

Global Markets Analysis Report

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

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PREPARED FOR GINNIE MAE



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Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

Highlights

In May of 2021, Ginnie Mae added Environmental, Social, and Governance (ESG) investment data disclosures to the [Single Family \(SF\) Supplemental File](#) on MBS containing low to moderate income (LMI) area loans. LMI areas are defined by the Department of Housing and Urban Development (HUD) (as delineated by HUD’s Community Development Block Grant (CDBG) Program).¹ HUD’s LMI area designation is a key differentiator for Ginnie Mae MBS pools that contain LMI area loans.

The new data disclosure, which is published monthly, identifies pools that include mortgage loans originated in LMI areas. Approximately 64% of all Ginnie Mae Single Family MBS outstanding contain LMI area loans. In fact, more than 16,000 Ginnie Mae MBS outstanding are fully collateralized by LMI area loans.²

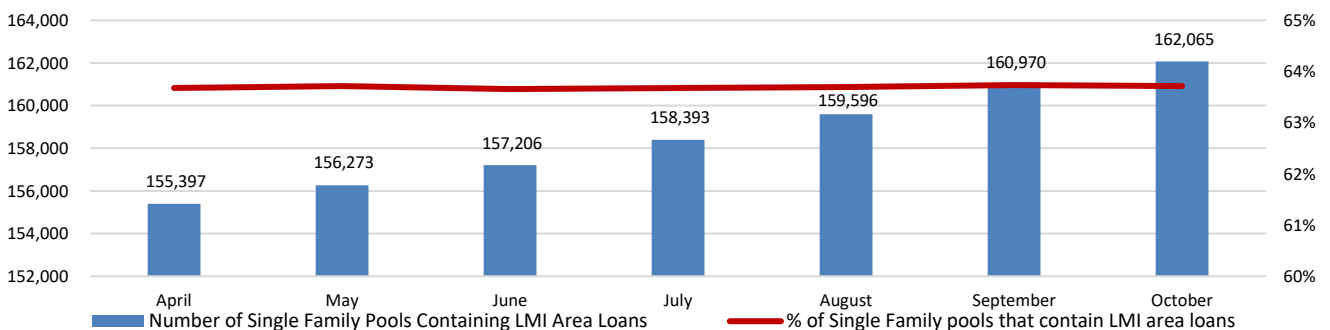
The pool level disclosure data includes the number of LMI area loans in the pool; the percentage of LMI area loans within the pool; the unpaid principal balance (UPB) of LMI area loans within the pool; and the percentage of LMI area loans within the pool by UPB. While each ESG investor may have their own definition of what constitutes an ESG investment and an overall ESG investment strategy, Ginnie Mae’s data disclosures provide an empirical framework to measure the impact of ESG investments in a fixed income investor’s MBS portfolio.

ESG Data: LMI Area Loan Data

Ginnie Mae has published pool level LMI area loan data for the past seven months. That data provides a UPB and loan count snapshot of LMI trends within the Ginnie Mae outstanding Single Family mortgage-backed securities (MBS). The LMI area loan UPB outstanding from the end of April 2021 to the end of October 2021 has held steady around \$255 billion, which is approximately 13.3% of total Ginnie Mae Single Family UPB outstanding.

The number of pools containing LMI area loans has increased by 6,668 over the seven-month period ending October 2021, as displayed in *Figure 1* below. As of the end of October 2021, there were 162,065 Ginnie Mae Single Family pools containing LMI area loans.

Figure 1. Ginnie Mae Single Family Pools that Contain LMI Area Loans



The percentage of Ginnie Mae Single Family pools that contain LMI area loans has held steady just below 64%.

¹ <https://catalog.data.gov/dataset/hud-low-and-moderate-income-areas>

² Information pertaining to MBS pools was obtained via the MBS SF Portfolio Pool/Security and Pool Supplemental disclosure files found on the Ginnie Mae website: https://www.ginniemae.gov/data_and_reports/disclosure_data/Pages/datadownload_bulk.aspx

