Ginnie Mae
Our Guaranty Matters

GLOBAL MARKETS ANALYSIS REPORT

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

November 2023

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

This month's *Highlights* section includes perspectives on various aspects of the MBS market from Vipul Jain, the head of residential mortgage-backed securities (RMBS) Trading Strategy at Mizuho Securities USA, LLC. The Highlights provide insight into Vipul's views on the economic outlook for the MBS market in 2024.

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

- The Fixed Income Product Performance Comparisons section shows that Ginnie Mae MBS continue to offer attractive yields relative to sovereigns with comparable durations globally.
- The Single-Family MBS Pass-Through Issuance section captures the dominant role government lending/mortgage insurance programs are playing in the mortgage market post-pandemic. Gross and net issuance of Single-Family Ginnie Mae pass-throughs exceeds that of both Fannie Mae and Freddie Mac.
- The Single-Family MBS Pass-Through Issuance section captures Ginnie Mae's leading net issuance of Agency MBS through 2023.
- The SOMA Holdings section captures FED Chair Jerome Powell's comments regarding the FED's decision to keep the policy rate unchanged, the forthcoming Statement of Economic Projections, and includes the composition of the FED's Agency MBS portfolio run-off.

Highlights

Ginnie Mae maintains active dialogues with the mortgage market experts and invites MBS industry leaders to share their views in our publications and podcasts. The objective of the Ginnie Mae Global Market Analysis Report is to share market intelligence, not for investment advice.

Mizuho MBS Strategy – 2024 Outlook

This month, *Global Markets Analysis Report* welcomes Vipul Jain from Mizuho Securities USA, LLC. As the head of RMBS Trading Desk Strategy, Vipul focuses on various aspects of the MBS market including relative value, prepayments, credit, housing, residential lending, and policy. He works closely with Mizuho Americas' MBS Trading Desk and regularly shares perspectives from the Trading Desk with 100+ Global Institutional Clients.

Below are his views on the MBS market for 2024:

Tough Road Ahead for the Fed

We believe the Fed is unlikely to achieve its 2% inflation target by the end of 2024 and the slack in the economy needs to increase further to achieve the target. Mizuho economists expect no cuts next year as inflation is likely to remain sticky. We believe that the Fed will continue running off the balance sheet until the end of next year.

Macro Environment Likely to Become Better Over 2024

The supply-demand landscape is expected to improve in 2024 relative to 2023. Investors are likely to become more comfortable with duration risk as the economy slows. However, the lack of forward guidance will keep rate volatility higher than pre-COVID levels. We anticipate the economic outlook and geopolitical instability to remain key risks for MBS. In our view, rolls to remain weak as the Fed continues to withdraw liquidity from the system.

Inventory to Remains a Tailwind for Housing, HPA[1] to Moderate

The lack of inventory remains the single most important tailwind for the housing market. As time passes, turnover among locked-in borrowers is expected to nudge higher due to life events. For 2024, we forecast moderate HPA of 2-3% as the economy weakens.

Demand Technicals to Improve in 2024

Supply technicals to remain similar to 2023 with $200 billion in net issuance and $225 of Fed Runoff. Bank deposits are expected to remain under pressure; however, the securities portfolio is closer to the historical steady state. Willingness to take duration risk is likely to bring back bank and Japanese demand over the course of the year. The demand outlook for REITs remains mixed and depends on their equity valuation. Money managers are once again poised to be the largest buyer, creating a delicate environment for MBS.

[1] *HPA: Home Price Appreciation*

Turnover to Benefit from Seasoning but to be offset by Higher Rates

The mortgage lending industry headcount is still too high relative to the current volume of business. Affordability may improve in 2024, but the economy and employment picture are likely to be weaker. We expect some of the largest discount cohorts to see higher speeds due to seasoning. The recent increase in rates is likely to push discount speeds lower early in the year. Overall, the two effects will offset each other. Speeds on recently originated collateral could reach 45-55 CPR in the case of a 100 bps rally as new production has high loan sizes. Quicken, Low FICO, Florida, and Second Home pools remain the best extension protection stories. Credit performance of residential mortgages to remain robust, while other consumer debt may feel more pressure.

Outlook for Mortgage Valuations:

Balance for mortgage valuation still remains delicate.

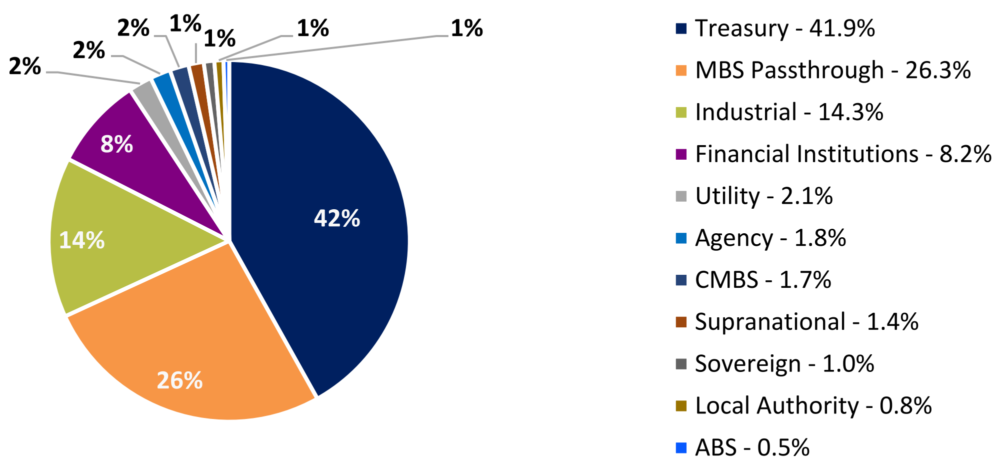
- Positives: Despite the supply outlook in 2024 being similar to 2023, the weakening economy is likely to bring in banks, overseas investors, and potentially some reallocation from corporate credit. Agency mortgages continue to look attractive on a cross-asset basis. Money managers will remain the dominant player, but demand in 2024 is likely to be more diversified. Overall, macro environment for Agency MBS is likely to be better in 2024 versus 2023.
- Negatives: Deposits for banks are expected to remain under pressure, and some of the banks that are large holders of MBS may let their MBS portfolio shrink further. Interest volatility is to remain higher than pre-COVID levels as the markets continue to react to every data release. On a currency-hedged basis, US assets are still not attractive for Japanese life insurance companies. Furthermore, it is not clear how much more capacity money managers have to absorb all the net supply. Rolls are expected to remain weak as the Fed continues to pull back liquidity from the market.

1 US AGGREGATE AND GLOBAL INDICES

1.1 Bloomberg US Aggregate and Global Indices

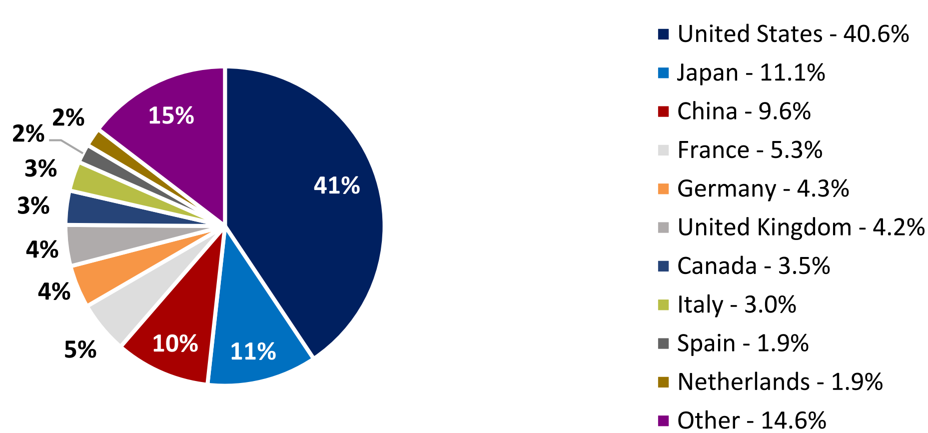
At month-end October, U.S. Treasuries contributed 41.9% to the Bloomberg U.S. Aggregate Index, up approximately 0.5% from the prior month. U.S. MBS (Ginnie Mae, Fannie Mae, and Freddie Mac) contributed 26.3%, down approximately 0.2% from the month prior. For the U.S. Aggregate Index, all other changes to the index components were no larger than 0.1%.

Figure 1. Bloomberg U.S. Aggregate Index



In the Bloomberg Global Aggregate Index by Country, the U.S. share of fixed income remained the largest share of total outstanding issuance, representing 40.6% of the total Bloomberg Global Aggregate Index, up 0.2% from the prior month. Japan's share of fixed income was the second largest at 11.1%, down 0.4% from the prior month. China's share of fixed income saw an increase of approximately 0.2% for the month end October. All other countries, excluding Spain, remained stable compared to the prior month with no changes larger than 0.1%.

Figure 2. Bloomberg Global Aggregate Index by Country



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

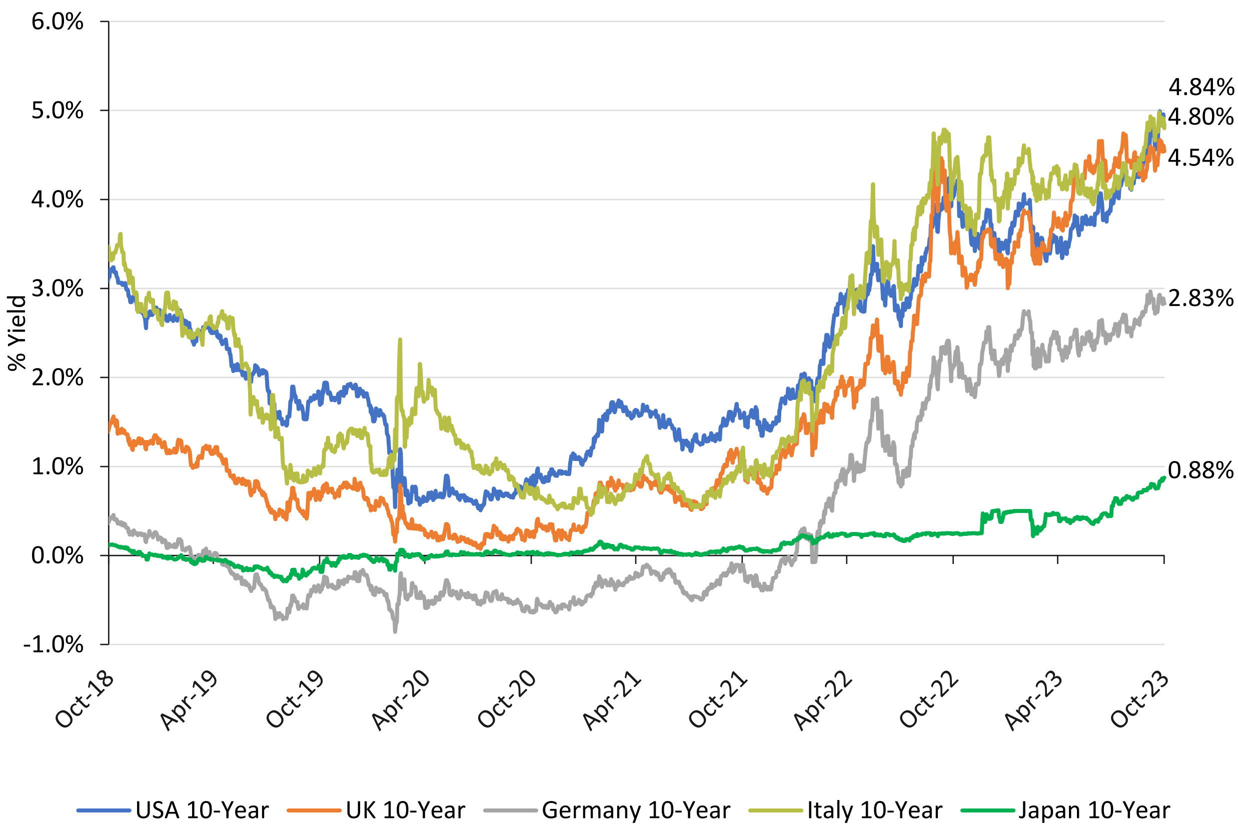
2 SOVEREIGN DEBT PRODUCT PERFORMANCE COMPARISONS

2.1 Global 10-Year Treasury Yields (Unhedged)

The U.S. 10-year Treasury yield moved to 4.84% at month-end October 2023, a MoM increase of 30 bps. This marks the second consecutive MoM increase of 30 bps for U.S. 10-year Treasury notes; now surpassing Italian government bonds for the highest government yield amongst the countries listed below. All month-end yields listed, excluding the UK, have increased for four consecutive months.

- The yield on the UK 10-year note increased to 4.54% at month-end October, a MoM increase of 22 bps.
- The yield on the German 10-year note increased to 2.83% at month-end October, a MoM increase of 2 bps.
- The yield on the Italian 10-year note increased to 4.80% at month-end October, a MoM increase of 6 bps.
- The yield on the Japanese 10-year note increased to 0.88% at month-end October, a MoM increase of 14 bps.

Figure 3. Global 10-Year Treasury Yields



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

2.2 U.S. Treasury Hedged Yields

- The yield for the 10-year Treasury, hedged in Japanese Yen stood at -0.66% at month-end October, a 37 bp increase from month-end September.
- The yield for the 10-year Treasury, hedged in Euros stood at 3.12% at month-end October, a 26 bp increase from month-end September.

Figure 4. U.S. 10yr Total Return Hedged, 1 yr. JPY

Figure 5. U.S. 10yr Total Return Hedged, 1 yr. EUR

Source: Bloomberg. Notes: Data as of October 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 5.85% in August, increased 44 bps to 6.29% at month-end September, then increased 29 bps to 6.58% at month-end October. Ginnie Mae II spreads over the U.S. 10-year Treasury yield increased 7 bps YoY to 174 bps over the U.S. 10-year Treasury yield as of month-end October 2023.

Figure 6. Ginnie Mae II SF Yield, USD

Figure 7. Ginnie Mae II SF Yield – U.S. 10yr Treasury Yield

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

3.2 Ginnie Mae Hedged Yields

The yield for Ginnie Mae II's, hedged in Japanese Yen stood at 1.08% at month-end October, a 36 bp increase from month-end September.

The yield for Ginnie Mae II's, hedged in Euros stood at 4.86% at month-end October, a 25 bp increase from month-end September.

Figure 8. Ginnie Mae II Hedged, 1 yr. JPY

Figure 9. Ginnie Mae II Hedged, 1 yr. EUR

Source: Bloomberg. Notes: Data as of October 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 GNMA II 30-year OAS increased 7 bps MoM, to 0.64%, as of month-end October. The U.S. Intermediate credit OAS increased 9 bps MoM, to 1.10%, as of month-end October. The yield differential between U.S. Intermediate Credit and GNMA II 30-year OAS increased by 2 bps to 0.46% at month-end October.

Figure 10. U.S. GNMA II 30yr MBS OAS versus U.S. Intermediate Credit OAS

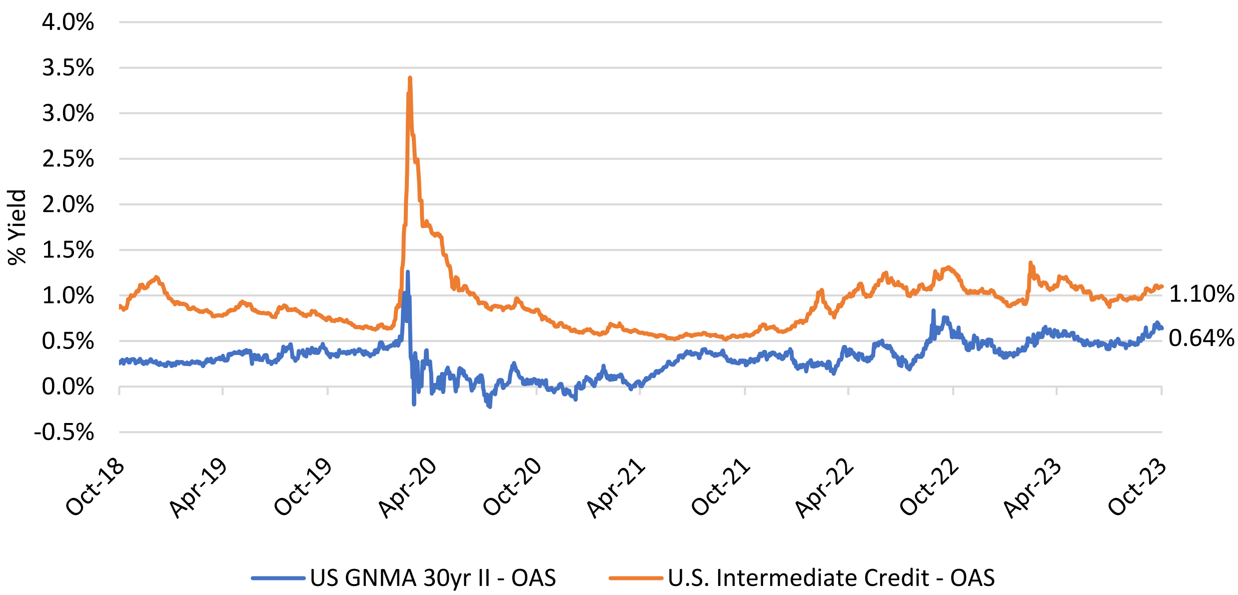
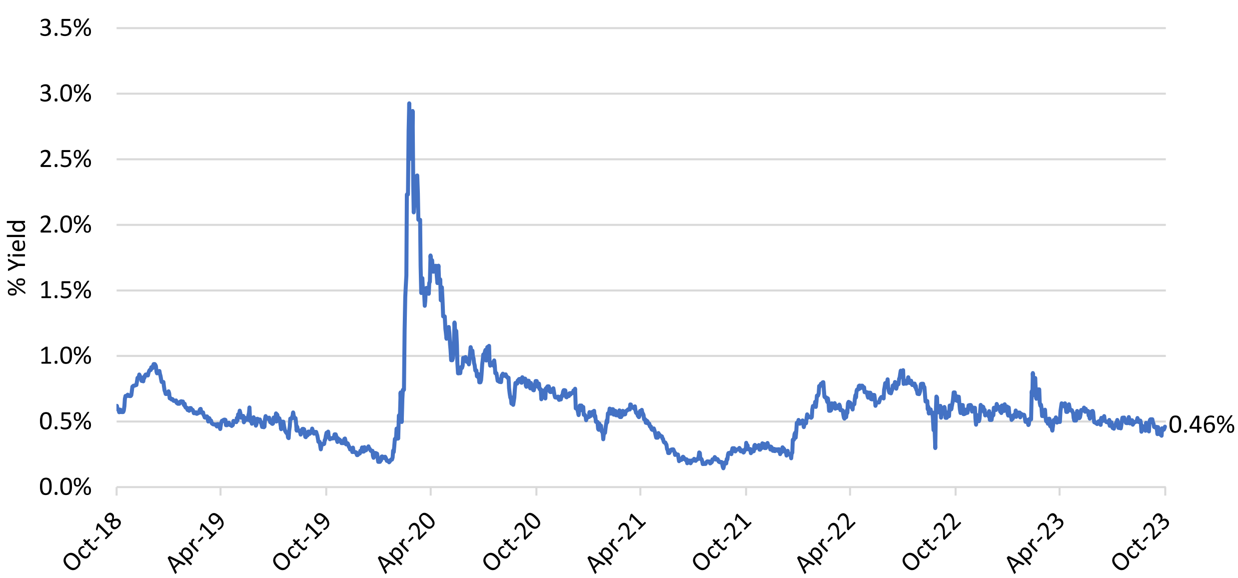


Figure 11. Spread between U.S. Intermediate Credit and U.S. GNMA II 30yr MBS OAS

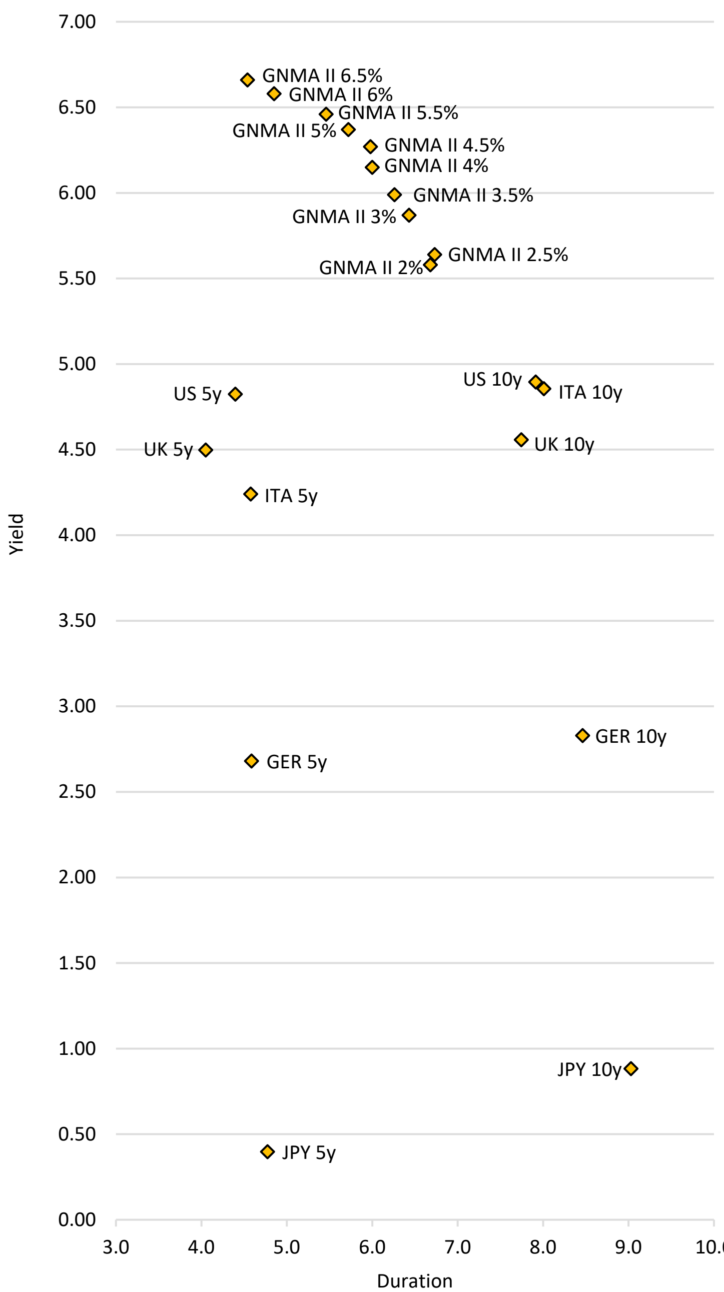


Source: Bloomberg. Note: Data as of October 2023.

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 12. Yield vs. Duration



Security	Duration	Yield
U.S. 5y	4.40	4.82
U.S. 10y	7.91	4.90
JPY 5y	4.77	0.40
JPY 10y	9.03	0.88
GER 5y	4.59	2.68
GER 10y	8.46	2.83
ITA 5y	4.58	4.24
ITA 10y	8.01	4.86
UK 5y	4.05	4.50
UK 10y	7.75	4.56
GNMA II 2%	6.68	5.58
GNMA II 2.5%	6.73	5.64
GNMA II 3%	6.43	5.87
GNMA II 3.5%	6.26	5.99
GNMA II 4%	6.00	6.15
GNMA II 4.5%	5.98	6.27
GNMA II 5%	5.72	6.37
GNMA II 5.5%	5.46	6.46
GNMA II 6%	4.85	6.58
GNMA II 6.5%	4.54	6.66

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 October 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 from 6.1% in September 2023 to 5.3% in October 2023. Likewise, Fannie Mae and Freddie Mac CPRs both decreased by 0.2% from September to October 2023. ARM prepayments also decreased for Freddie Mac, Fannie Mae, and Ginnie Mae.

