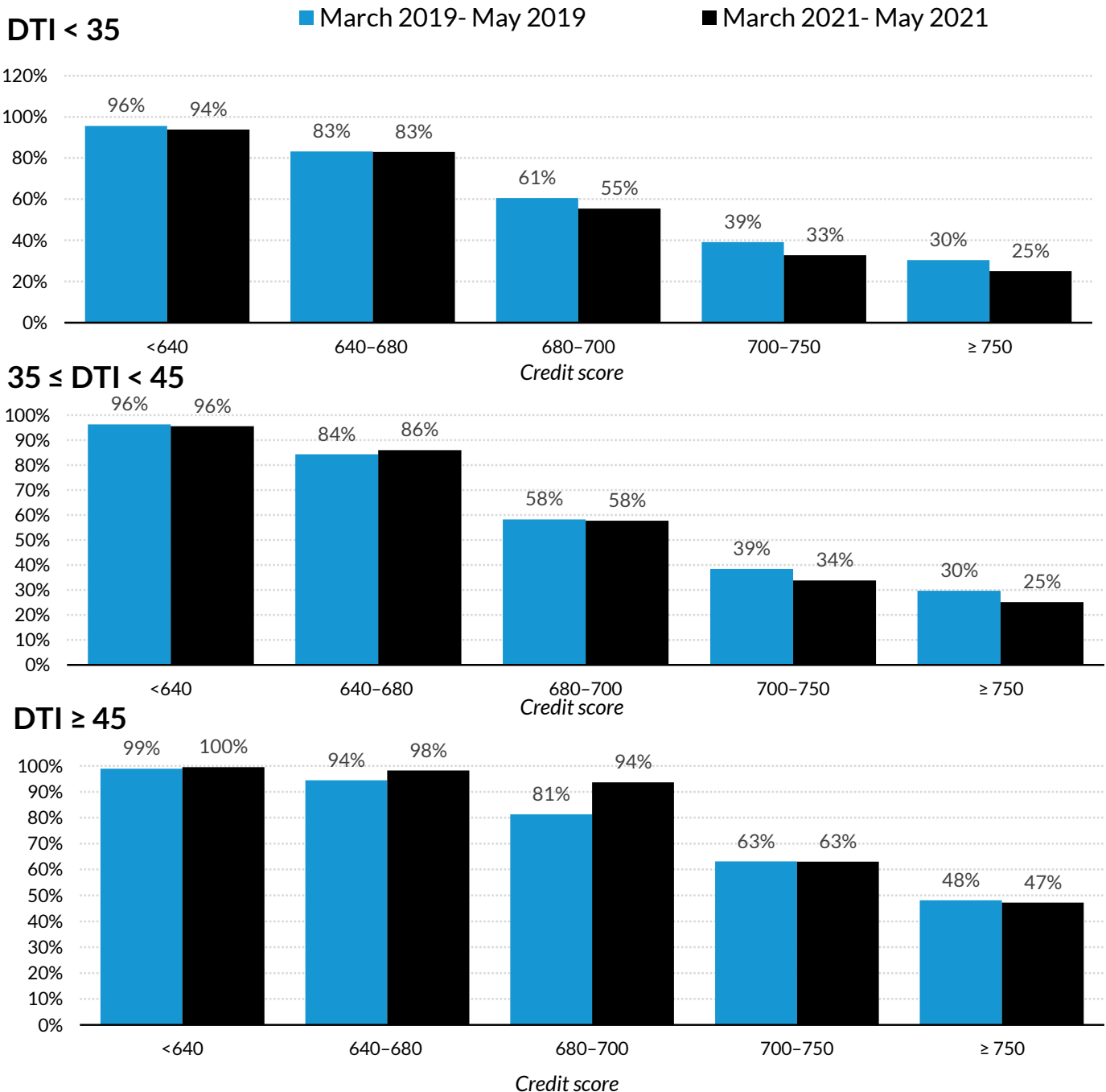


Sources: eMBS and Urban Institute. Note: Defaults = 180 days delinquent. Data as of May 2021.

Credit Box: Historical

This table shows Ginnie Mae's share of agency high-LTV lending by DTI and FICO. In each DTI bucket, Ginnie Mae's share is more concentrated in lower FICO scores than in higher FICO scores. In March 2021- May 2021, Ginnie Mae accounted for 94 percent of agency issuance for DTIs under 35 and FICOs below 640, compared to just 25 percent for DTIs below 35 and FICO 750 and higher. The Ginnie/GSE split in the 35-45 DTI bucket looks a lot like the below 35 percent DTI bucket. In March 2021- May 2021, Ginnie Mae's share of issuance was higher for DTIs of 45 and above, as compared with the two lower DTI buckets. Ginnie Mae share of loans with a DTI of 45 and above and a FICO of 680-700 was 94 percent; it was 55-58 percent for the same FICO in the lower DTI buckets. Comparing this period to 2 years earlier, it is clear the GSEs have stepped up their higher LTV lending for borrowers with FICO of 680 or higher for DTIs less than 45 (the less than 35 and the 35-45 buckets).

Ginnie Mae Share of Agency Market by DTI and FICO for Loans with LTV ≥ 95



Sources: eMBS and Urban Institute.

High LTV Loans: Ginnie Mae vs. GSEs

Ginnie Mae dominates high-LTV lending, with 59.9 percent of its issuances in the March 2021- May 2021 period having LTVs of 95 or above, compared to 7.6 percent for the GSEs. Both the GSEs and Ginnie Mae have decreased their high-LTV lending share from March 2019- May 2019, with the GSEs falling more dramatically from 20.2 percent. The share of high-LTV agency loans going to highest FICO borrowers (i.e. above 750) has increased from the March 2019- May 2019 period to the March 2021- May 2021 period, as has the share of lower DTI borrowers (below 35).

Share of Loans with LTV ≥ 95

| | Ginnie Mae | GSE | All |
|----------------------|------------|-------|-------|
| March 2019- May 2019 | 69.8% | 20.2% | 36.4% |
| March 2021- May 2021 | 59.9% | 7.6% | 14.3% |

Agency Market Share by DTI and FICO for Loans with LTV ≥ 95

March 2019-May 2019

| DTI | FICO | | | | | All |
|--------|-------|---------|---------|---------|-------|--------|
| | <640 | 640-680 | 680-700 | 700-750 | ≥ 750 | |
| < 35 | 3.0% | 4.5% | 2.5% | 6.7% | 8.6% | 25.3% |
| 35 -45 | 5.8% | 8.6% | 4.7% | 11.5% | 9.9% | 40.4% |
| ≥ 45 | 5.5% | 9.0% | 4.3% | 9.0% | 6.5% | 34.2% |
| All | 14.2% | 22.2% | 11.5% | 27.1% | 25.0% | 100.0% |

March 2021-May 2021

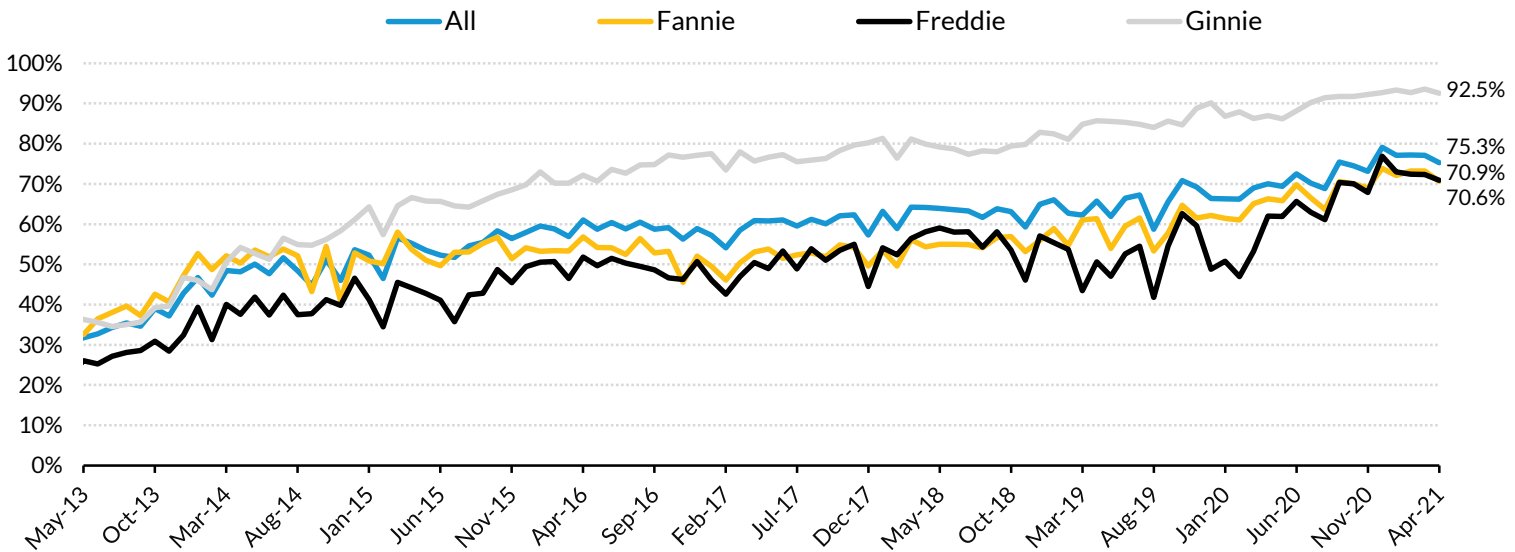
| DTI | FICO | | | | | All |
|--------|------|---------|---------|---------|-------|--------|
| | <640 | 640-680 | 680-700 | 700-750 | ≥ 750 | |
| < 35 | 1.8% | 4.7% | 3.0% | 9.3% | 13.6% | 32.3% |
| 35 -45 | 3.1% | 8.4% | 4.9% | 12.8% | 12.8% | 42.0% |
| ≥ 45 | 2.7% | 6.6% | 3.1% | 7.4% | 6.0% | 25.7% |
| All | 7.6% | 19.6% | 10.9% | 29.5% | 32.3% | 100.0% |

Sources: eMBS and Urban Institute.

Nonbank Originators

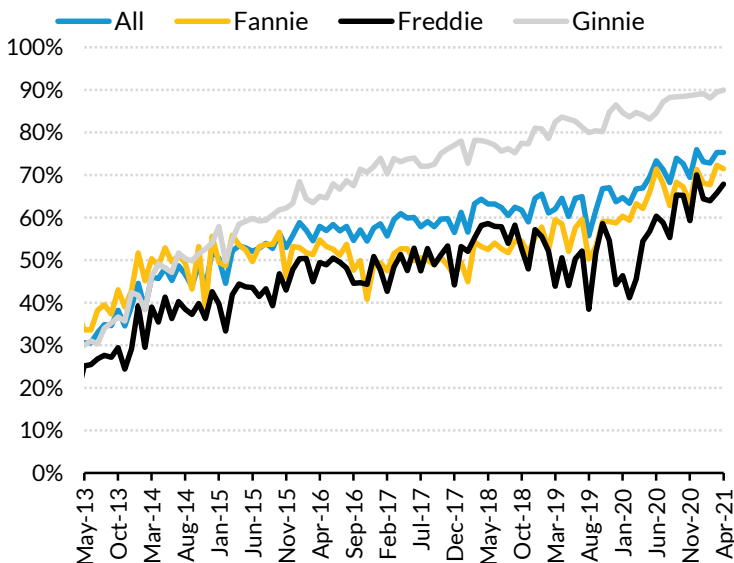
The nonbank origination share has been rising steadily for all three agencies since 2013. The Ginnie Mae nonbank share has been consistently higher than the GSEs, standing at 92.5 percent in April 2021. Fannie and Freddie's nonbank shares both declined in April, to 70.6 percent and 70.9 percent respectively (note that these numbers can be volatile on a month-to-month basis). Ginnie Mae and Freddie Mac have higher nonbank origination shares for refi activity, while Fannie Mae has a higher nonbank origination share for purchase activity. Freddie Mac's nonbank share is the lowest among the three agencies for purchase loans, while Fannie Mae's nonbank share is the lowest for refi loans.

Nonbank Origination Share: All Loans

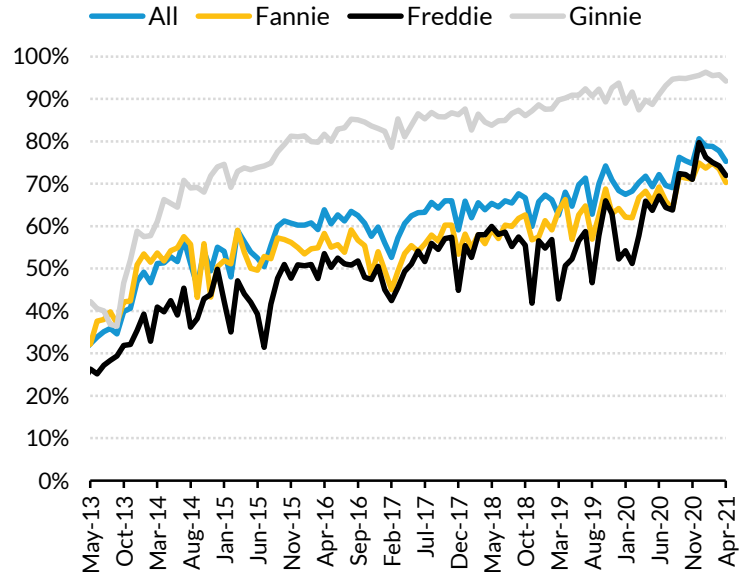


Sources: eMBS and Urban Institute
 Note: Data as of April 2021.

