

Global Markets Analysis Report

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

MAY
2022



PREPARED FOR GINNIE MAE

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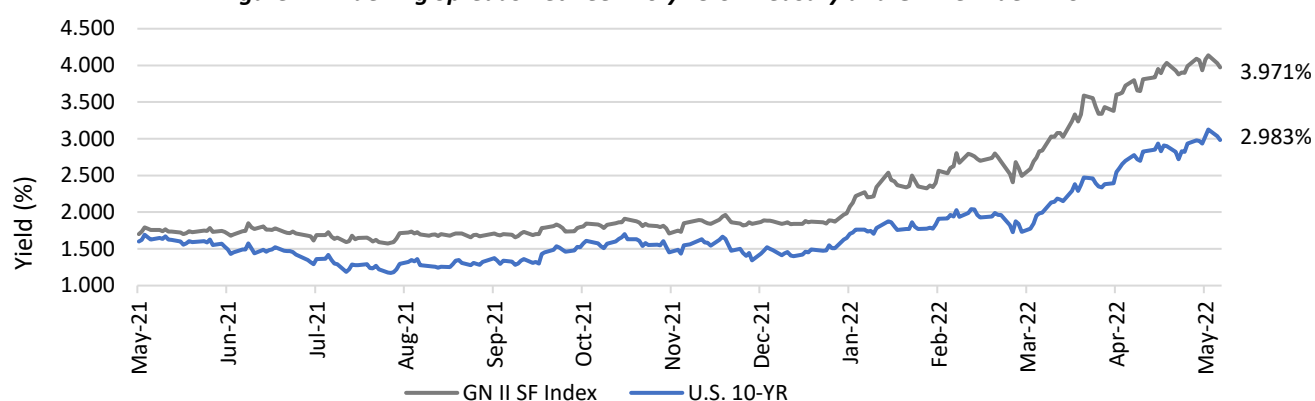
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Highlights

As we approach the midpoint of 2022, rapid changes in fixed-income markets have driven changes to the value of Ginnie Mae MBS relative to other government securities including the benchmark 10-yr U.S. Treasury. The Federal Reserve's quantitative tightening has impacted Ginnie Mae MBS gross issuance, net issuance, spread differentials, and MBS durations.

Figure 1, below, highlights changes to the yield spread between Ginnie Mae I, Ginnie Mae II, and the 10-year U.S. Treasury. The Federal Reserve's actions and market factors, including inflation, have driven yields higher, and the spread differential between Ginnie Mae MBS and 10-yr U.S. Treasury has widened through 2022

Figure 1. Widening Spreads Between 10-yr U.S. Treasury and Ginnie Mae MBS¹



With respect to Ginnie Mae II MBS, the tightest yield spread between Ginnie Mae II MBS and U.S. 10-yr Treasury was +9 bps on May 10, 2021. This has since widened to +99 bps as of May 10, 2022. Over this period the widest yield spread between Ginnie Mae II MBS and US 10 YR Treasury was +116 bps on April 26, 2022. For more

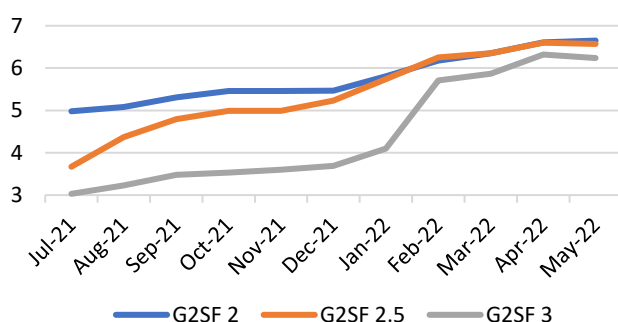


Figure 2. Ginnie Mae II MBS Cohort Durations

information on the U.S. 10-yr Treasury yields please see section **1.2 Global 10-Year Treasury Yields** and for more information on Ginnie Mae MBS Yields please see section **1.3 Ginnie Mae Yields – USD**.

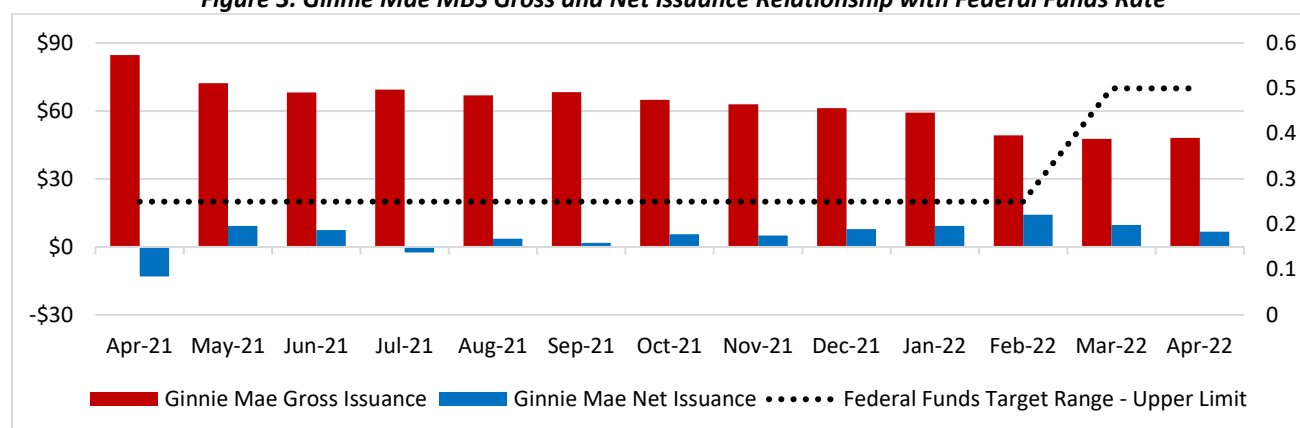
While yields on Ginnie Mae II MBS have increased, so too have Ginnie Mae II MBS durations. As shown in **Figure 2** on the left, durations have been steadily lengthening across Ginnie Mae II MBS coupon cohorts. Since July 2021, the Ginnie Mae II 2.0%, 2.5%, and 3.0% coupon cohorts have seen duration increases from 4.98 to 6.65, 3.67 to 6.57, and 3.03 to 6.24, respectively.

As the Fed continues quantitative tightening, investors are carefully monitoring the Fed pace of reduced reinvestment of proceeds into Agency debt and Agency MBS. This portfolio runoff allows the Fed to reduce its balance sheet holdings of Agency debt and Agency MBS without selling current Agency debt and Agency MBS holdings as aggressively as they might otherwise. The Fed

¹ Source: Bloomberg

has communicated that rather than reinvesting all proceeds from Agency debt and Agency MBS, they will only reinvest principal payments that exceed \$17.5 billion over the next three months and then they will increase the cap to \$35 billion thereafter.² According to the Fed, this will be accomplished through directing “the Open Market Trading Desk (the Desk) at the Federal Reserve Bank of New York to reinvest into Agency MBS the amount of principal payments from the Federal Reserve’s holdings of Agency debt and Agency MBS received each month that exceed the cap amount for that month. If the anticipated amount of principal payments is lower than the cap in effect that month, then the Desk will not reinvest those principal payments.”³ Despite the transparency, around the globe there is general uncertainty regarding how the Fed policy will influence investor behavior and, in turn, impact the Agency debt and Agency MBS market. The Fed’s limit on the reinvestment of principal payments into Agency debt and Agency MBS will be spread across the Fannie Mae, Freddie Mac, and Ginnie Mae, therefore it is difficult to estimate the impact that this action will have on the individual Agencies. As **Figure 3** below demonstrates, there are early indicators of declining gross issuance of Ginnie Mae MBS as the Fed’s target for the Federal Funds Rate (FFR) jumped from 0-25 bps to 25-50 bps in March 2022. The Fed’s target range for the FFR jumped to 50-100 bps on May 5, 2022.

Figure 3. Ginnie Mae MBS Gross and Net Issuance Relationship with Federal Funds Rate



Another major factor leading to uncertainty is that the supply of new MBS production in 2022 has dropped compared to 2021 due to lower levels of refinance activity. Nonetheless, Ginnie Mae MBS net issuance has been positive since July 2021 (\$6.7 billion in April 2022). For more information regarding Ginnie Mae gross and net issuance please see section **2.5 Ginnie Mae Agency Issuance and Agency Outstanding by State**. Government Sponsored Entities’ (GSE’s) net issuance has remained positive month to month in 2022. GSE net issuance was \$68.0 billion in January 2022, \$90.0 billion in February 2022, \$56.9 billion in March 2022, and \$52.6 billion in April 2022.

² <https://www.federalreserve.gov/newsevents/pressreleases/monetary20220504b.htm>

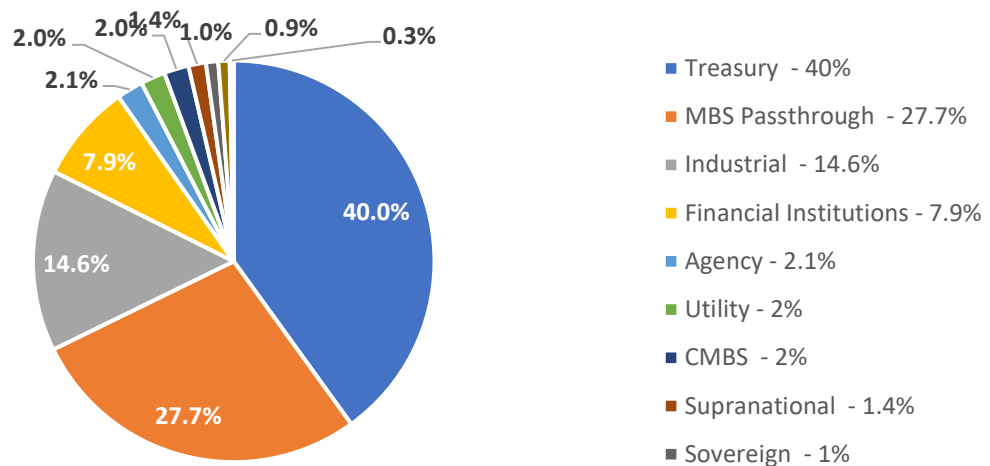
³ <https://www.newyorkfed.org/markets/ambts-treasury-faq.html>

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

1.0 Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

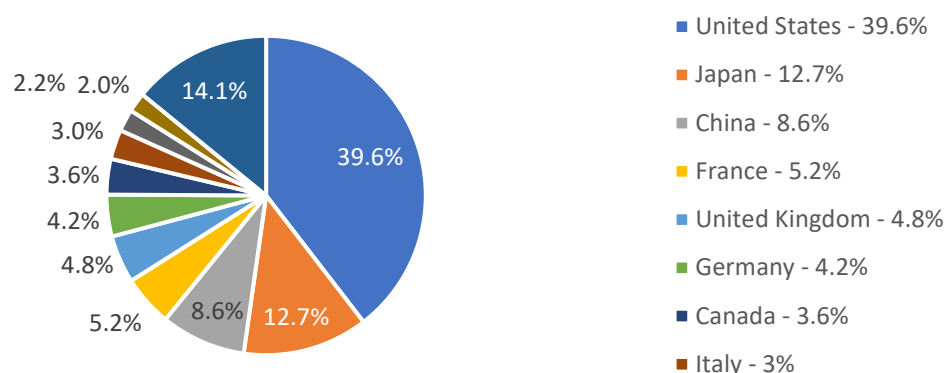
1.1 Barclays US Aggregate and Global Bond Indices

Barclays US Aggregate Index



US Treasuries contribute approximately 40% to the Barclays US Aggregate Index. US MBS (Ginnie Mae, Fannie Mae, and Freddie Mac) contribute approximately 28% to the Barclays US Aggregate Index. For the US Aggregate Index, the month over month (MoM) changes to the index components were no larger than 1%.

Barclays Global Aggregate Index by Country



In the Barclays Global Aggregate Index by Country, the US share of fixed income still represents the largest share of total outstanding issuance, representing approximately 40% of the total Barclays Global Aggregate Index. Both U.S. and Chinese shares grew slightly MoM. All categories remained stable when compared to the prior month.

Source: Bloomberg. Note: Data as of April 2022. Figures in charts may not add to 100% due to rounding.

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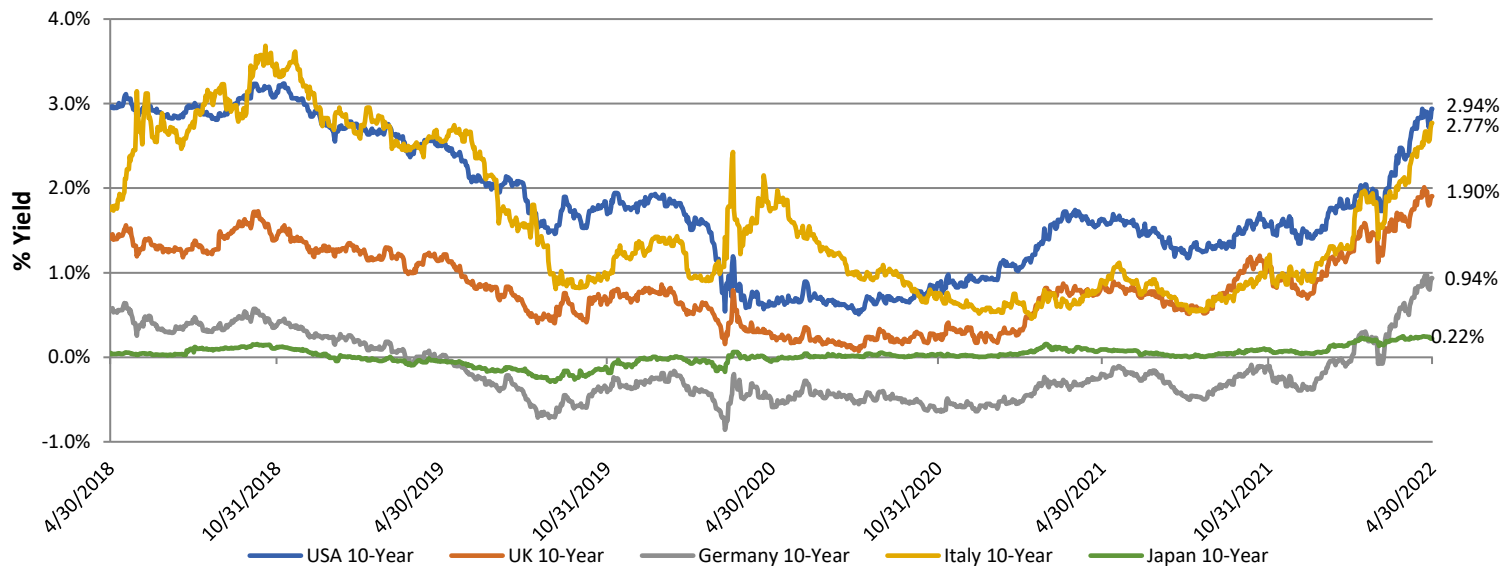
Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

1.2 Global 10-Year Treasury Yields

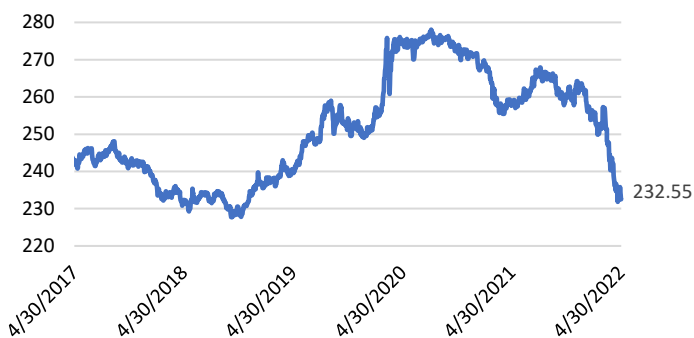
The US 10-year Treasury yield moved to 2.94% at month end March 2022, a MoM increase of 60 bps. US Treasury yields remain the highest of all the government treasury yields depicted in the figure below.

- The yield on the UK 10-year government notes increased to 1.90% at month-end March, a MoM increase of 29 bps.
- The yield on the German 10-year note increased to 0.94% at month-end March, a MoM increase of 49 bps.
- The yield on the Italian 10-year note increased to 2.77% at month-end March, a MoM increase of 73 bps.
- The yield on the Japanese 10-year government notes increased to 0.22% at month-end March, a MoM increase of 1 bp.
- The hedged yield for the 10-year Treasury JPY decreased to 2.33% at month-end March, a MoM decrease of 11 bps.
- The hedged yield for the 10-year Treasury EUR decreased to 1.33% at month-end March, a MoM decrease of 6 bps.

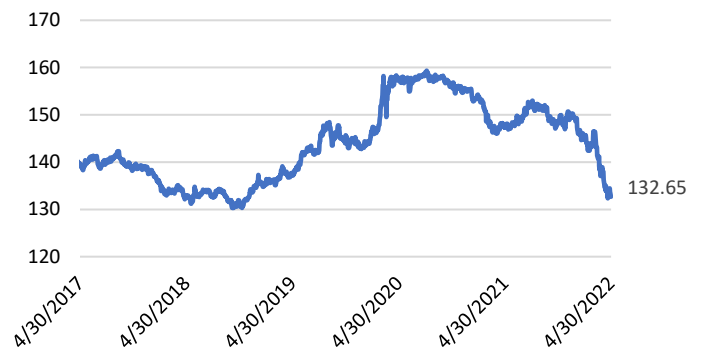
Global 10-Year Treasury Yields



7–10yr Total Return Hedged Index, JPY



7–10yr Total Return Hedged Index, EUR



Source: Bloomberg. Note: Data as of April 2022

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

1.3 Ginnie Mae Yields – USD

Ginnie Mae fixed rate MBS yields increased MoM in March 2022. Ginnie Mae II yields were at 3.99% at month end April, up by 65 bps MoM. Ginnie Mae I yields were at 3.89%, up by 60 bps MoM. At month end April, Ginnie Mae II SF yields were 105 bps higher than the US 10-year Treasury yield, an increase in spread of 5 bps MoM. The yields on the Ginnie Mae I SF were 95 bps higher than the US 10-year Treasury yield at month end April, a decrease in spread of 10 bps MoM.



