

# ***GLOBAL MARKETS ANALYSIS REPORT***

A Monthly Publication of Ginnie Mae's  
Office of Capital Markets



**August 2022**

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## Inside this Month's Global Market Analysis Report...

This month's *Highlights* section includes an analysis of the Federal Reserve balance sheet runoff that began in June 2022. The section discusses the Fed's implementation of monthly caps on the reinvestment of principal payments from securities held in the System Open Market Account (SOMA) and the preliminary impact of the Fed's actions on the Ginnie Mae MBS market.

Notable insights in this month's Global Market Analysis Report include the following.

- Under the [Global Treasury Yield Per Duration](#) section, the yield vs. duration analysis is expanded to include a larger coupon stack to reflect new issuance and interest rates.
- The [Prepayments](#) section illustrates the convergence of Ginnie Mae aggregate prepayment rates to those of Fannie Mae and Freddie Mac (GSE) securities.
- The [Agency REMIC issuance](#) section continues to capture the current upward trend in coupon rates for REMIC deals.
- In the [Agency Credit Breakdown](#) section, Ginnie Mae remains the leader in high-LTV lending because of a higher percentage of issuances with LTVs of 95 or above relative to the GSEs.
- In the [Agency Nonbank Originators](#) section, an increasing nonbank origination portion of refinance mortgage loans for Ginnie Mae has resulted in a comparatively higher nonbank origination share.
- Throughout the [U.S. Housing Market](#) section, the data details a lack of affordability within the housing market due to factors that include increasing home prices, and rising inflation that is outpacing wage growth.

## Highlights

In response to the economic consequences of the COVID-19 pandemic, the Fed ramped up purchases of agency Debt, agency MBS and Treasury Securities. In the months leading up to the onset of the pandemic, Fed purchases of Ginnie Mae MBS, a component of agency MBS, were low relative to the volume experienced throughout 2020 and 2021. For example, in January 2020, a few months before the start of the pandemic, the Fed purchased just under \$1 billion of Ginnie Mae MBS, but in April 2020, at the beginning of the pandemic, the Fed purchased roughly \$84.5 billion of Ginnie Mae MBS. As of January 1<sup>st</sup>, 2020, the Fed held roughly \$1.4 trillion in agency MBS, but as of August 3<sup>rd</sup>, 2022, the Fed's holdings of agency MBS reached just over \$2.7 trillion.

As the Fed continues to raise the Federal Funds Rate in 2022, they have also started to wind down their purchases of agency debt, agency MBS and Treasury securities. In a plan released on May 4<sup>th</sup>, 2022, the Federal Open Market Committee (FOMC) laid out the process, including a timeline, for reducing the Fed's balance sheet:

*"The Committee intends to reduce the Federal Reserve's securities holdings over time in a predictable manner primarily by adjusting the amounts reinvested of principal payments received from securities held in the System Open Market Account (SOMA). Beginning on June 1, principal payments from securities held in the SOMA will be reinvested to the extent that they exceed monthly caps. For agency debt and agency mortgage-backed securities, the cap will initially be set at \$17.5 billion per month and after three months will increase to \$35 billion per month."*<sup>1</sup>

In the plan, the Fed also included broad details regarding the planned duration of the balance sheet runoff stating that they intend to hold securities in amounts necessary to carry out the market activities required to effectively implement monetary policy. The FOMC plans to slow and then cease the decline in the balance sheet runoff "when reserve balances are somewhat above the level it judges to be consistent with ample reserves."<sup>1</sup>

The direct impact of the Fed's balance sheet runoff is a reduction in the Fed's demand for agency MBS. As of Q1 2022, the Fed held roughly 25% of agency debt and MBS (see [section 8 MBS Ownership](#)). Depending on the size of the Fed's balance sheet runoff, market participants could potentially see the Fed's holdings of agency debt and agency MBS drop from 25% of the total outstanding agency debt and agency MBS back to the Fed's January 2020 ownership percentage of 16% (roughly 96.2% of the Fed's agency debt and agency MBS holdings are agency MBS).

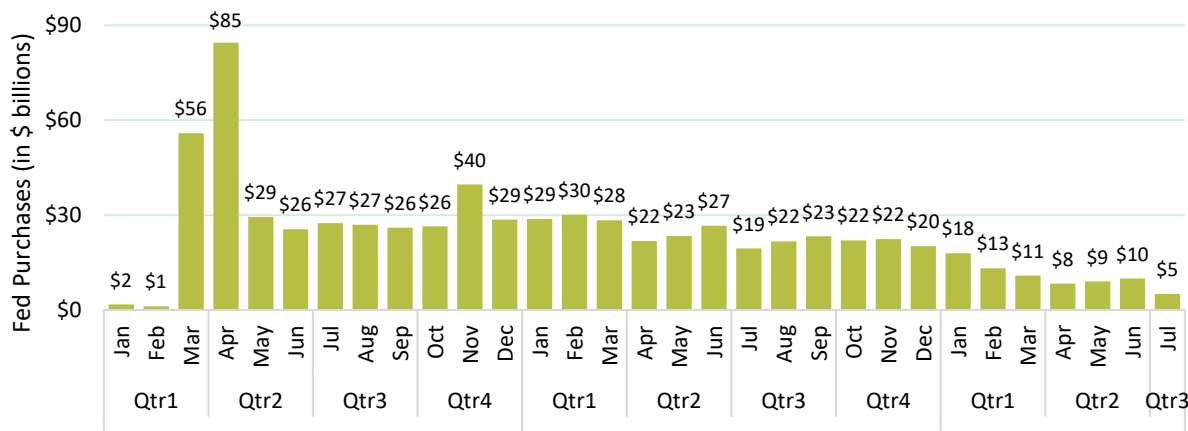
Over the period of January 2020 to May 2022, foreign investors share of the agency MBS market declined from 17.4% to 13.9% (see [section 8.3 Foreign Ownership of MBS](#)). With the Fed implementing caps on reinvestment of agency debt and agency MBS principal and interest payments, this transition in the level of demand from the Fed for agency MBS may have capital market impacts that affect both domestic and foreign investors who hold agency MBS in their portfolio.

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<sup>1</sup> <https://www.federalreserve.gov/newsevents/pressreleases/monetary20220504b.htm>

## MBS Supply and Demand Dynamics

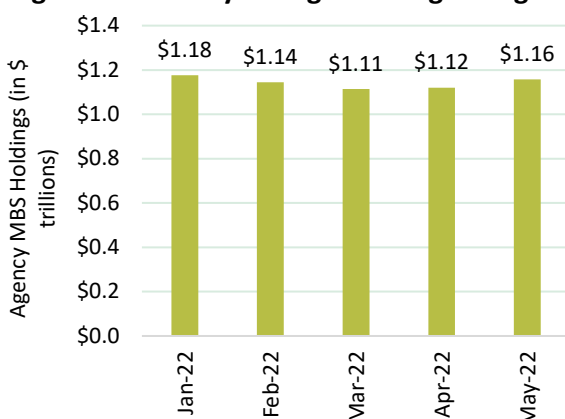
**Figure 1**, below, displays monthly data on Fed Ginnie Mae MBS purchases from January 2020 to July 2022. Prior to the June 2022 implementation of the Fed's cap on agency debt and agency MBS purchases, monthly Fed purchases of Ginnie Mae MBS began a downward trend. Since the implementation of the cap, the Fed purchased \$10 billion of Ginnie Mae MBS in June 2022 and \$5 billion of Ginnie Mae MBS in July 2022. Through the first seven months of 2022, the Fed purchased \$74.4 billion in Ginnie Mae MBS, which is a decline of more than \$100 billion compared to the same period in 2021.



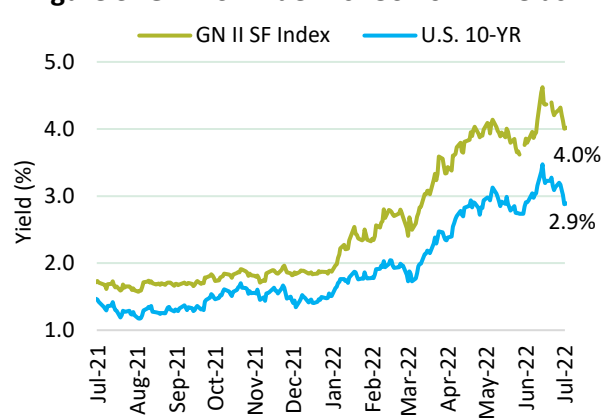
**Figure 1. Federal Reserve Purchases of Ginnie Mae MBS (in \$ billions)<sup>2</sup>**

As of September 1, 2022 the Fed cap on agency debt and agency MBS purchases will double from \$17.5 billion to \$35 billion. It is too early to draw conclusions on the impact of the Fed cap on the agency MBS market. However, significant changes in the marketplace have taken place such as an increase in agency MBS holdings by foreign investors<sup>3</sup>, shown in **Figure 2** below, and a widening of the spread between Ginnie Mae securities yield and Treasury securities yield<sup>4</sup>, shown in **Figure 3** below.

**Figure 2. Monthly Foreign Holdings of Agency**



**Figure 3. GN II SF Index vs. US 10-YR Yields<sup>3</sup>**



<sup>2</sup> Federal Reserve Bank of New York data. As of July 31, 2022

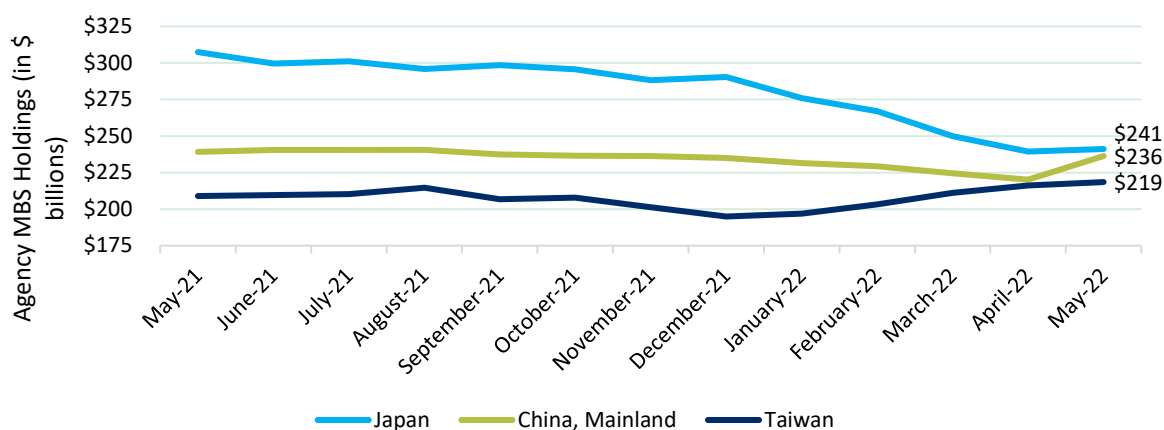
<sup>3</sup> Calculations based on Treasury International Capital data. As of August 2, 2022

<sup>4</sup> Bloomberg data. As of May 10, 2022



Concurrent with the increase in agency MBS holdings by foreign investors, the size of the portfolio holdings of the top three foreign agency MBS holders has converged. The range of agency MBS holdings by the top three foreign holders of agency MBS has tightened from a roughly \$90 billion range in May 2021 to a \$22 billion range in May 2022. Japan's agency MBS holdings have shifted the most from \$300 billion in May 2021 to \$241 billion in May 2022. China's agency MBS holdings have declined year over year from \$239 billion in May 2021 to \$236 billion in May 2022, while Taiwan's holdings have increased year over year from \$210 billion in May 2021 to \$219 billion in May 2022.

**Figure 4. Top Three Foreign Holders of Agency MBS (in \$ billions)<sup>5</sup>**



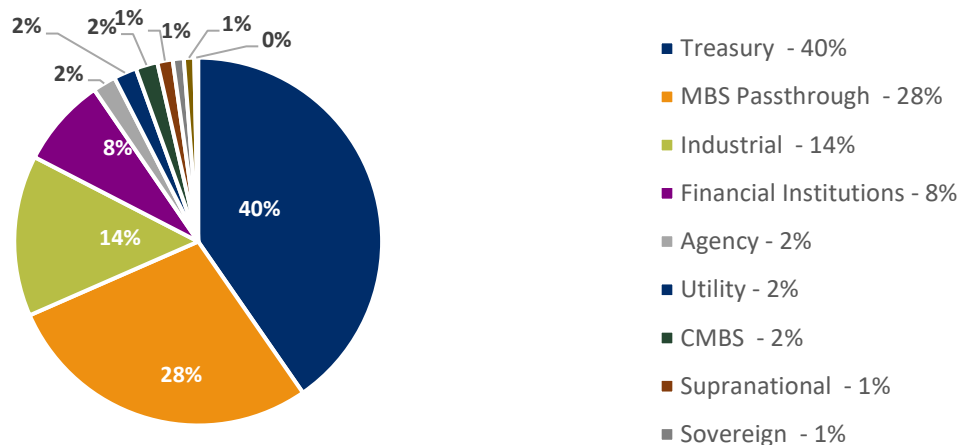
This is the narrowest range of agency MBS holdings between that the top three foreign holders of agency MBS since July 2016.<sup>5</sup> As the Fed cap enters the fourth month and increases from a \$17.5 billion cap to a \$35 billion cap, global investors will be keen to measure the impact of the demand gap on the agency MBS market.

<sup>5</sup> Calculations based on Treasury International Capital data. As of August 2, 2022

## 1 US AGGREGATE AND GLOBAL INDICES

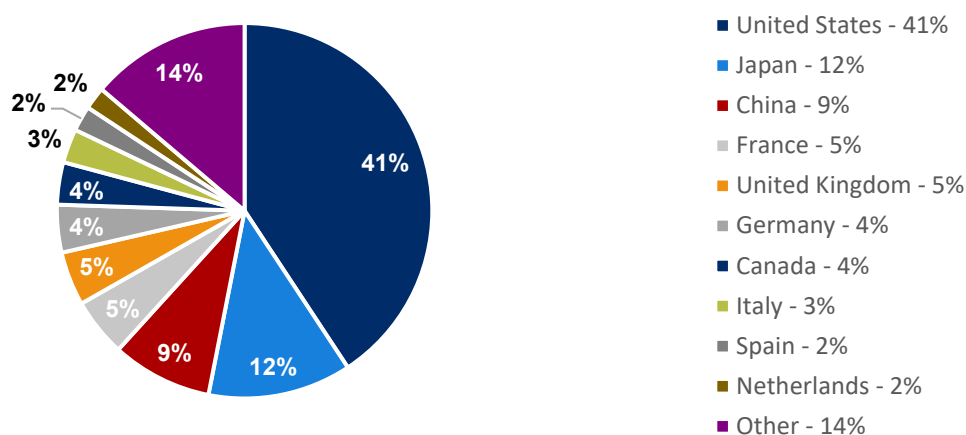
### 1.1 Bloomberg US Aggregate and Global Indices

**Figure 5. Bloomberg US Aggregate Index.**



US Treasuries contribute approximately 40% to the Bloomberg US Aggregate Index. US MBS (Ginnie Mae, Fannie Mae, and Freddie Mac) contributes 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%.

**Figure 6. Bloomberg Global Aggregate Index by Country.**



In the Bloomberg Global Aggregate Index by Country, the US share of fixed income remains the largest share of total outstanding issuance, representing approximately 41% of the total Barclays Global Aggregate Index. While the Japan share of fixed income decreased to 12% from 13%, all other categories remained stable when compared to the prior month.

*Source: Bloomberg [both charts]. Note: Data as of August 2022. Figures in charts may not add to 100% due to rounding.*



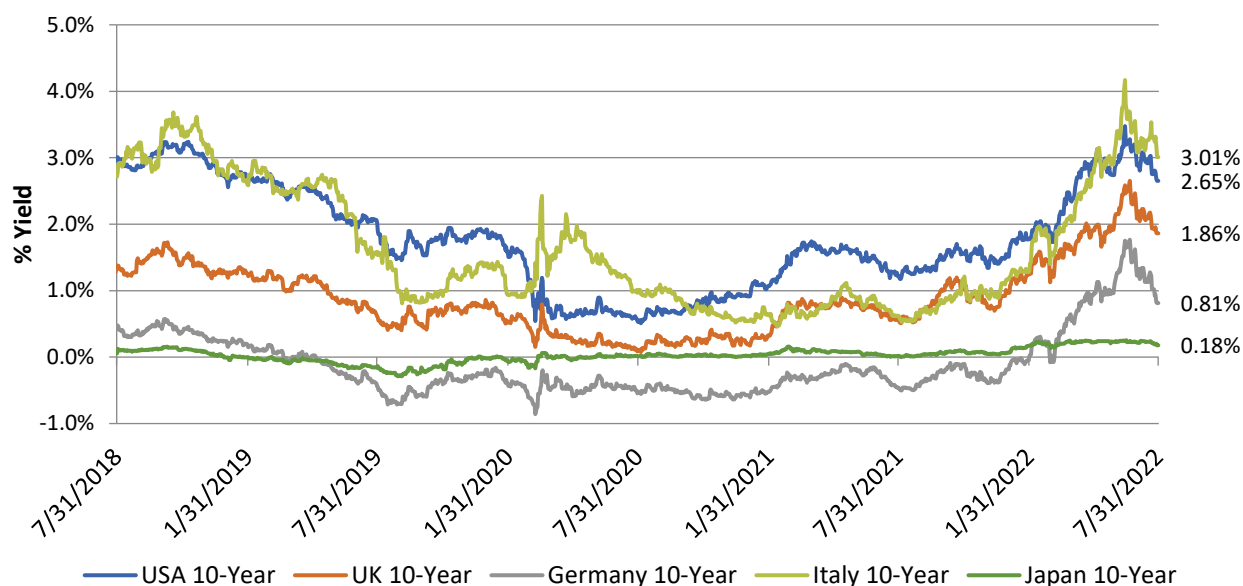
## 2 SOVEREIGN DEBT PRODUCT PERFORMANCE COMPARISONS

### 2.1 Global 10-Year Treasury Yields (Unhedged)

The US 10-year Treasury yield moved to 2.65% at month end July 2022, a MoM decrease of 37 bps. US Treasury yields remain second highest of all the government treasury yields depicted in the figure below, behind Italian Treasury yields.

- The yield on the UK 10-year notes decreased to 1.86% at month-end July, a MoM decrease of 37 bps.
- The yield on the German 10-year notes decreased to 0.81% at month-end July, a MoM decrease of 52 bps.
- The yield on the Italian 10-year note decreased to 3.01% at month-end July, a MoM decrease of 25 bps.
- The yield on the Japanese 10-year notes decreased to 0.18% at month-end July, a MoM decrease of 5 bps.

**Figure 7. Global 10-Year Treasury Yields.**



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

## 2.2 US Treasury Hedged Yields

- The hedged yield for the 10-year Treasury JPY increased MoM 6 bps to 2.37% at month-end July.
- The hedged yield for the 10-year Treasury EUR increased MoM 3 bps to 1.35% at month-end July.

**Figure 8. 7–10yr Total Return Hedged Index, JPY.**



**Figure 9. 7–10yr Total Return Hedged, EUR.**



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

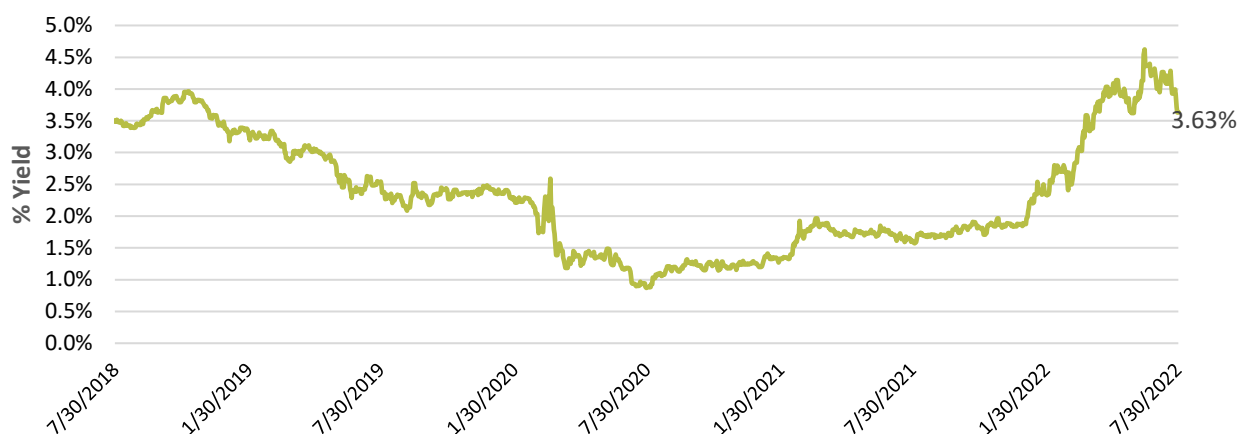
## SECONDARY MORTGAGE MARKET

### 3 FIXED INCOME PRODUCT PERFORMANCE COMPARISONS

#### 3.1 Ginnie Mae Yields – USD

Ginnie Mae fixed rate MBS yields decreased MoM in July 2022. Ginnie Mae II yields were at 3.76% at month end May, down by 23 bps MoM, rebounded to 4.12% at month-end June, and have now decreased to 3.63% at month-end July, down by 49 bps. Ginnie Mae I yields were at 3.72%, down by 17 bps MoM in May, similarly rebounded 36 bps to 4.08% at month-end June, and have now also decreased to 3.61% at month-end July, down by 47 bps. Over the past year, Ginnie Mae spreads over the 10-year Treasury yields have widened. Ginnie Mae II spreads over the US 10-year Treasury yield, just 37 bps at month end July 2021, had increased 25 bps to 62 bps over the US 10-year Treasury yield at month end July 2022. The yields on the Ginnie Mae I SF were 60 bps higher than the US 10-year Treasury yield at month end July, an decrease in spread of 46 bps MoM but an increase of 3 bps YoY.

**Figure 10. Ginnie Mae II SF Yield, USD**



**Figure 11. Ginnie Mae I SF Yield, USD**

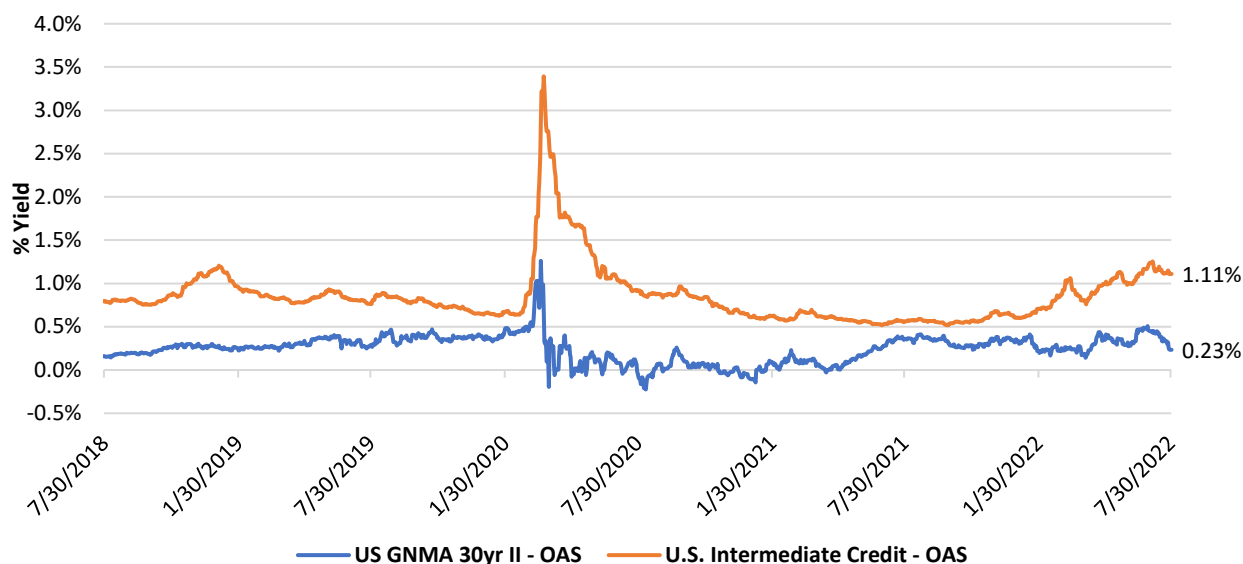


Sources Bloomberg. Note: Data as of July 2022

### 3.2 Ginnie Mae Yield Spreads – Intermediate Credit

The yield differential between US Intermediate Credit and GNMA II 30-year OAS increased by 11 bps to 0.88% at month end July. The Ginnie Mae II 30-year OAS decreased 23 bps MoM. The US Intermediate credit OAS has decreased 11 bps MoM.