Nonbank Origination Share: Purchase Loans



Nonbank Origination Share: Refinance Loans

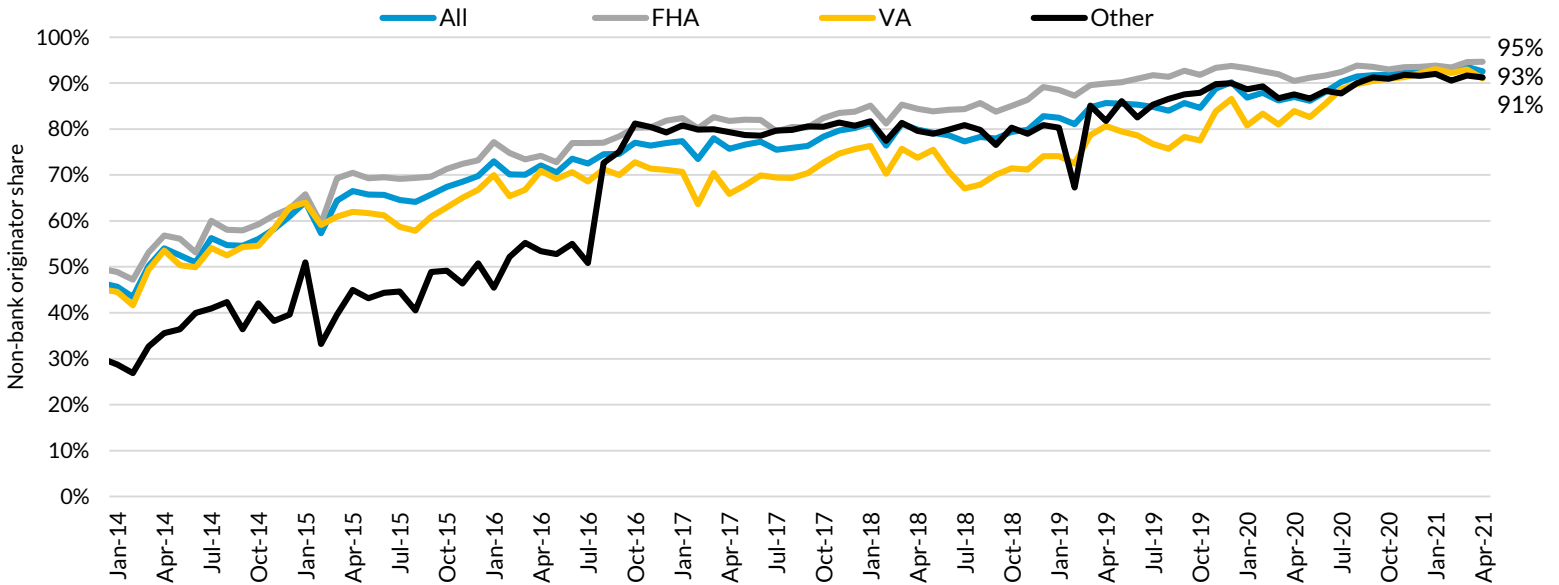


Sources: eMBS and Urban Institute. Note: "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of April 2021.

Ginnie Mae Nonbank Originators

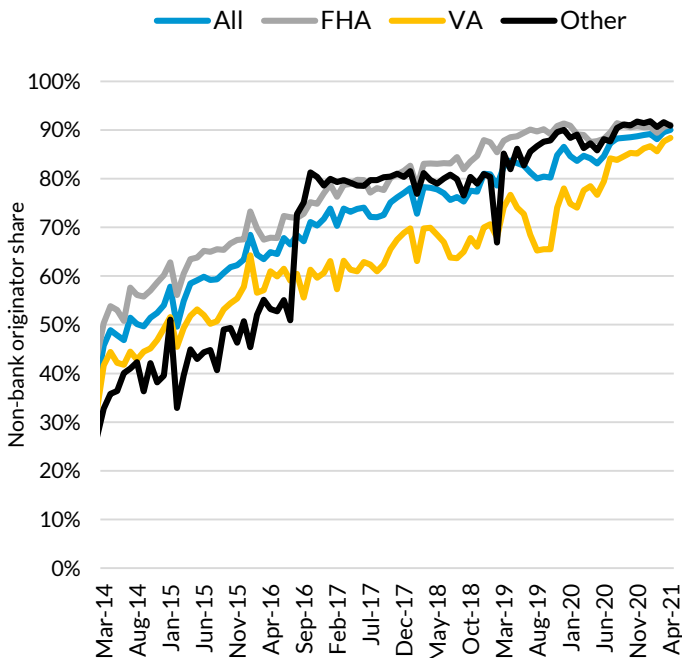
In April 2021, Ginnie Mae's nonbank share declined slightly to 92.5 percent. The nonbank originator share for FHA remained at 94.6 percent in April. The nonbank originator share for VA was higher than last month at 91.0 percent and the nonbank originator share for other loans, which can fluctuate quite a bit month to month, rose to 91.3 percent.

Ginnie Mae Nonbank Originator Share: All Loans

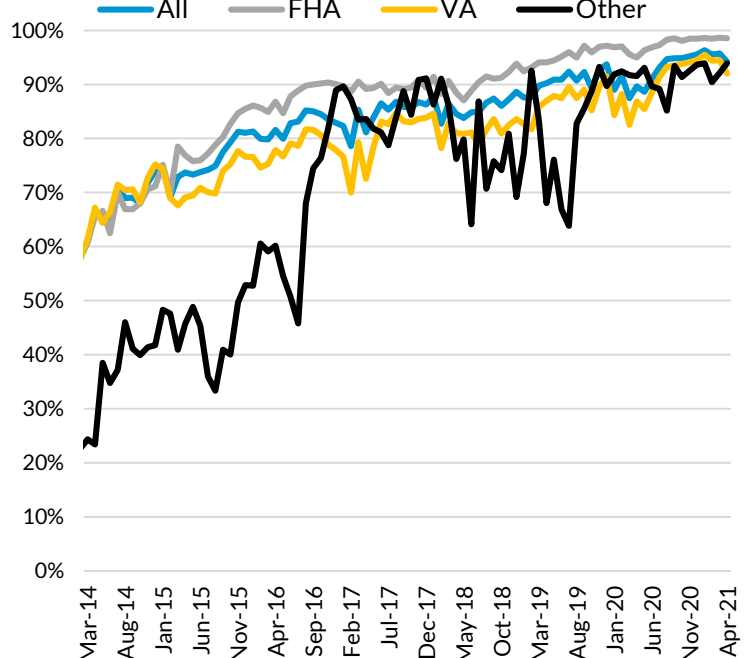


Sources: eMBS and Urban Institute
 Note: Data as of April 2021.

Ginnie Mae Nonbank Share: Purchase Loans



Ginnie Mae Nonbank Share: Refinance Loans

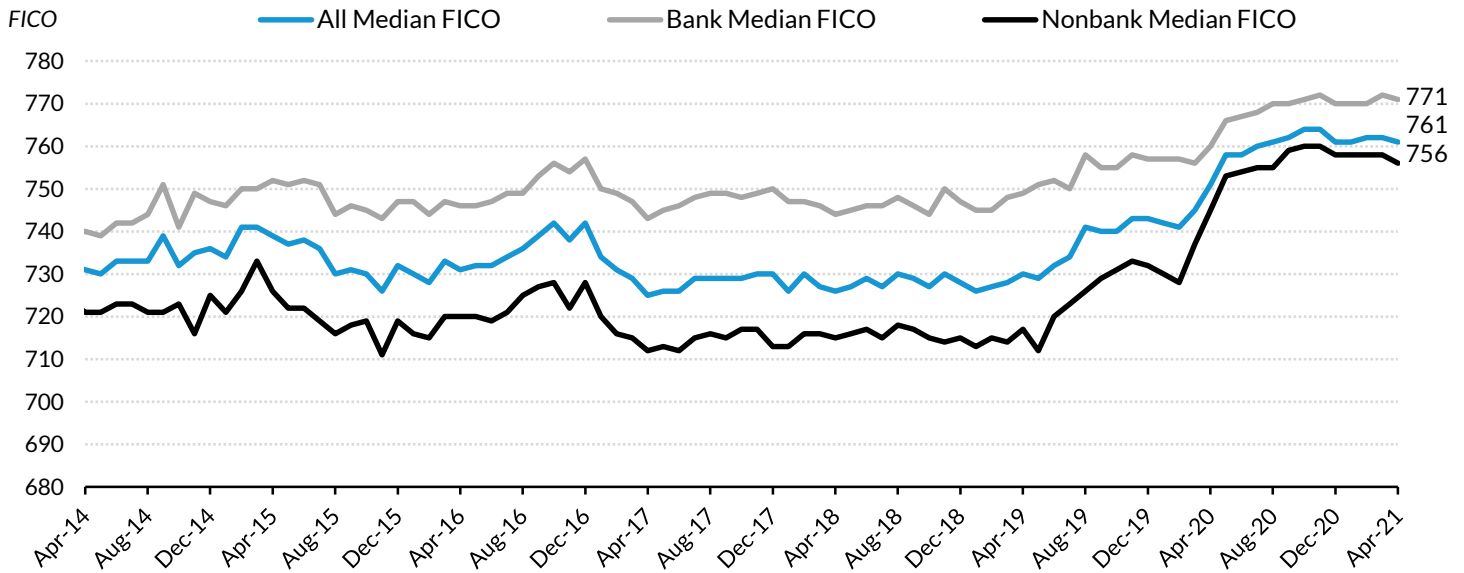


Sources: eMBS and Urban Institute. Note: "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of April 2021.

Nonbank Credit Box

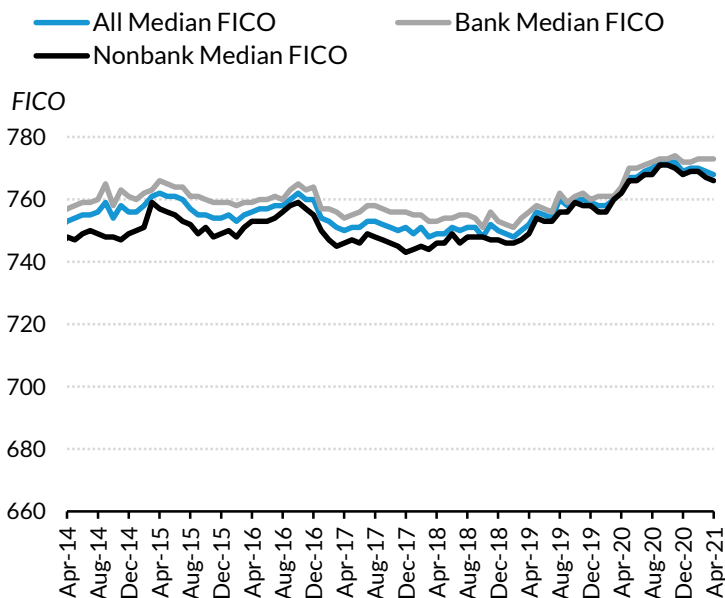
Nonbank originators have played a key role in opening up access to credit. FICO scores for loans originated by nonbanks are lower than their bank counterparts. Within the GSE space, where the differentials between banks and non-banks are small, FICO scores for both have increased since early 2014. The sharp rise in bank and non-bank FICOs reflects an increase in GSE refinance activity, producing a shift in their business mix toward higher FICO borrowers. Within the Ginnie Mae space, FICO scores for bank originations has been consistently higher than their non-bank counterparts, reflecting the sharp cut-back in FHA lending by many banks. The bank/non-bank FICO differential has narrowed over the past 2 years, as non-banks are relatively more active in refi lending, which is skewed toward higher FICO scores.