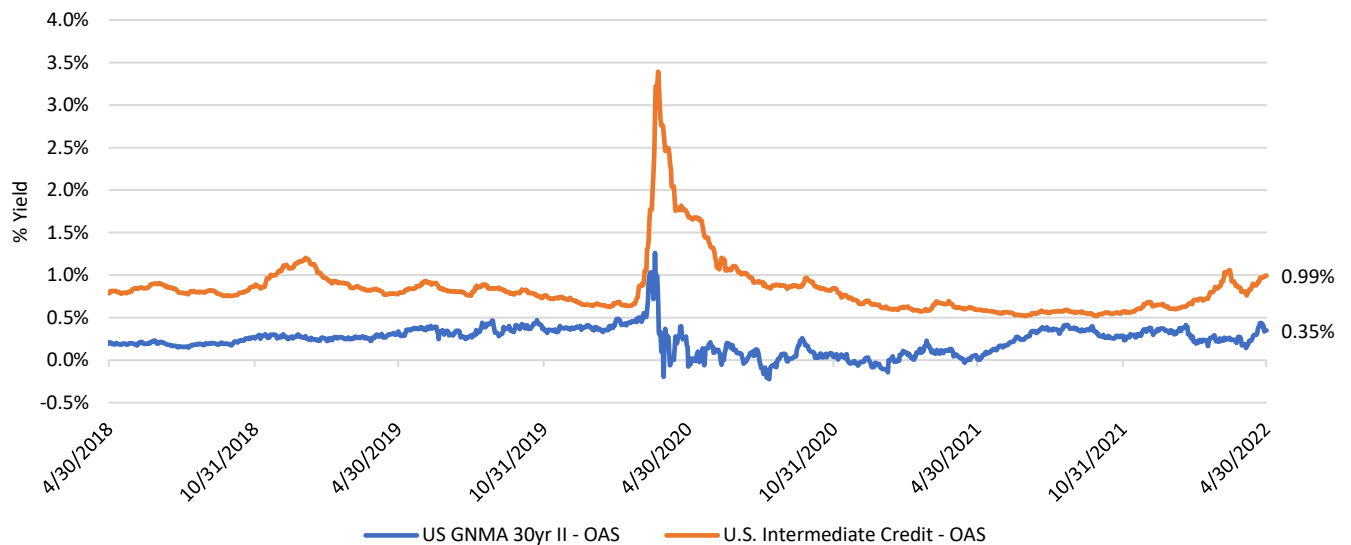
Sources: Bloomberg. Note: Data as of April 2022

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

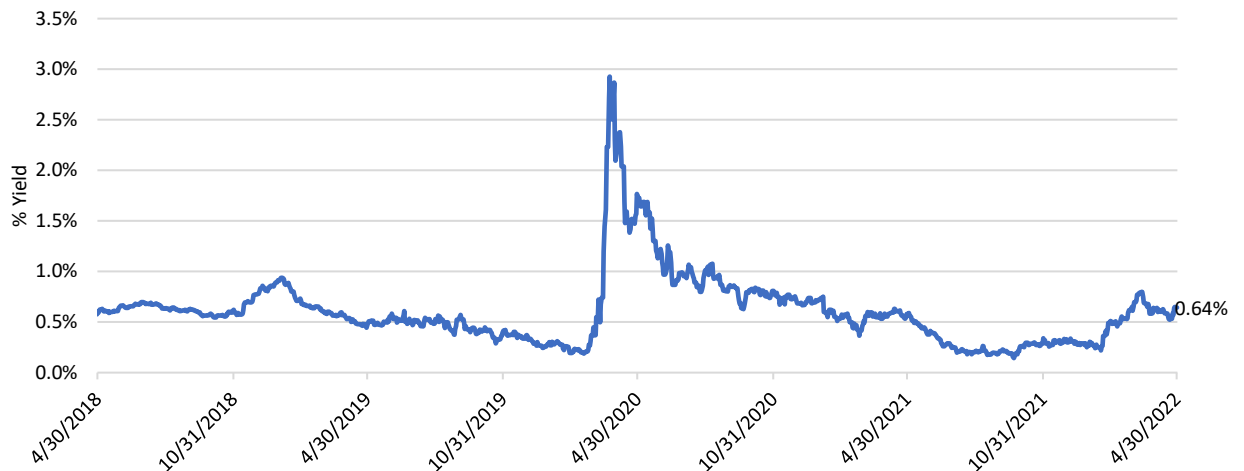
1.4 Ginnie Mae Yield Spreads – Intermediate Credit

The yield differential between US Intermediate Credit and GNMA II 30-year OAS increased by 2 bps to 0.64% at month end April. The Ginnie Mae II 30-year OAS increased 4 bps MoM. The US Intermediate credit OAS has increased 19 bps MoM.

US GNMA II 30yr MBS OAS versus US Intermediate Credit OAS



Spread between US Intermediate Credit and US GNMA II 30yr MBS OAS

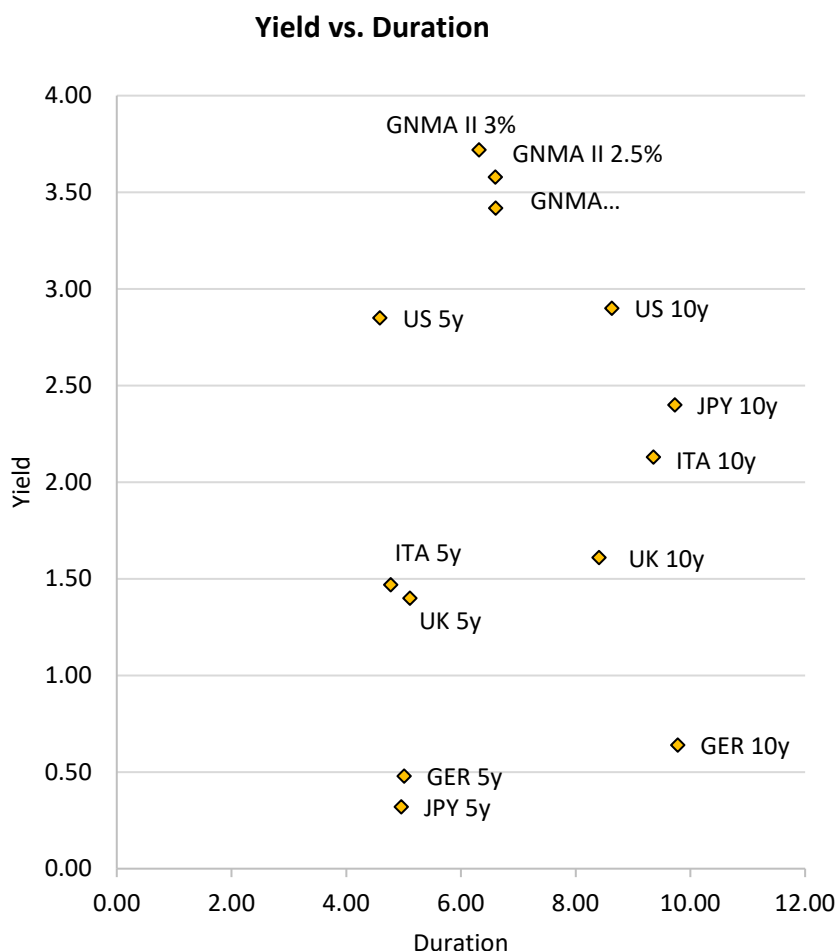


Source: Bloomberg. Note: Data as of April 2022.

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

1.5 Global Treasury Yield Per Duration

GNMA MBS continue to offer a higher yield in comparison to other government fixed income securities of various tenors with similar or longer duration. Prepayment risk is a feature of MBS. In April, the GNMA II 2.5% securities duration increased MoM by 0.25 units and yield increased MoM by 62 bps. In March, the GNMA II 3% securities duration increased MoM by 0.45 units and yield increased MoM by 55 bps.



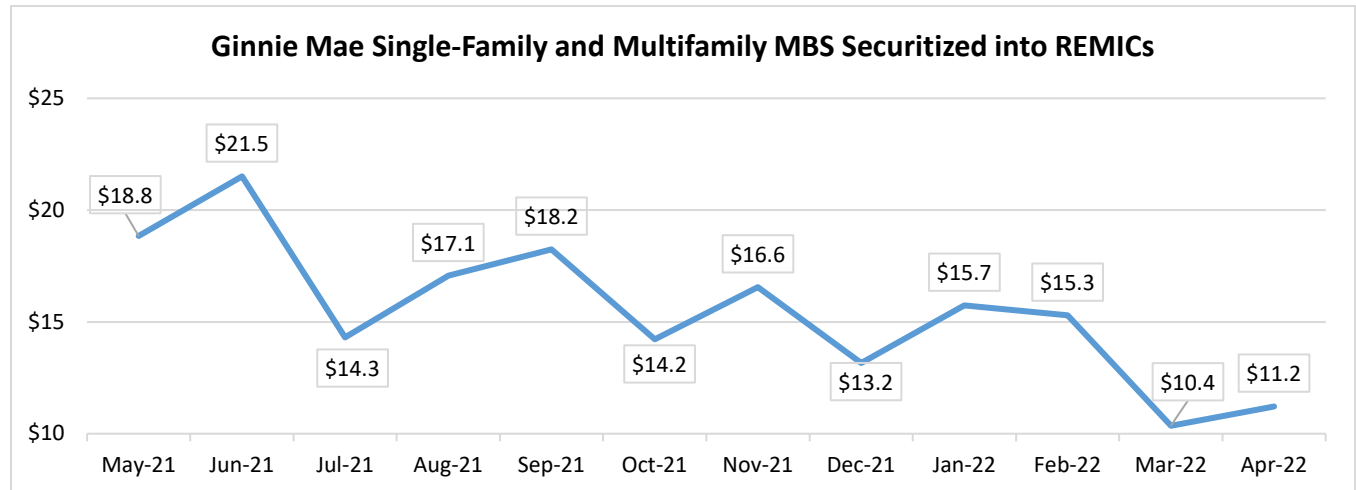
Security	Duration	Yield
US 5y	4.59	2.85
US 10y	8.63	2.90
JPY 5y	4.96	0.32
JPY 10y	9.73	2.40
GER 5y	5.01	0.48
GER 10y	9.78	0.64
ITA 5y	4.78	1.47
ITA 10y	9.36	2.13
UK 5y	5.11	1.40
UK 10y	8.41	1.61
GNMA II 2%	6.61	3.42
GNMA II 2.5%	6.60	3.58
GNMA II 3%	6.32	3.72

Source: Bloomberg. Note: Yield and modified duration for GNMA II securities is from illustrative TBA using base prepayment assumptions. All other data is as of April 2022. Yields are in base currency of security and unhedged.

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

1.6 Monthly REMIC Demand for Ginnie Mae MBS

In April 2022, \$11.2 billion of Ginnie Mae MBS were securitized into Real Estate Mortgage Investment Conduits (REMICs) as underlying collateral. Of that \$11.2 billion, approximately \$2.3 billion were Multifamily MBS, all having coupons between 2% and 3%. \$8.8 billion were Single-Family MBS with almost 90-percent of the Single-Family MBS having coupons between 3.0% and 4.5%.



April 2022 REMIC Collateral Coupon Distribution

Net Coupon (%)	Approx. Ginnie Mae MBS amount securitized into REMIC Deals (\$MM) ⁴	% Breakdown of REMIC Collateral by coupon ¹⁷
Multifamily		
2.01-2.50	773.1	33%
2.51-3.00	1,568.5	67%
Subtotal	2,341.5	100%
Single Family		
<2.00	22.8	0%
2.01-2.50	91.2	1%
2.51-3.00	534.2	6%
3.01-3.50	3,660.6	41%
3.51-4.00	2,680.4	30%
4.01-4.50	1,566.4	18%
4.51-5.00	164.8	2%
5.01-5.50	28.6	0%
5.51-6.00	98.6	1%
Subtotal	8,847.6	100%
Grand Total	11,189.2	

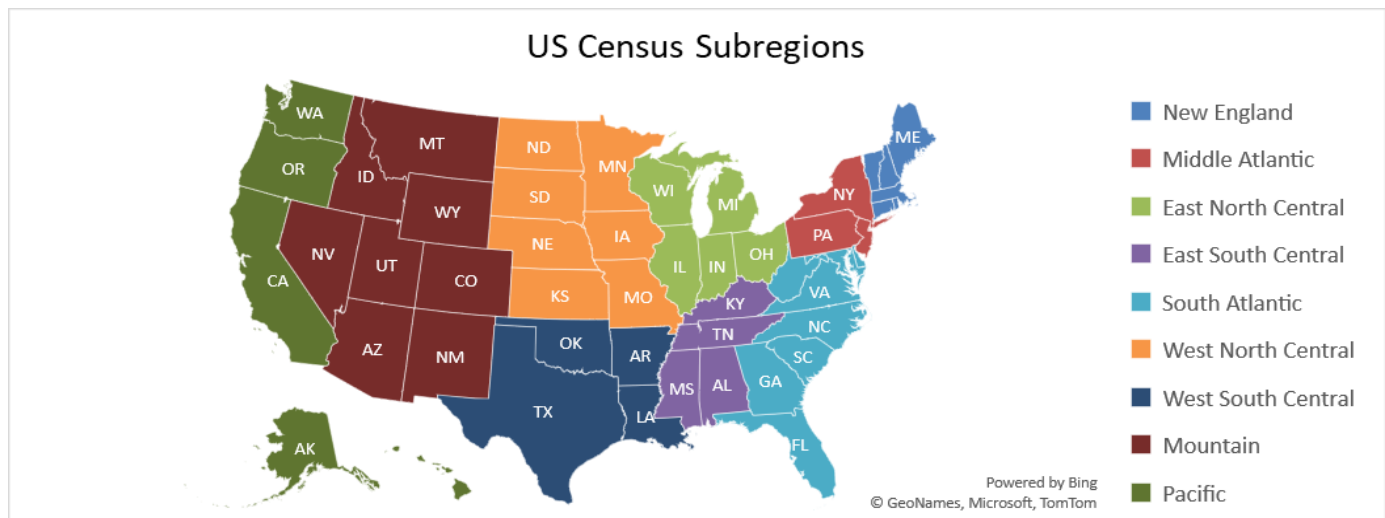
⁴Totals may not sum due to rounding.

2.0 State of the US Housing Market

2.1 National HPI

Home prices have increased rapidly during the pandemic, with Compound Annual Growth Rate (CAGR) for HPI at 16.4% between March 2020 and February 2022. Over that same period, the Mountain region has had the greatest home price appreciation (20.2% CAGR), while in the East North Central region, increases in home values have been the slowest (13.8% CAGR).

U.S. Census Subregion	New England	Middle Atlantic	East North Central	East South Central	South Atlantic	West North Central	West South Central	Mountain	Pacific	National
2000 to Peak CAGR	10.5%	8.7%	4.0%	4.6%	8.7%	5.0%	4.3%	8.3%	13.9%	7.1%
Peak to Trough CAGR	-8.3%	-5.3%	-9.7%	-5.5%	-14.1%	-5.7%	-2.1%	-15.1%	-17.9%	-9.7%
Trough to Pandemic CAGR	3.7%	3.6%	4.8%	4.5%	5.9%	4.7%	5.1%	8.3%	8.1%	5.5%
Pandemic CAGR	16.0%	14.4%	13.8%	16.8%	18.7%	13.9%	15.6%	20.2%	17.7%	16.4%
12-Month Period of Max HPI Growth During Pandemic	7-2020 to 6-2021	8-2020 to 7-2021	7-2020 to 6-2021	3-2021 to 2-2022	3-2021 to 2-2022	6-2020 to 5-2021	3-2021 to 2-2022	9-2020 to 8-2021	8-2020 to 7-2021	8-2020 to 7-2021
Max 12-Month Period Change, During Pandemic	21.7%	18.1%	17.1%	21.0%	23.9%	16.3%	18.8%	25.8%	22.1%	19.2%
12-Month Period of Max HPI Growth, Pre-Pandemic	12-2001 to 11-2002	12-2003 to 11-2004	2-2017 to 1-2018	2-2005 to 1-2006	9-2004 to 8-2005	4-1993 to 3-1994	3-2005 to 2-2006	11-2004 to 10-2005	5-2004 to 4-2005	10-2004 to 9-2005
Max 12-Month HPI Growth, Pre-Pandemic	14.0%	12.4%	6.9%	8.5%	15.3%	7.4%	7.5%	18.0%	22.4%	10.7%



Source: HPI data from FHFA. US Census Subregions as defined by the US Census Bureau.

Notes: HPI data as of February 2022. Peak refers to the month when HPI reached the highest level for each state/US during the housing boom period, ranging from 2005 to 2008. Trough represents the month when HPI fell to the lowest level for each region/US after the housing bust, ranging from 2009 to 2012. Pandemic Period refers to March 2020 to the current period, 10/2021. $CAGR = (End\ Value / Starting\ Value)^{1/n} - 1$

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State of the US Housing Market

S&P's Corelogic Case-Shiller US National Housing Price Index's March 29, 2022 reporting data indicated that home prices had increased by 17.9% YoY as of January 2022. This latest reported YoY HPI appreciation value is just 135 bps lower than the historical maximum value (19.2%) observed in July of 2021, suggesting a sustained pace of home price increases.

State National	2000 to Peak 59.6%	Peak to Trough -21.1%	Trough to Current 92.0%	YOY 14.4%	Current HPI % Above Peak 51.4%
AK	66.9%	-5.2%	42.3%	10.6%	35.0%
AL	41.8%	-15.0%	68.0%	15.7%	42.8%
AR	39.8%	-11.0%	60.4%	16.0%	42.8%
AZ	110.1%	-49.5%	186.6%	24.6%	44.8%
CA	145.0%	-47.0%	142.0%	19.0%	28.2%
CO	32.4%	-10.3%	144.4%	18.2%	119.2%
CT	72.7%	-19.6%	38.5%	17.0%	11.3%
DC	162.4%	-11.7%	113.4%	10.1%	88.5%
DE	88.6%	-23.5%	53.9%	15.3%	17.7%
FL	130.0%	-46.5%	152.2%	21.0%	34.9%
GA	36.0%	-27.1%	118.4%	18.0%	59.2%
HI	138.7%	-27.0%	101.3%	14.8%	46.9%
IA	28.0%	-5.4%	56.2%	11.5%	47.7%
ID	73.2%	-32.2%	206.7%	30.9%	107.9%
IL	49.9%	-23.8%	48.2%	12.3%	13.0%
IN	19.1%	-8.7%	79.6%	15.1%	64.0%
KS	31.0%	-7.8%	68.2%	14.2%	55.2%
KY	29.0%	-5.4%	66.7%	14.4%	57.6%
LA	51.6%	-6.7%	46.6%	9.6%	36.8%
MA	69.8%	-18.2%	79.0%	16.1%	46.4%
MD	126.4%	-26.5%	53.3%	12.7%	12.7%
ME	72.2%	-12.4%	79.9%	20.7%	57.5%
MI	18.4%	-31.5%	113.8%	15.6%	46.4%
MN	52.5%	-23.0%	85.7%	13.4%	43.0%
MO	39.2%	-15.0%	76.8%	15.3%	50.3%
MS	38.6%	-12.8%	47.4%	12.8%	28.6%
MT	80.0%	-13.6%	102.5%	22.5%	75.0%
NC	39.8%	-14.1%	88.4%	19.2%	61.7%
ND	51.3%	-0.9%	72.2%	9.4%	70.8%
NE	24.3%	-5.9%	79.8%	14.8%	69.2%
NH	72.7%	-21.9%	84.4%	19.4%	44.0%
NJ	102.3%	-22.7%	52.3%	16.5%	17.8%
NM	66.7%	-17.9%	58.2%	14.8%	29.8%
NV	117.4%	-59.3%	211.5%	20.1%	26.9%
NY	75.7%	-10.5%	58.3%	14.9%	41.6%
OH	19.5%	-16.6%	79.8%	14.8%	50.1%
OK	36.9%	-4.6%	63.1%	14.2%	55.5%
OR	85.6%	-28.6%	133.5%	18.3%	66.7%
PA	68.8%	-10.9%	59.3%	14.2%	41.9%
RI	108.0%	-28.0%	82.1%	18.9%	31.1%
SC	40.5%	-16.0%	89.6%	17.4%	59.2%
SD	40.2%	-2.4%	76.8%	17.7%	72.6%
TN	38.4%	-12.6%	105.6%	20.5%	79.6%
TX	35.8%	-3.0%	101.2%	17.1%	95.1%
UT	65.1%	-26.1%	158.9%	26.3%	91.4%
VA	95.1%	-18.8%	61.6%	14.3%	31.3%
VT	77.9%	-10.3%	58.7%	19.2%	42.4%
WA	83.4%	-27.3%	149.2%	19.9%	81.2%
WI	38.6%	-14.2%	72.0%	14.2%	47.5%
WV	38.7%	-5.7%	42.5%	12.8%	34.4%
WY	85.1%	-9.7%	55.8%	13.4%	40.8%