Figure 13. Fixed Rate Aggregate 1-Month CPR

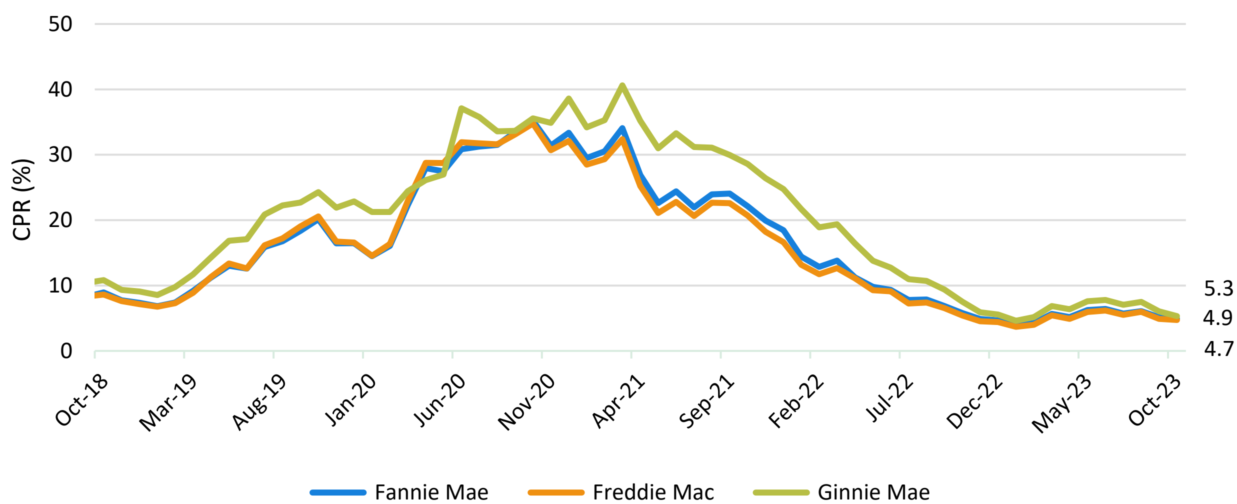
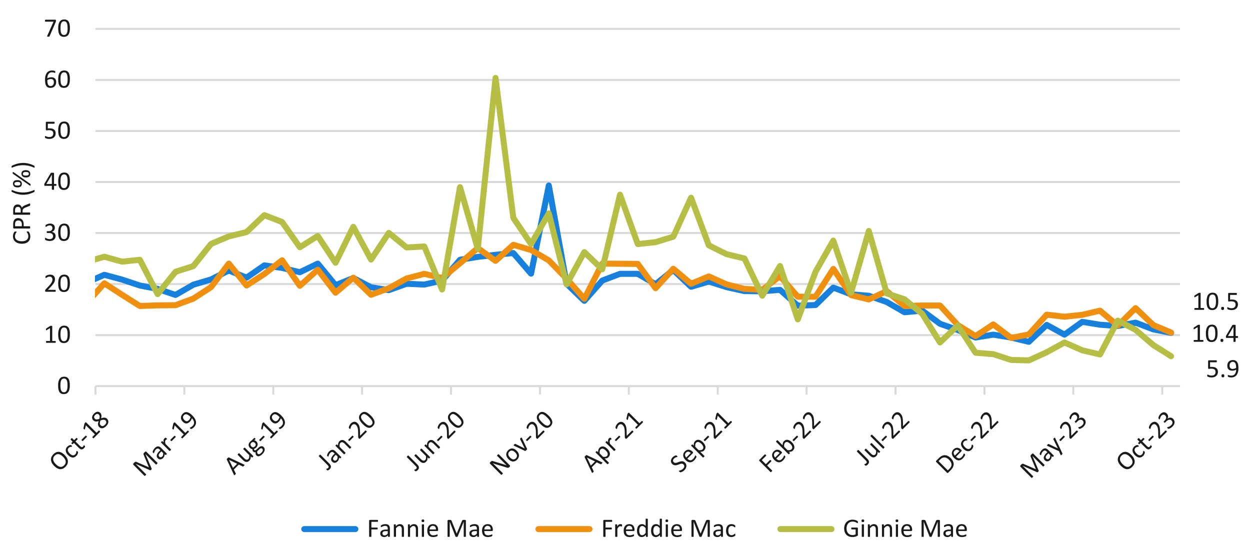


Figure 14. ARM Aggregate 1-Month CPR



Source: Recursion. Note: Data as of October 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 October 2023 after slightly overtaking Ginnie Mae in September 2022.

Figure 15. Fixed Rate Aggregate CDR

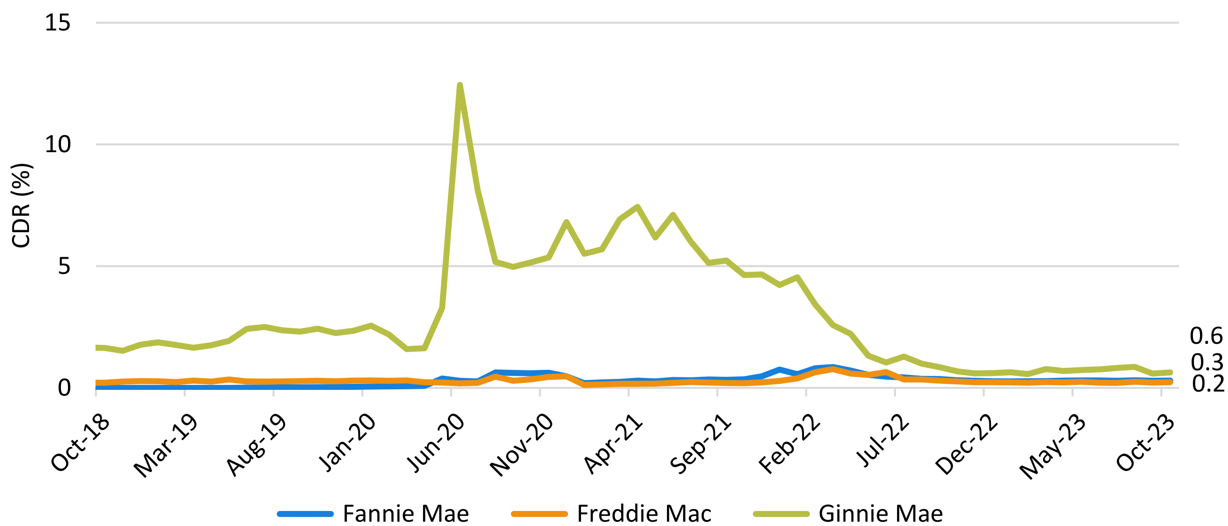
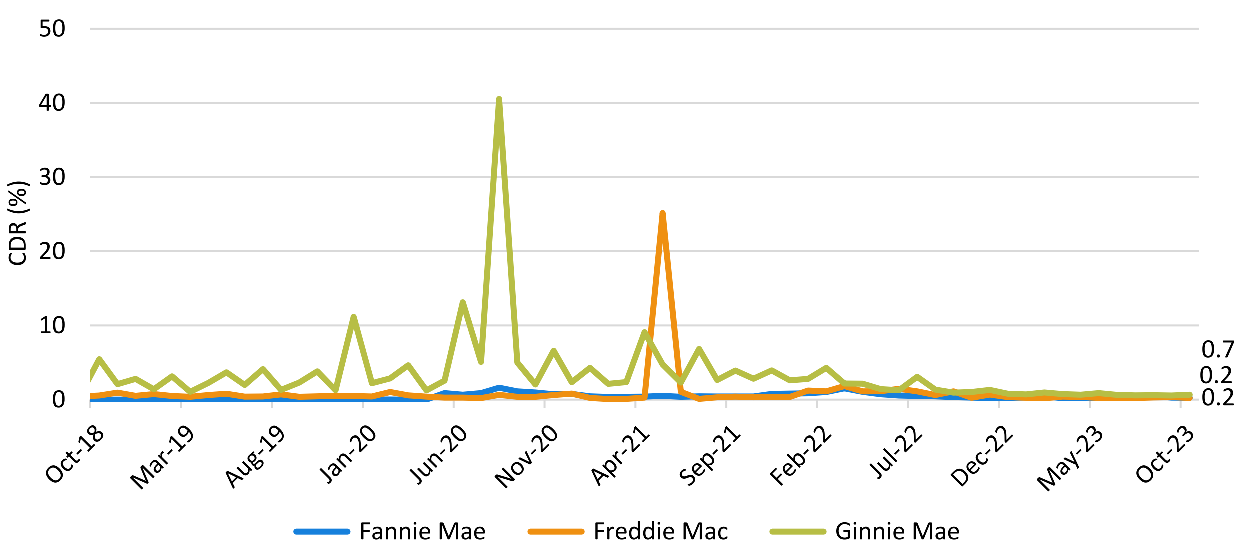


Figure 16. ARM Aggregate CDR



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

4.3 Voluntary Prepayment Rates (CRR)

Fixed rate voluntary prepayments were slightly higher for Ginnie Mae and Fannie Mae than Freddie Mac. Fannie Mae and Freddie Mac both saw a decrease of 0.2% in fixed rate aggregate CRR, respectively. Freddie Mac saw a 1.4% decrease and Fannie Mae saw a 0.7% decrease in ARM aggregate CRR. Ginnie Mae fixed rate aggregate CRR decreased by 0.8% and ARM aggregate CRR decreased by 2.3%.

Figure 17. Fixed Rate Aggregate CRR

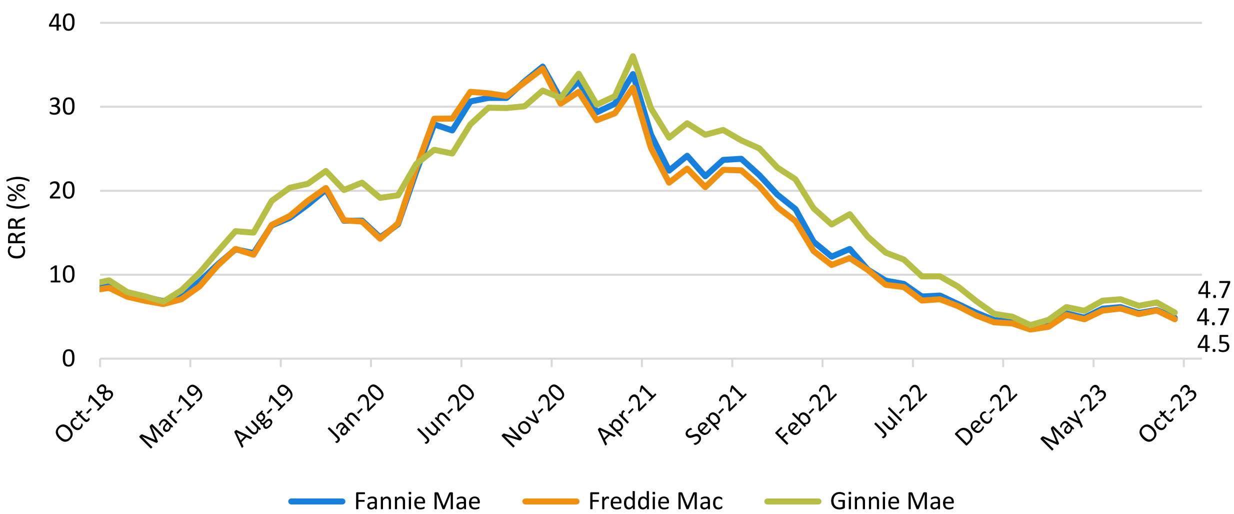
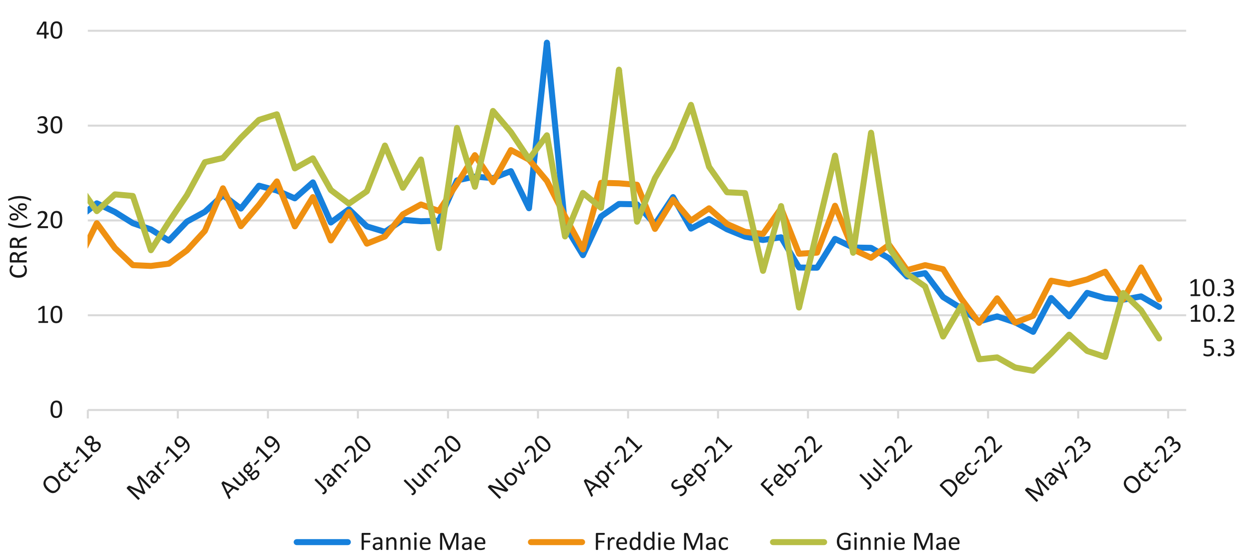


Figure 18. ARM Aggregate CRR



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

5 SINGLE-FAMILY MBS PASS-THROUGH ISSUANCE

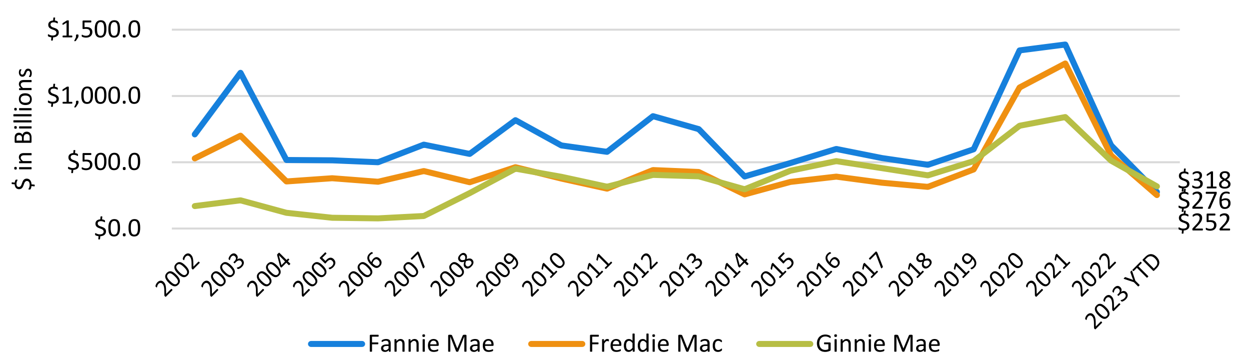
5.1 Gross Issuance of Agency MBS

In October 2023, Agency gross MBS issuance decreased by approximately $9.5 billion MoM. Ginnie Mae and Freddie Mac saw a decrease of $3.0 and $6.6 billion, respectively, while Fannie Mae saw a $0.1 billion increase in gross issuance 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	$275.6	$252.3	$527.9	$317.7	$845.6

Figure 19. Agency Gross Issuance

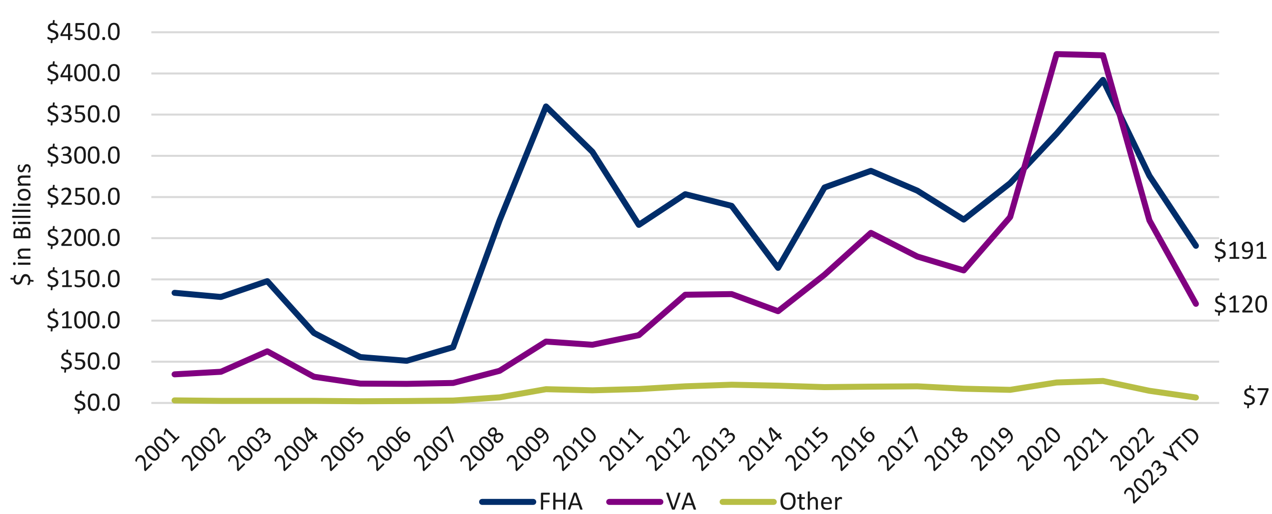


Source: Recursion. Note: Numbers are rounded to the nearest hundred million. For sums, like "GSE Total", the values are rounded after the exact underlying values are summed. As a result, some sums may not appear to match the sum of their rounded component values.

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	$190.7	$120.4	$6.7	$317.8

Figure 20. 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.

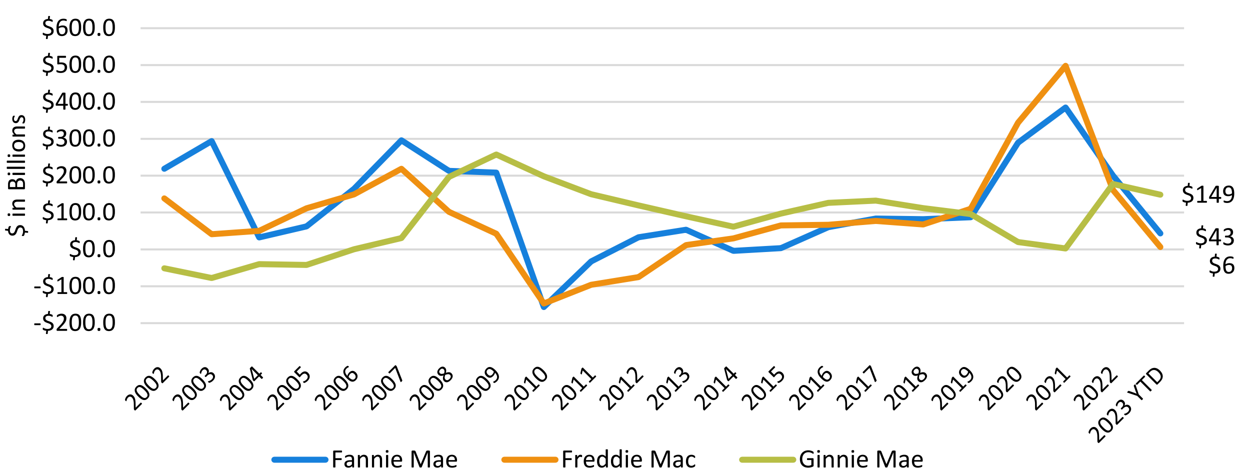
5.2 Net Issuance of Agency MBS

Agency Net Issuance as of month-end October was $196.3 billion for 2023 YTD, shown in **Table 3.** Since 2022, FHA net issuance has outpaced VA net issuance, as shown in **Table 4 and Figure 22.**

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	$43.4	$6.4	$49.7	$148.6	$196.3

Figure 21. Agency Net Issuance

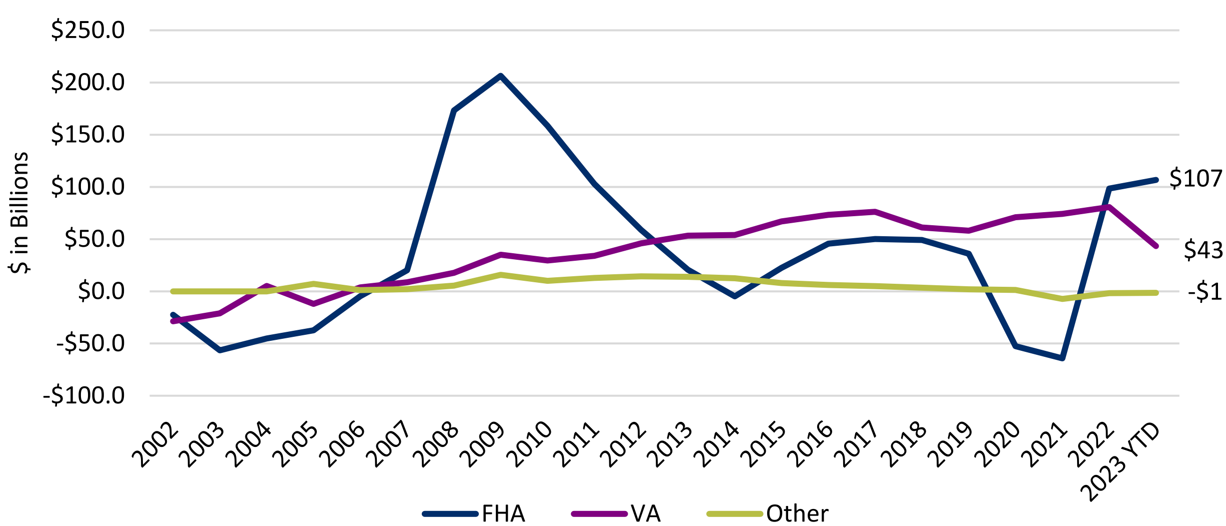


Source: Recursion. Note: Numbers are rounded to the nearest hundred million. For sums, like "GSE Total", the values are rounded after the exact underlying values are summed. As a result, some sums may not appear to match the sum of their rounded component values.

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	$106.6	$43.4	-$1.4	$148.6

Figure 22. 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 for the month of October was approximately $24.1 billion, which represents a $7.1 billion decrease MoM. Ginnie Mae net issuance was $17.0 billion in October, a $1.6 billion decrease from September 2023. Ginnie Mae's $32.1 billion of gross issuance in October, seen in **Table 5** was approximately $10.6 billion below the average monthly issuance in 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***
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
Aug-23	$27.8	$27.9	$36.5	$55.7	$92.2	-$1.5	$4.8	$17.2	$3.3	$20.5
Sep-23	$28.1	$31.1	$35.1	$59.2	$94.3	$1.9	$10.7	$18.6	$12.6	$31.2
Oct-23	$28.2	$24.5	$32.1	$52.7	$84.8	$2.6	$4.5	$17.0	$7.1	$24.1

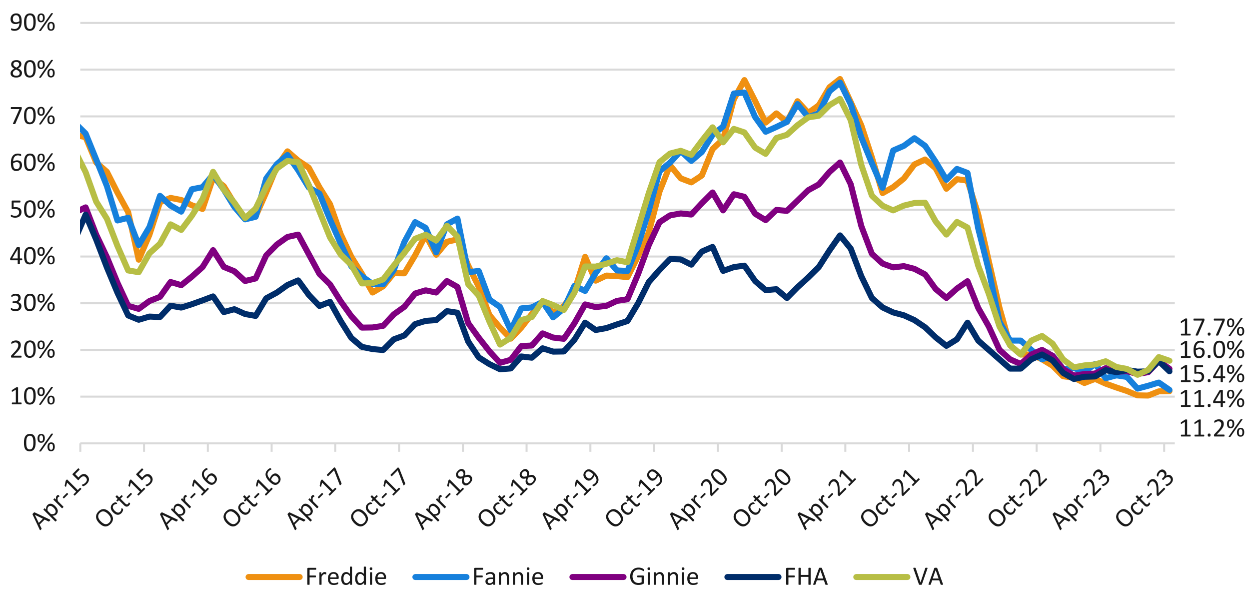
Sources: Beginning May 2021, data for Gross and Net Issuance was sourced from Fannie Mae, Freddie Mac, and Ginnie Mae loan level disclosure files. Net issuance is defined here as the difference between prior period UPB and current period UPB. Data as of October 2023. Beginning with the October 2021 GMAR, the Fannie Mae and Freddie Mac net issuance data have been updated to reflect the current UPB of the portfolios. July 2021 through October 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 9.3% MoM for Ginnie Mae as of month-end October 2023. The decline is primarily due to heightened mortgage rates discouraging refinance activity.

- Freddie Mac's refinance percentage increased to 11.2% in October, up from 11.1% in September.
- Fannie Mae's refinance percentage decreased to 11.4% in October, down from 13.0% in September.
- Ginnie Mae's refinance percentage decreased to 16.0% in October, down from 17.6% in September.
- FHA's refinance percentage decreased to 15.4% in October, down from 17.6% in September.
- VA's refinance percentage decreased to 17.7% in October, down from 18.5% in September.

Figure 23. Percent Refinance at Issuance – Single-Family



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

6 AGENCY SINGLE-FAMILY MBS OUTSTANDING

6.1 Outstanding Single-Family Agency MBS

As of month-end October 2023, outstanding Single-Family MBS in the agency market totaled $8.801 trillion: 40.7% Fannie Mae, 33.4% Freddie Mac, and 25.9% Ginnie Mae MBS. Over the past twelve months, Fannie Mae's, Freddie Mac's, and Ginnie Mae's total outstanding MBS increased by approximately 0.2%, 1.9%, and 8.6% respectively. Fannie Mae outstanding MBS remains larger than Freddie Mac's and Ginnie Mae's by approximately $642 billion and $1.3 trillion, respectively.

Ginnie Mae MBS collateral composition has changed dramatically over the past five years. In October 2018, 59.9% of Ginnie Mae outstanding collateral was FHA and 34.0% was VA. As of month-end October 2023, FHA collateral comprised 54.1% of Ginnie Mae MBS outstanding, and VA collateral comprised 41.4% of Ginnie Mae MBS outstanding.