Agency FICO: Bank vs. Nonbank



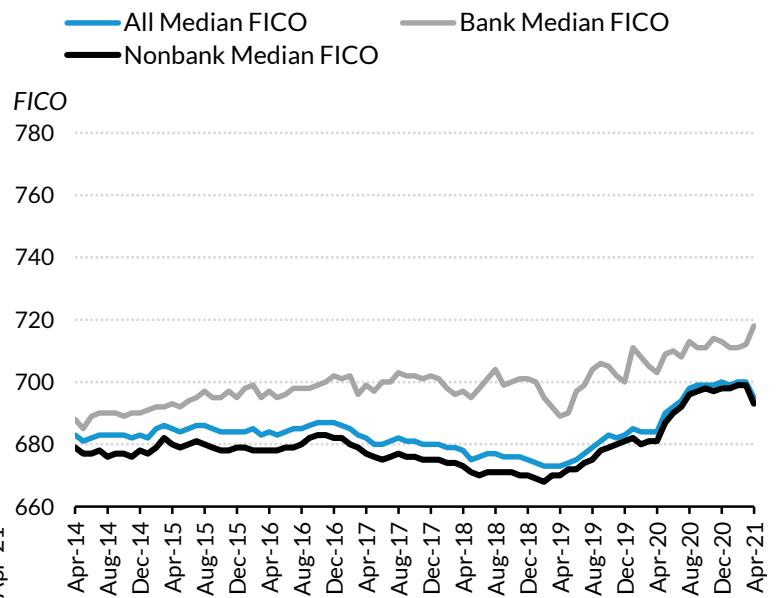
Sources: eMBS and Urban Institute. Note: Data as of April 2021.

GSE FICO: Bank vs. Nonbank



Sources: eMBS and Urban Institute. Note: Data as of April 2021.

Ginnie Mae FICO: Bank vs. Nonbank

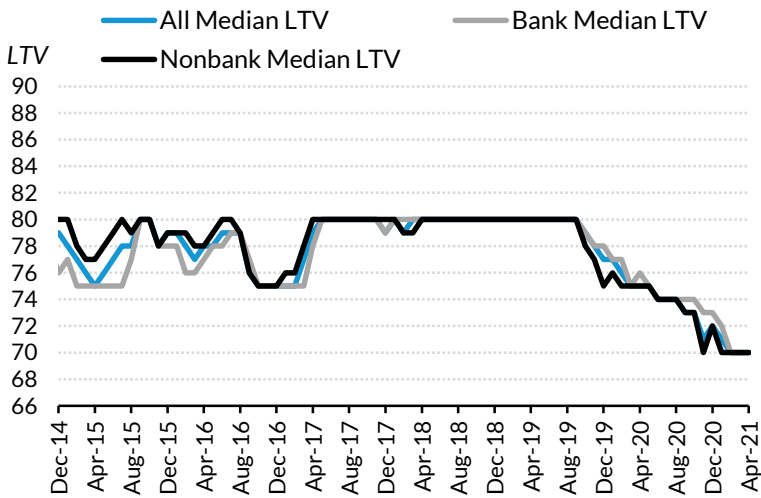


Sources: eMBS and Urban Institute. Note: Data as of April 2021.

Nonbank Credit Box

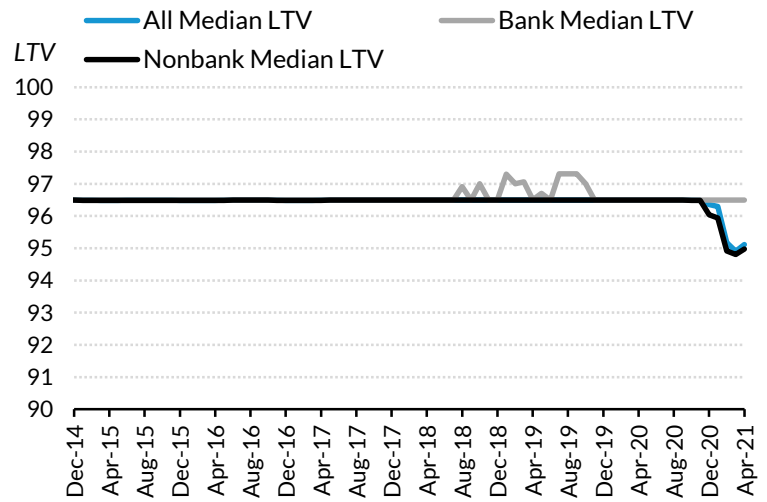
Between early 2017 and early 2019, there was a substantial increase in DTIs for both Ginnie Mae and the GSEs, for banks and nonbanks. Over the subsequent two years, this has mostly reversed in the Ginnie Mae space, and more than completely reversed for the GSEs, leaving GSE DTIs as low as they have been at any point since 2014. As interest rates increased, DTIs rose, because borrower payments were driven up relative to incomes. With the fall in interest rates over the past two years, DTIs have dropped.

GSE LTV: Bank vs. Nonbank



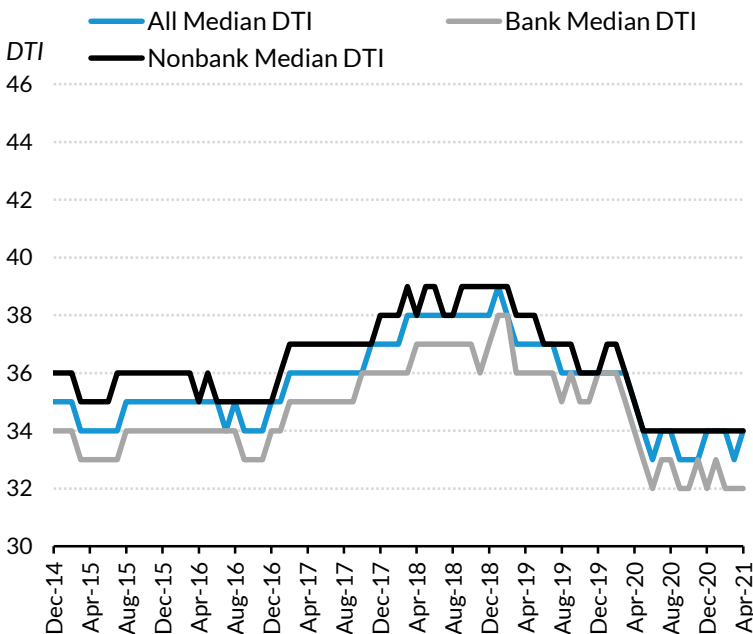
Sources: eMBS and Urban Institute. Note: Data as of April 2021.

Ginnie Mae LTV: Bank vs. Nonbank



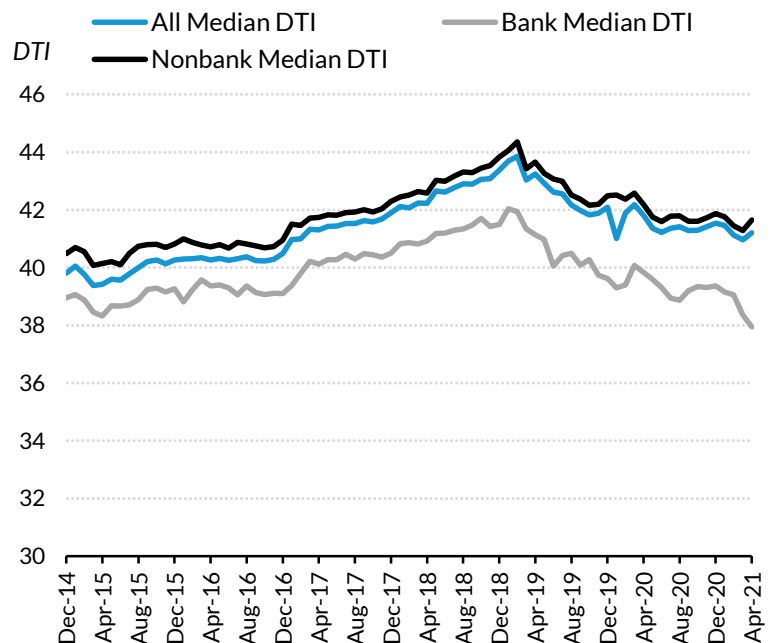
Sources: eMBS and Urban Institute. Note: Data as of April 2021.

GSE DTI: Bank vs. Nonbank



Sources: eMBS and Urban Institute. Note: Data as of April 2021.

Ginnie Mae DTI: Bank vs. Nonbank

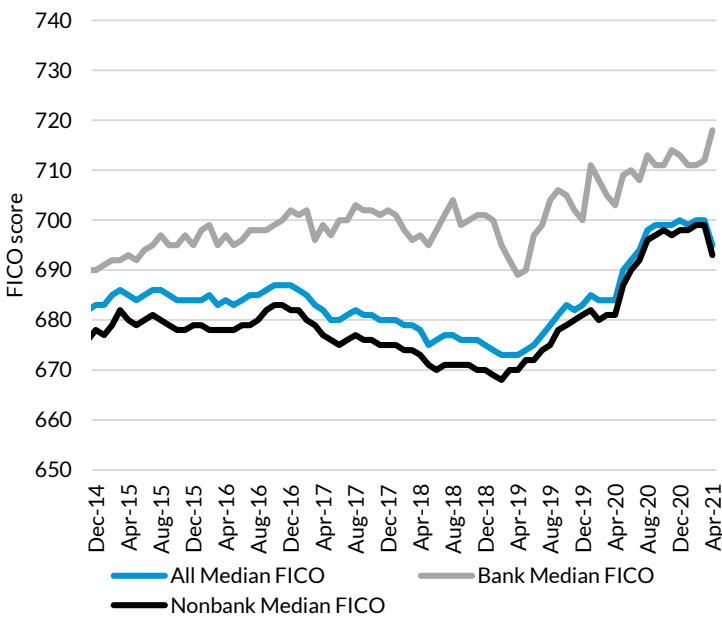


Sources: eMBS and Urban Institute. Note: Data as of April 2021.

Ginnie Mae Nonbank Originators: Credit Box

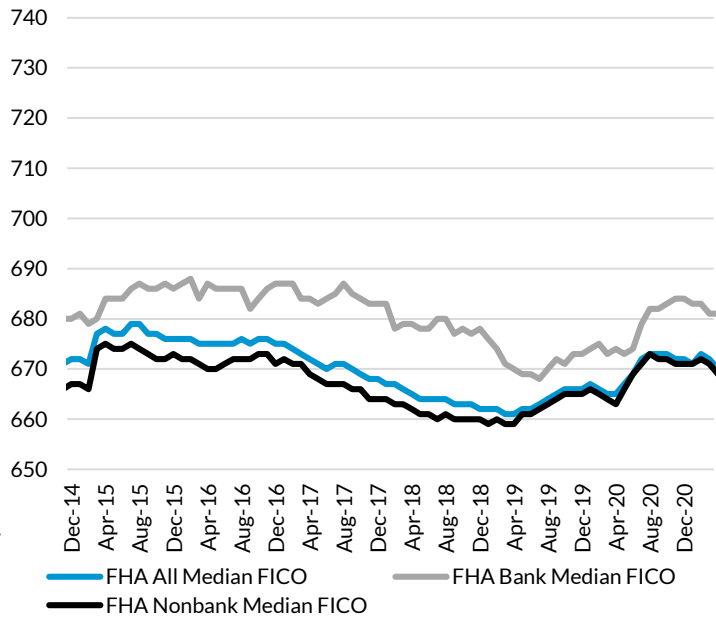
The median FICO score for Ginnie Mae nonbank originators declined in April 2021. Bank FICO scores are 23 points above non-banks. The gap between banks and non-banks is very apparent for all categories of government lending.

Ginnie Mae FICO Scores: Bank vs. Nonbank



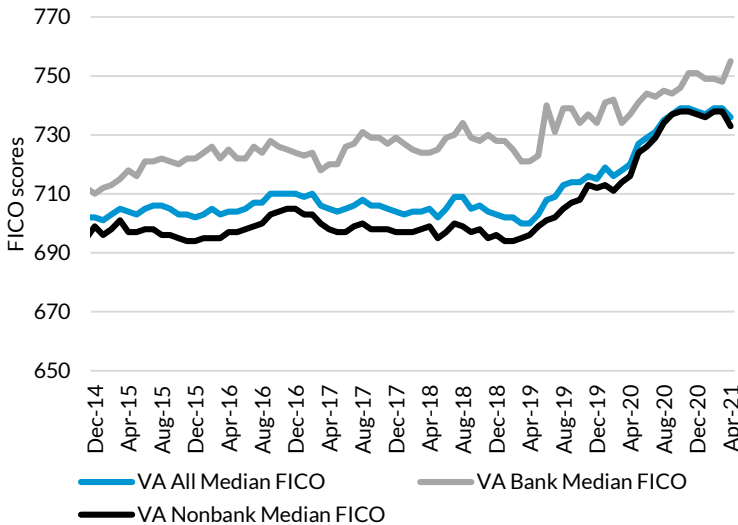
Sources: eMBS and Urban Institute Note: Data as of April 2021.

Ginnie Mae FHA FICO Scores: Bank vs. Nonbank



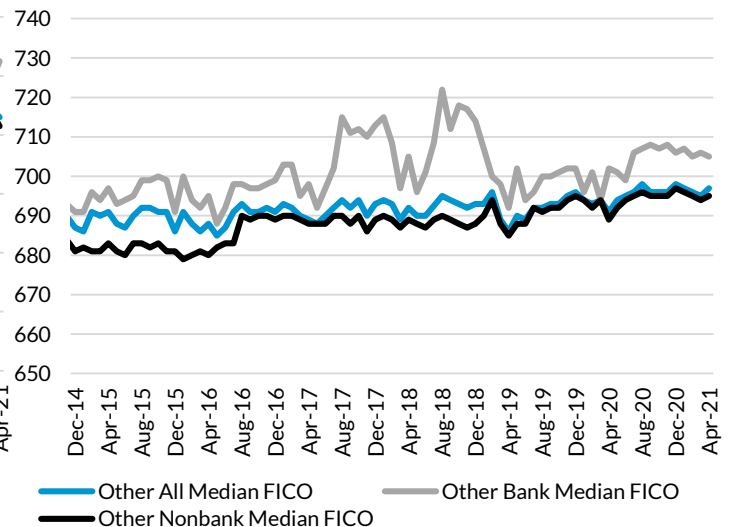
Sources: eMBS and Urban Institute Note: Data as of April 2021.