**Figure 12. US GNMA II 30yr MBS OAS versus US Intermediate Credit OAS.**



**Figure 13. Spread between US Intermediate Credit and US GNMA II 30yr MBS OAS.**

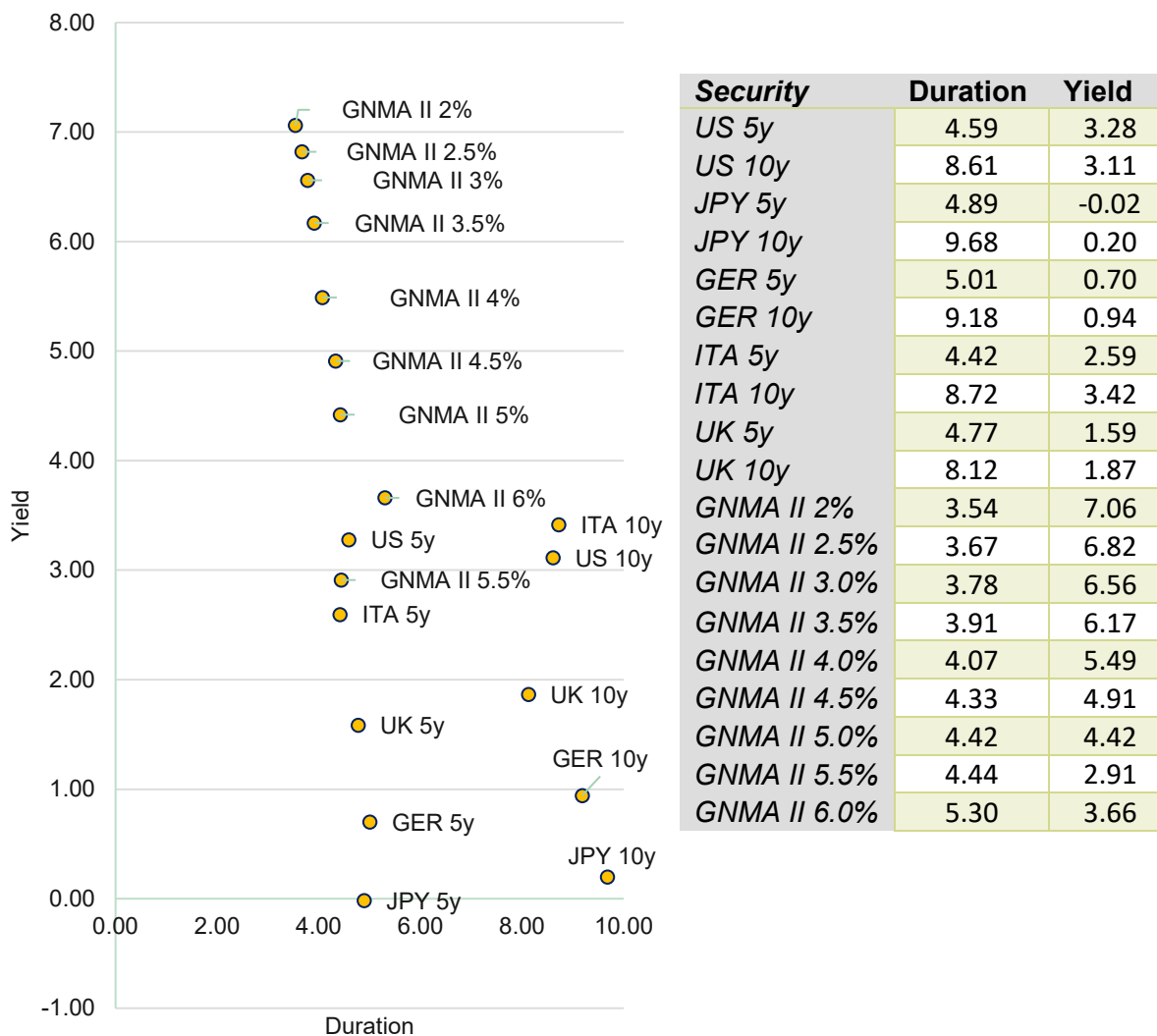


Source: Bloomberg. Note: Data as of July 2022.

### 3.3 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 the aftermath of the recent interest rate hikes, sharp declines in duration, particularly for lower coupon GNMA II securities, have been observed. Yields have increased sharply as well.

**Figure 14. Yield vs. Duration.**



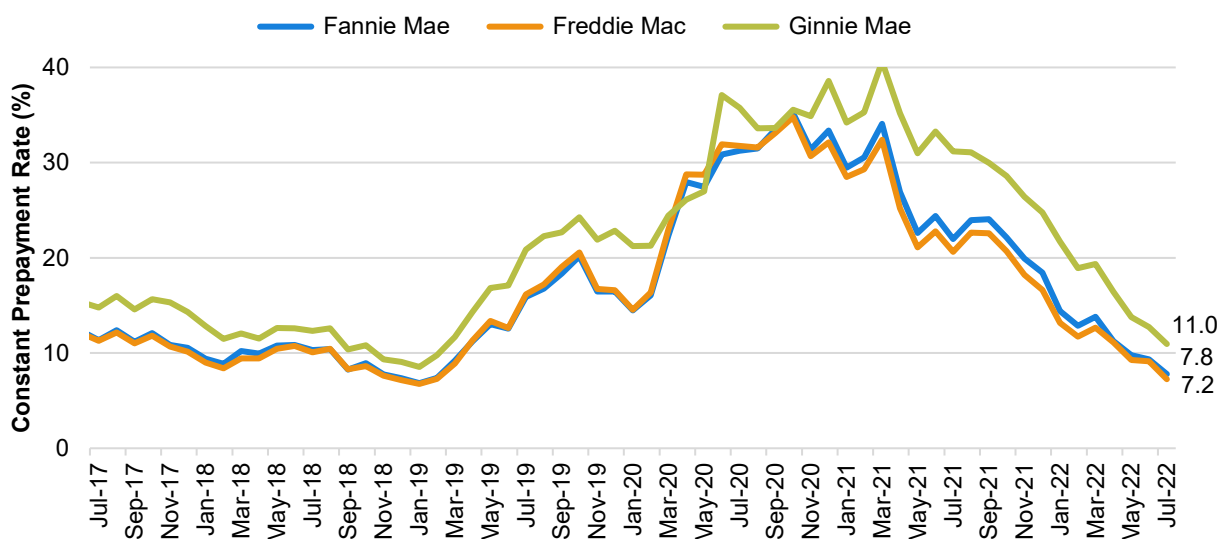
Source: Bloomberg. Note: Yield and modified duration for GNMA II securities is based on median prepayment assumptions from surveyed Bloomberg participants. All data is as of July 2022. Yields are in base currency of security and unhedged.

## 4 PREPAYMENTS

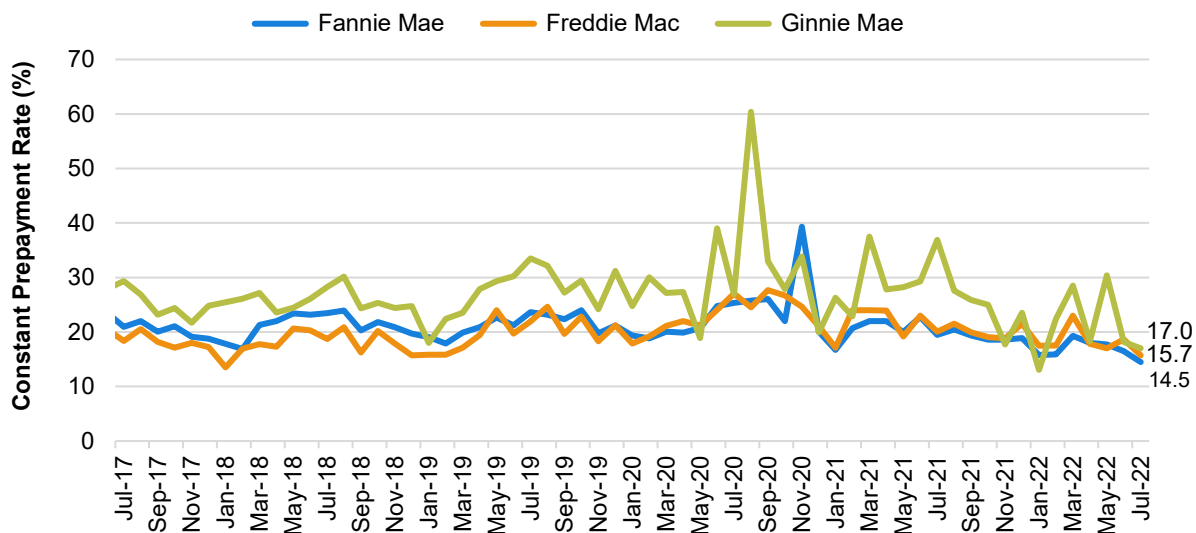
### 4.1 Aggregate Prepayments (CPR)

Fixed rate aggregate prepayment speeds decreased for each of the Agencies in July, driven primarily by lower voluntary prepayment rates ([see below on Voluntary Prepayments](#)). Ginnie Mae, Fannie Mae and Freddie Mac CPRs have dropped by 13.3%, 16.4% and 20.6% MoM to 11.0, 7.8 and 7.2 CPR, respectively. ARM prepayments have dropped significantly also, due to decreased refinance activity in the current higher interest rate environment.

**Figure 15. Fixed Rate Aggregate 1-Month CPR.**



**Figure 16. ARM Aggregate 1-Month CPR.**



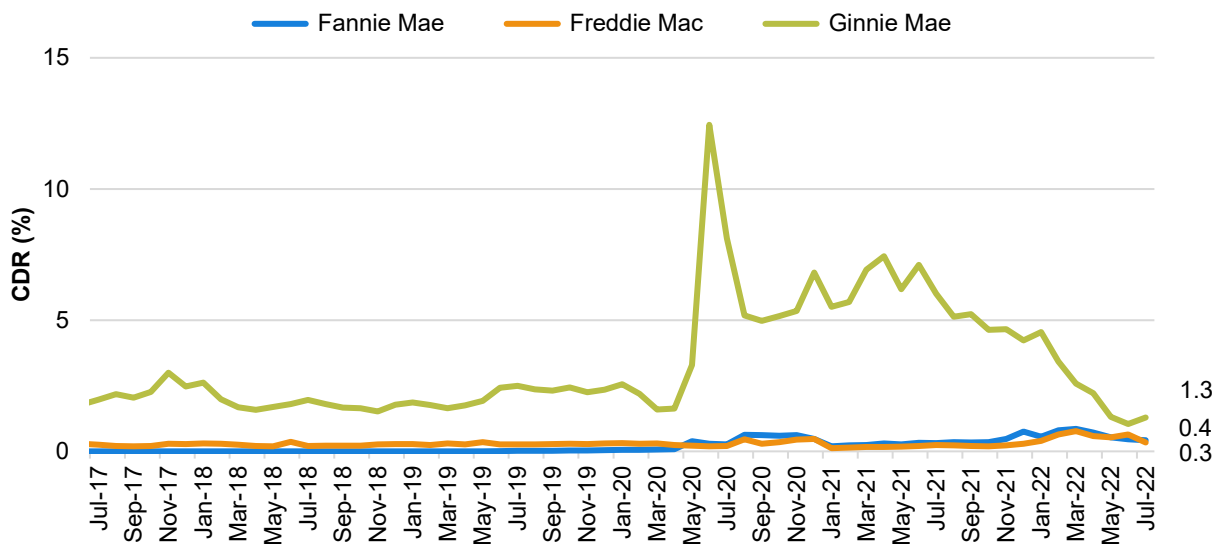
Source: Recursion, Note: Data as of July 2022



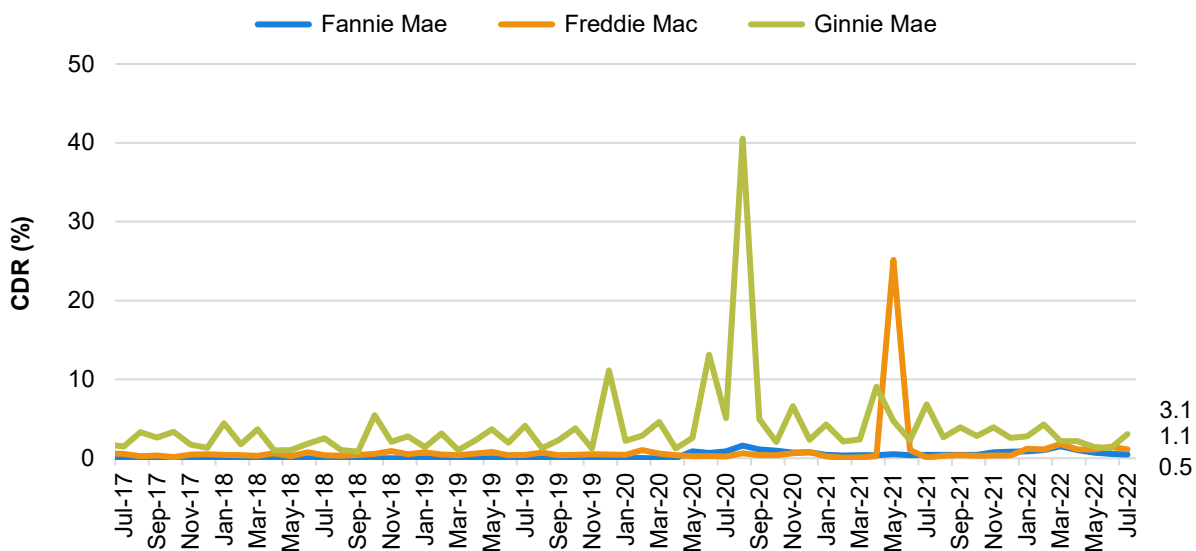
## 4.2 Involuntary Prepayments (CDR)

Fixed rate involuntary prepayments (CDR) remain higher for Ginnie Mae than for the GSEs. The spread in prepayment speeds between Ginnie Mae's and GSE prepayments has converged significantly since Ginnie Mae's CDR peak of 12.4 CDR in June 2020. ARM CDRs for Ginnie Mae's are also typically higher than those of the GSEs, due to the lower credit quality of the Ginnie Mae loans.

**Figure 17. Fixed Rate Aggregate CDR.**



**Figure 18. ARM Aggregate CDR.**

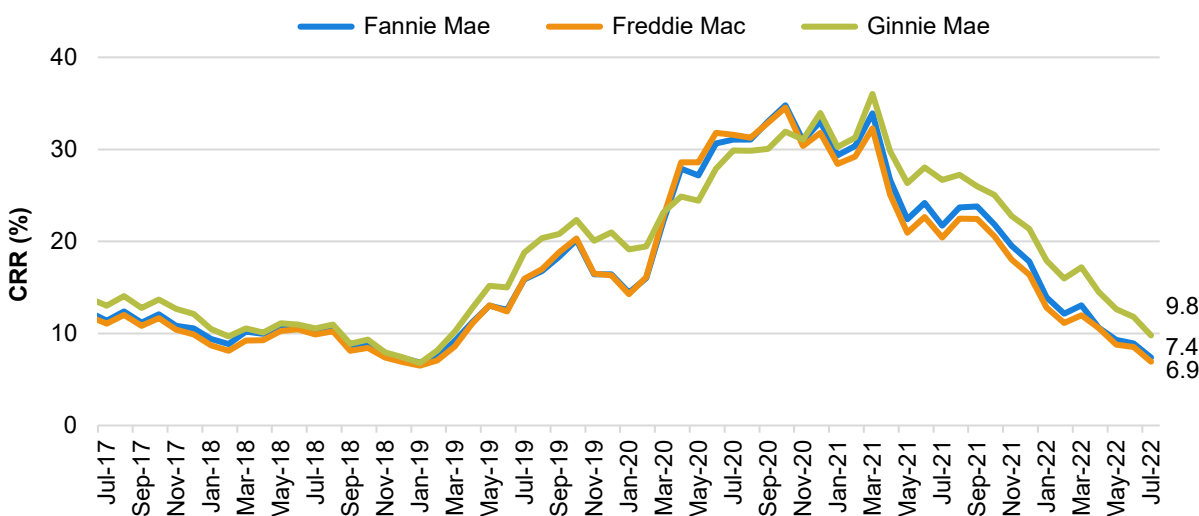


Source: Recursion, Note: Data as of July 2022

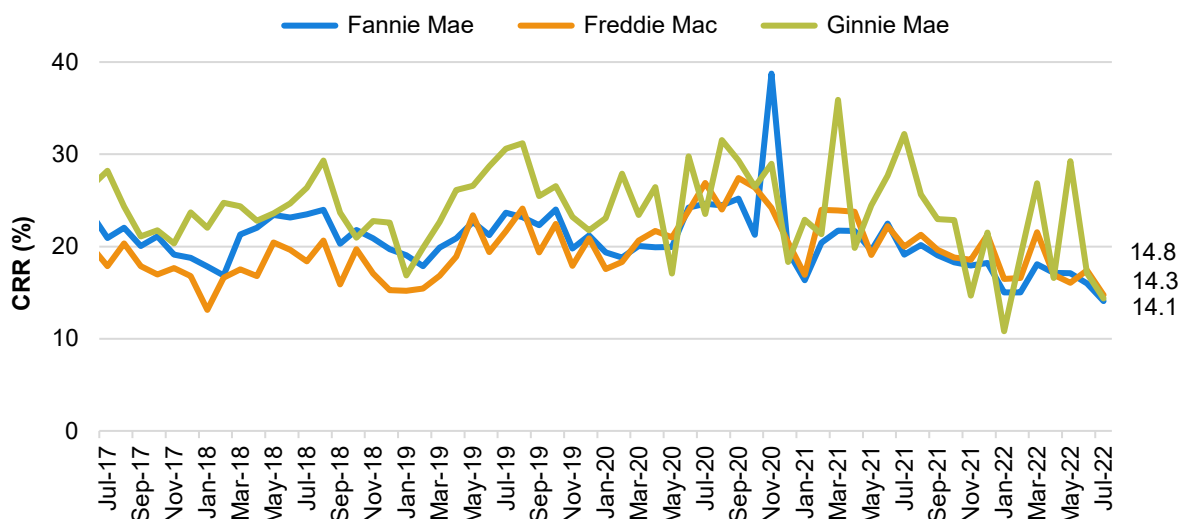
### 4.3 Voluntary Prepayment Rates (CRR)

Voluntary prepayments (CRR) continue to remain higher for Ginnie Mae relative to the GSEs. In the existing market of increasing interest rates and higher prices ([see section on Housing Affordability - Mortgage Rate Trends](#)), voluntary prepayments are facing downward trends for both Ginnie Mae and the GSEs. Fannie Mae and Freddie Mac saw 16.8% and 18.8% MoM decreases in fixed rate aggregate CRR, respectively. Freddie Mac saw a 14.9% MoM decrease and Fannie Mae saw a 11.8% MoM decrease in ARM aggregate CRR. Ginnie Mae saw a 16.9% MoM decrease in fixed rate aggregate CRR and a 16.3% MoM decrease in ARM aggregate CRR.

**Figure 19. Fixed Rate Aggregate CRR.**



**Figure 20. ARM Aggregate CRR.**



Source: Recursion, Note: Data as of July 2022

## 5 SINGLE-FAMILY MBS PASS-THROUGH ISSUANCE

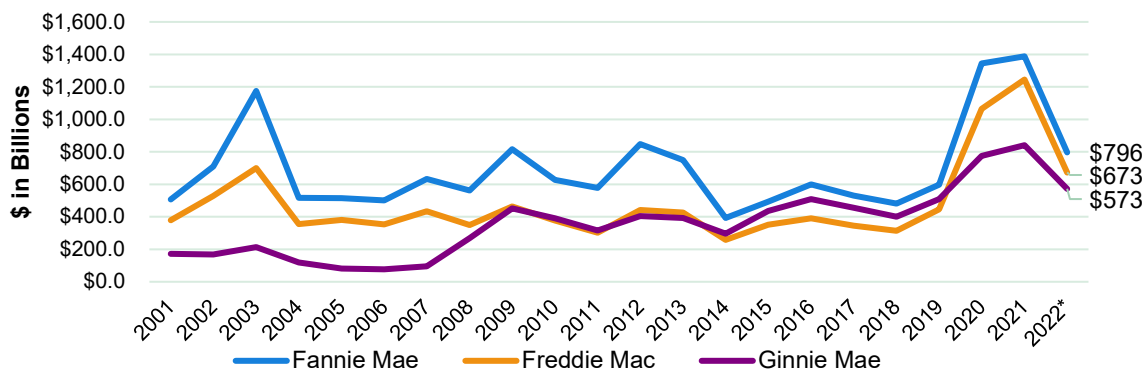
### 5.1 Gross Issuance of Agency MBS

Agency gross MBS issuance decreased MoM by 7.6% (from June to July). All three agencies saw decreases in gross issuance as compared to July.

**Table 1. 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	\$1,388.0	\$1,245.1	\$2,633.1	\$840.9	\$3,474.0
2022 YTD	\$464.6	\$392.8	\$857.4	\$334.2	\$1,191.6
2022 Annualized	\$796.5	\$673.4	\$1,469.8	\$572.9	\$2,042.7

**Figure 21. Agency Gross Issuance**



\*2022 values have been annualized – the annualization methodology is not seasonally adjusted.

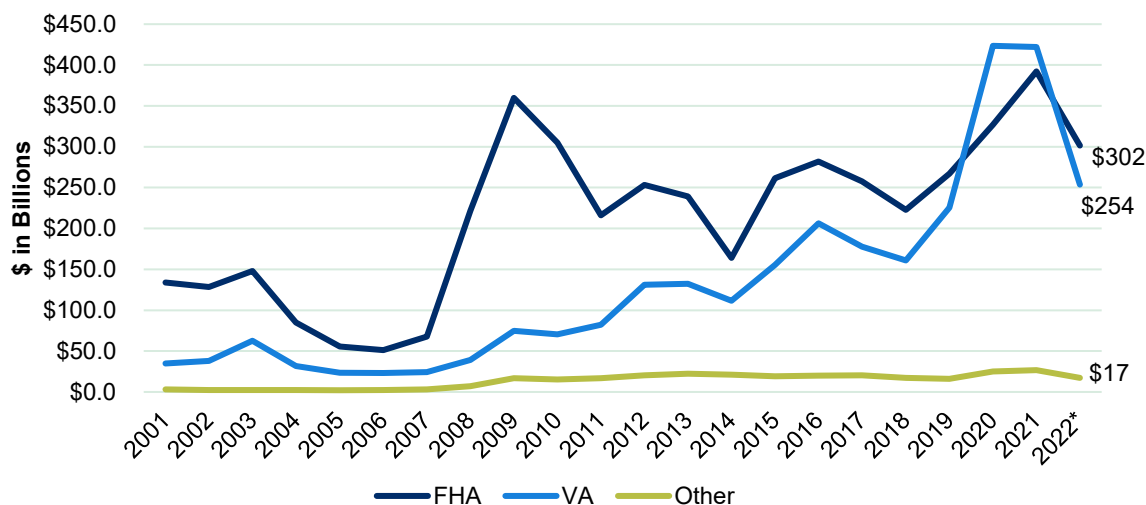
Note: Numbers are rounded to the nearest hundred million. For sums, like “GSE Total”, the values are rounded after the exact underlying values are summed. As a result, some sums may not appear to match the sum of their rounded component values.

Ginnie Mae's \$42.4 billion in gross issuance in July was approximately 40% below the average monthly issuance for 2021. Thus far in 2022, Ginnie Mae is on pace to have lower gross issuance than 2021 by approximately \$268.0 billion.

**Table 2. Ginnie Mae Gross Issuance Collateral Composition (\$ in billions)**

<i>Issuance Year</i>	<i>FHA</i>	<i>VA</i>	<i>Other</i>	<i>Total</i>
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	\$392.2	\$422.1	\$26.7	\$840.9
2022 YTD	\$175.9	\$148.1	\$10.1	\$334.1
2022 Annualized	\$301.5	\$253.9	\$17.3	\$572.7

**Figure 22. Ginnie Mae Gross Issuance**



\*2022 values have been annualized – the annualization methodology is not seasonally adjusted.

Note: Numbers are rounded to the nearest hundred million. For sums, like "GSE Total", the values are rounded after the exact underlying values are summed. As a result, some sums may not appear to match the sum of their rounded component values.