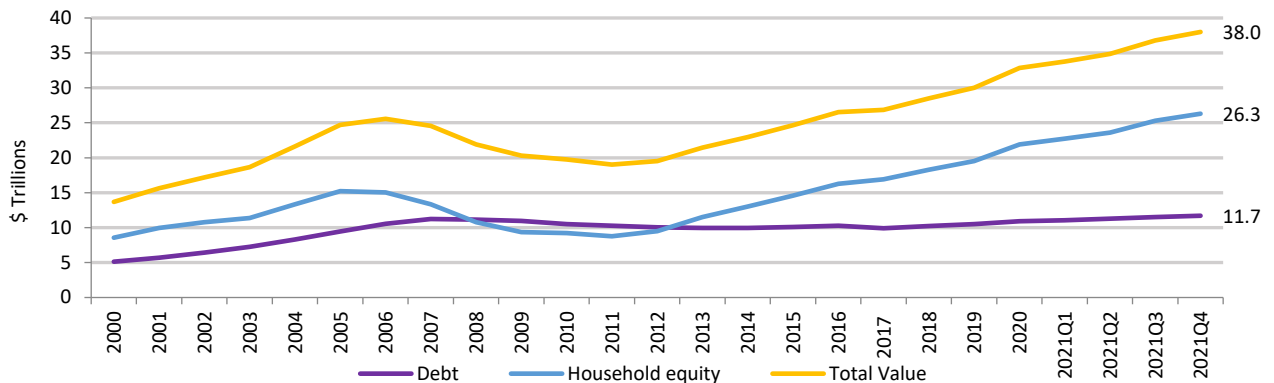
Source: FHFA/S&P Corelogic Case-Shiller US National Housing Price Index Data; Notes: HPI State-level data is provided quarterly by FHFA and presented here as of February 2022. Peak refers to the month when HPI reached the highest level for each state/US during the housing boom period, ranging from 2005 to 2008. Trough represents the month when HPI fell to the lowest level for each state/US after the housing bust, ranging from 2009 to 2012; S&P Corelogic Case-Shiller US National Housing Price Index reported for January 2022 in its Report dated March 29, 2022

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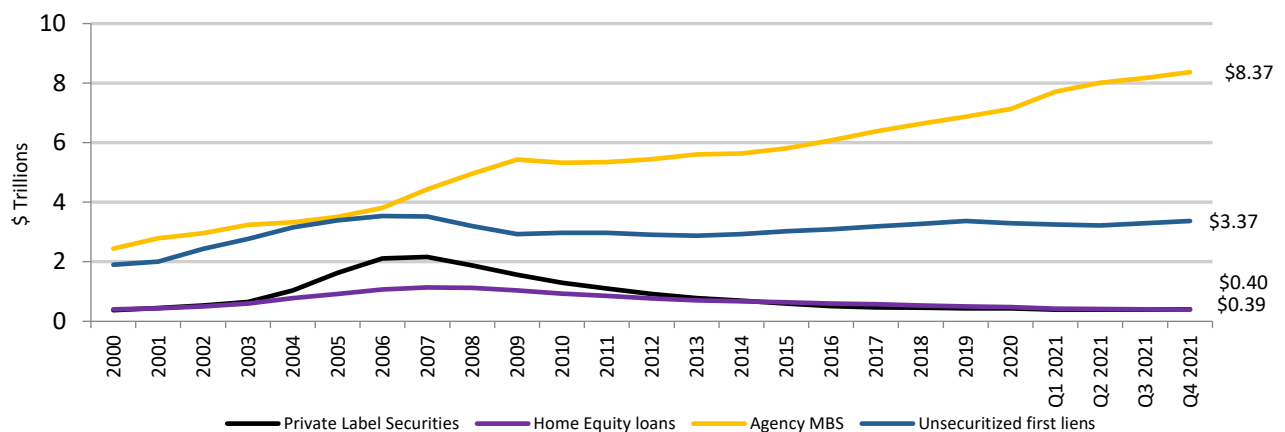
2.2 Size and Value of the US Housing Market

The total value of the single-family housing market reached \$38 trillion in Q4 2021. The total value of the US housing market is up 100% from its trough in 2011. Over that same period, mortgage debt outstanding has increased just 14%, approximately seven times less rapidly. From Q3 2021 to Q4 2021 mortgage debt outstanding has increased from \$11.5 trillion to \$11.7. However, according to Jim Reid, head of Thematic Research at Deutsche Bank, for the first time in 30 years household cash on hand exceeded total household debt. Agency SF MBS account for a growing percentage of the total mortgage debt outstanding, up to 67% of total mortgage debt from just 52% in 2011.

Value of the US Housing Market



Size of the US Residential Mortgage Market



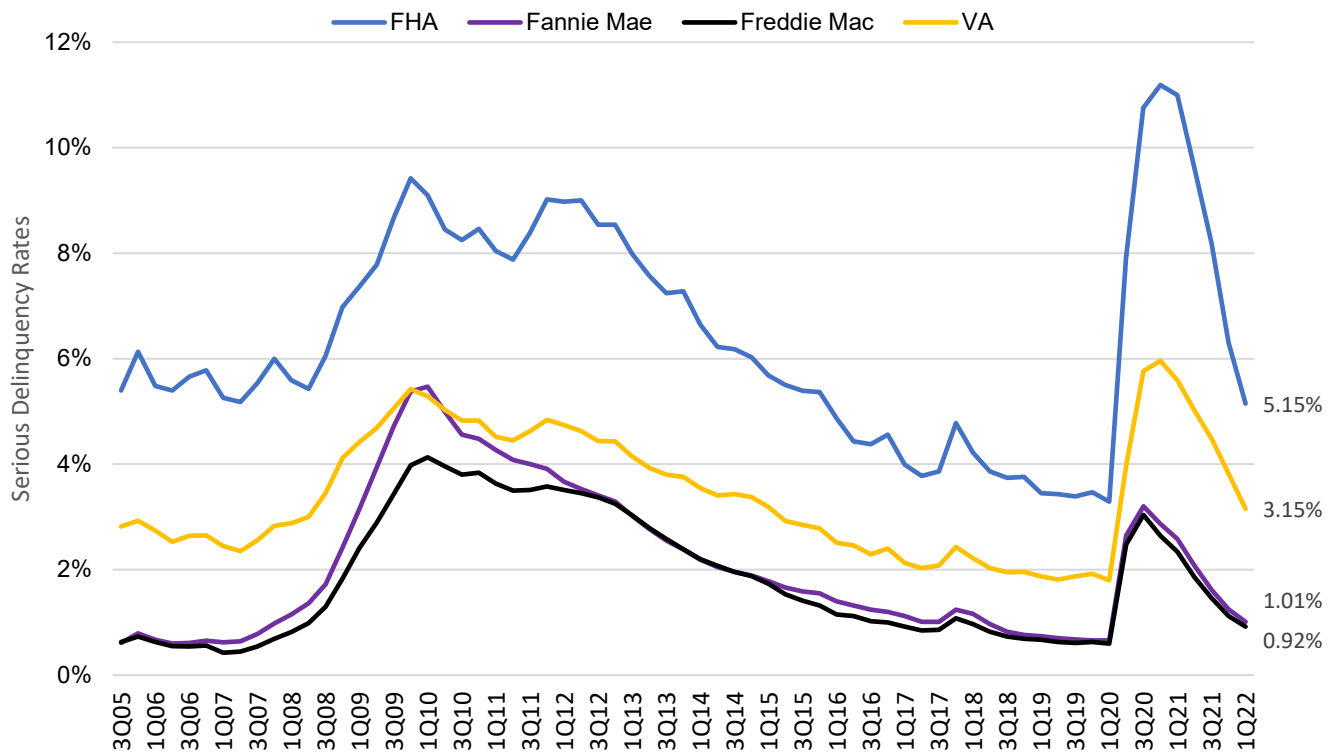
Sources:

1. Federal Reserve Flow of Funds Data. Notes: Data as of Q4 2021.
2. Idzelis, Christine. "Fed May Need to Be Even More Aggressive Fighting Inflation as U.S. Household Cash Exceeds Debt for First Time in Three Decades, Warns Deutsche Bank." *MarketWatch*, MarketWatch, 20 Apr. 2022, <https://www.marketwatch.com/story/fed-may-need-to-be-even-more-aggressive-fighting-inflation-as-u-s-household-cash-exceeds-debt-for-first-time-in-three-decades-warns-deutsche-bank-11650474606>.

2.3 Serious Delinquency Rates

Serious delinquency rates for single-family GSE, FHA, and VA loans all continued to fall sharply in Q1 2022. From Q4 2021 to Q1 2022, Fannie and Freddie serious delinquencies decreased 24 and 20 bps, respectively, or 19% and 18% respectively, as a percentage change. Ginnie Mae collateral's serious delinquency rates decreased more than the GSE rates in absolute terms, with FHA and VA dropping 115 and 67 bps respectively. This decline in serious delinquency rates is consistent with the decrease in the number of loans in forbearance captured in [Section 2.4 below](#).

Serious Delinquency Rates: Single-Family Loans



Sources:

1. Fannie Mae and Freddie Mac Monthly Summary Reports
2. MBA Delinquency Survey.

Note: Serious delinquency is defined as 90 days or more past due or in the foreclosure process. Data as of Q4 2021.

2.4 Characteristics of Ginnie Mae Loans in Forbearance

149,218 Ginnie Mae loans were in forbearance as of the end of March 2022. This represents a 3.5% decrease MoM. 7,701 of loans in forbearance were removed from MBS pools and 141,517 loans in forbearance still actively remain in pools. Most liquidated loans (5,634) were FHA and within that subset, 3,637 of those loans were originated by non-banks.

All Loans in Forbearance – March 2022						
	FICO Score*	Note Rate*	Current Principal Balance Median	First Time Homebuyer Share (%)	Purchase Share (%)	Loan Count
Ginnie	658	3.4	\$ 181,521.32	77.1	70.3	149,218
Bank	671	3.8	\$ 129,003.48	78.2	80.4	16,801
Non-bank	657	3.4	\$ 188,500.44	77.0	69.5	132,417
FHA	653	3.5	\$ 177,373.01	79.9	76.1	105,735
Bank	666	3.9	\$ 121,965.32	81.6	83.9	12,775
Non-bank	652	3.4	\$ 185,265.32	79.7	75.4	92,960
VA	668	3.1	\$ 230,787.78	64.0	49.5	30,550
Bank	684	3.5	\$ 177,627.57	64.6	67.8	2,909
Non-bank	667	3.1	\$ 235,898.07	63.9	48.0	27,641
Loans in Forbearance and Removed from Pools – March 2022						
	FICO Score*	Note Rate*	Current Principal Balance Median	First Time Homebuyer Share (%)	Purchase Share (%)	Loan Count
Ginnie	655	3.9	\$ 146,233.93	74.6	68.8	7,701
Bank	670	4.2	\$ 109,661.88	75.0	74.8	2,466
Non-bank	651	3.8	\$ 169,278.93	74.5	67.3	5,235
FHA	649	4.1	\$ 135,526.00	76.8	76.2	5,634
Bank	668	4.3	\$ 106,372.13	77.1	74.0	1,997
Non-bank	644	4.0	\$ 158,442.86	76.8	76.8	3,637
VA	666	3.5	\$ 206,995.20	65.5	48.7	1,614
Bank	672	3.8	\$ 150,335.44	63.8	70.7	316
Non-bank	665	3.4	\$ 225,067.13	65.9	45.5	1,298
Loans in Forbearance that Remain in Pools – March 2022						
	FICO Score*	Note Rate*	Current Principal Balance Median	First Time Homebuyer Share (%)	Purchase Share (%)	Loan Count
Ginnie	658	3.4	\$ 183,489.91	77.2	70.4	141,517
Bank	672	3.8	\$ 132,730.36	78.6	81.1	14,335
Non-bank	657	3.3	\$ 189,222.62	77.1	69.6	127,182
FHA	654	3.5	\$ 179,743.20	80.0	76.0	100,101
Bank	666	3.9	\$ 125,457.63	82.1	85.2	10,778
Non-bank	653	3.4	\$ 186,260.49	79.8	75.4	89,323
VA	668	3.1	\$ 231,964.30	63.9	49.5	28,936
Bank	685	3.5	\$ 183,419.18	64.6	67.6	2,593
Non-bank	667	3.1	\$ 236,361.59	63.8	48.1	26,343

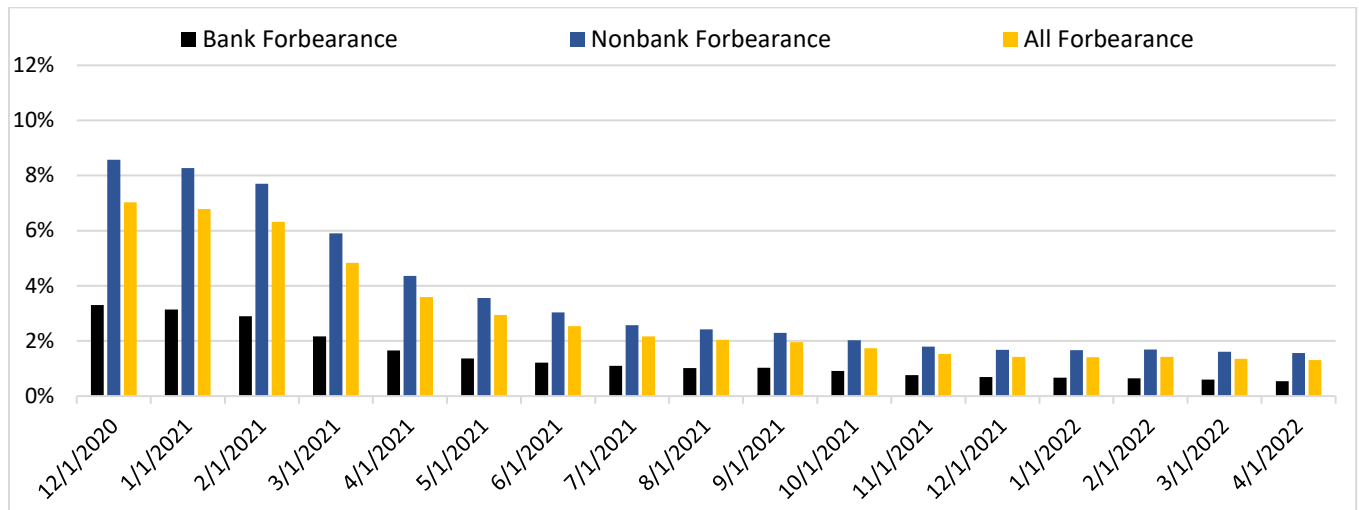
Sources: Ginnie Mae loan level MBS disclosure and forbearance file and Ginnie Mae Issuer Operational Performance Profile (IOPP) -Peer Group Listings.

Notes: Data as of March 2022; *Averages weighted by remaining principal balance of the loans. Beginning with the May 2022 GMAR Report, Credit Unions will be classified as Banks based on the updated Recursion data source.

State of the US Housing Market

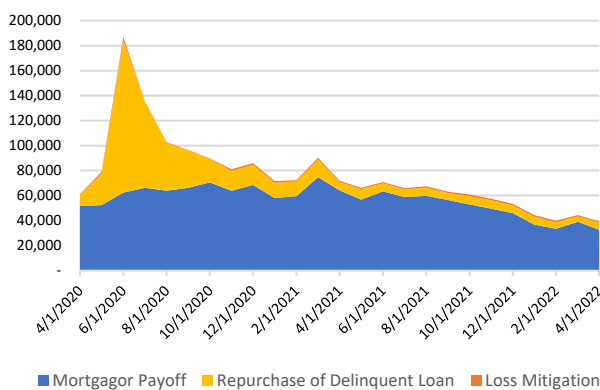
The current share of Ginnie Mae loans in forbearance stands at 1.31% as of the end of April 2022, a 4 bp MoM decline from 1.35% observed as of the end of March 2022. The forbearance rate remains significantly higher than the forbearance rate prevailing in the period prior to the pandemic between January 2019 and February 2020 (approximately 0.1%), and the rate of convergence to pre-pandemic rates slowed down in April 2022.

Share of Ginnie Mae Loans in Forbearance

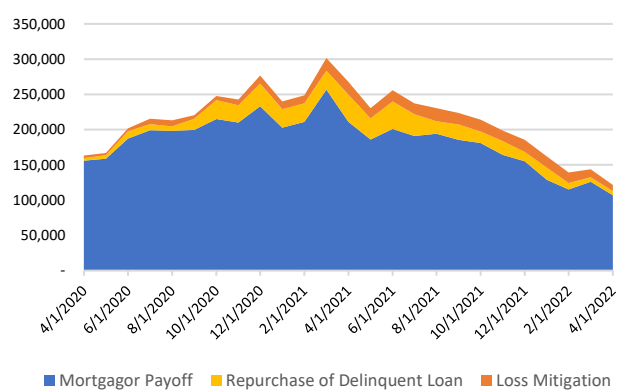


Sources: Recursion. Notes: Data as of April 2022.

Number of Loans Removed from Pools: Bank



Number of Loans Removed from Pools: Non-

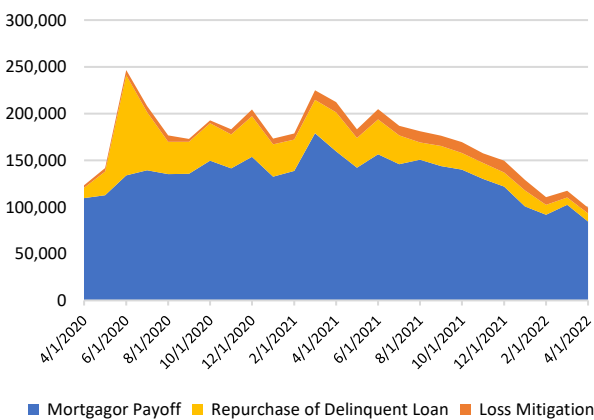


Sources: Recursion. Notes: Data as of April 2022. Beginning with the May 2022 GMAR Report, Credit Unions will be classified as Banks based on the updated Recursion data source.