Ginnie Mae VA FICO Scores: Bank vs. Nonbank



Sources: eMBS and Urban Institute Note: Data as of April 2021.

Ginnie Mae Other FICO Scores: Bank vs. Nonbank

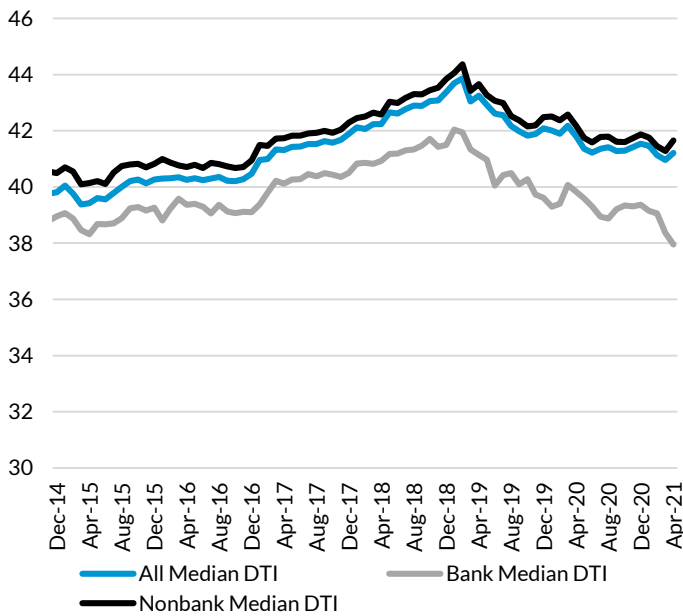


Sources: eMBS and Urban Institute Note: "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of April 2021.

Ginnie Mae Nonbank Originators: Credit Box

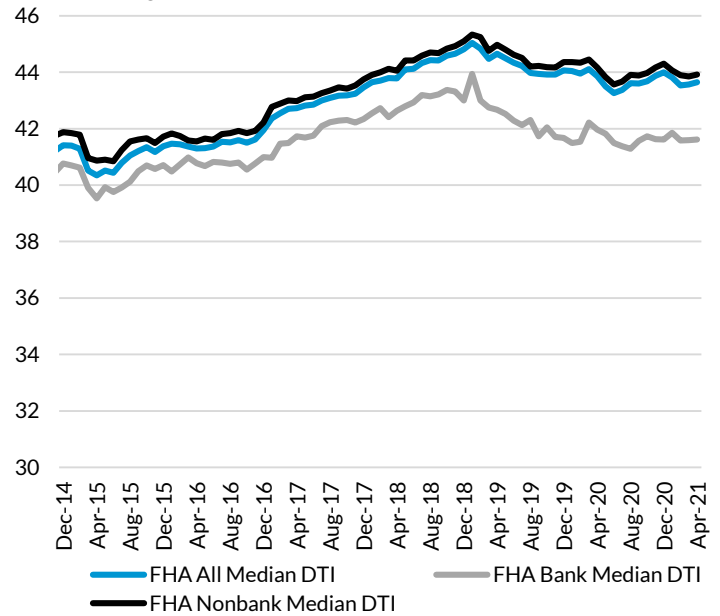
An analysis of borrowers' DTI ratios for bank versus non-bank originators indicates that the former have a lower median DTI. The DTIs for FHA and VA borrowers experienced notable increases during 2017 and 2018 for both banks and nonbank originators, while the Other origination DTIs stayed relatively flat. Rising DTIs are expected in a rising rate environment. After peaking in January 2019, Ginnie DTIs have reverted to 2017 levels, as rates have declined.

Ginnie Mae DTI: Bank vs. Nonbank



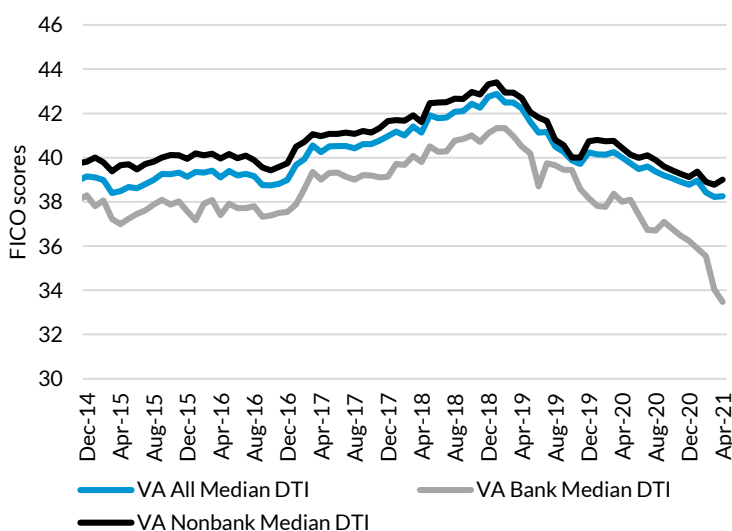
Sources: eMBS and Urban Institute Note: Data as of April 2021.

Ginnie Mae FHA DTI: Bank vs. Nonbank



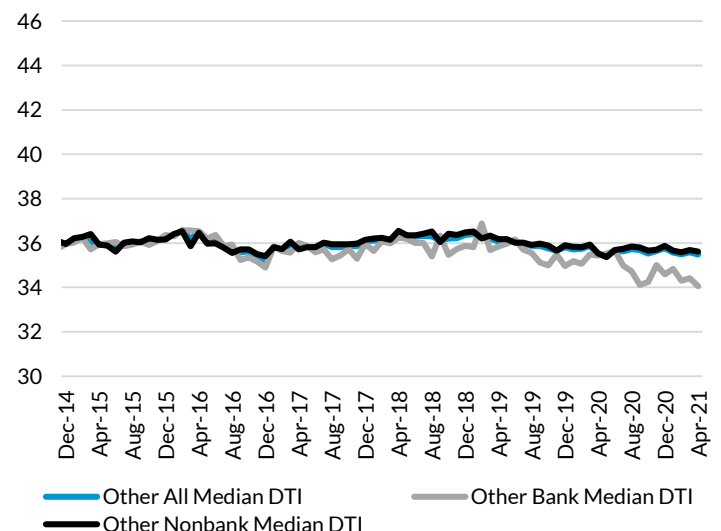
Sources: eMBS and Urban Institute Note: Data as of April 2021.

Ginnie Mae VA DTI: Bank vs. Nonbank



Sources: eMBS and Urban Institute Note: Data as of April 2021.

Ginnie Mae Other DTI: Bank vs. Nonbank



Sources: eMBS and Urban Institute Note: "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of April 2021.

Holders of Ginnie Mae MSR s

This table shows 30 largest owners of mortgage servicing rights (MSR) by UPB for Ginnie Mae securitizations. As of April 2021, over half (50.4 percent) of the Ginnie Mae MSR s are owned by the top six firms. The top 30 firms collectively own 82.4 percent. Twenty-one of these 30 are non-depositories, the remaining 9 are depository institutions.

Top 30 Holders of Ginnie Mae Mortgage Servicing Rights (MSR s), by UPB

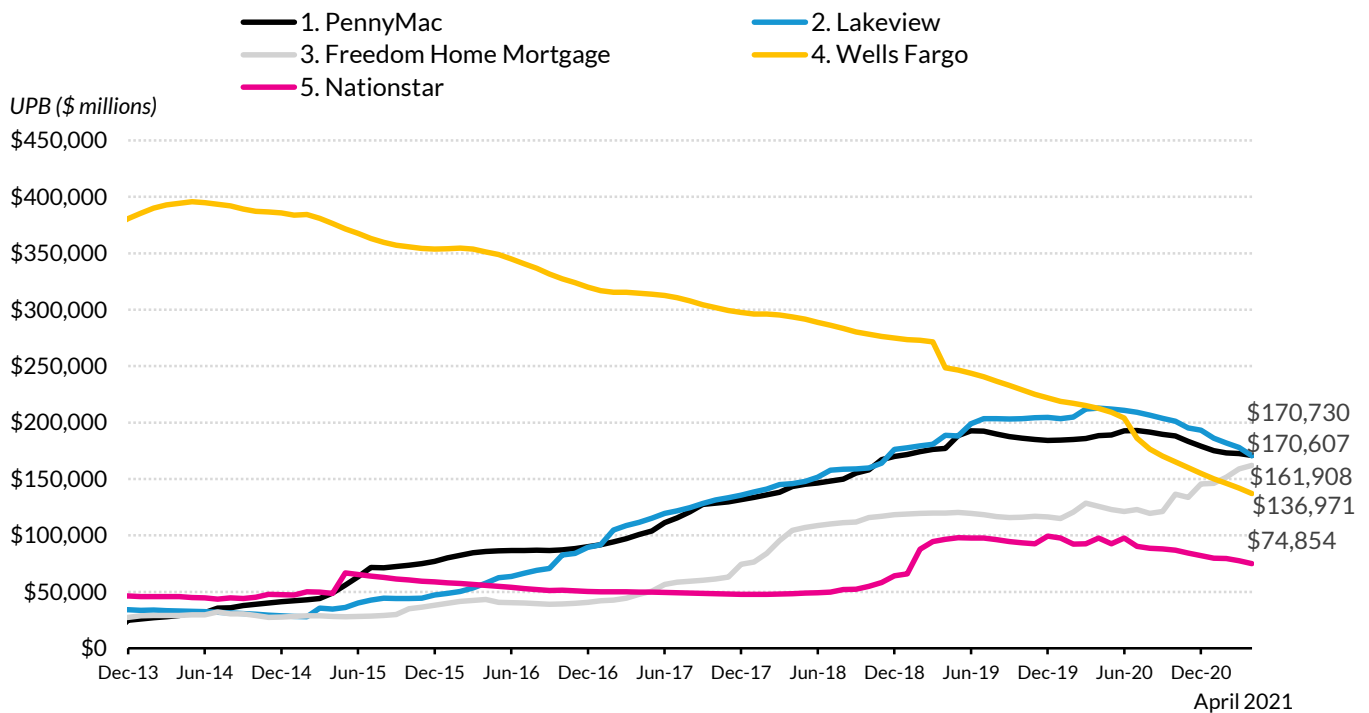
| Rank | MSR Holder | UPB (\$ millions) | Share | Cumulative Share |
|------|---------------------------------------|-------------------|-------|------------------|
| 1 | PennyMac | \$170,730 | 11.1% | 11.1% |
| 2 | Lakeview | \$170,607 | 11.1% | 22.2% |
| 3 | Freedom Home Mortgage | \$161,908 | 10.5% | 32.7% |
| 4 | Wells Fargo | \$136,971 | 8.9% | 41.6% |
| 5 | Nationstar | \$74,854 | 4.9% | 46.4% |
| 6 | Quicken Loans | \$60,957 | 4.0% | 50.4% |
| 7 | Newrez | \$44,880 | 2.9% | 53.3% |
| 8 | US Bank | \$42,568 | 2.8% | 56.1% |
| 9 | Carrington Mortgage | \$37,196 | 2.4% | 58.5% |
| 10 | USAA Federal Savings Bank | \$34,378 | 2.2% | 60.7% |
| 11 | Caliber Home Loans | \$34,024 | 2.2% | 62.9% |
| 12 | Navy Federal Credit Union | \$25,898 | 1.7% | 64.6% |
| 13 | Amerihome Mortgage | \$25,754 | 1.7% | 66.3% |
| 14 | Truist Bank | \$23,779 | 1.5% | 67.8% |
| 15 | United WholeSale Mortgage | \$21,357 | 1.4% | 69.2% |
| 16 | The Money Source | \$20,017 | 1.3% | 70.5% |
| 17 | Loan Depot | \$19,726 | 1.3% | 71.8% |
| 18 | Home Point Financial Corporation | \$19,329 | 1.3% | 73.1% |
| 19 | Planet Home Lending | \$15,485 | 1.0% | 74.1% |
| 20 | Guild Mortgage | \$15,427 | 1.0% | 75.1% |
| 21 | Midfirst Bank | \$14,609 | 0.9% | 76.0% |
| 22 | JP Morgan Chase | \$14,081 | 0.9% | 76.9% |
| 23 | Mortgage Research Center | \$13,312 | 0.9% | 77.8% |
| 24 | PHH Mortgage Corporation | \$11,428 | 0.7% | 78.5% |
| 25 | M&T Bank | \$11,361 | 0.7% | 79.3% |
| 26 | Citizens Bank | \$10,988 | 0.7% | 80.0% |
| 27 | Flagstar Bank | \$10,168 | 0.7% | 80.6% |
| 28 | Idaho Housing and Finance Association | \$9,880 | 0.6% | 81.3% |
| 29 | New American Funding | \$9,554 | 0.6% | 81.9% |
| 30 | CMG Mortgage, INC. | \$8,160 | 0.5% | 82.4% |

Sources: eMBS and Urban Institute. Note: Data as of April 2021.