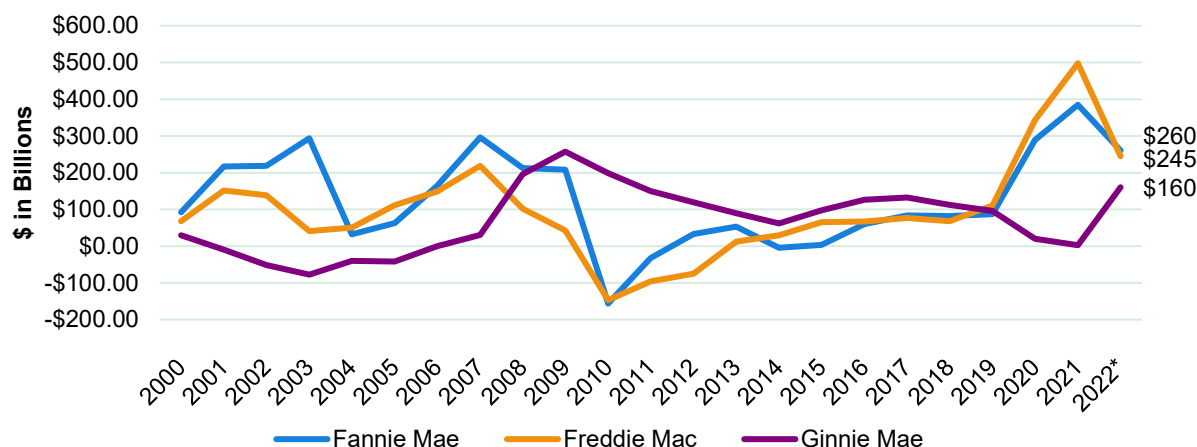
## 5.2 Net Issuance of Agency MBS

Agency net issuance in July was approximately \$44.5 billion, which represents a 7.1% MoM increase in net issuance. Ginnie Mae net issuance was \$18.0 billion in July. VA net issuance continues to outpace FHA.

**Table 3. 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	\$151.8	\$142.9	\$294.7	\$93.3	\$388.1
2022 Annualized	\$260.3	\$245.0	\$505.3	\$160.0	\$665.3

**Figure 23. Agency Net Issuance**



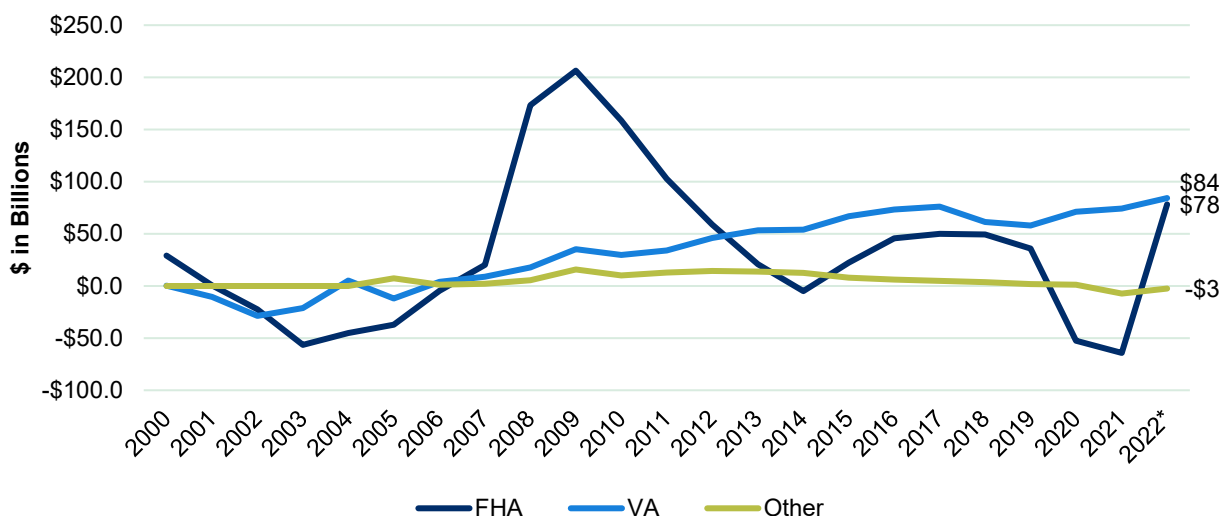
\*2022 values have been annualized – the annualization methodology is not seasonally adjusted.

Note: Numbers are rounded to the nearest hundred million. For sums, like "GSE Total", the values are rounded after the exact underlying values are summed. As a result, some sums may not appear to match the sum of their rounded component values.

**Table 4. Ginnie Mae Net Issuance Collateral Composition (\$ in billions)**

<i>Issuance Year</i>	<i>FHA</i>	<i>VA</i>	<i>Other</i>	<i>Total</i>
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	\$45.7	\$49.2	-\$1.5	\$93.3
2022 Annualized	\$78.3	\$84.3	-\$2.5	\$160.0

**Figure 24. Ginnie Mae Net Issuance**



\*2022 values have been annualized – the annualization methodology is not seasonally adjusted.

Note: Numbers are rounded to the nearest hundred million. For sums, like “GSE Total”, the values are rounded after the exact underlying values are summed. As a result, some sums may not appear to match the sum of their rounded component values.



### 5.3 Monthly Issuance Breakdown

**Table 5. Ginnie Mae Net Issuance Collateral Composition (\$ in billions)**

Month	Agency Gross Issuance Amount (in \$ Billions)					Agency Net Issuance Amount (in \$ Billions)				
	Fannie Mae	Freddie Mac	Ginnie Mae	GSEs	Total	Fannie Mae	Freddie Mac	Ginnie Mae	GSEs	Total
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	\$66.5	\$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	\$85.9	\$59.0	\$179.0	\$238.0	\$45.6	\$37.6	\$14.0	\$83.2	\$97.3
Feb-22	\$73.3	\$64.6	\$49.0	\$137.9	\$186.9	\$27.8	\$22.7	\$9.7	\$50.5	\$60.2
Mar-22	\$76.8	\$62.9	\$47.4	\$139.7	\$187.1	\$22.6	\$23.1	\$6.9	\$45.7	\$52.6
Apr-22	\$65.3	\$53.5	\$47.8	\$118.8	\$166.6	\$19.5	\$17.7	\$13.2	\$37.2	\$50.4
May-22	\$54.7	\$43.7	\$45.0	\$98.4	\$143.4	\$13.6	\$12.5	\$15.5	\$26.1	\$41.6
Jun-22	\$54.5	\$42.0	\$43.6	\$96.5	\$140.1	\$14.8	\$10.7	\$16.0	\$25.5	\$41.5
Jul-22	\$46.8	\$40.3	\$42.4	\$87.1	\$129.5	\$12.1	\$14.4	\$18.0	\$26.5	\$44.5

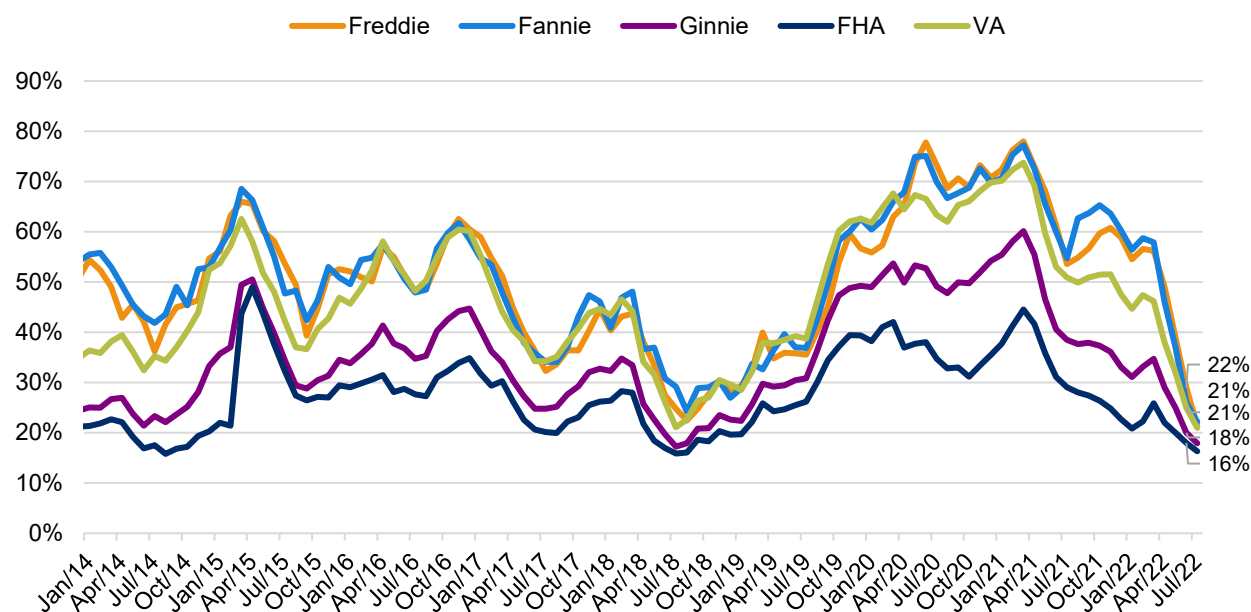
Source: Beginning May 2021, data for Gross and Net Issuance was sourced from Fannie Mae, Freddie Mac, and Ginnie Mae loan level disclosure files. Net issuance is defined here as the difference between prior period UPB and current period UPB. Data as of July 2022. Beginning with the October 2021 GMAR, the Fannie Mae and Freddie Mac net issuance data have been updated to reflect the current UPB of the portfolios. July 2021 through July 2022 GMAR net issuance data reflect the UPB at security issuance for Fannie Mae and Freddie Mac. Note: Numbers are rounded to the nearest hundred million.

## 5.4 Percent Refi at Issuance – Single-Family

Refinance activity has dropped for all of the agencies, but the rate of decline has been greater in the conventional mortgage market space, as Fannie and Freddie’s refinance percentages have declined approximately 15% and 26%, respectively. Ginnie Mae’s MoM decline has been approximately 10%, with the greater decline taking place with VA lending which was down almost 16% in July MoM. FHA’s refinance share declined just 9% in July MoM. The decline in refinance activity is leading to, particularly in the case of Ginnie Mae, a sharp increase in net issuance.

- Freddie Mac’s refinance percentage has dropped to 21% in July, down from 29% in June.
- Fannie Mae’s refinance percentage has dropped to 22% in July, down from 26% in June.
- Ginnie Mae’s refinance percentage dropped to 18% in July, down from 20% in June.
- FHA’s refinance percentage has dropped to 16% in July, down from 18% in June.
- VA’s refinance percentage has dropped to 21% in July, down from 25% in June.

**Figure 25. Percent Refinance at Issuance – Single-Family.**



Sources: Recursion. Notes: Data as of July 2022

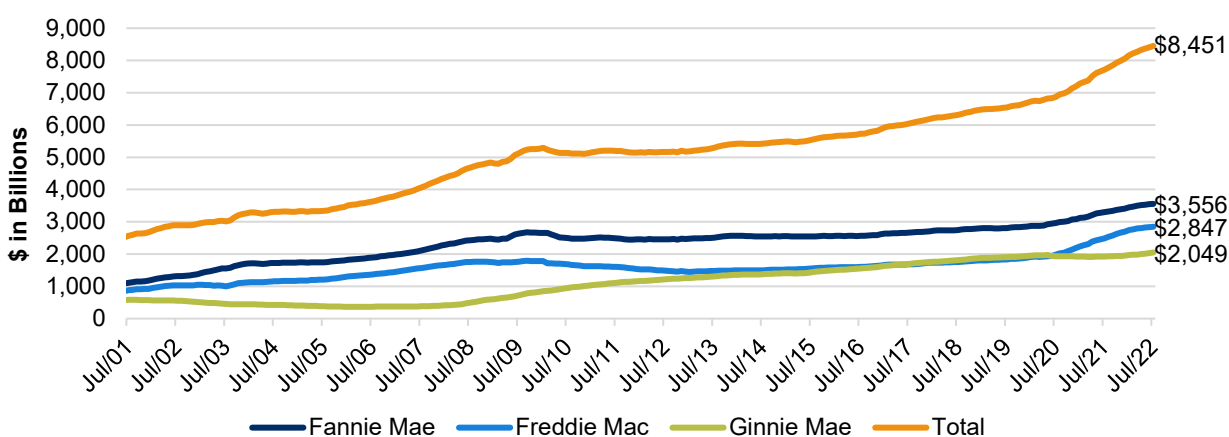
## 6 AGENCY SINGLE-FAMILY MBS OUTSTANDING

### 6.1 Outstanding Single-Family Agency MBS

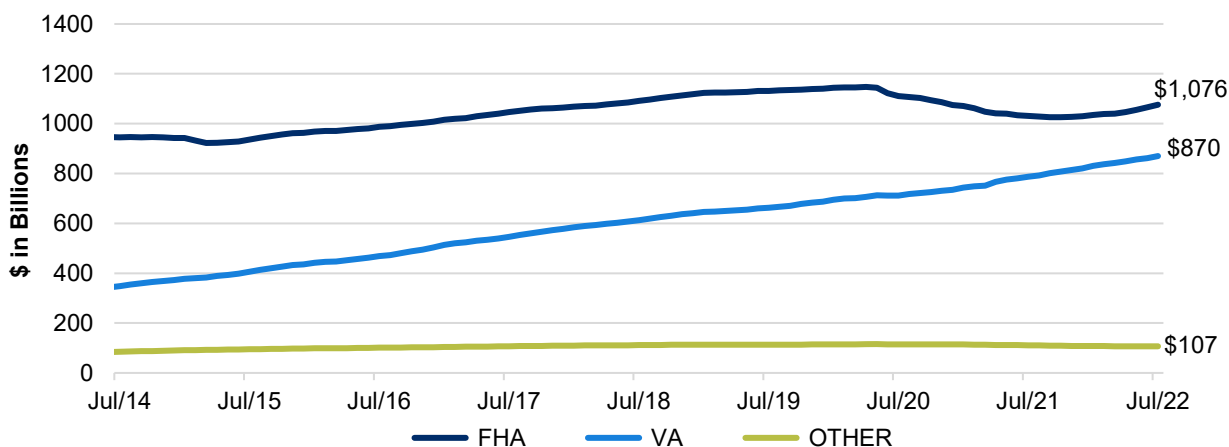
As of July 2022, outstanding single-family MBS in the Agency market totaled \$8.451 trillion: 42.1% Fannie Mae, 33.7% Freddie Mac, and 24.2% Ginnie Mae MBS. Over the past twelve months, Freddie Mac's, Fannie Mae's and Ginnie Mae's total outstanding MBS increased by approximately 14.4%, 7.6% and 6.4%, respectively. Despite this, Fannie Mae outstanding MBS remains larger than either Freddie or Ginnie by approximately \$709 billion and \$1.5 trillion, respectively.

Ginnie Mae MBS collateral composition has changed dramatically over the past five years. In July 2017, 61.5% of Ginnie Mae outstanding collateral was FHA and 32.1% was VA. In July 2022, FHA collateral comprised 52.4% of Ginnie Mae MBS outstanding and VA collateral comprised 42.4% of Ginnie Mae MBS outstanding.

**Figure 26. Outstanding Agency Mortgage-Backed Securities.**



**Figure 27. Composition of Outstanding Ginnie Mae Mortgage-Backed Securities.**

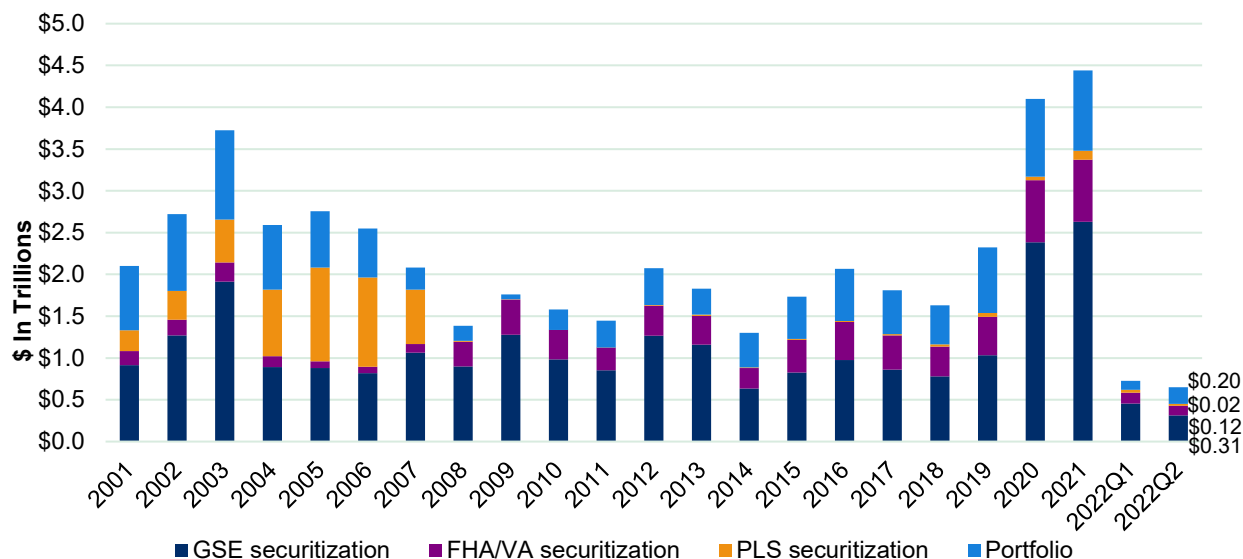


Sources: Recursion. Notes: Data as of July 2022.

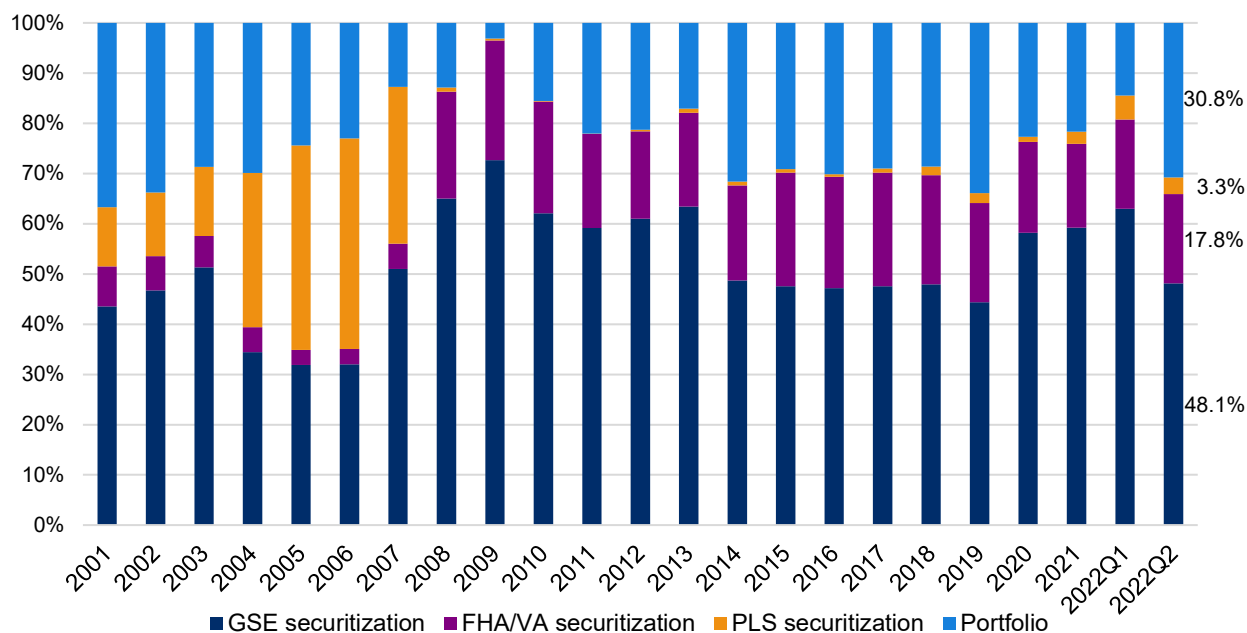
## 6.2 Origination Volume and Share Over Time

Origination volume continued to decline in Q2 2022, with \$650 billion in originations in Q2, which represents a decline in issuance from Q1 2022 of approximately 10%. Ginnie Mae's share of total origination increased slightly from 17.4% to 17.8% in Q2 2022, while Portfolio origination more than doubled from 14.7% to over 30.8% in Q2 2022.

**Figure 28. First Lien Origination Volume**



**Figure 29. First Lien Origination Share**



Source: Inside Mortgage Finance. Note: Data as of Q2 2022.

### 6.3 Agency Issuance and Agency Outstanding by State

Ginnie Mae MBS represent approximately 26% 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 share still being in Alaska (50%) and the lowest still in the District of Columbia (16%). The highest Ginnie Mae outstanding share is in Alaska and Mississippi (47%) and the lowest still in the District of Columbia (13%). There is currently a 1% difference between Ginnie Mae's share of new agency issuance and Ginnie Mae's share of agency outstanding.

**Table 6. Agency Issuance Breakdown by State**

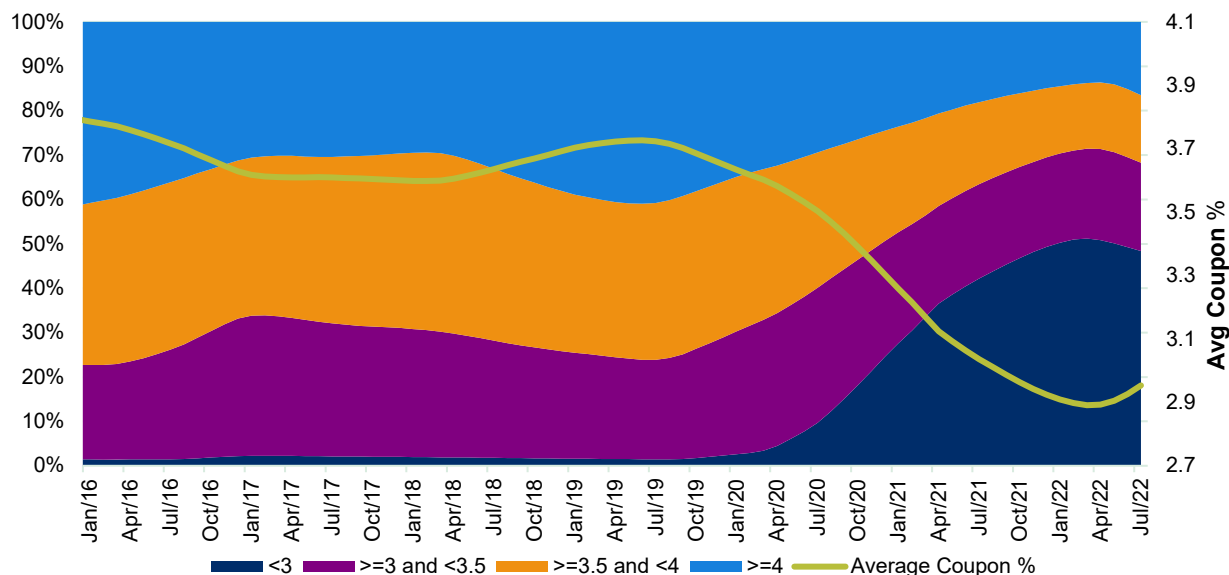
National	Agency Issuance (past 1 year)				Agency Outstanding			
	GNMA Share	GNMA Loan Count	GNMA Avg. Loan Size (000)	GSE Avg. Loan Size (000)	GNMA Share by UPB	GNMA Loan Count	GNMA Avg. Loan Size (000)	GSE Avg. Loan Size (000)
	26%	3,007,326	267.40	274.84	25%	10,449,872	200.70	210.07
AK	50%	10,069	323.93	286.50	47%	36,739	259.02	221.02
AL	40%	63,560	211.21	226.91	40%	230,836	153.23	176.58
AR	37%	34,147	180.07	209.57	38%	134,299	129.27	159.86
AZ	24%	93,039	289.05	296.12	24%	265,205	212.75	224.01
CA	19%	220,393	421.80	414.72	16%	662,724	322.32	321.56
CO	25%	71,472	375.05	357.05	23%	208,403	285.20	275.97
CT	26%	28,655	251.99	269.34	25%	103,198	199.45	209.34
DC	16%	2,477	500.26	436.42	13%	8,701	377.66	352.49
DE	31%	14,748	254.39	273.02	31%	50,370	201.35	210.15
FL	31%	263,445	269.53	273.59	31%	822,199	206.14	208.85
GA	33%	149,728	234.63	268.51	33%	484,627	174.59	204.54
HI	37%	10,415	593.29	472.18	31%	32,859	466.13	359.01
IA	23%	20,447	178.49	193.16	21%	80,874	131.73	148.96
ID	23%	18,062	316.07	302.17	23%	62,240	211.91	221.25
IL	23%	100,002	204.04	237.38	21%	354,803	157.52	179.33
IN	29%	73,858	179.49	197.26	29%	272,355	130.56	149.62
KS	29%	24,295	187.15	215.49	28%	94,631	137.43	163.46
KY	33%	43,320	188.86	204.21	34%	160,794	140.65	155.26
LA	42%	54,001	199.66	228.47	39%	194,501	155.87	177.53
MA	19%	34,133	355.64	352.95	15%	110,129	279.85	269.73
MD	36%	87,858	327.14	317.61	33%	284,041	262.63	249.99
ME	26%	10,263	229.85	253.38	25%	36,959	174.02	191.00
MI	20%	71,035	178.56	206.26	20%	268,475	131.01	156.58
MN	18%	40,372	237.58	260.57	17%	156,704	179.62	198.12
MO	28%	62,497	189.56	210.68	28%	239,420	139.13	161.67
MS	47%	31,114	192.91	206.93	47%	119,217	140.66	160.52
MT	23%	8,518	285.67	291.59	23%	31,864	204.32	215.01
NC	28%	117,524	232.84	265.38	28%	404,586	171.09	200.14
ND	28%	4,881	239.40	237.36	23%	16,674	191.72	185.36
NE	25%	15,313	205.64	209.17	26%	63,826	145.86	160.48
NH	22%	10,249	289.98	285.22	22%	37,515	222.09	214.21
NJ	23%	67,833	299.65	323.13	21%	224,900	236.30	254.49
NM	36%	23,525	226.48	236.09	37%	93,070	163.34	177.26
NV	30%	44,494	316.98	305.63	29%	128,751	242.65	233.53
NY	20%	65,466	297.54	338.30	19%	300,497	205.66	247.90
OH	27%	104,942	174.06	196.17	28%	412,927	127.64	148.60
OK	39%	44,391	191.71	211.04	41%	185,575	138.20	161.09
OR	20%	32,997	331.79	335.69	19%	107,934	249.55	252.53
PA	24%	88,287	195.17	238.56	25%	380,478	147.11	181.50
RI	32%	10,286	298.90	278.59	29%	34,459	229.00	212.88
SC	34%	71,791	236.06	247.85	33%	227,132	178.90	190.70
SD	30%	7,286	231.61	230.23	29%	28,719	169.84	177.25
TN	29%	75,875	240.71	263.11	31%	264,594	170.53	202.16
TX	29%	290,246	242.88	279.25	31%	1,058,882	177.22	209.65
UT	19%	30,518	346.15	345.52	18%	93,029	252.95	261.91
VA	38%	129,290	324.12	314.56	35%	435,738	253.94	250.76
VI	18%	145	375.56	393.54	23%	767	240.30	300.78
VT	19%	2,987	229.23	249.76	18%	11,878	179.14	179.95
WA	23%	71,208	376.30	378.37	21%	227,659	279.55	288.67
WI	18%	33,151	201.81	217.96	16%	120,760	154.19	163.75
WV	43%	15,291	189.16	193.16	43%	57,746	141.87	145.14
WY	35%	7,427	255.00	255.93	34%	24,609	203.92	201.46

Sources: Recursion. Notes: Outstanding balance is based on loan balance as of July 2022. Ginnie Mae issuance is based on the last 12 months, from June 2021 to July 2022. Values above are based on loan level disclosure data, thus excluding loan balances for the first six months that loans are in a pool. This accounts for the difference in the share of outstanding MBS represented above and in [Outstanding Single-Family Agency MBS](#).