ESG Data: LMI Area Loan Data by Pool Indicator

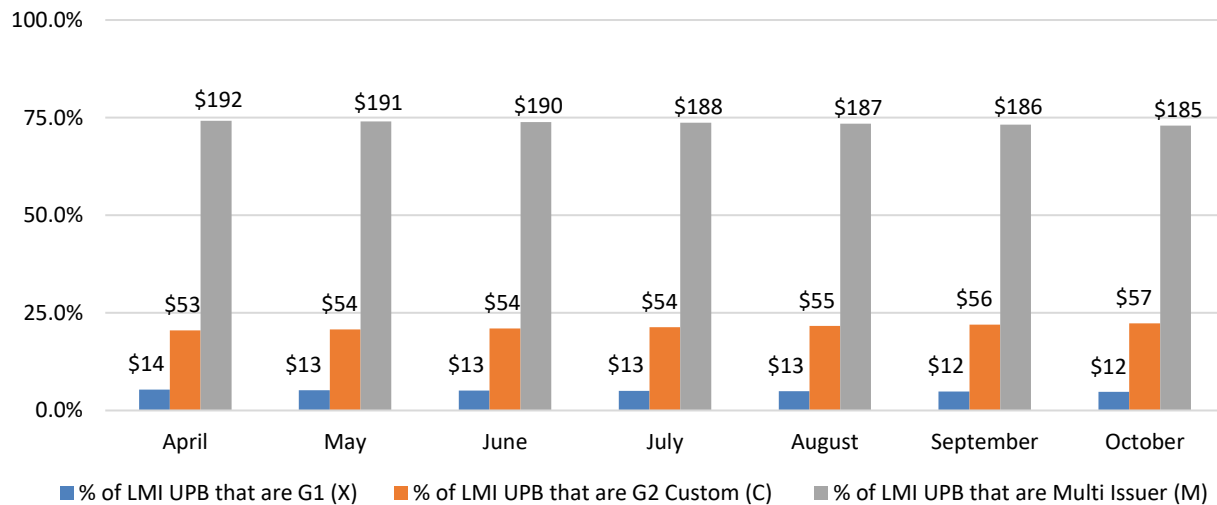
Ginnie Mae has three main pool indicators that differentiate Ginnie Mae pool issuances from one another. The three indicators are Ginnie Mae I pools, Ginnie Mae II Custom pools and Ginnie Mae II Multiple Issuer pools (X, C, and M, respectively).

“A Custom pool has a single-issuer that originates and administers the entire pool. A Multiple Issuer pool typically combines loans with similar characteristics. The resulting pool backs a single MBS issue and each participant is responsible for administering the mortgage loans that it contributes to the [Multiple Issuer] pool.”³

These pool indicators are often appended with specific pool type suffixes to further detail the composition or characteristics of the loans that have been placed in the pool (i.e. higher balance, ARM, etc.). *Figure 2* displays the percentage of LMI area loan UPB by pool indicator type.

Roughly three quarters of the outstanding Ginnie Mae LMI area loan UPB is securitized in Multiple Issuer pools.

Figure 2. Ginnie Mae Single Family LMI UPB by Pool Indicator (\$ billions)

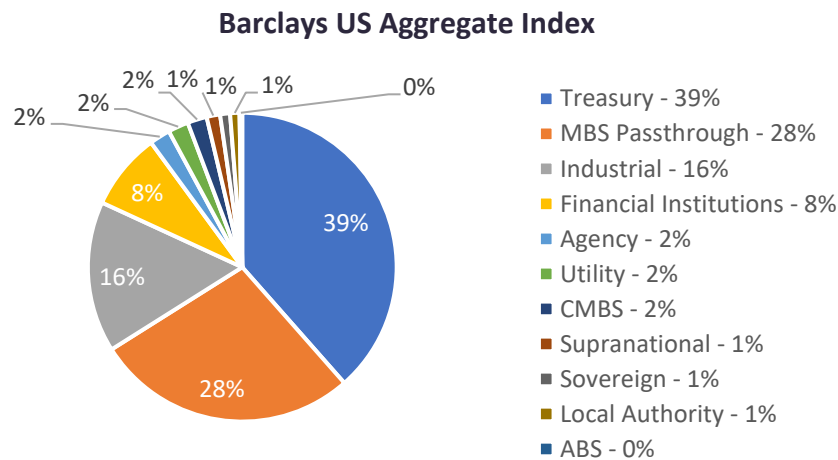


³ Excerpted from the Ginnie Mae “What We Do – Programs & Products” page of the Ginnie Mae website: https://www.ginniemae.gov/about_us/what_we_do/pages/programs_products.aspx#:~:text=An%20issuer%20may%20participate%20in.and%20administers%20the%20entire%20pool.

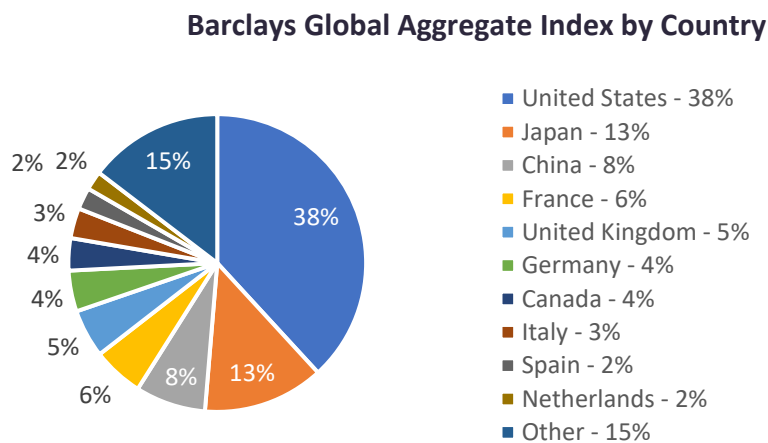
1.0 Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