Figure 24. Outstanding Agency Mortgage-Backed Securities

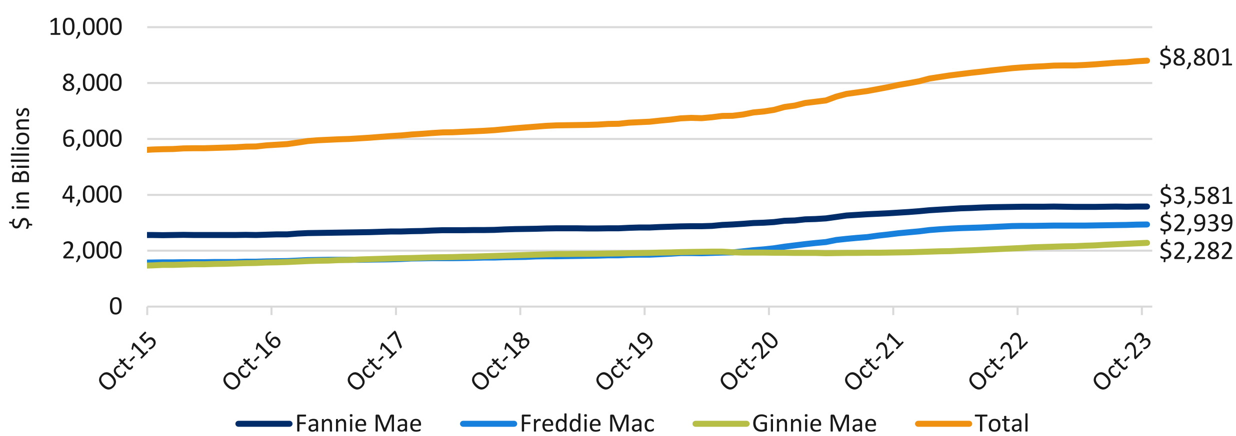
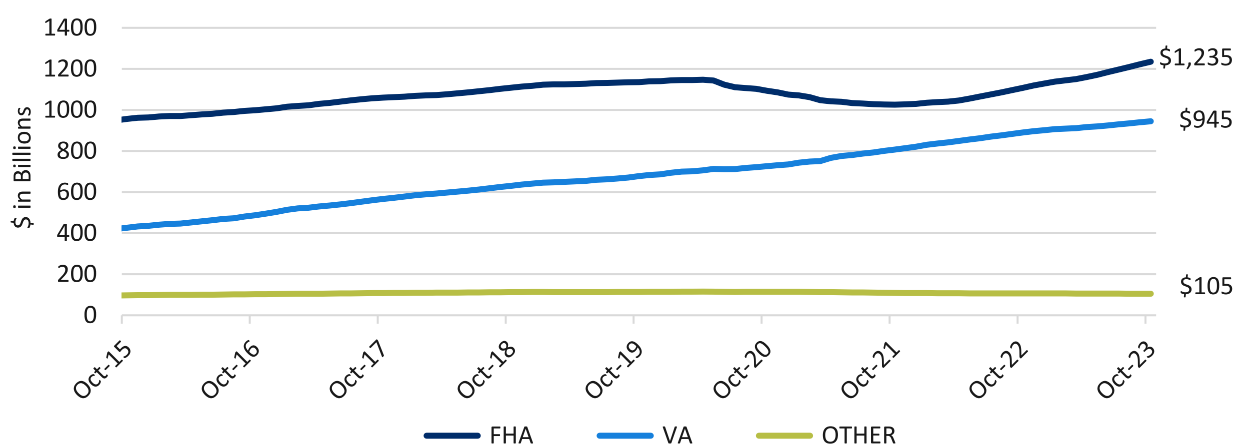


Figure 25. Composition of Outstanding Ginnie Mae Mortgage-Backed Securities



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

6.2 Origination Volume and Share Over Time

First lien origination volume decreased in Q3 2023, with approximately $385 billion in originations, which represents a decrease in issuance of 3.8% from Q2 2023. Ginnie Mae's share of total origination increased from 22.8% to 26.4% in Q3 2023, while portfolio origination decreased from 32.1% to 26.1%.

Figure 26. First Lien Origination Volume

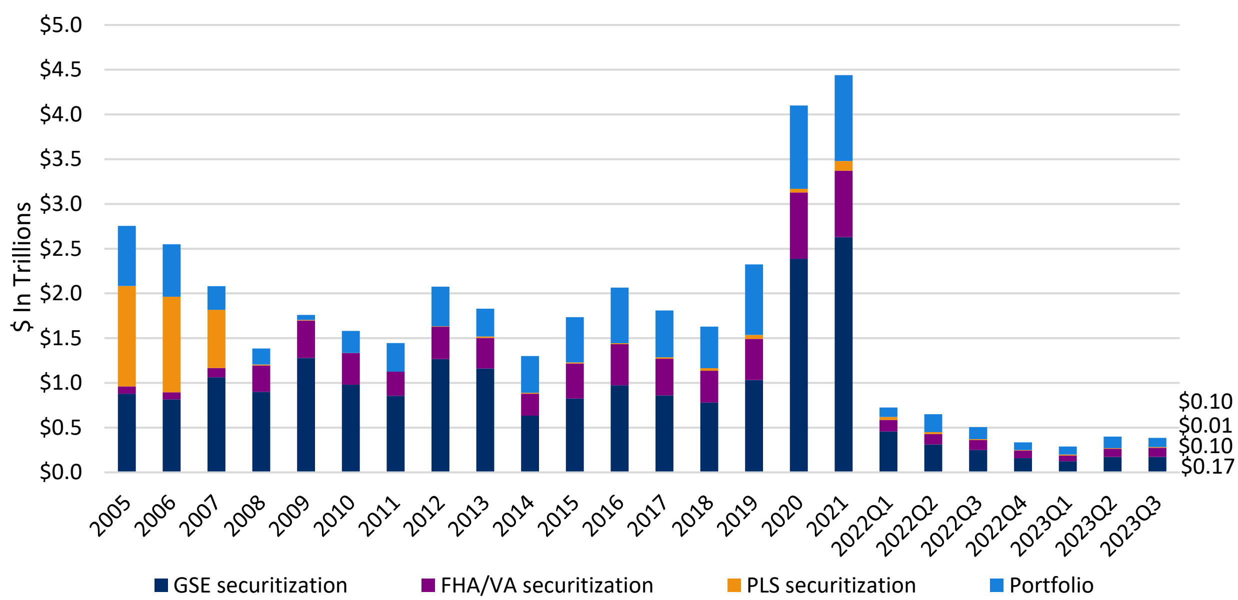
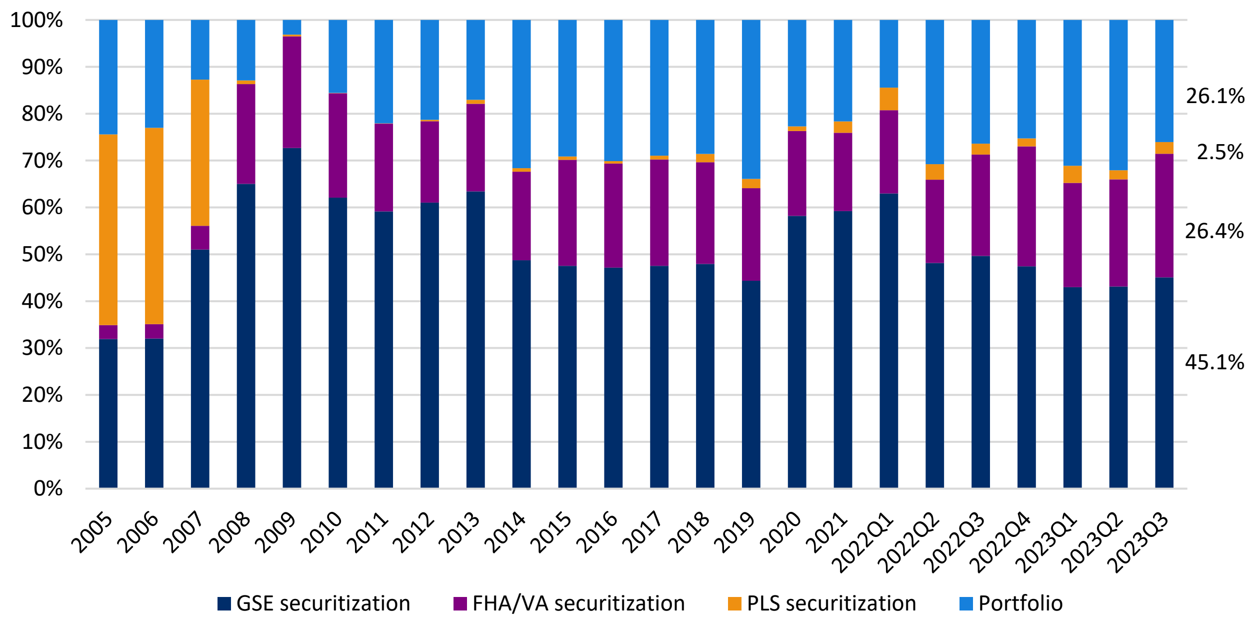


Figure 27. First Lien Origination Share



Source: Inside Mortgage Finance. Note: Data as of Q3 2023.

6.3 Agency Issuance and Agency Outstanding by State

Ginnie Mae MBS represent approximately 37% of new agency issuance over the past year, roughly 11% 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 both Alaska and Mississippi (59%) and the lowest in the District of Columbia (23%). The highest Ginnie Mae outstanding share is in Mississippi (49%) 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)
	37%	**1,559,142**	**295.97**	**301.46**	**26%**	**11,071,633**	**211.55**	**204.10**
AK	59%	4,387	352.57	308.23	48%	37,729	220.30	161.65
AL	52%	37,421	234.04	246.57	42%	245,128	178.54	135.94
AR	47%	19,639	201.14	232.57	40%	140,258	162.24	227.95
AZ	38%	47,115	335.68	339.85	26%	287,654	228.08	333.59
CA	33%	90,814	467.03	463.50	17%	708,408	319.62	299.48
CO	35%	33,166	417.73	408.21	24%	220,626	279.35	204.21
CT	34%	12,920	277.80	288.95	26%	108,197	209.10	389.40
DC	23%	1,106	516.29	429.88	14%	9,249	348.25	207.25
DE	38%	7,001	283.85	308.03	32%	53,588	212.35	220.03
FL	41%	147,104	317.90	314.73	33%	890,043	214.95	186.77
GA	45%	84,021	275.50	305.85	34%	515,645	209.37	360.36
HI	47%	3,678	625.91	517.38	32%	34,236	357.24	137.06
IA	33%	11,770	192.49	202.54	23%	84,766	148.42	225.82
ID	34%	9,186	342.65	331.53	24%	65,700	224.68	162.27
IL	30%	49,261	218.65	250.24	23%	377,312	179.55	138.02
IN	38%	41,732	202.32	221.53	31%	286,622	152.31	143.27
KS	38%	13,486	203.80	229.20	30%	98,017	164.50	147.15
KY	47%	25,223	207.65	222.31	35%	169,999	156.49	159.69
LA	52%	27,808	211.13	239.29	41%	208,082	177.39	289.24
MA	30%	14,923	394.48	386.68	17%	117,102	267.93	267.74
MD	45%	36,444	351.29	341.09	34%	299,689	249.42	181.23
ME	35%	5,125	260.95	282.15	26%	38,666	192.69	136.44
MI	28%	37,977	195.35	221.54	21%	281,752	157.14	185.04
MN	24%	18,162	262.00	284.54	18%	161,600	198.79	145.49
MO	39%	34,864	208.41	228.86	30%	249,812	162.84	147.24
MS	59%	18,035	210.47	224.74	49%	126,242	161.72	214.16
MT	33%	4,132	328.20	324.28	24%	32,793	217.80	182.18
NC	39%	67,103	270.60	300.53	30%	427,512	204.33	194.97
ND	36%	2,192	251.08	244.52	25%	17,266	183.42	153.48
NE	36%	8,454	233.19	232.84	27%	65,852	161.66	230.34
NH	30%	4,783	334.48	324.04	23%	38,840	215.97	244.70
NJ	31%	30,322	339.73	353.72	22%	237,660	254.69	171.04
NM	47%	13,032	254.85	268.69	39%	97,677	179.54	254.91
NV	42%	20,845	359.92	345.22	31%	138,749	237.33	213.14
NY	27%	34,074	307.34	344.36	20%	312,348	248.78	133.30
OH	37%	58,034	195.55	209.39	30%	433,415	149.96	144.80
OK	48%	26,122	212.14	231.86	42%	193,170	163.72	259.11
OR	29%	14,426	366.54	373.91	20%	113,709	254.45	150.88
PA	31%	46,251	211.66	255.80	26%	395,925	182.64	93.22
RI	46%	4,838	348.50	317.35	31%	36,805	213.19	189.09
SC	45%	41,043	267.68	271.70	35%	245,170	193.99	177.02
SD	40%	4,087	254.29	252.13	30%	29,798	177.74	182.66
TN	40%	43,706	275.05	294.31	32%	277,380	206.90	189.64
TX	38%	169,482	287.57	319.07	32%	1,141,785	216.22	270.25
UT	31%	15,093	397.07	398.64	20%	99,527	265.70	260.33
VA	48%	58,561	342.31	336.90	37%	456,328	250.29	260.23
VI	29%	90	413.52	438.75	24%	804	306.71	182.74
VT	25%	1,447	252.60	275.72	19%	12,337	181.23	290.86
WA	32%	30,180	415.12	423.78	22%	237,328	290.77	159.29
WI	28%	16,481	221.23	236.13	18%	126,256	163.10	146.56
WV	54%	8,621	202.41	197.40	45%	61,708	145.35	208.54
WY	45%	3,375	280.71	274.94	35%	25,369	201.87	263.36

Source: Recursion. Note: Outstanding balance based on loan balance as of October 2023. Values above are based on loan level disclosure data, thus excluding loan balances for 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 October 2023, the weighted average coupon (WAC) on outstanding Ginnie Mae MBS increased slightly from 3.40% in September 2023 to 3.44% as seen in **Figure 28**. **Figure 29** illustrates that loans originated since 2019 account for approximately 81% of Ginnie Mae MBS collateral outstanding.

Figure 28. Outstanding Ginnie Mae MBS Balance, by Coupon

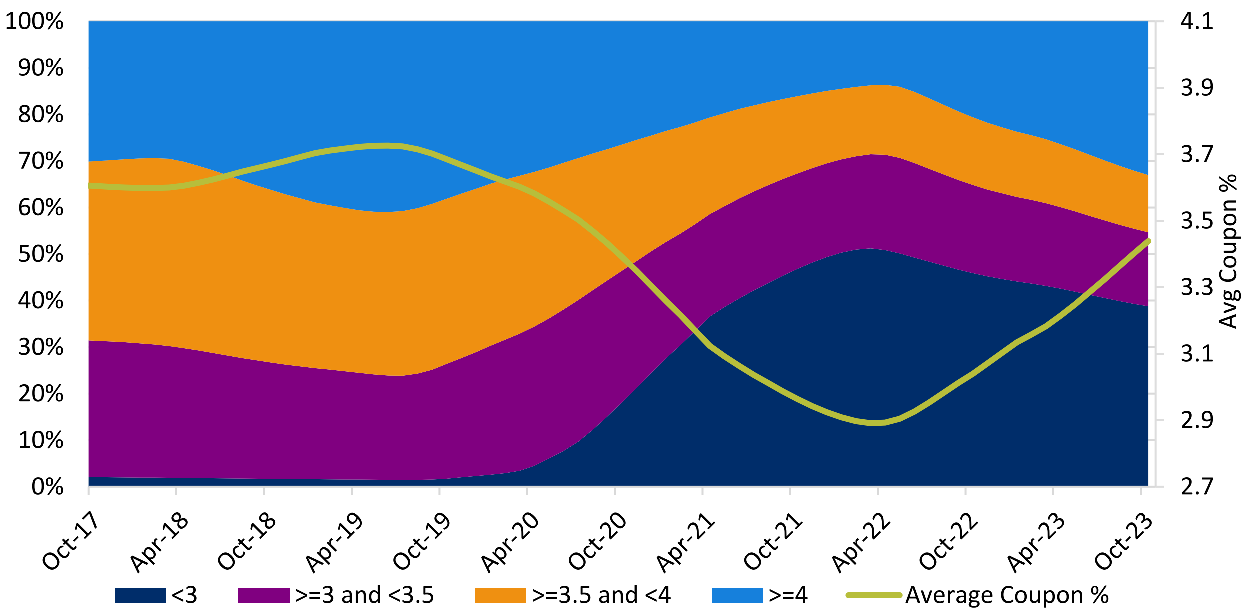
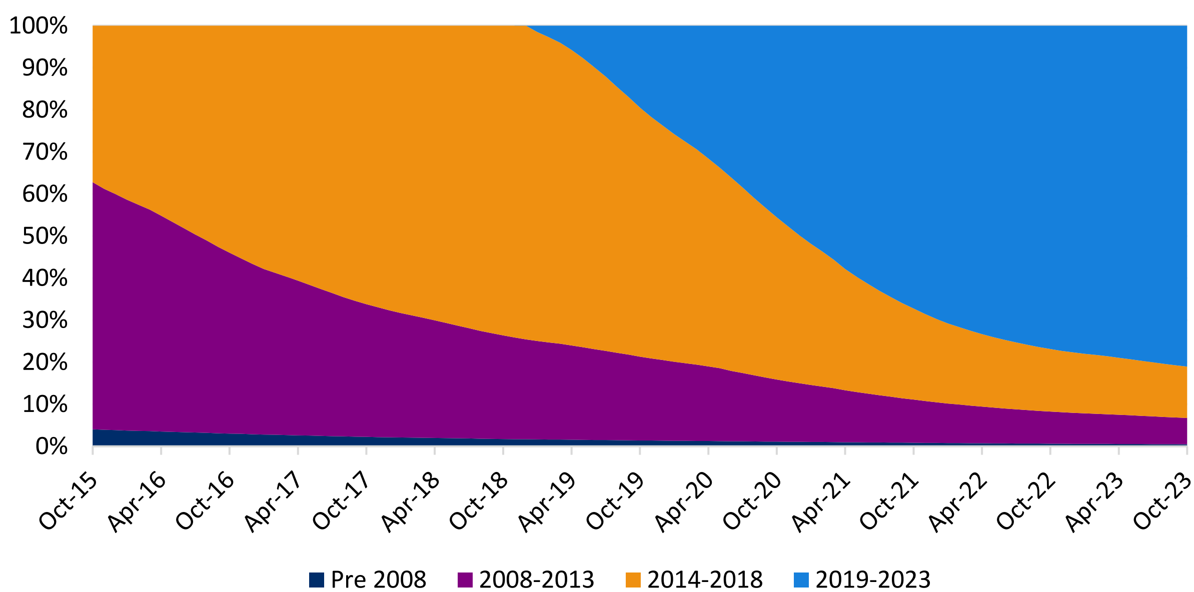


Figure 29. Outstanding Ginnie Mae MBS Balance, by Vintage



Source: Recursion. Note: October 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

Ginnie Mae Real Estate Mortgage Investment Conduit (REMIC) issuance volume for the month of October was $10.2 billion. This represents a 13.7% MoM increase from $8.9 billion in September 2023, and a 72.8% increase YoY from $5.9 billion in October 2022. Approximately $411.1 million of the October 2023 issuance volume were Multifamily MBS having coupons over 4.0% and over $8.3 billion were Single-Family MBS having coupons over 5.0%. $587.2 million of previously securitized REMICs were re-securitized into new REMIC deals in October.

Figure 30. Ginnie Mae Single-Family and Multifamily REMIC Issuance

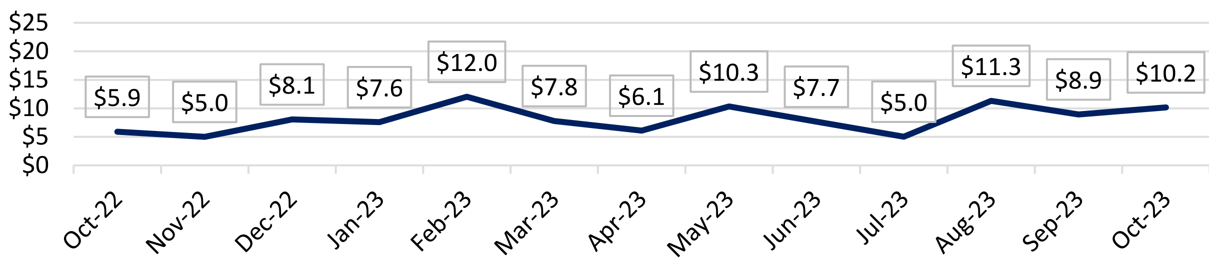


Table 7. October 2023 REMIC Collateral Coupon Distribution

Net Coupon (%)	*Approx. Ginnie Mae MBS amount securitized into REMIC Deals ($MM)*[2]	*% Breakdown of REMIC Collateral by coupon*
Multifamily		
<2.001 or N/A	185.5	17.7%
2.501-3.000	144.3	13.7%
3.001-3.500	13.1	1.2%
3.501-4.000	295.6	28.2%
4.001-4.500	326.1	31.1%
5.000-5.501	85.0	8.1%
Subtotal	**1,049.5**	**100.0%**
Single-Family		
ReREMIC	587.2	6.4%
4.001-4.500	83.7	0.9%
4.501-5.000	77.8	0.9%
5.001-5.500	99.2	1.1%
5.501-6.000	507.1	5.6%
6.001-6.500	4,661.8	51.1%
6.501-7.000	2,824.1	31.0%
>7.001	279.0	3.1%
Subtotal	**9,119.9**	**100.0%**
Grand Total	**10,169.4**	**100.0%**

Source: Ginnie Mae Disclosure Files

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

7.2 REMIC Market Snapshot

- In October 2023, Ginnie Mae and Freddie Mac saw increases in their Single-Family REMIC issuance collateral coupon of 9 bps and 3 bps respectively, and both reached new 12-month highs. Fannie Mae saw a 32 bp decrease in their Single-Family REMIC issuance collateral coupon in the same period.
- In October 2023, Ginnie Mae saw a decrease of 53 bps in their Multifamily REMIC issuance collateral coupon, the lowest collateral coupon, 3.59%, since June 2023. Freddie Mac saw an increase of 10 bps in their Multifamily REMIC issuance collateral coupon, highest collateral coupon, 5.27%, since February 2023.
- In October 2023, Ginnie Mae issued 18 REMIC deals, across SF and MF, an increase of 2 deals MoM. Freddie Mac issued 18 REMIC deals, across SF and MF, a decrease of 1 deal MoM.
- In October 2023, Fannie Mae issued its first Multifamily REMIC deal since July 2023. Fannie Mae's total REMIC issuance was $3.04 billion in October, up from $1.65 billion in September.

Figure 31. October 2023 REMIC Issuance by Agency

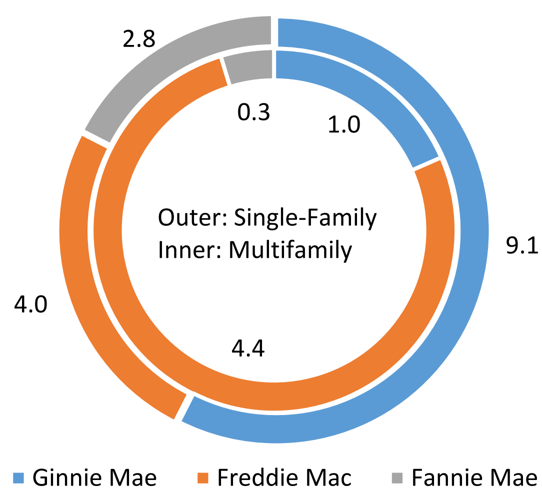


Table 8. Monthly REMIC Issuance by Agency

	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	9.12	57.5	11	1.05	18.4	7
Freddie Mac	3.98	25.1	10	4.37	76.8	8
Fannie Mae	2.77	17.4	7	0.27	4.7	1
Total [3]	**$15.87**	**100%**	**28**	**$5.69**	**100%**	**16**

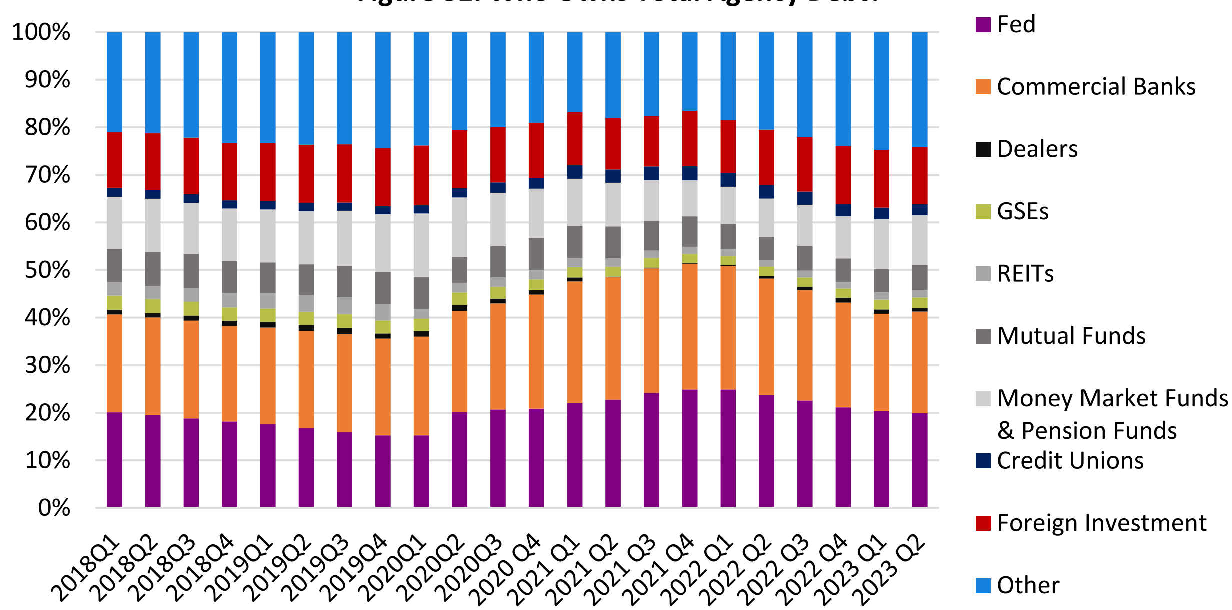
Source: Ginnie Mae Disclosure Files

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

8 MBS OWNERSHIP

As of Q2 2023, the largest holders of agency debt (agency MBS + agency notes and bonds) included commercial banks (21%), the Federal Reserve (20%), and foreign investors (12%). The Federal Reserve's share remained stable at 20% in the second quarter of 2023 as compared to the first quarter of 2023. Out of the approximately $2.5 trillion in holdings as of the end of October 2023, roughly $1.92 trillion was held by the top 25 domestic banks per **Table 9** below.