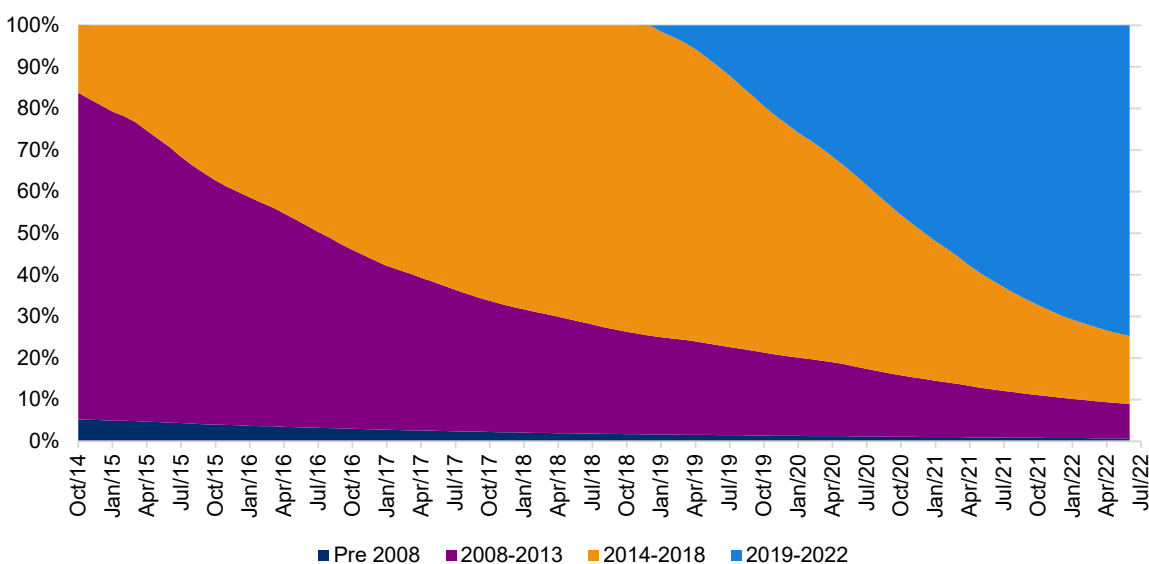
## 6.4 Outstanding Ginnie Mae MBS Volume by Coupon and Vintage Over Time

As of July 2022, the weighted average coupon (WAC) on outstanding Ginnie Mae MBS increased slightly from 2.92% in June 2022 to 2.95% in July. With 30-year fixed mortgage rates for certain credit profiles at over 6.0% in July, this increase in WAC is likely to continue. The bottom chart illustrates that loans originated since 2019 account for 75% of Ginnie MBS collateral outstanding.

**Figure 30. Outstanding Ginnie Mae MBS Balance, by Coupon.**



**Figure 31. Outstanding Ginnie Mae MBS Balance, by Vintage.**



Sources: Recursion. Note: July 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.



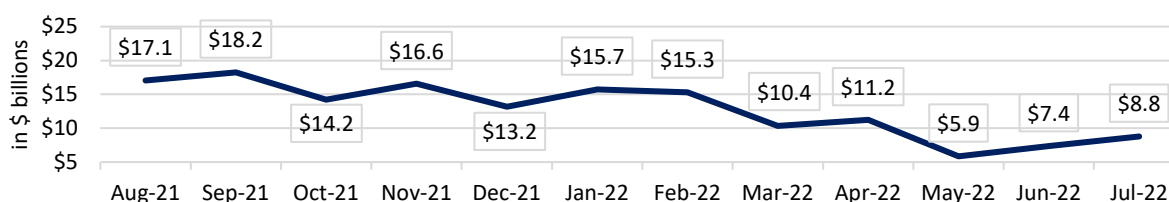
## 7 AGENCY REMIC SECURITIES

### 7.1 Monthly REMIC Demand for Ginnie Mae MBS

In July 2022, \$8.8 billion of Ginnie Mae MBS were securitized into Real Estate Mortgage Investment Conduits (REMICs) as underlying collateral, a 19% MoM increase. Of that, approximately \$0.9 billion were Multifamily MBS having coupons between 2.5% and 3.5%. \$7.8 billion were Single Family MBS with 84% of the Single-Family MBS having coupons over 4.5%.

Through ten months of Fiscal Year 2022, approximately \$119 billion of Ginnie Mae Single Family and Multifamily MBS were securitized into Ginnie Mae REMIC transactions. This represents a roughly 28% decrease over the same period in Fiscal Year 2021 (\$165 billion).

**Figure 32. Ginnie Mae Single-Family and Multifamily MBS Securitized into REMICs.**



**Table 7. July 2022 REMIC Collateral Coupon Distribution.**

Net Coupon (%)	Approx. Ginnie Mae MBS amount securitized into REMIC Deals (\$MM) <sup>6</sup>	% Breakdown of REMIC Collateral by coupon <sup>17</sup>
<b>Multifamily</b>		
2.01-2.50	339.3	36%
2.51-3.00	590.8	64%
<b>Subtotal</b>	<b>930.1</b>	<b>100%</b>
<b>Single-Family</b>		
<2.00	-	0%
2.01-2.50	-	0%
2.51-3.00	349.4	4%
3.01-3.50	429.7	5%
3.51-4.00	224.2	3%
4.01-4.50	302.4	4%
4.51-5.00	5,933.6	76%
5.01-5.50	609.3	8%
5.50-6.00	-	0%
6.01-6.50	-	0%
<b>Subtotal</b>	<b>7,848.6</b>	<b>100%</b>
<b>Grand Total</b>	<b>8,778.7</b>	

Source: Ginnie Mae Disclosure Files

<sup>6</sup>Totals may not sum due to rounding.

## 7.2 REMIC Market Snapshot

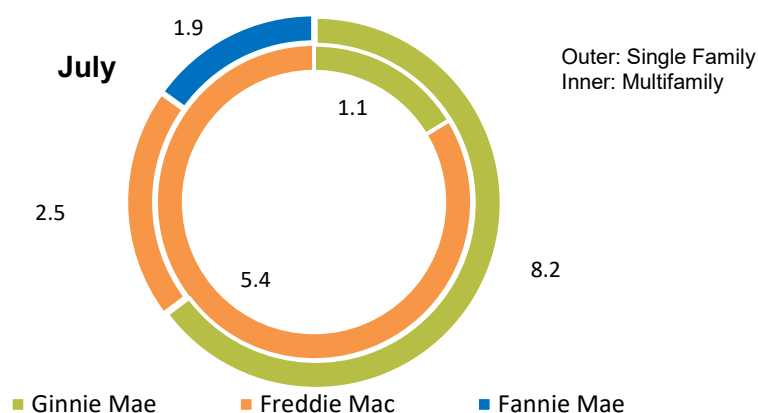
In July 2022, Ginnie Mae, Fannie Mae, and Freddie Mac Single-Family REMIC collateral WAC surpassed 4.75%. To note, Ginnie Mae, Fannie Mae, and Freddie Mac Single-Family REMIC collateral WAC similarly surpassed 4.00% in June as well. In July 2022, Ginnie Mae REMIC issuance volume increased for the third consecutive month.

- In May 2022, Ginnie Mae REMIC issuance volume was \$7.0 billion.
- In June 2022, Ginnie Mae REMIC issuance volume was \$9.1 billion.
- In July 2022, Ginnie Mae REMIC issuance volume was \$10.0 billion.

In July 2022, Fannie Mae REMIC issuance volume declined to \$1.9 billion across nine Single-Family transactions.

- In July 2022, Fannie Mae did not guarantee a Multifamily REMIC transaction, which is the third instance of Fannie Mae not guaranteeing a Multifamily REMIC transaction since October 2016.
- Fannie Mae's REMIC issuance volume of \$1.9 billion in July 2022 is the lowest monthly Fannie Mae REMIC issuance volume since December 2018.

**Figure 33. REMIC Issuance by Agency**



**Table 8. Monthly REMIC Issuance by Agency**

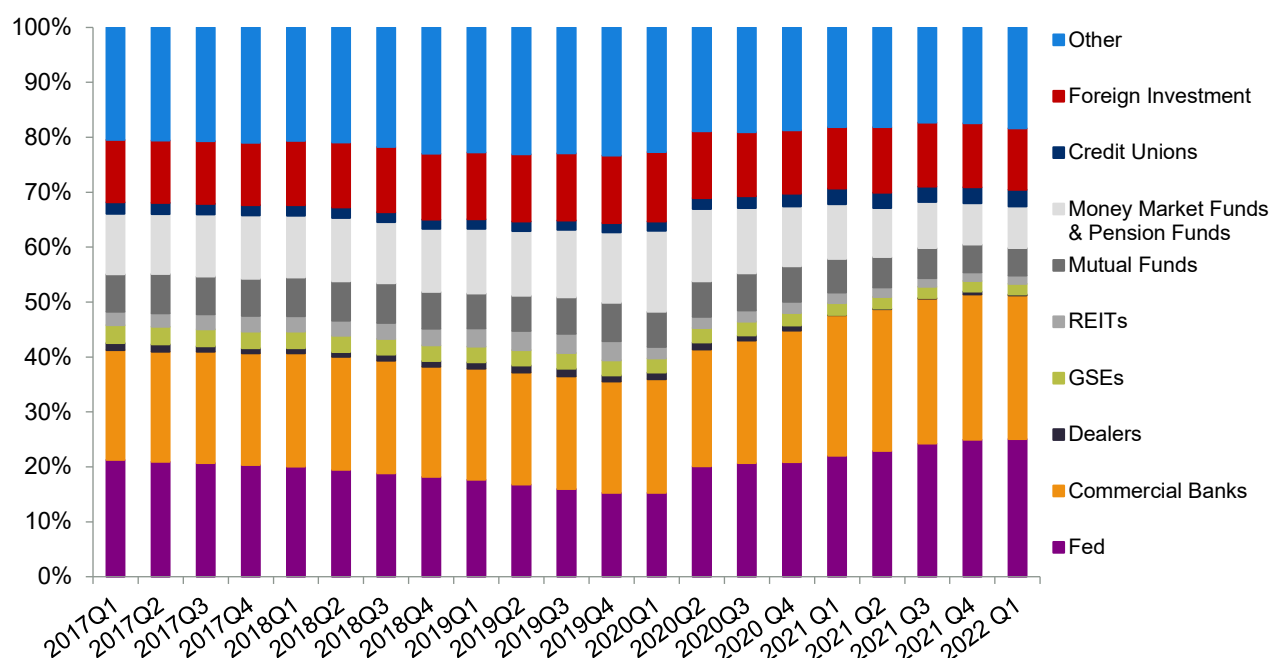
	<b>SF REMIC Issuance Volume (\$B)</b>	<b>% of SF REMIC Issuance Volume</b>	<b>Number of SF REMIC Trans- actions</b>	<b>MF REMIC Issuance Volume (\$B)</b>	<b>% of MF REMIC Issuance Volume</b>	<b>Number of MF REMIC Trans- actions</b>
<b>Ginnie Mae</b>	8.2	64.8	10	1.1	16.4	6
<b>Freddie Mac</b>	2.5	20.2	8	5.4	83.6	7
<b>Fannie Mae</b>	1.9	15.1	9	0.0	0.0	0
<b>Total</b>	\$12.6	100%	27	\$6.4	100%	13

Source: Ginnie Mae, Fannie Mae, and Freddie Mac Disclosure Files

## 8 MBS OWNERSHIP

As of Q1 2022, the largest holders of agency debt (agency MBS +agency notes and bonds) included commercial banks (26%), the Federal Reserve (25%), and foreign investors (11%). The Federal Reserve's share remained at 25% in the first quarter of 2022, 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 nearly \$2.9 trillion in holdings as of the end of June 2022, \$2.1 trillion was held by the top 25 domestic banks.

**Figure 34. 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 Q1 2022.

### 8.1 Commercial Bank Holdings of Agency MBS

**Table 9. Commercial Bank Holdings of Agency MBS**

	Commercial Bank Holdings (\$Billions)								Week Ending			
	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	6-Jul	13-Jul	20-Jul	27-Jul
Largest 25 Domestic Banks	2,140.2	2,153.7	2,188.8	2,200.4	2,186.8	2,163.9	2,143.9	2,122.4	2,125.4	2,121.8	2,118.7	2,127.0
Small Domestic Banks	721.5	730.7	742.2	748.6	744.1	736.1	730.8	735.8	729.4	730.8	728.9	730.5
Foreign Related Banks	46.2	43.2	42.2	39.3	36.6	34.2	34.1	37.4	40.8	37.6	36.7	38.0
<b>Total, Seasonally Adjusted</b>	<b>2,907.9</b>	<b>2,927.6</b>	<b>2,973.2</b>	<b>2,988.3</b>	<b>2,967.5</b>	<b>2,934.2</b>	<b>2,908.8</b>	<b>2,895.6</b>	<b>2,895.6</b>	<b>2,890.2</b>	<b>2,884.3</b>	<b>2,895.5</b>

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

## 8.2 Bank and Thrift Residential MBS Holdings

In Q2 2022, MBS holdings at banks and thrifts decreased for the second time in fourteen consecutive quarters. Like Q1 2022, the decrease was driven by GSE pass-throughs, Private MBS, and agency CMO holdings, with GSE pass-throughs seeing the largest decrease. In contrast, Ginnie Mae pass-throughs saw an increase of 0.2%. Total bank and thrift MBS holdings decreased by approximately 5.7% from Q2 2021 and 6.3% from Q1 2022. Out of the \$2.6 trillion in MBS holdings at banks and thrifts as of Q2 2022, \$2 trillion were GSE pass-throughs and \$369 billion of Ginnie Mae pass-throughs.

**Table 10. 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	730.84	380.12	109.53	37.62	236.91	76.18	606.91	203.37
2002	832.50	477.57	101.46	20.08	244.98	89.88	702.44	209.66
2003	899.89	536.83	75.11	19.40	236.81	106.86	775.66	206.45
2004	1,011.01	621.73	49.33	20.55	208.18	160.55	879.75	234.31
2005	1,033.77	602.73	35.92	29.09	190.70	211.25	897.06	242.69
2006	1,124.46	659.65	31.13	42.32	179.21	243.28	983.49	223.42
2007	1,149.10	591.34	31.58	26.26	174.27	357.24	971.42	264.59
2008	1,218.77	739.14	100.36	12.93	207.66	259.04	1,088.00	211.73
2009	1,275.52	784.18	155.00	7.53	271.17	212.64	1,161.67	184.07
2010	1,433.38	763.93	163.13	7.34	397.30	181.61	1,233.28	200.09
2011	1,566.88	842.17	214.81	3.28	478.82	167.70	1,359.24	207.64
2012	1,578.86	950.41	242.54	17.16	469.27	138.67	1,430.63	148.22
2013	1,506.60	937.91	231.93	26.11	432.60	114.15	1,363.65	142.94
2014	1,539.32	964.16	230.45	20.33	449.90	104.94	1,409.84	129.48
2015	1,643.56	1,115.40	292.30	11.14	445.39	71.63	1,512.67	130.89
2016	1,736.93	1,254.13	323.46	7.40	419.80	55.60	1,576.07	160.86
1Q17	1,762.38	1,280.63	329.91	7.03	419.34	55.39	1,589.93	172.45
2Q17	1,798.66	1,320.59	335.47	6.38	417.89	53.79	1,635.11	163.55
3Q17	1,838.93	1,364.75	351.86	5.65	418.08	50.45	1,661.84	177.09
4Q17	1,844.15	1,378.53	367.70	4.63	413.97	47.01	1,672.93	171.22
1Q18	1,809.98	1,352.28	360.71	3.92	412.41	41.37	1,635.52	174.46
2Q18	1,806.58	1,345.80	368.88	7.45	414.41	38.92	1,631.65	174.93
3Q18	1,794.39	1,339.73	373.21	2.42	416.20	36.04	1,618.29	176.10
2018	1,814.97	1,361.00	380.43	2.69	416.59	34.69	1,634.99	179.98
1Q19	1,844.99	1,385.10	383.49	3.06	422.18	34.65	1,673.40	171.59
2Q19	1,907.13	1,445.91	407.97	2.90	421.56	36.76	1,727.65	179.47
3Q19	1,975.78	1,506.92	427.10	4.74	428.69	35.44	1,786.74	189.04
2019	1,985.38	1,516.26	426.85	4.62	428.99	35.52	1,796.29	189.09
1Q20	2,107.66	1,621.70	448.34	4.65	443.73	37.57	1,907.02	200.64
2Q20	2,195.19	1,669.93	441.06	5.00	478.11	42.14	1,946.36	248.83
3Q20	2,310.42	1,764.72	415.24	4.43	499.50	41.78	2,040.61	269.81
4Q20	2,520.90	1,928.21	390.66	3.94	548.65	40.10	2,210.22	310.68
1Q21	2,690.92	2,088.41	374.63	4.88	555.35	42.28	2,350.94	339.98
2Q21	2,781.91	2,178.57	352.77	4.77	555.45	43.12	2,431.76	350.15
3Q21	2,858.59	2,239.90	353.12	4.24	565.51	48.95	2,487.32	371.27
4Q21	2,906.04	2,268.19	352.71	4.45	577.98	55.42	2,529.78	376.26
1Q22	2,799.21	2,186.14	368.43	4.04	548.60	60.43	2,476.11	323.10
2Q22	2,623.79	2,035.14	369.20	3.81	523.01	61.83	2,321.17	302.62
<b>Change:</b>								
1Q22-2Q22	-6.3%	-6.9%	-8.4%	0.2%	-5.6%	-4.7%	-6.3%	-6.3%
2Q21-2Q22	-5.7%	-6.6%	-8.8%	4.7%	-20.0%	-5.8%	-4.5%	-13.6%

Source: Inside Mortgage Finance. Notes: Data as of Q2 2022

**Table 11. Top 20 Bank and Thrift Residential MBS Investors (\$ in millions)**

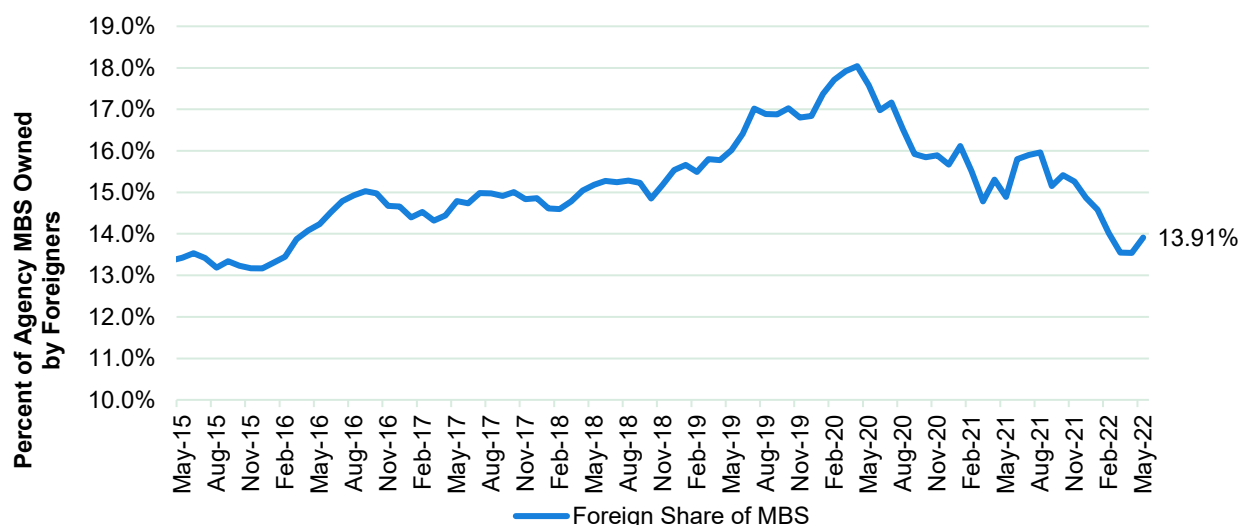
	<i>Institution</i>	<i>Total</i>	<i>GSE PT</i>	<i>GNMA PT</i>	<i>Agency CMO</i>	<i>Non-Agency</i>	<i>Share</i>
1	BANK OF AMERICA CORPORATION	\$495,136.0	\$415,280.0	\$71,947.0	\$7,758.0	\$151.0	18.9%
2	WELLS FARGO & COMPANY	\$249,055.0	\$177,562.0	\$68,239.0	\$3,125.0	\$129.0	9.5%
3	CHARLES SCHWAB	\$193,778.0	\$109,214.0	\$7,006.0	\$77,558.0	\$0.0	7.4%
4	JPMORGAN CHASE & CO.	\$166,937.0	\$83,341.0	\$67,650.0	\$98.0	\$15,848.0	6.4%
5	Truist Bank	\$119,517.0	\$58,899.0	\$13,721.0	\$43,472.0	\$3,425.0	4.6%
6	U.S. BANCORP	\$111,998.70	\$74,187.8	\$23,448.4	\$14,362.4	\$0.1	4.3%
7	CITIGROUP INC.	\$88,468.0	\$80,696.0	\$4,199.0	\$2,754.0	\$819.0	3.4%
8	Silicon Valley Bank	\$72,216.0	\$52,841.0	\$8,614.0	\$10,761.0	\$0.0	2.8%
9	PNC Bank, National Association	\$69,410.6	\$56,515.3	\$4,870.6	\$6,817.9	\$1,206.7	2.6%
10	CAPITAL ONE FINANCIAL CORPORATION	\$65,099.6	\$32,784.9	\$14,056.7	\$17,864.0	\$394.0	2.5%
11	MORGAN STANLEY	\$52,526.0	\$37,767.0	\$8,449.0	\$6,310.0	\$0.0	2.0%
12	BANK OF NEW YORK MELLON CORP	\$44,587.0	\$33,805.0	\$1,452.0	\$6,984.0	\$2,346.0	1.7%
13	USAA Federal Savings Bank	\$44,229.0	\$37,351.0	\$2,244.0	\$4,634.0	\$0.0	1.7%
14	State Street Bank and Trust Company	\$37,413.3	\$16,068.0	\$3,830.0	\$15,526.3	\$1,989.0	1.4%
15	The Huntington National Bank	\$30,194.1	\$12,956.1	\$9,571.6	\$7,514.8	\$151.6	1.2%
16	KeyBank National Association	\$27,174.5	\$4,278.4	\$237.6	\$22,658.5	\$0.0	1.0%
17	TD Bank USA/TD Bank NA	\$24,125.3	\$1,005.3	\$89.5	\$22,989.6	\$41.0	0.9%
18	Citizens Bank, National Association	\$23,774.7	\$13,187.7	\$5,149.5	\$5,437.5	\$0.0	0.9%
19	Ally Bank	\$22,166.0	\$14,142.0	\$1,756.0	\$1,874.0	\$4,394.0	0.8%
20	HSBC Bank USA, National Association	\$21,949.7	\$6,955.3	\$8,307.3	\$6,686.2	\$1.0	0.8%
<b>Total Top 20</b>		<b>\$1,959,755.5</b>	<b>\$1,318,836.8</b>	<b>\$324,838.2</b>	<b>\$285,185.2</b>	<b>\$30,895.4</b>	<b>74.8%</b>

Source: Inside Mortgage Finance. Notes: Data as of Q2 2022.