US Treasuries contribute approximately 39% to the Barclays US Aggregate Index. US MBS (Ginnie Mae, Fannie Mae, and Freddie Mac) contribute approximately 28% to the Barclays US Aggregate Index. For the US Aggregate Index, the month over month (MoM) changes to the index components were no bigger than 1%. In the Barclays Global Aggregate Index by Country, the US share of fixed income still represents the largest share of total outstanding issuance, representing approximately 38% of the total Barclays Global Aggregate Index. This is an increase of 1% from the previous month. All the other categories remained stable when compared to the previous month.

1.1 Barclays US Aggregate and Global Indices



Sources: Bloomberg. Note: Data as of October 2021. Numbers in chart may not add to 100 % due to rounding.



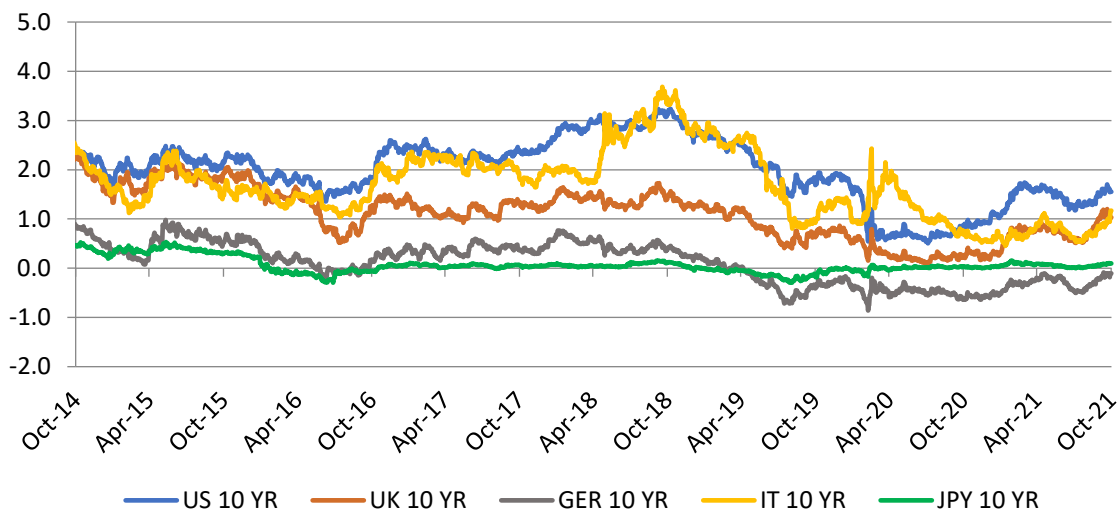
Sources: Bloomberg. Note: Data as of October 2021. Figures in charts may not add to 100 % due to rounding.

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

1.2 Global 10-Year Treasury Yields

The US 10-year Treasury yield moved to 1.56% in October 2021, an increase MoM of 7 bps. US Treasury yields remain the highest of all the government treasury yields depicted in the figure below. The yield on the Italian 10-year note increased to 1.17% in October, an increase MoM of 31 bps. The yields on the German 10-year and the UK 10-year notes increased by 9 bps to -0.11%, and 1 bp to 1.03%, respectively. The yield on the Japanese 10-year government notes increased to 0.09% in September, a slight increase MoM of 3 bps. At the end of October 2021, the hedged yield for the 10-year Treasury JPY held at 2.60%, a slight decrease of 1 bp from the previous month. The hedged yield for the 10-year Treasury EUR held at 1.48%, a slight decrease of 1 bp from the previous month.

Global 10-Year Treasury Yields



7 – 10yr Total Return Hedged Index, JPY



Sources: Bloomberg. Note: Data as of October 2021

6 – 10yr Total Return Hedged Index, EUR



Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

1.3 Ginnie Mae Yields— USD

Ginnie Mae MBS yields increased slightly in October 2021. Ginnie Mae II yields were at 1.84% and Ginnie Mae I yields at 2.02%, up by 6 bps and 4 bps, respectively, from the prior month. At the end of October, Ginnie Mae II SF yields were 29 bps higher than the US 10-year Treasury yield, representing a decrease in spread of 1 bp since last month. The yields on the Ginnie Mae I SF were 47 bps higher than the US 10-year Treasury yield at the end of October, representing a decrease in spread of 3 bps since last month.