Figure 32. 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 Q2 2023.

8.1 Commercial Bank Holdings of Agency MBS

Table 9. Commercial Bank Holdings of Agency MBS

	Commercial Bank Holdings ($Billions)								
	Feb-23	**Mar-23**	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Oct-23**
Largest 25 Domestic Banks	1,961.4	1,952.3	1,953.4	1,947.1	1,961.3	1,955.1	1,944.4	1,940.1	1,921.3
Small Domestic Banks	764.0	700.9	627.8	628.4	618.2	610.5	602.0	587.2	578.1
Foreign Related Banks	27.0	28.4	26.8	24.0	26.2	24.3	23.2	25.9	26.7
Total, Seasonally Adjusted	**2,752.4**	**2,681.6**	**2,608.0**	**2,599.5**	**2,605.7**	**2,589.9**	**2,569.6**	**2,553.2**	**2,526.1**

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

8.2 Bank and Thrift Residential MBS Holdings

In Q3 2023, MBS holdings at banks and thrifts continued to decrease. The decrease was mostly driven by GSE pass-throughs and Agency CMO holdings. Ginnie Mae pass-throughs saw a decrease of 2.8%, showing the smallest percentage decrease of all banks and thrifts, quarter over quarter (QoQ). Total bank and thrift MBS holdings decreased by approximately 12.1% from Q3 2022 and 6.3% from Q2 2023. Out of the $2.14 trillion in MBS holdings at banks and thrifts as of Q3 2023, $1.29 trillion were GSE pass-throughs and $373 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
3Q23	$2,137.37	$1,289.29	$372.71	$2.63	$416.84	$55.89	$1,892.93	$244.44
Change:								
2Q23-3Q23	-6.3%	-7.2%	-2.8%	-13.1%	-6.6%	-4.1%	-6.4%	-5.2%
3Q22-3Q23	-12.1%	-15.2%	5.9%	-20.0%	-16.1%	-5.7%	-12.2%	-11.2%

Source: Inside Mortgage Finance. Notes: Data as of Q3 2023.

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

Rank	Institution	Total	GSE PT	GNMA PT	Agency CMO	Non-Agency	Share
1	Bank Of America Corporation	$391,501.0	$329,448.0	$56,255.0	$5,656.0	$142.0	18.3%
2	Wells Fargo & Company	$221,156.0	$141,703.0	$77,058.0	$2,337.0	$58.0	10.3%
3	JPMorgan Chase & Co.	$155,852.0	$65,121.0	$78,094.0	$492.0	$12,145.0	7.3%
4	Charles Schwab	$146,103.0	$82,508.0	$5,184.0	$58,411.0	$0.0	6.8%
5	Truist Bank	$94,378.0	$47,324.0	$10,741.0	$33,505.0	$2,808.0	4.4%
6	U.S. Bancorp	$93,011.4	$59,409.8	$23,102.3	$10,499.2	$0.1	4.4%
7	Citigroup Inc.	$82,089.0	$63,563.0	$15,799.0	$2,110.0	$617.0	3.8%
8	PNC Bank, National Association	$66,149.3	$56,128.4	$3,733.4	$5,346.2	$941.3	3.1%
9	Capital One Financial Corporation	$59,512.4	$28,072.3	$13,922.7	$17,197.5	$320.0	2.8%
10	Morgan Stanley	$47,308.0	$29,290.0	$6,466.0	$11,523.0	$29.0	2.2%
11	Bank Of New York Mellon Corporation	$37,611.0	$26,281.0	$1,471.0	$8,096.0	$1,763.0	1.8%
12	USAA Federal Savings Bank	$35,306.0	$29,812.0	$1,734.0	$3,760.0	$0.0	1.7%
13	State Street Bank and Trust Company	$34,679.3	$12,693.0	$7,927.0	$12,493.3	$1,566.0	1.6%
14	BMO Harris Bank National Association	$28,675.4	$3,870.8	$5,751.2	$19,053.4	$0.0	1.3%
15	The Huntington National Bank	$26,094.3	$10,300.1	$8,502.9	$7,172.6	$118.7	1.2%
16	TD Bank USA/TD Bank NA	$25,998.1	$1,164.1	$70.8	$24,730.9	$32.3	1.2%
17	KeyBank National Association	$23,122.6	$3,463.2	$167.6	$19,491.8	$0.0	1.1%
18	HSBC Bank USA, National Association	$23,053.7	$3,876.6	$14,222.4	$4,954.0	$0.7	1.1%
19	Citizens Bank, National Association	$22,907.3	$11,578.3	$5,101.0	$6,228.1	$0.0	1.1%
20	Ally Bank	$18,161.0	$11,369.0	$1,675.0	$1,457.0	$3,660.0	0.8%
Total	**Top 20**	**$1,632,668.7**	**$1,016,975.5**	**$336,978.3**	**$254,514.0**	**$24,201.0**	**76.4%**

Source: Inside Mortgage Finance. Notes: Data as of Q3 2023.

8.3 SOMA Holdings

FOMC and Economic Highlights:

Federal Open Market Committee Meeting 11/1/2023 Press Release:

- "The Committee decided to maintain the target range for the federal funds rate at 5-1/4 to 5-1/2 percent."
- "Tighter financial and credit conditions for households and businesses are likely to weigh on economic activity, hiring, and inflation. The extent of these effects remains uncertain. The Committee remains highly attentive to inflation risks."
- "The Committee is strongly committed to returning inflation to its 2 percent objective."
- In Powell's press conference, he indicated that there will be another rate movement forecast after the next FOMC meeting, similar to the one provided after September's meeting. The final 2023 FOMC meeting is scheduled for December 12-13.

SOMA Portfolio Highlights (Sep 27, 2023 vs. Oct 25, 2023)

- SOMA holdings of domestic securities totaled $7.3 trillion on Oct 25 (a decrease of $64.5 billion or -0.88% from Sep 27). $47.7 billion (74% of the total decrease) was in U.S. Treasury holdings and $16.8 billion (26% of the total decrease) was in Agency MBS.
- Since the institution of redemption caps in June 2022, SOMA holdings have decreased by $1.1 trillion. The total reduction of holdings of U.S. Treasuries was $873.9 billion and $245.9 billion for Agency MBS. This represents 93.9% and 45.3% of the total redemption cap over the period for U.S. Treasuries and Agency MBS, respectively.
- Agency MBS comprise about 34% of the total SOMA portfolio. The $16.8 billion decrease was comprised of a $7.0 billion decrease in Fannie Mae holdings, a $6.0 billion decrease in Freddie Mac holdings, and a $3.8 billion decrease in Ginnie Mae holdings.
- While Ginnie Mae MBS comprise 25.5% of total Agency MBS outstanding, the SOMA Ginnie Mae allocation is underweighted at only 20.6%.
- SOMA Agency MBS holdings include 15-yr, 30-yr, and other securities with, 30-yr comprising around 88% of total Agency MBS holdings. Only 30-yr Ginnie Mae I & II MBS are held by SOMA.
- Over 99% of SOMA Agency MBS holdings have coupons of 4.5% or lower with an average WAC of 2.508%.
- There were no significant changes in Agency MBS holdings by coupon rate distribution from Sep 27 to Oct 25.
- The redemption cap for SOMA's Agency MBS holdings is set at $35 billion per month. The reduction of $16.8 billion in Agency MBS represents 48% of the liquidation cap.

Table 12: SOMA Holdings as of September 27, 2023 and October 25, 2023 ($ Billions)

Holdings by Security Type	*September 27, 2023*		*October 25, 2023*		*Month-Over-Month*	
	SOMA Holdings	*% Share*	*SOMA Holdings*	*% Share*	*$ Change*	*% Change*[4]
U.S. Treasuries	$4,847.4	66.14%	$4,799.7	66.07%	-$47.7	-0.98%
Federal Agency Debt	$2.3	0.03%	$2.3	0.03%	$0.0	0.00%
Agency MBS	$2,471.4	33.72%	$2,454.6	33.79%	-$16.8	-0.68%
Agency Commercial MBS	$8.3	0.11%	$8.3	0.11%	$0.0	-0.37%
Total SOMA Holdings	**$7,329.5**	**100.0%**	**$7,265.0**	**100.0%**	**-$64.5**	**-0.88%**

Table 13: SOMA Agency MBS Holdings Distribution ($ Billions)

Agency	Singly-Family AMBS Outstanding October 1, 2023	% AMBS Outstanding	SOMA AMBS Holdings September 27, 2023	% SOMA Holdings	SOMA AMBS Holdings October 25, 2023	% SOMA Holdings
Fannie Mae	$3,578.0	40.8%	$1,018.0	41.2%	1,011.0	41.2%
Freddie Mac	$2,934.3	33.4%	$943.2	38.2%	$937.2	38.2%
Ginnie Mae	$2,264.7	25.8%	$510.3	20.6%	$506.5	20.6%
Total	$8,777.0	100.0%	$2,471.4	100.0%	$2,454.6	100.0%

Table 14: SOMA Agency MBS Liquidations from Sep 27, 2023 to Oct 25, 2023 ($ Billions)

	MBS Holdings as of 9.27.23	*MBS Holdings 10.25.23*	*Liquidated Amount*	*Liquidation Cap*[5]	*% of Liquidation Cap*
Total	$2,471.4	$2,454.6	$16.8	$35.0	48%

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.*

[5] *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.*

8.4 Foreign Ownership of MBS

For the month of September 2023, foreign ownership of MBS represented $1.252 trillion in Agency MBS, up approximately $141 billion from September 2022. 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 33. Agency MBS Owned by Foreign Entities Ex-Fed Holdings and CMO's (USD Billions)

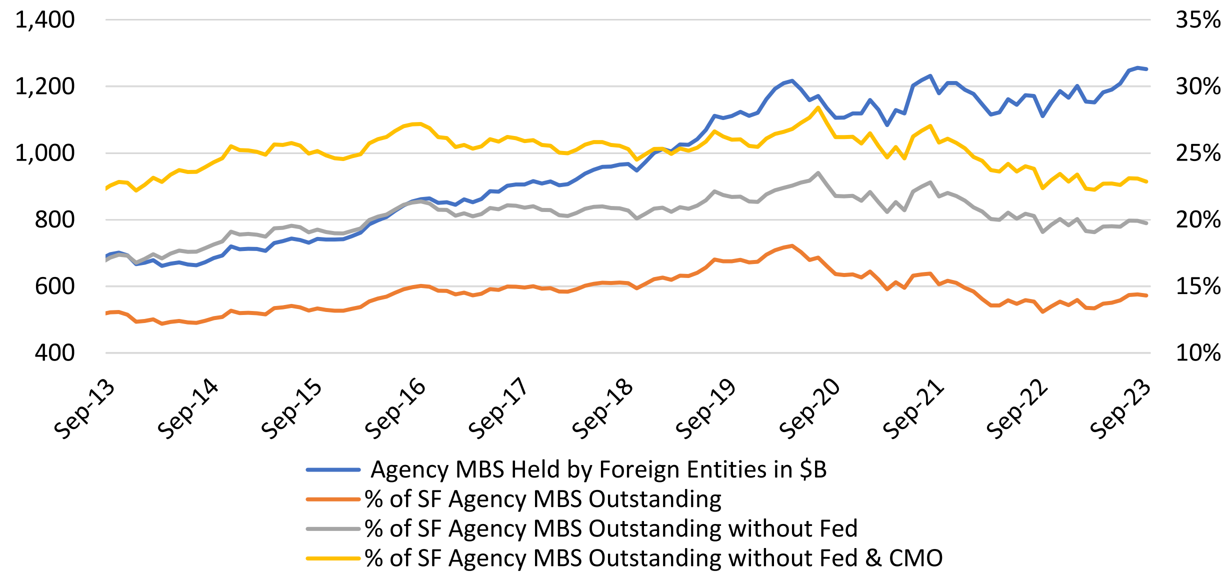
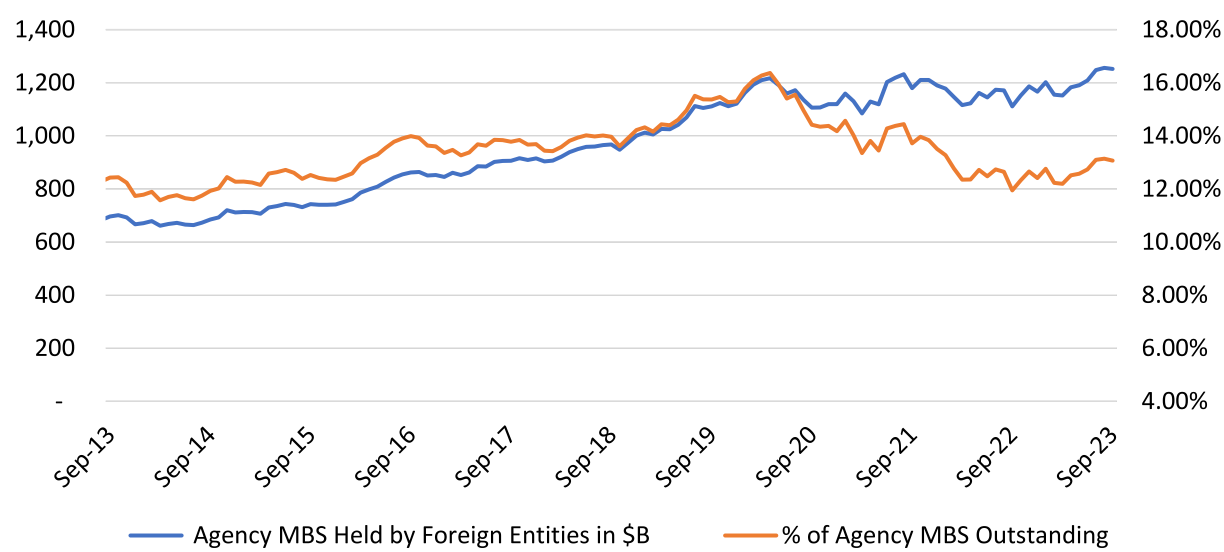


Figure 34. Agency MBS Owned by Foreign Entities (USD Billions)



Sources: TIC and Recursion, as of September 2023.

8.5 Foreign Ownership of Agency Debt and Agency MBS

The largest holders of Agency MBS were China, Japan, and Taiwan. As of June 2023, these three owned roughly 58% of all foreign owned Agency MBS. Between June 2022 and June 2023, China and Japan increased their Agency MBS holdings while Taiwan's holdings decreased. China's holdings increased by $25.6 billion, Japan's holdings increased by $21.9 billion, and Taiwan's holdings decreased by $14.4 billion.

Table 15. All Agency Debt

Country	*Level of Holdings ($ Millions)*				*Change in Holdings ($ Millions)*			
	9/1/2022	**12/1/2022**	**3/1/2023**	**6/1/2023**	**Q3 2022**	**Q4 2022**	**Q1 2023**	**Q2 2023**
China	241,523	251,592	263,892	269,980	-2,866	10,069	12,300	6,088
Japan	232,769	278,069	287,051	253,357	1,332	45,300	8,982	-33,694
Taiwan	209,453	210,309	212,533	208,226	-13,217	856	2,224	-4,307
Canada	89,313	97,234	105,527	105,330	12,922	7,921	8,293	-197
United Kingdom	56,348	61,393	41,101	55,682	-9,881	5,045	-20,292	14,581
Luxembourg	38,559	47,240	51,202	40,971	-4,281	8,681	3,962	-10,231
Ireland	17,692	22,478	25,099	36,766	-2,512	4,786	2,621	11,667
South Korea	35,643	36,237	38,131	36,737	-2,320	594	1,894	-1,394
Cayman Islands	35,081	30,941	29,485	30,398	100	-4,140	-1,456	913
Bermuda	18,681	19,008	19,418	21,930	-791	327	410	2,512
Other	188,623	226,067	199,801	206,671	-7,888	37,444	-26,266	6,870
Total	**1,163,685**	**1,280,568**	**1,273,240**	**1,266,048**	**-29,402**	**116,883**	**-7,328**	**-7,192**

Table 16. Agency MBS

Country	*Level of Holdings ($ Millions)*		
	6/1/2022	**6/1/2023**	***YoY Change in Holdings ($ Millions)***
China	244,389	269,980	25,591
Japan	231,437	253,357	21,920
Taiwan	222,670	208,226	-14,444
Canada	76,391	105,330	28,939
United Kingdom	66,229	55,682	-10,547
Luxembourg	42,840	40,971	-1,869
Ireland	20,204	36,766	16,562
South Korea	37,963	36,737	-1,226
Cayman Islands	34,981	30,398	-4,583
Bermuda	19,472	21,930	2,458
Other	196,511	206,671	10,160
Total	**1,193,087**	**1,266,048**	**72,961**

Source: Treasury International Capital (TIC). Note: Level of agency debt Holdings by month data as of Q2 2023. Agency MBS as of June 2023. Table 16 includes the top 10 holders of agency debt listed as of June 2023.

9 FIXED INCOME LIQUIDITY INDICATORS

The Agency MBS average daily trading volume YTD as of month-end October 2023 was $253 billion, which was up from a monthly average of $241 billion for calendar year 2022. As of month-end October 2023, Agency MBS average daily trading volume increased 1.6% MoM. *See footnote below for update on "Average Daily Turnover by Sector" data.*

Figure 35. Average Daily Trading Volume by Sector

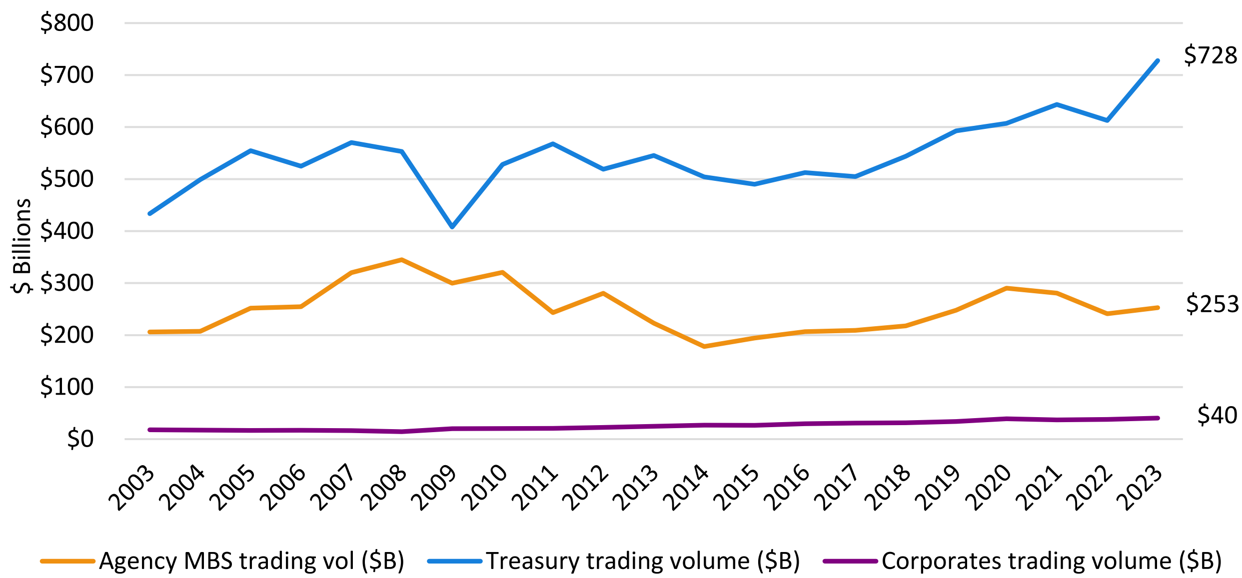
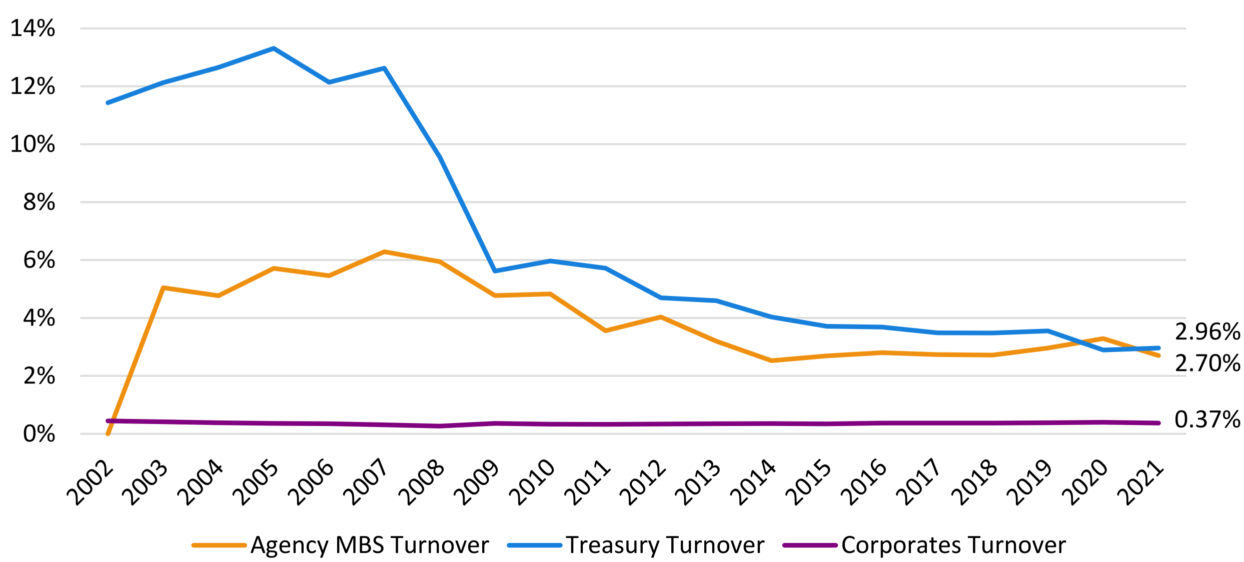


Figure 36. Average Daily Turnover by Sector



Source: SIFMA. Note: Data as of October 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 17, 18, and 19 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 October 2023. The distribution statistics capture some key differences in the populations served by the agencies.