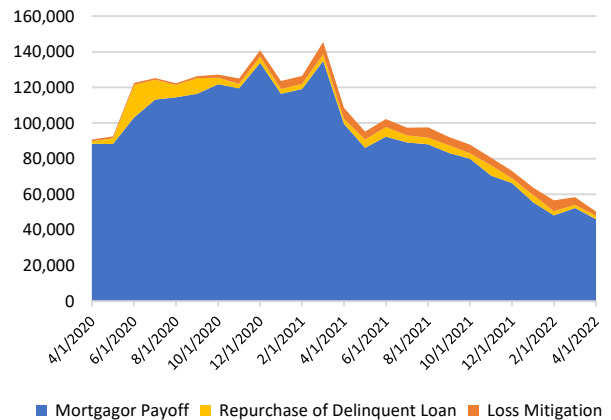
State of the US Housing Market

Of the Ginnie Mae loans that were liquidated from pools due to mortgage delinquency (these counts include all delinquent buyouts, regardless of forbearance status), a higher share of the loans were FHA versus VA loans (top charts, yellow areas). Liquidated loans across FHA and VA are also more likely to have coupons greater than or equal to 3.5% (bottom charts: “Number of Loans Removed from Pools by Coupon”). In April 2022, the number of loans repurchased due to delinquency increased 14% to 8,734 for FHA and increased 5% to 1,919 for VA loans.

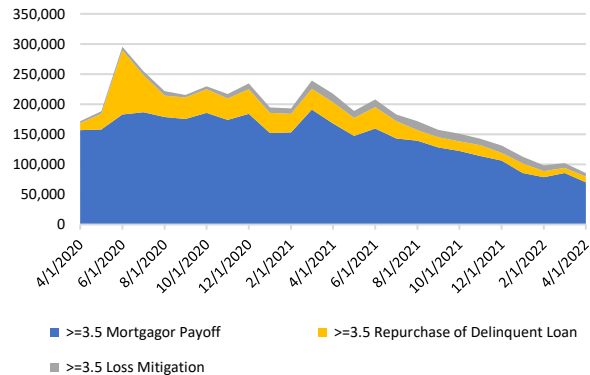
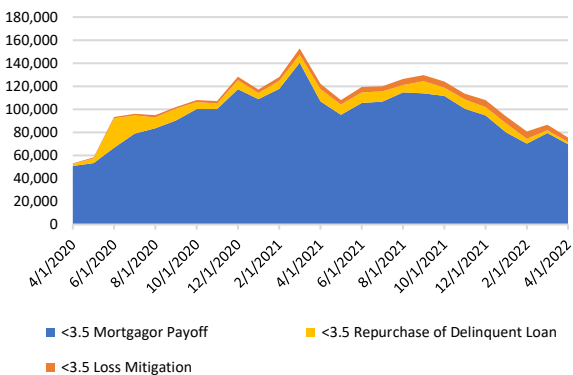
Number of Loans Removed from Pools: FHA



Number of Loans Removed from Pools: VA



Number of Loans Removed from Pools by Coupon



Sources: Recursion. Notes: Data as of April 2022.

Additionally, a small number of loans were removed due to ‘Foreclosure with Claim’ and ‘Other’ reasons in November 2021.

2.5 Ginnie Mae Agency Issuance and Agency Outstanding by State

Ginnie Mae MBS represent approximately 25% of new Agency issuance over the past year. The share of Ginnie Mae's new Agency issuance varies across states, with the highest Ginnie Mae's share in Alaska (49%) and the lowest in the District of Columbia (14%). The same holds true for Agency issuance outstanding, with the highest issuance share over the past year in Alaska (47%) and the lowest in the District of Columbia (12%). There is currently no difference between Ginnie Mae's share of new Agency issuance and Ginnie Mae's share of Agency outstanding, as they are both 25%.

Agency Issuance (past 1 year)					Agency Outstanding (past 1 year)			
National	GNMA Share	GNMA Loan Count	GNMA Avg. Loan Size (000)	GSE Avg. Loan Size (000)	GNMA Share by UPB	GNMA Loan Count	GNMA Avg. Loan Size (000)	GSE Avg. Loan Size (000)
AK	49%	11,972	318.18	281.22	47%	36,525	256.63	219.62
AL	38%	70,252	206.74	223.38	39%	228,146	150.48	175.13
AR	36%	37,423	176.26	204.92	38%	133,499	127.29	158.26
AZ	24%	110,528	279.30	286.25	23%	262,818	208.21	221.33
CA	17%	266,504	415.16	408.78	15%	652,938	318.03	320.94
CO	24%	85,293	365.33	346.01	23%	207,218	280.11	273.52
CT	25%	32,378	248.51	266.67	24%	102,025	197.78	208.71
DC	14%	2,937	504.96	438.25	12%	8,534	373.24	352.47
DE	30%	16,861	250.46	266.72	31%	49,668	199.49	208.85
FL	31%	303,550	261.30	266.65	31%	812,981	202.30	206.07
GA	32%	167,184	228.93	261.09	33%	479,500	171.27	201.83
HI	36%	12,959	578.64	464.27	31%	32,407	460.47	357.45
IA	21%	22,221	177.58	191.23	21%	80,275	130.14	148.72
ID	21%	20,859	306.66	292.17	22%	61,953	206.25	218.70
IL	21%	109,477	202.18	233.89	21%	349,073	155.82	178.48
IN	28%	81,265	175.75	193.38	29%	270,578	128.46	148.31
KS	27%	26,842	184.59	211.50	28%	94,397	135.79	162.17
KY	31%	47,699	185.43	200.68	33%	159,051	138.56	154.19
LA	40%	58,268	197.88	225.02	39%	190,254	154.09	176.53
MA	16%	40,064	348.76	346.59	15%	108,957	276.55	269.44
MD	34%	103,281	324.37	313.41	32%	279,869	260.33	249.08
ME	24%	11,785	223.86	247.54	25%	36,769	171.85	189.94
MI	18%	79,023	175.93	202.97	19%	266,281	129.27	155.81
MN	17%	45,852	233.50	253.75	17%	156,079	177.56	196.85
MO	26%	69,431	186.07	206.96	28%	238,254	137.11	160.60
MS	45%	33,374	189.25	203.83	47%	117,502	138.35	159.30
MT	23%	10,392	277.78	281.70	23%	32,022	201.44	212.78
NC	27%	134,851	227.06	258.51	28%	402,298	168.22	197.93
ND	25%	5,586	236.20	233.57	23%	16,510	189.68	184.72
NE	24%	17,228	200.79	204.11	26%	63,779	143.74	159.20
NH	21%	12,245	282.96	277.43	22%	37,526	219.79	213.02
NJ	21%	77,264	295.57	320.23	20%	221,719	233.72	253.88
NM	35%	26,616	221.55	231.71	37%	92,469	161.04	175.77
NV	30%	53,075	307.85	296.11	29%	127,155	238.57	230.90
NY	18%	71,848	294.84	336.91	19%	298,336	202.93	246.87
OH	26%	114,304	171.48	194.03	28%	409,843	126.03	147.67
OK	39%	48,258	188.22	207.08	41%	184,821	136.29	159.49
OR	19%	39,572	323.36	324.85	19%	107,027	245.70	250.18
PA	22%	99,183	193.53	235.54	25%	377,836	145.96	180.50
RI	30%	11,954	291.55	271.69	29%	34,150	225.90	211.70
SC	33%	81,124	230.66	243.25	33%	224,181	175.86	188.78
SD	28%	8,113	225.13	224.70	29%	28,705	167.25	175.95
TN	29%	85,240	234.36	256.53	31%	264,174	167.09	199.59
TX	29%	328,516	236.80	272.09	31%	1,050,043	174.40	206.74
UT	18%	36,136	335.68	331.67	18%	92,330	247.47	258.97
VA	36%	153,377	320.19	312.25	35%	430,652	251.05	250.02
VT	17%	139	389.85	383.17	23%	754	238.38	296.19
VI	19%	3,455	225.90	244.94	18%	11,840	178.02	179.13
WA	22%	84,810	366.55	368.04	21%	226,821	275.15	286.49
WI	16%	37,719	198.66	213.52	16%	119,846	152.33	163.10
WV	41%	16,589	188.22	191.86	42%	56,830	140.33	144.42
WY	34%	8,709	248.84	250.96	34%	24,506	250.96	200.25

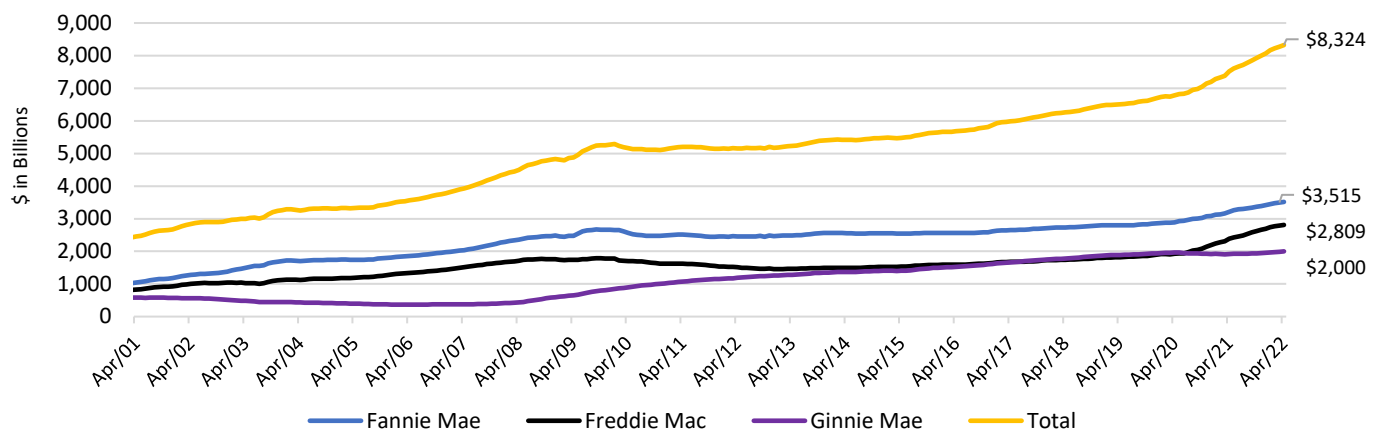
Sources: Recursion. Notes: Outstanding balance is based on loan balance as of April 2022. Ginnie Mae issuance is based on the last 12 months, from March 2021 to April 2022.

2.6 Outstanding Single-Family Agency MBS

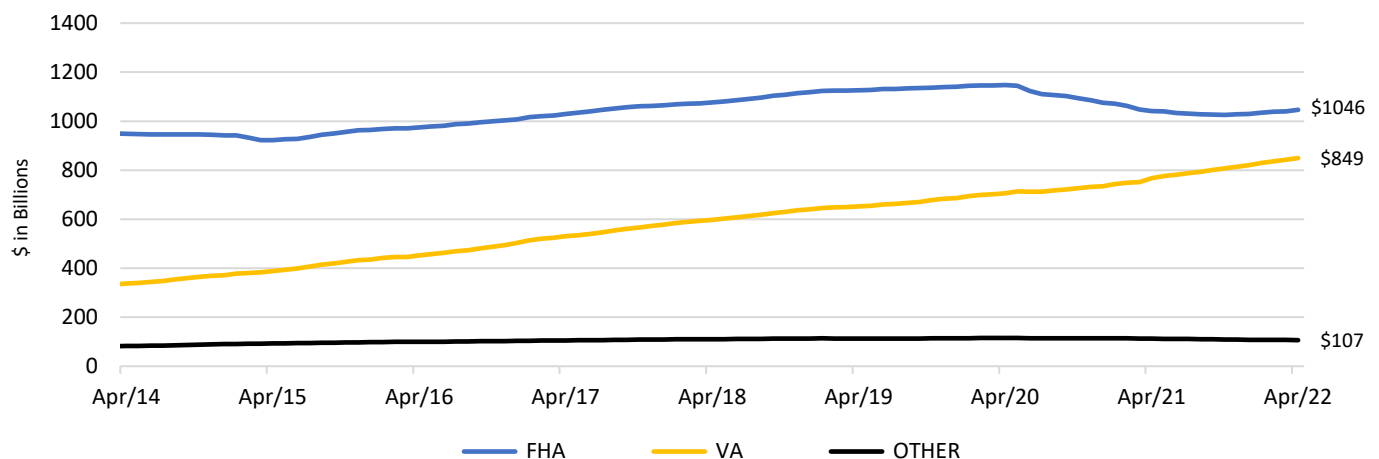
As of April 2022, outstanding single-family MBS in the Agency market totaled \$8.32 trillion: 42.2% Fannie Mae, 33.7% Freddie Mac, and 24.0% Ginnie Mae MBS. Over the past twelve months, Freddie Mac's, Fannie Mae's and Ginnie Mae's total outstanding MBS increased by approximately 17.8%, 10.2% and 4.7%, respectively. Despite this, Fannie outstanding MBS remains larger than either Freddie or Ginnie by approximately \$706 billion and \$1.5 trillion, respectively.

Ginnie Mae MBS collateral composition has changed dramatically over the past ten years. In December 2011, 76% of Ginnie Mae outstanding collateral was FHA and 19.5% was VA. In April 2022, FHA collateral comprised 52.2% of Ginnie Mae MBS outstanding and VA collateral comprised 42.4% of Ginnie Mae MBS outstanding.

Outstanding Agency Mortgage-Backed Securities



Composition of Outstanding Ginnie Mae Mortgage-Backed Securities

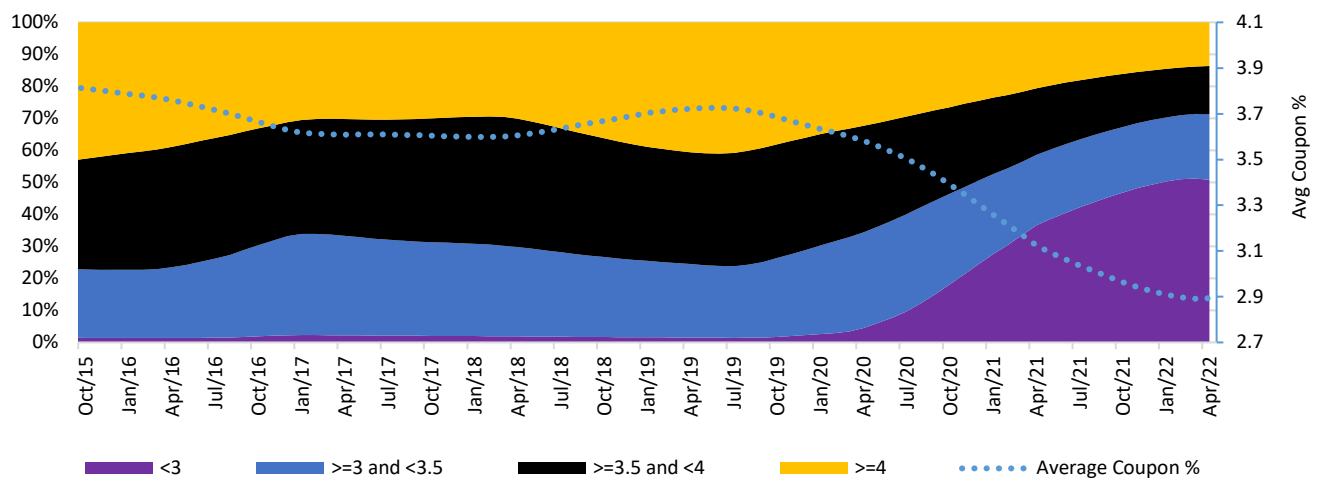


Sources: Recursion. Notes: Data as of April 2022.

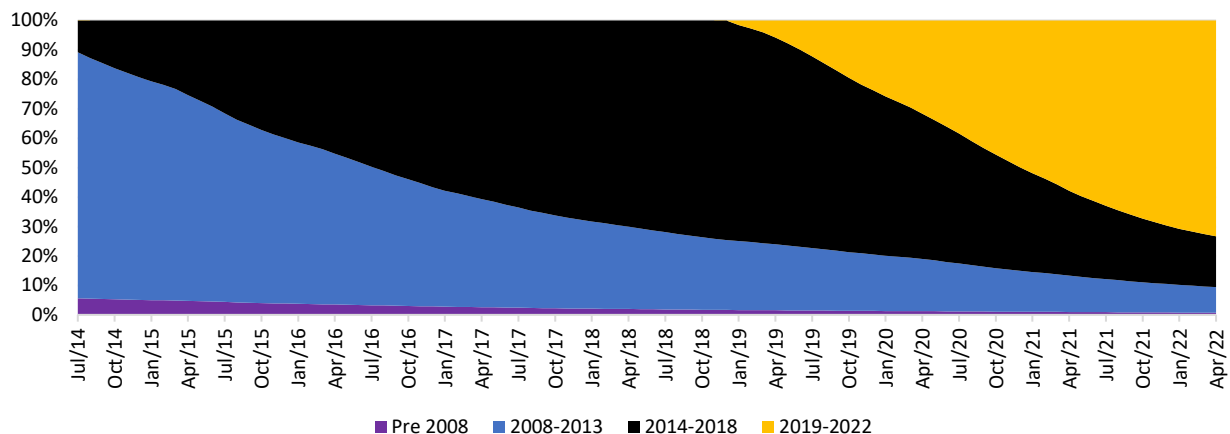
2.7 Outstanding Ginnie Mae MBS Volume by Coupon and Vintage Over Time

As of April 2022, the weighted average coupon on outstanding Ginnie Mae pools remained the same as March 2022 at 2.89% , down 5 bps since December 2021 and 46 bps since December 2020. The share of outstanding MBS pools with coupons below 3.0% (51% as of December 2021) began a rapid expansion in 2020. The proportion with coupons under 2.0% has increased approximately 13% (percent change). The bottom chart illustrates that loans originated since 2019 accounting for 73% of Ginnie MBS collateral outstanding.