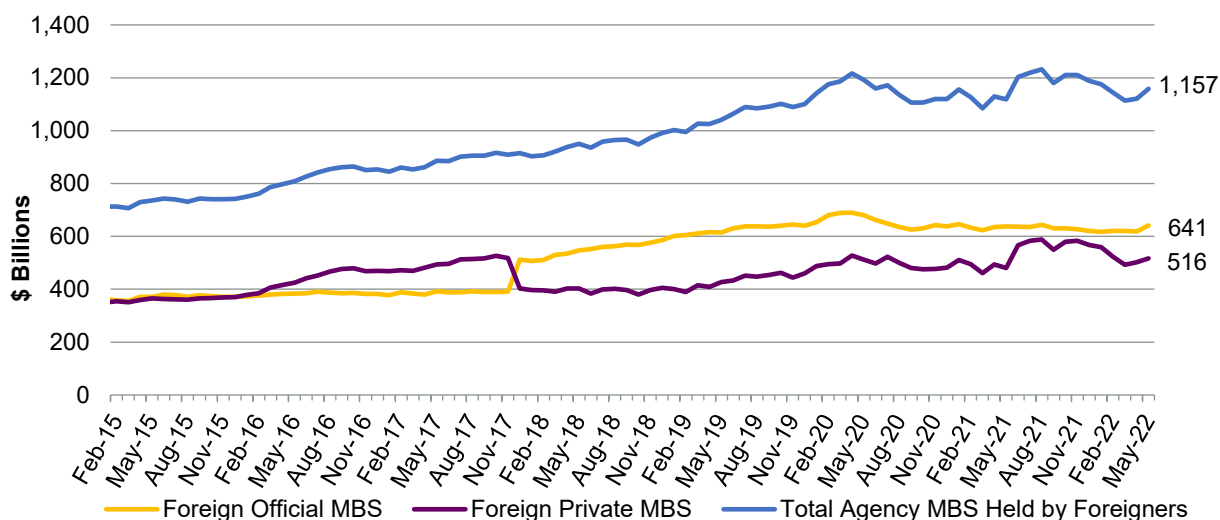
### 8.3 Foreign Ownership of MBS

For the month of May 2022, foreign ownership of MBS represents \$1.16 trillion in agency MBS, up approximately \$37 billion from April 2022. Total foreign ownership includes \$516 billion held by foreign private institutions and \$641 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 13.91% in May of 2022.

**Figure 35. Foreign Share of Agency MBS Market**



**Figure 36. Monthly Foreign MBS Holdings**



Sources: Recursion and Treasury International Capital (TIC) [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 May 2022.



## 8.4 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.

**Table 12. All Agency Debt**

Country	Level of Holdings (\$ Millions)				Change in Holdings (\$ Millions)			
	6/1/2021	9/1/2021	12/1/2021	3/1/2022	Q2 2021	Q3 2021	Q4 2021	Q1 2022
Japan	311,375	311,892	301,979	259,844	-8,396	517	-9,913	-42,135
Taiwan	250,081	247,341	244,375	233,340	-2,955	-2,740	-2,966	-11,035
China	217,842	215,102	202,659	219,553	16,870	-2,740	-12,443	16,894
Luxembourg	35,497	33,339	34,277	33,130	1,126	-2,158	938	-1,147
Ireland	21,453	22,617	21,305	20,589	-5,512	1,164	-1,312	--716
South Korea	43,201	43,208	42,051	40,362	169	7	-1,157	-1,689
Cayman Islands	36,027	36,160	35,004	31,795	-1,084	133	-1,156	-3,209
Bermuda	23,806	24,411	23,209	21,159	-2,637	605	-1,202	-2,050
Netherlands	12,544	17,435	16,249	14,851	-505	4,891	-1,186	-1,398
Malaysia	19,089	19,445	18,830	18,305	42	356	-615	-525
Other	166,009	268,746	302,816	269,544	-7,896	102,737	34,070	-33,372
<b>Total</b>	<b>1,136,924</b>	<b>1,239,696</b>	<b>1,242,754</b>	<b>1,162,472</b>	<b>-10,778</b>	<b>102,772</b>	<b>3,058</b>	<b>-80,282</b>

**Table 13. Agency MBS**

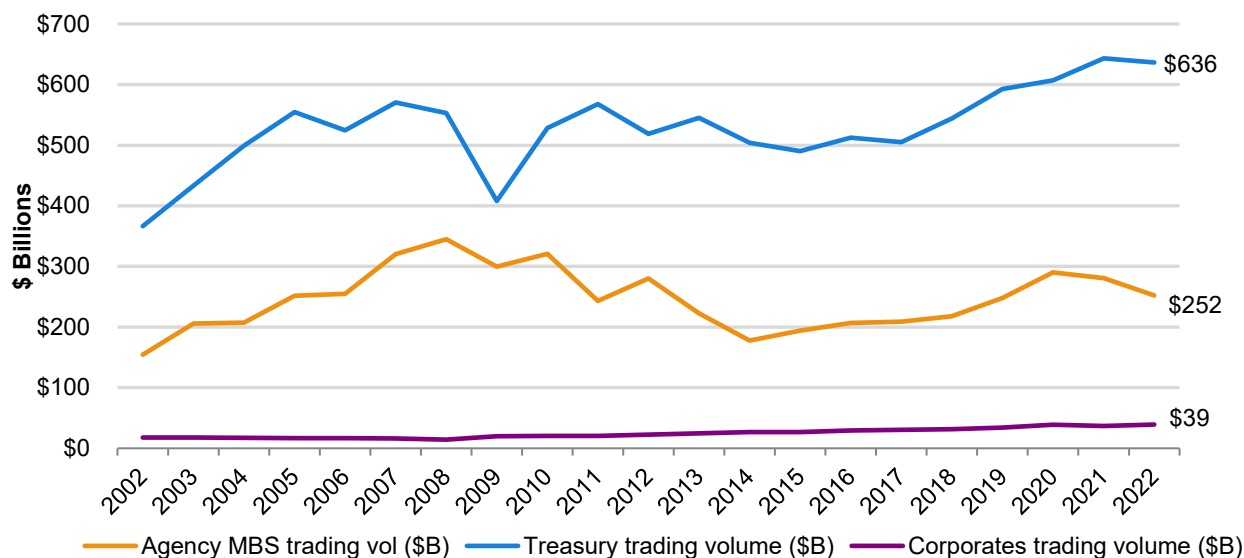
Country	Level of Holdings (\$ Millions)		
	6/1/2020	6/1/2021	YoY Change in Holdings (\$ Millions)
Japan	306,963	305,580	-1,383
Taiwan	267,700	267,492	-208
China	235,078	232,076	-3,002
Luxembourg	40,207	34,255	-5,952
Ireland	21,091	25,336	4,245
South Korea	28,743	34,313	5,570
Cayman Islands	28,431	29,682	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
<b>Total</b>	<b>1,159,809</b>	<b>1,156,341</b>	<b>-3,468</b>

Sources: Treasury International Capital (TIC). Notes: Level of agency debt Holdings by month data as of Q1 2022. Agency MBS as of June 2021. Revised to include top 10 holders of agency debt listed as of June 2018.

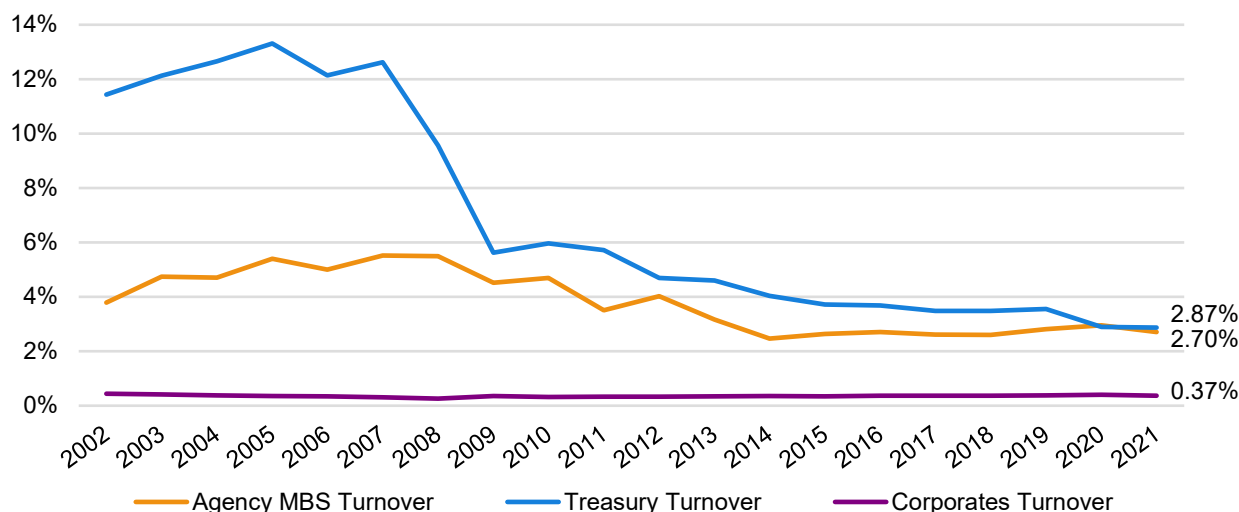
## 9 FIXED INCOME LIQUIDITY INDICATORS

The agency MBS average daily trading volume as of July 2022 was \$252 billion for 2022 YTD, which is down from \$281 billion from January 2021 to December 2022. Compared to June 2022, agency MBS average daily trading volume saw a 1.5% decrease MoM. In 2021, average agency MBS was at 2.70%, 25 bps lower than the 2020 average of 2.95%. In 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.

**Figure 37. Average Daily Trading Volume by Sector**



**Figure 38. Average Daily Turnover by Sector**



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

## PRIMARY MORTGAGE MARKET

### 10 AGENCY CREDIT BREAKDOWN

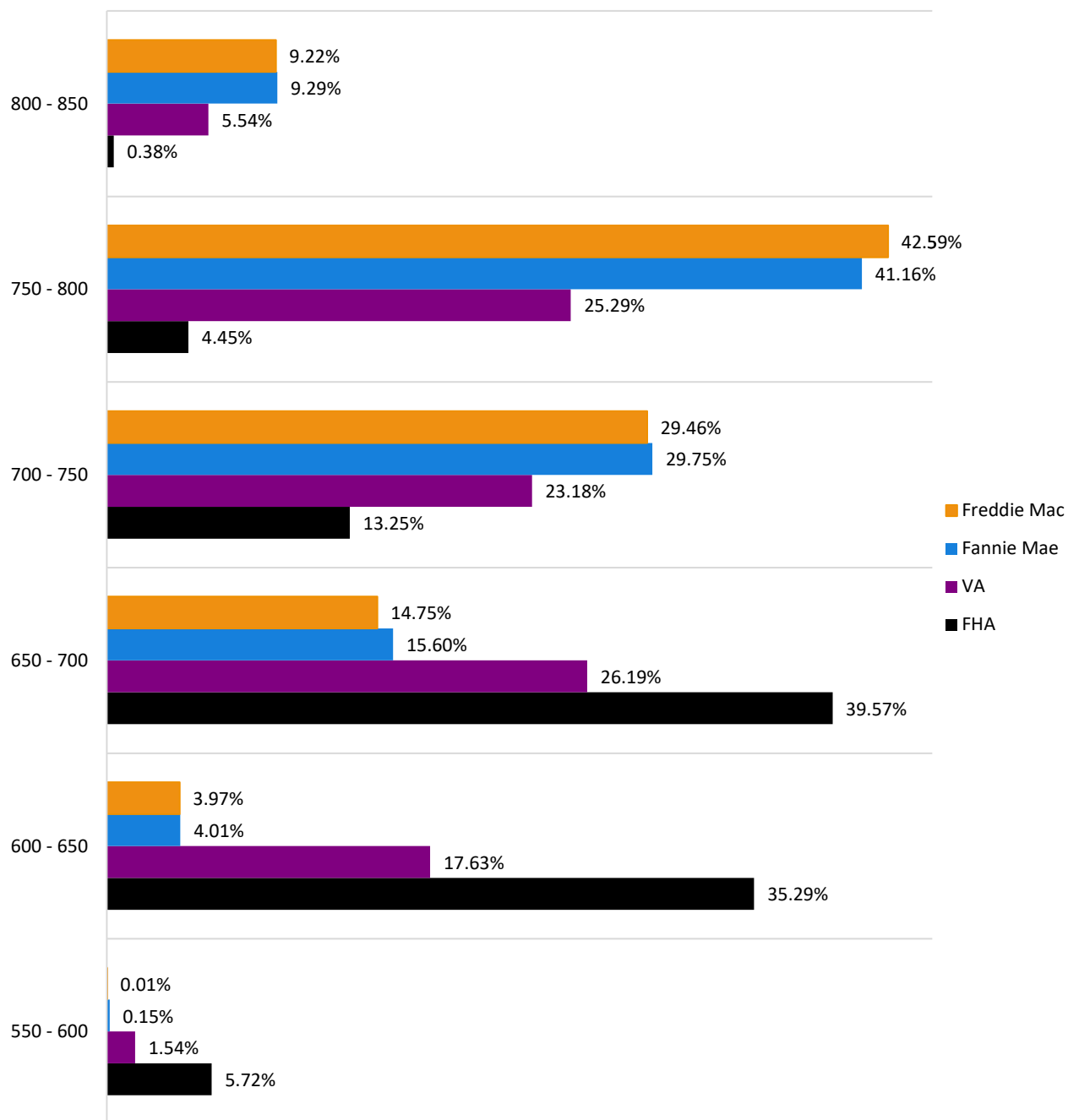
The tables below outline the population distributions of FICOs, DTIs, and LTVs between the agencies and between FHA, VA, and the Other Ginnie Mae loan sources as of the end of July 2022. The distribution statistics capture some key differences in the populations served by the agencies.

#### 10.1 Credit Scores

**Table 14. Share of Loans by FICO Score**

<i>Purchase FICO</i>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
All	301,852	649	689	741	778	798	731
Fannie	109,540	687	720	757	785	801	750
Freddie	93,823	695	727	761	787	801	754
Ginnie	98,489	625	647	679	729	776	690
<i>Refi FICO</i>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
All	104,314	631	662	707	756	788	708
Fannie	41,740	654	688	731	771	796	728
Freddie	34,558	648	680	720	762	790	720
Ginnie	28,016	603	628	658	695	740	664
<i>All FICO</i>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
All	All	406,166	644	681	733	774	796
Fannie	Fannie	151,280	676	711	751	782	800
Freddie	Freddie	128,381	678	713	753	783	800
Ginnie	Ginnie	126,505	620	643	674	722	771
<i>Purchase FICO: Ginnie Mae Breakdown By Source</i>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
All	All	98,489	625	647	679	729	776
FHA	FHA	57,382	620	640	664	694	731
VA	VA	36,331	639	671	724	773	796
Other	Other	4,776	638	659	692	731	763
<i>Refi FICO: Ginnie Mae Breakdown By Source</i>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
All	All	28,016	603	628	658	695	740
FHA	FHA	15,939	593	619	644	671	698
VA	VA	12,030	622	647	683	727	766
Other	Other	47	639	691	750	750	785
<i>All FICO: Ginnie Mae Breakdown By Source</i>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
All	126,505	620	643	674	722	771	684
FHA	73,321	612	634	660	689	726	664
VA	48,361	633	663	712	764	793	712
Other	4,823	638	659	693	732	764	696

**Figure 39. FICO Distributions by Agency**



Sources: Fannie Mae, Freddie Mac, and Ginnie Mae disclosure files.

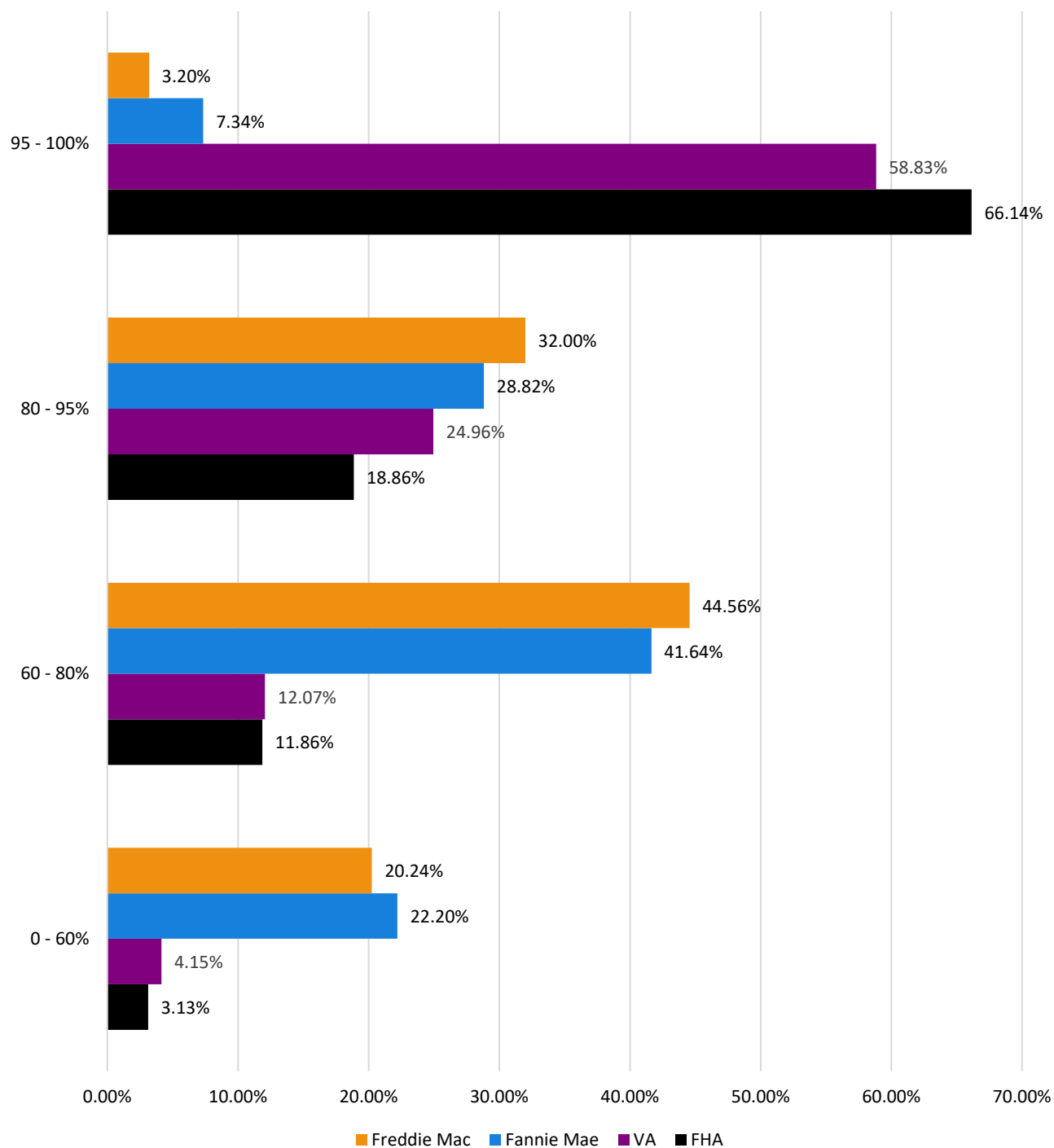
## 10.2 Loan-to-Value (LTV)

**Table 15. Share of Loans by LTV**

<b>Purchase LTV</b>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
<i>All</i>	302,127	66	80	92	97	100	86
<i>Fannie</i>	109,699	59	75	80	95	96	81
<i>Freddie</i>	93,845	60	75	80	95	95	81
<i>Ginnie</i>	98,583	90	97	98	100	101	96
<b>Refi LTV</b>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
<i>All</i>	104,484	39	54	68	79	81	65
<i>Fannie</i>	41,775	34	48	61	73	80	59
<i>Freddie</i>	34,560	37	51	64	74	80	61
<i>Ginnie</i>	28,149	58	70	80	85	90	77
<b>All LTV</b>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
<i>All</i>	406,611	53	71	81	95	98	80
<i>Fannie</i>	151,474	47	65	80	91	95	75
<i>Freddie</i>	128,405	49	66	80	90	95	75
<i>Ginnie</i>	126,732	75	89	98	100	100	92
<b>Purchase LTV: Ginnie Mae Breakdown By Source</b>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
<i>All</i>	98,583	90	97	98	100	101	96
<i>FHA</i>	57,438	92	97	98	98	98	96
<i>VA</i>	36,356	86	100	100	100	102	97
<i>Other</i>	4,789	93	99	101	101	101	98
<b>Refi LTV: Ginnie Mae Breakdown By Source</b>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
<i>All</i>	28,149	58	70	80	85	90	77
<i>FHA</i>	15,998	56	68	78	81	81	73
<i>VA</i>	12,082	62	75	86	90	100	82
<i>Other</i>	69	56	69	91	99	101	83
<b>All LTV: Ginnie Mae Breakdown By Source</b>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
<i>All</i>	126,732	75	89	98	100	100	92
<i>FHA</i>	73,436	74	85	98	98	98	91
<i>VA</i>	48,438	76	90	100	100	102	93
<i>Other</i>	4,858	93	99	101	101	101	98

Sources: Fannie Mae, Freddie Mac, and Ginnie Mae disclosure files. Note: All averages are rounded to the nearest whole number.

**Figure 40. Loan-to Value by Agency**



Sources: Fannie Mae, Freddie Mac, and Ginnie Mae disclosure files.