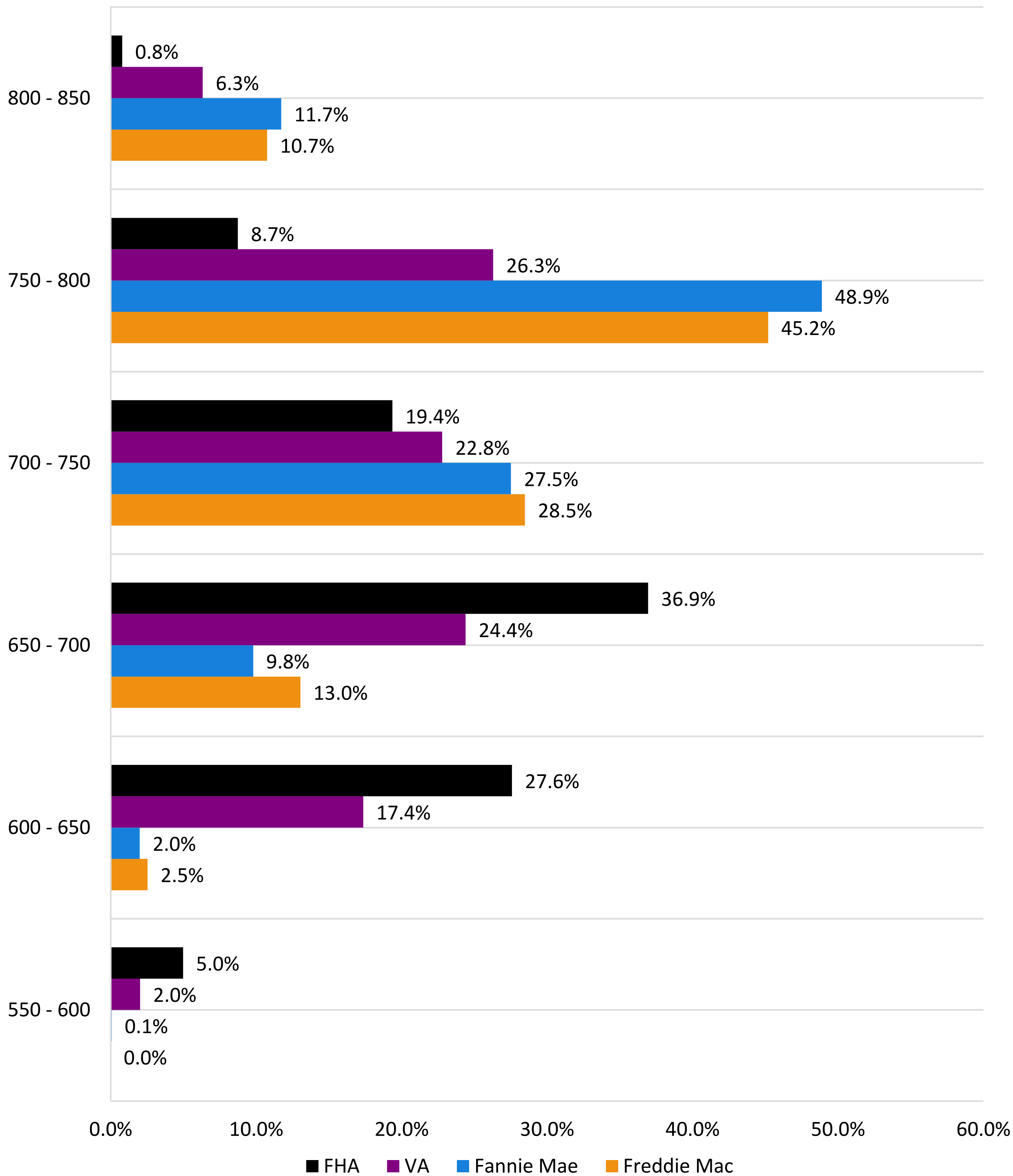
10.1 Credit Scores

Table 17. Share of Loans by FICO Score

			Purchase FICO				
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	217,805	653	695	745	781	799	735
Fannie	72,291	701	734	766	790	802	758
Freddie	67,624	691	725	761	788	802	753
Ginnie	77,890	628	653	690	740	779	697
			Refi FICO				
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	43,642	623	656	702	754	788	703
Fannie	12,915	666	703	744	779	799	738
Freddie	11,635	663	694	735	772	796	732
Ginnie	19,092	596	628	658	694	735	661
			All FICO				
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	261,447	646	687	739	778	798	729
Fannie	85,206	695	729	763	788	802	755
Freddie	79,259	685	720	758	786	801	750
Ginnie	96,982	622	648	683	732	774	690
			Purchase FICO: Ginnie Mae Breakdown by Source				
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	77,890	628	653	690	740	779	697
FHA	50,454	624	648	679	718	757	685
VA	24,715	638	674	729	774	797	722
Other	2,721	633	657	695	734	764	697
			Refi FICO: Ginnie Mae Breakdown by Source				
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	19,092	596	628	658	694	735	661
FHA	13,067	590	622	652	684	717	653
VA	6,009	615	641	675	717	758	680
Other	16	614	680	711	757	760	703
			All FICO: Ginnie Mae Breakdown by Source				
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	96,982	622	648	683	732	774	690
FHA	63,521	617	643	673	712	751	678
VA	30,724	632	664	716	768	794	714
Other	2,737	633	657	695	734	764	697

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

Figure 37. FICO Distributions by Agency



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

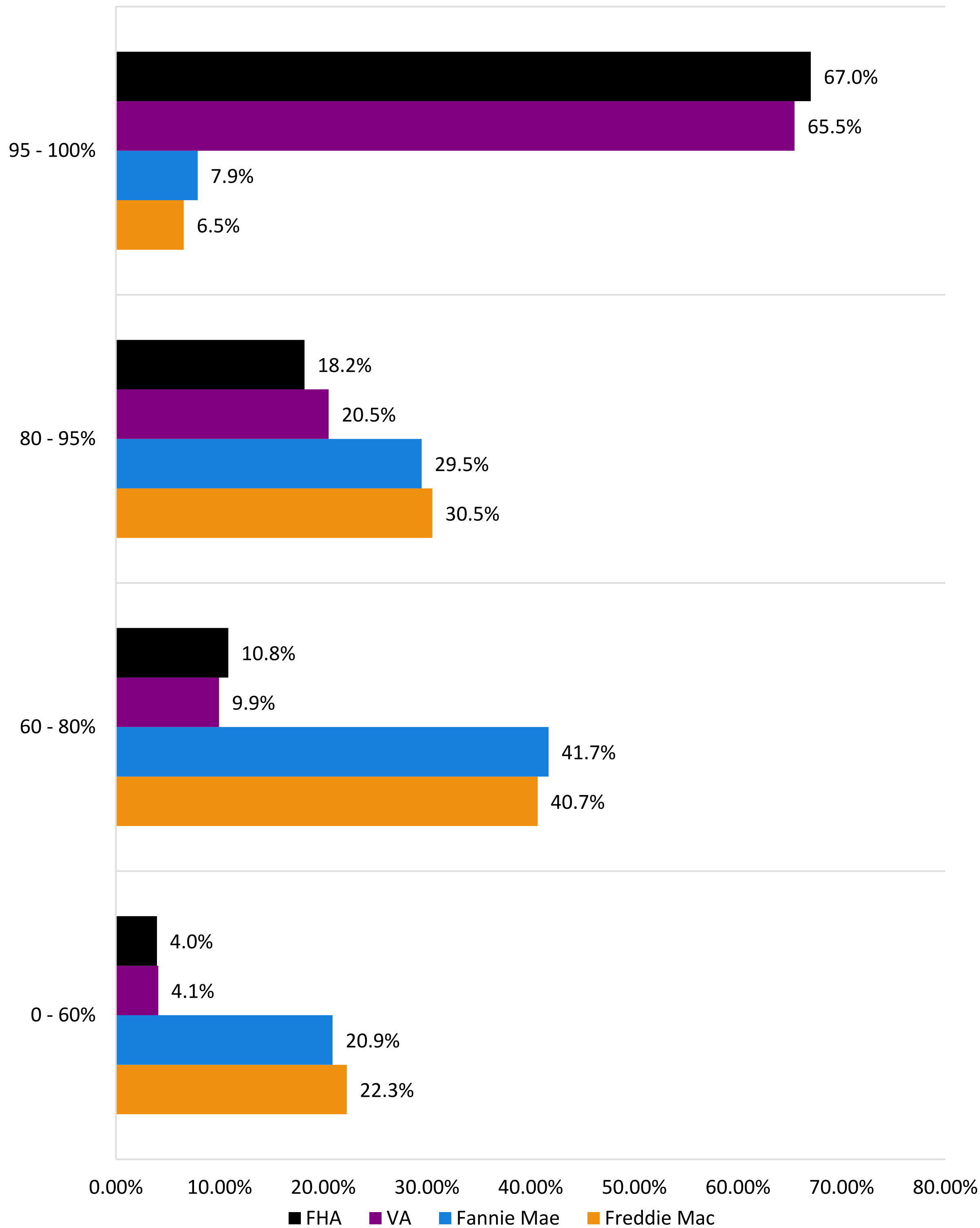
10.2 Loan-to-Value (LTV)

Table 18. Share of Loans by LTV

Names	Number of Loans	P10	P25	Median	P75	P90	Mean
Purchase LTV							
All	218,054	60	80	91	98	99	85
Fannie	72,390	55	75	80	95	95	79
Freddie	67,646	51	72	80	95	95	78
Ginnie	78,018	90	97	98	100	100	96
Refi LTV							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	43,898	34	51	68	80	86	64
Fannie	12,917	27	41	58	70	78	55
Freddie	11,636	28	42	58	70	78	55
Ginnie	19,345	54	69	80	81	95	76
All LTV							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	261,952	53	75	86	97	99	81
Fannie	85,307	47	66	80	90	95	75
Freddie	79,282	45	65	80	90	95	75
Ginnie	97,363	75	90	98	99	100	92
Purchase LTV: Ginnie Mae Breakdown by Source							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	78,018	90	97	98	100	100	96
FHA	50,535	92	97	98	98	98	96
VA	24,748	84	100	100	100	102	96
Other	2,735	92	99	101	101	101	98
Refi LTV: Ginnie Mae Breakdown by Source							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	19,345	54	69	80	81	95	76
FHA	13,152	51	66	77	81	81	72
VA	6,176	64	78	90	98	100	85
Other	17	60	65	85	94	99	81
All LTV: Ginnie Mae Breakdown by Source							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	97,363	75	90	98	99	100	92
FHA	63,687	74	86	98	98	98	91
VA	30,924	78	90	100	100	102	94
Other	2,752	92	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 38. Loan-to Value by Agency



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

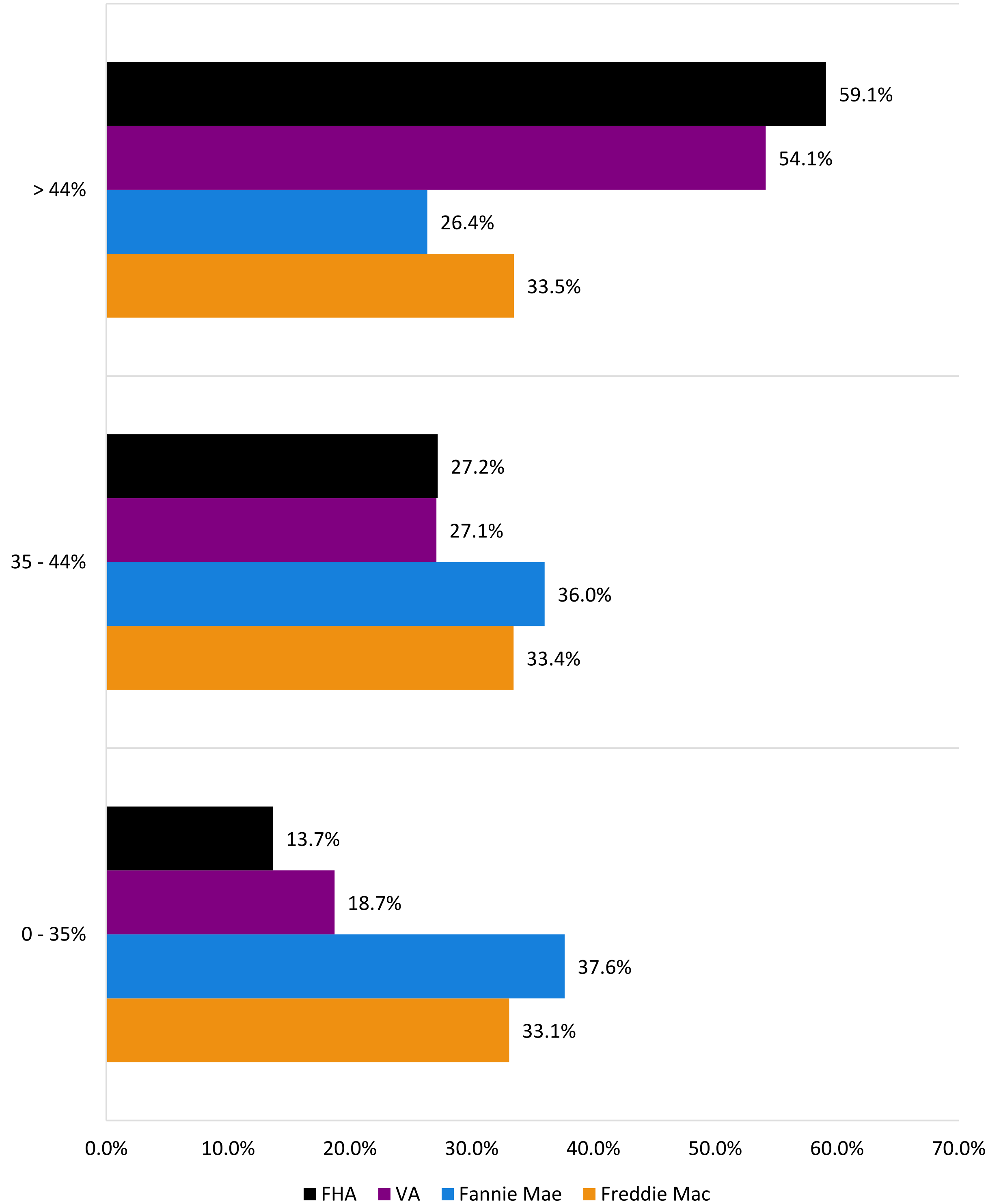
10.3 Debt-to-Income (DTI)

Table 19. Share of Loans by DTI

Purchase DTI							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	217,686	27	34	42	48	51	41
Fannie	72,390	25	32	39	45	49	38
Freddie	67,646	25	33	41	46	49	39
Ginnie	77,650	33	39	46	52	56	45
Refi DTI							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	43,203	25	33	41	47	51	40
Fannie	12,917	23	30	38	43	47	37
Freddie	11,636	24	32	41	46	49	38
Ginnie	18,650	29	36	44	50	55	43
All DTI							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	260,889	27	34	42	48	51	40
Fannie	85,307	24	31	39	45	48	38
Freddie	79,282	25	33	41	46	49	39
Ginnie	96,300	32	39	46	51	55	44
Purchase DTI: Ginnie Mae Breakdown by Source							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	77,650	33	39	46	52	56	45
FHA	50,512	34	41	47	52	55	46
VA	24,402	31	38	46	52	57	45
Other	2,736	28	32	36	40	42	35
Refi DTI: Ginnie Mae Breakdown by Source							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	18,650	29	36	44	50	55	43
FHA	13,033	29	36	44	50	55	43
VA	5,604	29	36	44	50	55	42
Other	13	30	32	37	41	41	36
All DTI: Ginnie Mae Breakdown by Source							
Names	**Number of Loans**	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	96,300	32	39	46	51	55	44
FHA	63,545	33	40	46	52	55	45
VA	30,006	31	38	45	51	56	44
Other	2,749	28	32	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 39. 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 August 2022 – October 2022 to the three-month range of August 2023 – October 2023, the share of high-LTV agency loans with:

- FICO scores above 750 increased by approximately 7.2%.
- DTIs below 35% decreased by approximately 19.3%.

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 70.63% of its issuances between August 2023 – October 2023 having LTVs of 95 or above, compared to 22.92% for the GSEs.

Table 20. Share of Loans with LTV > 95

	Ginnie Mae	*GSE*	*All*
Aug 2022 - Oct 2022	67.81%	21.36%	37.20%
Aug 2023 - Oct 2023	70.63%	22.92%	41.16%

Table 21. Agency Market Share by DTI and FICO for Loans with LTV > 95 (August 2022-October 2022)

	FICO					
DTI	**<650**	**650-700**	**700-750**	**≥750**	**NA**	**All**
<35	2.17%	3.55%	4.95%	7.81%	0.03%	18.52%
35-45	5.83%	9.16%	10.62%	11.59%	0.03%	37.23%
≥45	7.93%	13.02%	11.69%	10.27%	0.06%	42.96%
NA	0.30%	0.24%	0.17%	0.16%	0.42%	1.29%
All	**16.25%**	**25.96%**	**27.43%**	**29.82%**	**0.54%**	**100.00%**

Table 22. Agency Market Share by DTI and FICO for Loans with LTV > 95 (August 2023-October 2023)

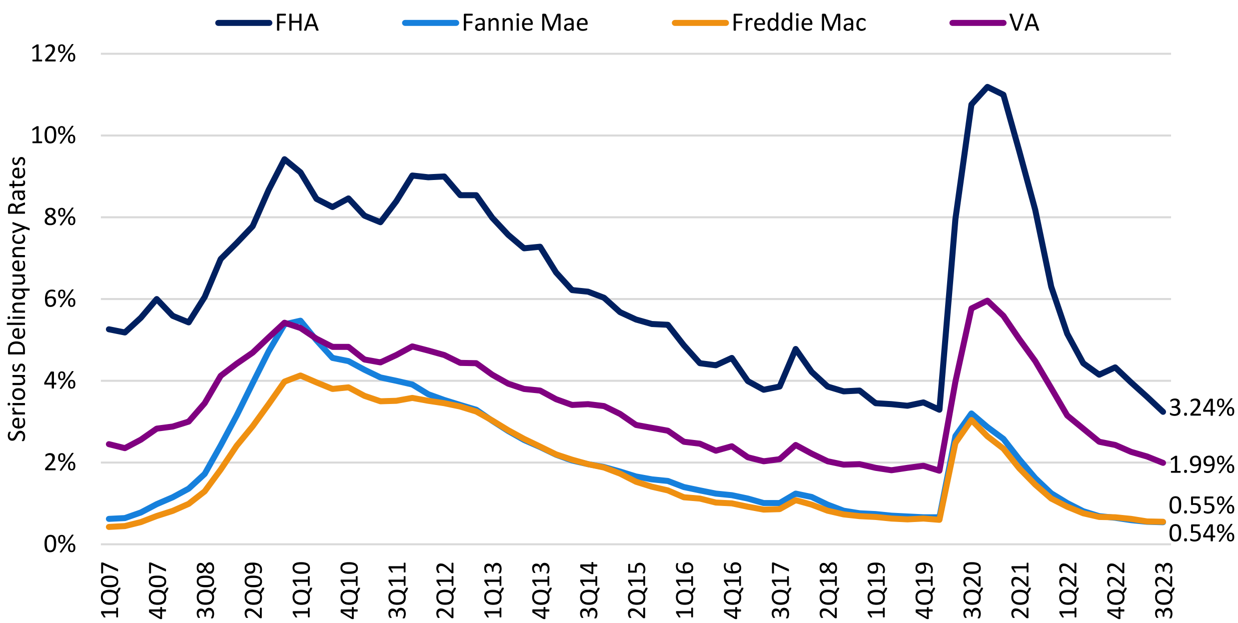
	FICO					
DTI	**<650**	**650-700**	**700-750**	**≥750**	**NA**	**All**
<35	1.68%	2.70%	3.89%	6.63%	0.05%	14.95%
35-45	5.11%	7.86%	9.82%	12.09%	0.04%	34.93%
≥45	7.76%	13.70%	14.22%	13.06%	0.11%	48.85%
NA	0.28%	0.23%	0.16%	0.20%	0.40%	1.28%
All	**14.83%**	**24.49%**	**28.10%**	**31.98%**	**0.60%**	**100.00%**

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

10.5 Serious Delinquency Rates

Serious delinquency rates for Single-Family GSE, VA, and FHA loans all fell in Q3 2023. From Q2 2023 to Q3 2023, Fannie and Freddie serious delinquencies both decreased by 1 bp. Ginnie Mae collateral's serious delinquency rates decreased more than the GSE rate, with VA decreasing 16 bps and FHA decreasing 37 bps. This overall decline in serious delinquency rates is consistent with the decrease in the number of loans in forbearance captured in Section 11.

Figure 40. 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 Q3 2023.

10.6 Credit Box

The first-time homebuyer share for agency purchase loans was 54.8% as of month-end October 2023, an increase from 54.4% in September 2023 and up from 53.0% in October 2022. Freddie Mac and Fannie Mae's first-time homebuyer shares, 46.2% and 47.5% respectively, as of month-end October 2023, increased 6.6% and 5.8% respectively, YoY. Ginnie Mae's first-time homebuyer share increased 1.0% YoY. **Table 23** shows that based on mortgages originated as of month-end October 2023, the average GSE first-time homebuyer was more likely to have a lower credit score and higher LTV. Ginnie Mae's first-time homebuyers were more likely to have lower loan amounts and lower DTI ratios, while having higher mortgage rates than Ginnie Mae repeat buyers.

Figure 41. First-Time Homebuyer Share: Purchase Only Loans

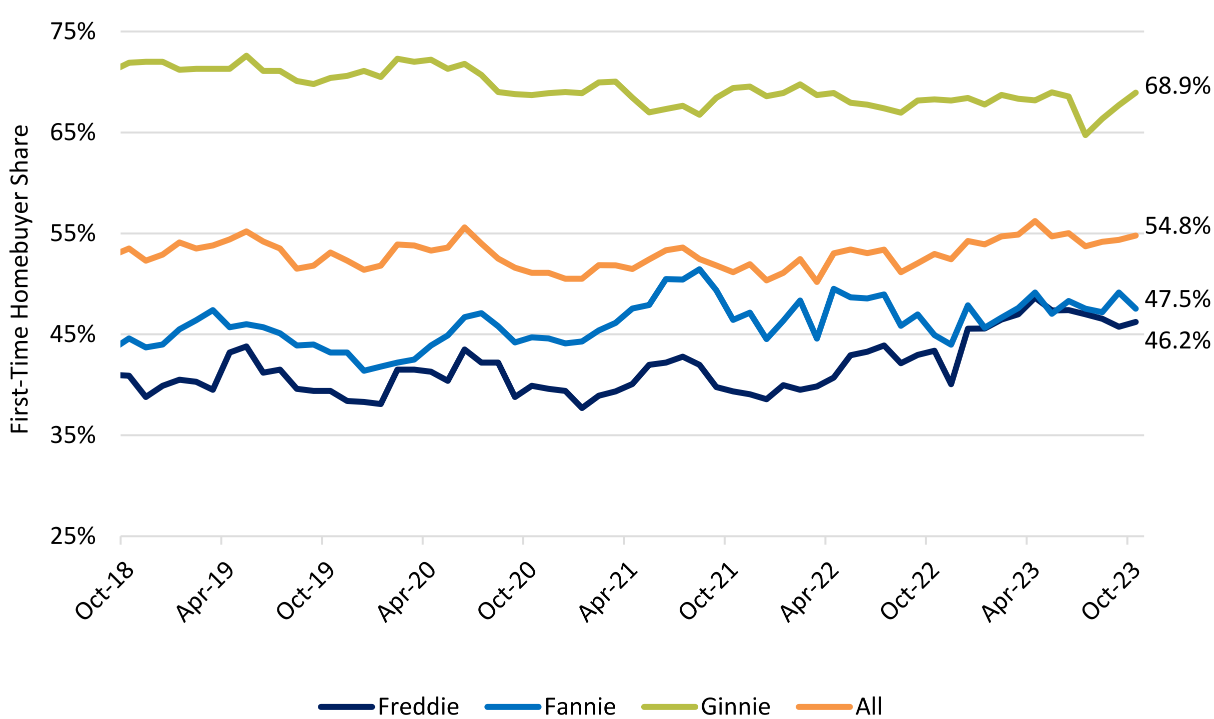


Table 23. Agency First-Time Homebuyer Share Summary

	Fannie Mae		Freddie Mac		Ginnie Mae		All	
	First-Time	*Repeat*	*First-Time*	*Repeat*	*First-Time*	*Repeat*	*First-Time*	*Repeat*
Loan Amount $	335,033	348,008	316,436	325,523	309,553	359,150	318,693	342,452
Credit Score	752	763	746	760	692	709	723	749
LTV (%)	85	74	84	73	97	94	90	79
DTI (%)	38	38	39	38	45	46	41	40
Loan Rate (%)	6.9	7.0	6.9	7.0	6.7	6.6	6.8	6.9

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

In the Ginnie Mae purchase market, 76.8% of FHA loans, 51.3% of VA loans, and 83.6% of other loans provided financing for first-time home buyers as of month-end October 2023. The share of first-time home buyers in the Ginnie Mae purchase market increased MoM for FHA and VA loans, while "Other" loans decreased. **Table 24** shows that based on mortgages originated as of month-end October 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 16.9% smaller loans, had a 23.6-point lower credit score, 5.1% higher LTV and had a 10 bp higher interest rate. FHA's first-time homebuyers are much more like their repeat buyers, with only 3.6% smaller loans, similar interest rates, and 2.4% 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 42. First-time Homebuyer Share: Ginnie Mae Breakdown

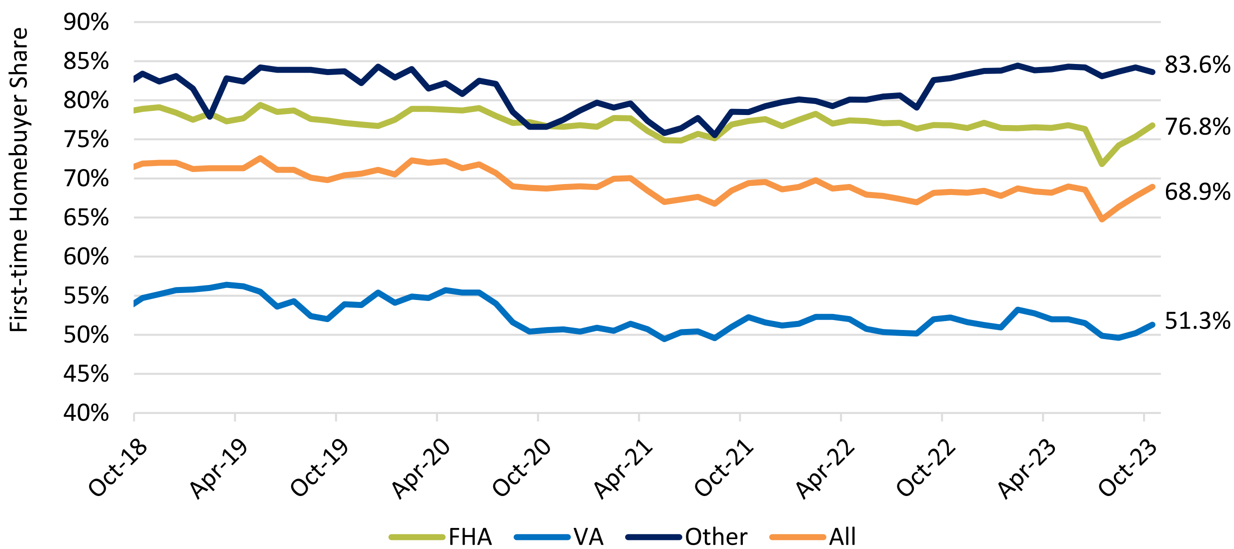


Table 24. Ginnie Mae First-Time Homebuyer Share Breakdown Summary

	FHA		VA		Other		Total	
	First-Time	*Repeat*	*First-Time*	*Repeat*	*First-Time*	*Repeat*	*First-Time*	*Repeat*
Loan Amount $	$308,696	$320,235	$335,206	$403,270	$181,778	$191,356	$309,553	$359,150
Credit Score	685	683	711	734	697	699	692	709
LTV (%)	97%	94%	99%	94%	98%	98%	97%	94%
DTI (%)	45%	47%	44%	45%	35%	36%	45%	46%
Loan Rate (%)	6.7%	6.7%	6.6%	6.5%	6.8%	6.7%	6.7%	6.6%

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

Note: Loan Rate % rounded to nearest tenth of a percent, all other numbers rounded to nearest whole number.

10.7 Credit Box: Historical

The median FICO score for all agency loans originated as of month-end October 2023 was 737, which represents a 9-point increase from October 2022. Ginnie Mae median FICO scores increased 9 points from 671 in October 2022 to 680 as of month-end October 2023. As of month-end October 2023, average FICO scores for refinances increased for Fannie Mae and Freddie Mac borrowers by 6 and 18 points YoY, respectively.