Outstanding Ginnie Mae MBS Balance, by Coupon



Outstanding Ginnie Mae MBS Balance, by Vintage

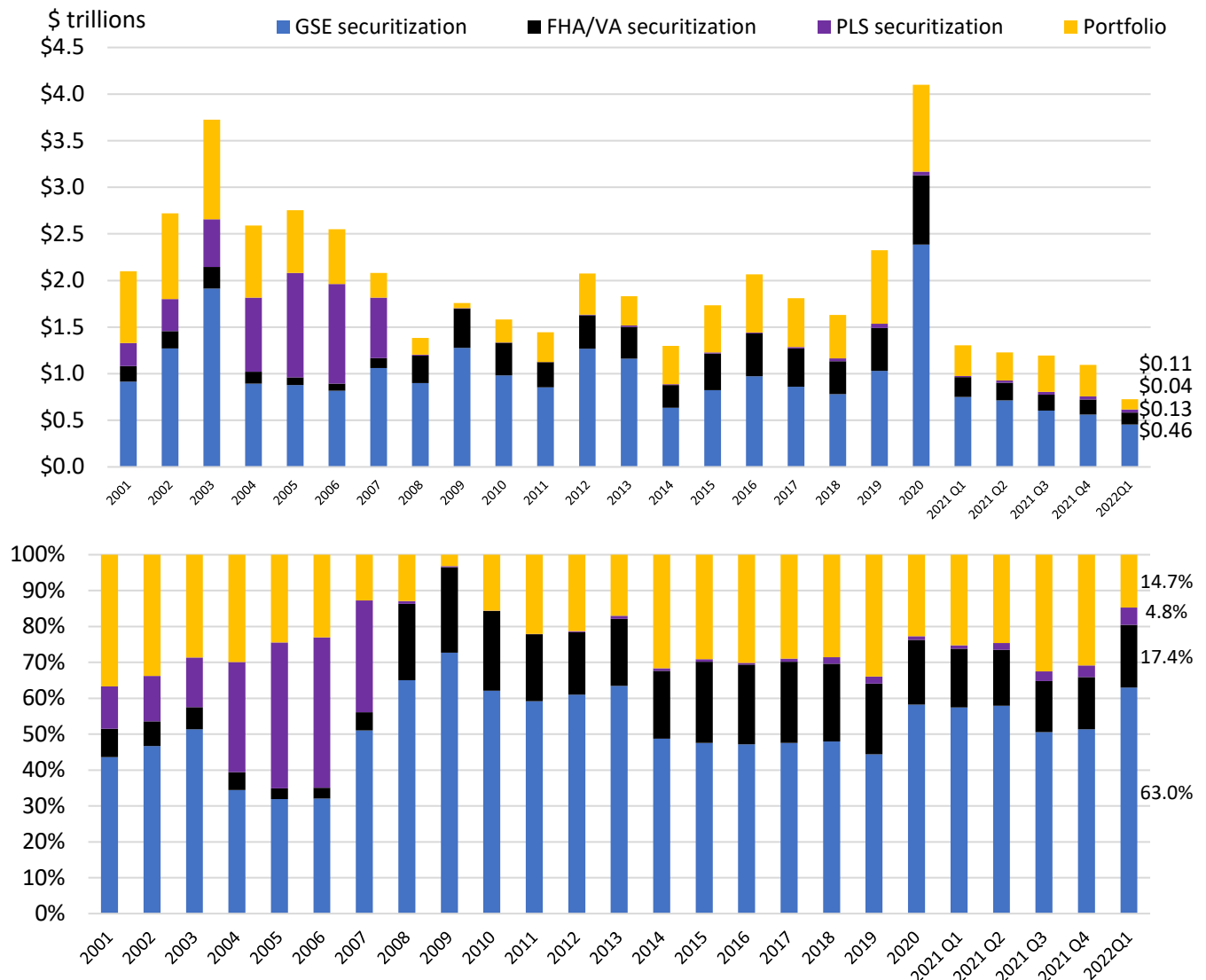


Sources: Recursion. Note: April 2022 data points reflect the current composition of balances by coupon and vintage; factor data is not applied to prior date balance compositions. Average coupon is weighted by remaining principal balance.

2.8 Origination Volume and Share Over Time

Origination volume trends declined in Q1 2022, with \$725 billion in originations in Q1, which fell short of Q4 2021 issuance by approximately 34%. Ginnie Mae's share of total origination increased 20.0% from 14.5% to 17.4% in Q1 2022.

First Lien Origination Volume & Share



Source: Inside Mortgage Finance. Note: Data as of Q1 2022.

3.0 US Agency Market, Single-Family Issuance

Agency gross MBS issuance decreased MoM by 11.0% (from March to April). Fannie Mae and Freddie Mac saw decreases in gross issuance as compared to March, while Ginnie Mae saw a slight increase. Ginnie Mae's \$47.8 billion in gross issuance in April was approximately 32% below the average monthly issuance for 2021.

Agency Gross Issuance (\$ in billions)					
Issuance Year	Fannie Mae	Freddie Mac	GSE Total	Ginnie Mae	Total
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	\$1,195.6
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	\$1,388.7	\$1,244.9	\$2,633.7	\$838.3	\$3,471.9
2022 YTD	\$308.5	\$266.8	\$575.3	\$203.2	\$778.5

Ginnie Mae Gross Issuance Collateral Composition (\$ in billions)				
Issuance Year	FHA	VA	Other	Total
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	\$389.7	\$370.9	\$175.7	\$614.5
2022 YTD	\$105.1	\$91.8	\$6.3	\$203.2

US Agency Market, Issuance

Agency net issuance in April was approximately \$87.5 billion, which represents a 11.0% MoM decrease in net issuance. Ginnie Mae net issuance was \$13.2 billion in April. As noted in [Section 2.6](#), VA net issuance continues to outpace FHA.

Agency Net Issuance (\$ in billions)					
Issuance Year	Fannie Mae	Freddie Mac	GSE	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	\$165.7
2016	\$60.5	\$66.8	\$127.4	\$126.1	\$253.5
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	\$197.7	\$95.7	\$293.5
2020	\$289.3	\$343.5	\$632.8	\$19.9	\$652.7
2021	\$384.9	\$498.0	\$882.9	\$2.7	\$885.6
2022 YTD	\$114.3	\$102.3	\$216.6	\$43.9	\$477.0

Ginnie Mae Net Issuance Collateral Composition (\$ in billions)				
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	\$131.2
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	-\$64.2	\$74.2	-\$7.3	\$2.7
2022 YTD	\$16.5	\$28.6	-\$1.1	\$43.9

US Agency Market, Issuance

Agency Gross Issuance Amount (in \$ Billions)						Agency Net Issuance Amount (in \$ Billions)				
Month	Fannie Mae	Freddie Mac	Ginnie Mae	GSEs	Total	Fannie Mae	Freddie Mac	Ginnie Mae	GSEs	Total
Sep-17	\$47.3	\$27.9	\$40.2	\$75.3	\$115.5	\$7.7	\$3.8	\$10.6	\$11.4	\$22.0
Oct-17	\$42.9	\$34.6	\$38.4	\$77.6	\$115.9	\$5.5	\$12.5	\$11.0	\$17.9	\$28.9
Nov-17	\$43.5	\$37.2	\$37.8	\$80.7	\$118.5	\$3.9	\$13.6	\$8.3	\$17.5	\$25.8
Dec-17	\$45.3	\$30.0	\$36.2	\$75.3	\$111.5	\$9.2	\$8.1	\$7.0	\$17.4	\$24.4
Jan-18	\$47.4	\$21.4	\$35.4	\$68.8	\$104.2	\$12.1	\$0.2	\$7.7	\$12.3	\$20.0
Feb-18	\$40.3	\$21.5	\$32.0	\$61.8	\$93.8	\$8.3	\$2.2	\$7.1	\$10.5	\$17.6
Mar-18	\$35.6	\$21.3	\$29.1	\$56.9	\$86.0	\$4.9	\$3.0	\$6.3	\$7.9	\$14.1
Apr-18	\$36.3	\$26.2	\$32.8	\$62.5	\$95.3	\$1.7	\$6.0	\$8.8	\$7.7	\$16.5
May-18	\$38.9	\$27.5	\$33.8	\$66.4	\$100.2	\$5.1	\$7.2	\$10.5	\$12.3	\$22.8
Jun-18	\$38.2	\$28.8	\$35.6	\$67.0	\$102.6	\$2.5	\$6.8	\$10.3	\$9.3	\$19.6
Jul-18	\$40.3	\$26.2	\$35.6	\$66.5	\$102.2	\$4.2	\$3.7	\$10.4	\$7.8	\$18.3
Aug-18	\$50.4	\$29.9	\$37.5	\$80.3	\$117.8	\$15.8	\$7.9	\$12.5	\$23.6	\$36.1
Sep-18	\$41.8	\$30.1	\$34.8	\$71.8	\$106.6	\$5.9	\$6.2	\$9.0	\$12.1	\$21.1
Oct-18	\$39.8	\$27.4	\$33.2	\$67.1	\$100.3	\$9.7	\$7.1	\$11.4	\$16.8	\$28.2
Nov-18	\$35.1	\$30.1	\$32.4	\$65.2	\$97.6	\$3.6	\$11.0	\$9.8	\$14.6	\$24.4
Dec-18	\$36.9	\$23.9	\$28.4	\$60.7	\$89.1	\$8.2	\$6.4	\$8.2	\$14.6	\$22.8
Jan-19	\$33.3	\$19.2	\$29.0	\$52.6	\$81.6	\$5.9	\$2.5	\$9.2	\$8.3	\$17.6
Feb-19	\$27.3	\$19.9	\$23.5	\$47.2	\$70.7	\$1.4	\$3.4	\$4.6	\$4.7	\$9.3
Mar-19	\$29.6	\$27.3	\$26.6	\$56.9	\$83.5	\$1.8	\$10.3	\$5.6	\$12.0	\$17.6
Apr-19	\$33.1	\$30.8	\$32.9	\$63.9	\$96.8	\$1.3	\$10.8	\$8.3	\$12.0	\$20.4
May-19	\$44.5	\$34.3	\$38.8	\$78.8	\$117.6	\$6.7	\$9.8	\$9.4	\$16.6	\$26.0
Jun-19	\$44.6	\$34.0	\$43.3	\$78.6	\$121.9	\$1.9	\$5.9	\$9.0	\$7.8	\$16.8
Jul-19	\$51.7	\$36.9	\$45.9	\$88.6	\$134.5	\$10.9	\$10.1	\$11.0	\$21.0	\$32.0
Aug-19	\$71.1	\$50.4	\$51.2	\$121.4	\$172.6	\$20.8	\$17.1	\$8.7	\$37.9	\$46.6
Sep-19	\$67.1	\$43.0	\$52.0	\$110.1	\$162.1	\$14.1	\$7.5	\$6.5	\$21.5	\$28.0
Oct-19	\$65.0	\$46.2	\$58.4	\$111.2	\$169.6	\$7.4	\$7.1	\$11.9	\$14.6	\$26.5
Nov-19	\$68.1	\$50.7	\$54.3	\$118.7	\$173.1	\$5.2	\$8.6	\$4.1	\$13.8	\$18.0
Dec-19	\$62.1	\$52.5	\$52.7	\$114.6	\$167.3	\$10.1	\$17.3	\$7.4	\$27.3	\$34.7
Jan-20	\$61.7	\$51.4	\$56.0	\$113.1	\$169.0	\$9.1	\$16.5	\$8.6	\$25.6	\$34.2
Feb-20	\$56.5	\$39.5	\$51.2	\$96.0	\$147.2	\$9.4	\$7.9	\$7.1	\$17.4	\$24.4
Mar-20	\$69.5	\$41.4	\$53.0	\$110.8	\$163.9	\$17.9	\$6.3	\$8.8	\$24.2	\$33.0
Apr-20	\$101.6	\$76.3	\$61.4	\$177.9	\$239.3	\$30.5	\$27.5	\$10.2	\$58.0	\$68.2
May-20	\$124.3	\$70.6	\$60.8	\$194.9	\$255.7	\$35.2	\$8.2	\$5.7	\$43.4	\$49.1
Jun-20	\$118.9	\$78.1	\$58.5	\$197.0	\$255.4	\$30.0	\$15.9	\$1.3	\$45.9	\$47.2
Jul-20	\$125.0	\$108.1	\$66.5	\$233.1	\$299.5	\$23.4	\$38.0	-\$15.5	\$61.4	\$45.9
Aug-20	\$137.6	\$113.6	\$73.6	\$251.3	\$324.8	\$34.2	\$43.4	-\$4.1	\$77.6	\$73.5
Sep-20	\$122.9	\$102.1	\$72.4	\$225.0	\$297.5	\$16.5	\$29.9	\$1.0	\$46.5	\$47.5
Oct-20	\$142.3	\$124.8	\$72.6	\$267.1	\$339.7	\$28.9	\$48.3	-\$0.3	\$77.2	\$76.9
Nov-20	\$152.4	\$131.5	\$72.6	\$283.9	\$356.5	\$31.4	\$48.4	-\$4.5	\$79.8	\$75.3
Dec-20	\$130.8	\$126.7	\$76.9	\$257.5	\$334.4	\$22.8	\$53.1	\$1.7	\$75.8	\$77.5
Jan-21	\$141.6	\$117.3	\$78.2	\$258.9	\$337.1	\$25.9	\$37.9	-\$6.5	\$63.8	\$57.3
Feb-21	\$118.8	\$115.5	\$72.3	\$234.3	\$306.6	\$16.8	\$44.3	-\$0.9	\$61.1	\$60.2
Mar-21	\$143.9	\$118.9	\$76.9	\$262.8	\$339.7	\$37.6	\$44.0	\$1.0	\$81.6	\$82.6
Apr-21	\$148.0	\$142.3	\$85.6	\$290.3	\$375.9	\$26.2	\$57.0	-\$4.2	\$83.3	\$79.0
May-21	\$132.3	\$91.4	\$71.7	\$223.7	\$295.4	\$64.9	\$38.8	-\$3.1	\$103.7	\$100.6
Jun-21	\$108.5	\$91.2	\$67.7	\$199.7	\$267.4	\$34.0	\$33.7	\$2.6	\$67.8	\$70.4
Jul-21	\$95.4	\$84.6	\$69.0	\$180.0	\$249.0	\$27.6	\$31.9	-\$1.4	\$59.5	\$58.0
Aug-21	\$104.8	\$109.3	\$66.6	\$214.1	\$280.8	\$27.5	\$48.5	\$1.4	\$76.1	\$77.4
Sep-21	\$102.9	\$105.3	\$68.0	\$208.3	\$276.3	\$26.4	\$45.6	\$3.1	\$72.0	\$75.1
Oct-21	\$105.1	\$102.7	\$62.5	\$207.8	\$270.3	\$34.6	\$46.9	\$1.9	\$81.5	\$83.4
Nov-21	\$93.6	\$81.1	\$60.8	\$174.7	\$235.5	\$29.5	\$34.9	\$3.1	\$64.4	\$67.6
Dec-21	\$93.7	\$85.4	\$58.9	\$179.1	\$238.0	\$33.8	\$34.4	\$5.7	\$68.3	\$73.9
Jan-22	\$93.1	\$64.1	\$49.0	\$157.2	\$206.2	\$44.0	\$46.2	\$8.3	\$90.2	\$98.6
Feb-22	\$73.3	\$62.3	\$47.3	\$135.6	\$182.8	\$28.7	\$28.3	\$4.2	\$57.0	\$61.2
Mar-22	\$76.8	\$62.9	\$47.4	\$139.7	\$187.1	\$23.1	\$22.6	\$6.9	\$45.7	\$98.3
Apr-22	\$65.3	\$53.5	\$47.8	\$118.8	\$166.6	\$17.7	\$19.5	\$13.2	\$37.2	\$87.5

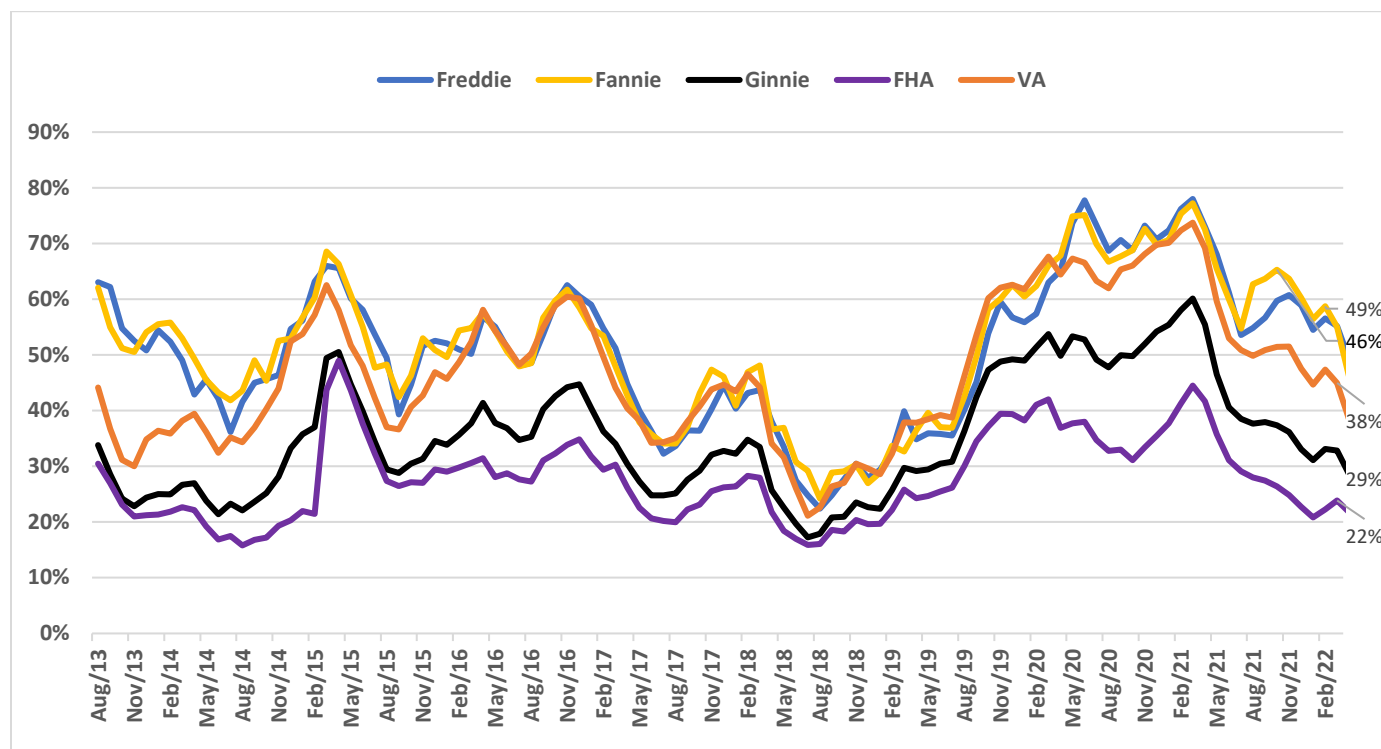
Source: Net issuance is defined here as the difference between prior period UPB and current period UPB. Data as of February 2022. Beginning with the October 2021 GMAR, the Fannie Mae and Freddie Mac net issuance data have been updated to reflect the current UPB of the portfolios. July 2021 through February 2022 GMAR net issuance data reflect the UPB at security issuance for Fannie Mae and Freddie Mac. As of January 2022, data source is Recursion.

Global Markets Analysis Report

3.1 Percent Refi at Issuance

The Ginnie Mae refinance share was 29% in April:

- The FHA refinance share was at 22% in April 2022, below the 46% share for Fannie, the 49% refi share for Freddie originations, and the 38% share for the VA.
- Refinances as a share of all Agency originations decreased by 7% to 42% in April.



Sources: Recursion. Notes: Data as of April 2022

4.0 High LTV Loans: Ginnie Mae vs. GSEs

The share of high-LTV Agency loans going to borrowers with FICO scores above 750 has decreased by approximately 5% between periods February 2020 – April 2020 and February 2022 - April 2022. The share of borrowers with DTIs below 35% increased by approximately 3% over the same period. From the period between February 2020 – April 2020 to the period between February 2022 – April 2022, the share of high-LTV loans decreased in the Ginnie Mae guarantee book by approximately 4% and the GSE portfolios increased by approximately 14%. Still, Ginnie Mae maintains its key role of expanding credit access to low-to-moderate income borrowers as it continues to dominate high-LTV lending, with 60.00% of its issuances between February 2022 and April 2022 having LTVs of 95 or above, compared to 13.59% for the GSEs.