## 10.3 Debt-to-Income (DTI)

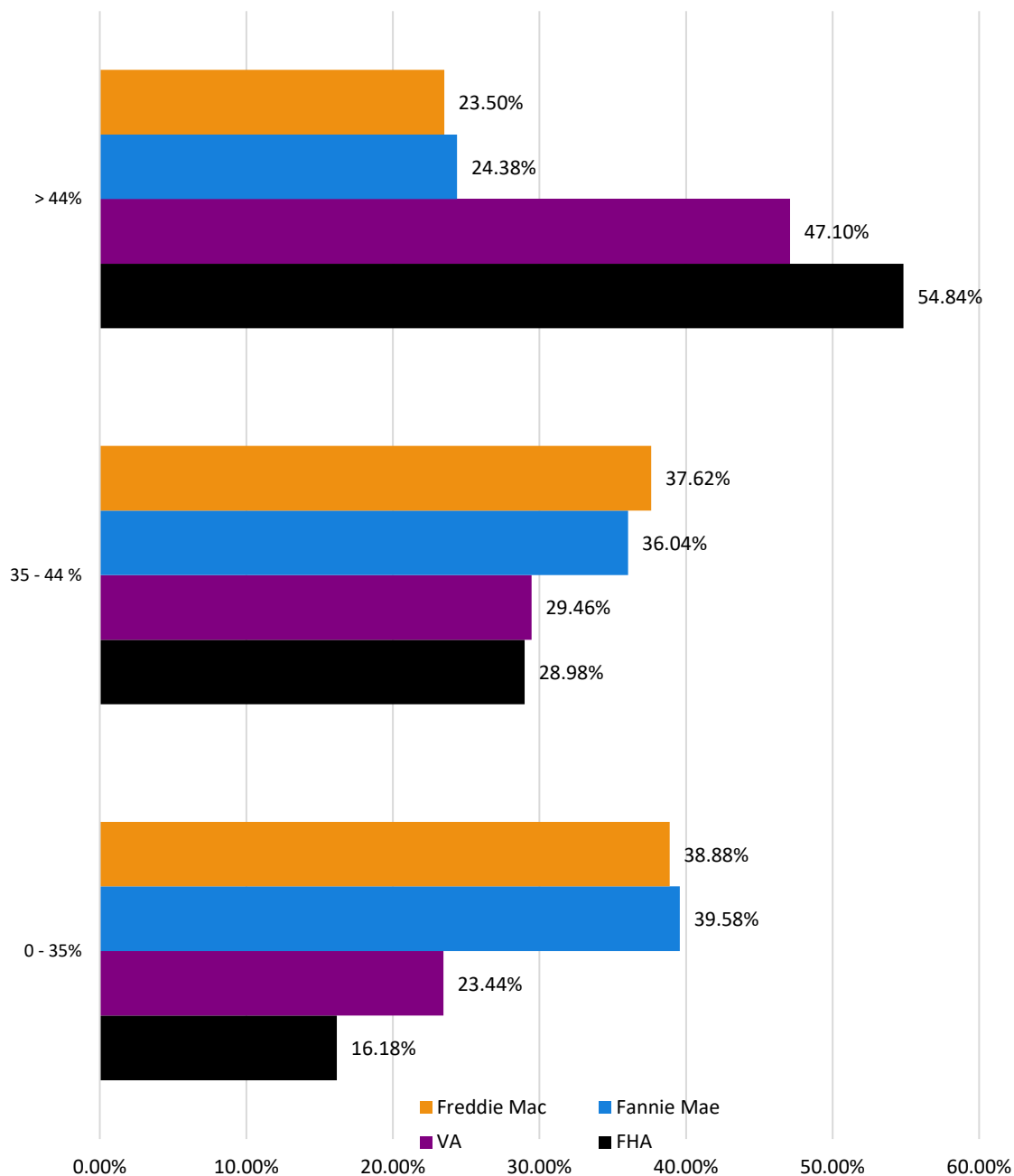
**Table 16. Share of Loans by DTI**

<i>Purchase DTI</i>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
All	301,457	25	33	40	46	50	39
Fannie	109,699	24	31	39	45	48	37
Freddie	93,845	24	31	38	44	48	37
Ginnie	97,913	31	38	45	51	55	44
<i>Refi DTI</i>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
All	104,008	24	32	40	45	49	39
Fannie	41,775	23	30	38	44	47	37
Freddie	34,560	24	32	39	44	48	38
Ginnie	27,673	28	35	43	49	54	42
<i>All DTI</i>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
All	405,465	25	32	40	46	50	39
Fannie	151,474	24	31	38	44	48	37
Freddie	128,405	24	31	39	44	48	37
Ginnie	125,586	30	37	44	50	55	43
<i>Purchase DTI: Ginnie Mae Breakdown By Source</i>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
All	97,913	31	38	45	51	55	44
FHA	57,420	33	39	46	51	55	45
VA	35,711	29	36	44	51	56	43
Other	4,782	27	31	36	40	43	35
<i>Refi DTI: Ginnie Mae Breakdown By Source</i>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
All	27,673	28	35	43	49	54	42
FHA	15,820	29	36	44	50	55	43
VA	11,803	27	34	42	49	54	41
Other	50	15	22	31	38	41	30
<i>All DTI: Ginnie Mae Breakdown By Source</i>							
<b>Names</b>	<b>Number of Loans</b>	<b>P10</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>P90</b>	<b>Mean</b>
All	125,586	30	37	44	50	55	43
FHA	73,240	32	39	45	51	55	44
VA	47,514	29	36	43	50	56	43
Other	4,832	27	31	36	40	43	35

Sources: Fannie Mae, Freddie Mac, and Ginnie Mae disclosure files. Note: All averages are rounded to the nearest whole number.



**Figure 41. Debt-to Income by Agency**



Sources: Fannie Mae, Freddie Mac, and Ginnie Mae disclosure files.

## 10.4 High LTV Loans: Ginnie Mae vs. GSEs

The share of high-LTV agency loans going to borrowers with FICO scores above 750 has increased by approximately 4% between periods May 2020 – July 2020 and May 2022 – July 2022. The share of borrowers with DTIs below 35% decreased by approximately 12% over the same period. From the period between May 2020 – July 2020 to the period between May 2022 – July 2022, the share of high-LTV loans increased in the Ginnie Mae guarantee book by approximately 6% and the GSE portfolios increased by approximately 111%. 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 66.03% of its issuances between May 2022 and July 2022 having LTVs of 95 or above, compared to 20.21% for the GSEs.

**Table 17. Share of Loans with LTV > 95**

	<b>Ginnie Mae</b>	<b>GSE</b>	<b>All</b>
<i>May 2020 - Jul 2020</i>	62.09%	9.58%	21.48%
<i>May 2022 - Jul 2022</i>	66.03%	20.21%	34.74%

**Table 18. Agency Market Share by DTI and FICO for Loans with LTV > 95 (May 2020-Jul 2020)**

<b>FICO</b>						
<i>DTI</i>	<650	650-700	700-750	≥750	NA	All
<b>&lt;35</b>	2.17%	4.31%	6.43%	10.50%	0.42%	23.82%
<b>35-45</b>	4.54%	8.59%	10.07%	10.66%	0.16%	34.01%
<b>≥45</b>	4.17%	7.65%	6.70%	5.59%	0.08%	24.20%
<b>NA</b>	1.83%	2.82%	2.53%	2.85%	7.93%	17.97%
<b>All</b>	<b>12.71%</b>	<b>23.37%</b>	<b>25.74%</b>	<b>29.59%</b>	<b>8.59%</b>	<b>100.00%</b>

**Table 19. Agency Market Share by DTI and FICO for Loans with LTV > 95 (May 2022-Jul 2022)**

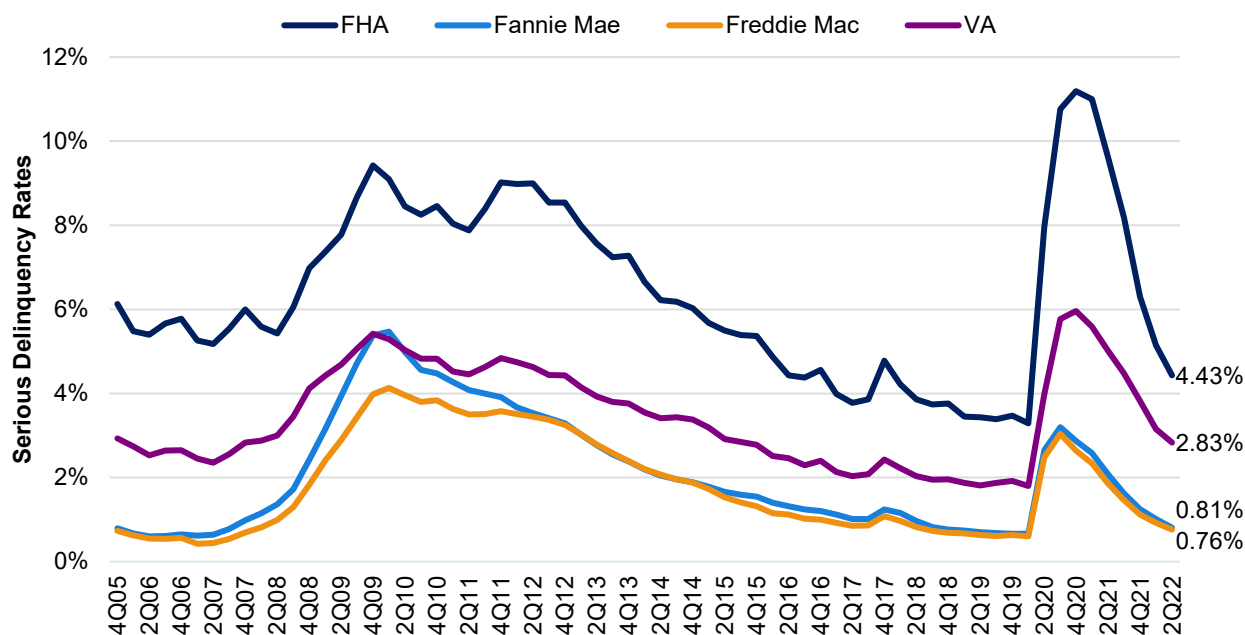
<b>FICO</b>						
<i>DTI</i>	<650	650-700	700-750	≥750	NA	All
<b>&lt;35</b>	2.33%	3.95%	5.45%	9.10%	0.04%	20.88%
<b>35-45</b>	5.84%	9.11%	10.55%	11.96%	0.04%	37.51%
<b>≥45</b>	7.17%	11.95%	10.39%	9.58%	0.04%	39.14%
<b>NA</b>	0.55%	0.38%	0.26%	0.25%	1.04%	2.47%
<b>All</b>	<b>15.89%</b>	<b>25.39%</b>	<b>26.65%</b>	<b>30.90%</b>	<b>1.17%</b>	<b>100.00%</b>

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

## 10.5 Serious Delinquency Rates

Serious delinquency rates for single-family GSE, FHA, and VA loans all continued to fall sharply in Q2 2022. From Q1 2022 to Q2 2022, Fannie and Freddie serious delinquencies decreased 20 and 16 bps, respectively, or 20% and 17% 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 72 and 32 bps respectively. This decline in serious delinquency rates is consistent with the decrease in the number of loans in forbearance captured in [Section 11 below](#).

**Figure 42. 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 Q2 2022.

## 11 FORBEARANCE TRENDS

As of the end of June 2022, 129,734 Ginnie Mae loans were in forbearance. This represents a 5.6% decrease MoM. 3,074 of loans in forbearance were removed from MBS pools and 126,660 loans in forbearance still actively remain in pools. Most liquidated loans (2,209) were FHA and within that subset, 1,402 of those loans were originated by non-banks.

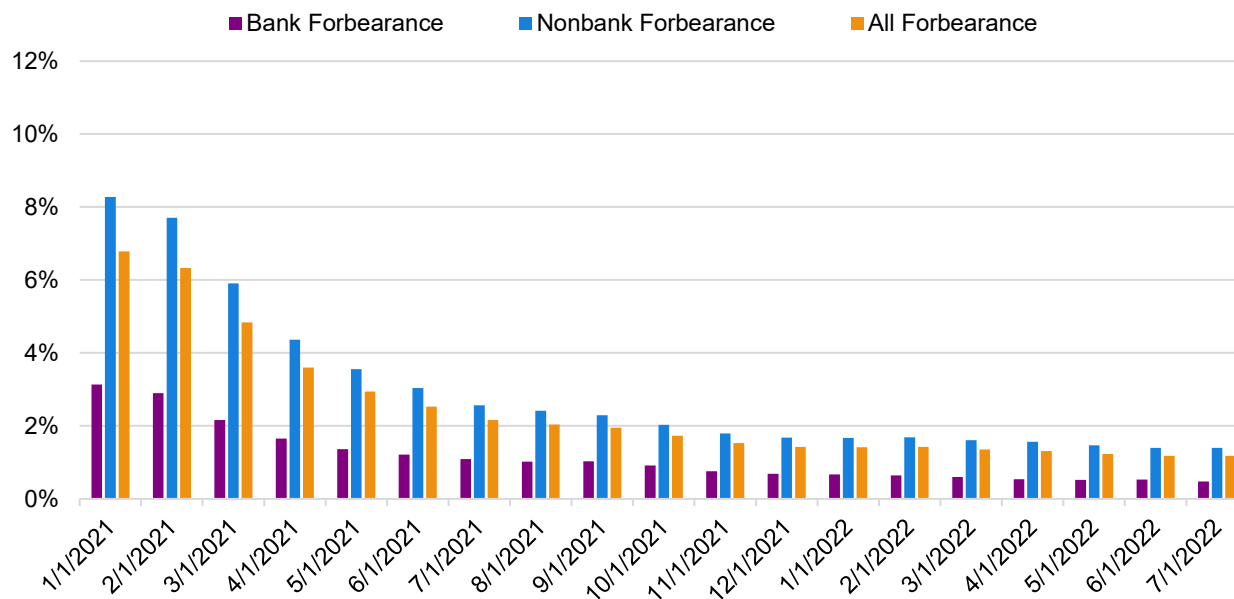
**Table 20. Forbearance Snapshot**

<b>All Loans in Forbearance – June 2022</b>						
	<b>FICO</b>	<b>Note</b>	<b>Current Principal</b>	<b>First Time</b>	<b>Purchase</b>	<b>Loan Count</b>
<b>Ginnie Bank</b>	657	3.3	\$187,386.55	77.2	71.4	129,734
<b>Nonbank</b>	673	3.6	\$139,477.52	79.5	81.5	13,510
<b>FHA</b>	656	3.3	\$193,254.76	76.9	70.6	116,224
<b>Bank</b>	654	3.4	\$184,105.90	80.0	76.2	94,080
<b>Nonbank</b>	668	3.7	\$133,454.30	83.1	85.2	10,264
<b>VA</b>	652	3.4	\$190,572.75	79.7	75.5	83,816
<b>Bank</b>	667	3.1	\$234,876.20	63.6	52.4	24,998
<b>Nonbank</b>	684	3.4	\$183,424.45	64.3	67.6	2,412
<b>Nonbank</b>	665	3.0	\$239,897.11	63.5	51.2	22,586
<b>Loans in Forbearance and Removed from Pools – June 2022</b>						
	<b>FICO</b>	<b>Note</b>	<b>Current Principal</b>	<b>First Time</b>	<b>Purchase</b>	<b>Loan Count</b>
<b>Ginnie Bank</b>	659	3.7	\$147,022.21	73.3	68.5	3,074
<b>Nonbank</b>	667	4.3	\$99,293.00	72.6	73.6	1,003
<b>FHA</b>	657	3.6	\$175,468.10	73.5	67.2	2,071
<b>Bank</b>	653	3.9	\$137,821.70	76.8	73.6	2,209
<b>Nonbank</b>	662	4.4	\$96,581.25	75.1	72.6	807
<b>VA</b>	651	3.7	\$170,186.06	77.4	73.9	1,402
<b>Bank</b>	670	3.3	\$206,214.36	58.0	51.0	607
<b>Nonbank</b>	682	3.8	\$137,212.56	57.9	70.2	125
<b>Nonbank</b>	668	3.2	\$220,728.30	58.0	47.8	482
<b>Loans in Forbearance that Remain in Pools – June 2022</b>						
	<b>FICO</b>	<b>Note</b>	<b>Current Principal</b>	<b>First Time</b>	<b>Purchase</b>	<b>Loan Count</b>
<b>Ginnie Bank</b>	657	3.3	\$188,310.06	77.2	71.5	126,660
<b>Nonbank</b>	673	3.6	\$142,924.55	79.9	81.9	12,507
<b>FHA</b>	656	3.3	\$193,508.91	77.0	70.7	114,153
<b>Bank</b>	654	3.4	\$185,141.26	80.1	76.3	91,871
<b>Nonbank</b>	669	3.7	\$137,414.16	83.5	85.9	9,457
<b>VA</b>	652	3.4	\$190,957.22	79.7	75.5	82,414
<b>Bank</b>	666	3.1	\$235,564.16	63.7	52.4	24,391
<b>Nonbank</b>	684	3.4	\$186,851.06	64.6	67.5	2,287
<b>Nonbank</b>	665	3.0	\$240,316.50	63.6	51.2	22,104

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 June 2022; \*Averages weighted by remaining principal balance of the loans.

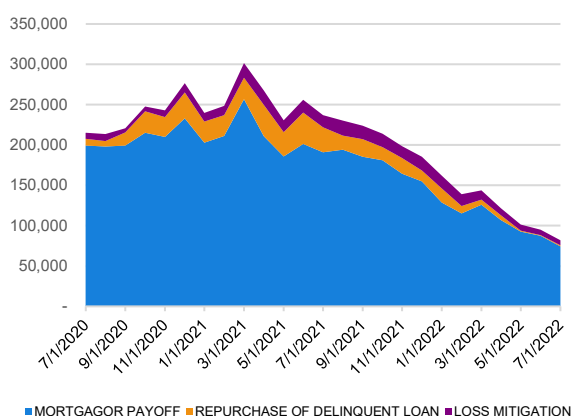
The current share of Ginnie Mae loans in forbearance stands at 1.18% as of the end of July 2022, the same as observed as of the end of June 2022. With the forbearance rate for Ginnie Mae collateral having been just 0.25% in March of 2020, prior to lockdown and the introduction of borrowers' right to forbearance under the CARES Act, the current rates remain approximately five times higher than the forbearance rate just prior to the pandemic, and the rate of convergence to pre-pandemic rates has continued to slow down in July 2022.

**Figure 43. Share of Ginnie Mae Loans in Forbearance.**

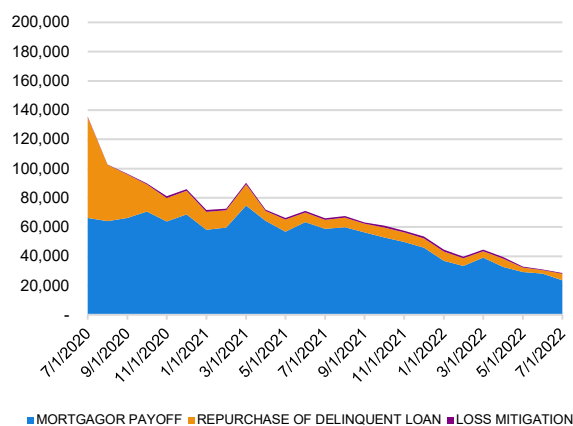


Sources: Recursion. Notes: Data as of July 2022

**Figure 44. Number of Loans Removed from Pools: Non-bank**



**Figure 45. Number of Loans Removed from Pools: Bank**

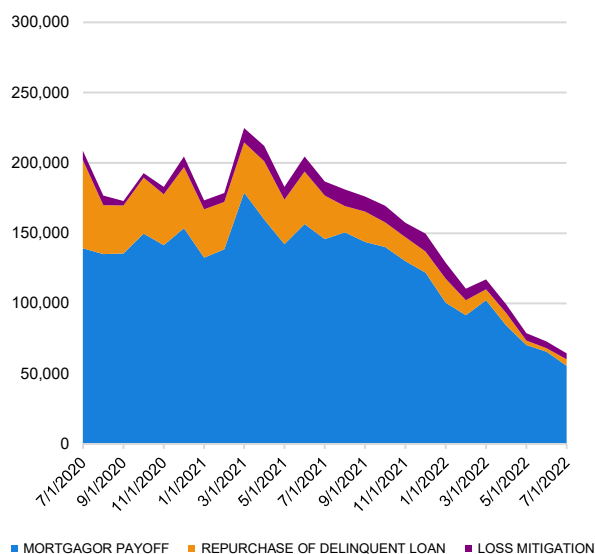


Sources: Recursion. Notes: data as of July 2022. Beginning with the May 2022 GMAR Report, Credit Unions will be classified as Banks based on the updated Recursion data source.

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 now more likely to have coupons less than 3.5% (bottom charts: “Number of Loans Removed from Pools by Coupon”). In July 2022, the number of loans repurchased due to delinquency increased 77% to 4,600 for FHA and increased 67% to 782 for VA loans.

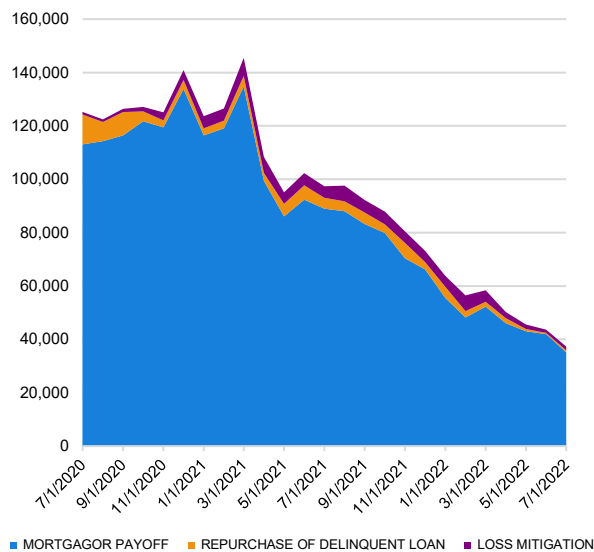
**Figure 46. Number of Loans Removed from**

**Pools: FHA**

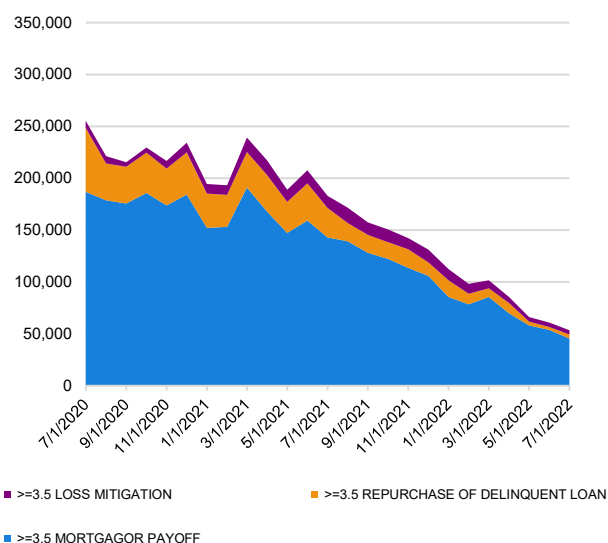
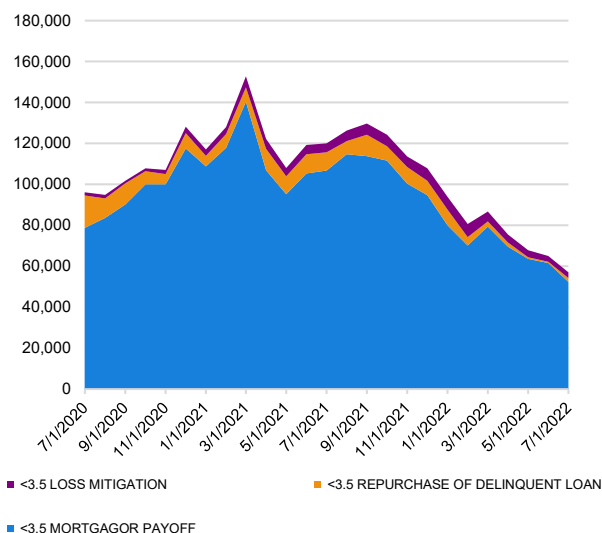


**Figure 47. Number of Loans Removed**

**from Pools: VA**



**Figure 48. Number of Loans Removed from Pools by Coupon:**



## 12 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 83.2% 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 July 2022, over half (51.1%) of the Ginnie Mae MSRs are owned by the top six firms.