Figure 43. FICO Scores for All Loans

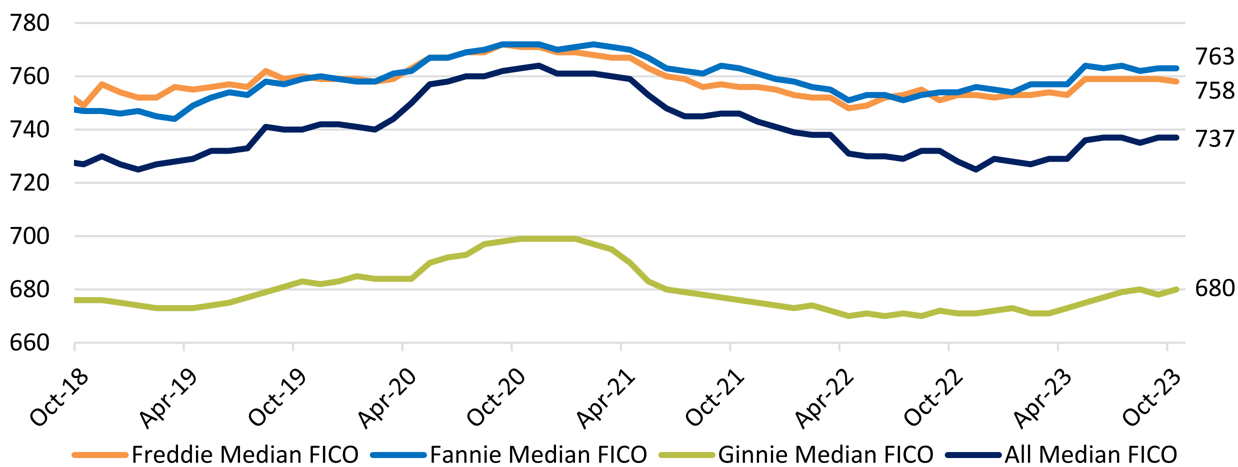


Figure 44. FICO Scores for Purchase Loans

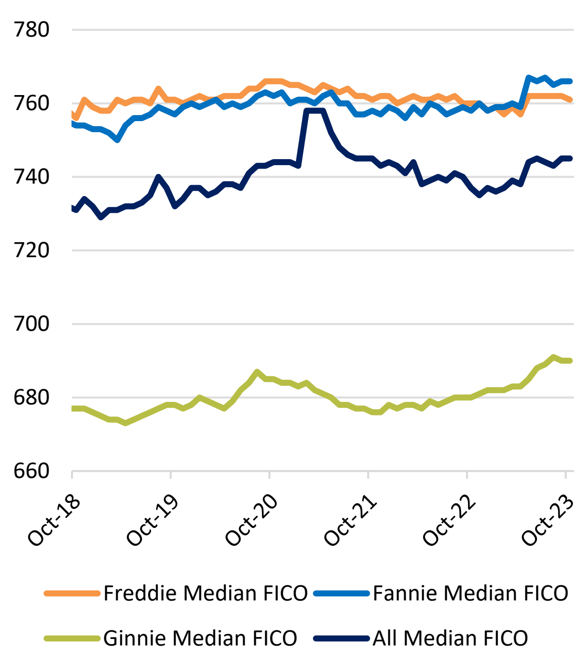
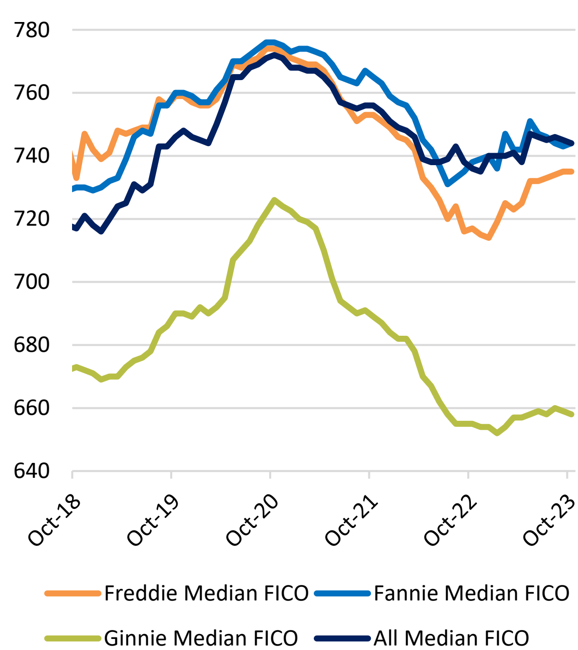


Figure 45. FICO Scores for Refinance Loans



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

In October 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 October 2022 to October 2023. In October 2023, median DTIs for Ginnie Mae, Freddie Mac, and Fannie Mae were 45.3%, 41.0%, and 39.0% respectively. In October 2022, median DTIs for Ginnie Mae, Freddie Mac, and Fannie Mae were 44.4%, 39.0%, and 39.0% respectively.

Figure 46. LTV Ratio for All Loans

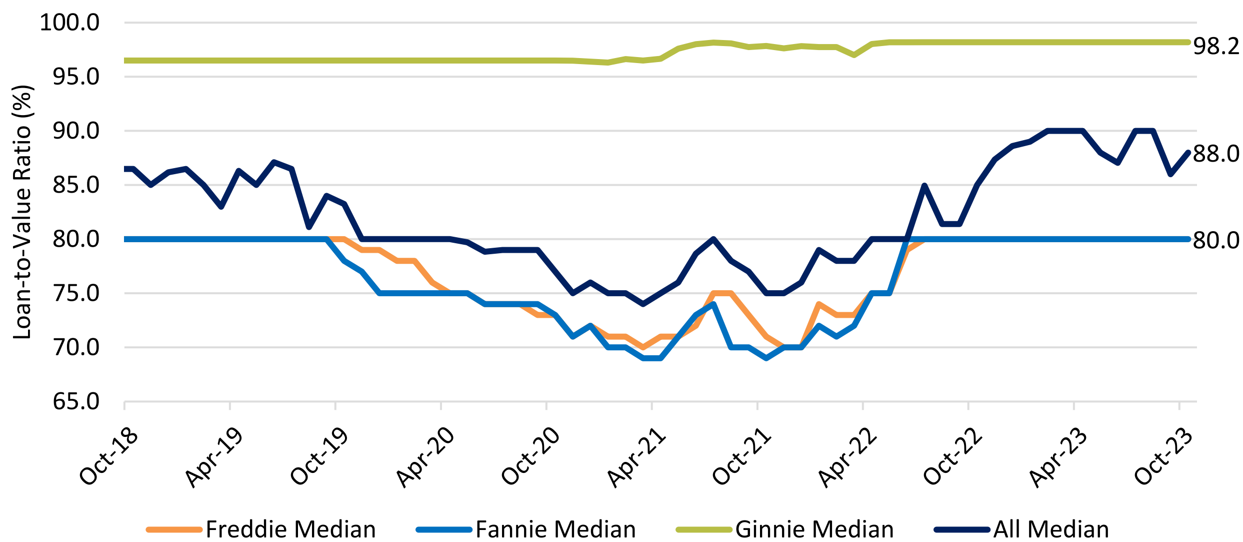
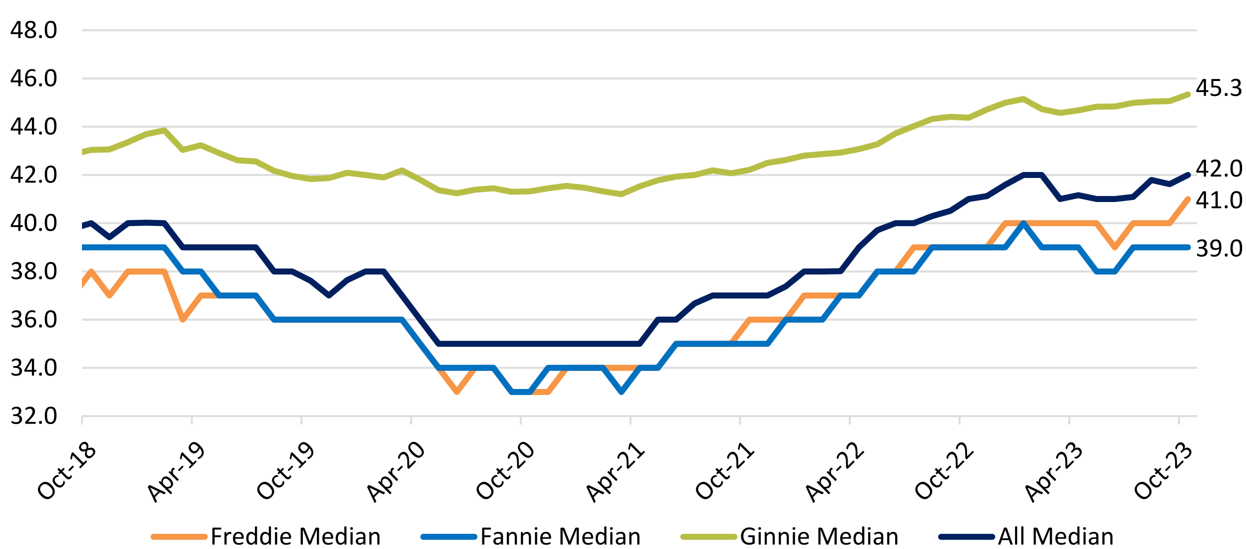


Figure 47. DTI Ratio for All Loans



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

11 FORBEARANCE TRENDS

At the end of October 2023, 41,764 Ginnie Mae loans were in forbearance. The number of loans in forbearance removed from MBS pools in October was 192 while 41,572 loans in forbearance remained in pools. The number of loans in forbearance 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.

Tables 25-27. Forbearance Snapshot

All Loans in Forbearance – October 2023						
	FICO Score*	Note Rate*	Current Principal Balance Median	First Time Homebuyer Share (%)	Purchase Share (%)	Loan Count
Ginnie	652	4.0	$201,195	74.2	75.5	41,764
Bank	670	4.1	$135,416	83.3	85.2	6,781
Nonbank	650	4.0	$214,543	73.2	74.5	34,957
FHA	649	4.1	$192,847	77.7	77.7	33,019
Bank	669	4.2	$133,286	85.7	86.6	5,825
Nonbank	647	4.0	$206,868	76.7	76.6	27,172
VA	660	3.8	$272,096	58.5	65.1	6,670
Bank	674	3.6	$181,717	62.1	70.5	615
Nonbank	660	3.8	$281,556	58.3	64.9	6,053

Loans in Forbearance and Removed from Pools – October 2023						
	FICO Score*	Note Rate*	Current Principal Balance Median	First Time Homebuyer Share (%)	Purchase Share (%)	Loan Count
Ginnie	656	4.0	$198,757	73.8	63.8	192
Bank	667	3.7	$83,895	82.3	87.0	39
Nonbank	655	4.1	$218,036	72.8	62.0	153
FHA	649	4.4	$185,202	78.1	71.4	134
Bank	649	4.3	$66,005	100.0	73.1	28
Nonbank	649	4.4	$214,135	76.8	71.3	106
VA	665	3.4	$234,377	62.1	47.3	50
Bank	677	3.2	$225,751	77.7	100.0	9
Nonbank	664	3.4	$243,203	58.8	42.3	41

Loans in Forbearance that Remain in Pools – October 2023						
	FICO Score*	Note Rate*	Current Principal Balance Median	First Time Homebuyer Share (%)	Purchase Share (%)	Loan Count
Ginnie	652	4.0	$201,195	74.2	75.5	41,572
Bank	670	4.1	$135,632	83.3	85.2	6,742
Nonbank	650	4.0	$214,519	73.2	74.6	34,804
FHA	649	4.1	$192,871	77.7	77.7	32,885
Bank	669	4.2	$133,548	85.7	86.6	5,797
Nonbank	647	4.0	$206,861	76.7	76.7	27,066
VA	660	3.8	$272,249	58.5	65.2	6,620
Bank	674	3.6	$180,888	61.8	70.1	606
Nonbank	660	3.8	$281,698	58.3	65.0	6,012

*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 October 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 28.** The top 30 firms collectively own 87.39% 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 October 2023, over half (53.69%) of the Ginnie Mae MSRs are owned by the top six firms.

Table 28. Top 30 Holders of Ginnie Mae Mortgage Servicing Rights (MSRs), by UPB

MSR Holder	*Current*	*Rank Year prior*	*Change*	*UPB ($ millions)*	*Share*	*Cumulative Share*	*CPR*	*CDR*
Lakeview Loan Servicing	1	2	↑	$ 304,379,455,553	13.3%	13.32%	5.40%	0.77%
Freedom Mortgage	2	1	↓	$290,744,627,478	12.7%	26.05%	6.43%	0.71%
PennyMac	3	3	↔	$266,760,351,076	11.7%	37.72%	5.31%	0.68%
Mr. Cooper (Nationstar)	4	4	↔	$127,538,052,036	5.6%	43.31%	4.33%	0.00%
Newrez	5	8	↑	$126,296,588,794	5.5%	48.84%	5.43%	0.70%
Rocket Mortgage (Quicken Loans)	6	6	↔	$111,009,307,125	4.9%	53.69%	7.18%	0.36%
Carrington Mortgage	7	7	↔	$109,303,975,263	4.8%	58.48%	6.00%	0.68%
Wells Fargo Bank	8	5	↓	$101,055,487,676	4.4%	62.90%	6.24%	0.51%
Planet Home Lending	9	12	↑	$65,192,407,103	2.9%	65.76%	4.79%	0.42%
U.S. Bank	10	11	↑	$55,816,740,348	2.4%	68.20%	4.70%	0.46%
United Wholesale Mortgage	11	10	↓	$52,508,187,497	2.3%	70.50%	2.12%	0.00%
LoanDepot	12	14	↑	$39,658,883,020	1.7%	72.23%	5.22%	0.82%
Navy Federal Credit Union	13	15	↑	$29,341,055,551	1.3%	73.52%	5.52%	0.38%
Mortgage Research Center	14	13	↓	$27,630,749,910	1.2%	74.73%	3.89%	0.00%
M&T Bank	15	NR	↑	$27,566,424,857	1.2%	75.93%	4.74%	0.29%
Guild Mortgage	16	17	↑	$23,998,365,637	1.1%	76.98%	4.92%	0.37%
The Money Source	17	18	↑	$22,124,498,784	1.0%	77.95%	6.04%	0.62%
Crossountry Mortgage	18	20	↑	$20,994,314,612	0.9%	78.87%	5.78%	0.87%
Truist Bank	19	19	↔	$20,283,464,642	0.9%	79.76%	5.81%	0.83%
Movement Mortgage	20	23	↑	$20,131,599,708	0.9%	80.64%	4.81%	0.78%
New American Funding	21	21	↔	$19,871,453,297	0.9%	81.51%	5.10%	0.64%
CMG Mortgage	22	24	↑	$19,161,640,434	0.8%	82.35%	4.84%	1.05%
AmeriHome Mortgage	23	16	↓	$17,593,777,869	0.8%	83.12%	2.95%	0.71%
PHH Mortgage	24	28	↑	$17,443,086,203	0.8%	83.88%	4.60%	0.72%
Idaho Housing and Finance	25	25	↔	$16,652,534,570	0.7%	84.61%	3.75	0.36%
Flagstar Bank	26	NR	↑	$14,205,097,349	0.6%	85.23%	4.38	0.25%
Citizens Bank.	27	27	↔	$13,997,324,284	0.6%	85.84%	4.37%	0.16%
Village Capital & Investment	28	22	↓	$12,970,276,450	0.6%	86.41%	9.16%	3.97%
MidFirst Bank	29	29	↔	$12,058,619,757	0.5%	86.94%	10.23%	4.19%
Sun West Mortgage.	30	NR	↑	$10,307,578,346	0.5%	87.39%	5.13%	0.40%

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

13 AGENCY NONBANK ORIGINATOR

Total agency nonbank origination share increased as of month-end October 2023 by approximately 1.8% MoM. The increase in nonbank origination share was driven by an increase in both Freddie Mac and Fannie Mae nonbank origination share, up 5.3% MoM and 0.5% MoM, respectively. The Ginnie Mae nonbank share rose to 91.0% as of October 2023 and has remained consistently higher than the GSEs, largely driven by origination share of refinance mortgage loans.

Figure 48. Agency Nonbank Originator Share (All, Purchase, Refi)

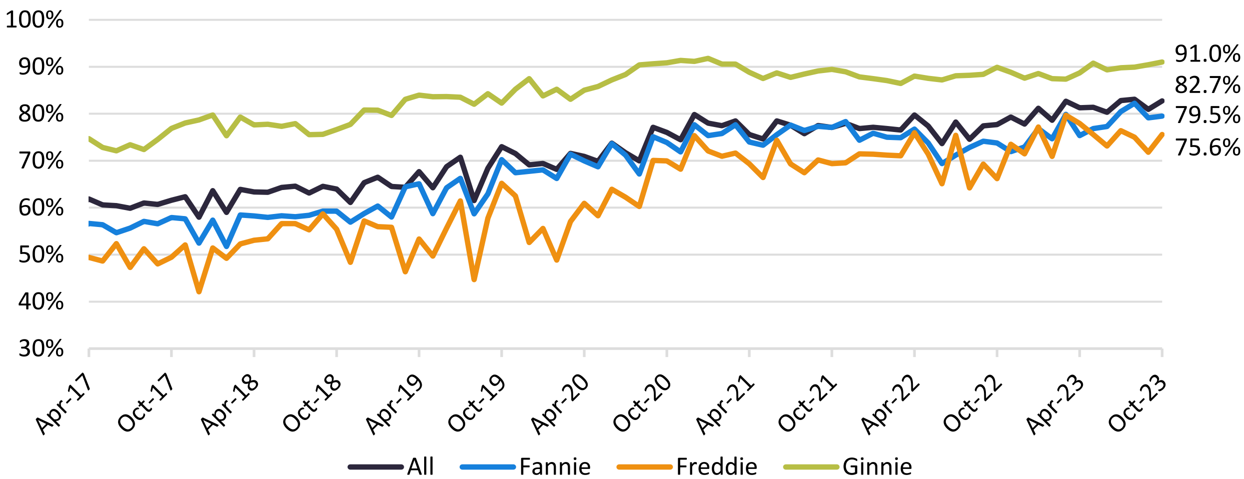


Figure 49. Nonbank Origination Share: Purchase Loans

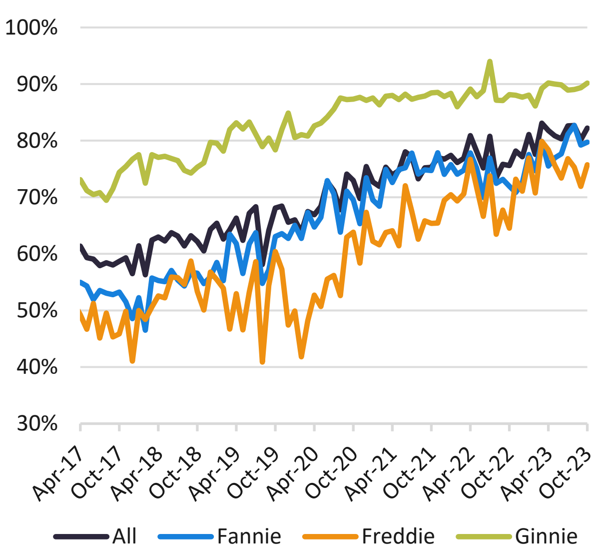
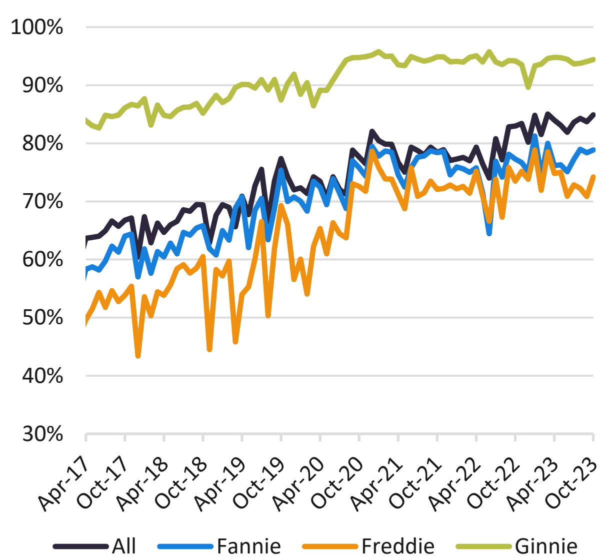


Figure 50. Nonbank Origination Share: Refi Loans



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

Ginnie Mae's total nonbank originator share remained relatively stable as of month-end October 2023. Ginnie Mae continues to have a high proportion of nonbank originations, with a rate of 91.0% in October 2023. The percentage of Ginnie Mae's Other nonbank refinanced loans decreased to 88.6% in October 2023.

Figure 51. Ginnie Mae Nonbank Originator Share (All, Purchase, Refi)

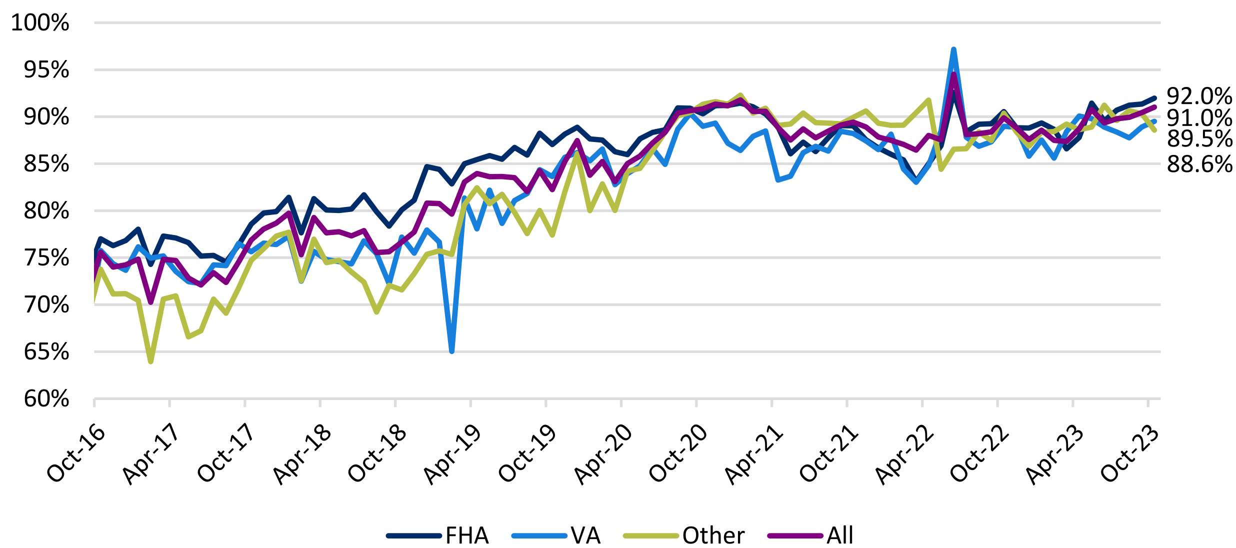


Figure 52. Ginnie Mae Nonbank Share: Purchase Loans

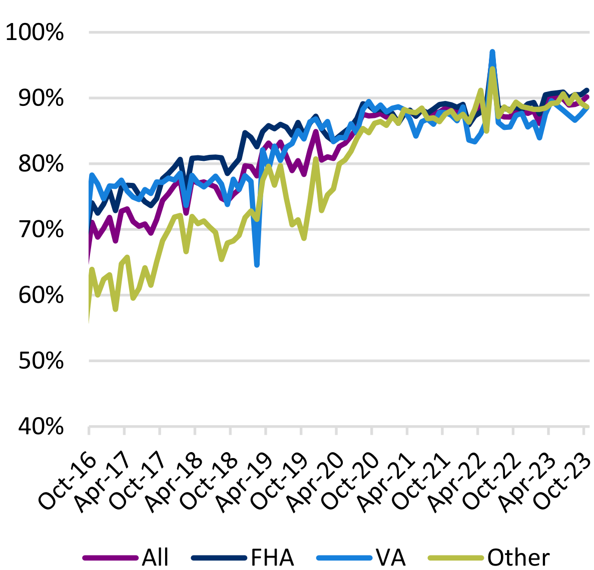
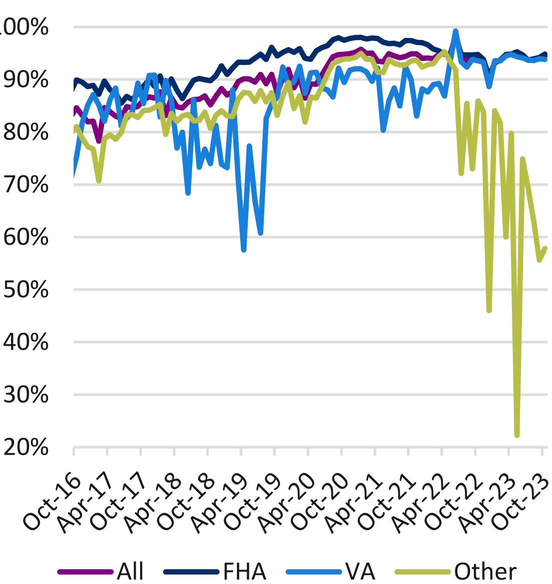


Figure 53. Ginnie Mae Nonbank Share: Refi Loans



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

14 BANK VS. NONBANK ORIGINATORS HISTORICAL CREDIT BOX, GINNIE MAE VS. GSE

14.1.1 (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 2 points from September 2023 to October 2023. The agency median FICO score remained at 737 in October 2023.