Ginnie Mae II SF Yield, USD



Ginnie Mae I SF Yield, USD



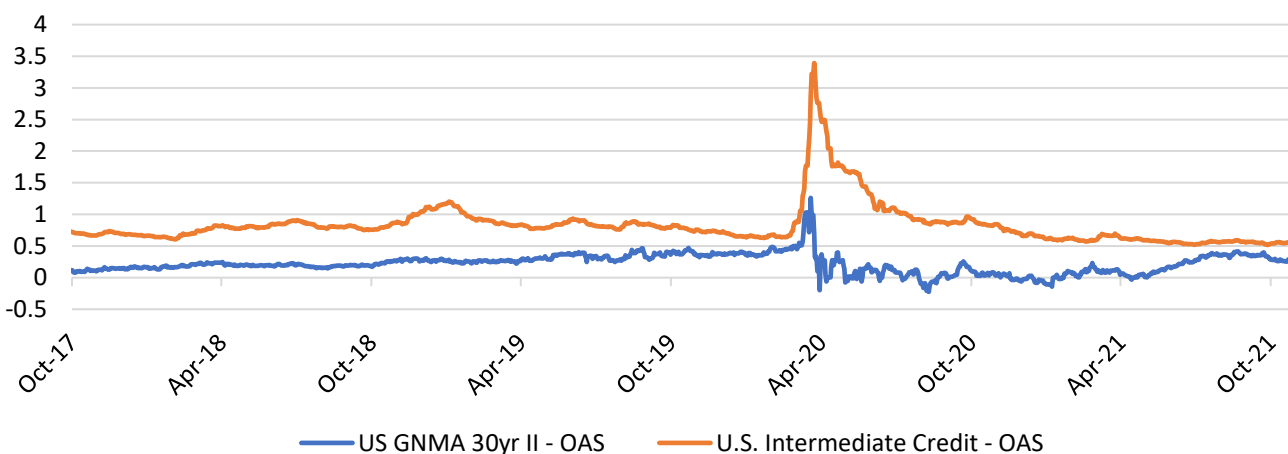
Sources: Bloomberg. Note: Data as of October 2021

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

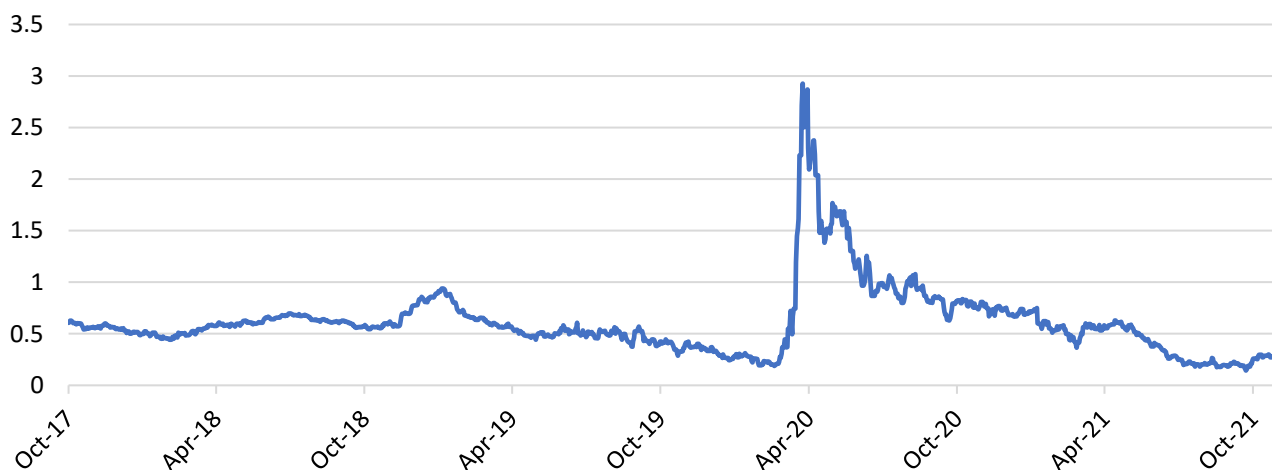
1.4 Ginnie Mae Yield Spreads – Intermediate Credit

The yield differential between US Intermediate Credit and Ginnie Mae II 30-year OAS increased when compared to the previous month, ending at 0.29%, an increase of 4 bps since the previous month. The Ginnie Mae II 30-year OAS slightly decreased by 1 bp since the previous month. The US Intermediate credit OAS has increased by 3 bps since last month.