**Table 21. Top 30 Holders of Ginnie Mae Mortgage Servicing Rights (MSRs), by UPB**

Rank	MSR Holder	UPB (\$ millions)	Share	Cumulative Share
1	DBA FREEDOM HOME MOR	\$253,806,254,213	12.4%	12.37%
2	PENNYMAC LOAN SERVIC	\$234,374,013,524	11.4%	23.79%
3	LAKEVIEW LOAN SERVIC	\$222,499,226,187	10.8%	34.63%
4	NATIONSTAR MORTGAGE,	\$119,826,875,599	5.8%	40.47%
5	WELLS FARGO BANK, NA	\$116,873,257,202	5.7%	46.16%
6	ROCKET MORTGAGE, LLC	\$100,832,781,176	4.9%	51.08%
7	CARRINGTON MORTGAGE	\$76,414,538,333	3.7%	54.80%
8	NEWREZ LLC	\$64,336,218,617	3.1%	57.93%
9	CALIBER HOME LOANS,	\$52,110,404,567	2.5%	60.47%
10	U. S. BANK, NA	\$48,729,226,940	2.4%	62.85%
11	UNITED WHOLESALE MOR	\$44,464,385,062	2.2%	65.01%
12	PLANET HOME LENDING,	\$35,293,835,485	1.7%	66.73%
13	MORTGAGE RESEARCH CE	\$35,050,605,276	1.7%	68.44%
14	LOANDEPOT.COM, LLC	\$34,294,148,393	1.7%	70.11%
15	NAVY FEDERAL CREDIT	\$28,639,304,476	1.4%	71.51%
16	AMERIHOME MORTGAGE C	\$25,333,060,748	1.2%	72.74%
17	GUILD MORTGAGE COMPA	\$21,305,064,478	1.0%	73.78%
18	THE MONEY SOURCE INC	\$21,141,396,150	1.0%	74.81%
19	TRUIST BANK	\$20,472,321,949	1.0%	75.81%
20	CROSSCOUNTRY MORTGAG	\$16,974,158,115	0.8%	76.64%
21	NEW AMERICAN FUNDING	\$16,250,929,981	0.8%	77.43%
22	VILLAGE CAPITAL & IN	\$14,739,825,023	0.7%	78.15%
23	MOVEMENT MORTGAGE, LL	\$14,139,619,935	0.7%	78.83%
24	CMG MORTGAGE, INC.	\$14,052,326,953	0.7%	79.52%
25	RUSHMORE LOAN MANAGE	\$13,958,889,004	0.7%	80.20%
26	IDAHO HOUSING AND FI	\$13,667,083,833	0.7%	80.87%
27	CITIZENS BANK N.A.	\$13,564,535,727	0.7%	81.53%
28	MIDFIRST BANK	\$12,240,447,859	0.6%	82.12%
29	PHH MORTGAGE CORPORA	\$11,577,506,171	0.6%	82.69%
30	CARDINAL FINANCIAL C	\$10,686,832,838	0.5%	83.21%

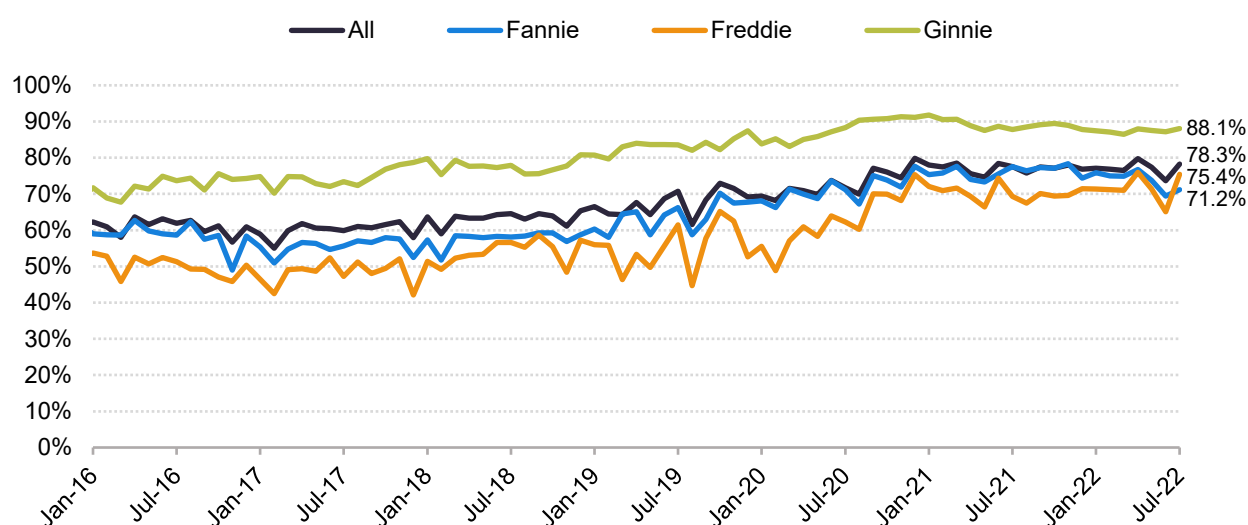
Source: Deloitte. Data as of July 2022.



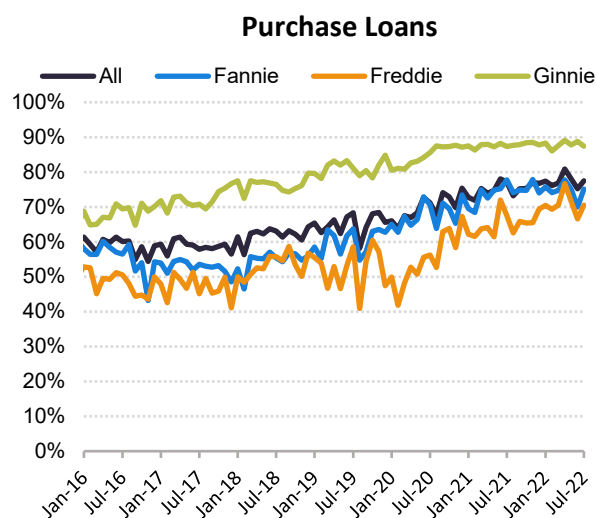
## 13 AGENCY NONBANK ORIGINATORS

Total agency non-bank origination experienced an increase in July, up approximately 6% since last month. This increase in non-bank origination share was driven primarily by Freddie Mac (non-bank origination share up 16% MoM). The Ginnie Mae non-bank share rose to 88.1% as of July 2022 and has remained 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.

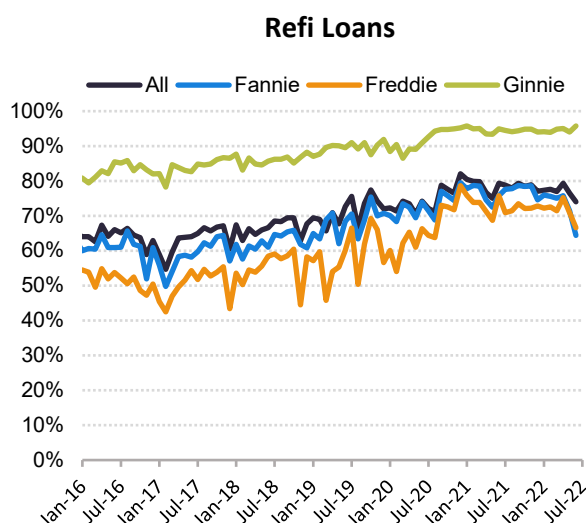
**Figure 49. Agency Nonbank Originator Share (All, Purchase, Refi)**



**Figure 50. Nonbank Origination Share: Purchase Loans**



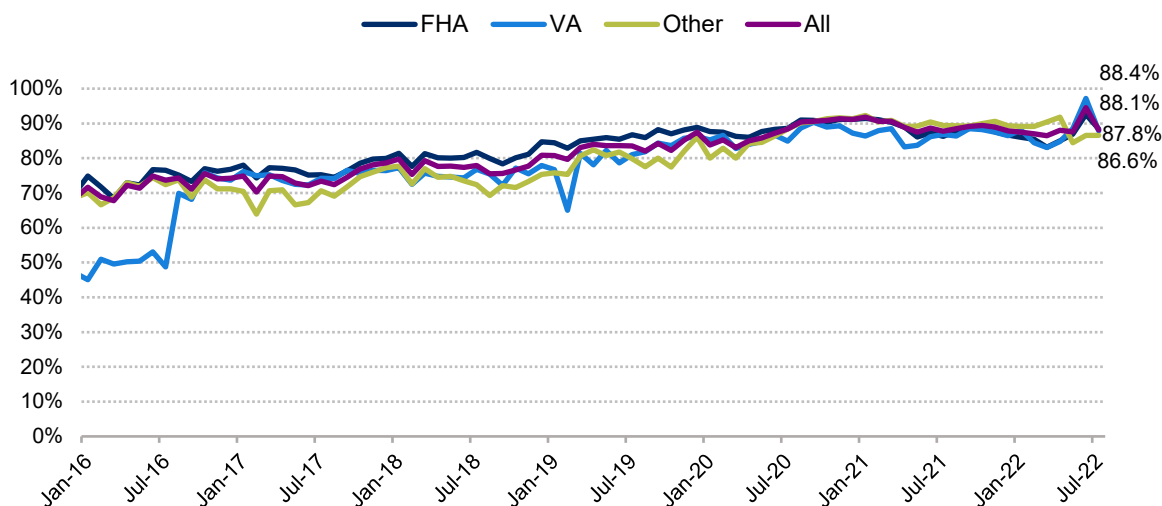
**Figure 51. Nonbank Origination Share: Refi Loans**



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

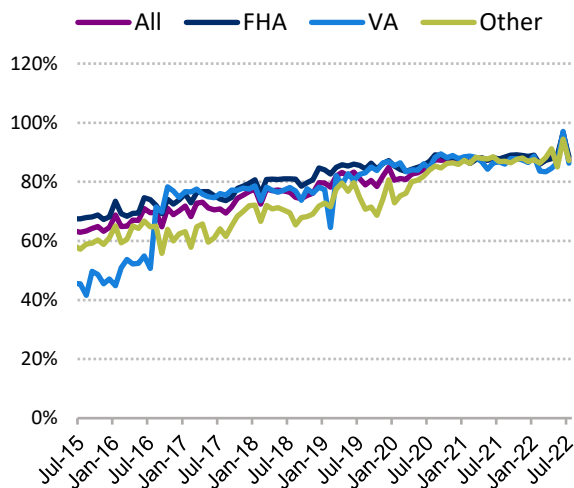
Ginnie Mae's total non-bank originator share remained relatively stable in July 2022.

**Figure 52. Ginnie Mae Nonbank Originator Share (All, Purchase, Refi)**



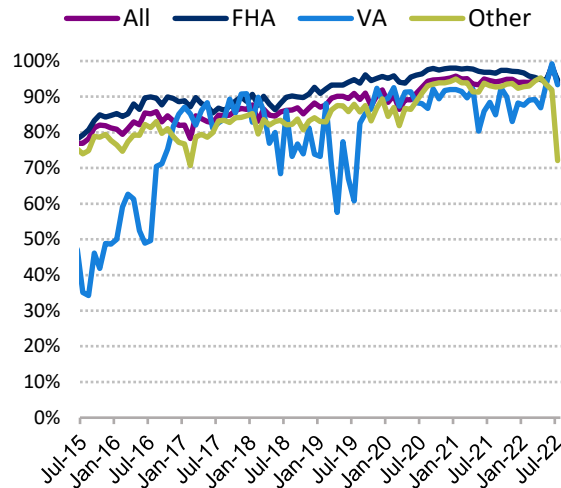
**Figure 53. Ginnie Mae Nonbank Share:**

**Purchase Loans**



**Figure 54. Ginnie Mae Nonbank Share:**

**Refi Loans**



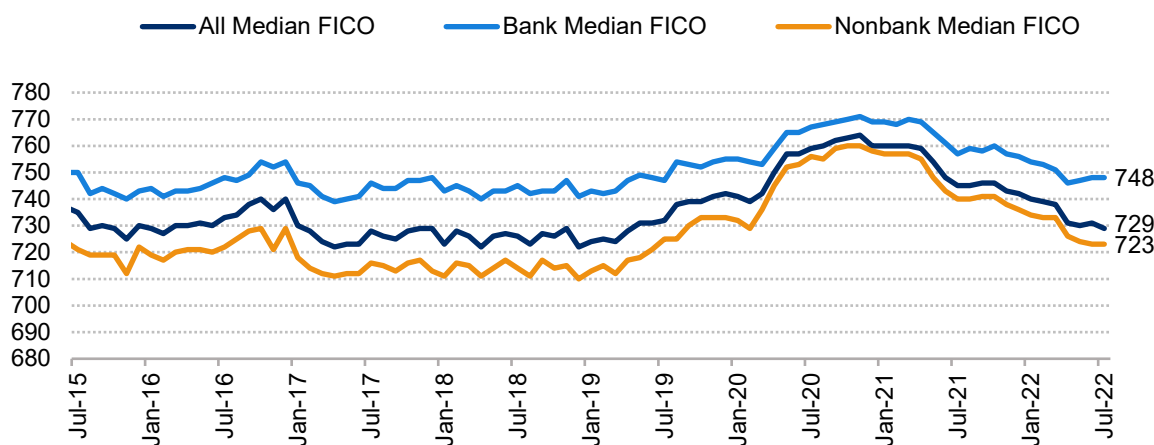
Sources: Recursion. Notes: Data as of July 2022.

## 13.1 Bank vs. Nonbank Originators Historical Credit Box, Ginnie Mae vs. GSE

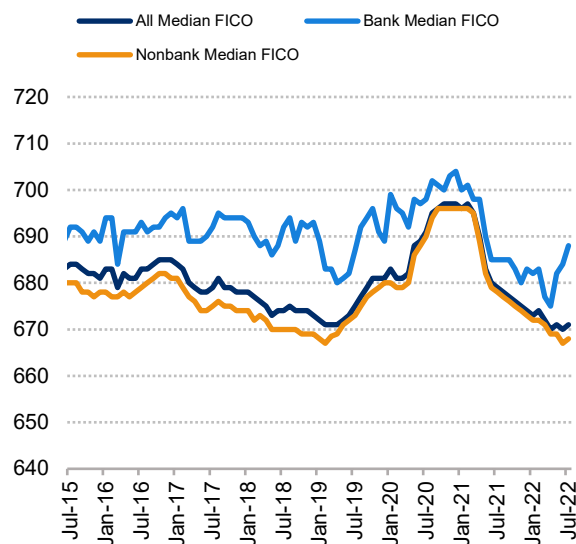
### 13.1.1 (FICO, LTV, DTI)

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 remained the same from June 2022 to July 2022. The agency median FICO decreased by 2 FICO score points to 729 MoM.

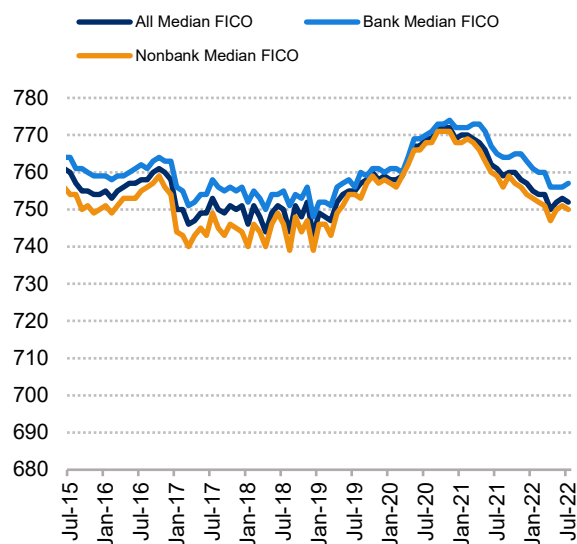
**Figure 55. Agency FICO: Bank vs. Nonbank**



**Figure 56. GSE FICO: Bank vs. Nonbank**



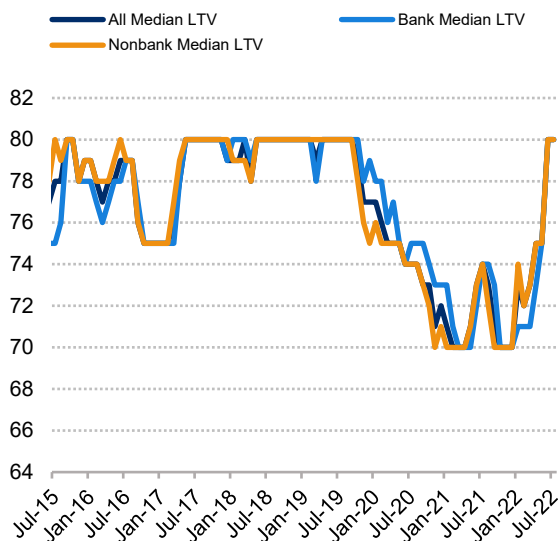
**Figure 57. Ginnie Mae FICO: Bank vs. Nonbank**



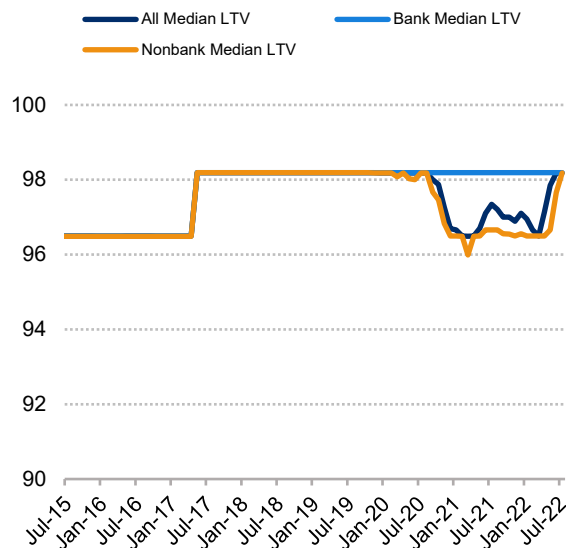
Sources: Recursion: Data as of July 2022.

The median LTV for all GSE originators remained the same in July 2022 MoM at 80%. While Ginnie Mae median bank LTV has been very flat at 98.19% since January 2021, non-bank median LTV has fluctuated more, increasing 0.5% MoM to 98.18% in July 2022. Ginnie Mae median DTI remained consistent MoM at approximately 44% in July 2022 in non-bank originations.

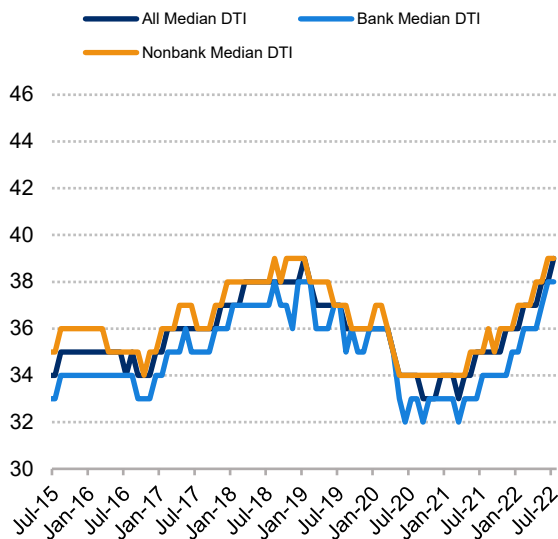
**Figure 58. GSE LTV: Bank vs. Nonbank**



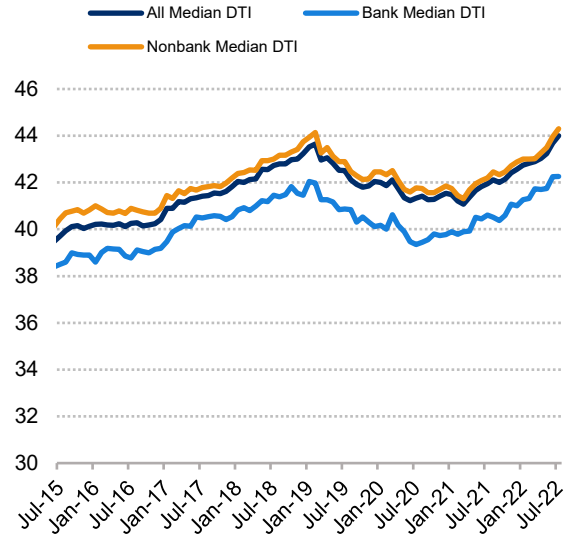
**Figure 59. Ginnie Mae LTV: Bank vs. Nonbank**



**Figure 60. GSE DTI: Bank vs. Nonbank**



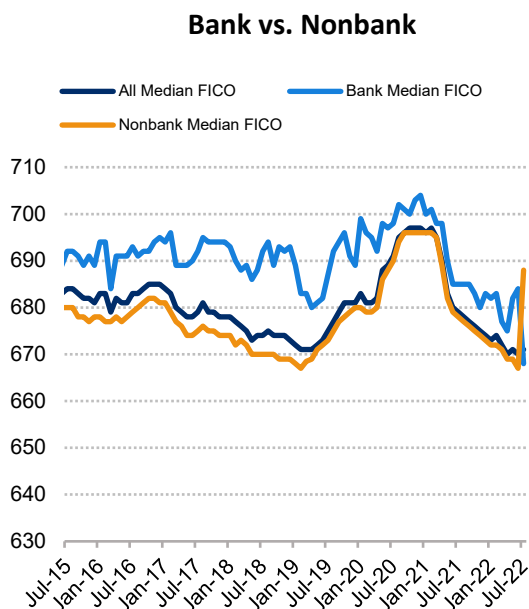
**Figure 61. Ginnie Mae DTI: Bank vs. Nonbank**



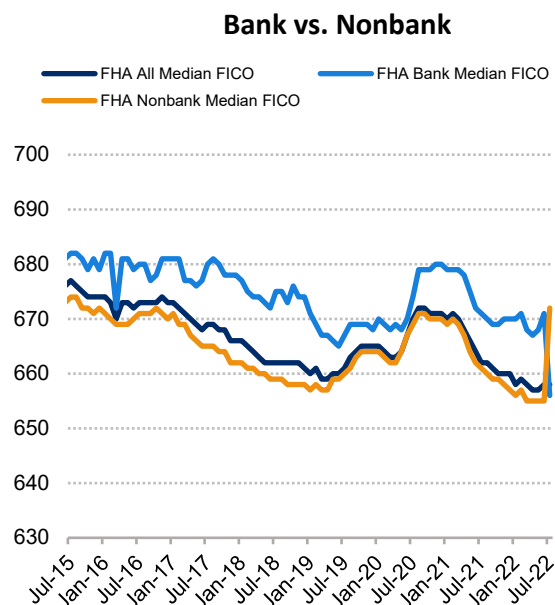
Sources: Recursion. Notes: Data as of July 2022.

In July 2022, the median FICO score for Ginnie Mae bank decreased by 16 points and non-bank originators increased by 21 points MoM. The median FICO for all Ginnie originations increased to 671 MoM. The gap between banks and non-banks is most apparent in VA lending (36-point spread).

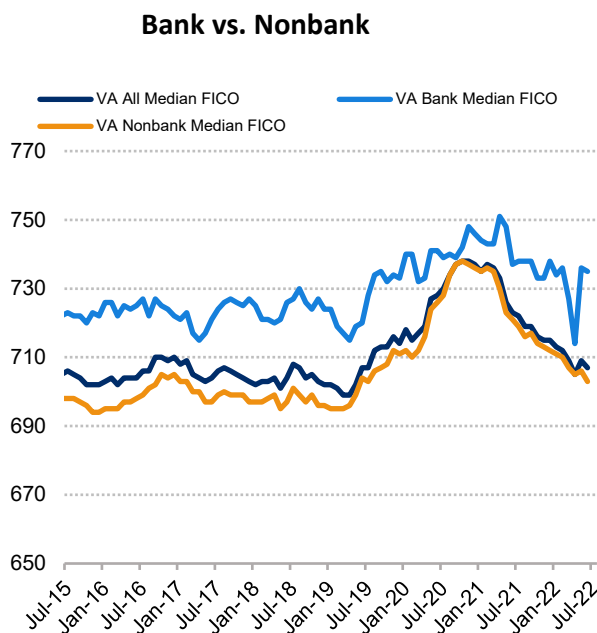
**Figure 62. Ginnie Mae FICO Score:**



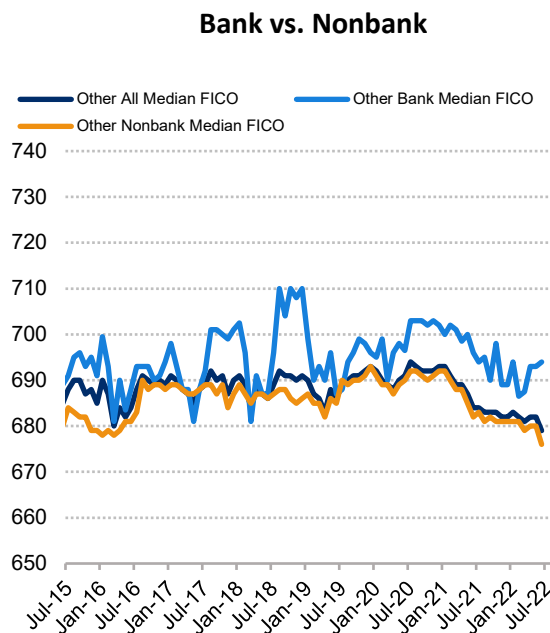
**Figure 63. Ginnie FHA FICO Score:**



**Figure 64. Ginnie Mae VA FICO Score:**



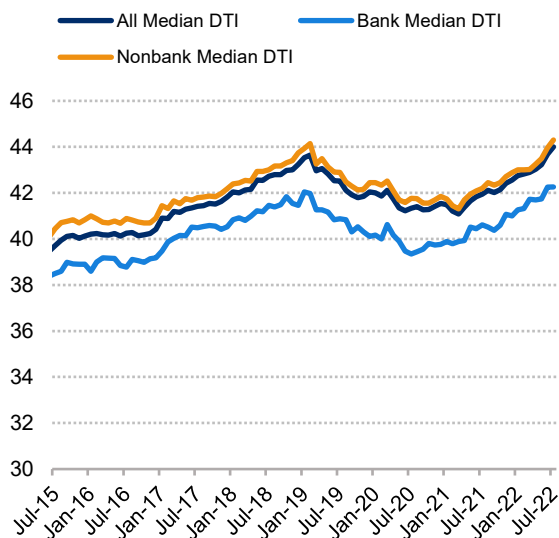
**Figure 65. Ginnie Mae Other FICO Score:**



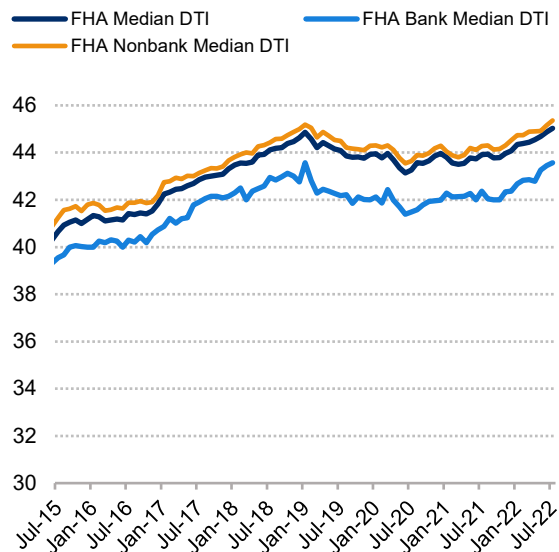
Sources: Recursion. Data as of July 2022.