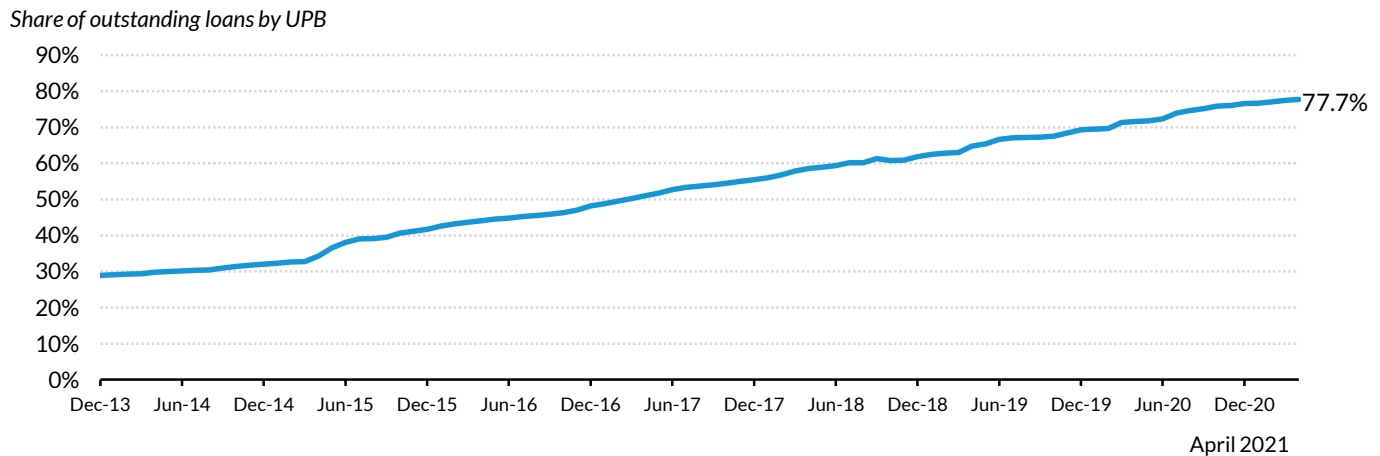
Holders of Ginnie Mae MSR

The composition of the largest owners of Ginnie Mae MSR has evolved quite a bit over time. In December 2013, Wells Fargo and JP Morgan Chase were the two largest owners of Ginnie Mae MSR, holding \$375 billion and \$139 billion in servicing UPB respectively. In April 2021, Wells Fargo's holdings of MSR dipped to \$137.0 billion, below the \$170.7, \$170.6, and \$161.9 billion held by PennyMac, Lakeview and Freedom Home Mortgage, respectively (all nonbanks). Nationstar (also nonbank) makes up the remainder of the top five largest holders of MSR, owning \$74.9 billion respectively as of April 2021. Nonbanks collectively owned servicing rights for 77.7 percent of all outstanding unpaid principal balance guaranteed by Ginnie Mae in April 2021. In December 2013, the nonbank share was much smaller at 27.7 percent.

Top 5 MSR Holders: Outstanding Ginnie Mae Loans by UPB



Share of Ginnie Mae MSR held by Nonbanks

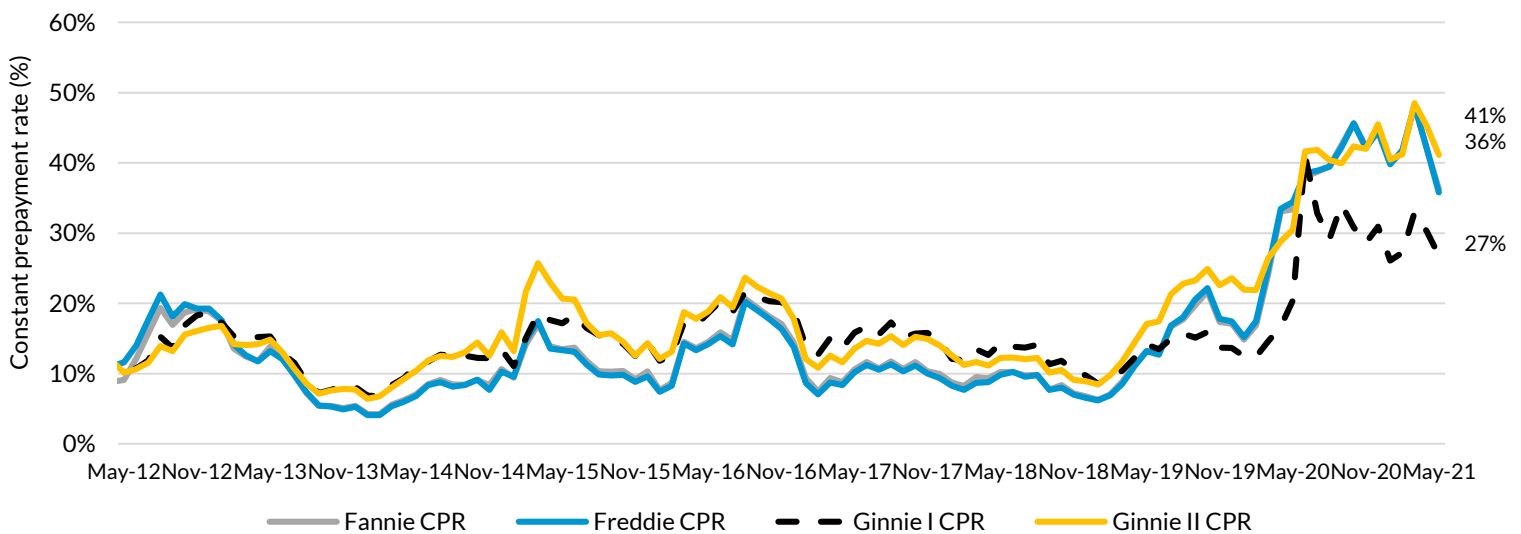


Sources: eMBS and Urban Institute. Note: Data as of April 2021.

Prepayments

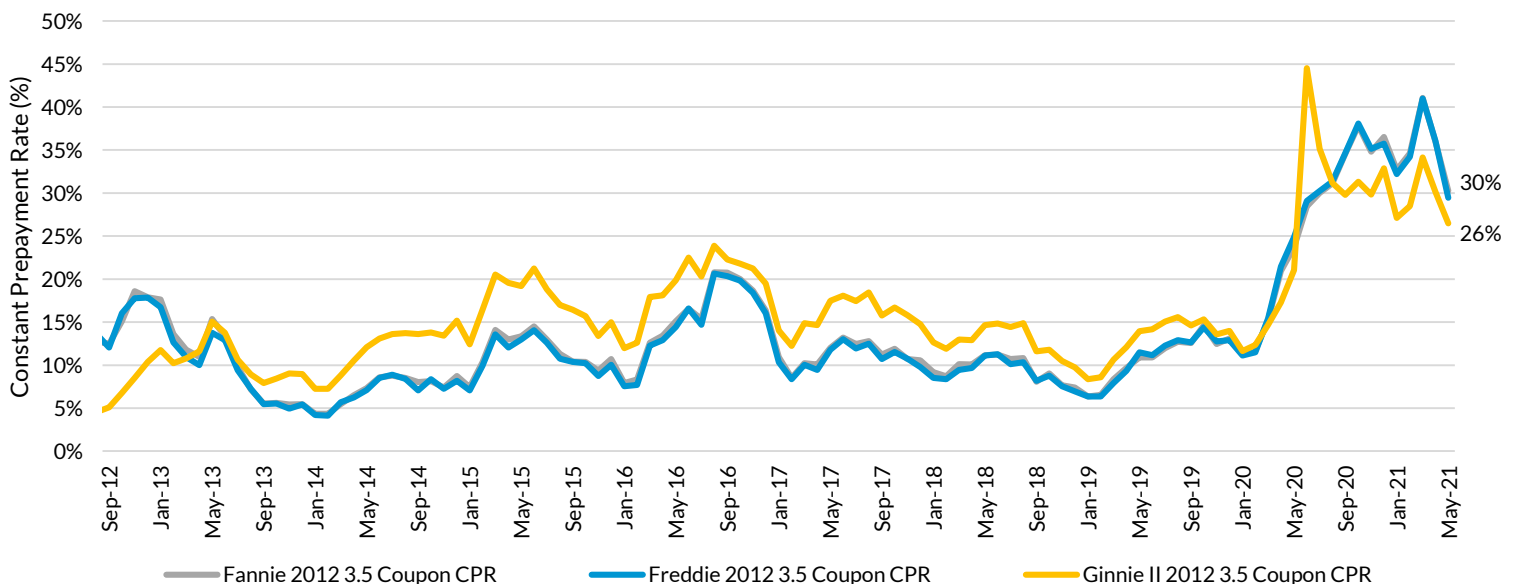
While prepayment speeds on all securities have risen since early 2019, the speed increase has been especially dramatic in 2020 and continuing into early 2021, with speeds on both Ginnie II and GSE securities rising rapidly due to a sharp drop in rates. At this point, the speeds on GSE securities have largely converged with those on Ginnie II securities, as the former have ramped up more quickly in 2020. The faster Ginnie speeds from 2013-early 2020 reflected the growing share of VA loans, which tend to prepay faster than either FHA or GSE loans. In addition, FHA puts fewer restrictions on streamlined refinances, and some of the upfront mortgage insurance premium can also be applied to the refinanced loan. Prepayment speeds have declined the past month, more for GSE loans, and may decline further over the next few months, given the more than 30 bps increase in mortgage rates since year end 2020. Even so, rates remain very low in a historical context.

Aggregate Prepayments



Sources: Credit Suisse and Urban Institute. Note: Data as of May 2021.

2012 Issued 3.5 Coupon CPR

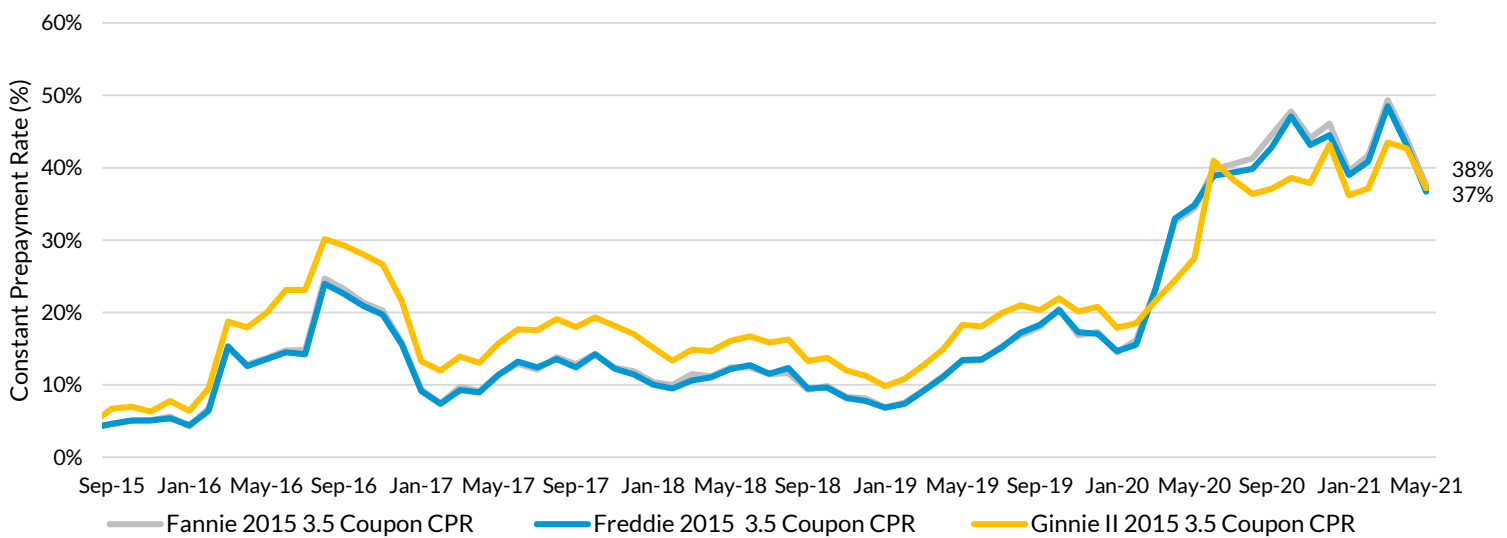


Sources: Credit Suisse and Urban Institute. Note: Data as of May 2021.