Figure 54. Agency FICO: Bank vs. Nonbank

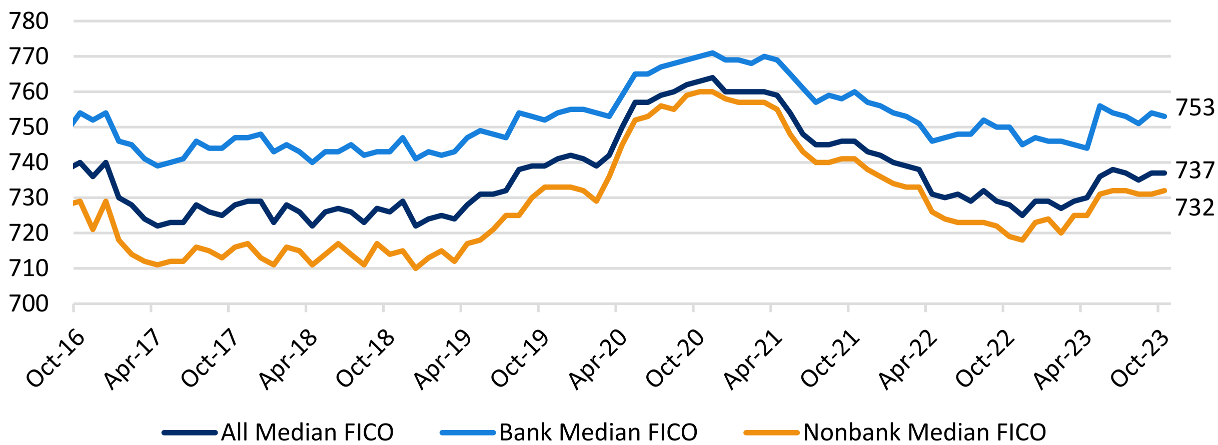


Figure 55. GSE FICO: Bank vs. Nonbank

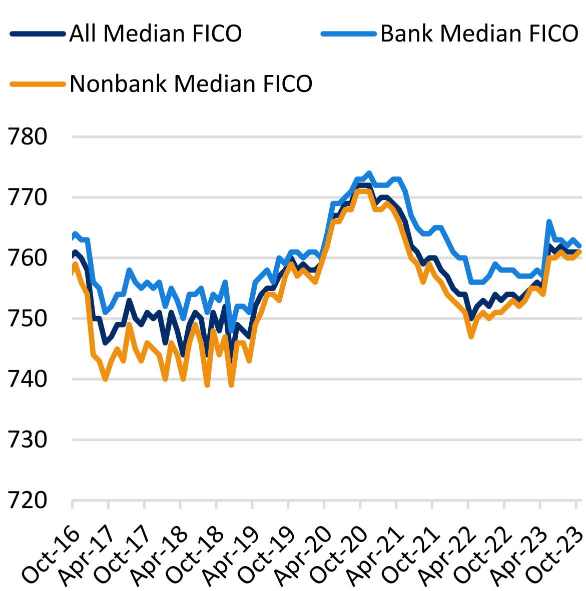
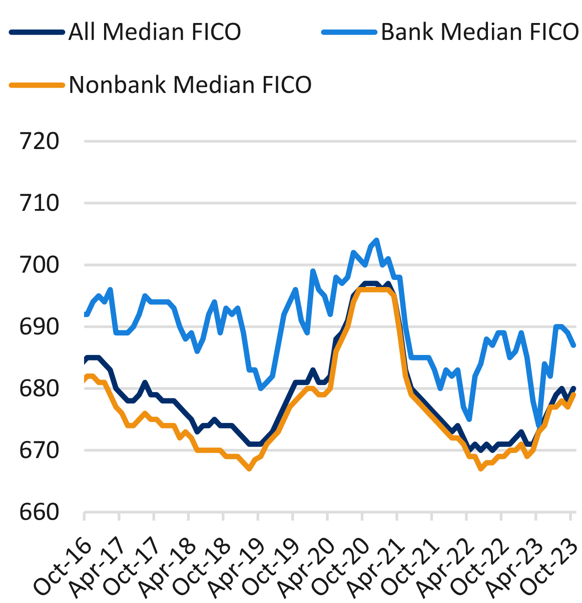


Figure 56. Ginnie Mae FICO: Bank vs. Nonbank



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

The median LTV for all GSE originators remained the same as of month-end October 2023 at 80%. Ginnie Mae median bank and nonbank LTV remained flat at 98.19%. Ginnie Mae median DTI increased to 45.6% through October 2023 in nonbank originations.

Figure 57. GSE LTV: Bank vs. Nonbank

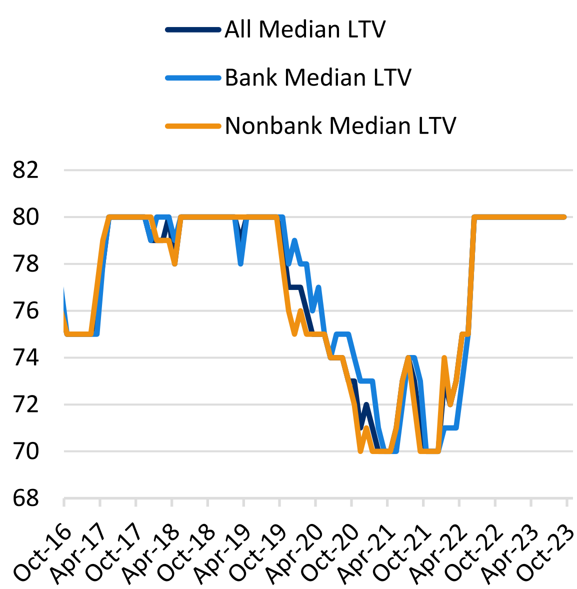


Figure 58. Ginnie Mae LTV: Bank vs. Nonbank

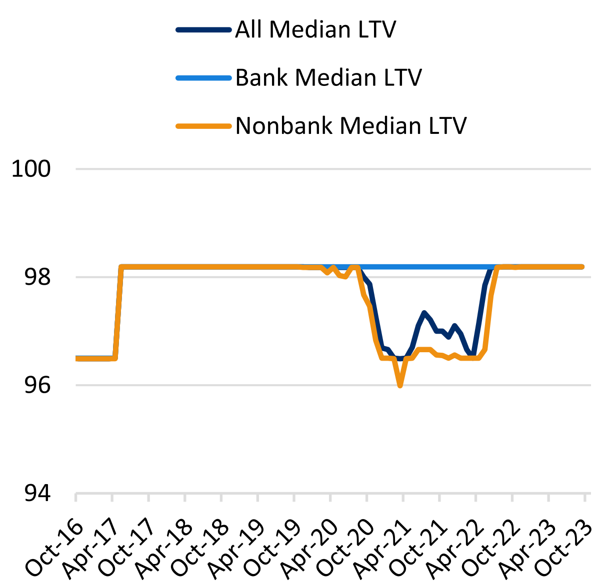


Figure 59. GSE DTI: Bank vs. Nonbank

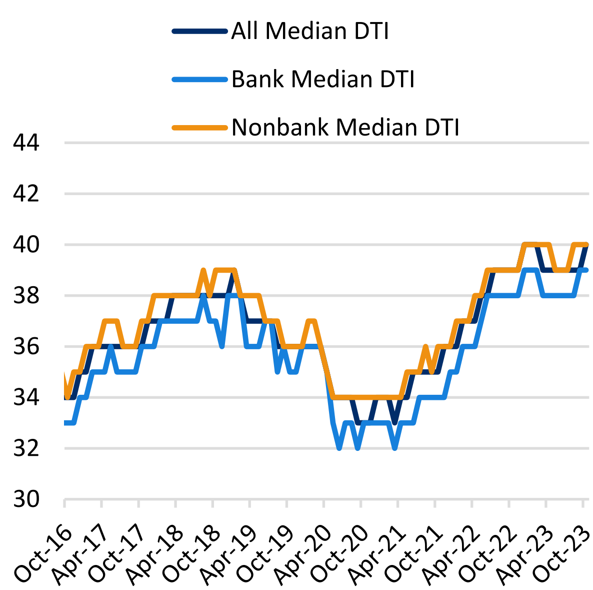
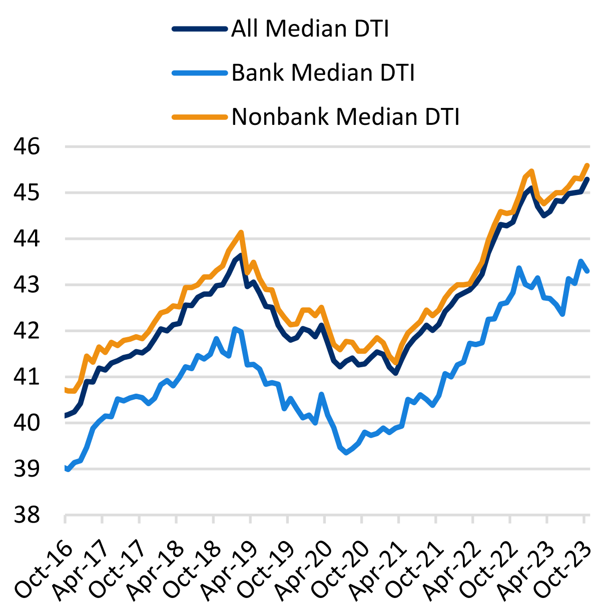


Figure 60. Ginnie Mae DTI: Bank vs. Nonbank



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

As of month-end October 2023, the median FICO score for Ginnie Mae bank decreased by 2 points to 687 and nonbank increased by 2 points 679. The median FICO score for all Ginnie originations increased 2 points to 680. The gap between banks and nonbanks is most apparent in VA lending (11-point spread).

Figure 61. Ginnie Mae FICO Score: Bank vs. Nonbank

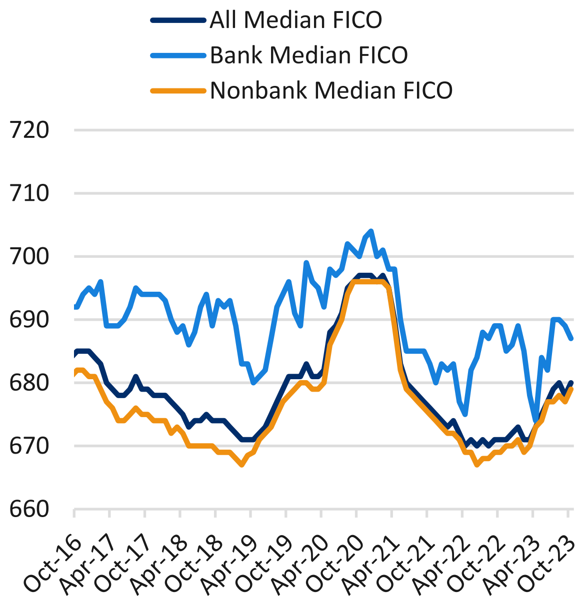


Figure 62. Ginnie Mae FHA FICO Score: Bank vs. Nonbank

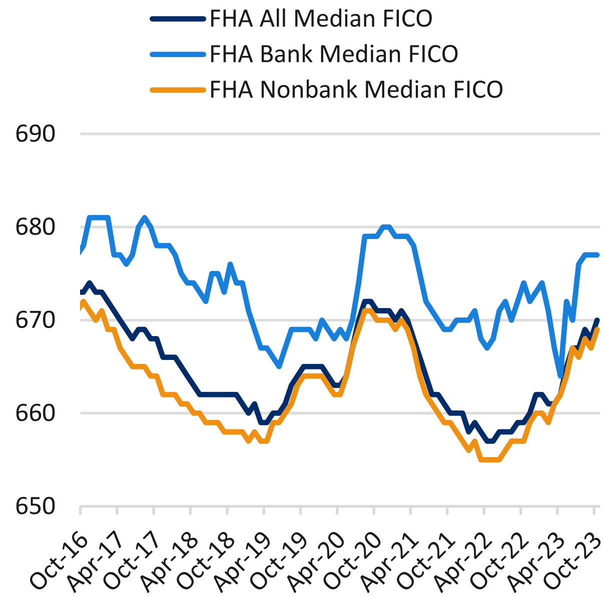


Figure 63. Ginnie Mae VA FICO Score: Bank vs. Nonbank

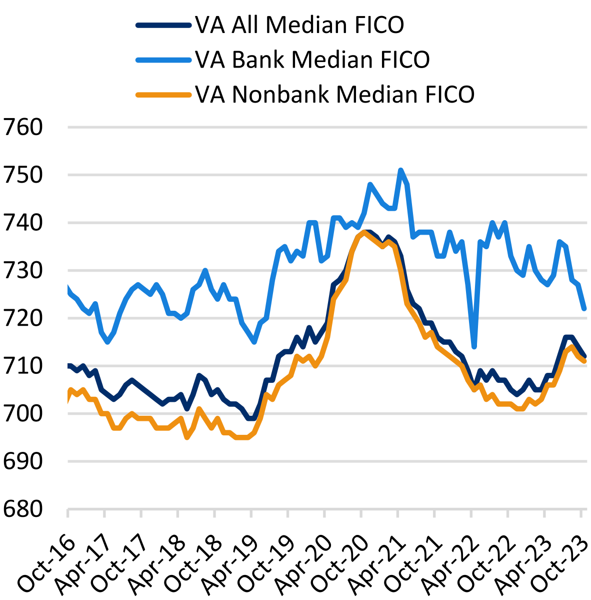
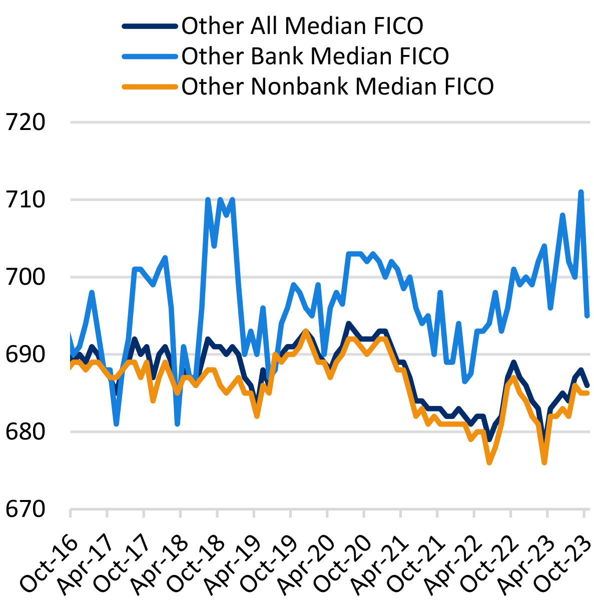


Figure 64. Ginnie Mae Other FICO Score: Bank vs. Nonbank



Source: Recursion. Notes: Data as of October 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 65. Ginnie Mae DTI: Bank vs. Nonbank

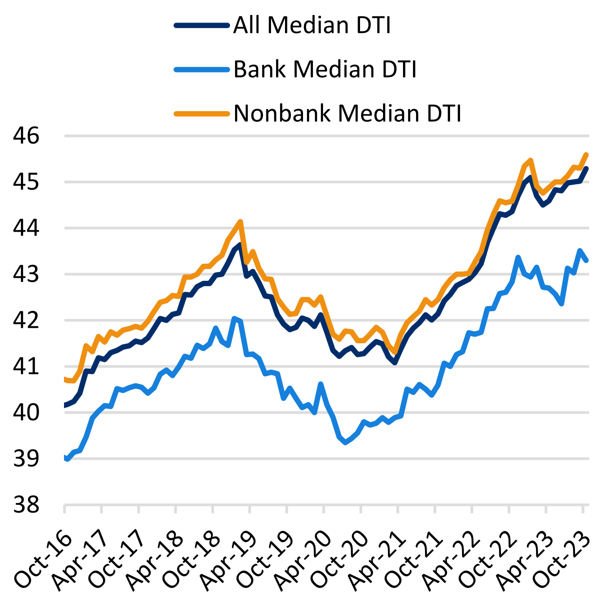


Figure 66. Ginnie Mae FHA DTI: Bank vs. Nonbank

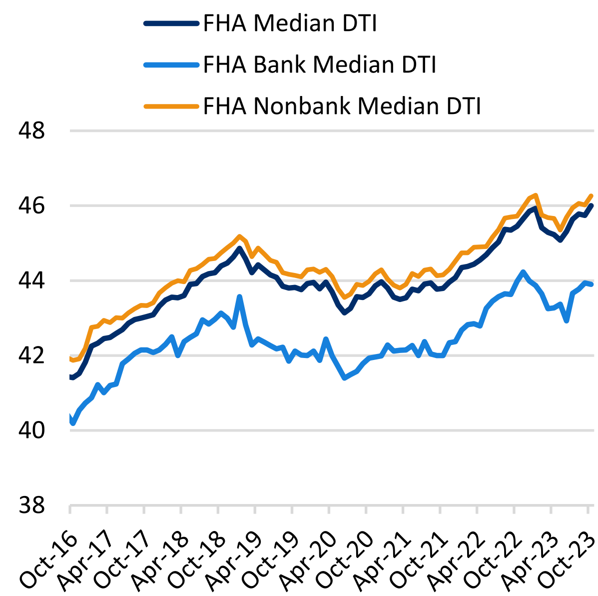


Figure 67. VA DTI: Bank vs. Nonbank

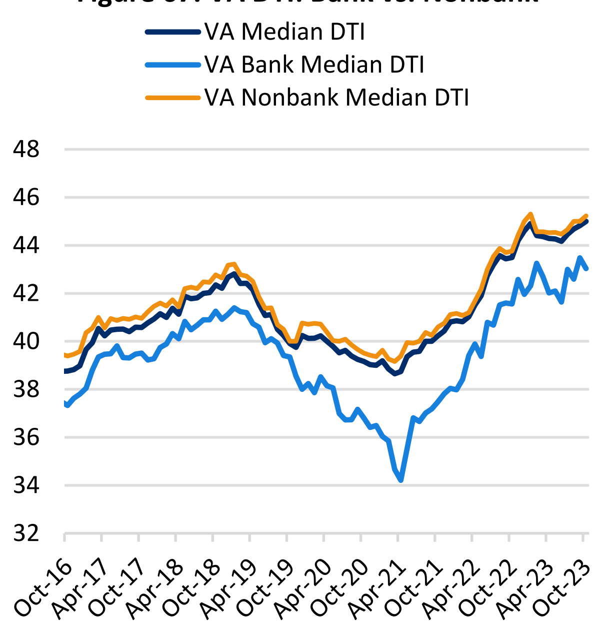
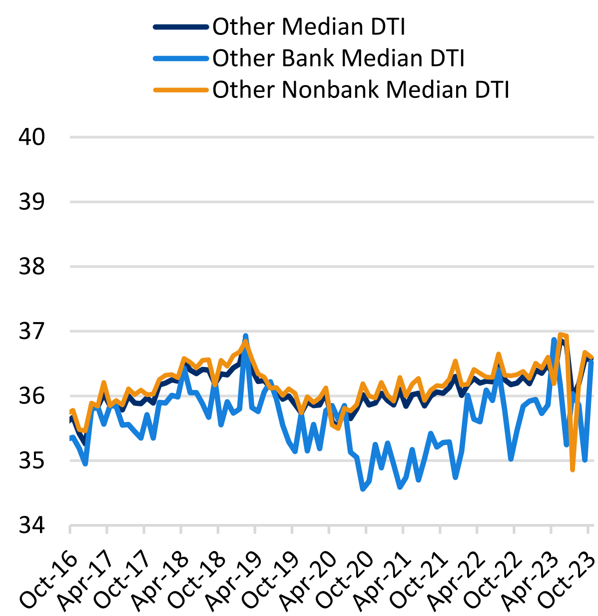


Figure 68. Other DTI: Bank vs. Nonbank



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

15 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.

15.1 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 29. ESG Metrics – MBS Portfolio (October 2023)

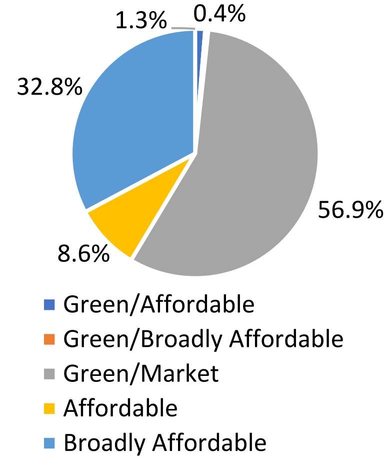
Ginnie Mae's ESG Metrics – MBS Portfolio as of October 2023				
	Targeted Population	**Positive Outcomes**	**Our Commitment**	
Social - Affordable	FHA Borrowers – 6,821,144 VA Borrowers – 3,576,863 RHS Borrowers – 784,928 PIH Borrowers – 23,778	Loans under $200K 6,513,248Loans First-Time Home Buyers 4,125,624 Loans Down Payment Assistance 694,261 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)	3,202,788 Loans		
	LMI Majority Census Tract Loans	1,724,497 Loans		
	Borrowers Facing Difficulties	792,722 modifications with over 649,565 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	285,330 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)	1.314 million apartment homes 495,035 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	4,866 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			

15.2 Environmental

Table 30. UPB by ESG Status

ESG Status	UPB	%
Green/Affordable	1,058,088,407	0.7%
Green/Broadly Affordable	343,904,819	0.2%
Green/Market	46,688,813,897	31.1%
Green Total	48,090,807,123	32.0%
Affordable[6]	7,068,396,549	4.7%
Broadly Affordable	26,886,657,864	17.9%
Affordable Total	35,357,047,639	23.5%
ESG Total	82,045,861,536	54.6%
Total	**150,299,630,159**	**100.0%**

Figure 69. 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 U.S. 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 54.6% of Ginnie Mae's Multifamily collateral is considered ESG.

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

15.3 Social

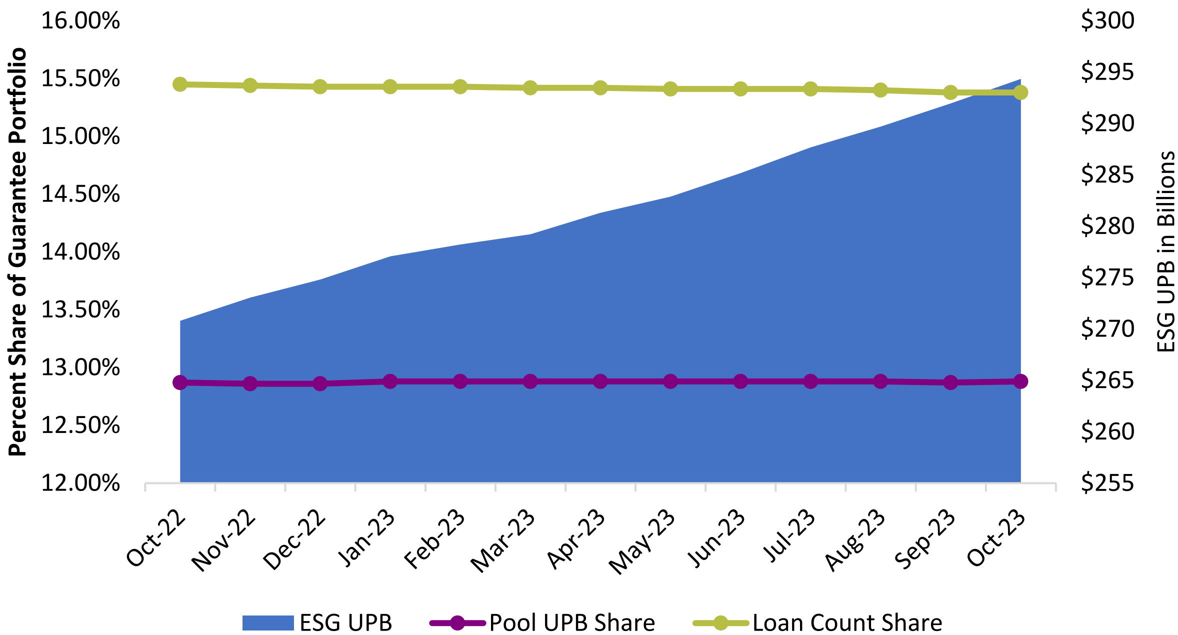
With the introduction of Ginnie Mae's new social disclosures, investors can now identify the number of underlying loans made to LMI borrowers, the percentage of LMI loan count out of total loan count, the unpaid principal balance (UPB) of LMI loans in the MBS, and the percentage of LMI UPB out of total 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. In September 2023, Ginnie Mae launched its Social Bond update to its Single-Family Forward MBS program and its Social Impact and Sustainability Framework. These enhancements highlight the structural aspects of Ginnie Mae's mission and program which drives broader access to mortgage financing, affordable homeownership, and rental opportunities for historically underserved communities.

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

15.3.1 Low-to-Moderate Income Borrowers

Over $294 billion of Ginnie Mae Single-Family collateral and over 1.7 million of loans outstanding have been issued too low to moderate income borrowers. Total ESG UPB increased by approximately $24 billion YoY.

Figure 70. ESG Share of the Outstanding SF Portfolio



Source: Ginnie Mae Disclosures as of October 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 91% of total UPB.