US Ginnie Mae II 30yr MBS OAS versus US Intermediate Credit OAS



Spread between US Intermediate Credit and US Ginnie Mae II 30yr MBS OAS



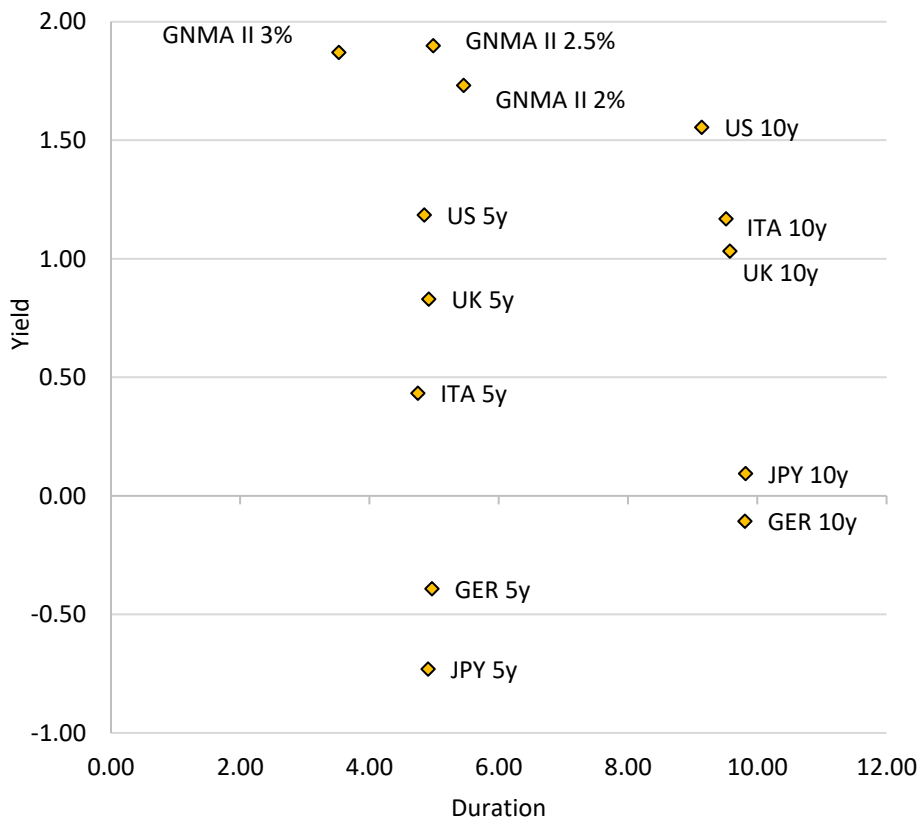
Sources: Bloomberg. Note: Data as of October 2021.

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

1.5 Global Treasury Yield Per Duration

Ginnie Mae MBS continue to offer a higher yield in comparison to other government fixed income securities of various tenors with similar or longer duration. Prepayment risk is a feature of MBS. The Ginnie Mae MBS 2.5% and 3% products have increased their yield and duration in October. The Ginnie Mae II 2.5% securities duration and yield increased by 0.20 units and 8 bps, respectively, when compared to the previous month. Additionally, the Ginnie Mae II 3% securities duration and yield increased by 0.05 units and 24 bps when compared to the previous month.

Yield vs. Duration



Security	Duration	Yield
US 5y	4.85	1.19
US 10y	9.14	1.56
JPY 5y	4.91	-0.73
JPY 10y	9.82	0.09
GER 5y	4.97	-0.39
GER 10y	9.81	-0.11
ITA 5y	4.75	0.43
ITA 10y	9.52	1.17
UK 5y	4.92	0.83
UK 10y	9.58	1.03
JPY 10y	9.82	0.09
GER 10y	9.81	-0.11
GNMA II 2%	5.46	1.73
GNMA II 2.5%	4.99	1.90
GNMA II 3%	3.53	1.87