Share of Loans with LTV \geq 95

	Ginnie Mae	GSE	All
Feb 2020 - April 2020	62.48%	11.90%	27.06%
Feb 2022 - April 2022	60.00%	13.59%	25.97%

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

Feb 2020-Apr 2020

DTI	FICO				NA	All
	<650	650-700	700-750	\geq 750		
<35	3.50%	4.41%	3.08%	3.80%	0.75%	15.53%
35-45	7.44%	8.68%	5.23%	4.12%	0.23%	25.70%
\geq 45	8.00%	10.75%	6.92%	4.47%	0.11%	30.25%
NA	3.89%	5.06%	4.10%	4.14%	11.33%	28.52%
All	22.83%	28.89%	19.33%	16.52%	12.42%	100.00%

Feb 2022-Apr 2022

DTI	FICO				NA	All
	<650	650-700	700-750	\geq 750		
<35	3.81%	5.00%	3.06%	4.00%	0.10%	15.97%
35-45	9.09%	11.47%	5.88%	4.93%	0.09%	31.46%
\geq 45	10.73%	15.67%	9.10%	6.13%	0.08%	41.73%
NA	1.79%	1.33%	0.83%	0.67%	6.22%	10.85%
All	25.42%	33.47%	18.88%	15.74%	6.49%	100.00%

Sources: Recursion and Ginnie Mae. Data as of April 2022

Holders of Ginnie Mae Mortgage Servicing Rights

5.0 Holders of Ginnie Mae Mortgage Servicing Rights

This table shows the 30 largest owners of mortgage servicing rights (MSR) by UPB for loans collateralizing Ginnie Mae MBS. The top 30 firms collectively own 82.8% of Ginnie Mae MSRs (see Cumulative Share). Twenty-three of these top 30 are non-depository institutions, the remaining 7 are depository institutions. As of April 2022, over half (50.3%) of the Ginnie Mae MSRs are owned by the top six firms.

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

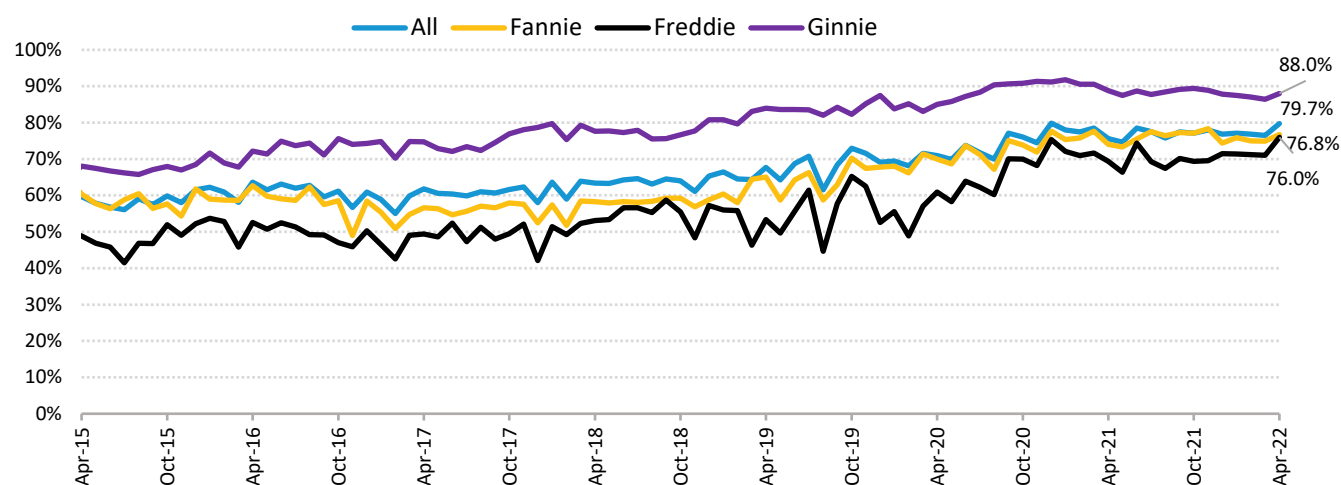
Rank	MSR Holder	UPB (\$ millions)	Share	Cumulative Share
1	FREEDOM HOME MORTGAGE	\$256,028,554,317	12.8%	12.8%
2	PENNYMAC LOAN SERVICING	\$228,641,937,818	11.4%	24.0%
3	LAKEVIEW LOAN SERVICING	\$210,386,709,332	10.5%	34.7%
4	WELLS FARGO BANK	\$119,584,800,856	6.0%	40.7%
5	ROCKET MORTGAGE	\$99,747,860,564	5.0%	45.7%
6	NATIONSTAR MORTGAGE	\$92,383,621,597	4.6%	50.3%
7	CARRINGTON MORTGAGE	\$75,579,869,029	3.8%	54.0%
8	NEWREZ	\$61,816,350,207	3.1%	57.1%
9	CALIBER HOME LOANS	\$50,599,334,041	2.5%	59.7%
10	U. S. BANK	\$48,573,373,156	2.4%	62.1%
11	UNITED WHOLESALE MORTGAGE	\$38,008,500,377	1.9%	64.0%
12	LOANDEPOT.COM, LLC	\$36,047,438,244	1.8%	65.8%
13	MORTGAGE RESEARCH CENTER	\$32,676,396,283	1.6%	67.4%
14	PLANET HOME LENDING	\$31,774,340,204	1.6%	69.0%
15	USAA FEDERAL SAVINGS	\$30,376,109,329	1.5%	70.5%
16	NAVY FEDERAL CREDIT	\$28,440,780,622	1.4%	71.9%
17	THE MONEY SOURCE INC	\$21,149,686,569	1.1%	73.0%
18	TRUIST BANK	\$21,117,629,313	1.1%	74.1%
19	GUILD MORTGAGE COMPA	\$20,714,940,465	1.0%	75.1%
20	AMERIHOME MORTGAGE C	\$20,175,783,173	1.0%	76.1%
21	CROSSCOUNTRY MORTGAG	\$16,094,713,994	0.8%	76.9%
22	NEW AMERICAN FUNDING	\$15,282,576,231	0.8%	77.7%
23	VILLAGE CAPITAL & INVESTMENT	\$14,472,110,345	0.7%	78.4%
24	CITIZENS BANK N.A.	\$13,381,341,628	0.7%	79.1%
25	IDAHO HOUSING AND FINANCE	\$13,301,606,237	0.7%	79.7%
26	RUSHMORE LOAN MANAGEMENT	\$13,270,296,483	0.7%	80.4%
27	MOVEMENT MORTGAGE, LL	\$12,876,905,760	0.6%	81.0%
28	CMG MORTGAGE, INC.	\$12,843,754,380	0.6%	81.7%
29	MIDFIRST BANK	\$12,754,989,684	0.6%	82.3%
30	PHH MORTGAGE CORPORA	\$10,905,126,653	0.5%	82.8%

Source: Deloitte. Data as of April 2022.

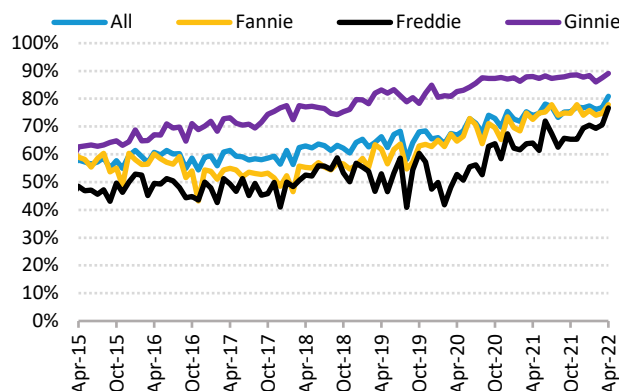
6.0 Agency Non-bank Originators

Total Agency non-bank origination experienced an increase in April, up approximately 3% since last month. This increase in non-bank origination share was driven primarily by Freddie Mac (non-bank origination share up 5% MoM). The Ginnie Mae non-bank share reached 88.0% as of April 2022 and has been consistently higher than the GSEs since September 2021 (89.1%). Ginnie Mae non-bank origination share of refinance mortgage loans has continued to drive Ginnie Mae's relatively higher non-bank origination share. GSE origination volume of purchase mortgage loans has been the primary driver in the MoM decline of Agency non-bank origination share.

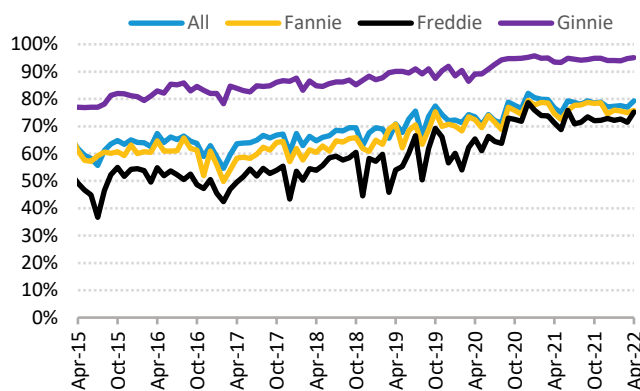
6.1 Agency Non-bank Originator Share (All, Purchase, Refi)



Non-bank Origination Share: Purchase Loans



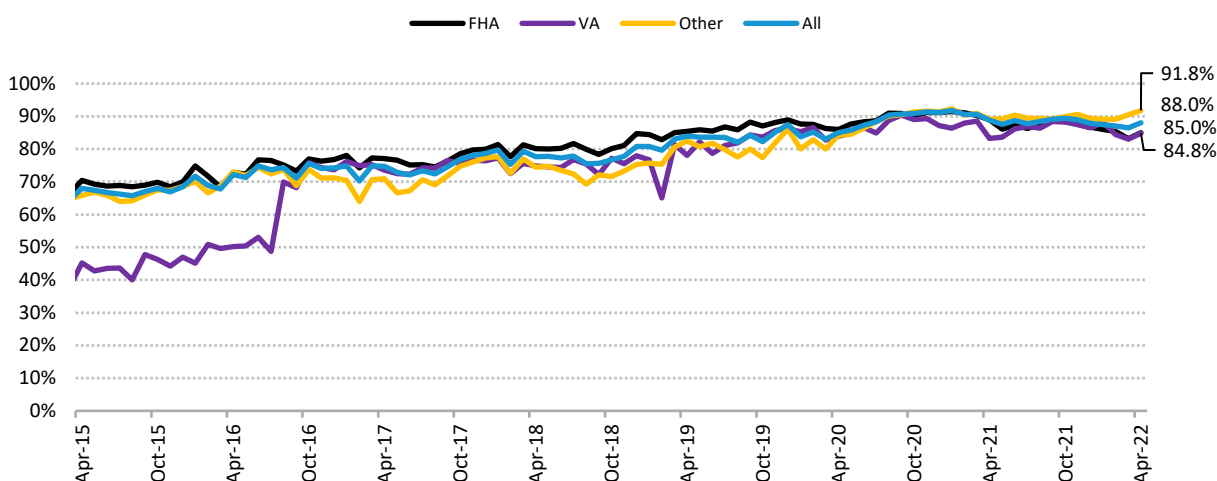
Non-bank Origination Share: Refi Loans



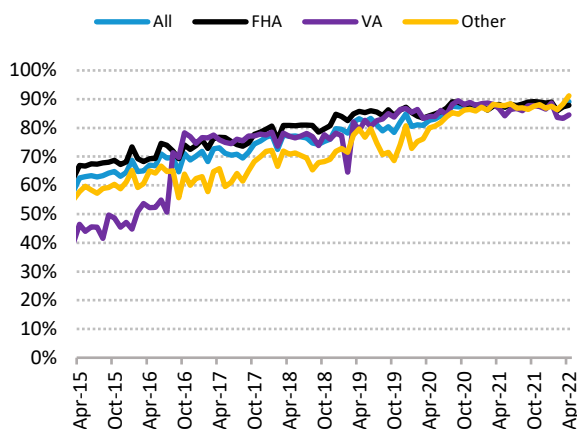
Sources: Recursion. Notes: Data as of April 2022.

Ginnie Mae's total non-bank originator share increased in April 2022, up 1.6% MoM. This increase in Ginnie Mae non-bank origination share was driven by increases in all three loans: FHA insured loans, VA guaranteed loans, and PIH and RD- guaranteed ("Other") origination. The increase in non-bank origination share of refi loans was primarily driven by Other loans, with an increase of approximately 0.8% MoM.

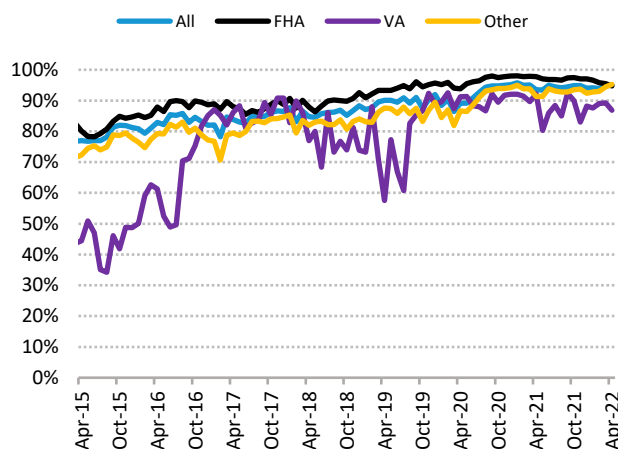
6.2 Ginnie Mae Non-bank Originator Share (All, Purchase, Refi)



Ginnie Mae Non-bank Share: Purchase Loans



Ginnie Mae Non-bank Share: Refi Loans

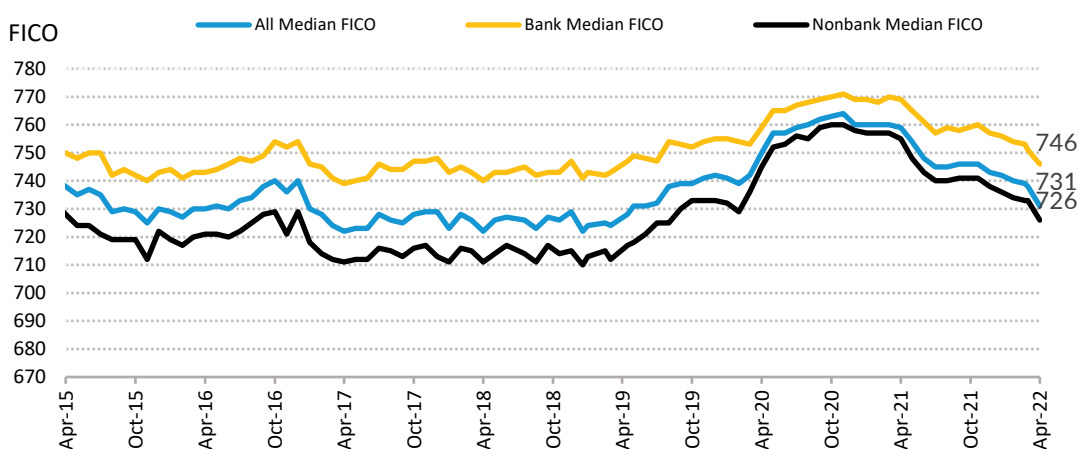


Sources: Recursion. Data as of April 2022.

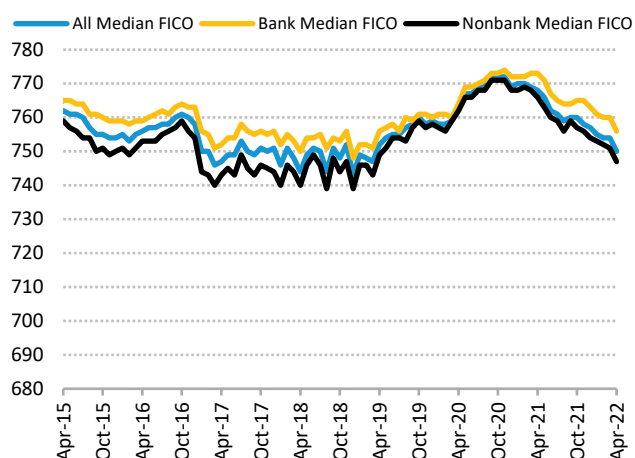
6.3 Bank vs. Non-bank Originators Historical Credit Box, Ginnie Mae vs. GSE (FICO, LTV, DTI)

The mortgage loan originations of non-banks continue to have a consistently lower median FICO score than their bank counterparts across all Agencies. The spread between non-bank and bank FICO scores increased by 2 FICO score points from March 2022 to April 2022. The Agency median FICO decreased by 7 FICO score points to 731 MoM.

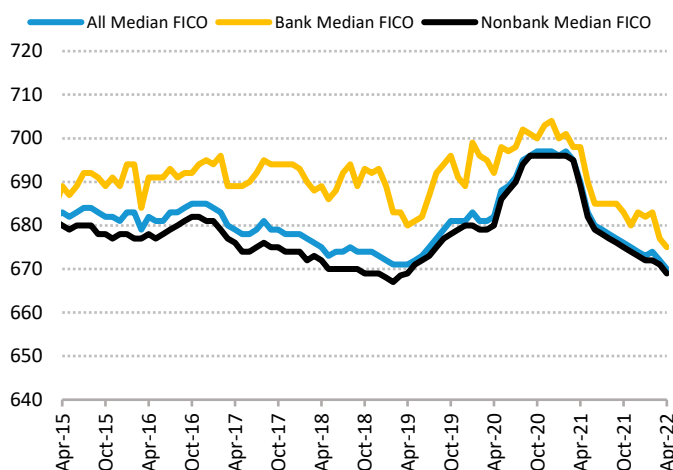
Agency FICO: Bank vs. Non-bank



GSE FICO: Bank vs. Non-bank



Ginnie Mae FICO: Bank vs. Non-bank

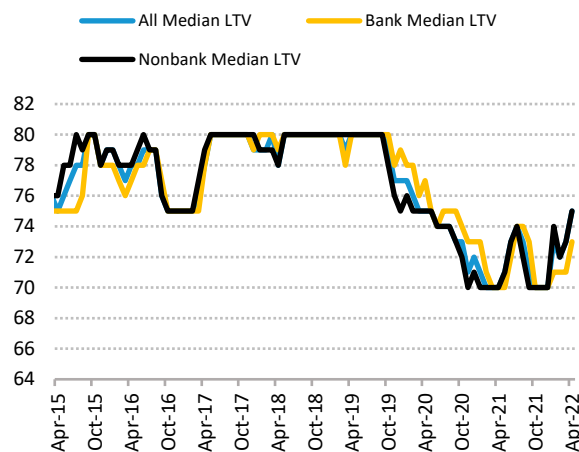


Sources: Recursion. Notes: Data as of April 2022.

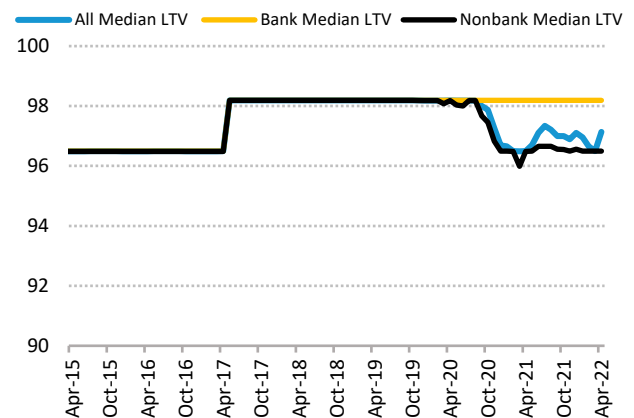
Non-bank Originators

The median LTV for all GSE originators increased by 2.0% in April 2022 MoM to 75%. While Ginnie Mae Median Bank LTV has been very flat at 98.19% since January 2021, Non-bank Median LTV has fluctuated more, although remaining within 20 bps of 96.5% since April of 2021. Ginnie Mae median DTI remained consistent MoM at approximately 43% in April 2022 in non-bank originations.