Prepayments

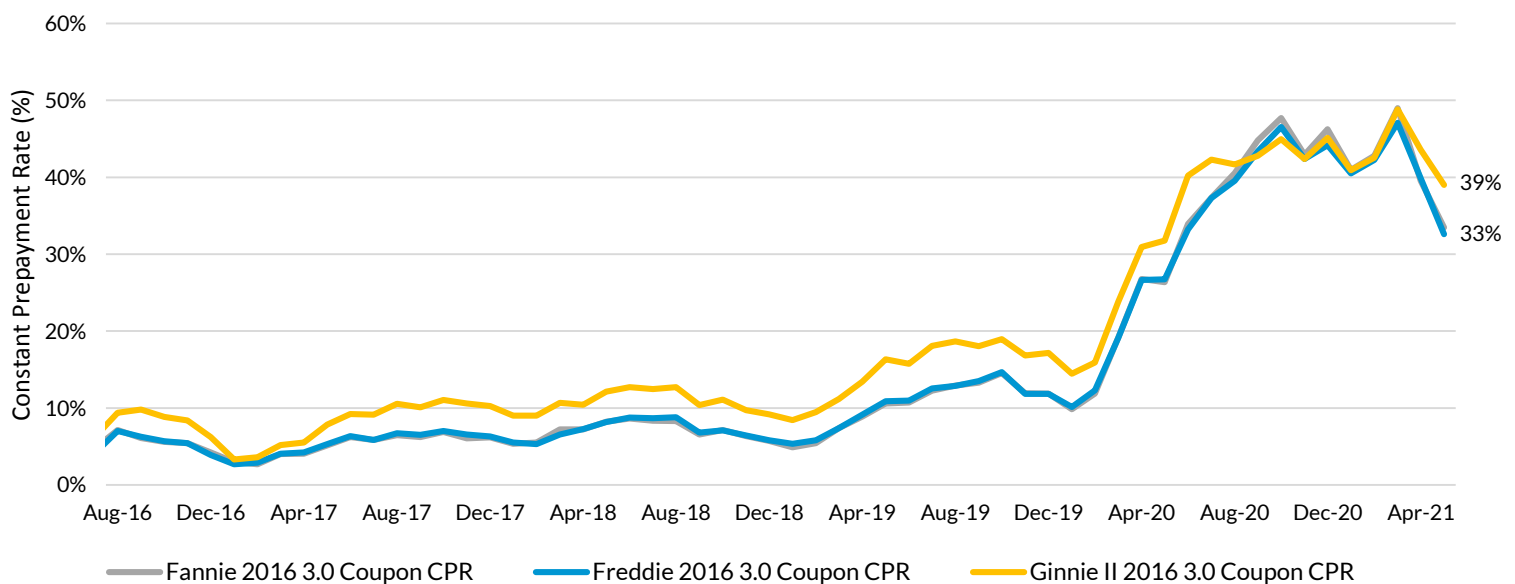
Speeds on the 2015 3.5s and the 2016 3.0s, the largest coupon cohorts of those vintage years, have been increasing since early 2019; the speed increases have been especially dramatic in 2020 and continuing into early 2021 due to a sharp drop in rates, with speeds on both Ginnie II and GSE securities rising rapidly. However, over the past month prepayment speeds have declined, and may decline further over the next few months, given the more than 30 bps increase in mortgage rates since year end 2020. The speeds on the 2015-issued Ginnie 3.5s have been slightly lower than their conventional counterparts from August 2020 through early in 2021, although they converged this past month as conventional prepayments dropped more than their Ginnie counterparts. The speeds on the 2016-issued Ginnie Mae 3.0s remained very comparable to their conventional counterparts from August 2020 until earlier this year, although over the past few months conventional prepayments have dropped more than Ginnie Mae prepayments. The faster historical speeds on the Ginnie Mae cohorts reflect the fact that 2015 and 2016 Ginnie originations consist of a large component of VA loans, which prepay faster than either FHA or GSE loans. The FHA streamlined programs are likely another contributor to the historically faster speeds.

2015 Issued 3.5 Coupon CPR



Sources: Credit Suisse and Urban Institute. Note: Data as of May 2021.

2016 Issued 3.0 Coupon CPR

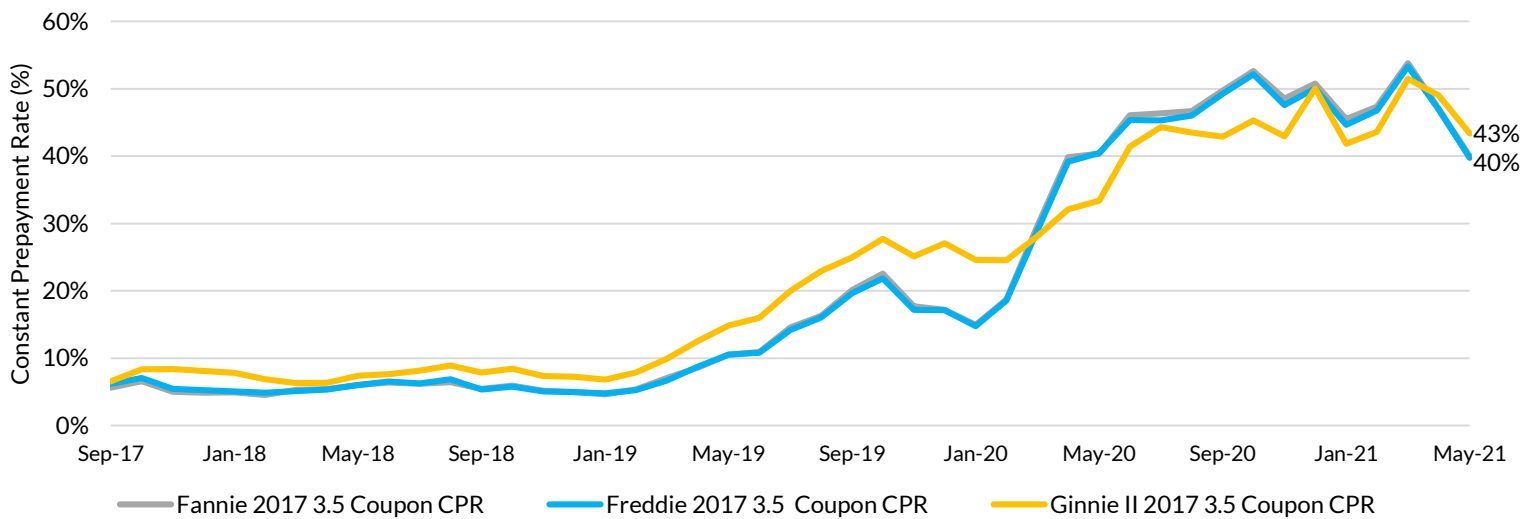


Sources: Credit Suisse and Urban Institute. Note: Data as of May 2021.

Prepayments

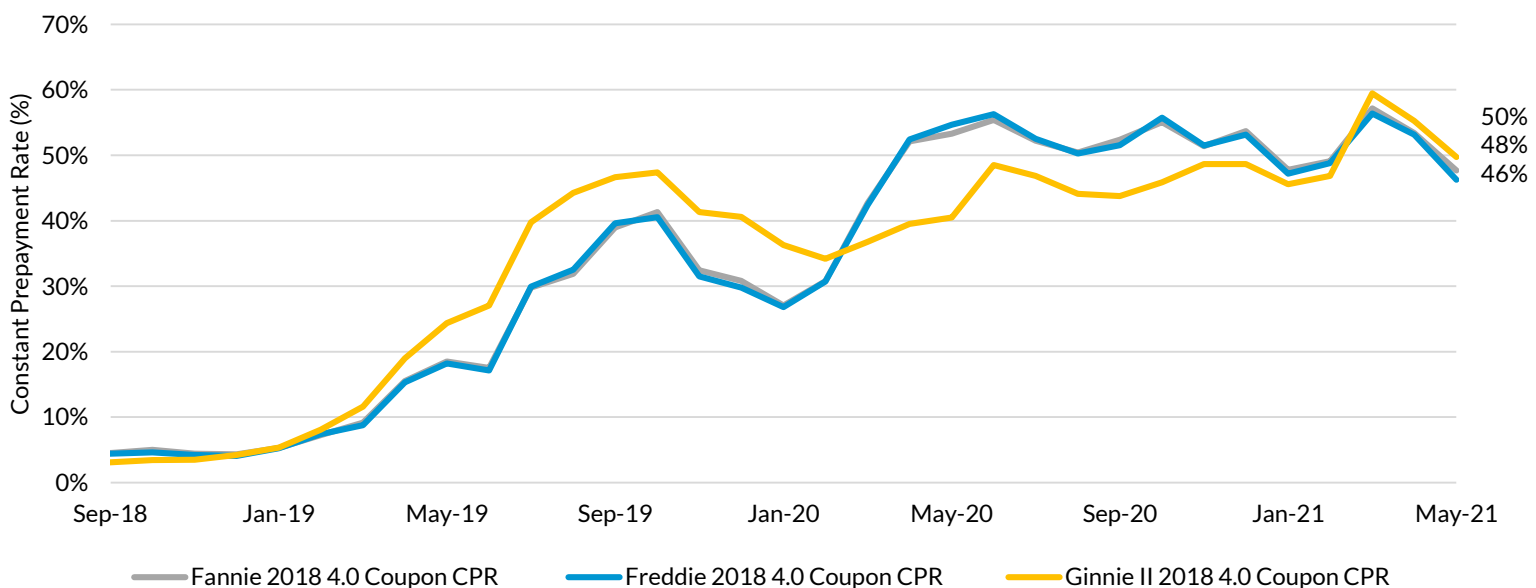
The charts below show the behavior of the 2017-issued 3.5s and the 2018-issued 4.0s, the largest coupon cohorts of those vintage years. Despite slower seasoning, 2017 Ginnie II 3.5s were prepaying faster than their conventional counterparts from late 2017 to March 2020, due primarily to fast VA prepayment speeds. Similarly, the 2018 Ginnie II 4.0s prepaid more slowly than their conventional counterparts until January of 2019. In 2019, speeds of 2018 4.0s and 2017 3.5s accelerated, and Ginnie II speeds accelerated more than their conventional counterparts. However, in early 2020 conventional speeds accelerated more than Ginnie speeds. Since March 2020, conventional speeds have generally exceeded those of the Ginnie cohorts, although the difference between the two has narrowed in recent months, and, for the latest month, both 2017 Ginnie 3.5s and 2018 Ginnie 4s are marginally faster than their conventional counterparts. Prepayment speeds have declined the past month, and may decline further over the next few months, given the more than 30 bps increase in mortgage rates since year end 2020.

2017 Issued 3.5 Coupon CPR



Sources: Credit Suisse and Urban Institute. Note: Data as of May 2021.

2018 Issued 4.0 Coupon CPR

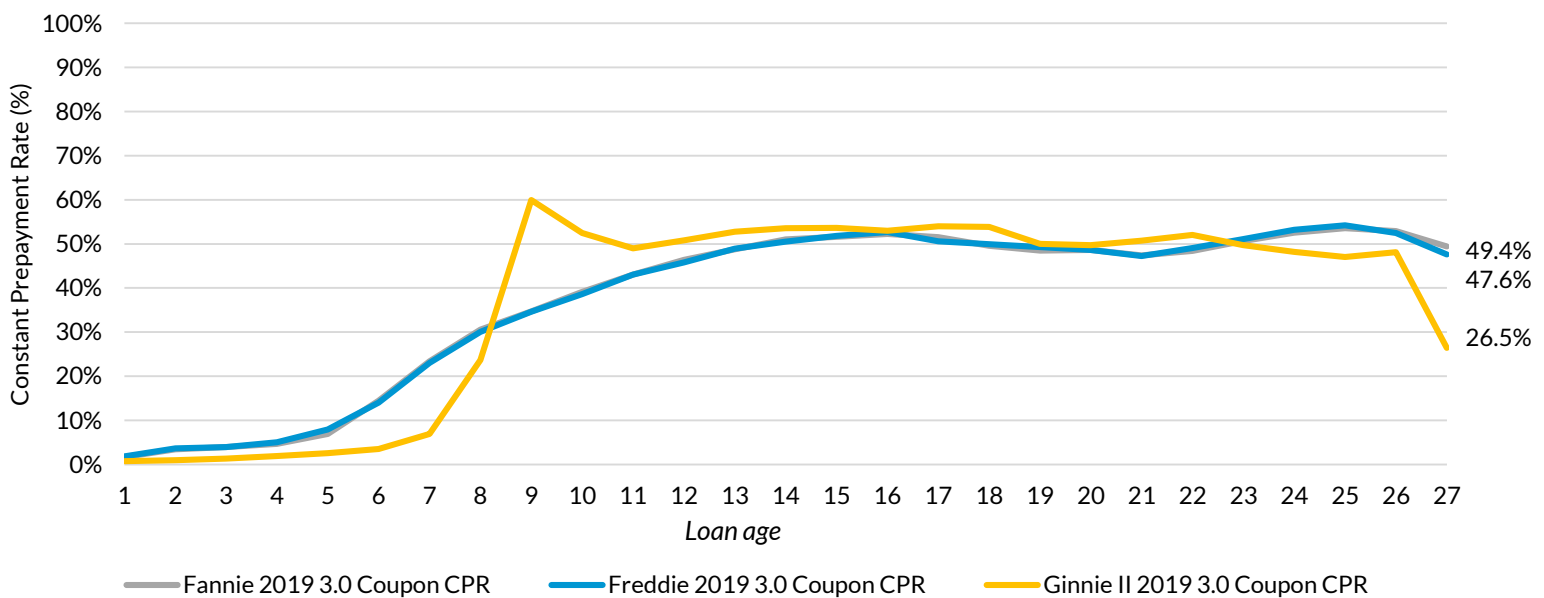


Sources: Credit Suisse and Urban Institute. Note: Data as of May 2021.

