Ginnie Mae
Our Guaranty Matters

GLOBAL MARKETS ANALYSIS REPORT

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

August 2023

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

This month's *Highlights* section introduces a new subsection within Section 8, *MBS Ownership*, Section 8.3, *SOMA Holdings*. The Highlights section provides a clear understanding of what the SOMA portfolio is and how it relates to the Fed's changes in monetary policy. It captures the driving factors that contribute to slower runoff and elevated MBS holdings on the Fed's balance sheet.

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

- The Agency REMIC Issuance section captures the continued upward trend in coupon rates for REMIC deals.
- The Agency Credit Breakdown section illustrates the leading role that Ginnie Mae continues to play in high-LTV lending and in providing homeownership opportunities to first-time homebuyers.
- The U.S. Housing Market section includes home price indices for each of the U.S. census regions by quarter. While inflation has slowed, it continues to be elevated and mortgage rates have continued to increase. Home prices are increasing at a much slower pace than seen in 2021 and 2022 but remain high. This section also includes an analysis of the average price of homes sold to median income buyers, which shows housing affordability remains historically low.

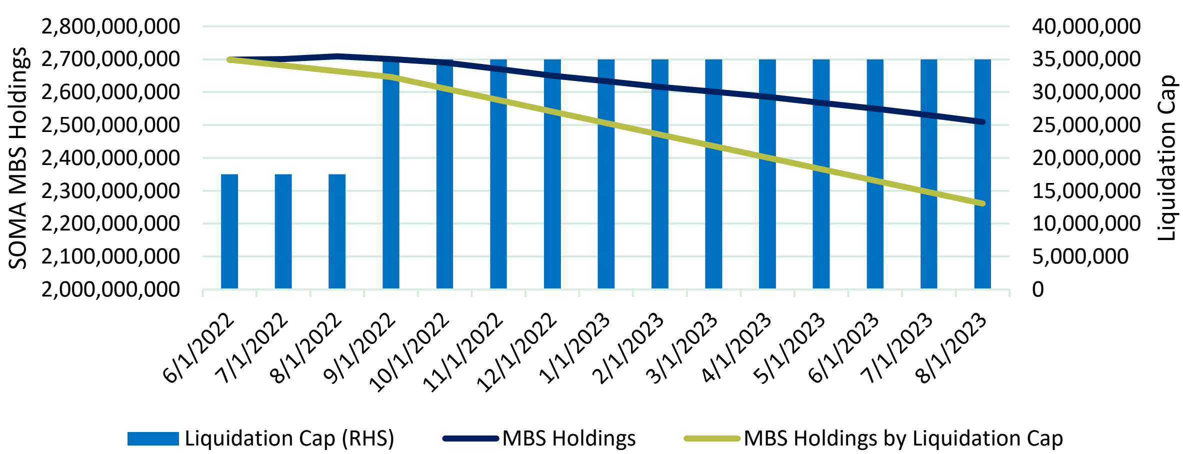
Highlights

This month's *Global Markets Analysis Report* includes a new subsection, Section 8.3, within Section 8, *MBS Ownership*, that covers the month-over-month change in the Federal Reserve's (Fed) System Open Market Account (SOMA). The SOMA portfolio contains dollar-denominated assets acquired through open market operations, which was a function of the Fed's quantitative easing (QE) program. These securities serve as collateral for U.S. currency in circulation and other liabilities on the Federal Reserve System's balance sheet, as a tool for the Federal Reserve's management of reserve balances, and as a mechanism for achieving the Federal Reserve's macroeconomic objectives.

In March 2020, the Fed resumed its QE program in an effort to provide support to the U.S. Treasury (UST) and mortgage-backed securities (MBS) markets after the outbreak of COVID-19. The Fed's actions were initially aimed to restore smooth functioning to these markets, but then shifted the objective to supporting and stimulating the broader economy through lower interest rates. As the domestic economy recovered, the Fed wound down their open market purchases and began a quantitative tightening (QT) program to slow a rapidly growing economy and reel in the highest annual inflation rates the U.S. economy had experienced in over 40 years. QT is the process of the Fed letting matured securities roll off its balance sheet instead of reinvesting the proceeds into newly issued securities. The Fed's QT process began in June 2022, reducing its balance sheet by \$47.5 billion per month, comprised of \$30 billion of UST's and \$17.5 billion of MBS, before accelerating to \$95 billion per month in September 2022, including \$60 billion of UST's and \$35 billion of MBS.

The new *SOMA Holdings* section of the *Global market Analysis Report* provides readers with an overview of the most recent Federal Open Market Committee (FOMC) meeting as well as MoM changes in "U.S. Treasuries", "Federal Agency Debt", "Agency MBS", "Agency Commercial MBS", and "Total SOMA Holdings". **Figure 1** below shows the SOMA portfolio's holdings of MBS compared to the forecasted holdings of MBS if the liquidation cap was fully realized each month since the Fed began their QT process. The holdings are as of the first reported date of each month.

Figure 1. SOMA MBS Holdings (In Thousands $)



As seen in the chart above, the runoff of MBS securities on the Fed's balance sheet is substantially lagging the allocated liquidation cap the Fed set in 2022. The SOMA holdings of MBS are roughly $248 billion higher than the liquidation cap pace set by the Fed, as of August 2, 2023. The runoff continues to come in lower than the liquidation cap due to the increasing interest rate environment. With many mortgage holders locked into mortgage rates much lower than today's rates, refinances and therefore prepayments have slowed drastically leading to a much slower runoff and elevated MBS holdings on the Fed's balance sheet.

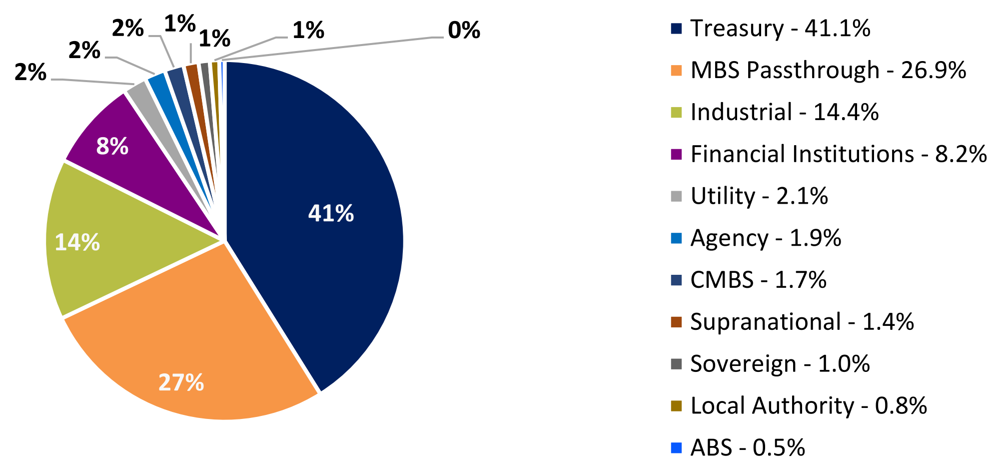
Source: System Open Market Account Holdings of Domestic Securities - FEDERAL RESERVE BANK of NEW YORK (newyorkfed.org) Note: MBS Holdings in Figure 1 are as of the first reported date of each month. SOMA holdings are reported every Thursday as of Wednesday's values.

1 US AGGREGATE AND GLOBAL INDICES

1.1 Bloomberg US Aggregate and Global Indices

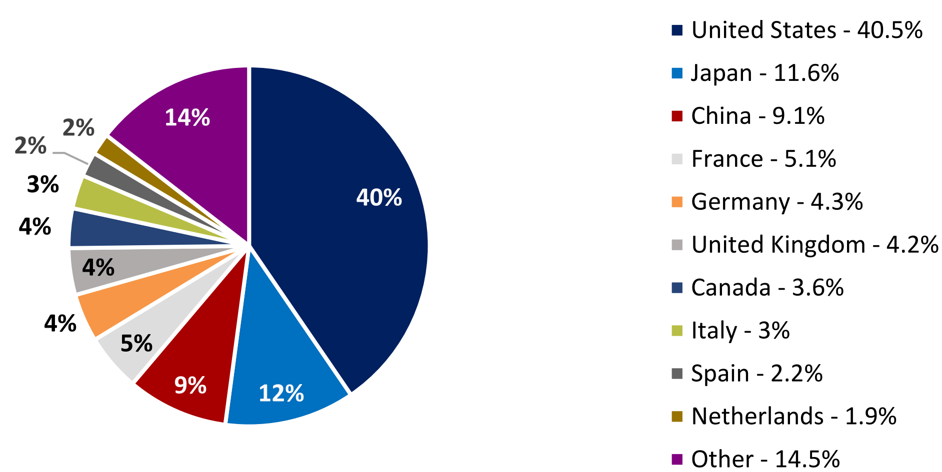
At month-end July, US Treasuries contributed 41.1% to the Bloomberg US Aggregate Index, stable from the prior month. US MBS (Ginnie Mae, Fannie Mae, and Freddie Mac) contributed 26.9%, up approximately 0.2% from the month prior. For the US Aggregate Index, all other changes to the index components were no larger than 1%.

Figure 2. Bloomberg US Aggregate Index



In the Bloomberg Global Aggregate Index by Country, the US share of fixed income remained the largest share of total outstanding issuance, representing 40.5% of the total Bloomberg Global Aggregate Index, up slightly from the prior month. Japan's share of fixed income was the second highest at 11.6%, down slightly from the prior month. For the Global Aggregate Index, all countries remained stable compared to the prior month with no changes larger than 1%.

Figure 3. Bloomberg Global Aggregate Index by Country



Source: Bloomberg [both charts]. Note: Data as of July 2023. Figures in charts may not add to 100% due to rounding.

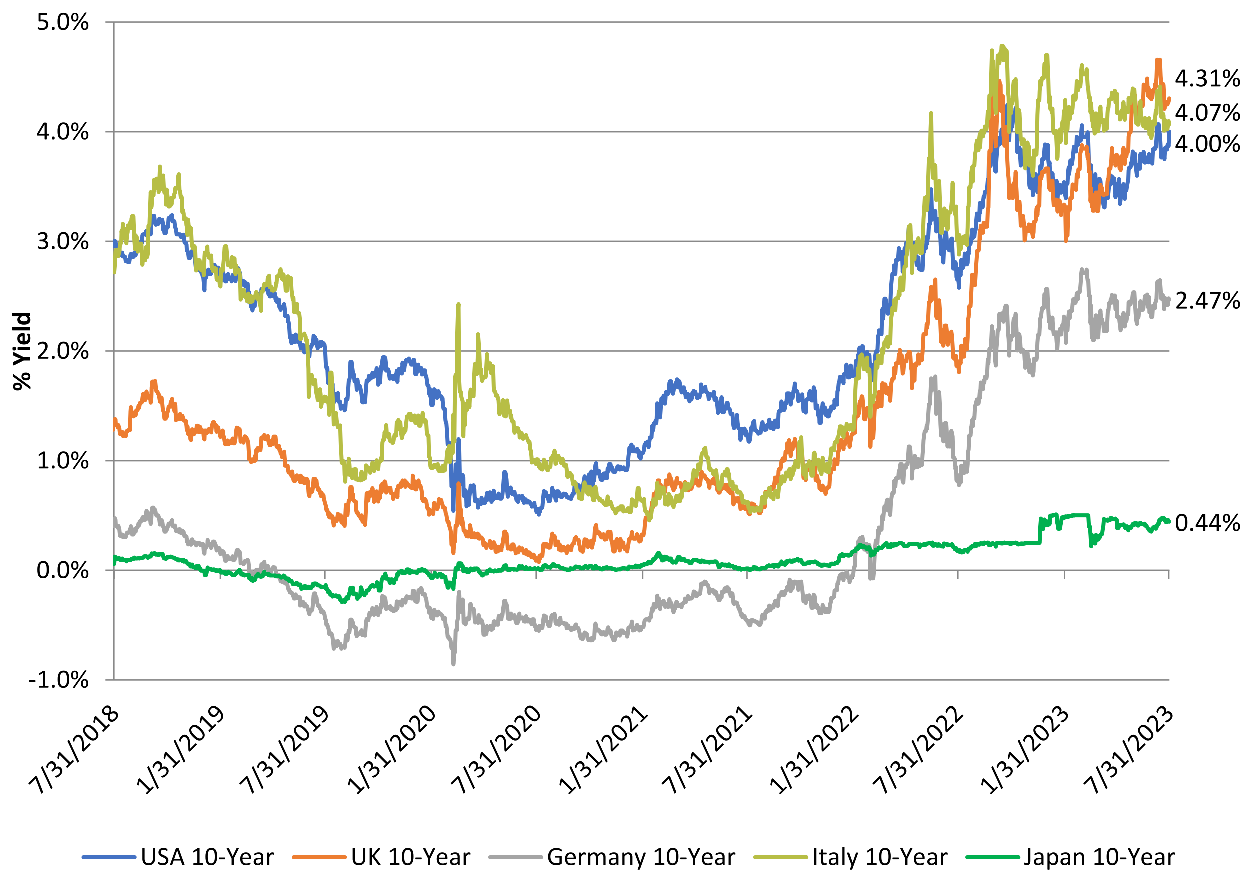
2 SOVEREIGN DEBT PRODUCT PERFORMANCE COMPARISONS

2.1 Global 10-Year Treasury Yields (Unhedged)

The US 10-year Treasury yield moved to 4.00% at month-end July 2023, a MoM increase of 28 bps. US Treasury yields were the third highest of all the government treasury yields depicted in the figure below behind UK and Italian government bond yields.

- The yield on the UK 10-year note increased to 4.31% at month-end July, a MoM increase of 1 bp.
- The yield on the German 10-year note increased to 2.47% at month-end July, a MoM increase of 16 bps.
- The yield on the Italian 10-year note increased to 4.07% at month-end July, a MoM increase of 12 bps.
- The yield on the Japanese 10-year note increased to 0.44% at month-end July, a MoM increase of 9 bps.

Figure 4. Global 10-Year Treasury Yields



Source: Bloomberg. Note: Data as of July 2023.

2.2 US Treasury Hedged Yields

The yield for the 10-year Treasury, hedged in Japanese Yen stood at -1.52% at month-end July, compared to 0.44% on the Japanese 10-year note.

The yield for the 10-year Treasury, hedged in Euros stood at 2.26% at month-end July, compared to 2.47% on the German 10-year note.

Figure 5. US 10yr Total Return Hedged, JPY

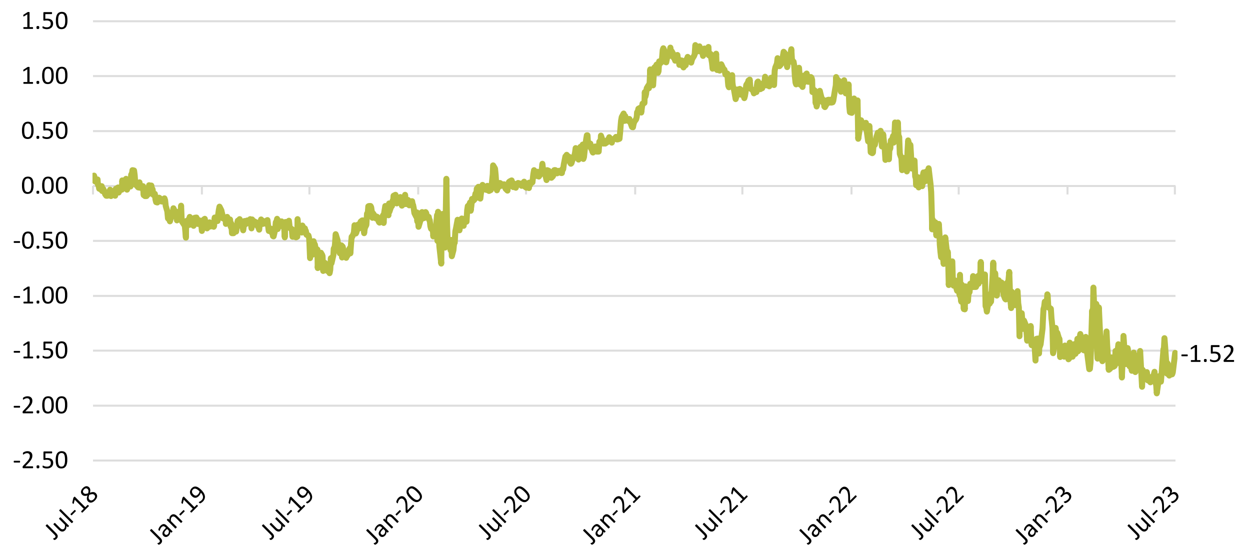


Figure 6. US 10yr Total Return Hedged, EUR

Source: Bloomberg. Notes: Data as of July 2023. The 10yr Total Return Hedged Yields are calculated by taking the 10yr treasury yield and subtracting the 1yr hedge cost for JPY and EUR.

SECONDARY MORTGAGE MARKET

3 FIXED INCOME PRODUCT PERFORMANCE COMPARISONS

3.1 Ginnie Mae Yields – USD

Ginnie Mae II yields were 5.50% in May, increased 17 bps to 5.67% by month-end June, then increased 4 bps to 5.71% by month-end July. Ginnie Mae II spreads over the US 10-year Treasury yield increased 72 bps YoY to 170 bps over the US 10-year Treasury yield as of month-end July 2023.

Figure 7. Ginnie Mae II SF Yield, USD

Figure 8. Ginnie Mae II SF Yield – US 10yr Treasury Yield

Source: Bloomberg. Note: Data as of July 2023.

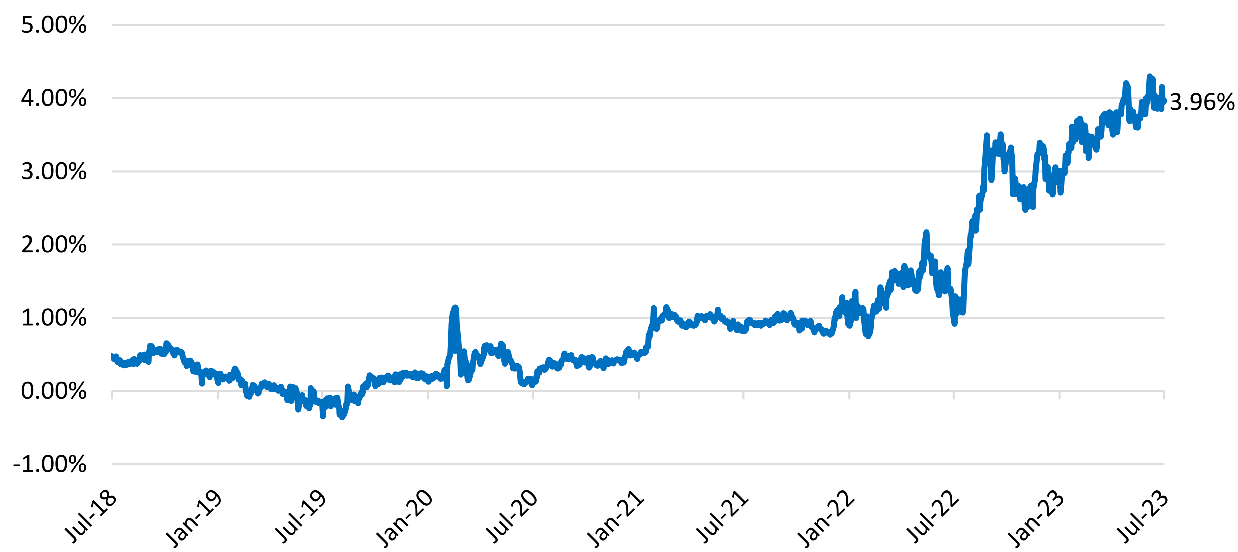
3.2 Ginnie Mae Hedged Yields

The yield for Ginnie Mae II's, hedged in Japanese Yen stood at 0.18% at month-end July, compared to 0.44% on the Japanese 10-year note.

The yield for Ginnie Mae II's, hedged in Euros stood at 3.96% at month-end July, compared to 2.47% on the German 10-year note.

Figure 9. Ginnie Mae II Hedged, JPY

Figure 10. Ginnie Mae II Hedged, EUR



Source: Bloomberg. Notes: Data as of July 2023. The Ginnie Mae II Hedged Yields are calculated by taking the Ginnie Mae II Yield and subtracting the 1yr hedge cost for JPY and EUR.

3.3 Ginnie Mae Yield Spreads – Intermediate Credit

The yield differential between US Intermediate Credit and GNMA II 30-year OAS decreased by 3 bps to 0.46% at month-end July. The GNMA II 30-year OAS decreased 5 bps MoM as of month-end July. The US Intermediate credit OAS decreased 8 bps MoM as of month-end July.

Figure 11. US GNMA II 30yr MBS OAS versus US Intermediate Credit OAS

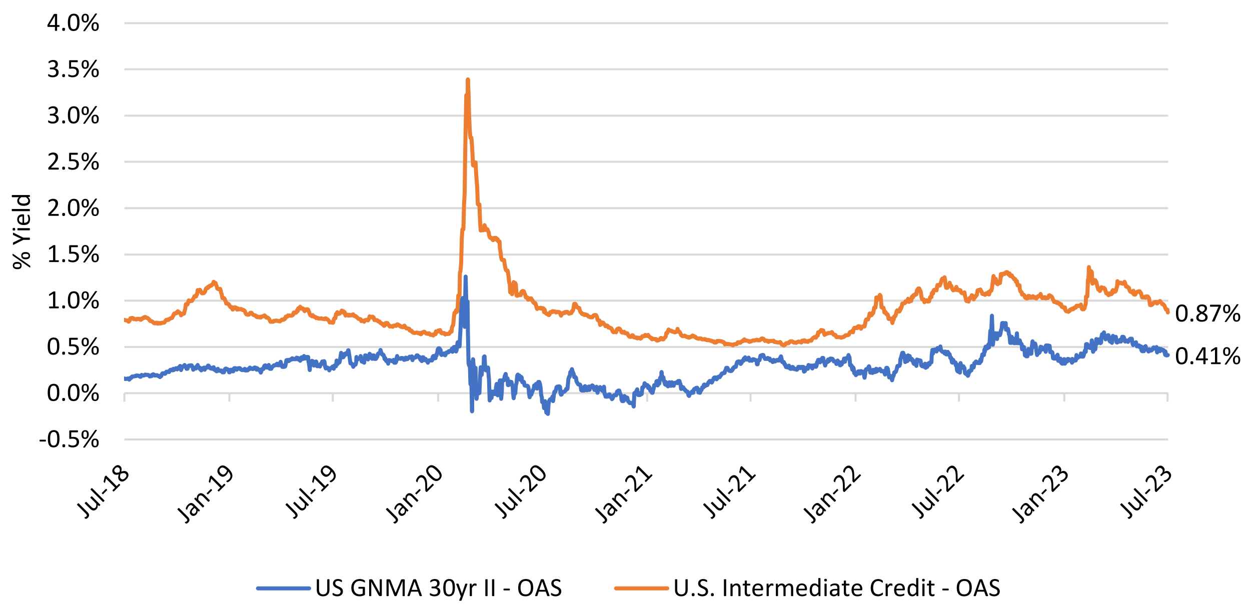
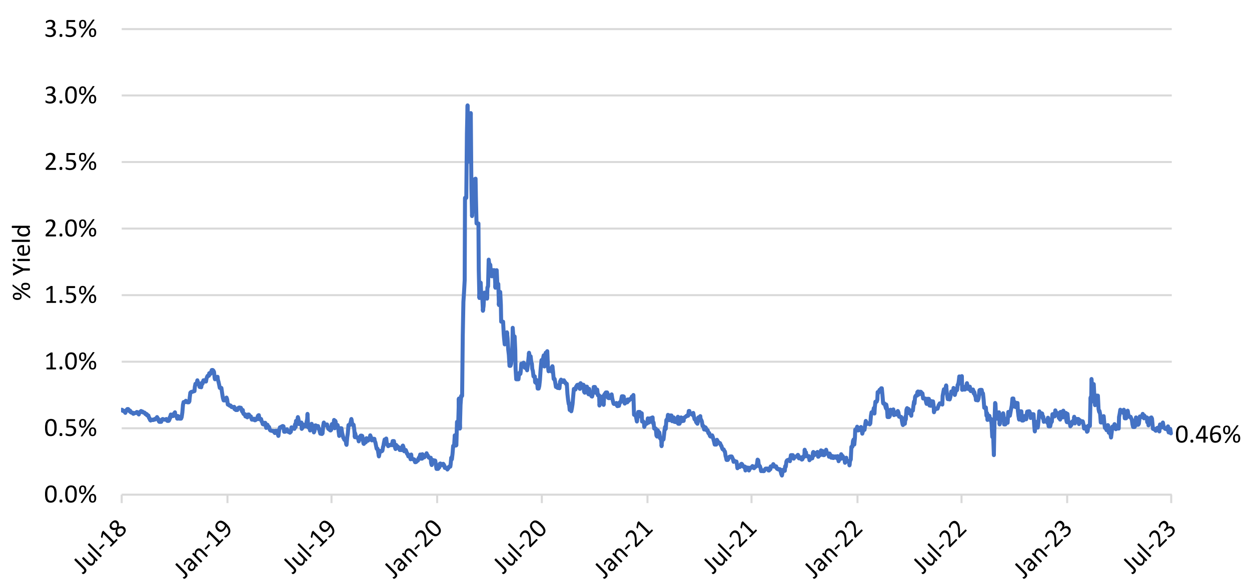


Figure 12. Spread between US Intermediate Credit and US GNMA II 30yr MBS OAS

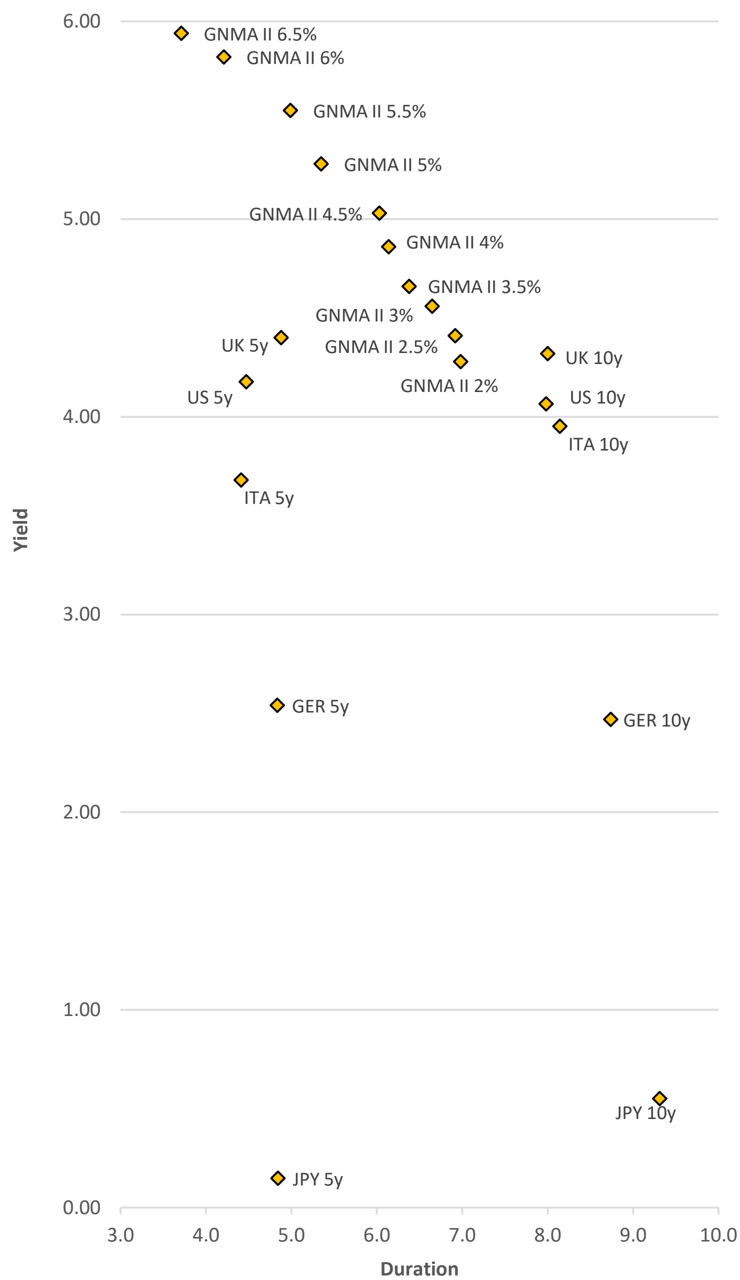


Source: Bloomberg. Note: Data as of July 2023.