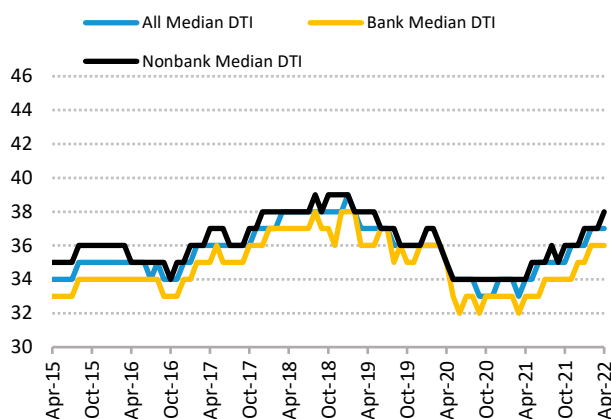
GSE LTV: Bank vs Non-bank



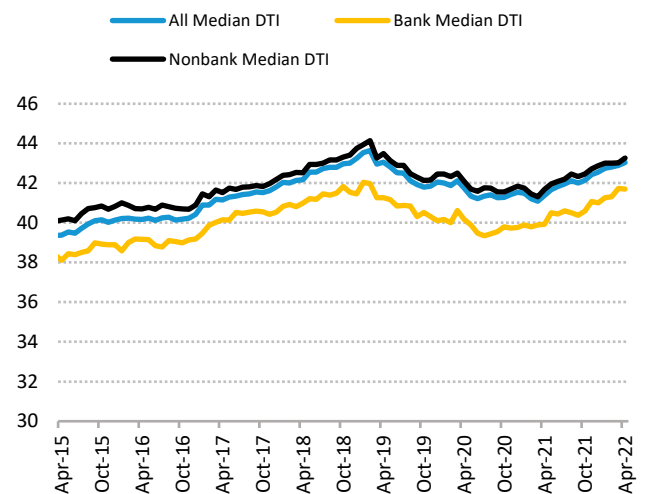
Ginnie Mae LTV: Bank vs. Non-bank



GSE DTI: Bank vs Non-bank



Ginnie Mae DTI: Bank vs. Non-bank

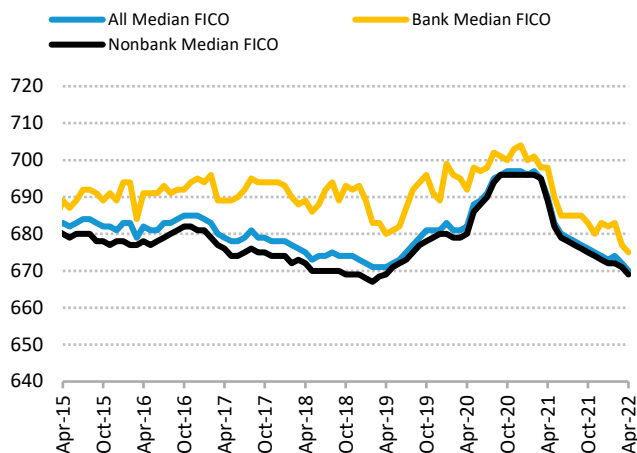


Sources: Recursion. Notes: Data as of April 2022.

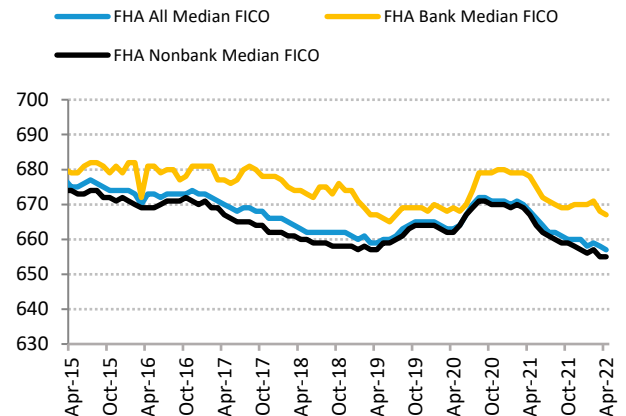
Non-bank Originators

In April 2022, the median FICO score for Ginnie Mae bank and non-bank originators continued to decline since February 2022. The median FICO for all Ginnie originations declined to 670 MoM. The gap between banks and non-banks continues and is most apparent in “Other” lending (13-point spread).

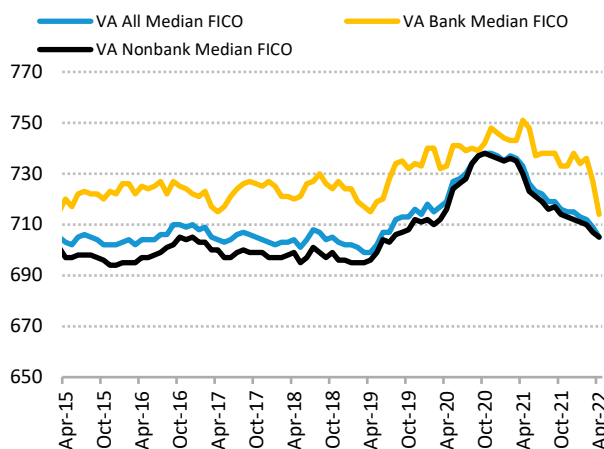
Ginnie Mae FICO Score: Bank vs. Non-bank



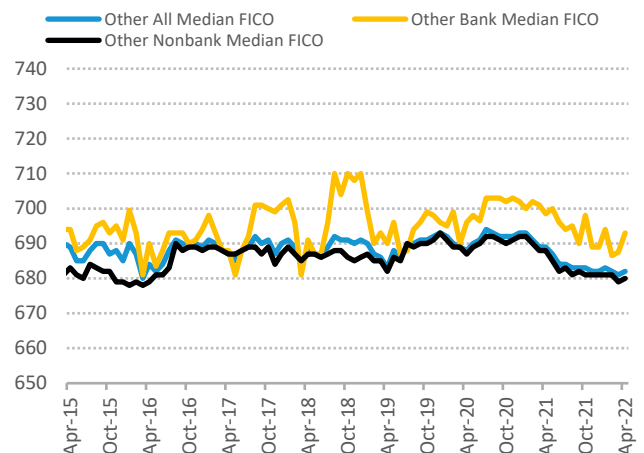
Ginnie Mae FHA FICO Score: Bank vs. Non-bank



Ginnie Mae VA FICO Score: Bank vs. Non-bank



Ginnie Mae Other FICO Score: Bank vs. Non-bank

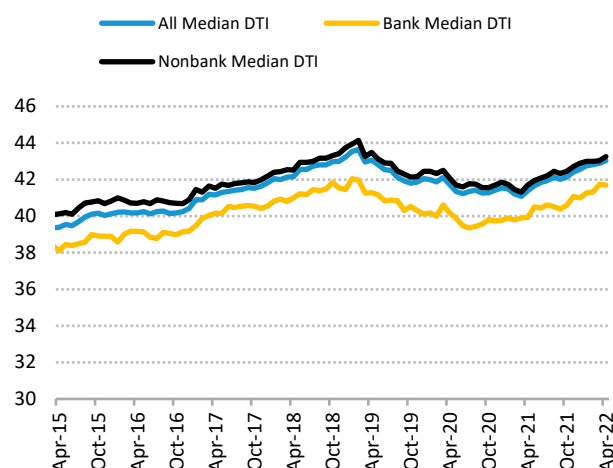


Sources: Recursion. Notes: Data as of April 2022.

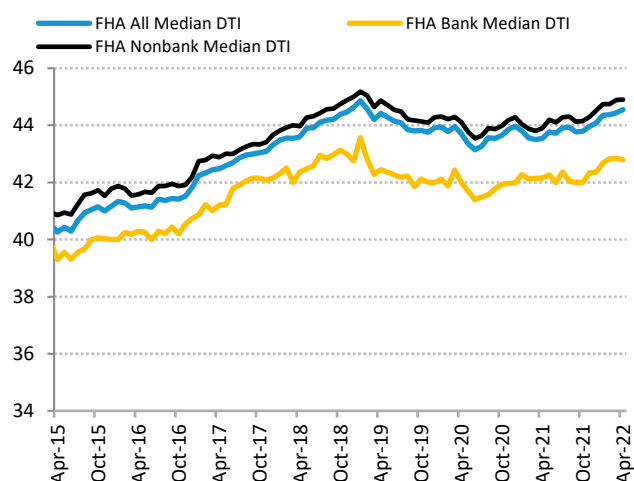
Non-bank Originators

Median DTI for Ginnie Mae non-bank originations has been consistently higher than the median DTI for Ginnie Mae bank originations. This is a trend evident for all Ginnie Mae-eligible loan types except for the “Other” category, where the spread between median bank and non-bank DTI is relatively small.

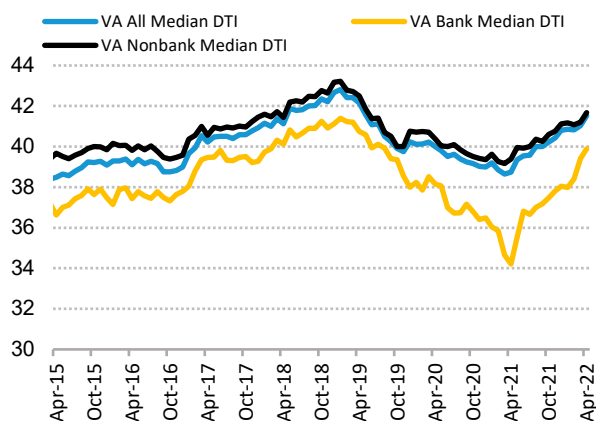
Ginnie Mae DTI: Bank vs. Non-bank



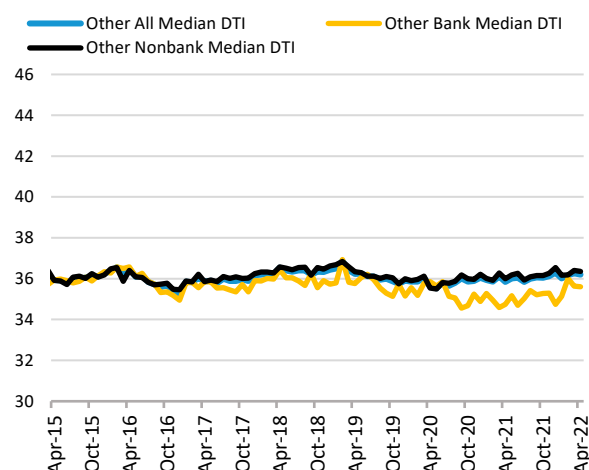
Ginnie Mae FHA DTI: Bank vs. Non-bank



Ginnie Mae VA DTI: Bank vs. Non-bank



Ginnie Mae Other DTI: Bank vs. Non-bank



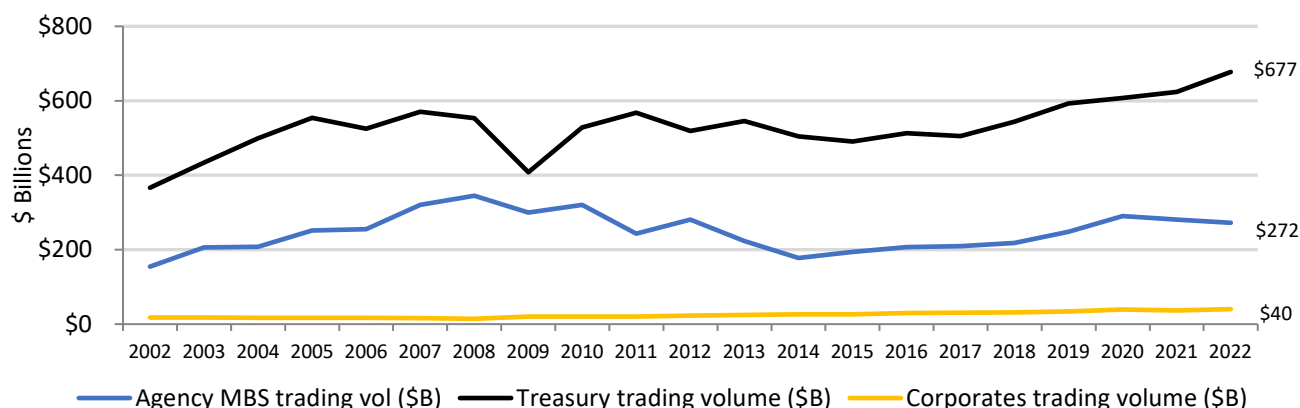
Sources: Recursion. Notes: Data as of April 2022.

7.0 Fixed Income Market Conditions

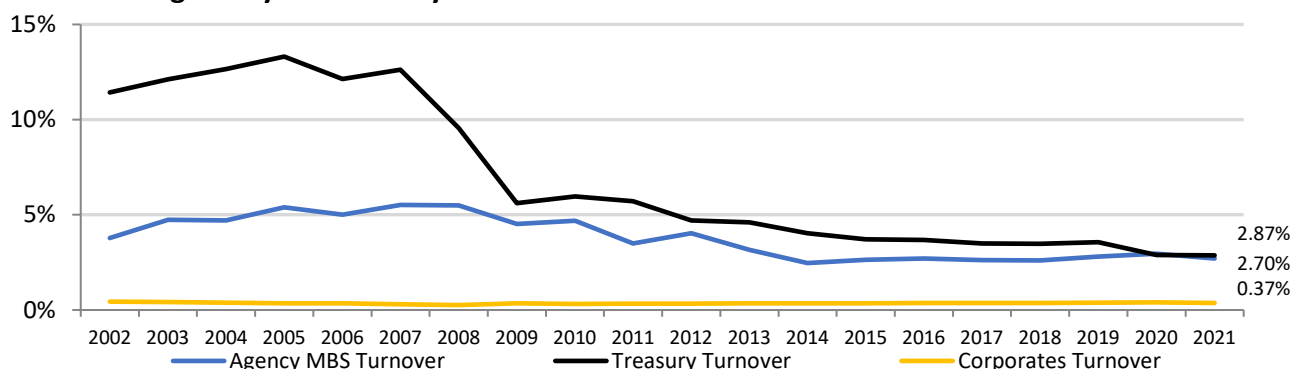
Agency MBS average daily trading volume as of April 2022 was \$272 billion for 2022 YTD, which is down from \$281 billion from January 2021 to December 2021. January 2022 was the highest month of Agency MBS trading volume since February 2021. Agency MBS turnover in 2021 was 25 bps lower than its 2020 average, at 2.70% and 2.95% respectively. 2021 Agency MBS turnover and US Treasury turnover both finished lower than the 2020 averages at 2.70% and 2.87% respectively. Corporates turnover remains minimal relative to either Agency MBS or Treasury turnover.

7.1 Average Daily Trading Volume and Turnover by Sector

Average Daily Trading Volume by Sector



Average Daily Turnover by Sector

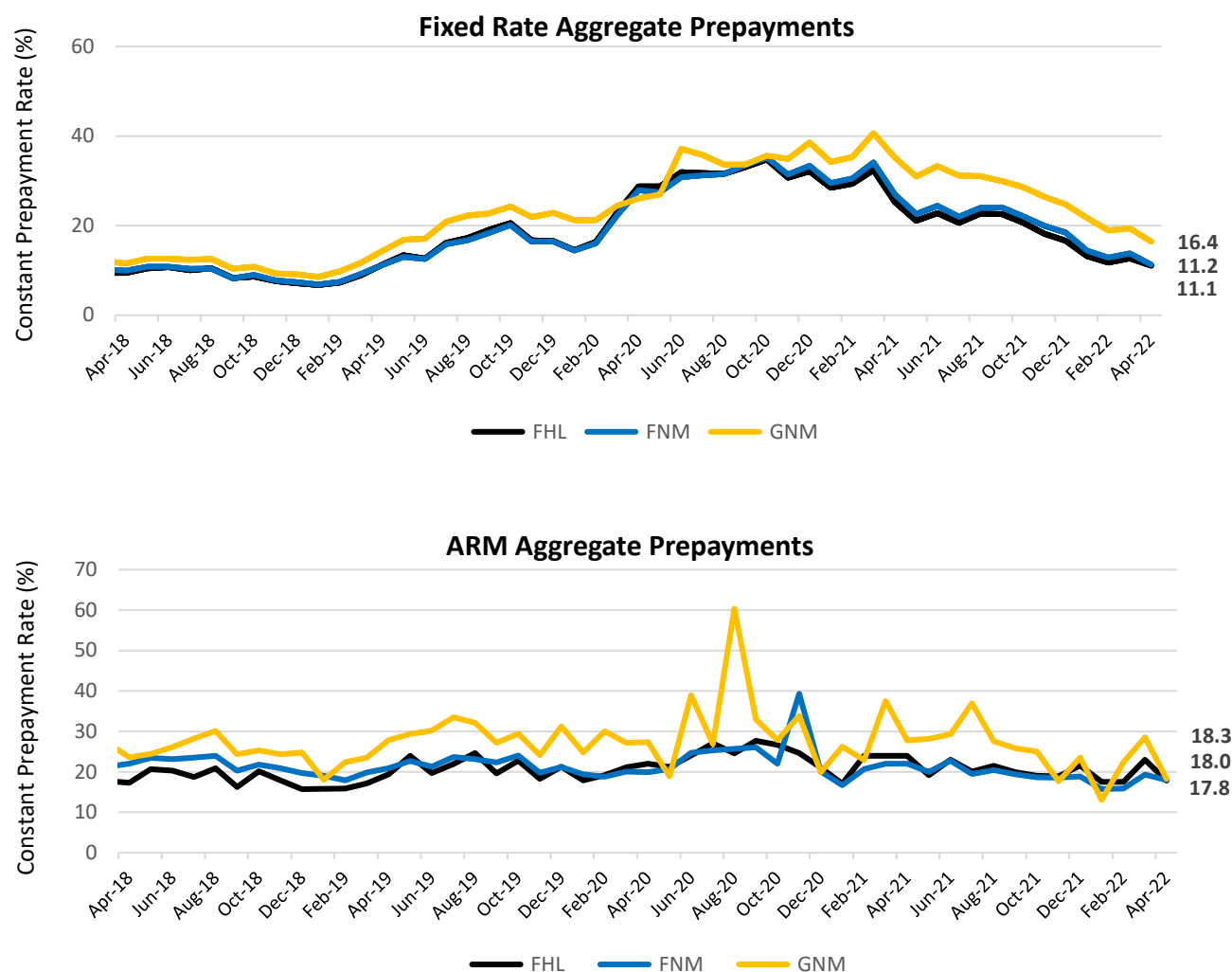


Source: SIFMA. Note: Data as of April 2022 for Average Daily Trading Volume by Sector and as of December 2021 for Average Daily Turnover by Sector

8.0 Prepayments

In April 2022, Ginnie Mae fixed rate prepayment speed decreased by 15.1%, to 16.4 CPR. Comparatively, Fannie Mae and Freddie Mac fixed rate prepayment speeds decreased by 18.6% and 12.4% MoM, respectively. ARM MBS prepayments for Ginnie Mae decreased by 35.8% MoM, while Freddie Mac and Fannie Mae posted decreases in ARM prepayment speeds of 22.4% and 6.8% MoM respectively.