Table 31. Percent LMI by Pool Share

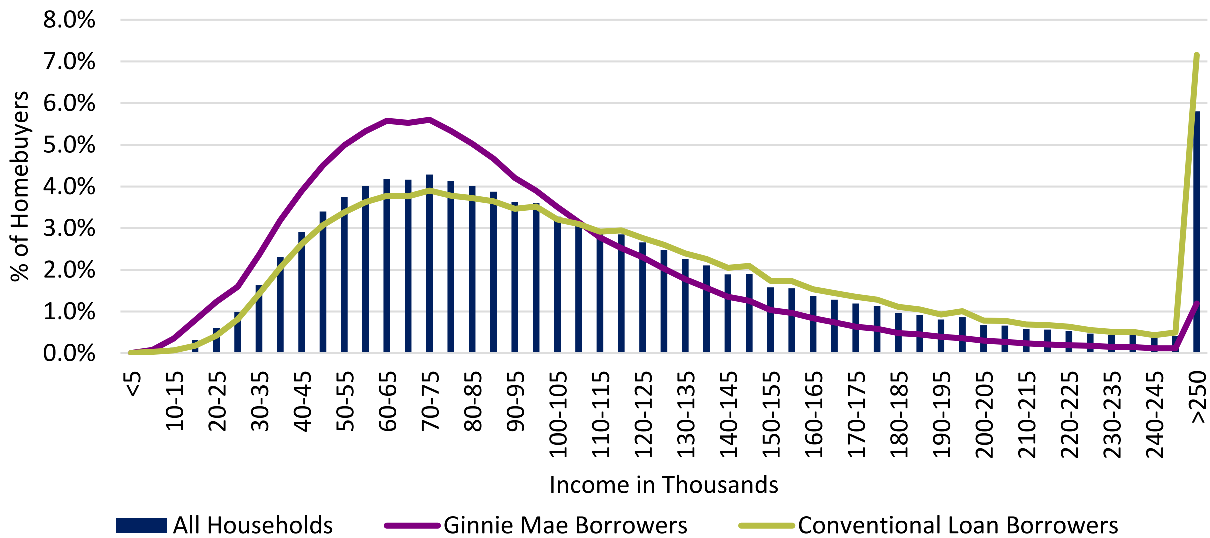
Metric	LMI Pool Share >50%	LMI Pool Share 20% - 50%	LMI Share < 20%	All Pools
Total UPB ($ billions)	$8.1	$199.7	$2,030.8	$2,238.6
Average Original Loan Size	$172,118	$190,470	$335,261	$321,758
Credit Score (Median)	674	675	679	677
DTI (Median)	40%	40%	40%	40%
LTV (Median)	97%	96%	95%	96%
Interest Rate (WA)	4.71%	4.53%	3.81%	3.88%

Source: Ginnie Mae Disclosures as of October 2023

15.3.2 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 71. Income Distribution of Homebuyers Served Under Ginnie Mae Program



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

U.S. HOUSING MARKET

16 HOUSING AFFORDABILITY

16.1 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 72. Regional HPI Trend Analysis Q/Q

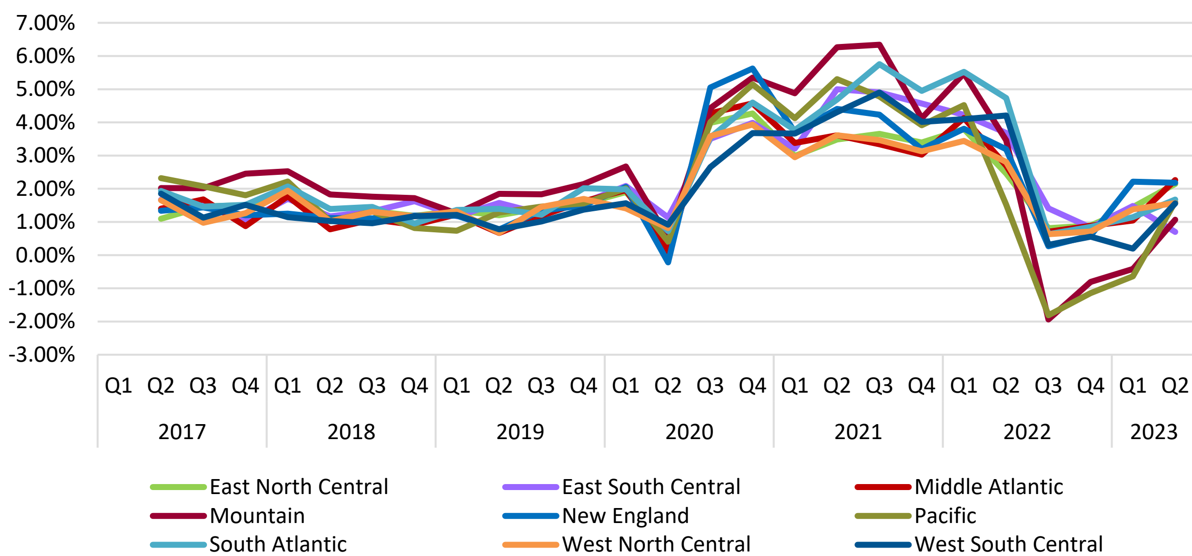
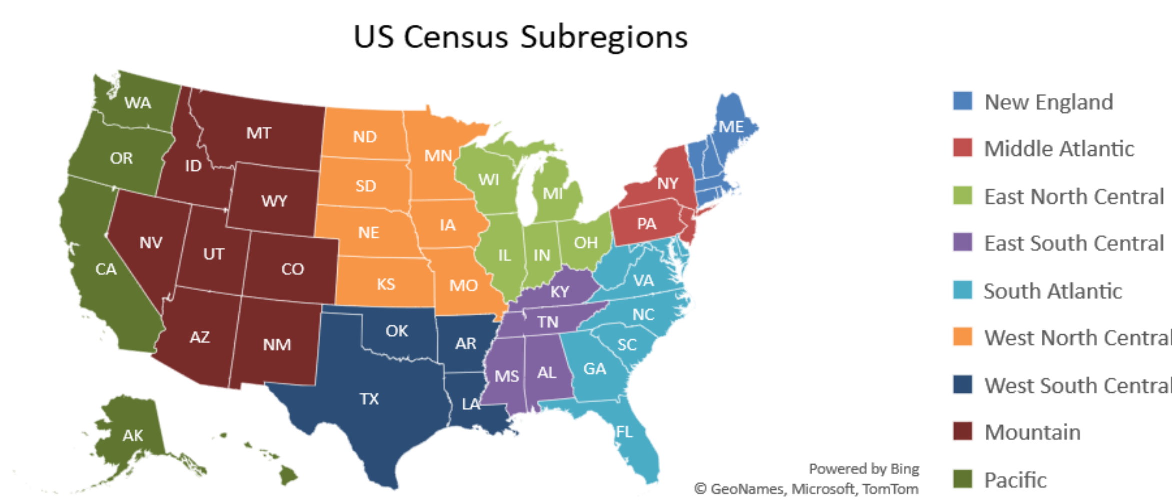


Figure 73. FHFA U.S. Census Subregions as defined by the U.S. Census Bureau



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

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

As of month-end October 2023, inflation was 3.2%, decreasing from 3.7% in the month prior. Nationally, rents are down 0.3% YoY as of month-end October 2023. The MoM change in rents from September 2023 to October 2023 decreased by 1.6%. Wage growth saw no change from 5.2% in September 2023 to 5.2% as of month-end October 2023. Month-end August 2023 reporting data shows YoY home price appreciation increased by 2.6% from a 1.0% YoY change in July 2023.

Figure 74. Inflation | 12-Month Percent Change in CPI

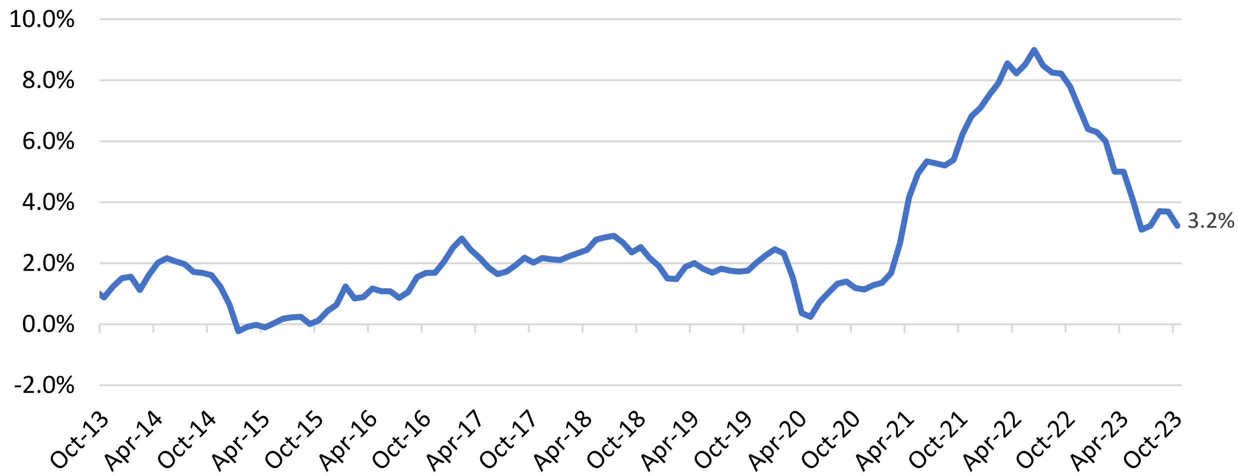
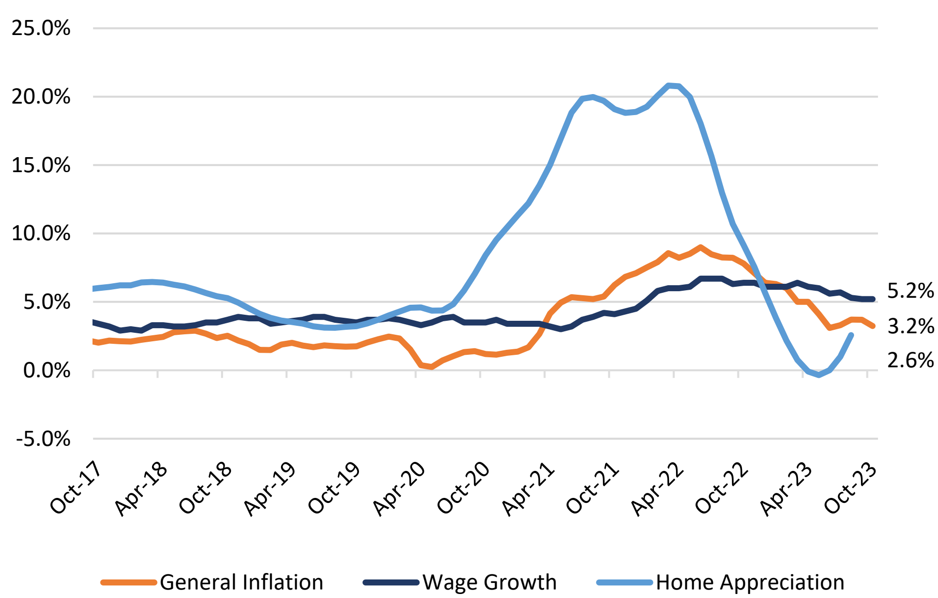


Figure 75. Asset Price Appreciation vs. Wage Increases

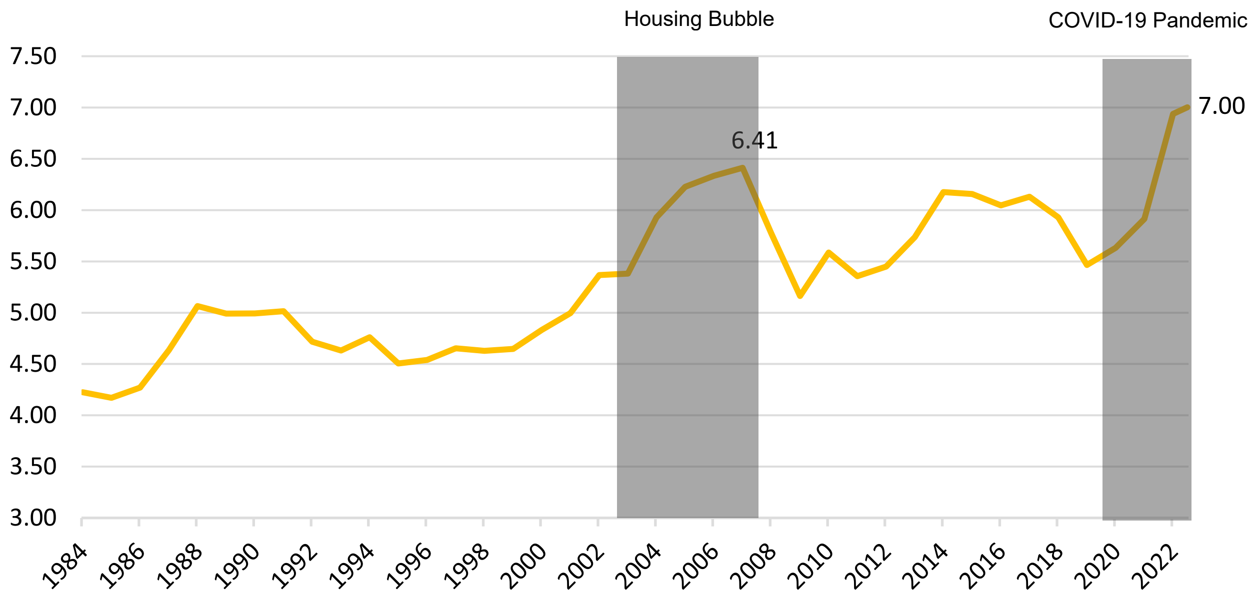


Metric	*Statistic*
General Inflation	*3.2%*
Home Price Appreciation *(YoY)*	*2.6%*
Rental Price Appreciation *(Median Rent Change YoY)*	*-0.3 %*
Wage Growth	*5.2%*

Sources: Bureau of Labor Statistics – Consumer Price Index; Federal Reserve Bank of Atlanta, Research and Data - 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 76. Average Price of Homes Sold to Median Income Ratio

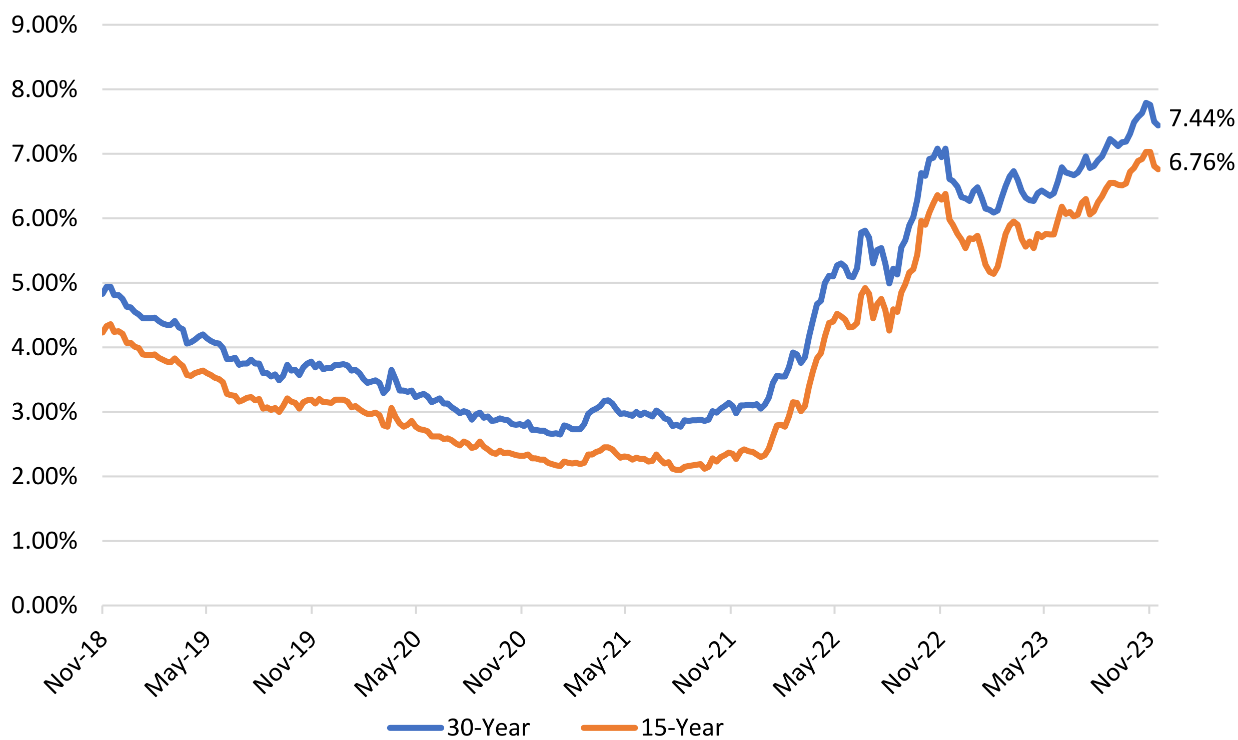


Source: FRED Average Home Sales Data, FRED Median Income Data

16.2.1 Housing Affordability – Mortgage Rate Trends

The Federal Reserve maintained the Federal Funds target range on November 1, 2023, at a range of 5.25% and 5.50% per the FOMC[7]. As of November 16, 2023, the average 30-year and 15-year fixed rate mortgage rates were 7.44% and 6.76%, respectively. The average 30-year fixed rate mortgage rate decreased 13 bps and the average 15-year fixed rate mortgage rate decreased 13 bps MoM from October 12, 2023.

Figure 77. Average Fixed Rate Mortgage Rates



Sources: FRED data as of November 2023

[7] Federal Reserve Board - Federal Reserve issues FOMC statement

16.3 Housing Inventory

As of October 2023, there was 7.8 months of housing inventory on the market, an increase of 0.6 months from 7.2 months in September 2023. As housing affordability continues to remain low (See above Section 16.2) 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 79**, 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 78. Single-Family Housing Inventory

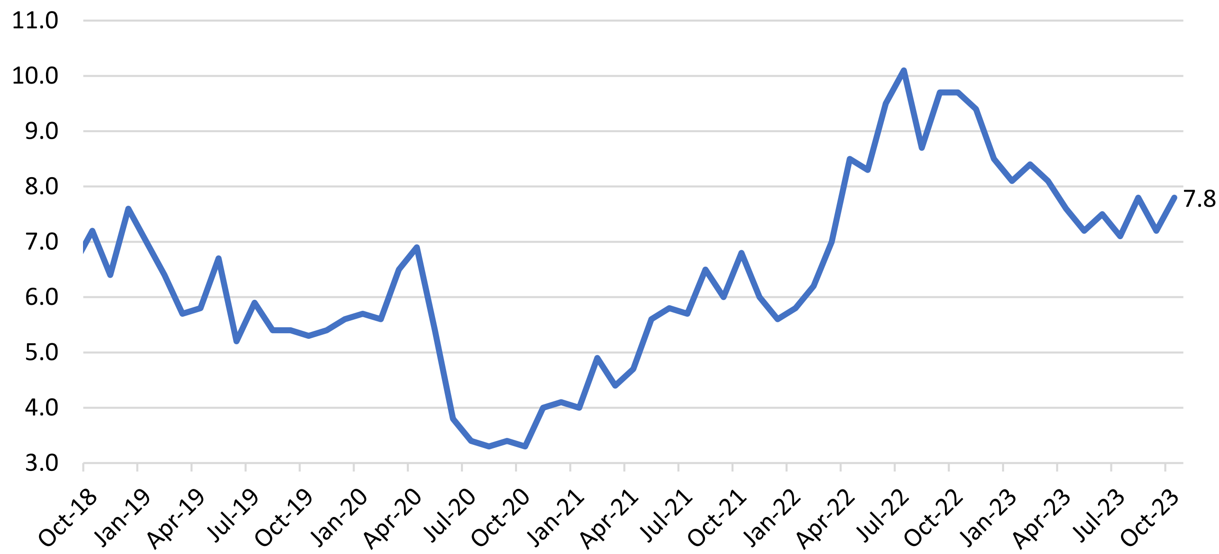
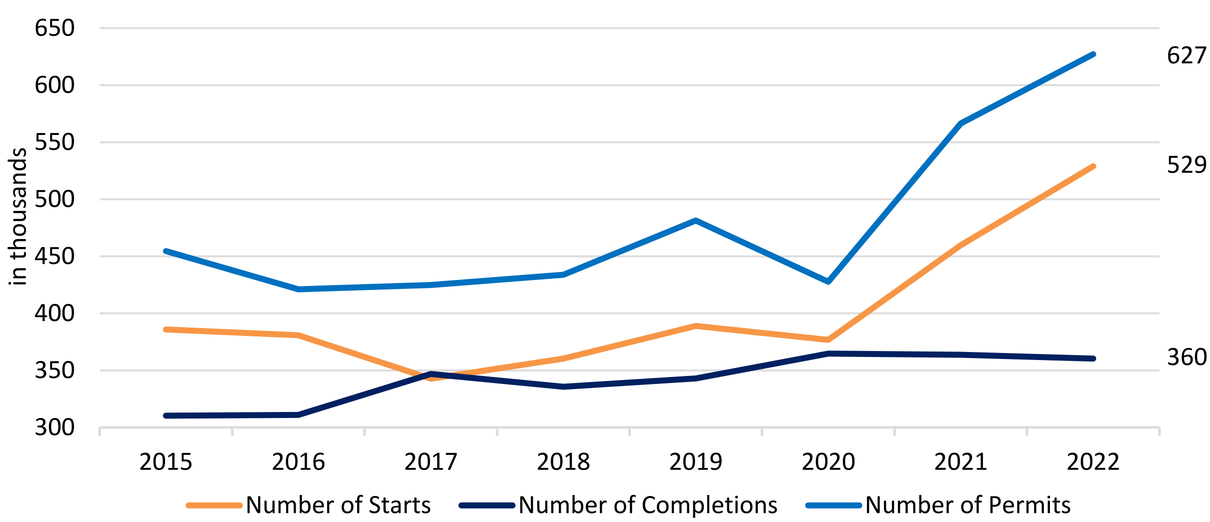


Figure 79. Multifamily Construction Metrics: Permits, Starts, Completions



Source: FRED. Figure 78: data as of October 2023. New Residential Construction, U.S. Census Bureau. Figure 79: data as of December 2022.

16.4 Size and Value of the U.S. Housing Market

The total value of the Single-Family housing market increased to $44.4 trillion in Q2 2023. The total value of the US housing market is up 133% from its trough in 2011. From Q2 2022 to Q2 2023 mortgage debt outstanding increased from $12.1 trillion to $12.8 trillion and household equity increased from $31.1 trillion to $31.6 trillion. At $9.0 trillion in Q2 2023, Agency Single-Family MBS continues to account for a growing percentage of the total mortgage debt outstanding, up to 65% of total mortgage debt from just 52% in 2011.

Figure 80. Value of the U.S. Housing Market

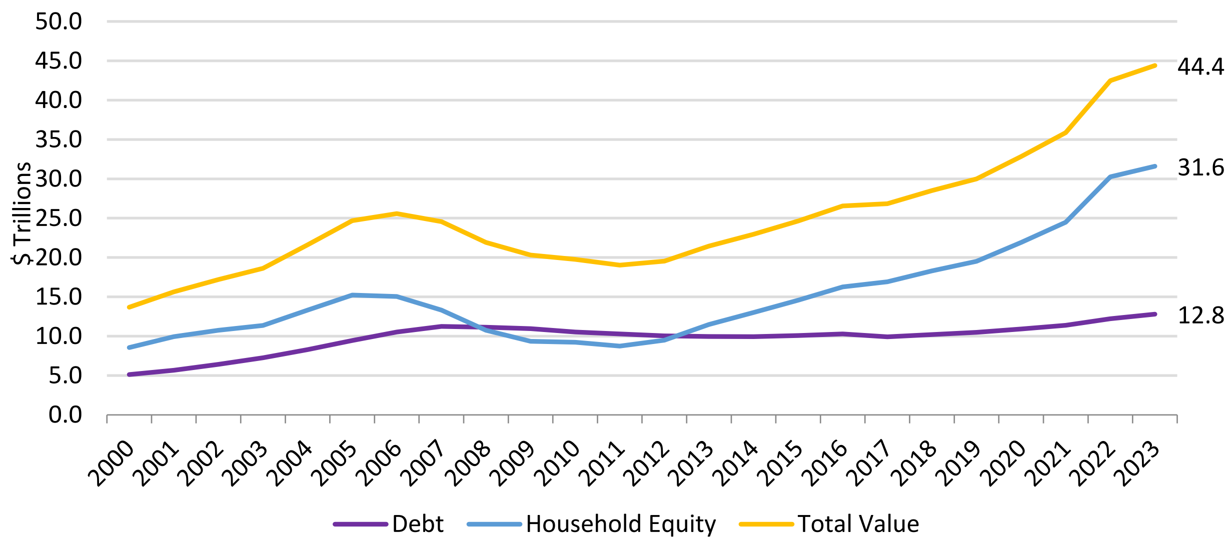
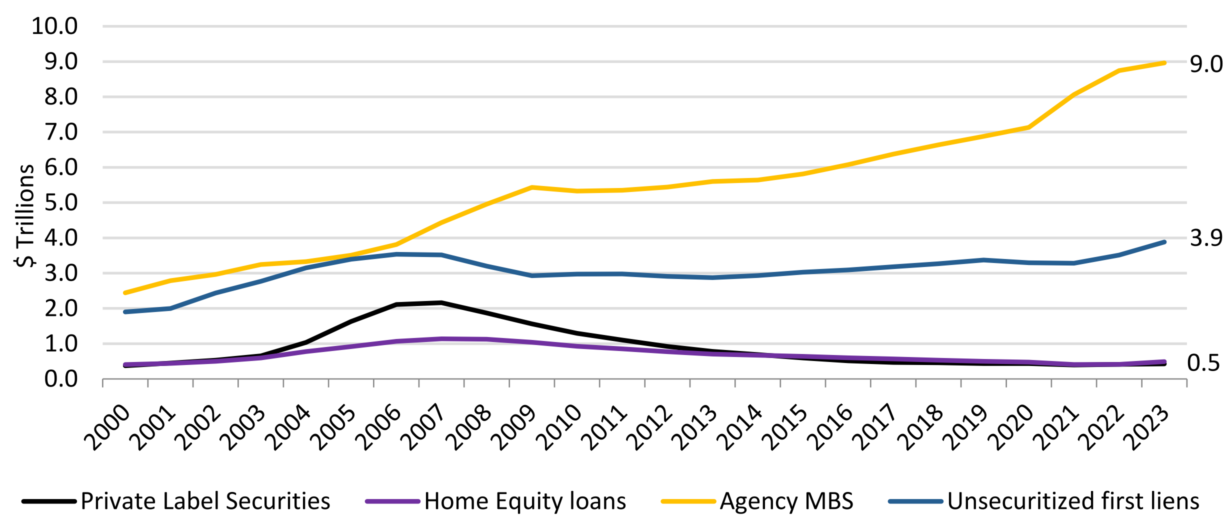


Figure 81. Size of the U.S. Residential Mortgage Market



Source: Federal Reserve Flow of Funds Data as of Q2 2023.

17 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").

Therefore, if there is insufficient or inaccurate data to support calculations of any specific disclosure information, Ginnie Mae disclaims any and all liability relating to that information, including, without limitation, any express or implied representations or warranties for statements or errors contained in, or omissions from, the report.

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