3.4 Global Treasury Yield Per Duration

GNMA MBS continued 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.

Figure 13. Yield vs. Duration



Security	Duration	Yield
US 5y	4.47	4.18
US 10y	8.14	3.95
JPY 5y	4.84	0.15
JPY 10y	9.31	0.55
GER 5y	4.84	2.54
GER 10y	8.74	2.47
ITA 5y	4.41	3.68
ITA 10y	7.98	4.07
UK 5y	4.88	4.40
UK 10y	8.00	4.32
GNMA II 2%	6.98	4.28
GNMA II 2.5%	6.92	4.41
GNMA II 3%	6.65	4.56
GNMA II 3.5%	6.38	4.66
GNMA II 4%	6.14	4.86
GNMA II 4.5%	6.03	5.03
GNMA II 5%	5.35	5.28
GNMA II 5.5%	4.99	5.55
GNMA II 6%	4.21	5.82
GNMA II 6.5%	3.71	5.94

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 2023. Yields are in base currency of security and unhedged.

4 PREPAYMENTS

4.1 Aggregate Prepayments (CPR)

Ginnie Mae fixed rate aggregate prepayment speeds decreased in July 2023 by 9.3% MoM. Likewise, Fannie Mae and Freddie Mac CPRs decreased 11.1% and 10.8%, respectively. ARM prepayments decreased for Freddie Mac and Fannie Mae but increased for Ginnie Mae MoM.

Figure 14. Fixed Rate Aggregate 1-Month CPR

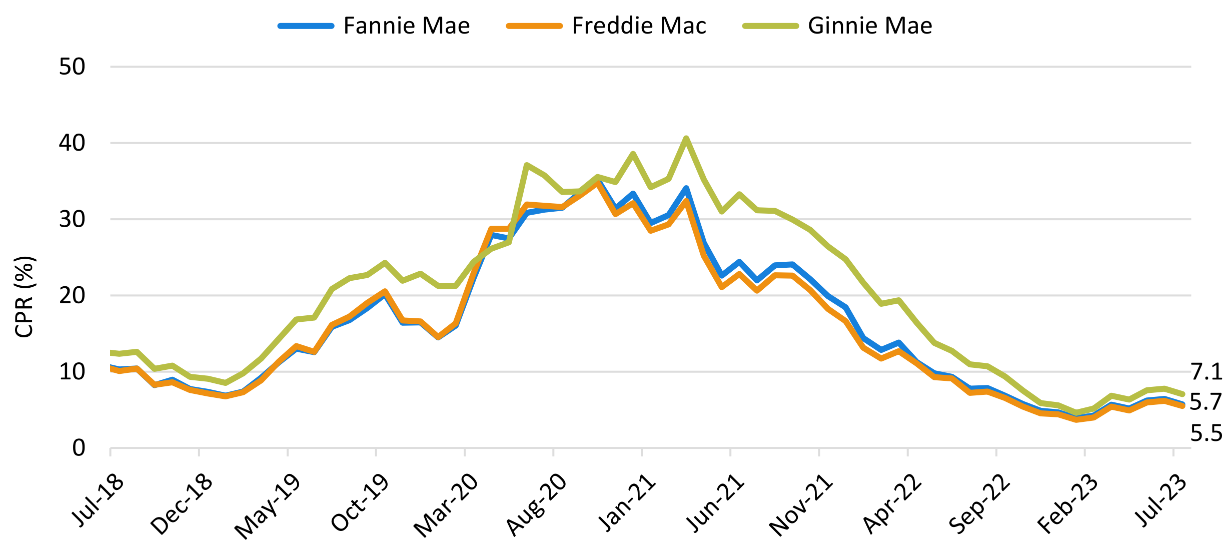
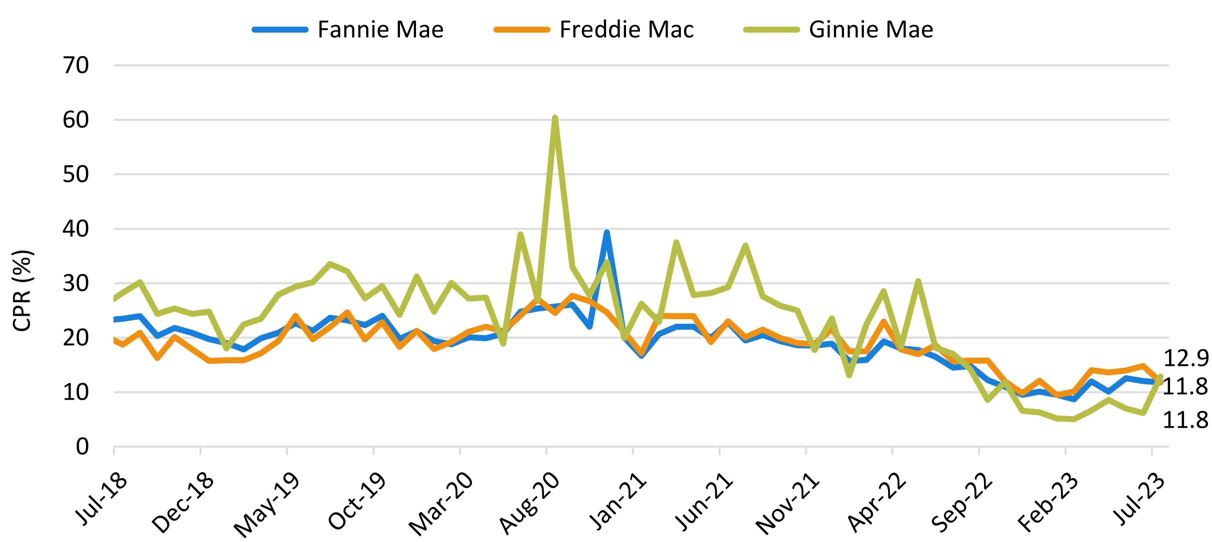


Figure 15. ARM Aggregate 1-Month CPR



Source: Recursion. Note: Data as of July 2023.

4.2 Involuntary Prepayments (CDR)

Fixed rate involuntary prepayments (CDR) remained higher for Ginnie Mae than for the GSEs. The spread in prepayment speeds between Ginnie Mae and GSE prepayments has converged significantly since Ginnie Mae's peak of 12.4 CDR in June 2020. ARM CDRs for Freddie Mac continued to remain below Ginnie Mae as of month-end July 2023 after slightly overtaking Ginnie Mae in September 2022.

Figure 16. Fixed Rate Aggregate CDR

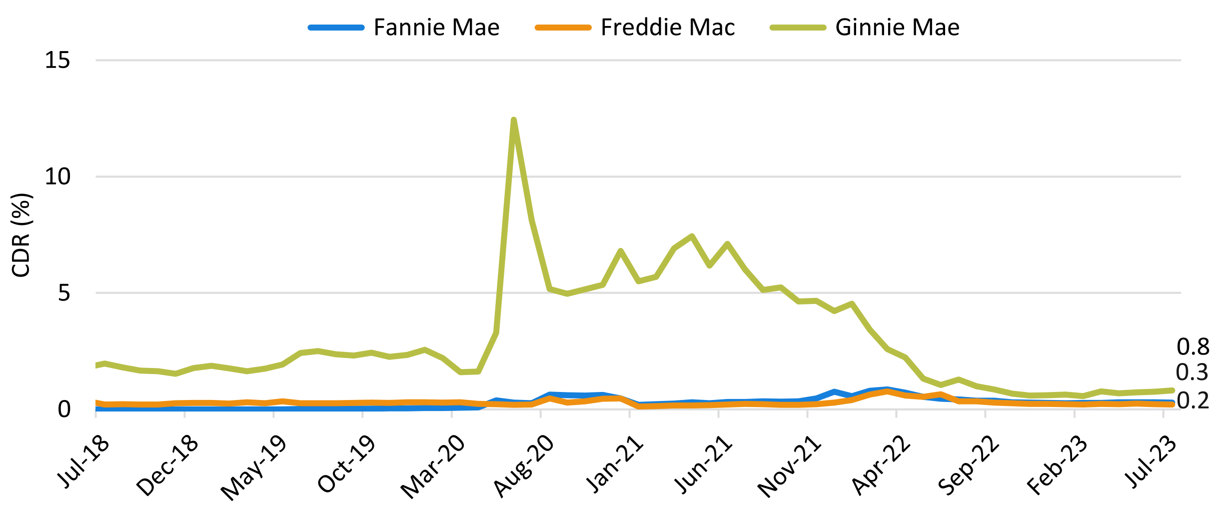
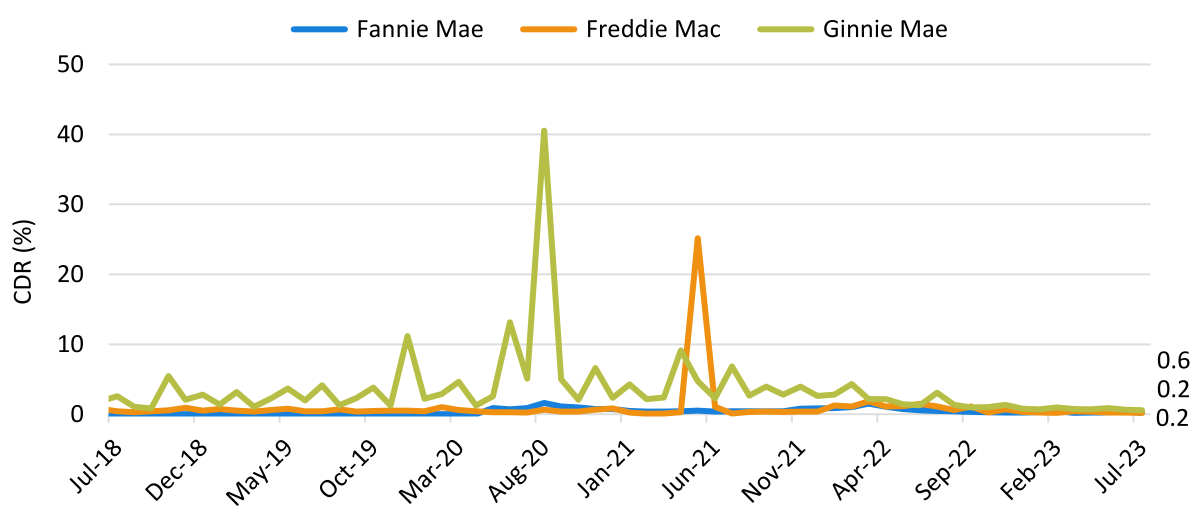


Figure 17. ARM Aggregate CDR



Source: Recursion. Note: Data as of July 2023.

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4.3 Voluntary Prepayment Rates (CRR)

Fixed rate voluntary prepayments (CRR) continued to remain higher for Ginnie Mae relative to the GSEs. Fannie Mae and Freddie Mac saw decreases of 11.5% MoM and 11.1% MoM in fixed rate aggregate CRR, respectively. Freddie Mac saw a 20.1% MoM decrease and Fannie Mae saw a 1.4% MoM decrease in ARM aggregate CRR. Ginnie Mae decreased 11.1% MoM in fixed rate aggregate CRR and saw a 120.3% MoM increase in ARM aggregate CRR.

Figure 18. Fixed Rate Aggregate CRR

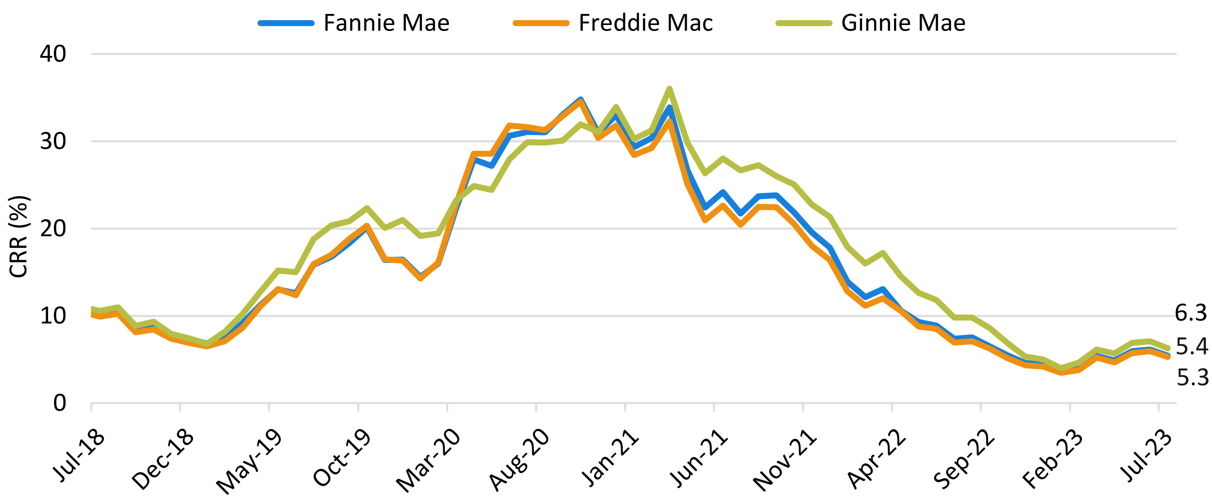
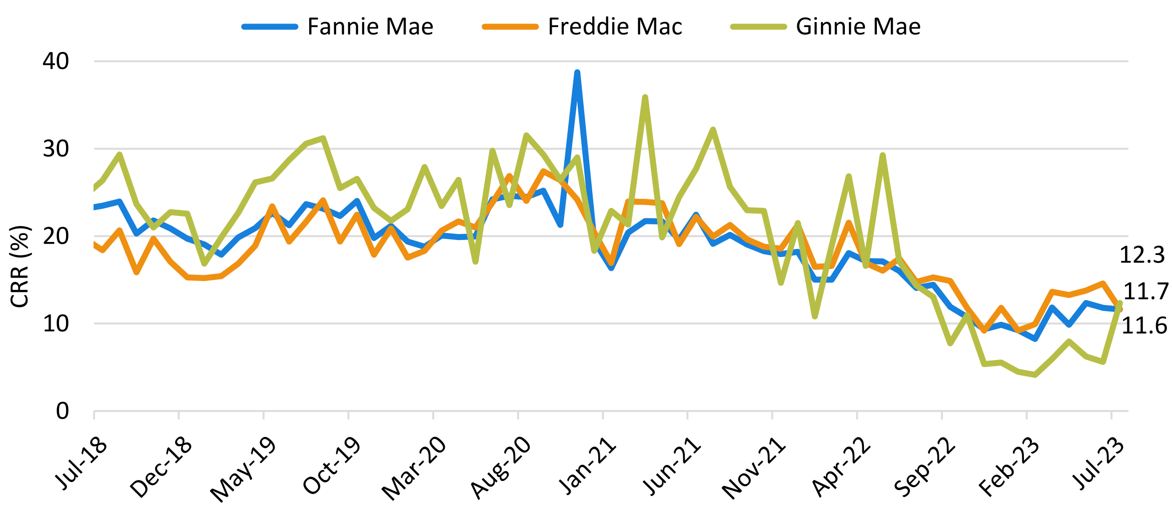


Figure 19. ARM Aggregate CRR



Source: Recursion. Note: Data as of July 2023.

5 SINGLE-FAMILY MBS PASS-THROUGH ISSUANCE

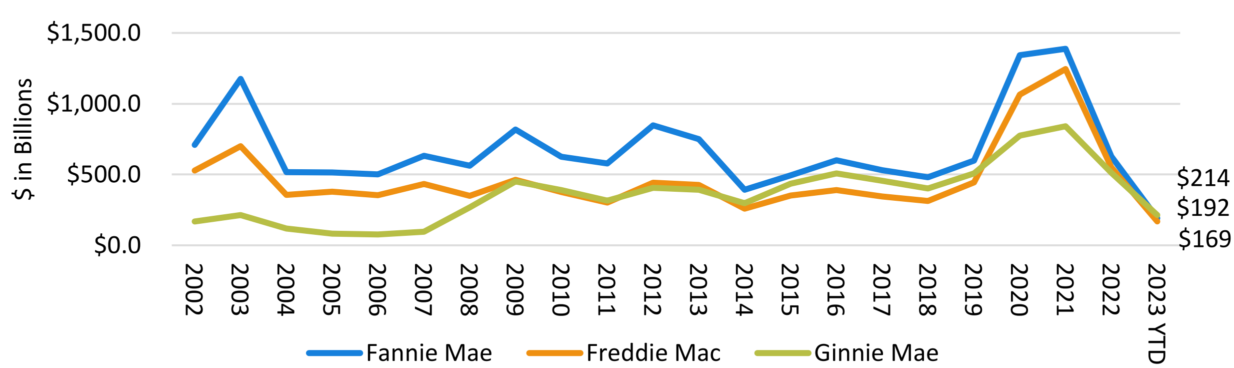
5.1 Gross Issuance of Agency MBS

Agency gross MBS issuance decreased by 8% MoM. Freddie Mac, Ginnie Mae, and Fannie Mae all saw decreases in gross issuance compared to June 2023 as seen in Section 5.3.

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	$628.3	$551.6	$1,179.9	$512.3	$1,692.2
2023 YTD	$191.5	$168.8	$360.3	$214.0	$574.3

Figure 20. Agency Gross Issuance

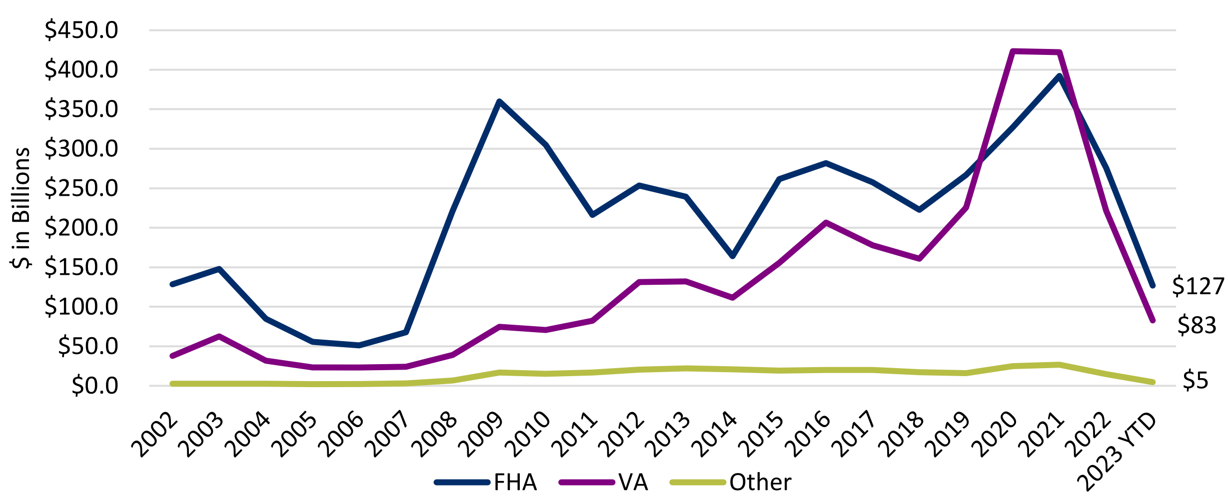


Source: Recursion. Note: Numbers are rounded to the nearest hundred million. For sums, like "GSE Total", the values are rounded after the exact underlying values are summed. As a result, some sums may not appear to match the sum of their rounded component values.

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

Issuance Year	FHA	VA	Other	Total
2001	$133.8	$34.7	$3.1	$171.5
2002	$128.6	$37.9	$2.5	$169.0
2003	$147.9	$62.7	$2.5	$213.1
2004	$85.0	$31.8	$2.5	$119.2
2005	$55.7	$23.5	$2.1	$81.4
2006	$51.2	$23.2	$2.3	$76.7
2007	$67.7	$24.2	$3.0	$94.9
2008	$221.7	$39.0	$6.9	$267.6
2009	$359.9	$74.6	$16.8	$451.3
2010	$304.9	$70.6	$15.3	$390.7
2011	$216.1	$82.3	$16.9	$315.3
2012	$253.4	$131.3	$20.3	$405.0
2013	$239.2	$132.2	$22.2	$393.6
2014	$163.9	$111.4	$21.0	$296.3
2015	$261.5	$155.6	$19.2	$436.3
2016	$281.8	$206.5	$19.9	$508.2
2017	$257.6	$177.8	$20.2	$455.6
2018	$222.6	$160.8	$17.2	$400.6
2019	$266.9	$225.7	$16.0	$508.6
2020	$327.0	$423.5	$24.9	$775.4
2021	$392.2	$422.1	$26.7	$840.9
2022	$275.8	$221.7	$14.8	$512.3
2023 YTD	$126.7	$82.6	$4.7	$214.0

Figure 21. Ginnie Mae Gross Issuance



Source: Recursion. 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.

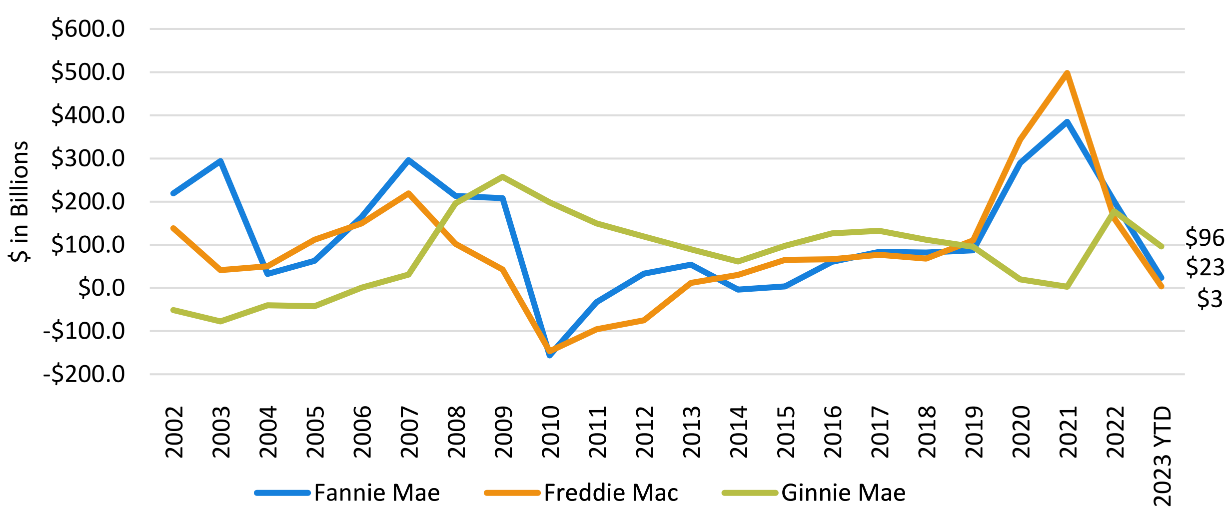
5.2 Net Issuance of Agency MBS

Agency Net Issuance as of month-end July was $122.6 billion for 2023 YTD as shown in **Table 3**. Since 2022, FHA net issuance has outpaced VA net issuance, as shown in **Table 4 and Figure 23.**

Table 3. Agency Net Issuance ($ in billions)

Issuance Year	Fannie Mae	Freddie Mac	GSE	Ginnie Mae	Total
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	$200.4	$161.5	$361.9	$177.4	$539.4
2023 YTD	$23.4	$3.3	$26.7	$95.9	$122.6

Figure 22. Agency Net Issuance

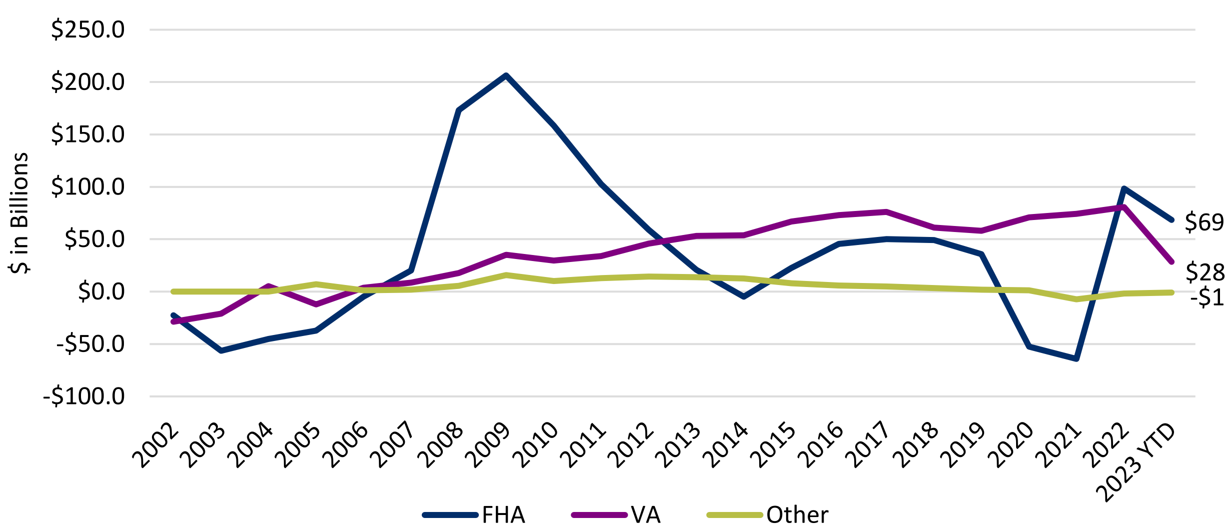


Source: Recursion. Note: Numbers are rounded to the nearest hundred million. For sums, like "GSE Total", the values are rounded after the exact underlying values are summed. As a result, some sums may not appear to match the sum of their rounded component values.

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

Issuance Year	FHA	VA	Other	Total
2000	$29.0	$0.3	$0.0	$29.3
2001	$0.7	-$10.6	$0.0	-$9.9
2002	-$22.5	-$28.7	$0.0	-$51.2
2003	-$56.5	-$21.1	$0.0	-$77.6
2004	-$45.2	$5.1	$0.0	-$40.1
2005	-$37.3	-$12.1	$7.2	-$42.2
2006	-$4.7	$3.8	$1.2	$0.2
2007	$20.2	$8.7	$2.0	$30.9
2008	$173.3	$17.7	$5.4	$196.4
2009	$206.4	$35.1	$15.8	$257.4
2010	$158.6	$29.6	$10.0	$198.3
2011	$102.8	$34.0	$12.8	$149.6
2012	$58.9	$45.9	$14.3	$119.1
2013	$20.7	$53.3	$13.9	$87.9
2014	-$4.8	$53.9	$12.5	$61.6
2015	$22.5	$66.9	$7.9	$97.3
2016	$45.6	$73.2	$6.0	$124.9
2017	$50.1	$76.1	$5.0	$131.2
2018	$49.2	$61.2	$3.5	$113.9
2019	$35.9	$58.0	$1.9	$95.7
2020	-$52.5	$71.0	$1.3	$19.9
2021	-$64.2	$74.2	-$7.3	$2.7
2022	$98.5	$80.7	-$1.7	$177.4
2023 YTD	$69.4	$28.4	-$0.9	$95.9

Figure 23. Ginnie Mae Net Issuance



Source: Recursion. 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

Agency net issuance as of month-end July was approximately $27.5 billion, which represents a 9% MoM decrease. Ginnie Mae net issuance was $18 billion as of month-end July, a 1% increase from June 2023. Ginnie Mae's $36.3 billion in gross issuance as of month-end July, seen in **Table 5**, was approximately 15% below the average monthly issuance for 2022.