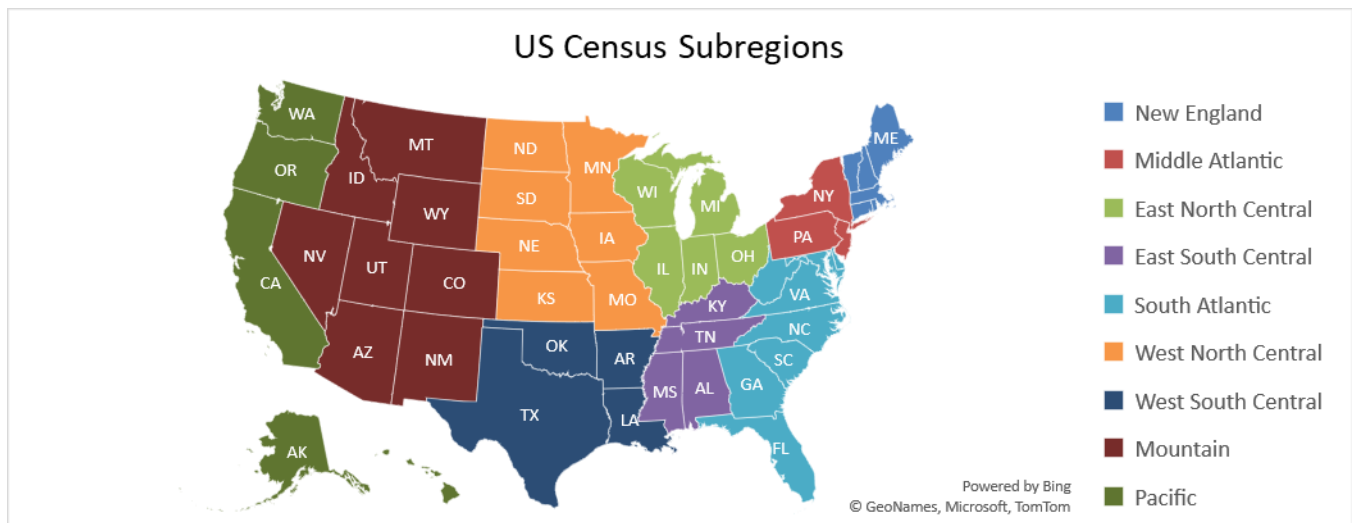
Sources: Bloomberg. Note: Yield and modified duration for GNMA II securities is from illustrative TBA using base prepayment assumptions and an assumed settlement of 11/19. All other data is as of October 2021. Yields are in base currency of security and unhedged.

2.0 State of the US Housing Market

2.1 National HPI

Home prices have increased rapidly during the pandemic, with Compound Annual Growth Rate (CAGR) for HPI at 15.1% between March 2020 to August 2021. Over that period, the Mountain region has had the greatest home price appreciation (19.7% CAGR), while the East and West North Central regions' increases in home values have been slowest (12.8%). Prices have not increased this rapidly at any time in our observation period (1991 to present), with the prior maximum having been 10.7% CAGR (between '04 and '05) as the housing bubble was developing. The Pacific region is the only region for which the current HPI appreciation pace is not record-breaking; between May 2004 and April 2005, prices in the Pacific states increased 22.4%, 1.3% greater than the HPI increase during the Pandemic months.

U.S. Census Subregion	New England	Middle Atlantic	East North Central	East South Central	South Atlantic	West North Central	West South Central	Mountain	Pacific	National
2000 to Peak CAGR	10.5%	8.7%	4.0%	4.6%	8.7%	5.0%	4.3%	8.3%	13.9%	7.1%
Peak to Trough CAGR	-8.3%	-5.3%	-9.7%	-5.5%	-14.1%	-5.7%	-2.1%	-15.1%	-17.9%	-9.7%
Trough to Pandemic CAGR	3.7%	3.6%	4.8%	4.5%	5.9%	4.7%	5.1%	8.3%	8.1%	5.5%
Pandemic CAGR	15.3%	13.5%	12.8%	15.3%	16.4%	12.8%	13.5%	19.7%	16.9%	15.1%
12-Month Period of Max HPI Growth During Pandemic	7-2020 to 6-2021	8-2020 to 7-2021	7-2020 to 6-2021	9-2020 to 8-2021	9-2020 to 8-2021	6-2020 to 5-2021	8-2020 to 7-2021	9-2020 to 8-2021	8-2020 to 7-2021	8-2020 to 7-2021
Max 12-Month Period Change, During Pandemic	21.7%	18.1%	17.1%	18.8%	20.6%	16.3%	17.8%	25.8%	22.1%	19.2%
12-Month Period of Max HPI Growth, Pre-Pandemic	12-2001 to 11-2002	12-2003 to 11-2004	2-2017 to 1-2018	2-2005 to 1-2006	9-2004 to 8-2005	4-1993 to 3-1994	3-2005 to 2-2006	11-2004 to 10-2005	5-2004 to 4-2005	10-2004 to 9-2005
Max 12-Month HPI Growth, Pre-Pandemic	14.0%	12.4%	6.9%	8.5%	15.3%	7.4%	7.5%	18.0%	22.4%	10.7%



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

Notes: HPI data as of August 2021. Peak refers to the month when HPI reached the highest level for each state/US during the housing boom period, ranging from 2005 to 2008. Trough represents the month when HPI fell to the lowest level for each region/US after the housing bust, ranging from 2009 to 2012.

Pandemic Period refers to March 2020 to the current period, 8/2021. $CAGR = (End\ Value / Starting\ Value)^{1/n} - 1$

Nationally, home prices exceed their pre-crisis peak on a nominal basis by 45.3% through June 2021. As shown in both the tables above and below, the extent of HPI increases since the trough has varied from region to region and state to state. Nationally, home prices exceed the trough by 84.2%. As shown in the regional HPI table above, much of this asset appreciation has taken place during the pandemic.