Median DTI for Ginnie Mae nonbank 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 nonbank DTI is relatively small.

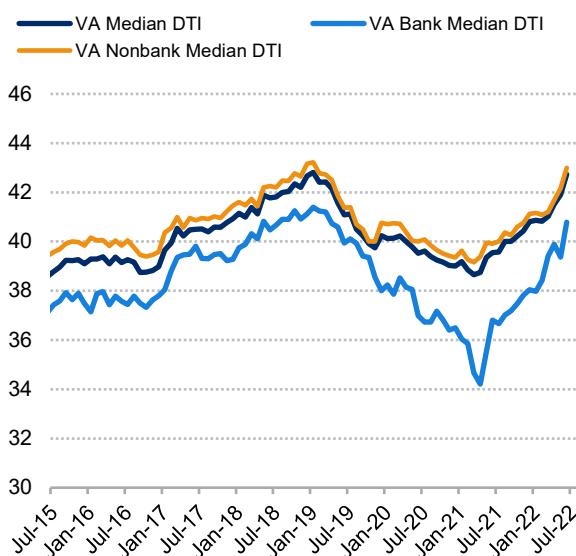
**Figure 66. Ginnie Mae DTI FI:**  
**Bank vs. Nonbank**



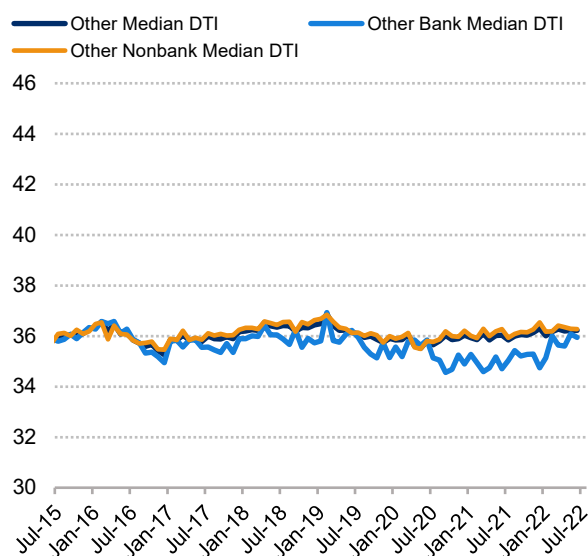
**Figure 67. Ginnie Mae FHA DTI:**  
**Bank vs. Nonbank**



**Figure 68. Ginnie Mae VA DTI:**  
**Bank vs. Nonbank**



**Figure 69. Ginnie Mae Other DTI:**  
**Bank vs. Nonbank**



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

## U.S. HOUSING MARKET

### 14 HOUSING AFFORDABILITY

#### 14.1 Housing Affordability – Home Price Appreciation

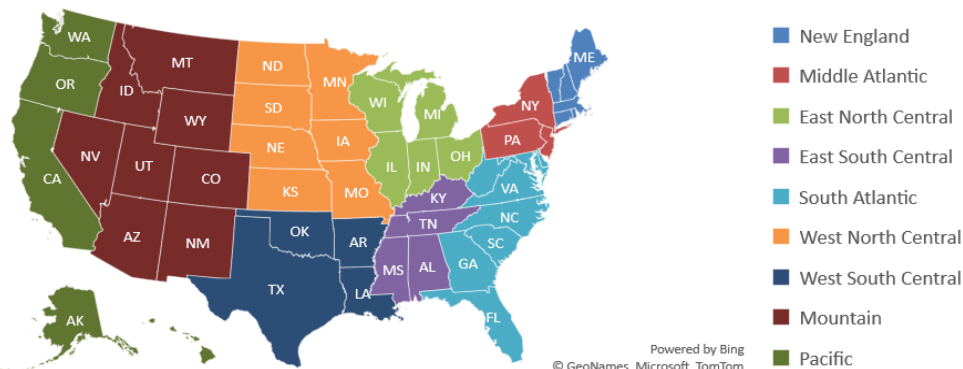
Home prices have increased rapidly during the pandemic, with Compound Annual Growth Rate (CAGR) for HPI at 19.2% between April 2020 and May 2022. Over that same period, the Mountain region has had the greatest home price appreciation (24.0% CAGR), while in the West North Central region, increases in home values have been the slowest (16.3% CAGR).

**Table 22. Regional HPI Trend Analysis**

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	-8.4%	-5.3%	-9.8%	-5.5%	-14.2%	-5.9%	-2.1%	-15.1%	-17.9%	-10.4%
Trough to Pandemic CAGR	3.7%	3.5%	4.8%	4.5%	5.9%	4.6%	5.1%	8.3%	8.1%	5.4%
Pandemic CAGR	19.9%	16.5%	16.4%	19.4%	22.3%	16.3%	18.7%	24.0%	19.4%	19.2%
12-Month Period of Max HPI Growth During Pandemic	7-2020 to 6-2021	8-2020 to 7-2021	7-2020 to 6-2021	4-2021 to 3-2022	3-2021 to 2-2022	5-2021 to 4-2022	6-2021 to 5-2022	9-2020 to 8-2021	7-2020 to 6-2021	8-2020 to 7-2021
Max 12-Month Period Change, During Pandemic	21.8%	18.1%	17.1%	21.5%	23.9%	16.1%	19.3%	25.7%	21.8%	19.3%
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%	6.8%	8.5%	15.3%	7.4%	7.4%	18.0%	22.3%	10.7%

**Figure 70. FHFA.US Census Subregions as defined by the US Census Bureau.**

US Census Subregions



Source: HPI data from FHFA.US Census Subregions as defined by the US Census Bureau. Notes: HPI data as of May 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, 3/2022. CAGR =  $(\text{End Value}/\text{Starting Value})^{1/n} - 1$

S&P's CoreLogic Case-Shiller US National Housing Price Index's June 30, 2022, reporting data indicated that home prices had increased by 18.3% YoY as of June 2022. This latest reported YoY HPI appreciation value marks the 125<sup>th</sup> consecutive month of YoY increases, suggesting a continuity of home price increases.

**Table 23. Home Price Trends by State**

State	2000 to Peak	Peak to Trough	Trough to Current	YOY	Current HPI % Above Peak
<b>National</b>	<b>59.6%</b>	<b>-21.1%</b>	<b>91.9%</b>	<b>14.4%</b>	<b>51.4%</b>
AK	67.0%	-5.4%	42.3%	10.6%	34.7%
AL	41.6%	-15.1%	68.3%	15.8%	42.9%
AR	39.8%	-11.1%	60.6%	16.1%	42.7%
AZ	110.1%	-49.5%	186.7%	24.6%	44.8%
CA	144.8%	-47.1%	142.1%	19.0%	28.2%
CO	32.2%	-10.3%	144.6%	18.2%	119.3%
CT	72.8%	-19.7%	38.6%	17.0%	11.2%
DC	162.2%	-11.7%	113.5%	10.0%	88.4%
DE	88.4%	-23.5%	54.2%	15.5%	17.9%
FL	130.0%	-46.5%	152.3%	21.1%	35.0%
GA	35.9%	-27.1%	118.4%	18.1%	59.2%
HI	138.9%	-27.1%	101.4%	15.1%	46.8%
IA	27.8%	-5.4%	56.4%	11.5%	47.9%
ID	73.3%	-32.2%	207.0%	31.0%	108.0%
IL	49.8%	-23.8%	48.3%	12.4%	13.0%
IN	19.1%	-8.6%	79.6%	15.1%	64.1%
KS	31.0%	-7.7%	68.2%	14.3%	55.2%
KY	28.9%	-5.4%	66.7%	14.4%	57.7%
LA	51.6%	-6.7%	46.7%	9.7%	36.8%
MA	69.8%	-18.3%	79.1%	16.2%	46.4%
MD	126.2%	-26.4%	53.1%	12.8%	12.7%
ME	72.0%	-12.4%	80.0%	20.8%	57.7%
MI	18.4%	-31.6%	113.9%	15.6%	46.4%
MN	52.6%	-23.0%	85.6%	13.3%	42.9%
MO	39.2%	-15.0%	76.5%	15.2%	50.1%
MS	38.9%	-12.8%	47.2%	13.0%	28.3%
MT	79.4%	-13.5%	103.1%	22.5%	75.8%
NC	39.7%	-14.1%	88.4%	19.3%	61.8%
ND	51.6%	-0.8%	71.6%	9.5%	70.3%
NE	24.3%	-5.9%	79.9%	14.8%	69.2%
NH	72.8%	-21.9%	84.2%	19.5%	43.8%
NJ	102.2%	-22.8%	52.4%	16.4%	17.7%
NM	66.5%	-17.9%	58.2%	14.7%	29.9%
NV	117.4%	-59.4%	211.9%	20.1%	26.8%
NY	75.6%	-10.6%	58.3%	15.0%	41.6%
OH	19.5%	-16.6%	79.8%	14.9%	50.0%
OK	36.7%	-4.5%	63.0%	14.3%	55.6%
OR	85.6%	-28.6%	133.5%	18.4%	66.7%
PA	68.8%	-10.9%	59.2%	14.2%	41.8%
RI	108.1%	-28.2%	82.4%	18.9%	30.9%
SC	40.5%	-16.0%	89.3%	17.4%	59.0%
SD	40.1%	-2.3%	76.6%	17.5%	72.5%
TN	38.3%	-12.6%	105.8%	20.6%	79.9%
TX	35.8%	-3.0%	101.2%	17.2%	95.2%
UT	65.1%	-26.0%	158.9%	26.2%	91.4%
VA	95.0%	-18.8%	61.7%	14.3%	31.3%
VT	78.4%	-10.5%	58.5%	19.3%	41.9%
WA	83.3%	-27.3%	149.2%	19.9%	81.1%
WI	38.6%	-14.3%	72.0%	14.2%	47.4%
WV	39.2%	-5.9%	41.9%	12.7%	33.5%
WY	84.7%	-9.7%	56.1%	13.3%	41.0%

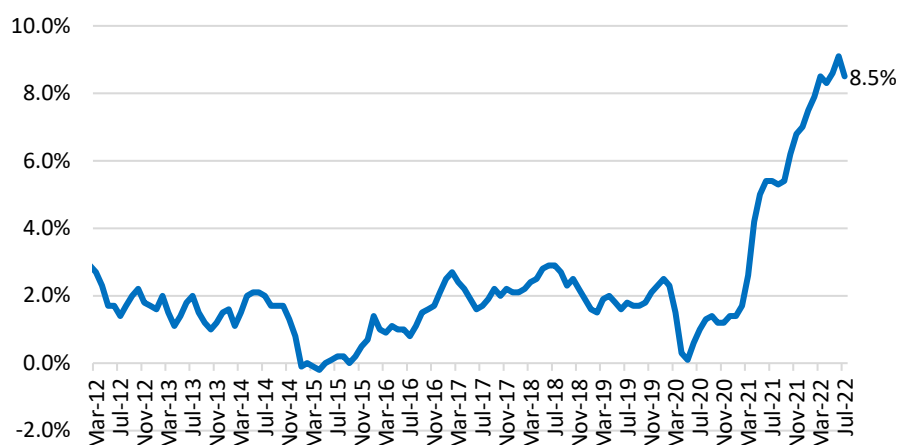
Source: FHFA/S&P Corelogic Case-Shiller US National Housing Price Index Data; Notes: HPI State-level data is provided quarterly by FHFA and presented here as of March 2022. Peak refers to the month when HPI reached the highest level for each state/US during the housing boom period, ranging from 2005 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



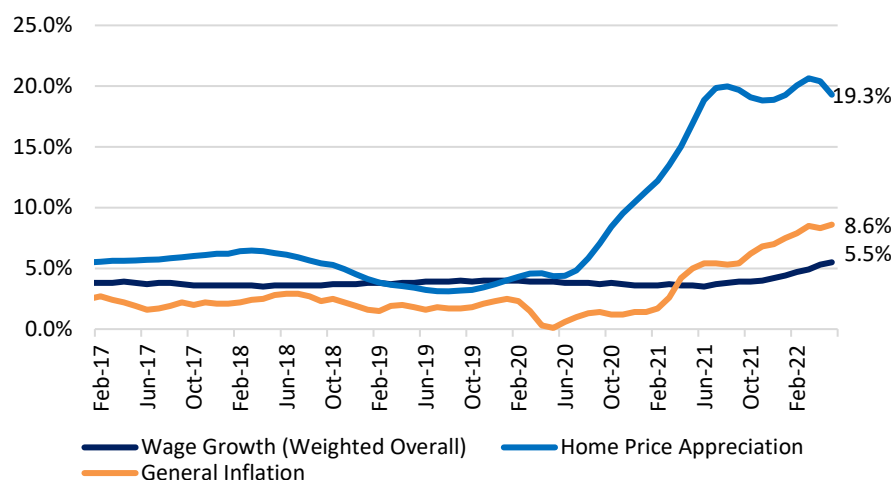
## 14.2 Housing Affordability – Inflation, Wages, and the Price of Real Estate and Rent

While housing affordability is directly affected by real estate price fluctuation, affordability is also impacted by general asset price changes. In June of 2022, inflation, as measured by the 12-month percent change in the Bureau of Labor Statistics' Consumer Price Index, had hit a 40-year high of 9.1%. Inflation has dropped slightly to 8.5% in July of 2022. As of June of 2022, rents were up 39.0% for 1 Bedroom units year over year, and 38.3% for 2 Bedroom units year over year. Meanwhile, wage growth remains significantly lower, and relatively flat at just 5.5%.

**Figure 71. Inflation | 12-Month Percent Change in CPI**



**Figure 72. Asset Price Appreciation vs. Wage Increases**



Metric	Statistic	
General Inflation	8.5%	
Home Price Appreciation	19.3%	
Rental Price Appreciation	1 Bedroom	2 Bedroom
	39.0%	38.3%
Wage Growth	5.5%	

Sources: Bureau of Labor Statistics – Consumer Price Index and Wage-Growth Data; Rent.com - Rental Price Appreciation; S&P/Case-Schiller U.S. National Home Price Index – Home Price Appreciation.

### 14.2.1 HOUSING AFFORDABILITY – MORTGAGE RATE TRENDS

While there have been recent decreases in mortgage rates, the Federal Reserve raised the Federal Funds Target Rate to address surging inflation. In June, Federal Reserve Chairman Jerome Powell indicated a potential increase in interest rates as inflation hit a 40-year high. Accordingly, the rate was raised by 75bps to a range of 2.25%-2.5% in July as inflation dropped by 60 bps (shown above in [Housing Affordability – Inflation, Wages, and the Price of Real Estate and Rent](#)). This increase in the target rate was the fourth consecutive hike since March 2022. As of August 25, 2022, the average 30-year and 15-year fixed rate mortgage rates were 5.55% and 4.85% respectively.

**Figure 73. Average Fixed Rate Mortgage Rates**

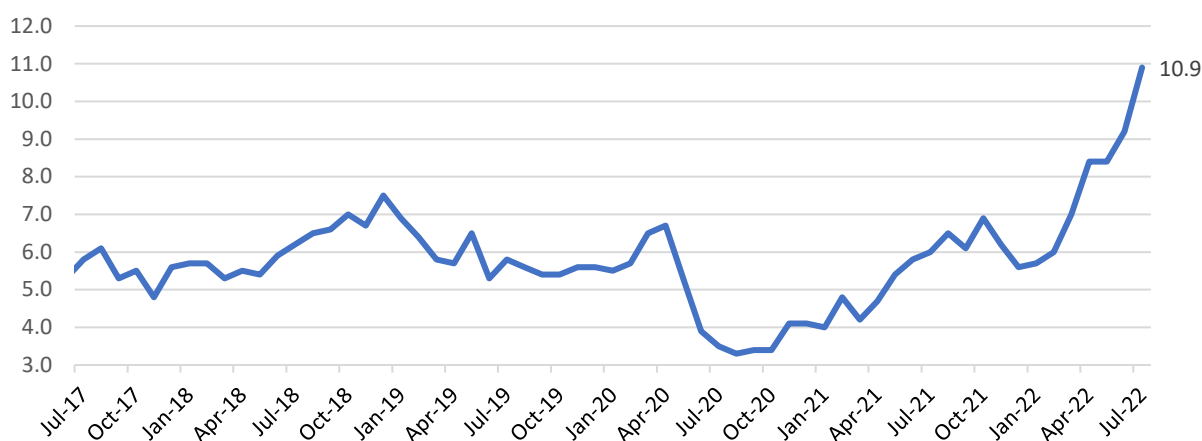


Sources: [federalreserve.gov/monetarypolicy/openmarket.htm](https://federalreserve.gov/monetarypolicy/openmarket.htm); Federal Reserve Chair News Conference, June 15, 2022, FRED

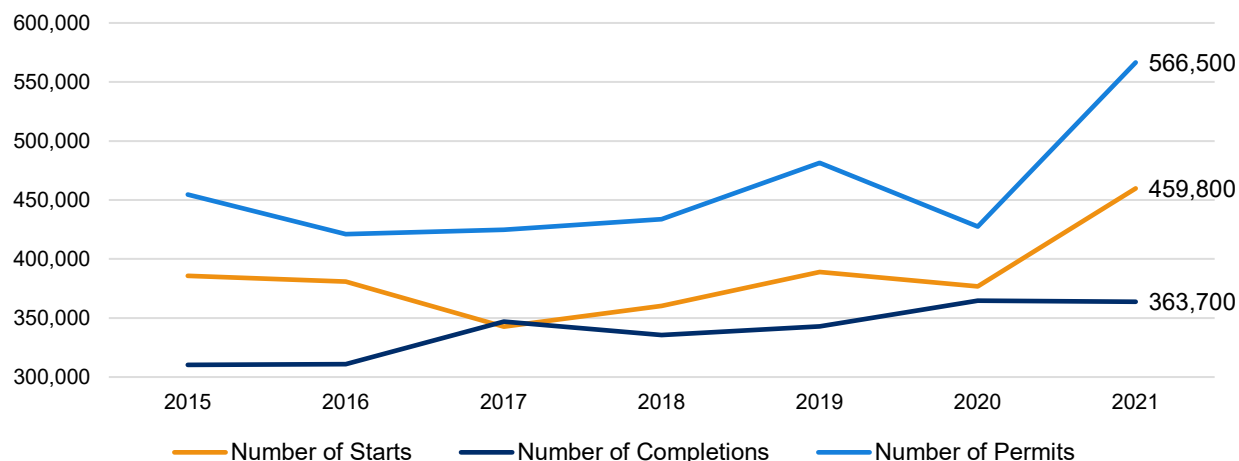
### 14.3 Housing Inventory

As of July 2022, there was 10.9 months of housing inventory on the market, despite estimates of a housing shortfall in excess of 1.5 million homes.<sup>7</sup> The July housing inventory values increased 18.5% MoM. As housing affordability continues to decline (see above section [14.2 – Inflation, Wages, and the Price of Real Estate and Rent](#)) single family home sales are unlikely to play a large role in the resolution of the housing shortfall. Multifamily construction volume metrics, shown in the bottom table, have been increasing.

**Figure 74. Single-Family Housing Inventory**



**Figure 75. Multifamily Construction Metrics: Permits, Starts, Completions**

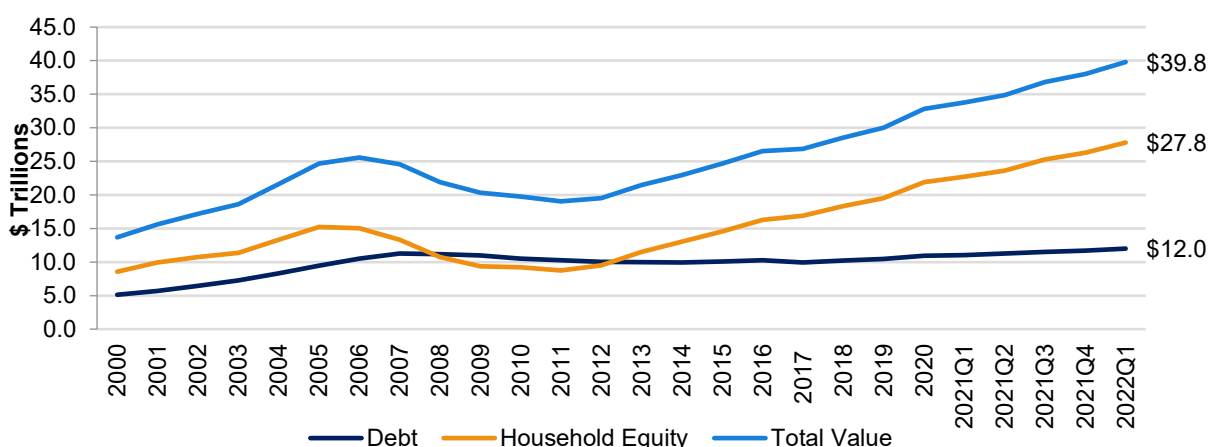


<sup>7</sup> "President Biden Announces New Actions to Ease the Burden of Housing Costs.", The White House, 16 May 2022, <https://www.whitehouse.gov/briefing-room/statements-releases/2022/05/16/president-biden-announces-new-actions-to-ease-the-burden-of-housing-costs/>. Press Release

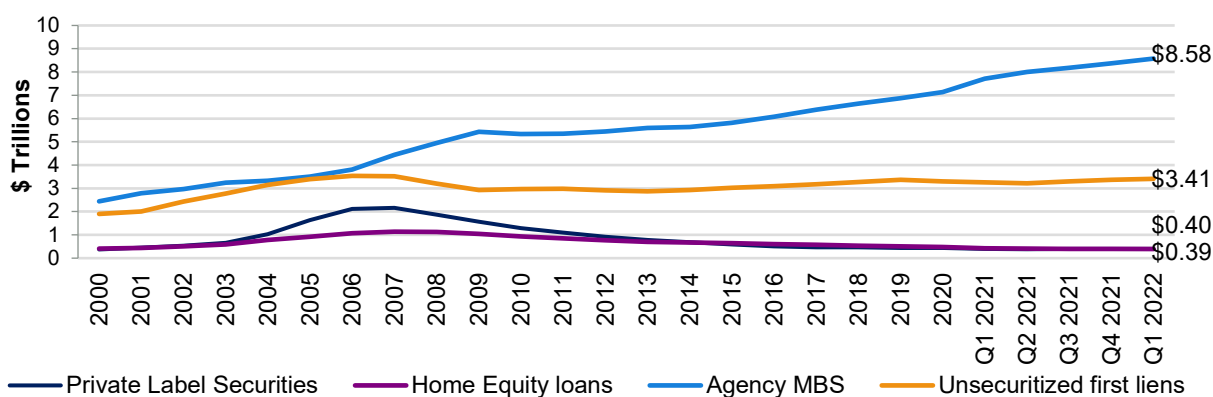
## 14.4 Size and Value of the US Housing Market

The total value of the single-family housing market reached \$39.8 trillion in Q1 2022. The total value of the US housing market is up 109% from its trough in 2011. Over that same period, mortgage debt outstanding has increased just 17%, approximately six times less rapidly. From Q4 2021 to Q1 2022 mortgage debt outstanding has increased from \$11.7 trillion to \$12.0 trillion. Thus, the expansion in the housing market is being driven primarily by increases in home values, as detailed in the [Housing Affordability Section](#), 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.

**Figure 76. Value of the US Housing Market.**



**Figure 77. Size of the US Residential Mortgage Market.**



Sources:

1. Federal Reserve Flow of Funds Data. Notes: Data as of Q1 2022.
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>.

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## 15 DISCLOSURE

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“The data provided in the Global Markets Analysis Report (hereinafter, the “report”) should be considered as general information only and is current only as of its specified date, unless otherwise noted. No information contained herein is, and should not be construed to be, investment advice. Nor does any information contained herein constitute an offer to sell, or is a solicitation of an offer to buy, securities.

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