Table 5. Agency Issuance ($ in billions)

	Agency Gross Issuance Amount (in $ Billions)					Agency Net Issuance Amount (in $ Billions)				
Month	Fannie Mae	Freddie Mac	Ginnie Mae	GSEs	Total	Fannie Mae	Freddie Mac	Ginnie Mae	GSEs	Total
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
Aug-22	$39.8	$46.3	$40.3	$86.1	$126.4	$4.8	$19.8	$16.2	$24.6	$40.8
Sep-22	$39.3	$38.2	$39.9	$77.5	$117.4	$7.6	$13.9	$18.3	$21.5	$39.8
Oct-22	$34.1	$26.1	$35.5	$60.2	$95.7	$5.8	$4.7	$17.3	$10.5	$27.8
Nov-22	$25.7	$22.7	$33.6	$48.4	$82.0	$0.3	$3.5	$18.3	$3.8	$22.1
Dec-22	$24.9	$25.5	$28.8	$50.4	$79.2	$0.2	$6.6	$14.0	$6.8	$20.8
Jan-23	$25.7	$22.4	$27.1	$48.1	$75.2	$3.4	$5.3	$14.1	$8.7	$22.8
Feb-23	$18.9	$16.5	$22.7	$35.4	$58.1	-$4.4	-$1.4	$8.6	-$5.8	$2.8
Mar-23	$23.6	$19.2	$26.2	$42.8	$69.0	-$4.4	-$2.4	$8.7	-$6.8	$1.9
Apr-23	$27.7	$21.0	$31.6	$48.7	$80.3	$1.4	$0.6	$15.0	$2.0	$17.0
May-23	$30.4	$29.0	$32.6	$59.4	$92.0	$0.6	$6.0	$13.5	$6.6	$20.1
Jun-23	$33.5	$32.9	$37.5	$66.4	$103.9	$3.1	$9.3	$17.8	$12.4	$30.2
Jul-23	$31.7	$27.9	$36.3	$59.6	$95.9	$3.6	$5.9	$18.0	$9.5	$27.5

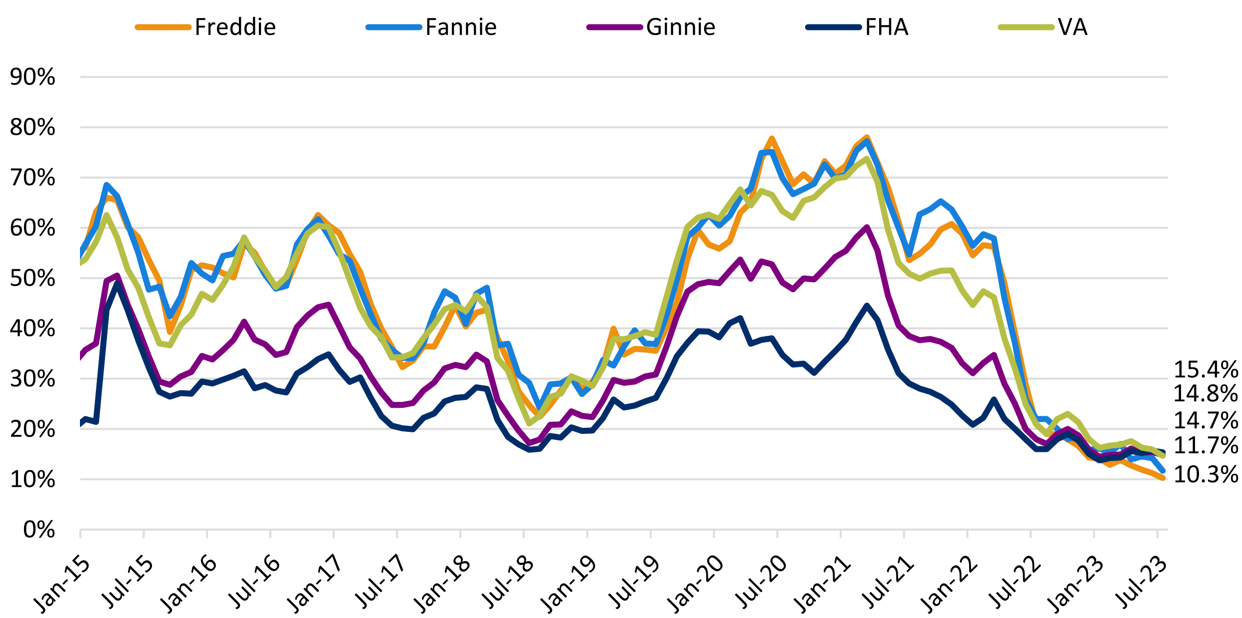
Sources: Beginning May 2021, data for Gross and Net Issuance was sourced from Fannie Mae, Freddie Mac, and Ginnie Mae loan level disclosure files. Net issuance is defined here as the difference between prior period UPB and current period UPB. Data as of July 2023. Beginning with the October 2021 GMAR, the Fannie Mae and Freddie Mac net issuance data have been updated to reflect the current UPB of the portfolios. July 2021 through July 2023 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 decreased by approximately 4% MoM for Ginnie Mae as of month-end July 2023. VA's lending decreased approximately 7.9% MoM. FHA's refinance share decreased by approximately 2.2%. In the conventional conforming mortgage market space, Fannie Mae saw a decrease of 17.8% MoM and Freddie Mac saw a decrease of 8.5% MoM.

- Freddie Mac's refinance percentage dropped to 10.3% in July, down from 11.2% in June.
- Fannie Mae's refinance percentage dropped to 11.7% in July, down from 14.2% in June.
- Ginnie Mae's refinance percentage dropped to 14.8% in July, down from 15.5% in June.
- FHA's refinance percentage dropped to 15.4% in July, down from 15.7% in June.
- VA's refinance percentage dropped to 14.7% in July, down from 15.9% in June.

Figure 24. Percent Refinance at Issuance – Single-Family



Source: Recursion. Note: Data as of July 2023.

6 AGENCY SINGLE-FAMILY MBS OUTSTANDING

6.1 Outstanding Single-Family Agency MBS

As of month-end July 2023, outstanding single-family MBS in the agency market totaled $8.725 trillion: 41.0% Fannie Mae, 33.5% Freddie Mac, and 25.5% Ginnie Mae MBS. Over the past twelve months, Fannie Mae's, Freddie Mac's, and Ginnie Mae's total outstanding MBS increased by approximately 0.6%, 2.5%, and 8.8%, respectively. Fannie Mae outstanding MBS remains larger than Freddie Mac's and Ginnie Mae's by approximately $659 billion and $1.3 trillion, respectively.

Ginnie Mae MBS collateral composition has changed dramatically over the past five years. In July 2018, 60.1% of Ginnie Mae outstanding collateral was FHA and 33.8% was VA. As of month-end July 2023, FHA collateral comprised 53.6% of Ginnie Mae MBS outstanding, and VA collateral comprised 41.7% of Ginnie Mae MBS outstanding.

Figure 25. Outstanding Agency Mortgage-Backed Securities

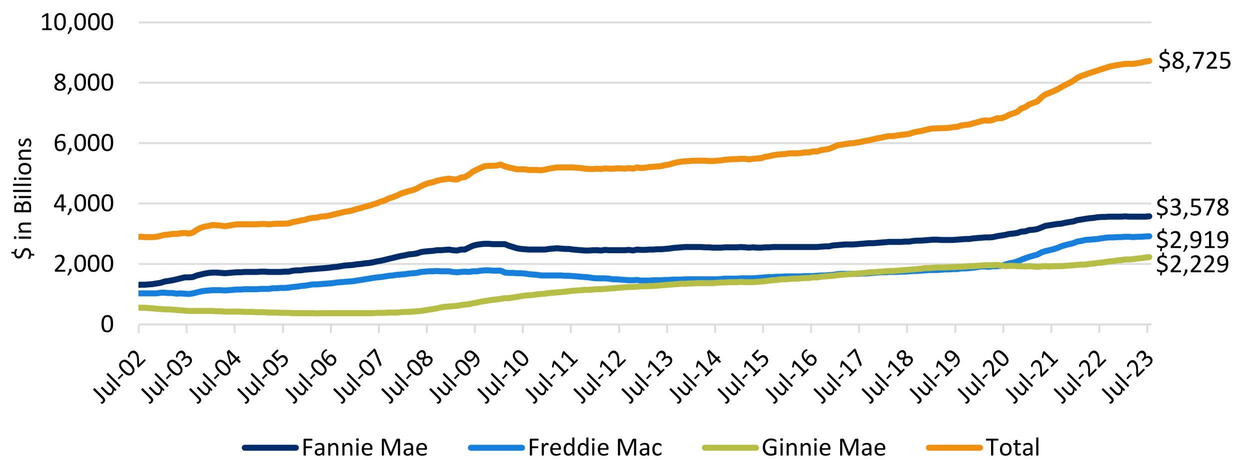
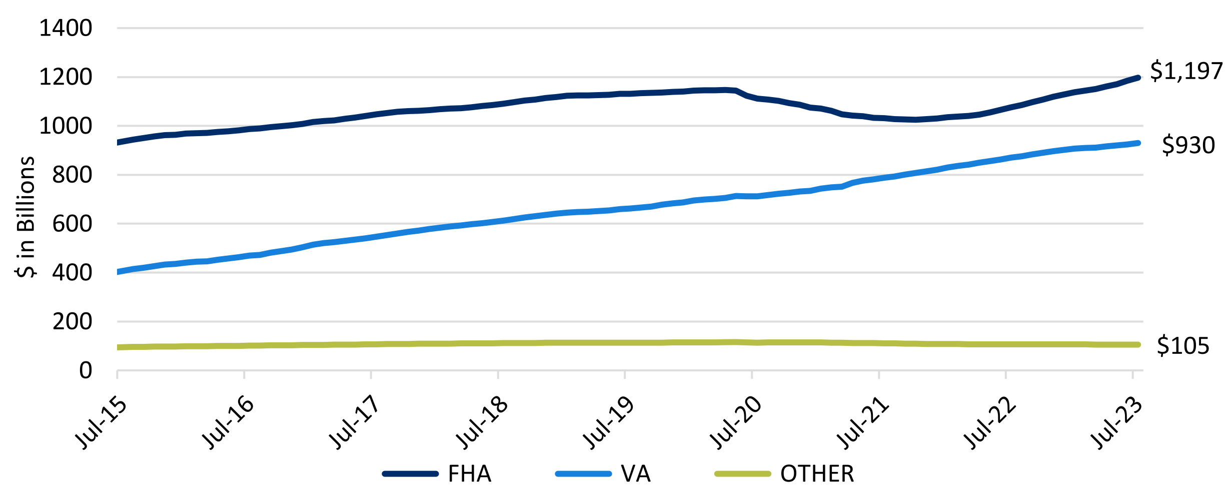


Figure 26. Composition of Outstanding Ginnie Mae Mortgage-Backed Securities



Source: Recursion. Note: Data as of July 2023.

6.2 Origination Volume and Share Over Time

First lien origination volume increased in Q2 2023, with approximately $400 billion in originations, which represents an approximate rise in issuance of 38% from Q1 2023. Ginnie Mae's share of total origination increased from 22.3% to 22.8% in Q2 2023, while portfolio origination increased from 31.1% to 32.1%.

Figure 27. First Lien Origination Volume

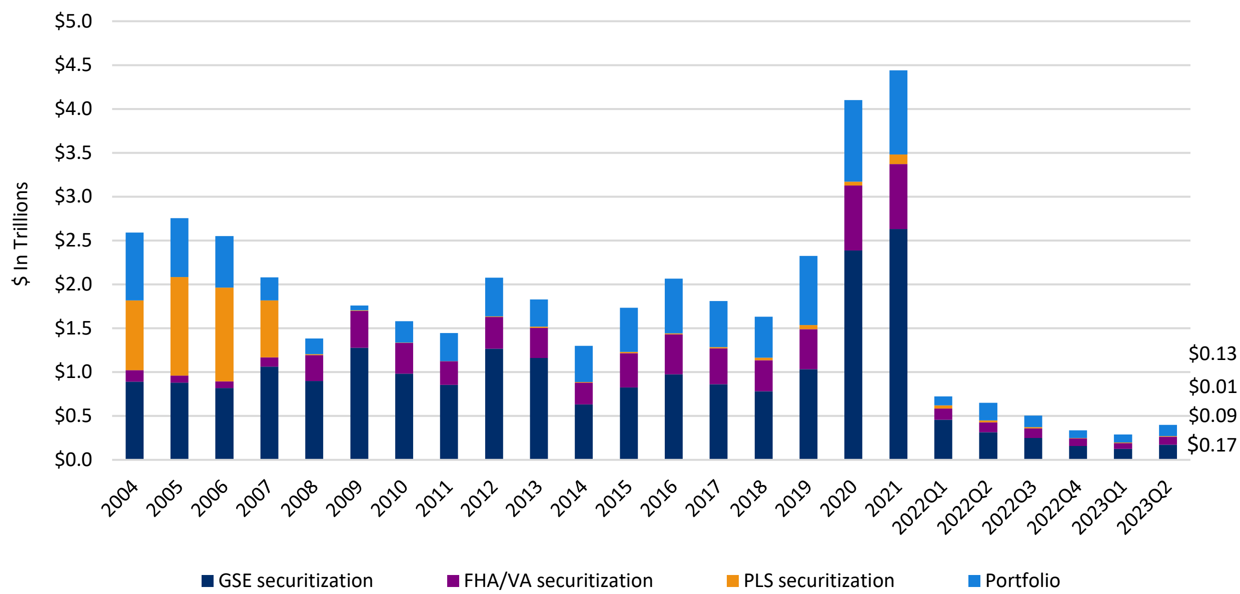
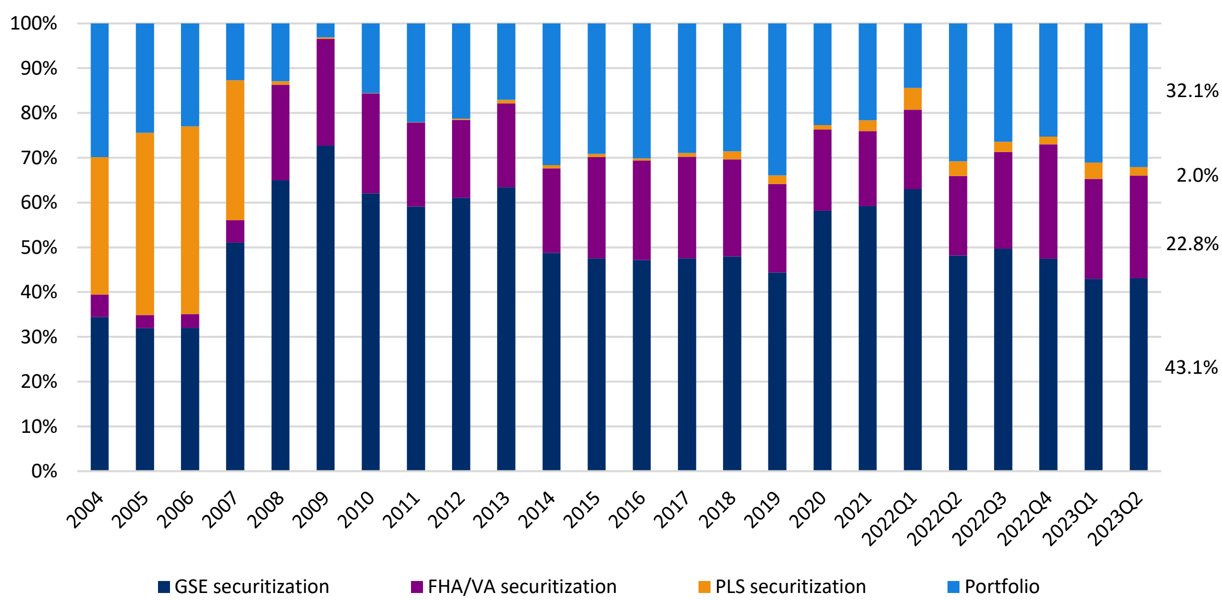


Figure 28. First Lien Origination Share



Source: Inside Mortgage Finance. Note: Data as of Q2 2023.

6.3 Agency Issuance and Agency Outstanding by State

Ginnie Mae MBS represent approximately 36% of new agency issuance over the past year, roughly 10% higher than Ginnie Mae's 26% share of agency outstanding. The share of Ginnie Mae's new agency issuance varies across states, with the highest Ginnie Mae share being in Alaska (57%) and the lowest in the District of Columbia (22%). The highest Ginnie Mae outstanding share is also in Alaska (48%) and the lowest in the District of Columbia (14%).

Table 6. Agency Issuance Breakdown by State

	Agency Issuance (past 1 year)				Agency Outstanding (past 1 year)			
National	GNMA Share by UPB	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)
	36%	1,901,981	292.13	300.68	26%	10,934,729	207.68	211.30
AK	57%	5,771	348.99	311.57	48%	37,521	262.72	220.49
AL	50%	45,575	231.67	247.39	41%	241,765	160.21	178.38
AR	45%	23,638	198.15	231.40	39%	138,632	134.78	161.79
AZ	35%	57,051	331.70	338.45	25%	282,400	225.63	227.76
CA	31%	112,443	460.71	457.99	17%	698,630	331.85	319.95
CO	33%	41,220	415.77	406.70	24%	217,539	297.41	279.07
CT	33%	16,052	273.98	286.09	26%	107,541	203.49	208.94
DC	22%	1,389	516.13	431.45	14%	9,124	387.27	348.69
DE	37%	8,577	279.35	307.51	31%	52,944	206.27	212.14
FL	39%	177,616	313.47	311.86	32%	874,656	217.93	214.19
GA	42%	102,709	271.06	305.01	34%	509,096	184.93	208.85
HI	46%	4,829	630.86	513.53	32%	33,951	471.68	357.59
IA	32%	14,048	189.49	203.31	23%	83,664	135.96	148.42
ID	32%	11,075	339.88	332.63	24%	64,715	223.67	224.36
IL	29%	61,143	215.98	251.87	22%	373,367	161.42	179.33
IN	37%	50,959	199.27	221.40	31%	283,748	136.86	151.93
KS	37%	16,477	202.24	230.52	29%	97,291	142.23	164.34
KY	45%	30,593	205.47	222.56	35%	167,932	146.06	156.30
LA	50%	35,398	210.20	241.33	41%	205,221	159.16	177.43
MA	29%	18,235	387.13	382.29	16%	115,704	287.41	267.92
MD	43%	45,729	346.88	339.45	34%	296,633	266.85	249.44
ME	35%	6,160	257.12	282.09	26%	38,316	179.95	192.21
MI	28%	46,519	192.60	221.20	21%	279,609	135.64	156.89
MN	23%	22,345	258.50	285.58	18%	160,512	184.00	198.62
MO	37%	42,490	205.75	228.15	29%	247,477	144.41	162.60
MS	57%	22,310	209.23	225.47	48%	124,681	146.18	161.54
MT	31%	5,007	321.82	325.31	24%	32,545	212.59	217.33
NC	37%	80,731	266.25	300.17	29%	421,940	180.44	203.89
ND	35%	2,686	249.88	244.83	24%	17,130	194.22	183.48
NE	34%	10,156	229.74	233.61	27%	65,398	152.04	161.46
NH	29%	5,735	329.77	322.29	22%	38,565	228.91	215.55
NJ	30%	37,603	331.44	348.78	22%	235,429	243.23	254.42
NM	46%	15,739	252.07	265.71	38%	96,533	169.84	179.24
NV	40%	25,550	356.78	345.13	31%	136,519	253.05	237.07
NY	27%	41,462	302.49	343.58	20%	310,649	211.76	248.43
OH	36%	70,646	191.79	209.30	29%	429,573	132.32	149.64
OK	46%	31,461	210.28	232.70	42%	191,239	143.71	163.49
OR	27%	17,788	364.47	374.42	19%	112,190	257.45	254.25
PA	30%	56,699	207.67	255.35	26%	393,342	150.21	182.37
RI	43%	5,828	342.59	314.16	30%	36,238	237.53	212.99
SC	43%	49,719	264.05	271.93	35%	241,172	187.44	193.59
SD	38%	4,715	253.43	253.76	30%	29,388	175.41	177.70
TN	38%	53,188	270.80	293.70	32%	274,283	180.63	206.27
TX	35%	201,844	283.04	316.89	32%	1,121,603	187.70	215.38
UT	29%	18,230	394.71	398.52	19%	97,746	267.46	265.43
VA	47%	73,541	341.50	336.03	36%	451,688	259.19	250.27
VI	27%	121	380.32	423.90	24%	802	257.48	304.56
VT	24%	1,711	250.65	274.78	19%	12,236	182.35	180.81
WA	30%	36,946	412.13	422.06	22%	234,756	288.96	290.53
WI	27%	19,980	218.22	236.25	17%	125,146	158.31	163.05
WV	53%	10,430	198.68	198.60	44%	60,809	145.60	145.33
WY	42%	4,114	274.51	277.03	35%	25,141	207.65	201.85

Source: Recursion. Note: Outstanding balance is based on loan balance as of July 2023. Ginnie Mae issuance is based on the last 12 months, from June 2022 to July 2023. Values above are based on loan level disclosure data, thus excluding loan balances for the first 6 months that loans are in a pool. This accounts for the difference in share of outstanding MBS represented above & in Outstanding Single-Family Agency MBS.

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

As of month-end July 2023, the weighted average coupon (WAC) on outstanding Ginnie Mae MBS increased slightly from 3.29% in June 2023 to 3.32% as seen in **Figure 29**. **Figure 30** illustrates that loans originated since 2019 account for approximately 80% of Ginnie Mae MBS collateral outstanding.

Figure 29. Outstanding Ginnie Mae MBS Balance, by Coupon

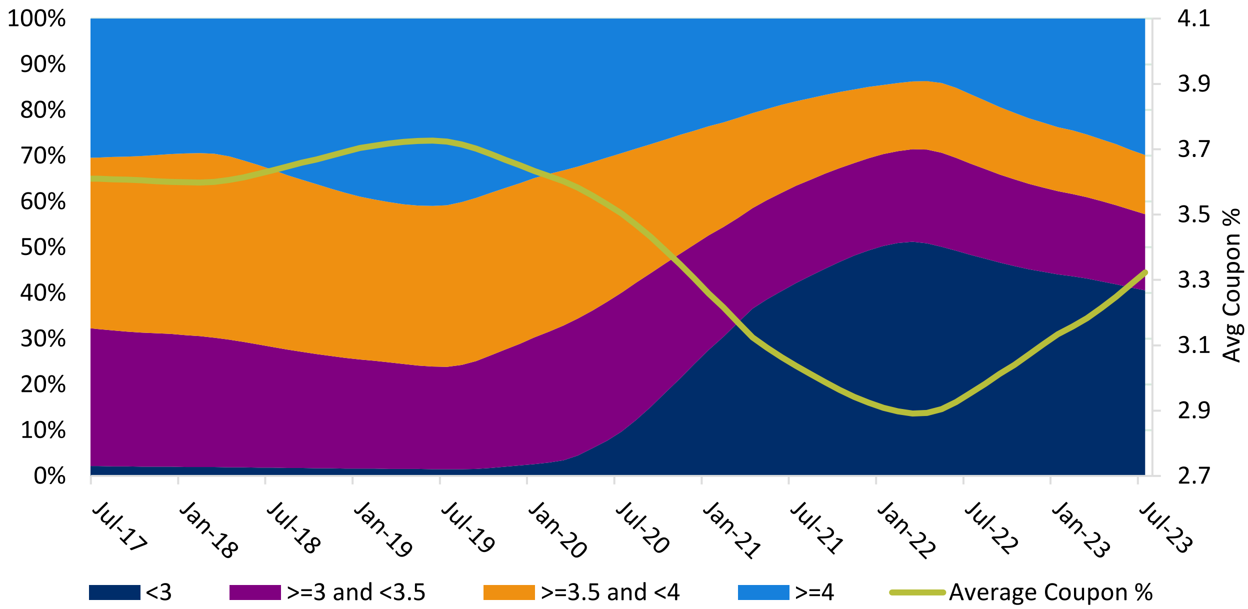
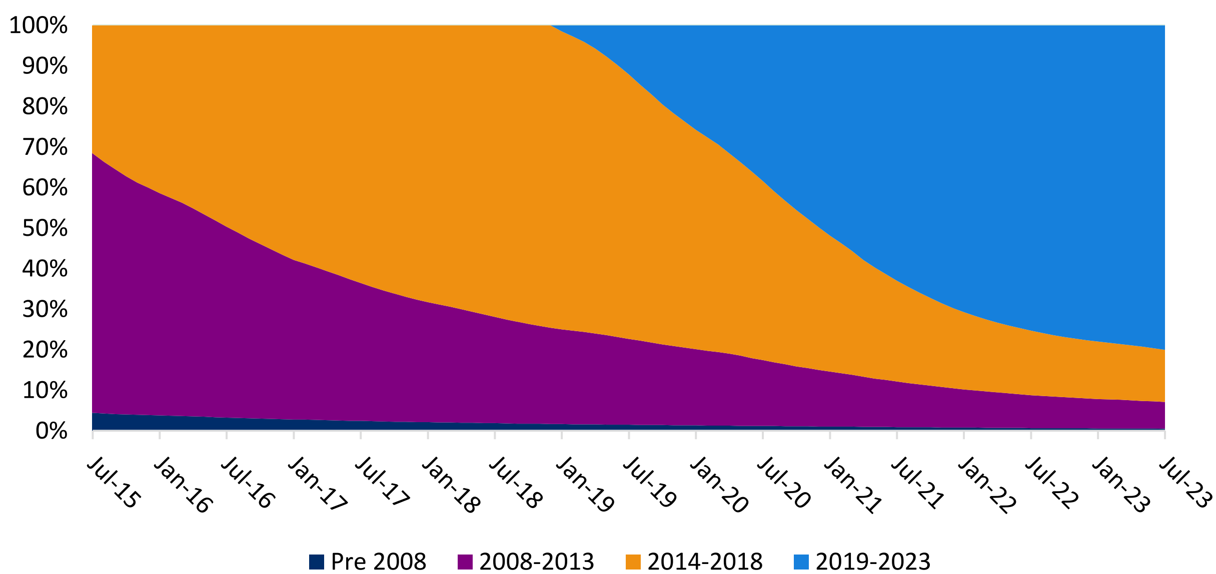


Figure 30. Outstanding Ginnie Mae MBS Balance, by Vintage



Source: Recursion. Note: July 2023 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

As of month-end July 2023, $4.9 billion of Ginnie Mae MBS were securitized into Real Estate Mortgage Investment Conduits (REMICs) as underlying collateral. This represents a 43.7% decrease YoY from $8.8 billion in July 2022, and a 33.1% MoM decrease from $7.4 billion in June 2023. Of that, approximately $295.7 million were multifamily MBS having coupons over 4.01%. $5.9 billion were single-family MBS having coupons over 5.01%.

Figure 31. Ginnie Mae Single-Family and Multifamily MBS Securitized into REMICs

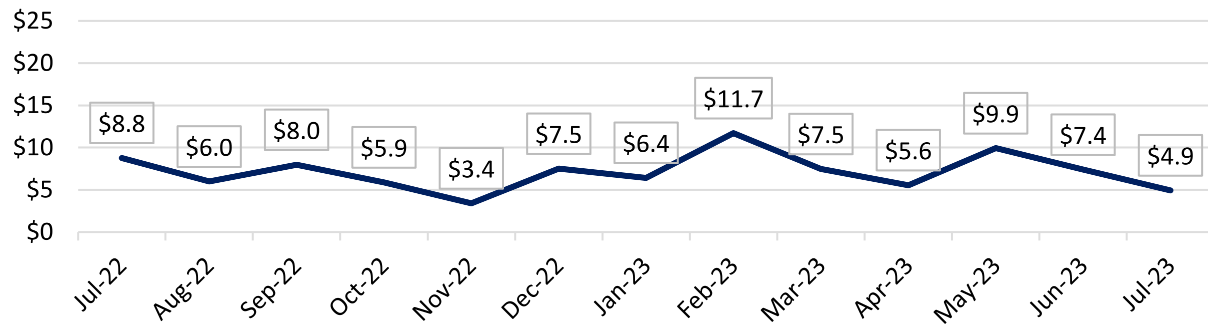


Table 7. July 2023 REMIC Collateral Coupon Distribution

Net Coupon (%)	*Approx. Ginnie Mae MBS amount securitized into REMIC Deals ($MM)*[1]	*% Breakdown of REMIC Collateral by coupon*
Multifamily		
<2.01	0.0	0%
2.01-3.00	0.0	0%
3.01-4.00	213.7	40%
4.01-5.00	202.2	37%
>5.00	125.0	23%
Subtotal	**541.0**	**100.0%**
Single-Family		
<2.01	0.0	0%
3.00-4.00	0.0	0%
4.01-5.00	20.0	1%
5.01-6.00	3,135.3	71%
6.01-7.00	1,241.9	28%
>7.00	1.6	0%
Subtotal	**4,398.9**	**100.0%**
Grand Total	**4,939.9**	**100.0%**

Source: Ginnie Mae Disclosure Files

[1]Totals may not sum due to rounding.