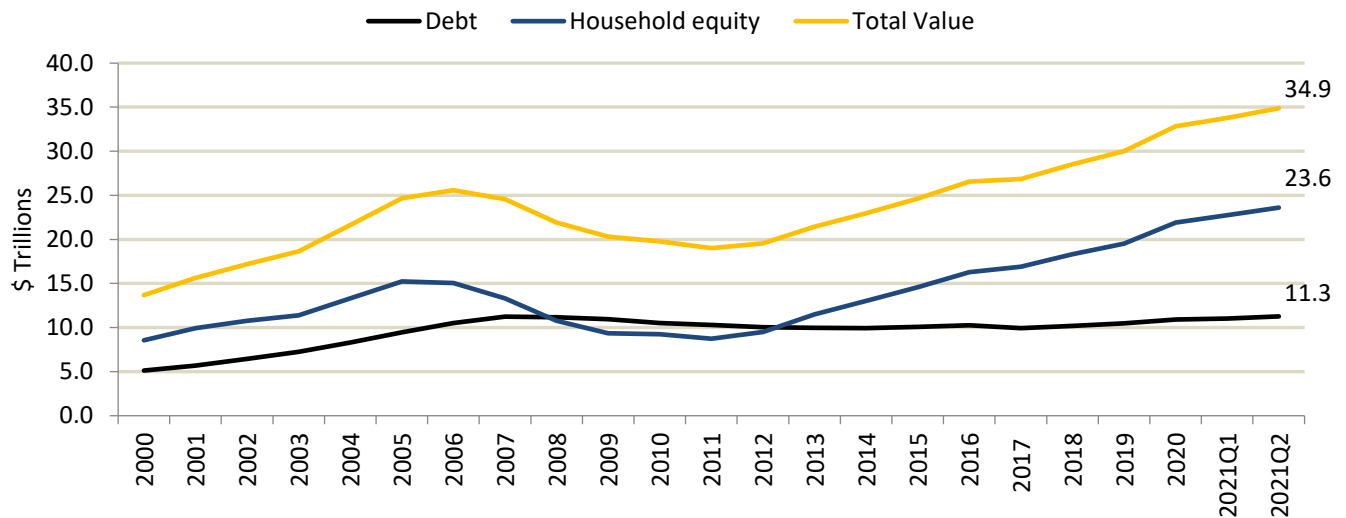
State	2000 to Peak	Peak to Trough	Trough to Current	YOY	Current HPI % Above Peak
National	59.6%	-21.1%	84.2%	10.5%	45.3%
AK	66.9%	-5.2%	37.4%	6.4%	30.3%
AL	41.7%	-15.0%	60.6%	10.0%	36.5%
AR	39.8%	-11.0%	52.7%	10.3%	35.8%
AZ	110.3%	-49.5%	167.9%	16.4%	35.3%
CA	144.8%	-47.0%	132.1%	13.8%	23.0%
CO	32.4%	-10.2%	134.5%	13.1%	110.6%
CT	72.9%	-19.6%	34.9%	13.7%	8.4%
DC	162.7%	-11.8%	114.6%	10.2%	89.3%
DE	88.7%	-23.5%	50.4%	12.0%	15.1%
FL	130.2%	-46.5%	135.8%	12.8%	26.0%
GA	35.9%	-27.1%	106.5%	11.2%	50.6%
HI	138.9%	-26.9%	91.0%	8.9%	39.6%
IA	27.9%	-5.4%	51.6%	8.0%	43.4%
ID	73.3%	-32.3%	190.6%	23.8%	96.6%
IL	49.9%	-23.8%	44.0%	8.7%	9.7%
IN	19.1%	-8.6%	73.5%	11.0%	58.5%
KS	31.0%	-7.7%	63.6%	10.8%	51.1%
KY	28.9%	-5.5%	60.7%	9.9%	51.9%
LA	51.6%	-6.6%	42.7%	6.5%	33.3%
MA	69.9%	-18.1%	73.4%	12.1%	41.9%
MD	126.4%	-26.4%	50.2%	10.2%	10.5%
ME	72.0%	-12.4%	71.3%	14.6%	50.1%
MI	18.4%	-31.5%	107.0%	11.6%	41.8%
MN	52.6%	-23.0%	81.1%	10.4%	39.5%
MO	39.2%	-15.0%	71.2%	11.2%	45.5%
MS	38.9%	-12.9%	40.8%	7.7%	22.7%
MT	79.3%	-13.8%	91.1%	14.8%	64.8%
NC	39.8%	-14.1%	78.0%	12.3%	52.9%
ND	51.8%	-0.8%	66.7%	5.8%	65.3%
NE	24.4%	-6.0%	73.9%	10.6%	63.5%
NH	72.7%	-21.9%	76.8%	14.5%	38.0%
NJ	102.2%	-22.6%	48.1%	12.8%	14.6%
NM	66.7%	-18.0%	52.7%	10.5%	25.3%
NV	117.4%	-59.2%	192.8%	13.0%	19.4%
NY	75.8%	-10.5%	53.8%	11.4%	37.6%
OH	19.6%	-16.5%	74.8%	11.3%	45.9%
OK	36.9%	-4.7%	56.2%	8.8%	48.8%
OR	85.7%	-28.6%	124.6%	13.6%	60.4%
PA	69.0%	-10.9%	54.7%	10.7%	37.9%
RI	108.2%	-28.0%	75.4%	14.4%	26.2%
SC	40.6%	-16.0%	79.8%	11.0%	51.1%
SD	40.1%	-2.4%	68.1%	11.7%	64.2%
TN	38.5%	-12.6%	93.7%	13.4%	69.3%
TX	35.8%	-3.0%	92.0%	11.4%	86.3%
UT	65.2%	-26.1%	144.5%	19.1%	80.7%
VA	95.2%	-18.8%	57.2%	10.6%	27.7%
VT	78.2%	-10.2%	51.6%	14.0%	36.1%
WA	83.5%	-27.3%	139.2%	14.8%	73.9%
WI	38.6%	-14.2%	66.5%	10.4%	43.0%
WV	39.2%	-5.8%	37.9%	8.9%	29.9%
WY	84.7%	-9.6%	50.5%	8.9%	36.0%