Prepayments

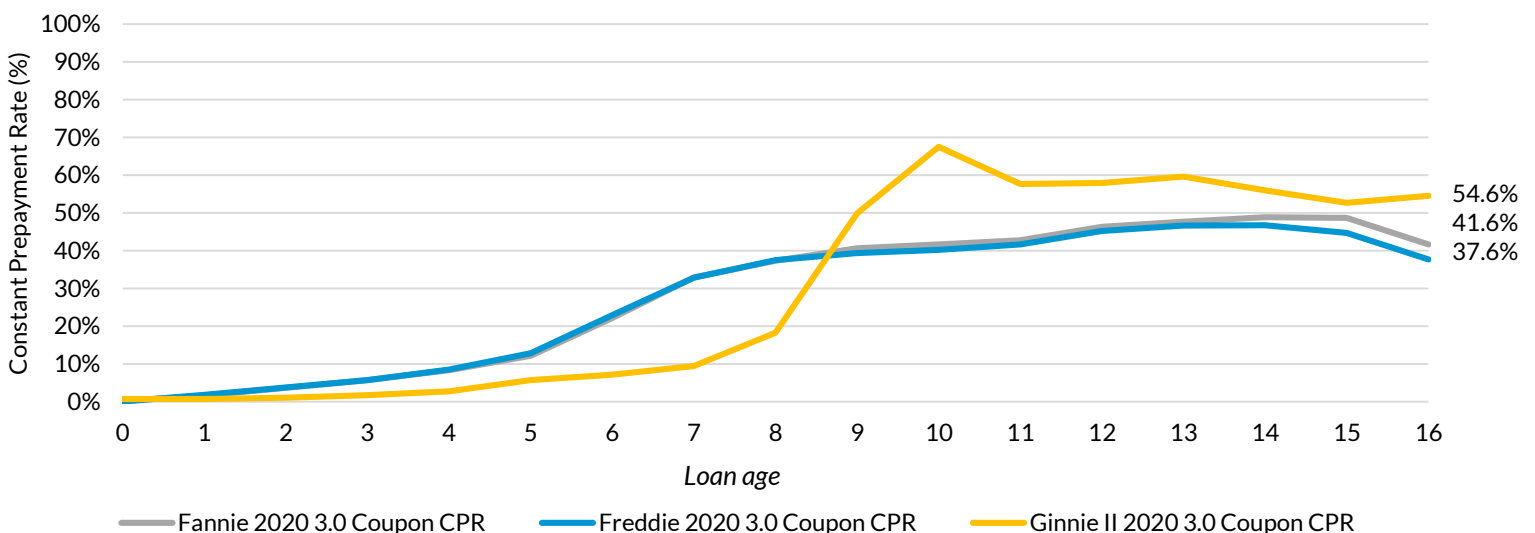
The charts below show prepayment speeds by loan age for 2019 and 2020 Ginnie II 3.0s. Prepayment speeds on both cohorts jumped at the 8-10 month loan age, a more muted jump than earlier cohorts at the same age; they then began to converge with conventional speeds more quickly, as a result of Ginnie Mae actions to curtail the “churning” problem. These actions have included suspending a few servicers whose VA speeds are especially high from selling VA loans into Ginnie Mae II securities, as well as rewriting the pooling requirements so that if loans that do not meet the seasoning requirement are refinanced, the new loan is ineligible for securitization. Ginnie’s latest action on this front became effective for securities issued on or after November 1, 2019. It bars the securitization of over 90 percent LTV cash-out refinances into Ginnie I and Ginnie II pools (custom pools excepted). In addition, VA has implemented a net tangible benefit test, requiring the lender to show that the borrower has obtained a benefit from the refinance. The recent experience of these cohorts indicates that, as a result of these cumulative actions plus the acceleration of speeds in the conventional market in response to lower rates, Ginnie Mae speeds on 2019-issued 3.0s have been generally running below their conventional counterparts 22 month loan age onwards. 2020 Ginnie II 3.0s show a sharp increase in speeds at the 9-10 month mark, pushing it well above conventional speeds, but the gaps are narrowing by months 11 and 12.

2019 Issued 3.0 Coupon CPR, by Loan Age



Sources: Credit Suisse and Urban Institute. Note: Data as of May 2021.

2020 Issued 3.0 Coupon CPR, by Loan Age

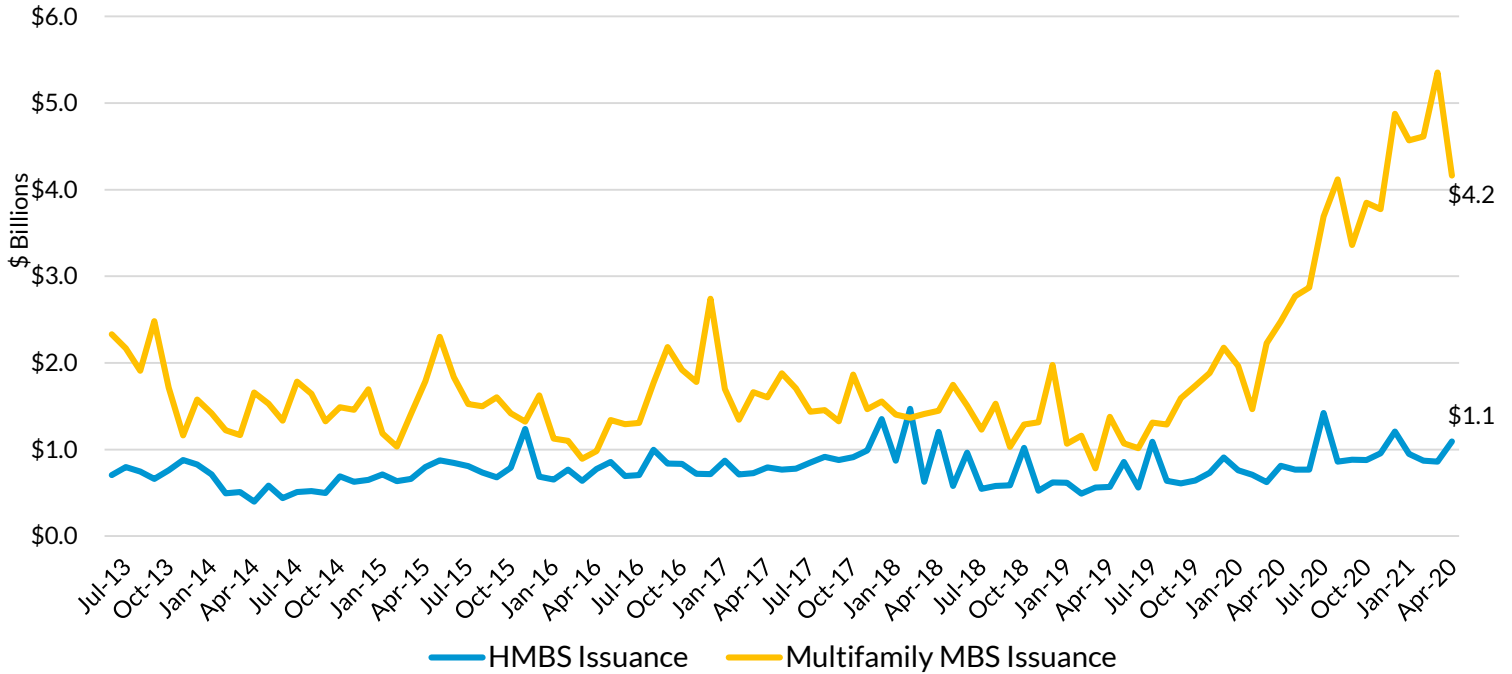


Sources: Credit Suisse and Urban Institute. Note: Data as of May 2021.

Other Ginnie Mae Programs Reverse and Multifamily Mortgages

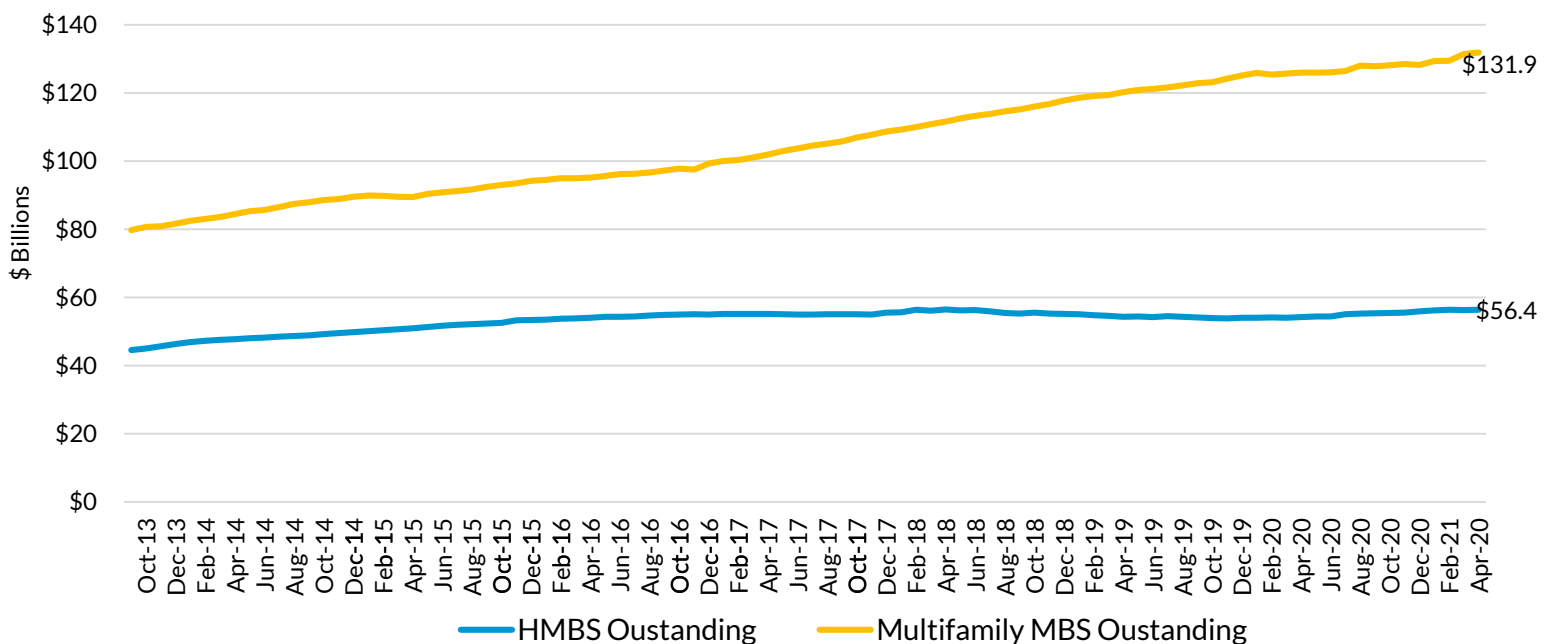
Monthly issuance of Ginnie Mae reverse mortgages has been volatile over the past three years. After declining in 2018, volume has slowly improved over the course of 2019 and 2020. In April 2021, issuance grew to \$1.1 billion. Outstanding reverse mortgage securities totaled \$56.4 billion in April 2021, up slightly from the previous month, reflecting a higher volume of new issuances relative to paydowns. Ginnie Mae multifamily issuance has increased considerably over the past year, but there are month to month fluctuations. After increasing in February 2021, Ginnie Mae multifamily issuance has since decreased through April to \$4.2 billion. Outstanding multifamily securities totaled \$131.9 billion in April of 2021.

Issuance Volume



Sources: Ginnie Mae and Urban Institute. Note: Data as of April 2021.