7.2 REMIC Market Snapshot

- In July 2023, Ginnie Mae and Fannie Mae saw increases in their single-family REMIC issuance collateral coupon, 21 bps and 22 bps, respectively. Freddie Mac saw a 22 bp decrease MoM.
- In July 2023, Ginnie Mae saw a substantial increase, 95 bps, in their multifamily REMIC issuance collateral coupon to 4.48%, marking the highest coupon rate in over five years. Freddie Mac's multifamily collateral coupon also increased, 29 bps, to the highest collateral coupon rate since February 2023.
- In July 2023, Ginnie Mae issued 15 deals, across SF and MF, a decrease of 5 deals MoM. Ginnie Mae's total REMIC issuance fell to $5.04 billion in July, the lowest recorded issuance since November 2022.
- In July 2023, Fannie Mae issued 3 multifamily deals, totaling $1.8 billion, marking their highest multifamily issuance since February 2022.

Figure 32. REMIC Issuance by Agency[2]

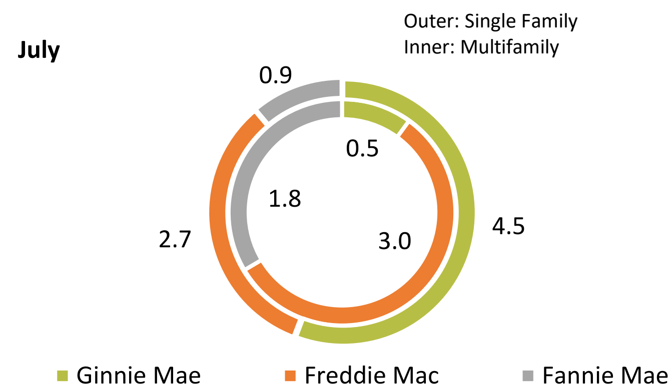


Table 8. Monthly REMIC Issuance by Agency

	SF REMIC Issuance Volume ($B)	% of SF REMIC Issuance Volume	Number of SF REMIC Transactions	MF REMIC Issuance Volume ($B)	% of MF REMIC Issuance Volume	Number of MF REMIC Transactions
Ginnie Mae	4.50	55.7	10	0.54	10.1	5
Freddie Mac	2.67	33.1	7	3.03	56.5	5
Fannie Mae	0.90	11.2	4	1.80	33.5	3
Total[3]	**$8.07**	**100%**	**21**	**$5.37**	**100%**	**13**

Source: Ginnie Mae Disclosure Files

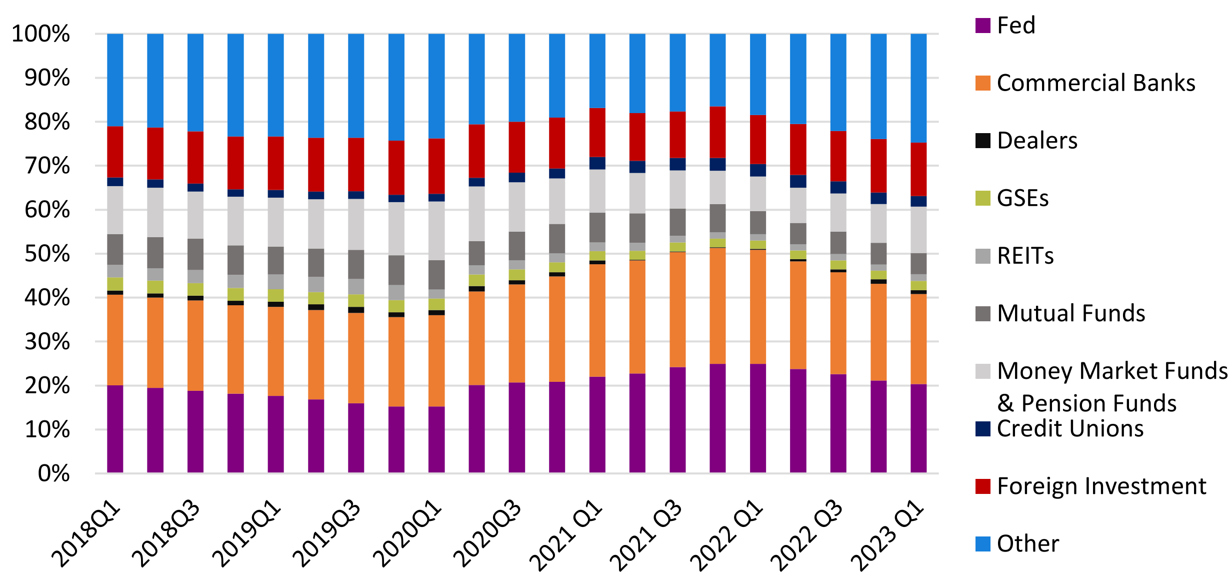
[2] *The REMIC Market Snapshot is inclusive of Re-REMIC deals which are not included in the "Monthly REMIC Demand for Ginnie Mae MBS" above.*

[3] *Totals may not sum due to rounding.*

8 MBS OWNERSHIP

As of Q1 2023, the largest holders of agency debt (agency MBS + agency notes and bonds) included commercial banks (20%), the Federal Reserve (20%), and foreign investors (12%). The Federal Reserve's share decreased slightly to 20% in the first quarter of 2023 from 21% in the fourth quarter of 2022. Along with the Federal Reserve, commercial banks are one of the largest holders of agency MBS. Out of the approximately $2.6 trillion in holdings as of the end of June 2023, roughly $1.95 trillion was held by the top 25 domestic banks per **Table 9** below.

Figure 33. 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 2023.

8.1 Commercial Bank Holdings of Agency MBS

Table 9. Commercial Bank Holdings of Agency MBS

	Commercial Bank Holdings ($Billions)								
	Nov-22	**Dec-22**	**Jan-23**	**Feb-23**	**Mar-23**	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**
Largest 25 Domestic Banks	2,052.0	2,056.5	2,054.5	1,961.4	1,952.3	1,953.4	1,947.1	1,961.3	1,955.1
Small Domestic Banks	690.9	677.3	663.5	764.0	700.9	627.8	628.4	618.2	610.5
Foreign Related Banks	39.3	36.6	30.0	27.0	28.4	26.8	24.0	26.2	24.3
Total, Seasonally Adjusted	**2,782.2**	**2,770.4**	**2,748.0**	**2,752.4**	**2,681.6**	**2,608.0**	**2,599.5**	**2,605.7**	**2,589.9**

Source: Federal Reserve Bank. Note: Small domestic banks include all domestically chartered commercial banks not included in the top 25. Data as of July 2023.

8.2 Bank and Thrift Residential MBS Holdings

In Q2 2023, MBS holdings at banks and thrifts continued to decrease. The decrease was driven by GSE pass-throughs, agency CMO holdings, and Private CMO holdings, with GSE pass-throughs seeing the largest decrease. Ginnie Mae pass-throughs saw a decrease of 0.7%, showing the smallest percentage decrease of all banks and thrifts, QoQ. Total bank and thrift MBS holdings decreased by approximately 13.1% from Q2 2022 and 3.2% from Q1 2023. Out of the $2.28 trillion in MBS holdings at banks and thrifts as of Q2 2023, $1.39 trillion were GSE pass-throughs and $383 billion were Ginnie Mae pass-throughs.

Table 10. Bank and Thrift Residential MBS Holdings

	All Banks & Thrifts ($ in billions)						All MBS ($ in billions)	
Year	*Total*	*GSE PT*	*GNMA PT*	*Private MBS*	*Agency CMO*	*Private CMO*	*Banks*	*Thrifts*
2001	$730.84	$270.59	$109.53	$37.62	$236.91	$76.18	$606.91	$203.37
2002	$832.50	$376.11	$101.46	$20.08	$244.98	$89.88	$702.44	$209.66
2003	$899.89	$461.72	$75.11	$19.40	$236.81	$106.86	$775.66	$206.45
2004	$1,011.01	$572.40	$49.33	$20.55	$208.18	$160.55	$879.75	$234.31
2005	$1,033.77	$566.81	$35.92	$29.09	$190.70	$211.25	$897.06	$242.69
2006	$1,124.46	$628.52	$31.13	$42.32	$179.21	$243.28	$983.49	$223.42
2007	$1,149.10	$559.75	$31.58	$26.26	$174.27	$357.24	$971.42	$264.59
2008	$1,218.77	$638.78	$100.36	$12.93	$207.66	$259.04	$1,088.00	$211.73
2009	$1,275.52	$629.19	$155.00	$7.53	$271.17	$212.64	$1,161.67	$184.07
2010	$1,433.38	$600.80	$163.13	$7.34	$397.30	$181.61	$1,233.28	$200.09
2011	$1,566.88	$627.37	$214.81	$3.28	$478.82	$167.70	$1,359.24	$207.64
2012	$1,578.86	$707.87	$242.54	$17.16	$469.27	$138.67	$1,430.63	$148.22
2013	$1,506.60	$705.97	$231.93	$26.11	$432.60	$114.15	$1,363.65	$142.94
2014	$1,539.32	$733.71	$230.45	$20.33	$449.90	$104.94	$1,409.84	$129.48
2015	$1,643.56	$823.10	$292.30	$11.14	$445.39	$71.63	$1,512.67	$130.89
2016	$1,736.93	$930.67	$323.46	$7.40	$419.80	$55.60	$1,576.07	$160.86
2017	$1,844.15	$1,010.83	$367.70	$4.63	$413.97	$47.01	$1,672.93	$171.22
2018	$1,814.97	$980.56	$380.43	$2.69	$416.59	$34.69	$1,634.99	$179.98
1Q19	$1,844.99	$1,001.61	$383.49	$3.06	$422.18	$34.65	$1,673.40	$171.59
2Q19	$1,907.13	$1,037.93	$407.97	$2.90	$421.56	$36.76	$1,727.65	$179.47
3Q19	$1,975.78	$1,079.82	$427.10	$4.74	$428.69	$35.44	$1,786.74	$189.04
2019	$1,985.38	$1,089.41	$426.85	$4.62	$428.99	$35.52	$1,796.29	$189.09
1Q20	$2,107.66	$1,173.36	$448.34	$4.65	$443.73	$37.57	$1,907.02	$200.64
2Q20	$2,195.19	$1,228.87	$441.06	$5.00	$478.11	$42.14	$1,946.36	$248.83
3Q20	$2,310.42	$1,349.48	$415.24	$4.43	$499.50	$41.78	$2,040.61	$269.81
4Q20	$2,520.90	$1,537.54	$390.66	$3.94	$548.65	$40.10	$2,210.22	$310.68
1Q21	$2,690.92	$1,713.78	$374.63	$4.88	$555.35	$42.28	$2,350.94	$339.98
2Q21	$2,781.91	$1,825.80	$352.77	$4.77	$555.45	$43.12	$2,431.76	$350.15
3Q21	$2,858.59	$1,886.78	$353.12	$4.24	$565.51	$48.95	$2,487.32	$371.27
4Q21	$2,906.04	$1,915.48	$352.71	$4.45	$577.98	$55.42	$2,529.78	$376.26
1Q22	$2,799.22	$1,817.72	$368.43	$4.04	$548.60	$60.43	$2,476.12	$323.10
2Q22	$2,623.79	$1,665.94	$369.20	$3.81	$523.01	$61.83	$2,321.17	$302.62
3Q22	$2,431.57	$1,520.24	$352.02	$3.29	$496.72	$59.30	$2,156.16	$275.41
4Q22	$2,423.87	$1,505.65	$371.91	$3.96	$481.69	$60.65	$2,154.46	$269.41
1Q23	$2,356.93	$1,441.18	$386.32	$4.12	$465.24	$60.08	$2,088.27	$268.65
2Q23	$2,280.38	$1,389.37	$383.52	$3.03	$446.19	$58.27	$2,022.46	$257.92
Change:								
1Q23-2Q23	-3.2%	-3.6%	-0.7%	-26.5%	-4.1%	-3.0%	-3.2%	-4.0%
2Q22-2Q23	-13.1%	-16.6%	3.9%	-20.5%	-14.7%	-5.7%	-12.9%	-14.8%

Source: Inside Mortgage Finance. Notes: Data as of Q2 2023.

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

	Institution	Total	GSE PT	GNMA PT	Agency CMO	Non-Agency	Share
1	BANK OF AMERICA CORPORATION	$425,886.0	$358,807.0	$60,878.0	$6,054.0	$147.0	18.7%
2	WELLS FARGO & COMPANY	$238,211.0	$154,323.0	$81,335.0	$2,491.0	$62.0	10.4%
3	JPMORGAN CHASE & CO.	$161,413.0	$68,554.0	$79,707.0	$517.0	$12,635.0	7.1%
4	CHARLES SCHWAB	$156,171.0	$88,295.0	$5,622.0	$62,254.0	$0.0	6.8%
5	Truist Bank	$102,173.0	$51,563.0	$11,661.0	$35,921.0	$3,028.0	4.5%
6	U.S. BANCORP	$98,929.9	$64,621.7	$23,225.0	$11,083.2	$0.1	4.3%
7	CITIGROUP INC.	$82,573.0	$68,947.0	$10,716.0	$2,231.0	$679.0	3.6%
8	PNC Bank, National Association	$69,861.0	$59,357.1	$4,037.6	$5,451.7	$1,014.5	3.1%
9	CAPITAL ONE FINANCIAL CORPORATION	$63,138.3	$30,002.4	$14,901.6	$17,900.2	$334.1	2.8%
10	MORGAN STANLEY	$50,757.0	$32,486.0	$7,190.0	$11,081.0	$0.0	2.2%
11	BANK OF NEW YORK MELLON CORP	$39,946.0	$28,321.0	$1,578.0	$8,152.0	$1,895.0	1.8%
12	USAA Federal Savings Bank	$38,196.0	$32,268.0	$1,886.0	$4,042.0	$0.0	1.7%
13	State Street Bank and Trust Company	$35,556.7	$13,705.0	$6,956.0	$13,345.7	$1,550.0	1.6%
14	BMO Harris Bank National Association	$30,642.6	$4,179.4	$6,247.3	$20,215.9	$0.0	1.3%
15	The Huntington National Bank	$28,073.2	$11,158.7	$9,193.6	$7,598.1	$122.8	1.2%
16	TD Bank USA/TD Bank NA	$26,928.8	$1,079.3	$75.9	$25,737.0	$36.6	1.2%
17	KeyBank National Association	$24,634.7	$3,723.2	$182.9	$20,728.6	$0.0	1.1%
18	HSBC Bank USA, National Association	$23,944.3	$4,209.0	$14,418.1	$5,316.6	$0.7	1.1%
19	Citizens Bank, National Association	$23,183.4	$12,233.4	$5,315.4	$5,634.6	$0.0	1.0%
20	Ally Bank	$19,630.0	$12,338.0	$1,801.0	$1,576.0	$3,915.0	0.9%
	Total Top 20	$1,739,848.9	$1,100,171.1	$346,927.3	$267,330.7	$25,419.8	76.3%

Source: Inside Mortgage Finance. Notes: Data as of Q2 2023.

8.3 SOMA Holdings

Below is a summary of the holdings within the Fed's System Open Market Account (SOMA) as of July 26, 2023.

Highlights (June 28, 2023 – July 26, 2023):

- Federal Open Market Committee Meeting 7/26/2023 Comments:
- "The Committee decided to raise the target range for the federal funds rate to be 5.25%-5.5%."
- "The Committee is strongly committed to returning inflation to its 2% objective."
- "The Committee will continue reducing its holdings of Treasury securities and agency debt and agency mortgage-backed securities, as described in its previously announced plans."
- Next FOMC meeting scheduled for September 19-20.
- Inflation fell for the 12th straight month to 3% in June, per the July 12th CPI report.
- SOMA holdings of domestic securities totaled $7.5 trillion on Jul 26 (a decrease of $84.7 billion or -1.12% from Jun 28).
- $64.1 billion (76% of the total decrease) was in U.S. Treasury holdings and $20.7 billion (24% of the total decrease) was in Agency MBS.
- Agency MBS comprise about 33% of the total SOMA portfolio. The $20.7 billion decrease was comprised of a $8.4 billion decrease in Fannie Mae holdings, a $7.3 billion decrease in Freddie Mac holdings, and a $5.0 billion decrease in Ginnie Mae holdings.
- Over 99% of SOMA Agency MBS holdings have coupons of 4.5% or lower with an average WAC of 2.509%.
- The redemption cap for SOMA's Agency MBS holdings is set at $35 billion per month. The reduction of $20.6 billion in Agency MBS represents 59% of the liquidation cap.

Table 12: SOMA Holdings as of June 28, 2023 and July 26, 2023 ($ Billions)

Holdings by Security Type	*June 28, 2023*		*July 26, 2023*		*Month-Over-Month*	
	SOMA Holdings	*% Share*	*SOMA Holdings*	*% Share*	*$ Change*	*% Change*
US Treasuries	$5,037.0	66.47%	$4,972.8	66.37%	-$64.1	-1.27%
Federal Agency Debt	$2.3	0.03%	$2.3	0.03%	$0.0	0.00%
Agency MBS	$2,529.8	33.39%	$2,509.2	33.49%	-$20.6	-0.81%
Agency Commercial MBS	$8.4	0.11%	$8.4	0.11%	$0.0	-0.15%[4]
Total SOMA Holdings	$7,577.4	100.0%	$7,492.7	100.0%	-$84.7	-1.12%

Table 13: SOMA Agency MBS Liquidations from June 28, 2023 to July 26, 2023 ($ Billions)

	MBS Holdings as of 6.28.23	*MBS Holdings 7.26.23*	*Liquidated Amount*	*Liquidation Cap*	*Percentage of Liquidation Cap*
Total	*$2,529.8*	*$2,509.2*	*$20.6*	*$35.0*	*59%*

Source: New York FED SOMA Holdings https://www.newyorkfed.org/markets/soma-holdings. Notes: The liquidation cap is per calendar month. Our analysis here instead covers a four-week period to maintain consistency with other analyses in this report.

[4] *Table 12 illustrates figures in $ billions, any change less than $50 million will be expressed as a "$0.0" change in the "$ Change" column.*

8.4 Foreign Ownership of MBS

For the month of May 2023, foreign ownership of MBS represented $1.191 trillion in agency MBS, down approximately $20 billion from April 2023. Total foreign ownership of Agency MBS represents roughly 14% of total Agency MBS outstanding. Total foreign ownership excluding Fed Holdings and CMO's represents roughly 23% of total Agency MBS available.

Figure 34. Agency MBS Owned by Foreign Entities Ex-Fed Holdings and CMO's (USD Billions)

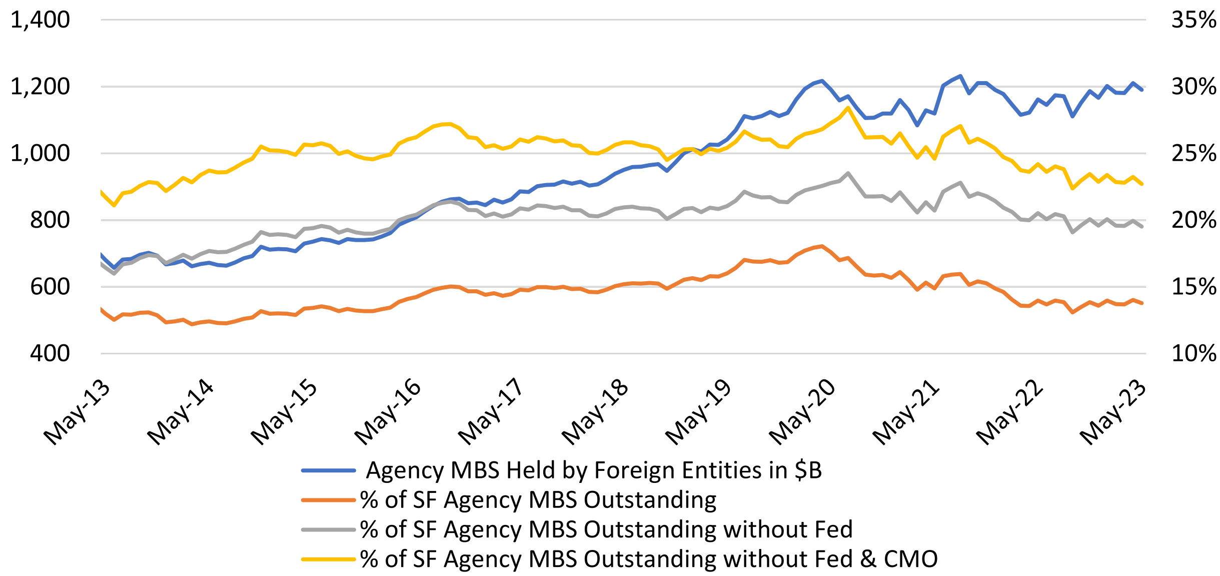
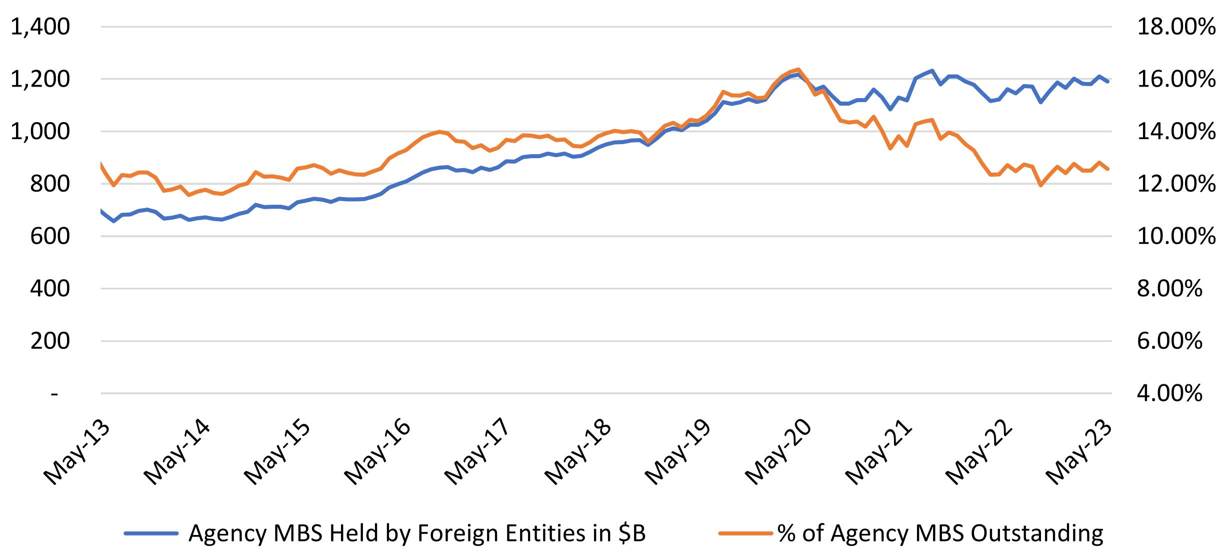


Figure 35. Agency MBS Owned by Foreign Entities (USD Billions)



Sources: TIC and Recursion, as of May 2023.

8.5 Foreign Ownership of Agency Debt and Agency MBS

The largest holders of agency MBS were Japan, China, and Taiwan. As of March 2023, these three owned 60% of all foreign owned US MBS. Between March 2022 and March 2023, Japan and China increased their agency MBS holdings while Taiwan's holdings decreased. Japan's holdings increased by $27.2 billion, China's holdings increased by $44.3 billion, and Taiwan's holdings decreased by $20.6 billion.

Table 14. All Agency Debt

Country	*Level of Holdings ($ Millions)*				*Change in Holdings ($ Millions)*			
	6/1/2022	**9/1/2022**	**12/1/2022**	**3/1/2023**	**Q2 2022**	**Q3 2022**	**Q4 2022**	**Q1 2023**
Japan	231,437	232,769	278,068	287,050	(28,407)	1,332	45,299	8,982
China	244,389	241,523	251,566	263,891	24,840	(2,866)	10,043	12,325
Taiwan	222,670	209,453	210,309	212,782	(10,670)	(13,217)	856	2,473
Canada	76,391	89,313	97,234	105,527	2,668	12,922	7,921	8,293
Luxembourg	42,840	38,559	47,142	51,268	9,456	(4,281)	8,583	4,126
United Kingdom	66,229	56,348	61,418	41,147	17,793	(9,881)	5,070	(20,271)
South Korea	37,963	35,643	36,240	38,146	(2,365)	(2,320)	597	1,906
Cayman Islands	34,981	35,081	30,954	29,485	3,009	100	(4,127)	(1,469)
Ireland	20,204	17,692	22,478	25,100	(385)	(2,512)	4,786	2,622
France	16,706	16,199	19,805	22,578	(421)	(507)	3,606	2,773
Other	199,626	191,424	187,241	196,266	12,816	(8,202)	(4,183)	9,025
Total	**1,193,436**	**1,164,004**	**1,242,455**	**1,273,240**	**28,334**	**(29,432)**	**78,451**	**30,785**

Table 15. Agency MBS

Country	*Level of Holdings ($ Millions)*		
	3/1/2022	**3/1/2023**	***YoY Change in Holdings ($ Millions)***
Japan	259,844	287,050	27,206
China	219,549	263,891	44,342
Taiwan	233,340	212,782	-20,558
Canada	73,723	105,527	31,804
Luxembourg	33,384	51,268	17,884
United Kingdom	48,436	41,147	-7,289
South Korea	40,328	38,146	-2,182
Cayman Islands	31,972	29,485	-2,487
Ireland	20,589	25,100	4,511
France	17,127	22,578	5,451
Other	186,810	196,266	9,456
Total	**1,165,102**	**1,273,240**	**108,138**

Source: Treasury International Capital (TIC). Note: Level of agency debt Holdings by month data as of Q1 2023. Agency MBS as of March 2023. Revised to include top 10 holders of agency debt listed as of March 2023.