8.1 Aggregate Prepayments

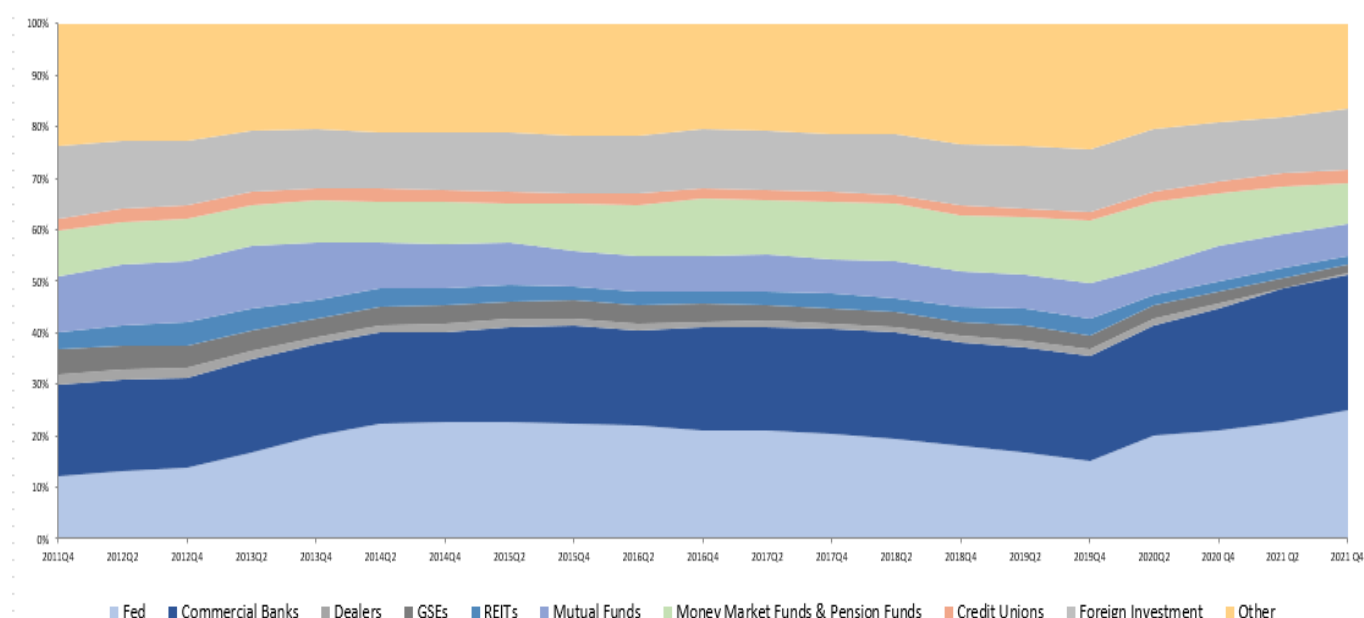


Source: Recursion; Note: Data as of April 2022.

9.0 MBS Ownership

As of Q4 2021, the largest holders of Agency debt (Agency MBS + Agency notes and bonds) included commercial banks (26%), the Federal Reserve (25%), and foreign investors (12%). The Federal Reserve's share increased to 25% in the fourth quarter of 2021, the highest it has been since 2015. Despite large Federal Reserve purchases, commercial banks continue to be the largest holders of Agency MBS. Out of their \$3.7 trillion in holdings as of the end of February 2022, \$2.9 trillion was held by the top 25 domestic banks.

Who Owns Total Agency Debt?



Source: Federal Reserve Flow of Funds. Note: The "other" category includes primarily life insurance companies, state and local governments, households and nonprofits. Data as of Q4 2021.

9.1 Commercial Bank Holdings of Agency MBS

	Commercial Bank Holdings (\$Billions)								Week Ending			
	Mar-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	6-Apr	13-Apr	20-Apr	27-Apr
Largest 25 Domestic Banks	1,966.5	2,139.5	2,149.9	2,140.2	2,153.7	2,188.8	2,200.4	2,186.8	2,179.8	2,175.8	2,156.3	2,157.6
Small Domestic Banks	667.7	694.8	712.0	721.5	730.7	742.2	748.6	744.1	735.3	739.6	736.0	737.3
Foreign Related Banks	54.2	48.0	47.9	46.2	44.0	43.3	40.7	36.4	36.5	34.7	32.5	28.3
Total, Seasonally Adjusted	2,688.4	2,882.3	2,909.8	2,907.9	2,928.4	2,974.3	2,989.7	2,967.3	2,951.6	2,950.1	2,924.8	2,923.2

Source: Federal Reserve Bank. Note: Small domestic banks include all domestically chartered commercial banks not included in the top 25. Data as of April 2022.

9.2 Bank and Thrift Residential MBS Holdings

In Q4 2021, MBS holdings at banks and thrifts increased for the thirteenth consecutive quarter. The increase was driven by both GSE pass-throughs and Private CMO holdings, with the increase in GSE pass-throughs making the larger contribution. Ginnie Mae pass-throughs declined by less than 1%. Total bank and thrift MBS holdings increased by 2% from Q3 2021. Out of the \$2.9 trillion in MBS holdings at banks and thrifts as of Q4 2021, \$2.3 trillion were Agency pass-throughs, including \$1.9 trillion of GSE pass-throughs and \$353 billion of Ginnie Mae pass-throughs. In addition, another \$578 billion in bank and thrift holdings were Agency CMOs, while holdings of Private MBS and Private CMOs totaled \$60 billion.

Bank and Thrift Residential MBS Holdings

Year	All Banks & Thrifts (\$ in billions)						All MBS (\$ in billions)	
	Total	GSE PT	GNMA PT	Private MBS	Agency CMO	Private CMO	Banks	Thrifts
2001	810.50	270.59	109.53	37.62	236.91	76.18	606.91	203.37
2002	912.36	376.11	101.46	20.08	244.98	89.88	702.44	209.66
2003	982.08	461.72	75.11	19.40	236.81	106.86	775.66	206.45
2004	1,113.89	572.40	49.33	20.55	208.18	160.55	879.75	234.31
2005	1,033.77	566.81	35.92	29.09	190.70	211.25	897.06	242.69
2006	1,124.46	628.52	31.13	42.32	179.21	243.28	983.49	223.42
2007	1,149.10	559.75	31.58	26.26	174.27	357.24	971.42	264.59
2008	1,218.77	638.78	100.36	12.93	207.66	259.04	1,088.00	211.73
2009	1,275.52	629.19	155.00	7.53	271.17	212.64	1,161.67	184.07
2010	1,433.38	600.80	163.13	7.34	397.30	181.61	1,233.28	200.09
2011	1,566.88	627.37	214.81	3.28	478.82	167.70	1,359.24	207.64
2012	1,578.86	707.87	242.54	17.16	469.27	138.67	1,430.63	148.22
2013	1,506.60	705.97	231.93	26.11	432.60	114.15	1,363.65	142.94
2014	1,539.32	733.71	230.45	20.33	449.90	104.94	1,409.84	129.48
2015	1,643.56	823.10	292.30	11.14	445.39	71.63	1,512.67	130.89
2016	1,736.93	930.67	323.46	7.40	419.80	55.60	1,576.07	160.86
2017	1,844.15	1,010.83	367.70	4.63	413.97	47.01	1,672.93	171.22
1Q18	1,809.98	991.57	360.71	3.92	412.41	41.37	1,635.52	174.46
2Q18	1,806.58	976.92	368.88	7.45	414.41	38.92	1,631.65	174.93
3Q18	1,794.39	966.52	373.21	2.42	416.20	36.04	1,618.29	176.10
4Q18	1,814.97	980.56	380.43	2.69	416.59	34.69	1,634.99	179.98
1Q19	1,844.99	1,001.61	383.49	3.06	422.18	34.65	1,673.40	171.59
2Q19	1,907.13	1,037.93	407.97	2.90	421.56	36.76	1,727.65	179.47
3Q19	1,975.78	1,079.82	427.10	4.74	428.69	35.44	1,786.74	189.04
4Q19	1,985.38	1,089.41	426.85	4.62	428.99	35.52	1,796.29	189.09
1Q20	2,107.66	1,173.36	448.34	4.65	443.73	37.57	1,907.02	200.64
2Q20	2,195.19	1,228.87	441.06	5.00	478.11	42.14	1,946.36	248.83
3Q20	2,310.42	1,349.48	415.24	4.43	499.50	41.78	2,040.61	269.81
4Q20	2,520.90	1,537.54	390.66	3.94	548.65	40.10	2,210.22	310.68
1Q21	2,690.92	1,713.78	374.63	4.88	555.35	42.28	2,350.94	339.98
2Q21	2,781.91	1,825.80	352.77	4.77	555.45	43.12	2,431.76	350.15
3Q21	2,858.59	1,886.78	353.12	4.24	565.51	48.95	2,487.32	371.27
4Q21	2,906.07	1,915.48	352.71	4.45	578.01	55.42	2,529.81	376.26
Change:								
3Q21-4Q21	2%	2%	0%	5%	2%	13%	2%	1%
4Q20-4Q21	15%	25%	-10%	13%	5%	38%	14%	21%

Source: Inside Mortgage Finance. Notes: Data as of Q4 2021.

Global Markets Analysis Report

Bank and Thrift Residential MBS Holdings

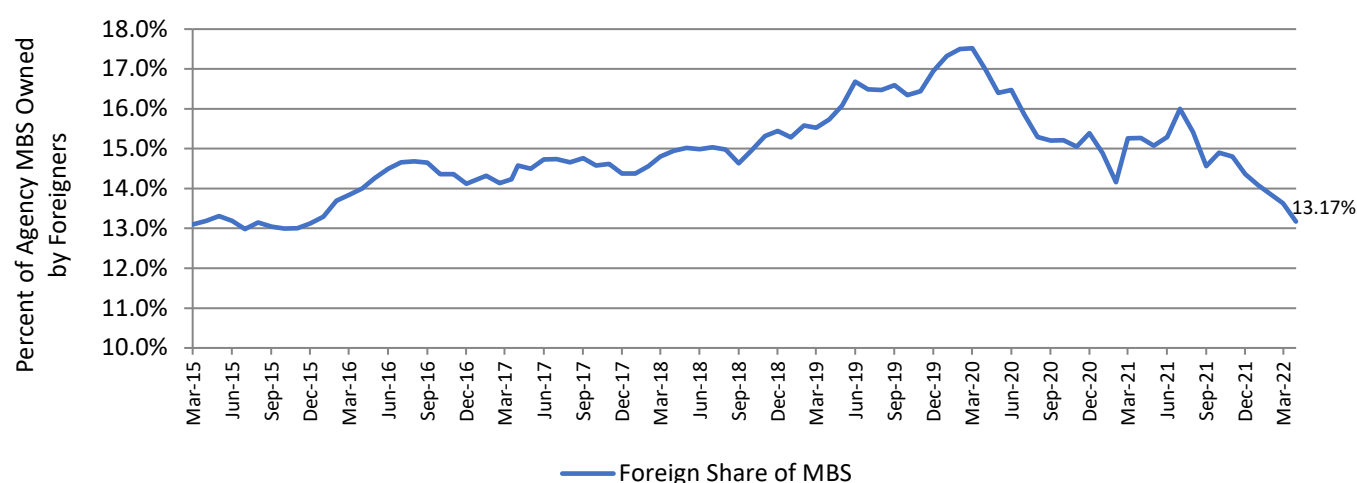
Top Bank & Thrift Residential MBS Investors (\$ in millions)	Institution	Total	GSE PT	GNMA PT	Agency CMO	Non-Agency	Share
1	BANK OF AMERICA CORPORATION	599,912.0	518,605.0	71,466.0	9,675.0	166.0	21%
2	WELLS FARGO & COMPANY	290,952.0	216,803.0	69,862.0	3,963.0	324.0	10%
3	CHARLES SCHWAB	230,495.0	122,754.0	9,208.0	98,533.0	-	8%
4	JPMORGAN CHASE & CO.	166,570.0	98,276.0	54,898.0	115.0	13,281.0	6%
5	Truist Bank	139,783.0	66,766.0	16,573.0	52,186.0	4,258.0	5%
6	U.S. BANCORP	118,800.9	81,370.7	20,818.8	16,611.0	0.4	4%
7	CITIGROUP INC.	89,216.0	82,756.0	2,006.0	3,336.0	1,118.0	3%
8	Silicon Valley Bank	83,437.0	62,391.0	9,874.0	11,172.0	-	3%
9	CAPITAL ONE FINANCIAL CORPORATION	73,102.1	40,027.5	12,506.1	20,086.3	482.2	3%
10	PNC Bank, National Association	68,787.6	53,187.7	5,880.7	8,561.4	1,157.8	2%
11	BANK OF NEW YORK MELLON CORP	53,526.0	40,889.0	1,845.0	7,999.0	2,793.0	2%
12	USAA Federal Savings Bank	46,889.1	38,965.2	2,616.5	5,307.4	-	2%
13	State Street Bank and Trust Company	40,144.8	16,734.0	3,631.0	17,748.8	2,031.0	1%
14	MORGAN STANLEY	33,912.0	21,773.0	5,933.0	6,206.0	-	1%
15	The Huntington National Bank	30,336.2	15,947.0	7,018.4	7,265.2	105.5	1%
16	E*TRADE Bank	30,194.2	24,473.3	4,099.2	1,621.8	-	1%
17	KeyBank National Association	28,640.4	4,994.6	297.5	23,348.3	-	1%
18	HSBC Bank USA, National Association	25,866.4	8,068.9	9,558.6	8,237.5	1.5	1%
19	Ally Bank	23,771.0	16,454.0	764.0	2,322.0	4,231.0	1%
20	BMO Harris Bank National Association	23,723.8	3,637.7	369.6	19,711.0	5.6	1%
Total Top 20		2,198,059.6	1,534,873.5	309,225.4	324,005.6	29,955.0	76%

Source: Inside Mortgage Finance. Notes: Data as of Q4 2021.

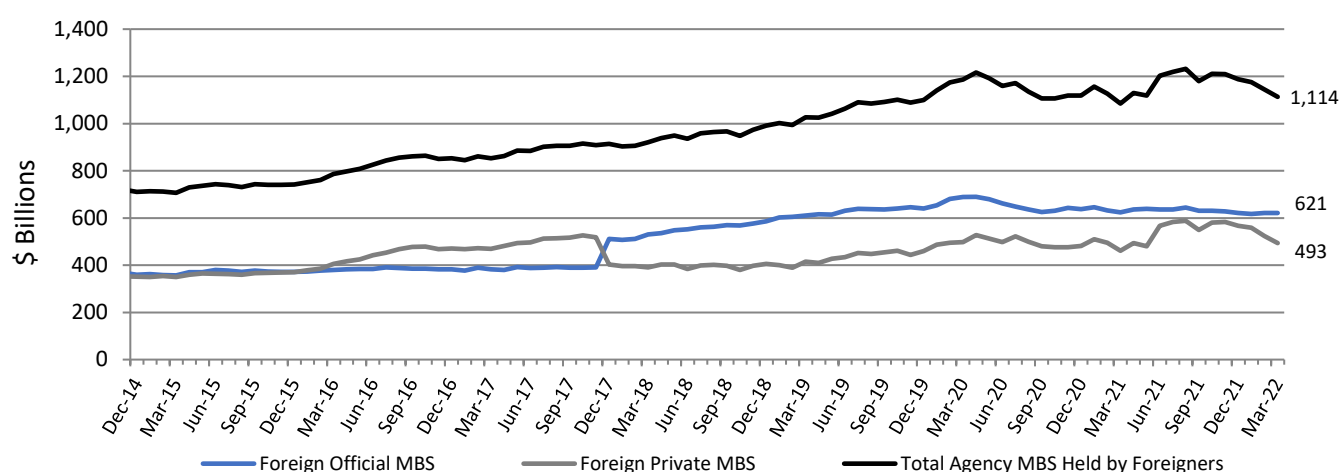
9.3 Foreign Ownership of MBS

For the month of March 2022, foreign ownership of MBS represents \$1.11 trillion in Agency MBS, down approximately \$30 billion from February 2022. Total foreign ownership includes \$493 billion held by foreign private institutions and \$621 billion held by foreign official institutions. The foreign share of the Agency MBS Market continues to decline since the beginning of COVID. The pre-Covid peak of approximately 17.5% has fallen all the way to 13.17% in March of 2022.

Foreign Share of Agency MBS Market



Monthly Foreign MBS Holdings



Sources: eMBS [Top Chart], Treasury International Capital (TIC) [Bottom Chart] Notes: In December 2017, there was a data correction that moved about \$120 billion from privately held U.S. Agency bonds to officially held U.S. Agency bonds; this resulted in a series break at December 2017 in the split between the portion held by foreign private and the portion held by foreign official. Data as of February 2022.

9.4 Foreign Ownership of Agency Debt and Agency MBS

The largest non-US holders of Agency MBS are in Japan, Taiwan, and China. As of December 2021, these three own 60% of all US MBS held by investors outside of the United States. Between June 2020 and June 2021, these top three have decreased their Agency MBS holdings by over \$4.6 billion. Japan has decreased their holdings by \$1.4 billion, Taiwan has decreased their holdings by \$208 million and China has decreased their holdings by \$3.0 billion.

All Agency Debt

Country	Level of Holdings (\$ Millions)				Change in Holdings (\$ Millions)			
	3/1/2021	6/1/2021	9/1/2021	12/1/2021	Q1 2021	Q2 2021	Q3 2021	Q4 2021
Japan	319,771	311,375	311,892	301,979	11,738	-8,396	517	-9,913
Taiwan	253,036	250,081	247,341	244,375	-9,417	-2,955	-2,740	-2,966
China	200,972	217,842	215,102	202,659	-11,345	16,870	-2,740	-12,443
Luxembourg	34,371	35,497	33,339	34,277	-1,852	1,126	-2,158	938
Ireland	26,965	21,453	22,617	21,305	-4,099	-5,512	1,164	-1,312
South Korea	43,032	43,201	43,208	42,051	404	169	7	-1,157
Cayman Islands	37,111	36,027	36,160	35,004	2,847	-1,084	133	-1,156
Bermuda	26,443	23,806	24,411	23,209	-1,545	-2,637	605	-1,202
Netherlands	13,049	12,544	17,435	16,249	705	-505	4,891	-1,186
Malaysia	19,047	19,089	19,445	18,830	-100	42	356	-615
Other	173,905	166,009	268,746	302,816	-23,557	-7,896	102,737	34,070
Total	1,147,702	1,136,924	1,239,696	1,242,754	-36,221	-10,778	102,772	3,058

Agency MBS

Country	Level of Holdings (\$ Millions)		
	6/1/2020	6/1/2021	YoY Change in Holdings (\$ Millions)
Japan	306,963	305,580	-1,383
Taiwan	267,700	267,492	-208
China	235,078	232,076	-3,002
Luxembourg	40,207	34,255	-5,952
Ireland	21,091	25,336	4,245
South Korea	28,743	34,313	5,570
Cayman Islands	28,431	29,682	1,251
Bermuda	25,111	24,245	-866
Netherlands	12,739	13,351	612
Malaysia	20,028	19,949	-79
Other	173,716	170,062	-3,654
Total	1,159,809	1,156,341	-3,468

Sources: Treasury International Capital (TIC). Notes: Level of Agency debt Holdings by month data as of Q4 2021. Agency MBS as of June 2021. Revised to include top 10 holders of Agency debt listed as of June 2018.

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