Outstanding Volume

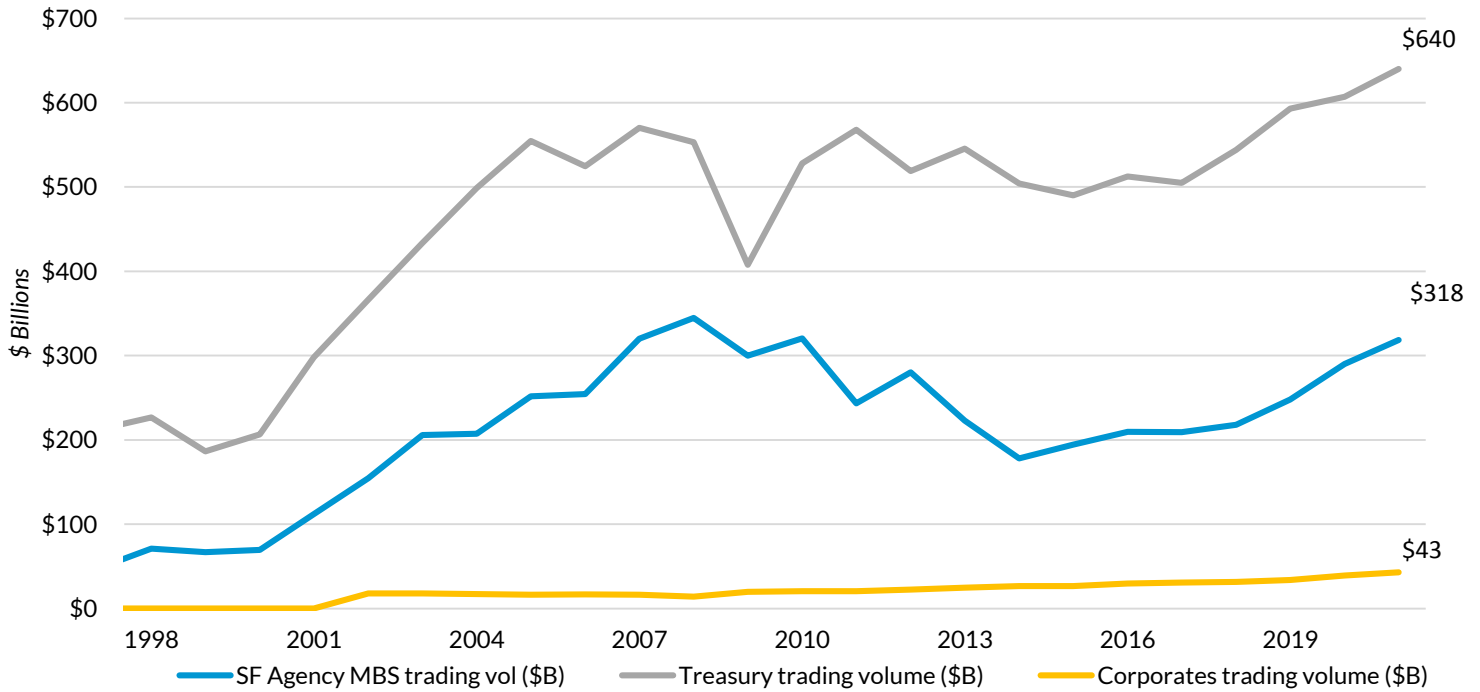


Sources: Ginnie Mae and Urban Institute. Note: Data as of April 2021.

Market Conditions

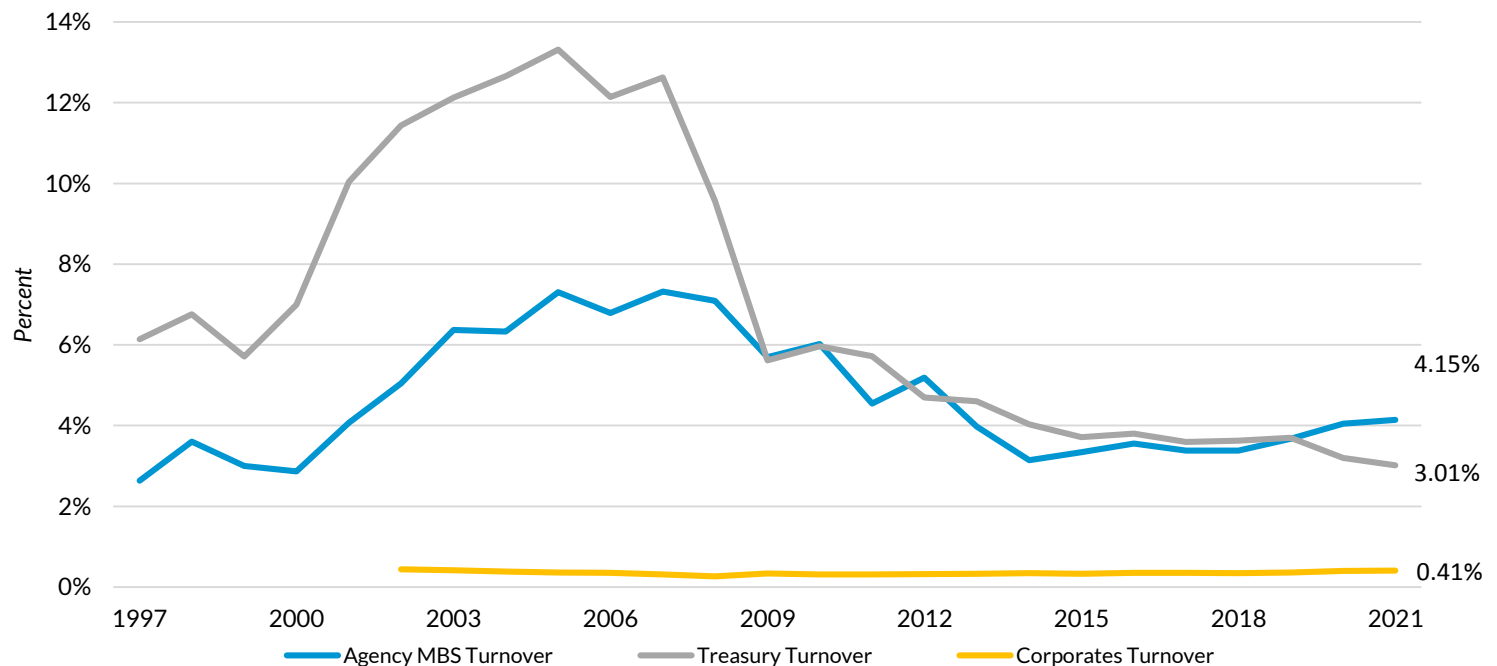
Agency MBS trading volume was \$318 billion per day from January to April 2021, just below the pre-crisis peak of \$345 billion in 2008. Agency MBS turnover in the first four months of 2021 was also higher than the 2014-2020 period; in April 2021, average daily MBS turnover was 4.15 percent, above the 2020 average of 4.05 percent. Note that agency MBS turnover in 2020 and thus far in 2021 was higher than US Treasury turnover, a relatively rare occurrence. Both average daily mortgage and Treasury turnover are down from their pre-crisis peaks. Corporate turnover is miniscule relative to either Agency MBS or Treasury turnover.

Average Daily Fixed Income Trading Volume by Sector



Sources: SIFMA and Urban Institute. Note: Updated June 2021.

Average Daily Turnover by Sector



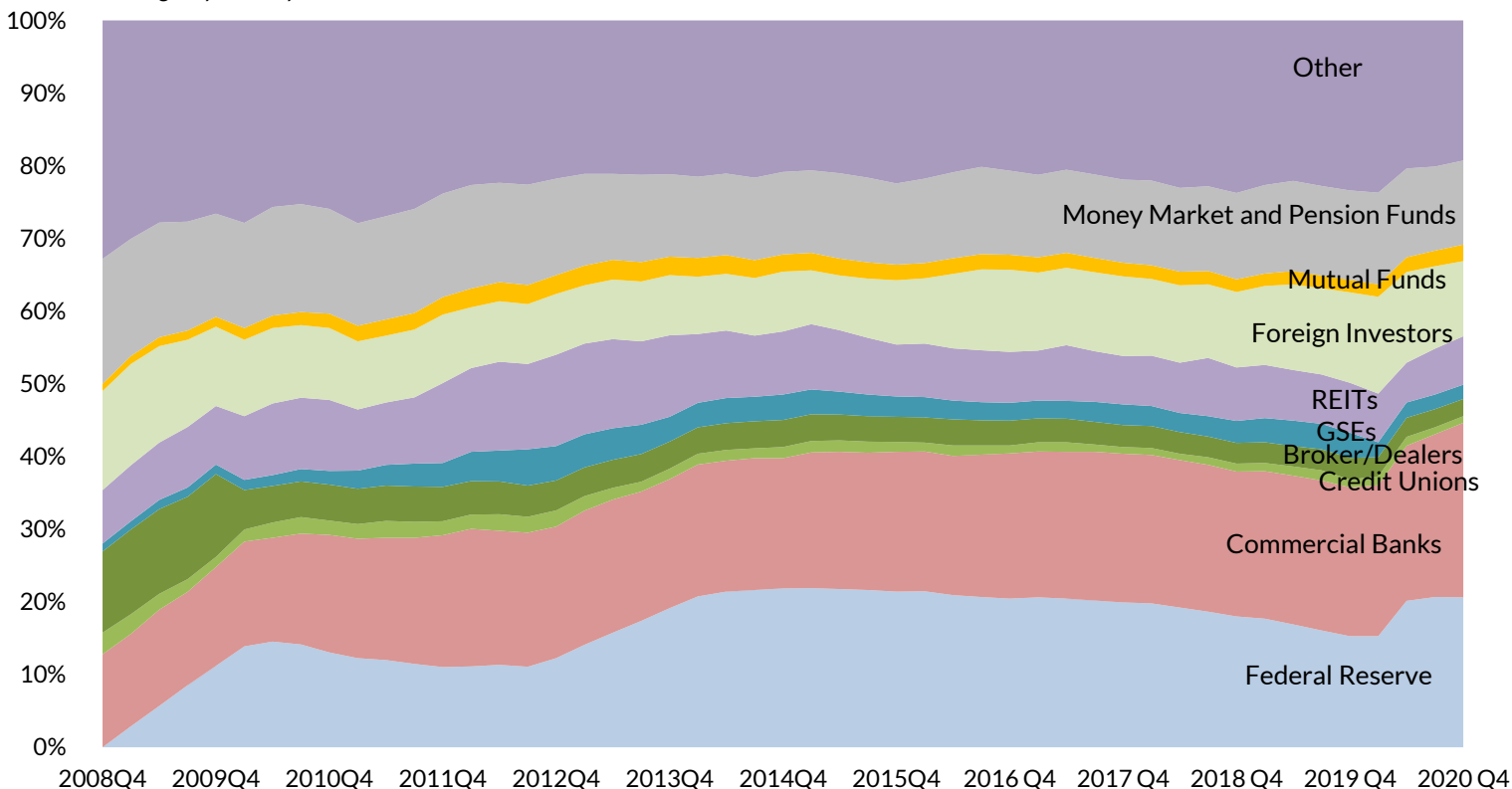
Sources: SIFMA and Urban Institute. Note: Updated June 2021.

MBS Ownership

The largest holders of agency debt (Agency MBS + Agency notes and bonds) include the Federal Reserve (21 percent), commercial banks (24 percent), foreign investors (12 percent), and money market & pension funds (10 percent). The broker/dealer and GSE shares are a fraction of what they once were. The Federal Reserve's share increased from 15 percent in the first quarter of 2020 to 21 percent in the fourth quarter due to substantial purchases of MBS in response to the COVID-19 crisis. Despite large Federal Reserve purchases, commercial banks continue to be the largest holders of Agency MBS, as they too have dramatically increased their holdings as deposits have swelled. Out of their \$2.8 trillion in holdings as of the end of May 2021, \$2.0 trillion was held by the top 25 domestic banks.

Who owns Total Agency Debt?

Share of Total Agency Debt by Owner



Sources: Federal Reserve Flow of Funds and Urban Institute. Note: The "other" category includes primarily life insurance companies, state and local govts, households, and nonprofits. Data as of Q4 2020.

Commercial bank holdings of agency MBS

| | Commercial Bank Holdings (\$Billions) | | | | | | | | Week Ending | | | |
|----------------------------|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|-------------|--------|--------|--------|
| | Apr-20 | Oct-20 | Nov-20 | Dec-20 | Jan-21 | Feb-21 | Mar-21 | Apr-21 | May 05 | May 12 | May 19 | May 26 |
| Largest 25 Domestic Banks | 1634.7 | 1766.2 | 1822.4 | 1852.7 | 1894.0 | 1938.1 | 1966.5 | 1987.5 | 2008.8 | 2008.2 | 2021.2 | 2026.4 |
| Small Domestic Banks | 538.0 | 594.6 | 607.3 | 623.7 | 637.0 | 650.5 | 667.7 | 686.9 | 703.5 | 708.1 | 715.0 | 712.2 |
| Foreign Related Banks | 45.8 | 39.9 | 45.3 | 47.1 | 48.6 | 50.3 | 52.3 | 51.8 | 53.4 | 52.1 | 47.5 | 47.6 |
| Total, Seasonally Adjusted | 2218.5 | 2400.7 | 2475.0 | 2523.5 | 2579.6 | 2638.9 | 2686.5 | 2726.2 | 2765.7 | 2768.4 | 2783.7 | 2786.2 |

Sources: Federal Reserve Bank and Urban Institute. Note: Small domestic banks includes all domestically chartered commercial banks not included in the top 25. Data as of May 2021.