9 FIXED INCOME LIQUIDITY INDICATORS

The agency MBS average daily trading volume YTD as of month-end July 2023 was $247 billion, which was up from a monthly average of $241 billion for calendar year 2022. As of month-end July 2023, agency MBS average daily trading volume decreased 2.7% MoM. *See footnote below for update on "Average Daily Turnover by Sector" data.*

Figure 36. Average Daily Trading Volume by Sector

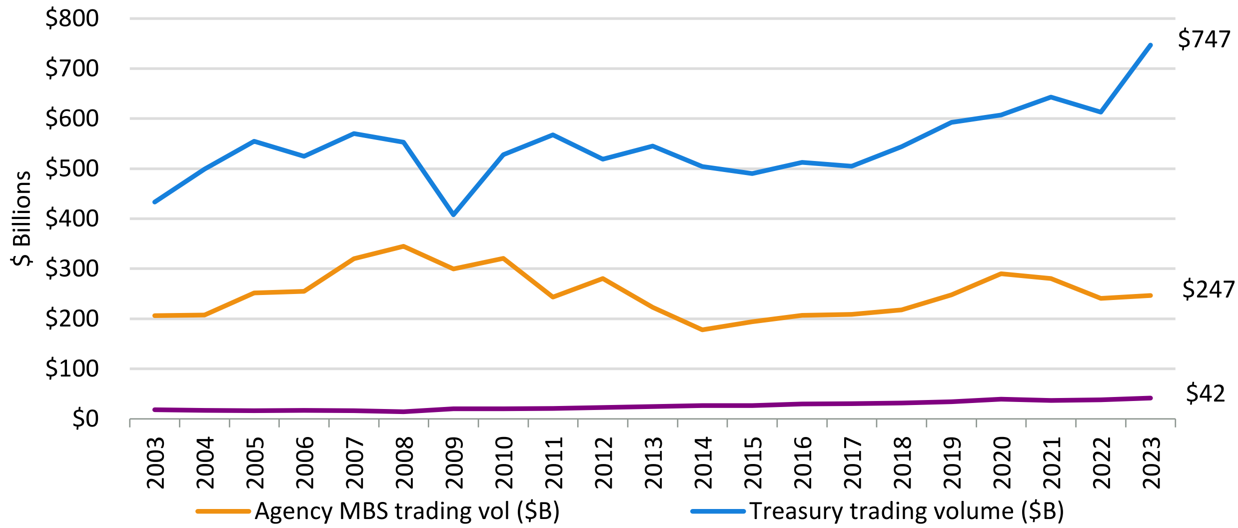
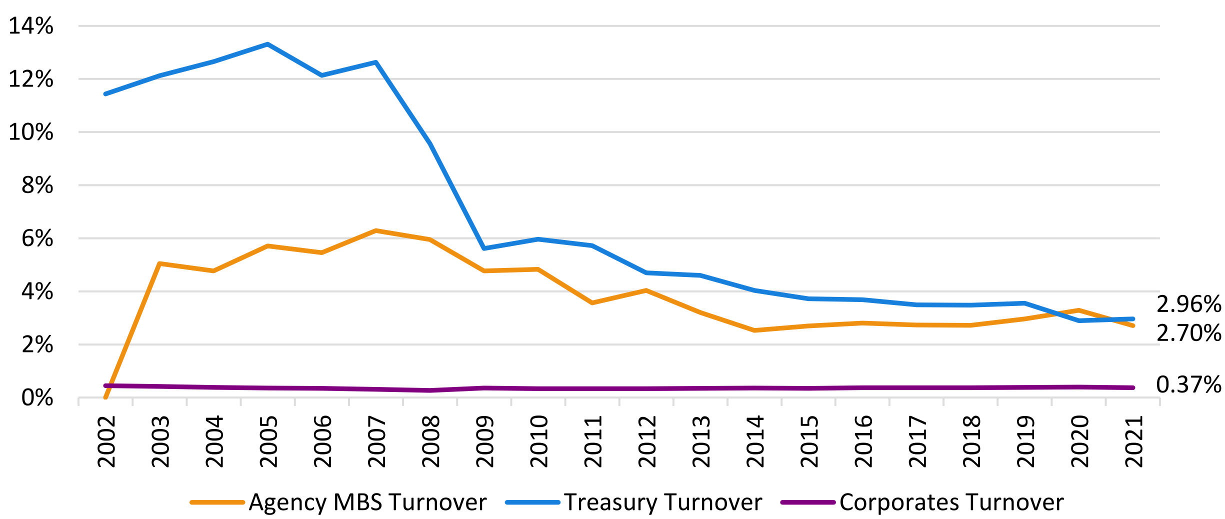


Figure 37. Average Daily Turnover by Sector



Source: SIFMA. Note: Data as of July 2023 for Average Daily Trading Volume by Sector and as of December 2021 for agency MBS in Average Daily Turnover by Sector. The MBS outstanding database for Turnover by Sector is under maintenance and is not updated in this report.

PRIMARY MORTGAGE MARKET

10 AGENCY CREDIT BREAKDOWN

Tables 16, 17, and 18 below outline the population distributions of FICOs, DTIs, and LTVs between the agencies and between FHA, VA, and other Ginnie Mae loan sources as of month-end July 2023. The distribution statistics capture some key differences in the populations served by the agencies.

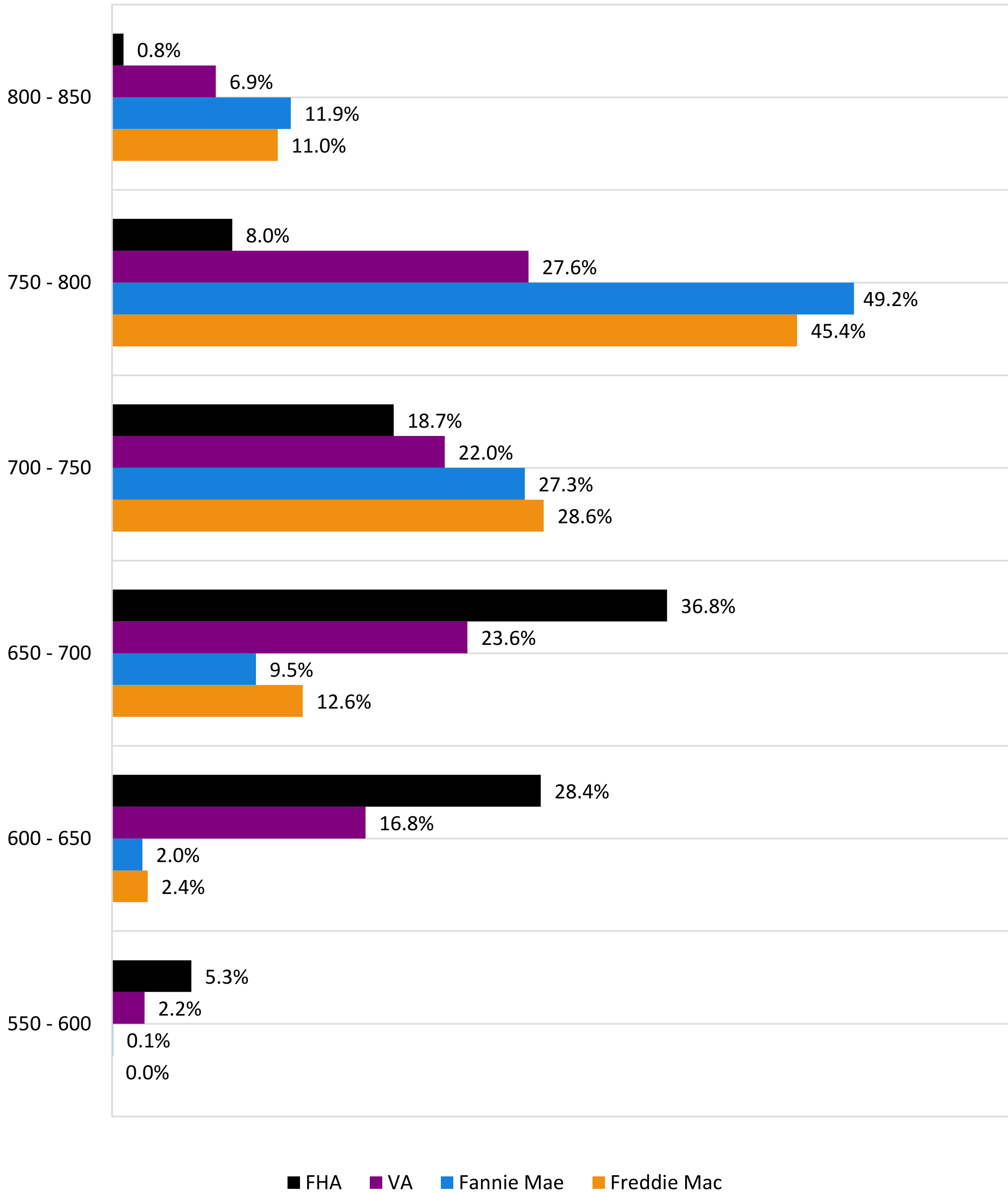
10.1 Credit Scores

Table 16. Share of Loans by FICO Score

Purchase FICO							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	238,168	651	693	745	781	799	734
Fannie	76,504	702	734	767	790	802	758
Freddie	73,723	693	726	762	788	802	754
Ginnie	87,941	626	652	689	740	781	696
Refi FICO							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	47,131	624	657	703	756	789	704
Fannie	14,909	668	704	746	780	799	739
Freddie	12,082	661	693	733	773	796	731
Ginnie	20,140	596	628	658	694	734	662
All FICO							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	285,299	645	686	739	779	798	729
Fannie	91,413	695	729	764	789	802	755
Freddie	85,805	687	721	759	787	801	751
Ginnie	108,081	621	647	682	732	776	690
Purchase FICO: Ginnie Mae Breakdown By Source							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	87,941	626	652	689	740	781	696
FHA	54,965	622	646	675	715	753	681
VA	29,957	636	674	731	777	798	723
Other	3,019	632	655	692	735	765	695
Refi FICO: Ginnie Mae Breakdown By Source							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	20,140	596	628	658	694	734	662
FHA	13,876	592	624	653	685	718	654
VA	6,252	608	638	672	718	763	678
Other	12	679	684	692	763	766	714
All FICO: Ginnie Mae Breakdown By Source							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	108,081	621	647	682	732	776	690
FHA	68,841	616	642	671	708	748	676
VA	36,209	631	664	719	771	796	715
Other	3,031	632	655	692	735	765	695

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

Figure 38. FICO Distributions by Agency



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

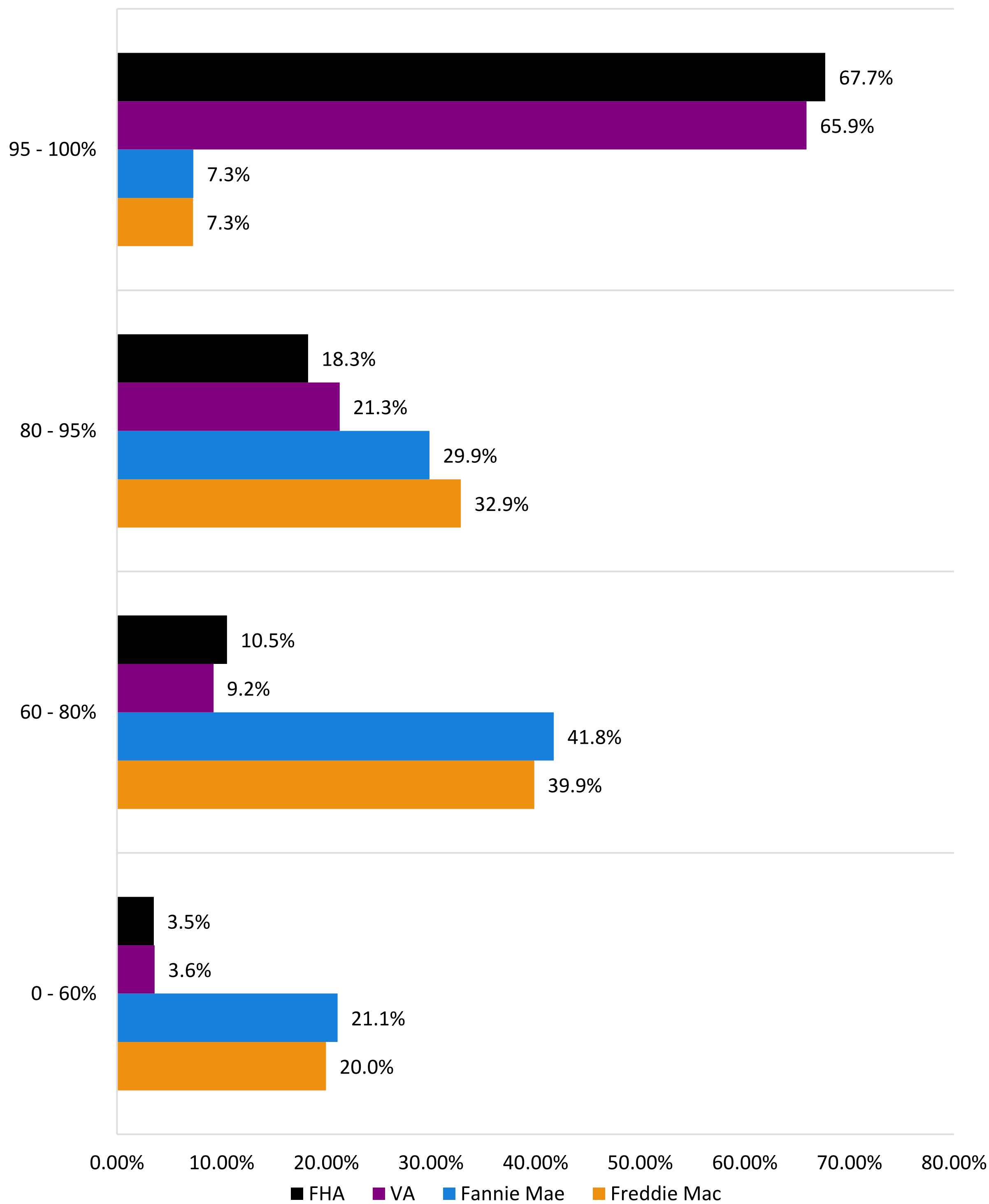
10.2 Loan-to-Value (LTV)

Table 17. Share of Loans by LTV

Names	Number of Loans	P10	P25	Median	P75	P90	Mean
Purchase LTV							
All	238,448	63	80	92	98	100	86
Fannie	76,592	55	75	80	95	95	80
Freddie	73,743	54	75	80	95	95	80
Ginnie	88,113	90	97	98	100	100	96
Refi LTV							
Names	Number of Loans	P10	P25	Median	P75	P90	Mean
All	46,813	34	51	69	80	85	64
Fannie	14,916	28	42	58	70	79	55
Freddie	12,082	29	43	59	70	79	56
Ginnie	19,815	56	70	80	81	91	76
All LTV							
Names	Number of Loans	P10	P25	Median	P75	P90	Mean
All	285,261	54	75	89	97	99	82
Fannie	91,508	47	66	80	90	95	76
Freddie	85,825	47	68	80	93	95	76
Ginnie	107,928	77	91	98	99	100	93
Purchase LTV: Ginnie Mae Breakdown By Source							
Names	Number of Loans	P10	P25	Median	P75	P90	Mean
All	88,113	90	97	98	100	100	96
FHA	55,079	92	97	98	98	98	96
VA	30,001	85	100	100	100	102	97
Other	3,033	94	99	101	101	101	98
Refi LTV: Ginnie Mae Breakdown By Source							
Names	Number of Loans	P10	P25	Median	P75	P90	Mean
All	19,815	56	70	80	81	91	76
FHA	13,927	53	67	78	81	81	72
VA	5,876	64	78	89	94	100	84
Other	12	70	74	86	99	99	85
All LTV: Ginnie Mae Breakdown By Source							
Names	Number of Loans	P10	P25	Median	P75	P90	Mean
All	107,928	77	91	98	99	100	93
FHA	69,006	76	88	98	98	98	91
VA	35,877	80	92	100	100	102	95
Other	3,045	94	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 39. Loan-to Value by Agency



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

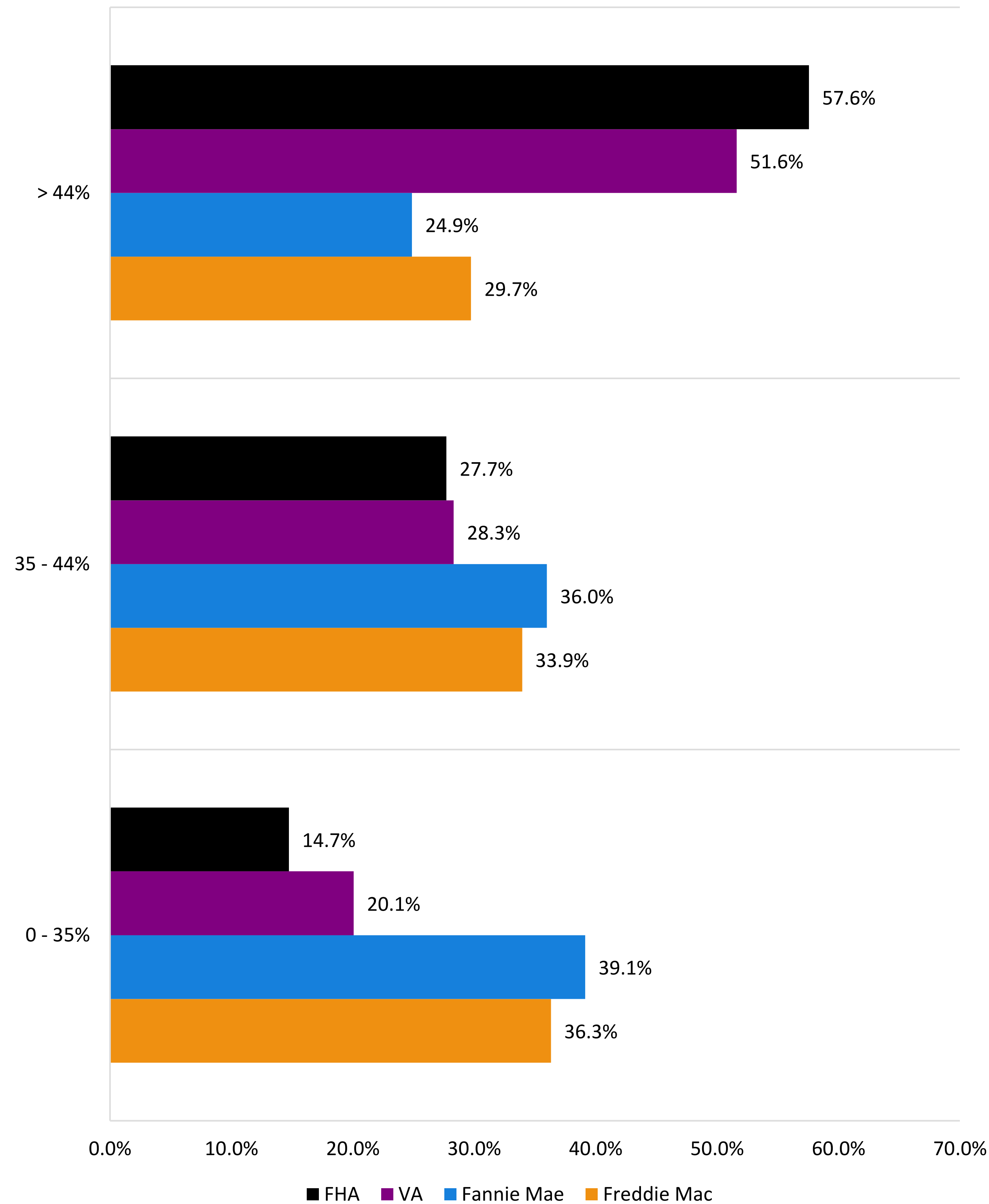
10.3 Debt-to-Income (DTI)

Table 18. Share of Loans by DTI

Purchase DTI							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	238,017	26	34	41	47	51	40
Fannie	76,592	24	31	39	45	48	37
Freddie	73,743	24	31	39	45	49	38
Ginnie	87,682	32	39	45	51	55	44
Refi DTI							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	46,520	25	33	41	47	50	39
Fannie	14,916	22	30	37	43	47	36
Freddie	12,082	24	32	40	46	49	38
Ginnie	19,522	29	36	44	50	55	42
All DTI							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	284,537	26	34	41	47	51	40
Fannie	91,508	24	31	39	44	48	37
Freddie	85,825	24	31	40	46	49	38
Ginnie	107,204	31	38	45	51	55	44
Purchase DTI: Ginnie Mae Breakdown By Source							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	87,682	32	39	45	51	55	44
FHA	55,032	34	40	46	52	55	45
VA	29,621	30	37	45	51	56	44
Other	3,029	27	31	36	40	42	35
Refi DTI: Ginnie Mae Breakdown By Source							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	19,522	29	36	44	50	55	42
FHA	13,800	29	36	44	50	55	43
VA	5,710	28	35	43	50	54	42
Other	12	26	34	36	41	41	36
All DTI: Ginnie Mae Breakdown By Source							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	107,204	31	38	45	51	55	44
FHA	68,832	33	39	46	51	55	45
VA	35,331	30	37	44	51	56	44
Other	3,041	27	31	36	40	42	35

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

Figure 40. Debt-to Income by Agency



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

10.4 High LTV Loans: Ginnie Mae vs. GSEs

Comparing the three-month range of May 2022 – July 2022 to the three-month range of May 2023 – July 2023, the share of high-LTV agency loans with:

- FICO scores above 750 increased by approximately 4.9%.
- DTIs below 35% decreased by approximately 19.1%.

YoY, the share of high-LTV loans increased in the Ginnie Mae guarantee portfolio by approximately 8% and in the GSE guarantee portfolios by approximately 15%. 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 71.41% of its issuances between May 2023 – July 2023 having LTVs of 95 or above, compared to 23.18% for the GSEs.

Table 19. Share of Loans with LTV > 95

	Ginnie Mae	*GSE*	*All*
May 2022 - Jul 2022	63.56%	20.21%	34.74%
May 2023 - Jul 2023	71.41%	23.18%	40.78%

Table 20. Agency Market Share by DTI and FICO for Loans with LTV > 95 (May 2022-July 2022)

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

Table 21. Agency Market Share by DTI and FICO for Loans with LTV > 95 (May 2023-July 2023)

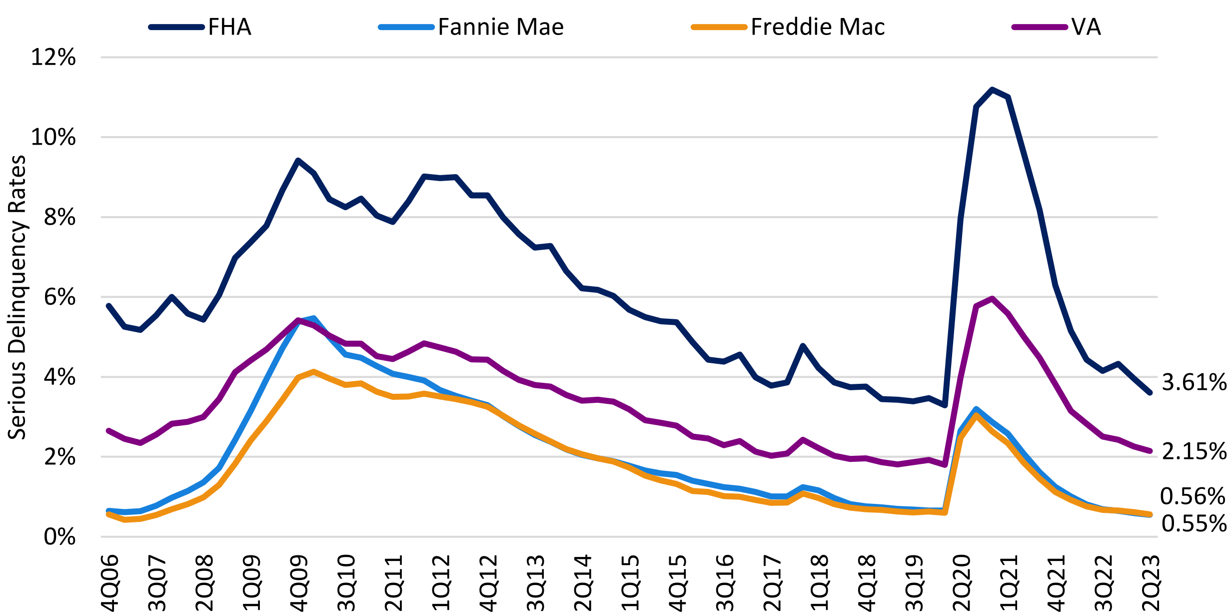
	FICO					
DTI	<650	650-700	700-750	≥750	NA	All
<35	1.86%	2.98%	4.35%	7.66%	0.04%	16.90%
35-45	5.38%	8.15%	10.07%	12.42%	0.05%	36.07%
≥45	7.69%	12.98%	12.94%	12.16%	0.12%	45.89%
NA	0.25%	0.19%	0.11%	0.18%	0.40%	1.13%
All	15.19%	24.30%	27.48%	32.42%	0.61%	100.00%

Sources: Recursion and Ginnie Mae. Data as of July 2023.

10.5 Serious Delinquency Rates

Serious delinquency rates for single-family GSE, VA, and FHA loans all fell in Q2 2023. From Q1 2023 to Q2 2023, Fannie and Freddie serious delinquencies decreased by 4 and 6 bps, respectively. Ginnie Mae collateral's serious delinquency rates decreased more than the GSE rate, with VA decreasing 11 bps and FHA decreasing 35 bps. This overall decline in serious delinquency rates is consistent with the decrease in the number of loans in forbearance captured in Section 11 below.

Figure 41. Serious Delinquency Rates: Single-Family Loans



Sources: Fannie Mae and Freddie Mac Monthly Summary Reports. MBA Delinquency Survey

Note: Serious delinquency is defined as 90 days or more past due or in the foreclosure process. Data as of Q2 2023.

10.6 Credit Box

The first-time homebuyer share for agency purchase loans was 53.7% as of month-end July 2023, a decrease from 55.0% in June 2023 and up from 53.4% in July 2022. Ginnie Mae and Fannie Mae's first-time homebuyer shares, 64.7% and 47.5% respectively, as of month-end July 2023, have decreased 2.7% and 1.5% respectively, YoY. Freddie Mac's first-time homebuyer share increased 7.1% YoY. **Table 22** shows that based on mortgages originated as of month-end July 2023, the average GSE first-time homebuyer was more likely to have a higher credit score and lower LTV. Ginnie Mae's first-time homebuyers were more likely to have lower loan amounts and higher DTI's while loan rates were very similar.

Figure 42. First-Time Homebuyer Share: Purchase Only Loans

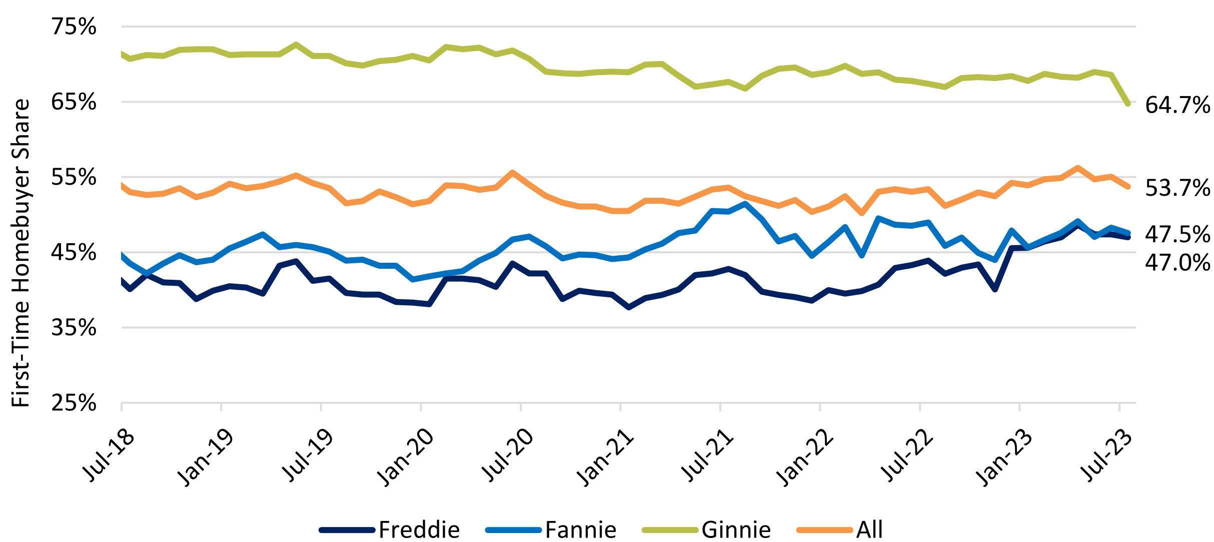


Table 22. Agency First-Time Homebuyer Share Summary

	Fannie Mae		Freddie Mac		Ginnie Mae		All	
	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat
Loan Amount $	350,955	361,224	327,866	342,316	314,088	366,206	328,292	355,928
Credit Score	753	763	747	760	690	708	723	747
LTV (%)	85	75	85	74	97	95	91	80
DTI (%)	37	37	38	38	44	45	40	40
Loan Rate (%)	6.4	6.5	6.5	6.5	6.3	6.2	6.4	6.4

Sources: Fannie Mae, Freddie Mac, and Ginnie Mae disclosure files as of July 2023

In the Ginnie Mae purchase market, 71.8% of FHA loans, 49.9% of VA loans, and 83.1% of other loans provided financing for first-time home buyers as of month-end July 2023. The share of first-time home buyers in the Ginnie Mae purchase market decreased MoM for VA, FHA, and other loans. **Table 23** shows that based on mortgages originated as of month-end July 2023; the credit profile of the average VA first-time homebuyer differed from the average VA repeat buyer. The average VA first-time homebuyer took out 16.0% smaller loans, had a 21.7-point lower credit score, 4.3% higher LTV and had a 13 bp higher interest rate. FHA's first-time homebuyers are much more like their repeat buyers, with only 4.2% smaller loans, similar interest rates, and 2.0% higher LTVs. Because FHA provides one of few credit options for borrowers with lower credit scores, repeat borrowers with weaker credit profiles are often limited to FHA financing; FHA's repeat buyers have similar credit scores compared to their first-time home buyers. For VA and conventional borrowers alike, repeat buyers tend to have higher credit scores than first-time homebuyers.

Figure 43. First-time Homebuyer Share: Ginnie Mae Breakdown

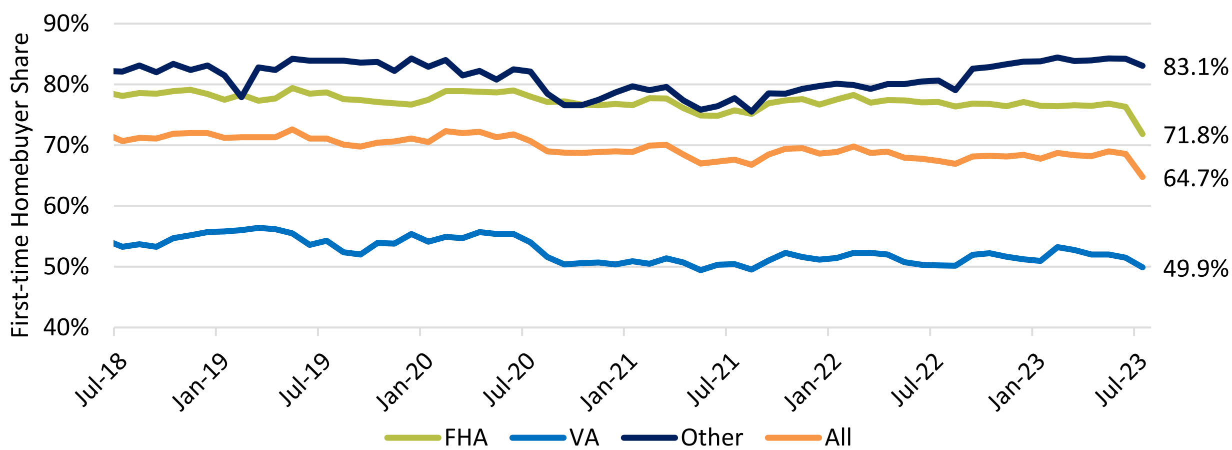


Table 23. Ginnie Mae First-Time Homebuyer Share Breakdown Summary

	FHA		VA		Other		Total	
	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat
Loan Amount $	308,663	322,213	350,668	417,658	182,058	189,086	314,088	366,206
Credit Score	681	682	712	734	695	696	690	708
LTV (%)	97	95	99	94	98	98	97	95
DTI (%)	45	46	43	45	35	36	44	45
Loan Rate (%)	6.3	6.3	6.2	6.1	6.4	6.2	6.3	6.2

Sources: Fannie Mae, Freddie Mac, and Ginnie Mae disclosure files as of July 2023

10.7 Credit Box: Historical

The median FICO score for all agency loans originated as of month-end July 2023 was 737, which represents an 8-point increase YoY. Ginnie Mae median FICO scores increased 8 points YoY to 679 as of month end July. 2023. As of month-end July 2023, average FICO scores for refinances increased for Fannie Mae and Freddie Mac borrowers by 15 and 13 points YoY, respectively.

Figure 44. FICO Scores for All Loans

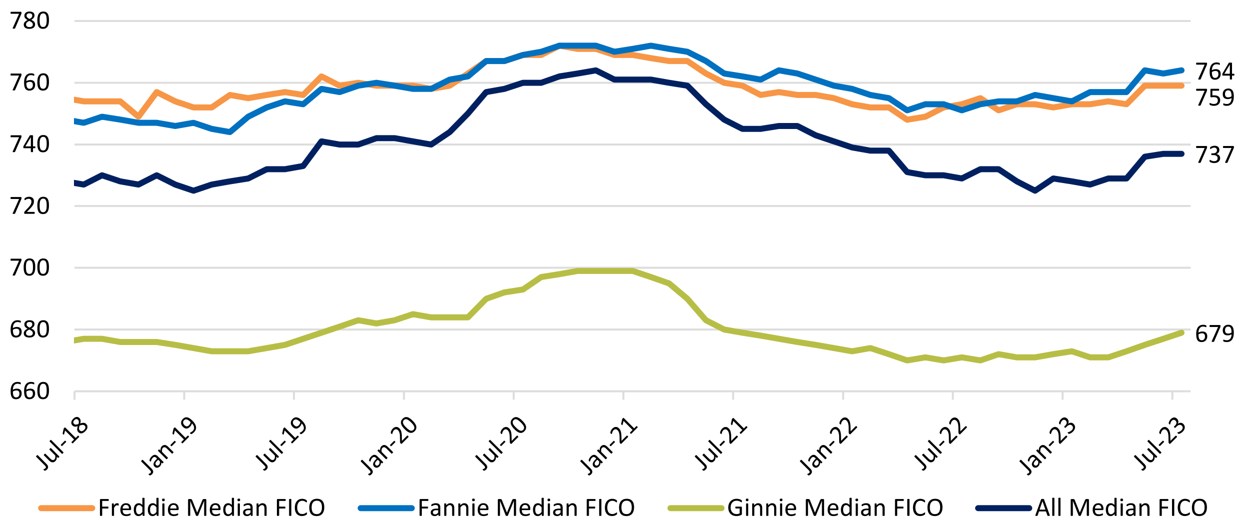


Figure 45. FICO Scores for Purchase Loans

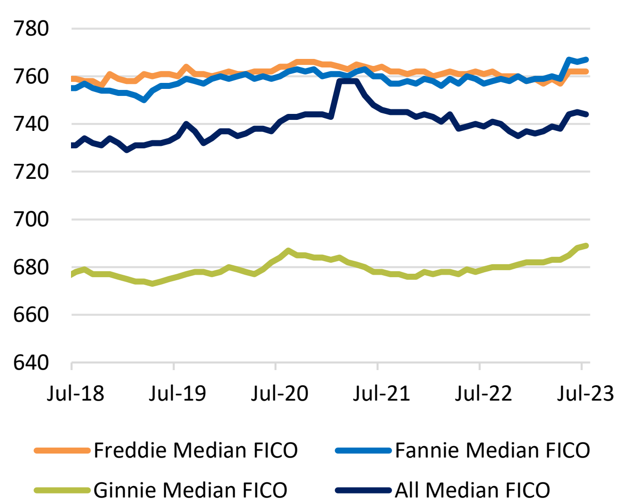
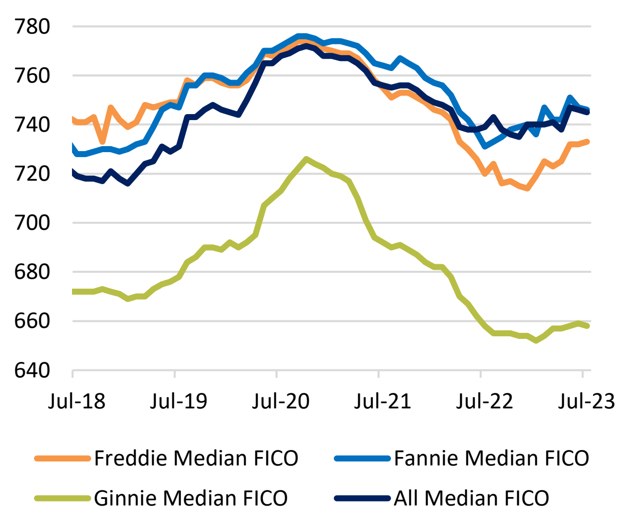


Figure 46. FICO Scores for Refinance Loans



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

In July 2023, the median LTV for Ginnie Mae loans was 98.2% compared to 80% for Fannie Mae and Freddie Mac, owing primarily to the lower down-payment requirements for government loan programs. Ginnie Mae, Fannie Mae, and Freddie Mac all saw their LTV ratios remain flat YoY from July 2022 to July 2023. In July 2023, median DTIs for Ginnie Mae, Freddie Mac, and Fannie Mae were 45.0%, 40.0%, and 39.0% respectively. In July 2022, median DTIs for Ginnie Mae, Freddie Mac, and Fannie Mae were 44.0%, 39.0%, and 38.0% respectively.

Figure 47. LTV Ratio for All Loans

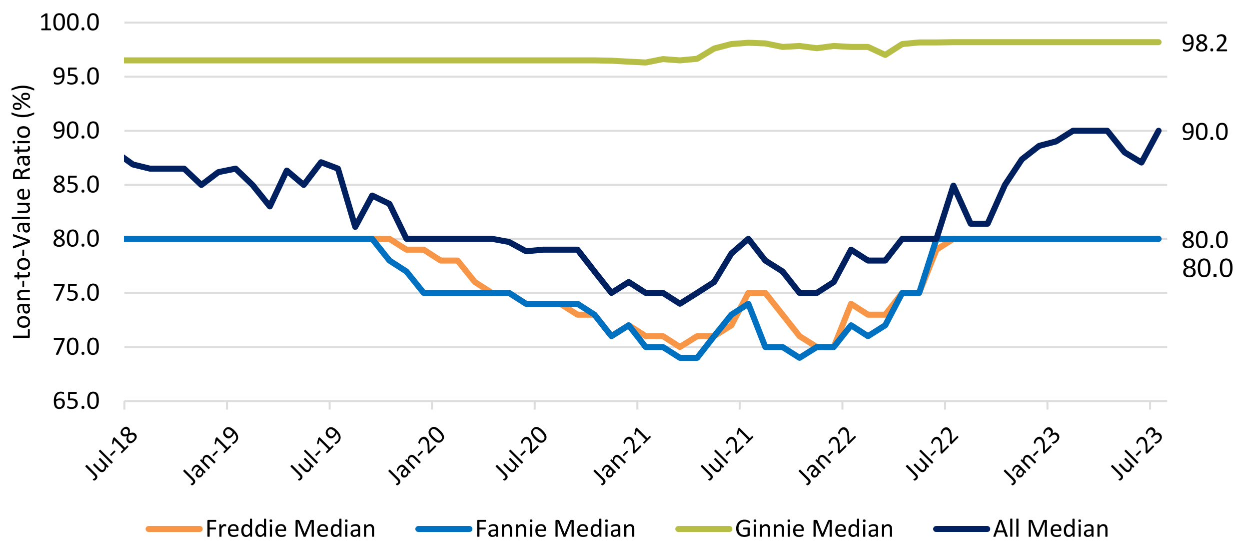
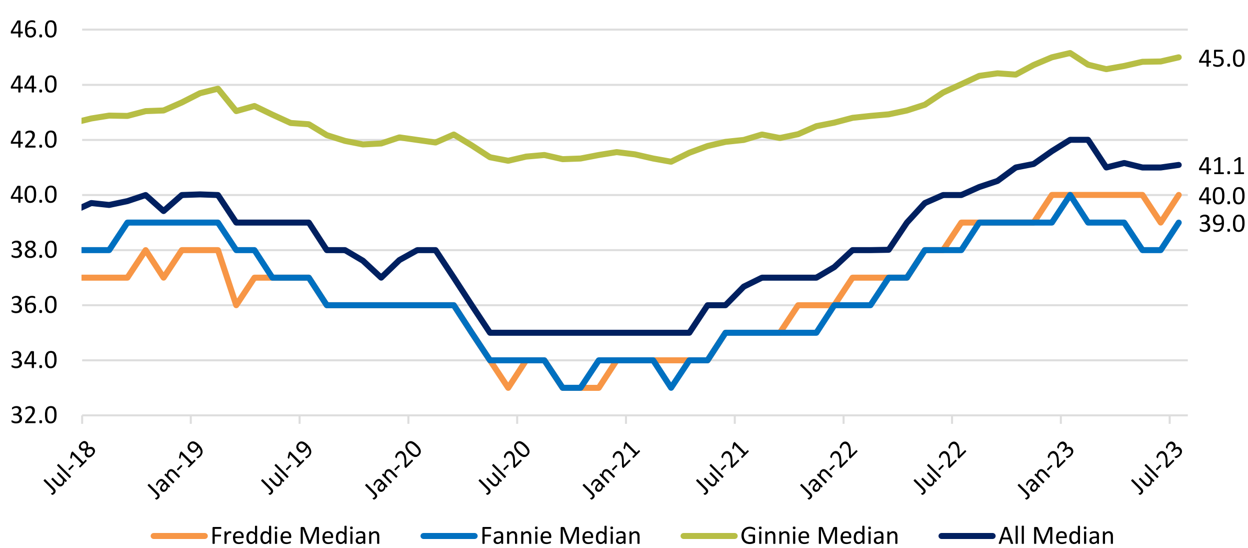


Figure 48. DTI Ratio for All Loans



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

11 FORBEARANCE TRENDS

At the end of July 2023, 67,013 Ginnie Mae loans were in forbearance. The number of loans in forbearance removed from MBS pools in July was 344 while 66,669 loans in forbearance remain in pools. The number of loans in forbearance, loans in forbearance that were removed from pools, and loans in forbearance that remained in pools decreased MoM. The median current principal balance for Ginnie Mae, FHA, and VA was higher for loans in forbearance originated by nonbanks than banks in all subsets.

Table 24. Forbearance Snapshot

	FICO Score*	Note Rate*	Current Principal Balance Median	First Time Homebuyer Share (%)	Purchase Share (%)	Loan Count
All Loans in Forbearance – July 2023						
Ginnie	655	3.8	$207,910	74.1	75.7	67,013
Bank	672	3.9	$142,898	84.4	88.4	9,548
Nonbank	653	3.8	$219,491	73.0	74.5	57,446
FHA	651	3.9	$201,897	77.7	78.4	50,973
Bank	671	4.0	$140,585	87.3	90.7	8,215
Nonbank	649	3.9	$214,380	76.5	77.1	42,743
VA	664	3.6	$268,271	59.0	64.2	12,027
Bank	674	3.5	$187,043	57.1	69.8	902
Nonbank	664	3.6	$275,576	59.0	63.9	11,122
Loans in Forbearance and Removed from Pools – July 2023						
	FICO Score*	Note Rate*	Current Principal Balance Median	First Time Homebuyer Share (%)	Purchase Share (%)	Loan Count
Ginnie	659	3.6	$176,928	66.0	58.5	344
Bank	662	4.0	$79,875	77.1	80.1	98
Nonbank	659	3.5	$220,277	64.0	55.7	246
FHA	648	3.7	$166,169	66.0	63.7	239
Bank	660	4.3	$62,225	72.3	79.5	74
Nonbank	646	3.6	$207,966	64.8	61.5	165
VA	681	3.3	$222,636	64.4	42.0	82
Bank	668	3.3	$150,206	80.1	66.7	12
Nonbank	682	3.3	$239,978	63.0	40.4	70
Loans in Forbearance that Remain in Pools – July 2023						
	FICO Score*	Note Rate*	Current Principal Balance Median	First Time Homebuyer Share (%)	Purchase Share (%)	Loan Count
Ginnie	655	3.8	$208,039	74.2	75.8	66,669
Bank	672	3.9	$143,334	84.5	88.5	9,450
Nonbank	653	3.8	$219,485	73.0	74.6	57,200
FHA	651	3.9	$202,054	77.8	78.5	50,734
Bank	671	4.0	$141,172	87.3	90.8	8,141
Nonbank	649	3.9	$214,402	76.5	77.1	42,578
VA	664	3.6	$268,453	58.9	64.3	11,945
Bank	675	3.5	$187,491	57.0	69.9	890
Nonbank	664	3.6	$275,814	59.0	64.1	11,052

*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 July 2023; *Averages weighted by remaining principal balance of the loans.*

12 HOLDERS OF GINNIE MAE MORTGAGE SERVICING RIGHTS

The 30 largest owners of mortgage servicing rights (MSR) by UPB for loans collateralizing Ginnie Mae MBS is shown in **Table 25.** The top 30 firms collectively own 87.22% of Ginnie Mae MSRs (see Cumulative Share). Twenty-two of these top 30 are non-depository institutions, the remaining eight are depository institutions. As of July 2023, over half (53.73%) of the Ginnie Mae MSRs are owned by the top six firms.

Table 25. Top 30 Holders of Ginnie Mae Mortgage Servicing Rights (MSRs), by UPB

MSR Holder	*Rank Current*	*Rank Year prior*	*Change*	*UPB ($ millions)*	*Share*	*Cumulative Share*	*CPR*	*CDR*
LAKEVIEW LOAN SERVIC	1	3	↑	$302,510,676,674	13.55%	13.55%	7.17%	1.04%
DBA FREEDOM HOME MOR	2	1	↓	$276,402,518,262	12.38%	25.93%	7.45%	0.72%
PENNYMAC LOAN SERVIC	3	2	↓	$260,596,500,891	11.67%	37.60%	7.15%	0.81%
NATIONSTAR MORTGAGE,	4	4	↔	$127,264,313,047	5.70%	43.30%	8.59%	1.68%
NEWREZ LLC	5	8	↑	$124,247,339,733	5.57%	48.87%	6.23%	0.65%
ROCKET MORTGAGE, LLC	6	6	↔	$108,608,827,879	4.86%	53.73%	6.60%	0.24%
WELLS FARGO BANK, NA	7	5	↓	$107,213,856,691	4.80%	58.54%	8.21%	0.58%
CARRINGTON MORTGAGE	8	7	↓	$98,088,804,661	4.39%	62.93%	7.32%	0.80%
PLANET HOME LENDING,	9	12	↑	$61,084,113,459	2.74%	65.67%	5.90%	0.63%
U. S. BANK, NA	10	10	↔	$54,304,061,970	2.43%	68.10%	5.21%	0.24%
UNITED WHOLESALE MOR	11	11	↔	$49,343,728,540	2.21%	70.31%	5.93%	2.06%
LOANDEPOT.COM,LLC	12	14	↑	$38,538,448,074	1.73%	72.04%	4.28%	0.28%
NAVY FEDERAL CREDIT	13	15	↑	$29,202,644,971	1.31%	73.34%	7.11%	0.82%
M&T BANK	14	NR	↑	$28,063,004,534	1.26%	74.60%	7.34%	0.27%
MORTGAGE RESEARCH CE	15	13	↓	$27,073,011,757	1.21%	75.81%	7.71%	0.39%
GUILD MORTGAGE COMPANY	16	17	↑	$23,378,402,735	1.05%	76.86%	6.70%	0.54%
THE MONEY SOURCE INC	17	18	↑	$21,776,479,922	0.98%	77.84%	7.25%	0.95%
AMERIHOME MORTGAGE	18	16	↓	$20,658,374,546	0.93%	78.76%	7.39%	1.01%
CROSSCOUNTRY MORTGAGE	19	20	↑	$20,275,471,486	0.91%	79.67%	6.70%	0.65%
TRUIST BANK	20	19	↓	$20,172,653,355	0.90%	80.57%	9.00%	0.99%
NEW AMERICAN FUNDING	21	21	↔	$19,088,833,678	0.86%	81.43%	6.17%	0.27%
MOVEMENT MORTGAGE, LLC	22	23	↑	$18,821,520,287	0.84%	82.27%	5.57%	0.35%
CMG MORTGAGE, INC.	23	24	↑	$18,794,432,443	0.84%	83.11%	6.63%	1.19%
IDAHO HOUSING	24	26	↑	$15,662,927,556	0.70%	83.82%	5.69%	1.04%
PHH MORTGAGE CORPORATION	25	29	↑	$15,121,993,033	0.68%	84.49%	5.88%	0.45%
CITIZENS BANK N.A.	26	27	↑	$13,962,017,814	0.63%	85.12%	6.20%	0.07%
FLAGSTAR BANK, N.A.	27	NR	↑	$13,200,629,511	0.59%	85.71%	6.00%	0.21%
MIDFIRST BANK	28	28	↔	$12,525,899,683	0.56%	86.27%	10.72%	5.40%
CARDINAL FINANCIAL	29	30	↑	$11,042,135,141	0.49%	86.76%	6.52%	1.20%
SUN WEST MORTGAGE CO	30	NR	↑	$10,258,263,761	0.46%	87.22%	6.25%	0.31%

Sources: Deloitte, Recursion. Notes: Data as of July 2023.

13 AGENCY NONBANK ORIGINATOR

Total agency nonbank origination share increased as of month-end July 2023 by approximately 3.1% MoM. The increase in nonbank origination share was driven by a decrease in both Ginnie Mae and Freddie Mac nonbank origination share, up 0.5% and 4.5% MoM, respectively. The Ginnie Mae nonbank share rose to 89.8% as of July 2023 and has remained consistently higher than the GSEs, largely driven by origination share of refinance mortgage loans.

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

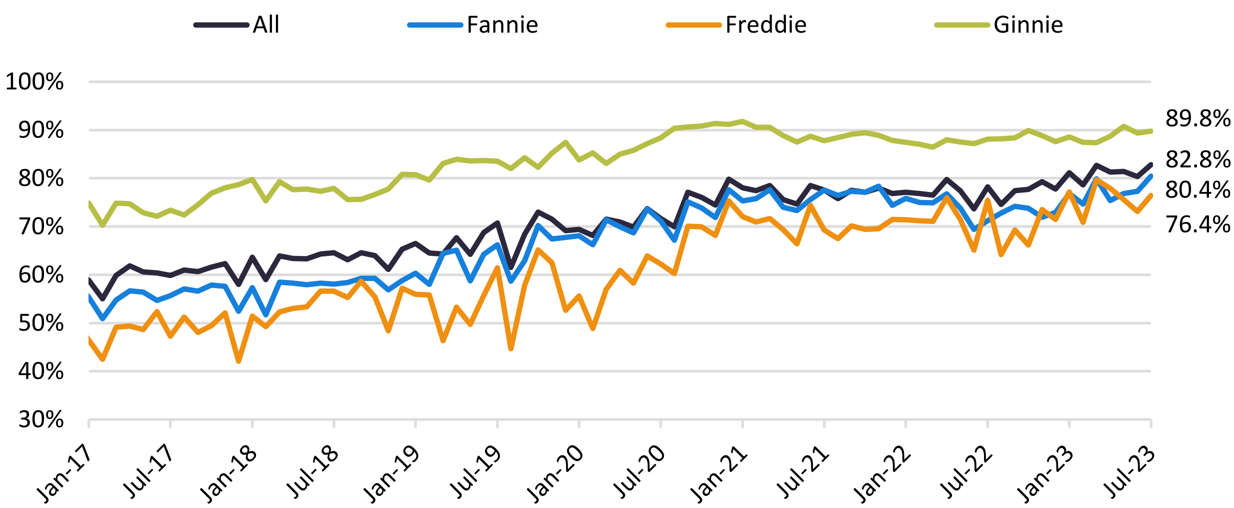


Figure 50. Nonbank Origination Share: Purchase Loans

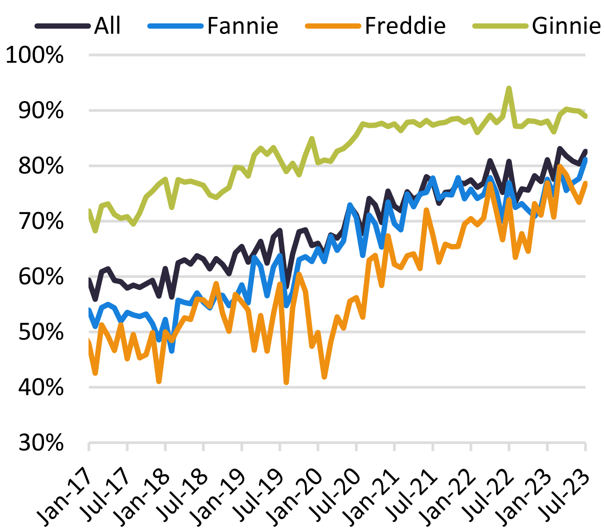
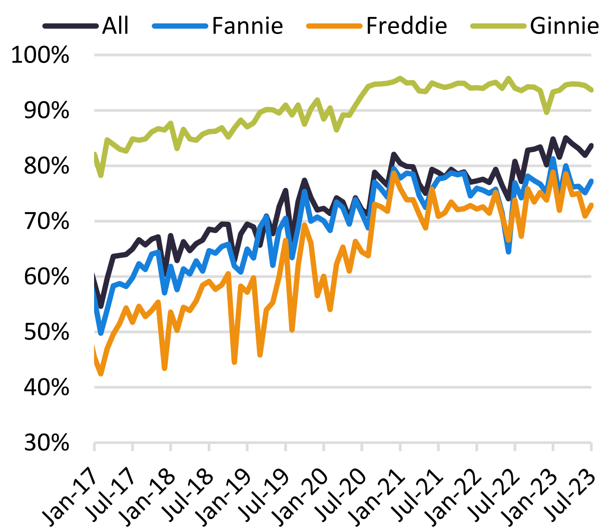


Figure 51. Nonbank Origination Share: Refi Loans



Source: Recursion. Notes: Data as of July 2023.

Ginnie Mae's total nonbank originator share remained relatively stable as of month-end July 2023. Ginnie Mae continues to have a high proportion of nonbank originations, with a rate of 89.8% in July 2023. The percent of Ginnie Mae's Other nonbank refinanced loans decreased to 89.6% in July 2023.

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

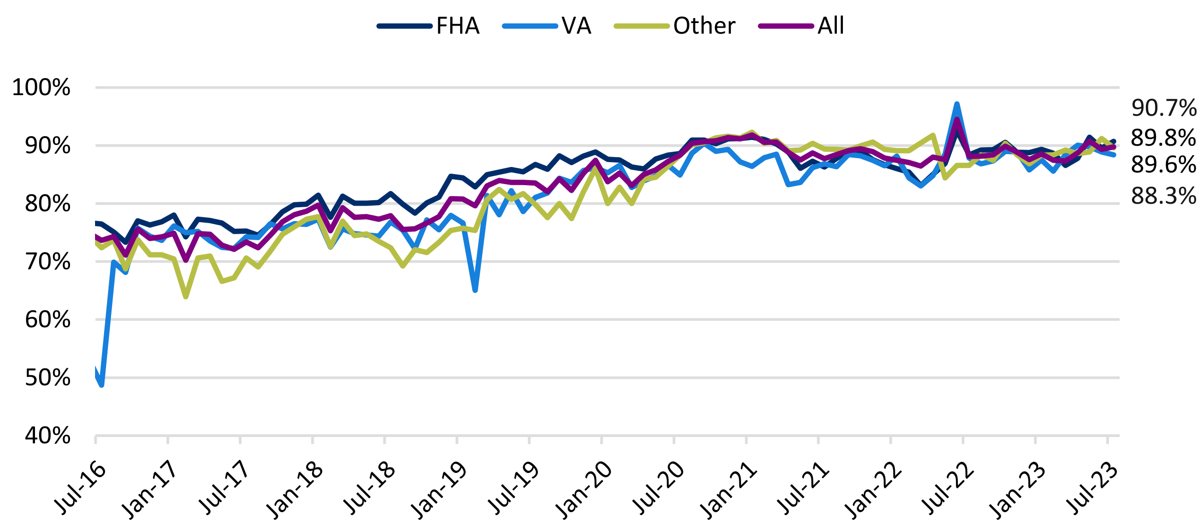


Figure 53. Ginnie Mae Nonbank Share: Purchase Loans

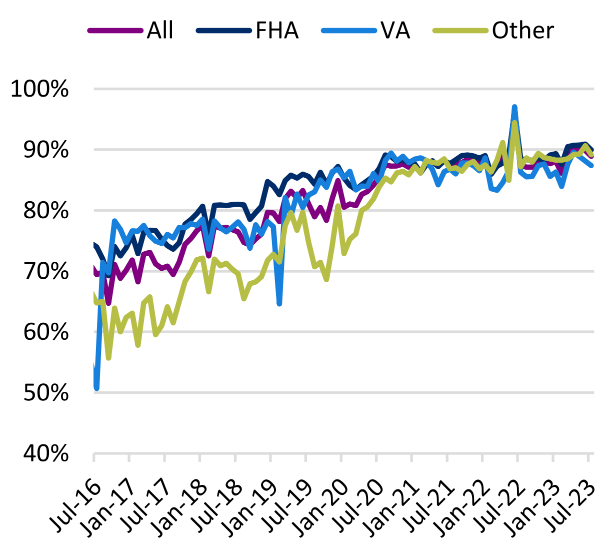
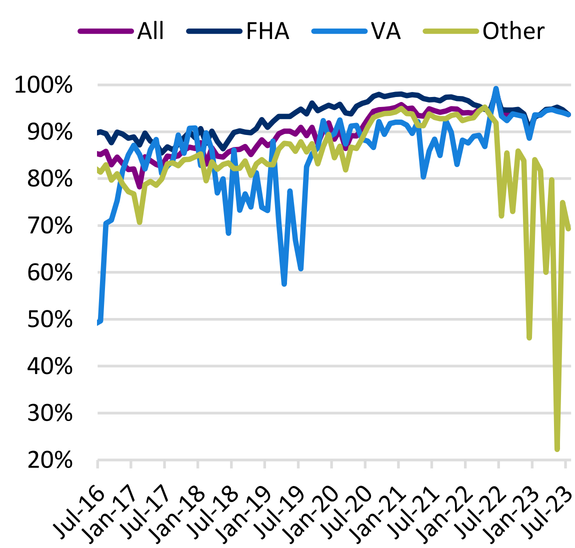


Figure 54. Ginnie Mae Nonbank Share: Refi Loans



Source: Recursion. Notes: Data as of July 2023.

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

13.1.1 (FICO, LTV, DTI)

The mortgage loan originations of nonbanks continued to have a consistently lower median FICO score than their bank counterparts across all agencies. The spread between nonbank and bank FICO scores decreased by 1 point from June 2023 to July 2023. The agency median FICO decreased by 1 point MoM to 737.

Figure 55. Agency FICO: Bank vs. Nonbank

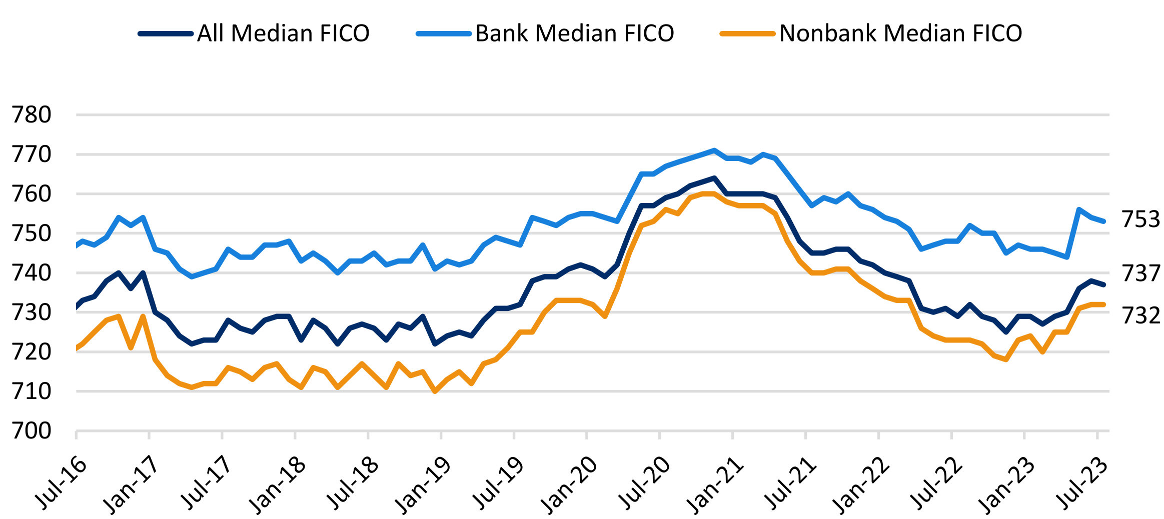


Figure 56. GSE FICO: Bank vs. Nonbank

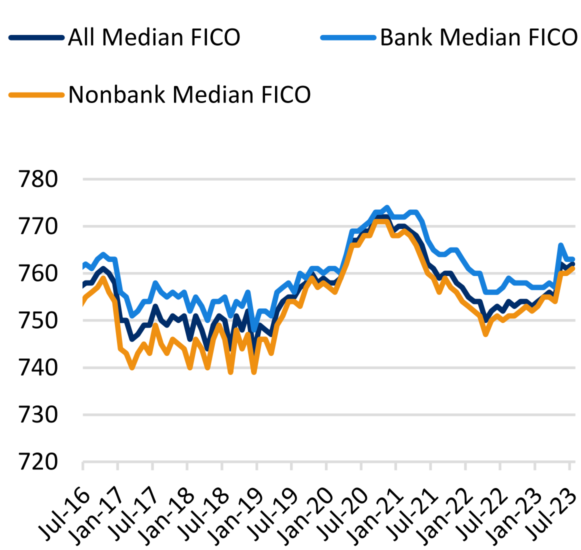
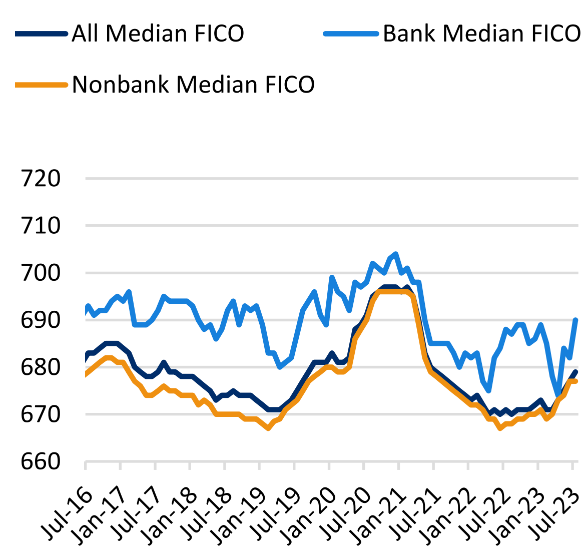


Figure 57. Ginnie Mae FICO: Bank vs. Nonbank



Source: Recursion: Notes: Data as of July 2023.

The median LTV for all GSE originators remained the same as of month-end July 2023 MoM at 80%. Ginnie Mae median bank and nonbank LTV remained flat at 98.19% MoM. Ginnie Mae median DTI slightly rose to 45.1% MoM July 2023 in nonbank originations.

Figure 58. GSE LTV: Bank vs. Nonbank

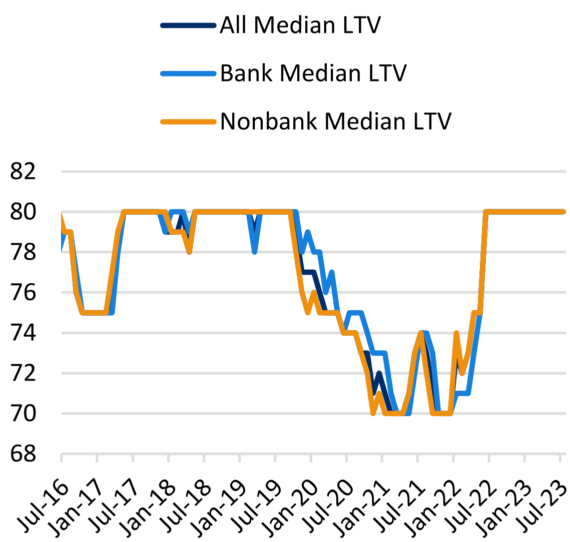


Figure 59. Ginnie Mae LTV: Bank vs. Nonbank

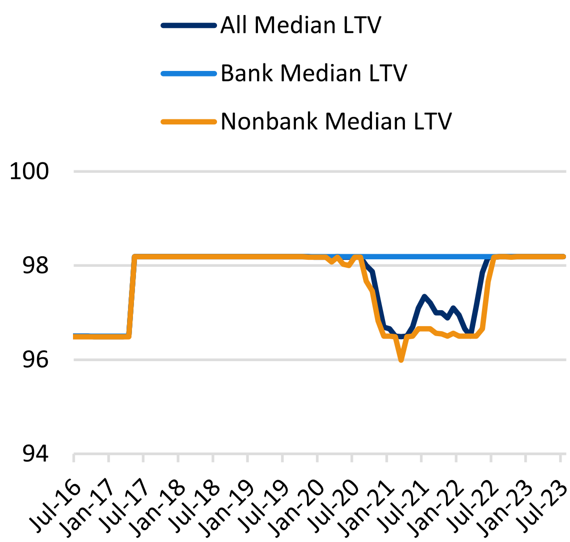


Figure 60. GSE DTI: Bank vs. Nonbank

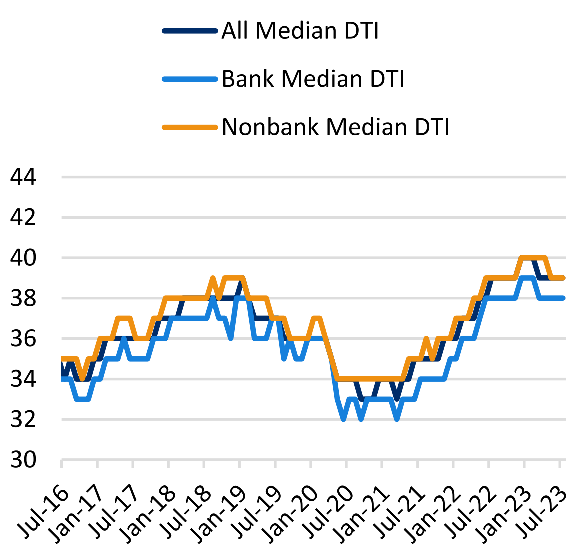
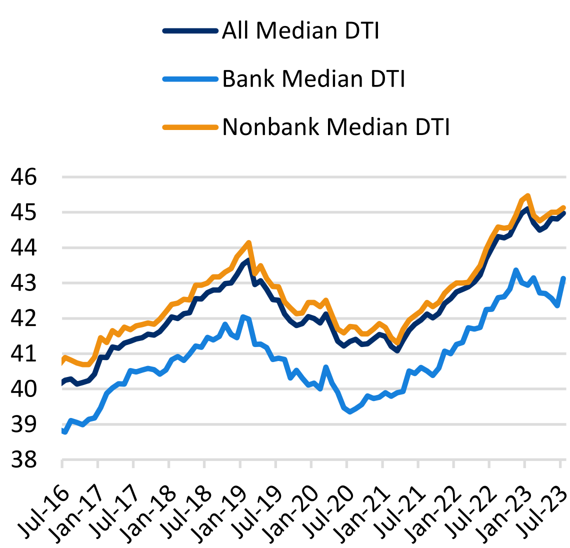


Figure 61. Ginnie Mae DTI: Bank vs. Nonbank



Source: Recursion. Notes: Data as of July 2023.

As of month-end July 2023, the median FICO score for Ginnie Mae bank increased 8 points to 690 and nonbank remained at 677 MoM. The median FICO for all Ginnie originations increased 2 points to 679 MoM. The gap between banks and nonbanks is most apparent in VA lending (22-point spread).

Figure 62. Ginnie Mae FICO Score: Bank vs. Nonbank

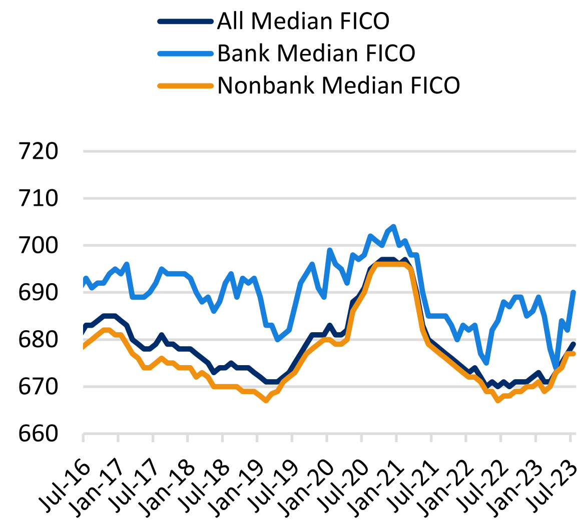


Figure 63. Ginnie Mae FHA FICO Score: Bank vs. Nonbank

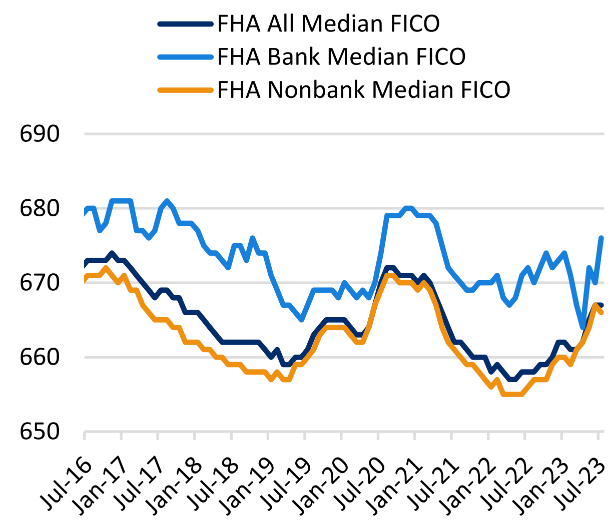


Figure 64. Ginnie Mae VA FICO Score: Bank vs. Nonbank

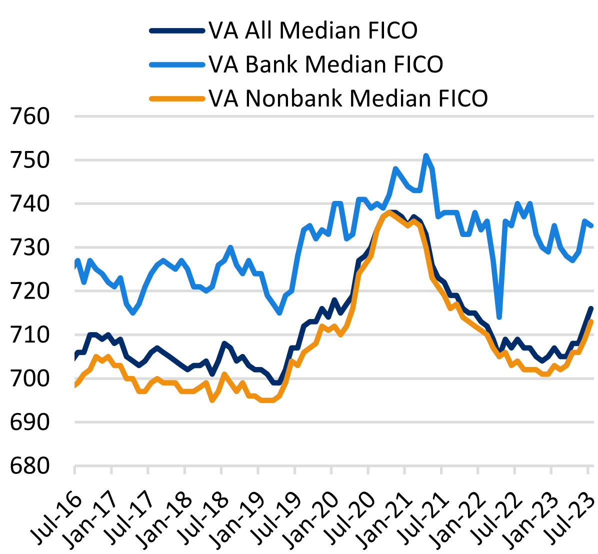
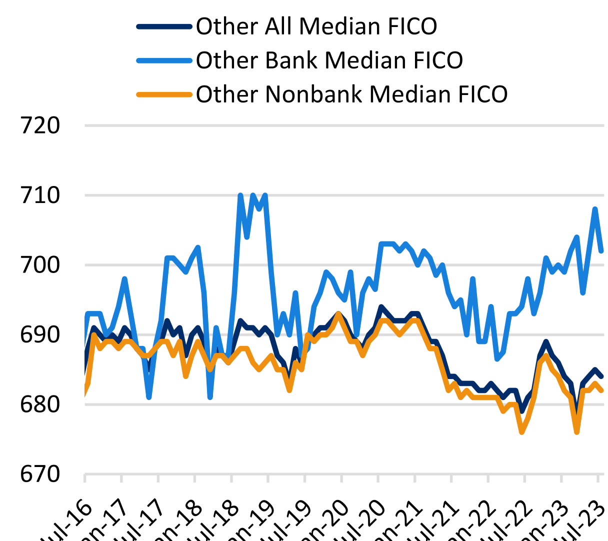


Figure 65. Ginnie Mae Other FICO Score: Bank vs. Nonbank



Source: Recursion. Notes: Data as of July 2023.

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: Bank vs. Nonbank

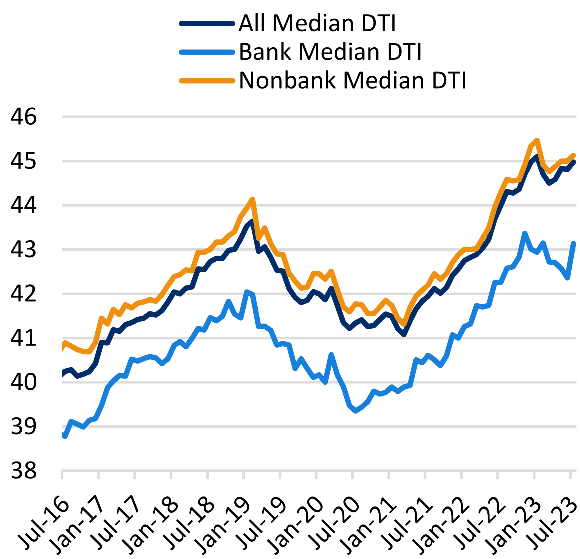


Figure 67. Ginnie Mae FHA DTI: Bank vs. Nonbank

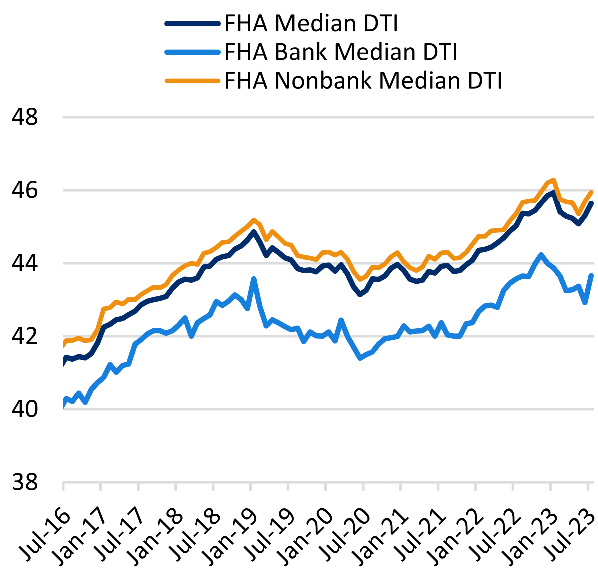


Figure 68. VA DTI: Bank vs. Nonbank

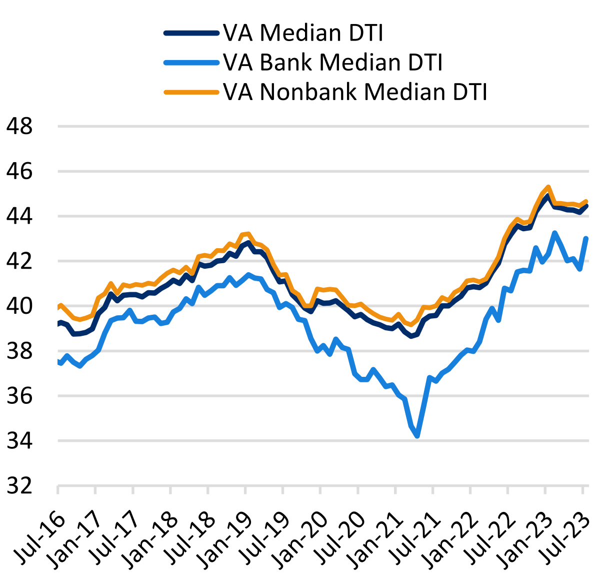
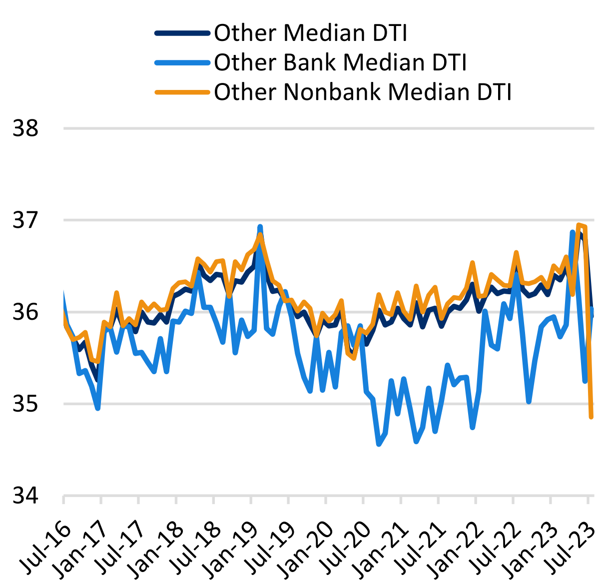


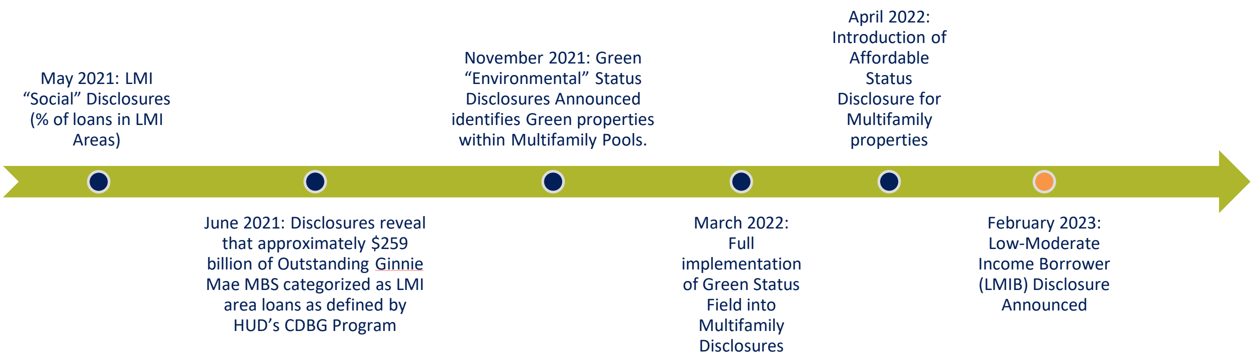
Figure 69. Other DTI: Bank vs. Nonbank



Source: Recursion. Notes: Data as of July 2023.

14 ENVIRONMENTAL, SOCIAL, AND GOVERNANCE

Ginnie Mae Mortgage-Backed Securities are collateralized by loans that facilitate homeownership for low-to-moderate income (LMI) borrowers, veterans, rural borrowers, and others that traditionally experience challenges in their efforts to achieve homeownership or obtain housing. Ginnie Mae is enhancing their disclosures to provide insight into the extent that the securities they guarantee support meaningful environmental and social goals. The timeline below captures the efforts Ginnie Mae has taken to produce ESG disclosures in recent years.



14.1 Environmental, Social, and Governance: A Summary

Ginnie Mae's guaranty of the securities provides a connection between the primary and secondary mortgage markets that promote access to mortgage credit throughout the Nation for residential and multifamily properties. The table below captures the outcomes Ginnie Mae has seen, both socially and environmentally, through its guaranty program.

Table 26. ESG Metrics – MBS Portfolio (July 2023)

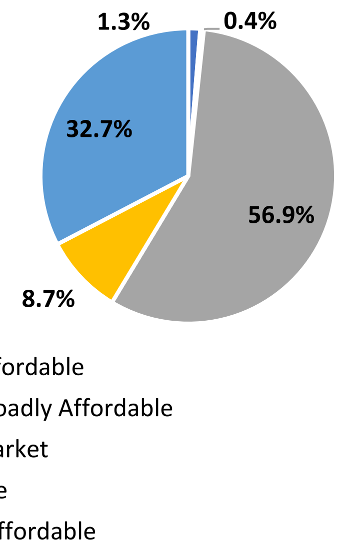
Ginnie Mae's ESG Metrics – MBS Portfolio as of July 2023				
	Targeted Population	**Positive Outcomes**	**Our Commitment**	
Social - Affordable	FHA Borrowers - 6,713,882 VA Borrowers – 3,543,077 RHS Borrowers – 788,496 PIH Borrowers - 23,783	Loans under $200K 6,513,966 Loans First-Time Home Buyers 4,011,629 Loans Down Payment Assistance 685,205 Loans	Ginnie Mae was established by Congress in 1968 to offer broad access to credit nationwide with a special emphasis on low- and moderate-income borrowers, and rural, inner-city, and underserved communities. Ginnie Mae securitization provides a unique and sustainable service in making home ownership more affordable, accessible, and equitable for our nation. The proceeds from the sale of Ginnie Mae Primary Issuance MBS are a source of capital to finance the specific residential mortgage loans collateralizing the Ginnie Mae MBS. Ginnie Mae securitization collateral selection is restricted to agency insured mortgages from the following United States Government Agencies. These agencies are the: Federal Housing Administration (FHA), Department of Veterans Affairs (VA), United States Department of Agriculture's Rural Housing Service (USDA-RHS), and HUD Public and Indian Housing (PIH). The combination of these insuring agency programs and Ginnie Mae's guaranty enable housing outcomes for households who might otherwise not be able to obtain mortgage access.	Single Family
	Low-to-Moderate Income Borrowers (LMI)	3,170,002 Loans		
	LMI Majority Census Tract Loans	1,706,310 Loans		
	Borrowers Facing Difficulties	790,634 modifications with over 595,467 in partial claims	Ginnie Mae has been integral to the federal actions to prevent foreclosure for homeowners experiencing financial hardship.	
	Senior Citizens Aging in Place	289,420 Home Equity Convertible Mortgages (HECM) or Reverse	Ginnie Mae has developed the securities market for the FHA HECM (Reverse Mortgage) program which provides senior citizens a vehicle for accessing the equity in their homes.	HECM
	Multifamily Housing (MF)	1.31 million apartment homes 499,164 healthcare living units	Affordable rental housing is in critically short supply. Government lending and subsidy programs support preservation and creation of new affordable housing units nationwide.	Multi-Family
	MF Affordable	4,816 MF loans are either Green, Affordable, or both	Ginnie Mae provides information to investors via its monthly bond disclosure on multifamily investments that meet FHA's MF Green Mortgage Insurance Premium (MIP) Discount Qualified Mortgages and those loans meeting FHA's MF Broadly Affordable and Affordable requirements.	
Green	MF Green			

14.2 Environmental

Table 27. UPB by ESG Status

ESG Status	UPB	%
Green/Affordable	$1,046,275,257	0.7%
Green/Broadly Affordable	$326,708,662	0.2%
Green/Market	$46,024,767,792	31.0%
Green Total	$47,397,751,711	31.9%
Affordable[5]	$7,040,929,789	4.7%
Broadly Affordable[2]	$26,397,952,824	17.8%
Affordable Total	$34,811,866,532	23.4%
ESG Total	$80,836,634,324	54.4%
Total	$148,676,331,607	100.0%

Figure 70. Composition of Ginnie Mae Green Status and Affordable Multifamily Collateral



Much of Ginnie Mae's environmental impact is made through its Multifamily programs. Approximately 32% of Ginnie Mae collateral are "Green"-certified, as defined by the multiple organizations that sponsor and maintain green building certifications, including the US Green Building Council, Energy Star, Greenpoint, and the National Green Building Standard, just to name a few. Additionally, over 23% of Ginnie Mae Multifamily collateral is "Affordable" or "Broadly Affordable". In total 54.4% of Ginnie Mae's Multifamily collateral is considered ESG.

Sources: Ginnie Mae Disclosures as of July 2023, https://www.hud.gov/program_offices/housing/mfh/green

14.3 Social

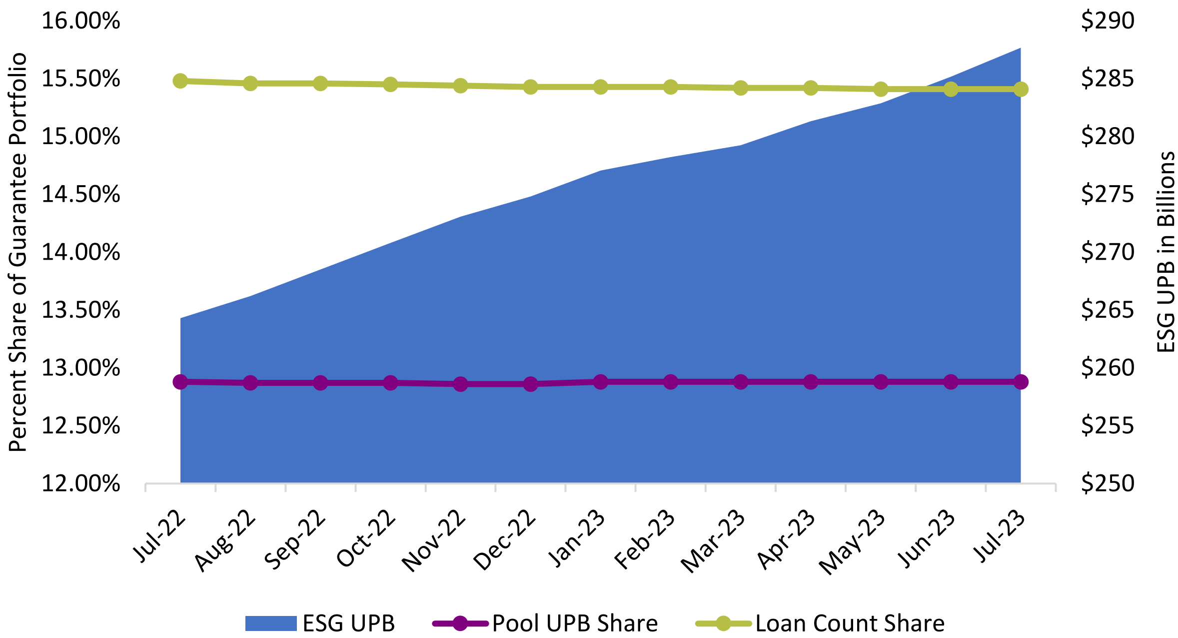
With the introduction of Ginnie Mae's new social disclosures, investors can now identify the number of underlying loans made to LMI borrowers, the percentage of LMI loan count out of total loan count, the unpaid principal balance (UPB) of LMI loans in the MBS, and the percentage of LMI UPB out of total MBS UPB. The borrower household income and address data, received from the government's insuring and guarantying agencies, is compared against the appropriate Federal Financial Institution's Examination Council (FFIEC) Area Median Income (AMI) database by loan origination year. If the borrower income is less than 80 percent of its respective AMI income value, in the associated census tract, their mortgage will be flagged as an LMI loan.

[5] *"Affordable" and "Broadly Affordable" removes "Green/Affordable" and "Green/Broadly Affordable" from the UPB total.*

14.3.1 Low-to-Moderate Income Borrowers

Over $287 billion of Ginnie Mae single-family collateral and approximately 1.7 million of loans outstanding have been issued too low to moderate income borrowers. Total ESG UPB increased by approximately $23 billion over the past 12 months as of July 2023.

Figure 71. ESG Share of the Outstanding SF Portfolio



Source: Ginnie Mae Disclosures as of July 2023

The UPB of pools that are made up of 20% or more LMI loans make up over 9% of total pool UPB. These pools have slightly higher LTV's, marginally lower FICO scores, and substantially lower loan sizes than pools made up of less than 20% LMI loans. The UPB of pools that are made up of less than 20% LMI loans make up roughly 90% of total UPB.

Table 28. Percent LMI by Pool Share

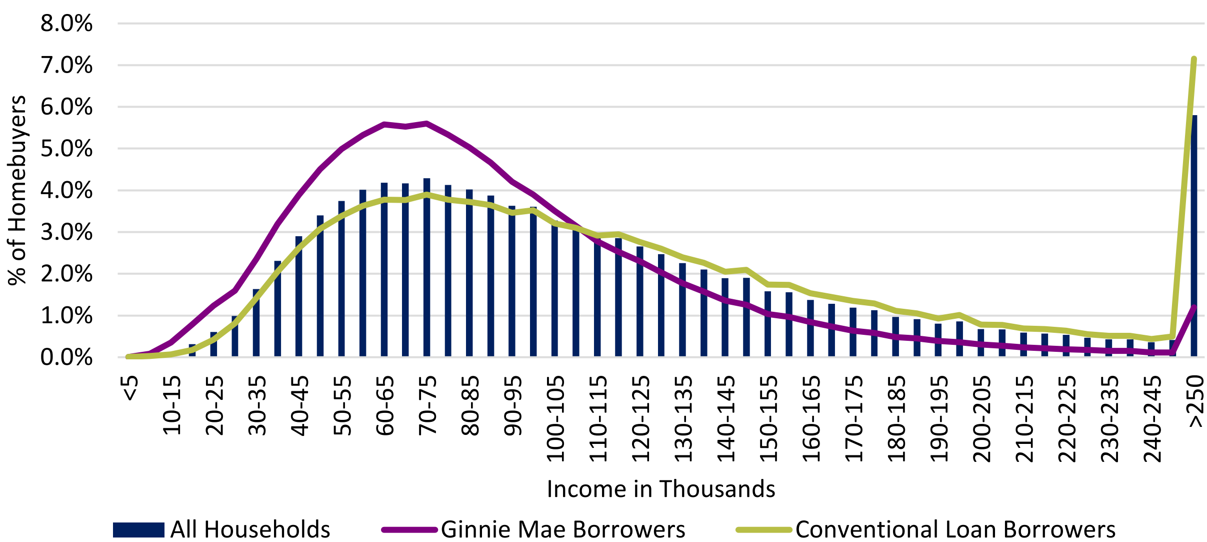
Metric	LMI Pool Share >50%	LMI Pool Share >=20 - <50%	LMI Share < 20%	All Pools
Total UPB ($ billions)	$7.9	$194.8	$1,985.7	$2,188.4
Average Original Loan Size	$170,334	$187,829	$331,218	$317,873
Credit Score (Median)	675	675	679	677
DTI (Median)	40%	40%	40%	40%
LTV (Median)	97%	96%	95%	96%
Interest Rate (WA)	4.66%	4.43%	3.69%	3.76%

Source: Ginnie Mae Disclosures as of July 2023

14.3.2 Purchase and Refinance Origination by Income Bracket

Over 18% of all purchase and refinance loan originations guaranteed by Ginnie Mae are to households with income less than $50,000 compared to 10.7% of the Government Sponsored Entities (GSE's) single-family guarantee portfolio. Additionally, over 68% of these loan originations guaranteed by Ginnie Mae are to households with income less than $100,000 compared to 47.3% at the GSE's.

Figure 72. Income Distribution of Homebuyers Served Under Ginnie Mae Program



Source: Home Mortgage Disclosure Act (HMDA) data as of 2022

U.S. HOUSING MARKET

15 HOUSING AFFORDABILITY

15.1 Housing Affordability – Home Price Appreciation

Home prices increased in all regions in Q2 2023. Notably, the East North Central, Middle Atlantic, and New England regions all saw over a 2% increase QoQ. The East South Central and Mountain regions saw the smallest QoQ increases, 0.7% and 1.07%, respectively. The East North Central has appreciated more than any other region over the past four quarters appreciating by 5.40%.

Figure 73. Regional HPI Trend Analysis Q/Q

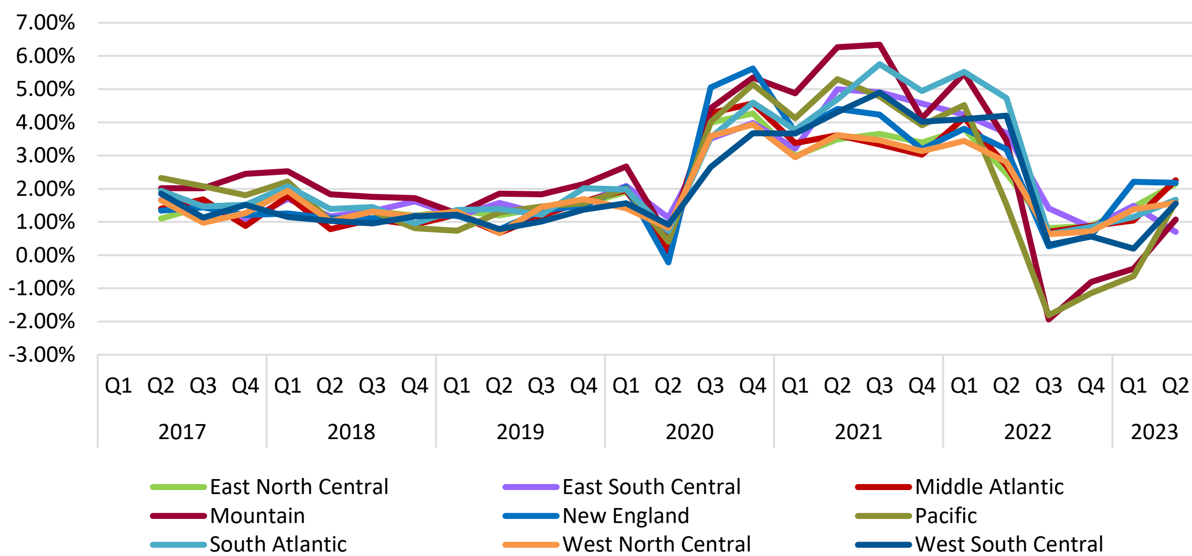
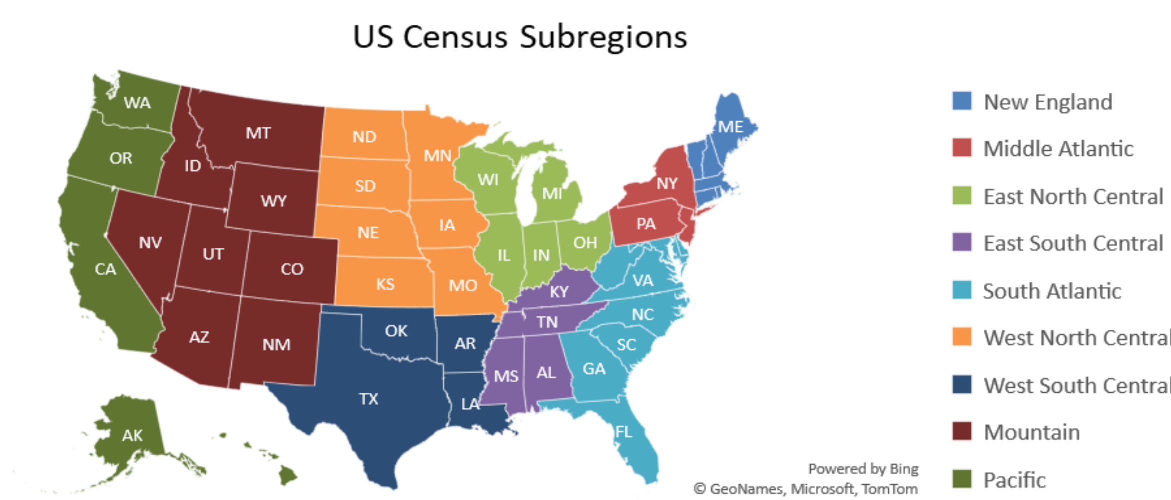


Figure 74. FHFA US Census Subregions as defined by the US Census Bureau



Source: HPI data from FHFA and is seasonally adjusted.US Census Subregions as defined by the US Census Bureau.

15.2 Housing Affordability – Inflation, Wages, and the Price of Real Estate

As of month-end July 2023, inflation was 3.2%, up slightly from the month prior. Nationally, rents are up 0.3% YoY as of month-end July 2023. The MoM change in rents from June 2023 to July 2023 increased by 0.41%. Wage growth saw an increase from 5.6% in June 2023 to 5.7% as of month-end July 2023. Month-end June 2023 reporting data shows YoY home price appreciation was flat, appreciating 0.0%, an increase from a 0.4% decrease in May 2023.

Figure 75. Inflation | 12-Month Percent Change in CPI

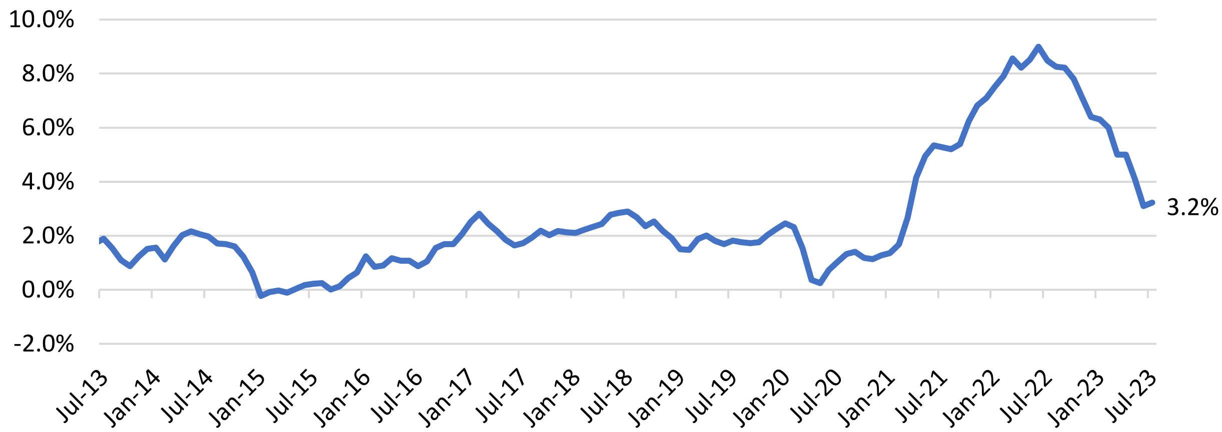
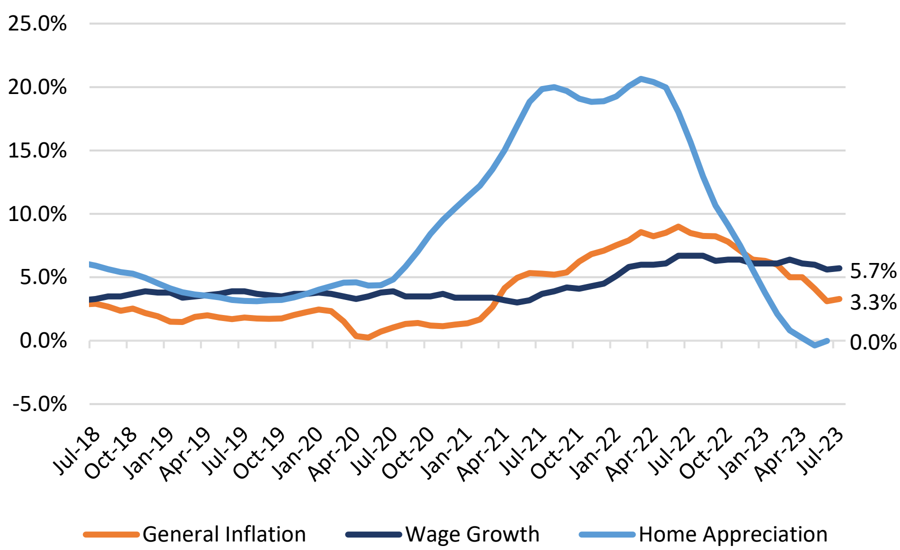


Figure 76. Asset Price Appreciation vs. Wage Increases

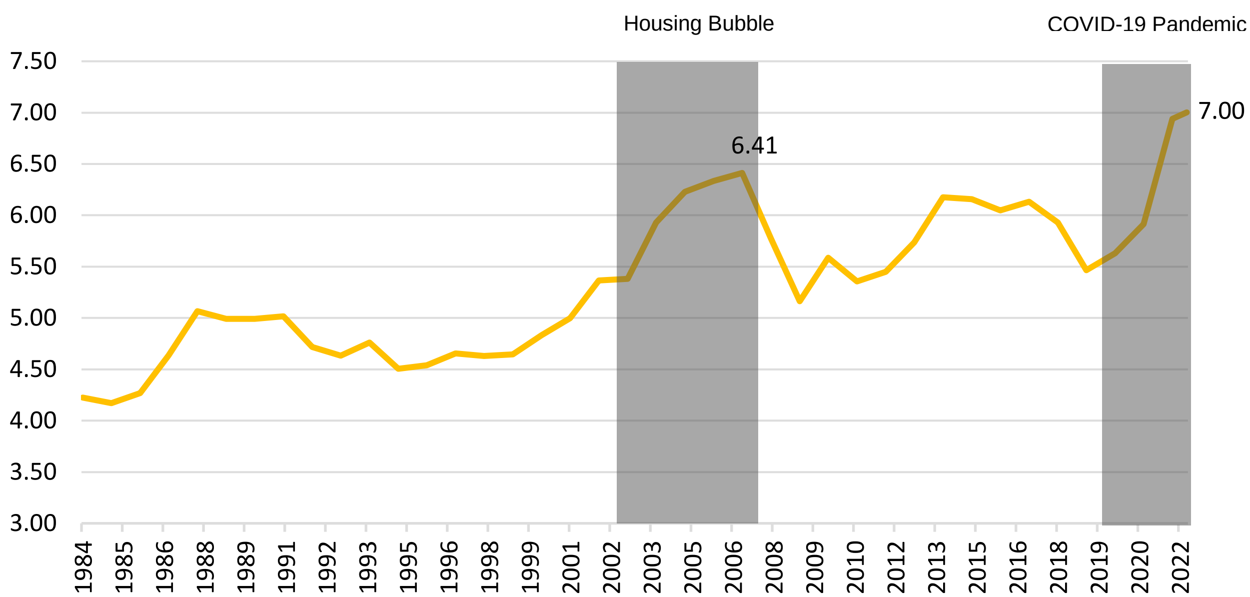


Metric	*Statistic*
General Inflation	*3.2%*
Home Price Appreciation (YoY)	*0.0%*
Rental Price Appreciation (Median Rent Change YoY)	*0.31%*
Wage Growth	*5.7%*

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.

Home affordability remains low, as the ratio of the average price of sold homes to median incomes is at a historically high level. Typically, this ratio has been around 5:1; the current 7:1 sales price to median income ratio exceeds the ratio observed during the housing bubble (6.4:1). With declining home price appreciation, and home prices even dropping in some regions in the country, this ratio may drop back down to historically normal levels.

Figure 77. Average Price of Homes Sold to Median Income Ratio

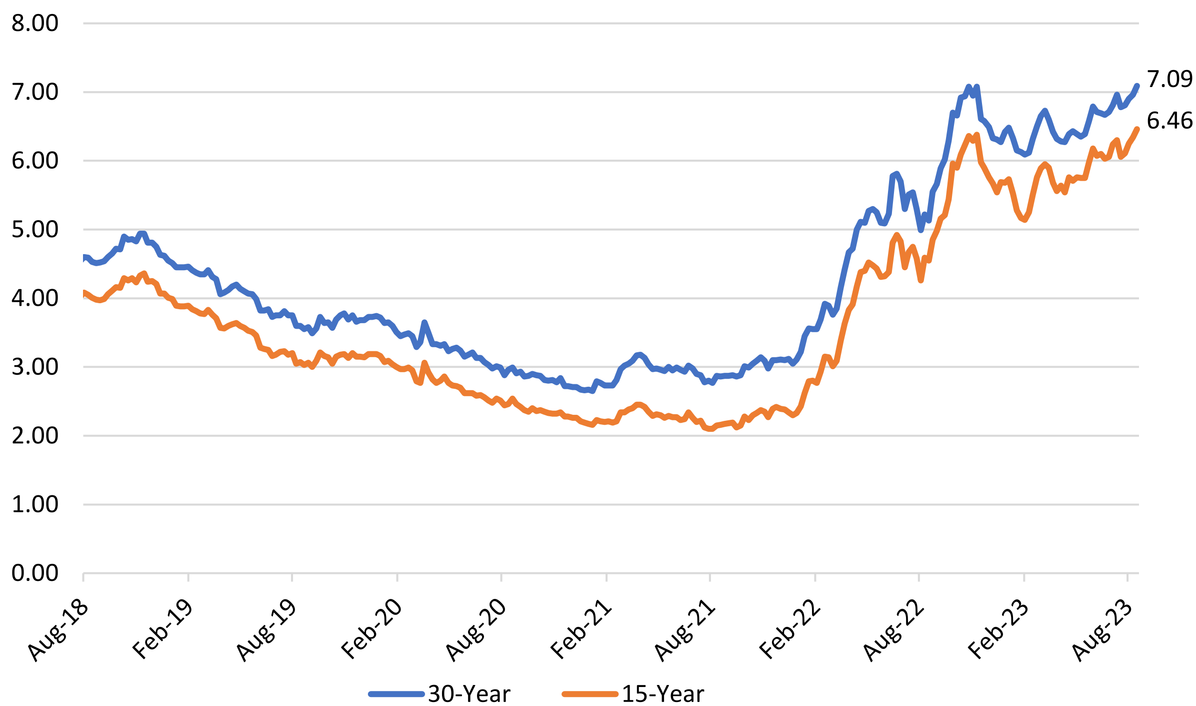


Source: FRED Average Home Sales Data, FRED Median Income Data

15.2.1 Housing Affordability – Mortgage Rate Trends

The Federal Reserve raised the Federal Funds target range on July 26, 2023, to a range of 5.25% and 5.50% per the FOMC.[6] As of August 17, 2023, the average 30-year and 15-year fixed rate mortgage rates were 7.09% and 6.46%, respectively. The average 30-year fixed rate mortgage rate increased 31 bps and the average 15-year fixed rate mortgage rate increased 40 bps MoM from July 15, 2023.

Figure 78. Average Fixed Rate Mortgage Rates



Sources: FRED data as of August 2023

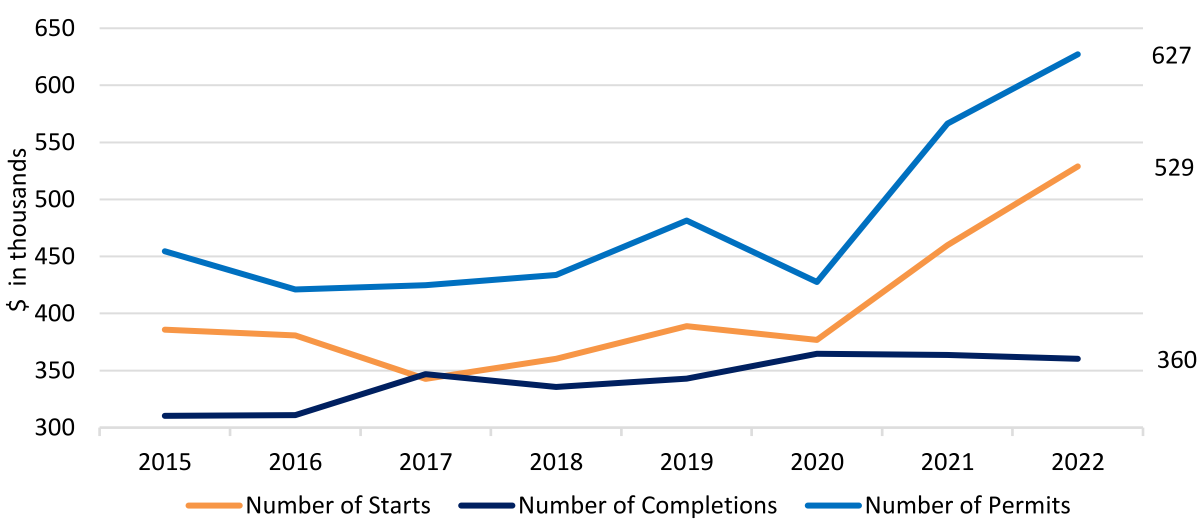
[6] https://www.federalreserve.gov/newsevents/pressreleases/monetary20230726a.htm

15.3 Housing Inventory

As of July 2023, there was 7.3 months of housing inventory on the market, a decrease from 7.5 months in June 2023. As housing affordability continues to remain low (See above Section 15.2) single-family home sales are unlikely to play a large role in the resolution of the housing shortfall. Multifamily construction volume metrics, shown in **Figure 80**, increased in 2022; number of starts increased by 15.0% and numbers of permits increased by 10.7% while number of completions remained relatively stable.

Figure 79. Single-Family Housing Inventory

Figure 80. Multifamily Construction Metrics: Permits, Starts, Completions



Source: FRED. Figure 78: data as of July 2023. New Residential Construction, US Census Bureau. Figure 79: data as of December 2022.

15.4 Size and Value of the US Housing Market

The total value of the single-family housing market declined to $41.2 trillion in Q1 2023. However, the total value of the US housing market is up 117% from its trough in 2011. From Q1 2022 to Q1 2023 mortgage debt outstanding increased from $12.0 trillion to $12.5 trillion and household equity increased from $27.8 trillion to $28.7 trillion. At $8.9 trillion in Q1 2023, agency single family MBS continues to account for a growing percentage of the total mortgage debt outstanding, up to 66% of total mortgage debt from just 52% in 2011.

Figure 81. Value of the US Housing Market

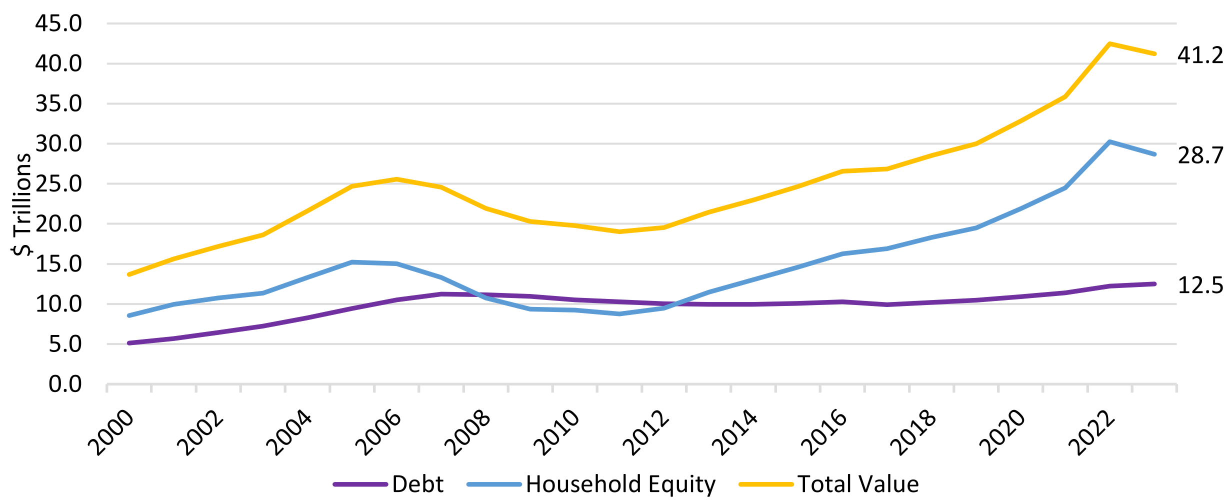
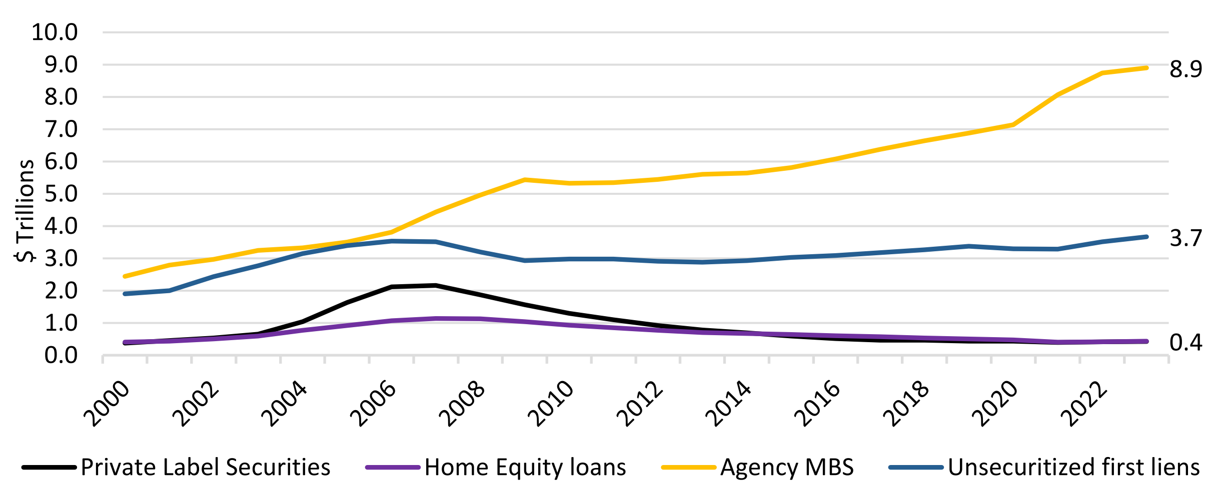


Figure 82. Size of the US Residential Mortgage Market



Source: Federal Reserve Flow of Funds Data as of Q1 2023.

16 DISCLOSURE

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The information contained herein is based upon information generally available to the public from sources believed to be reliable as of the specified date. The accuracy of the information contained herein is based on the corresponding accuracy of the issuer data as reported to the Government National Mortgage Association (hereinafter, "Ginnie Mae").

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