Source: FHFA Notes: HPI State-level data is provided quarterly by FHFA and presented here as of June 2021. Peak refers to the month when HPI reached the highest level for each state/US during the housing boom period, ranging from 2005 to 2008. Trough represents the month when HPI fell to the lowest level for each state/US after the housing bust, ranging from 2009 to 2012.

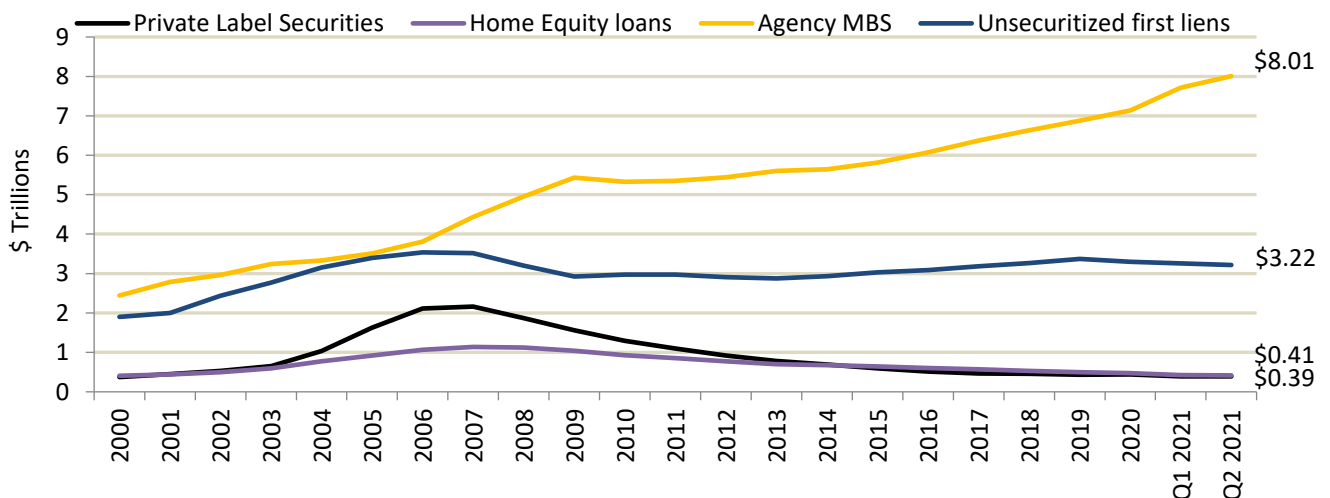
2.2 Size and Value of the US Housing Market

The total value of the single-family housing market reached \$34.9 trillion in Q2 2021. The value of household equity has continued to trend upward into Q2 2021, but as mentioned in Section 2.1 above, the unprecedented pace of asset appreciation during the pandemic is driving much of the increase in the overall value of real estate as an asset class. The total value of the US housing market is up 83% from its trough in 2011. Mortgage debt outstanding has remained relatively flat, increasing from \$11.0 trillion in Q1 2021 to \$11.3 trillion in Q2 2021. Agency MBS account for a growing percentage of the total mortgage debt outstanding, up to 66% of total mortgage debt which represents an increase of almost 2% from the prior quarter.

Value of the US Housing Market



Size of the US Residential Mortgage Market

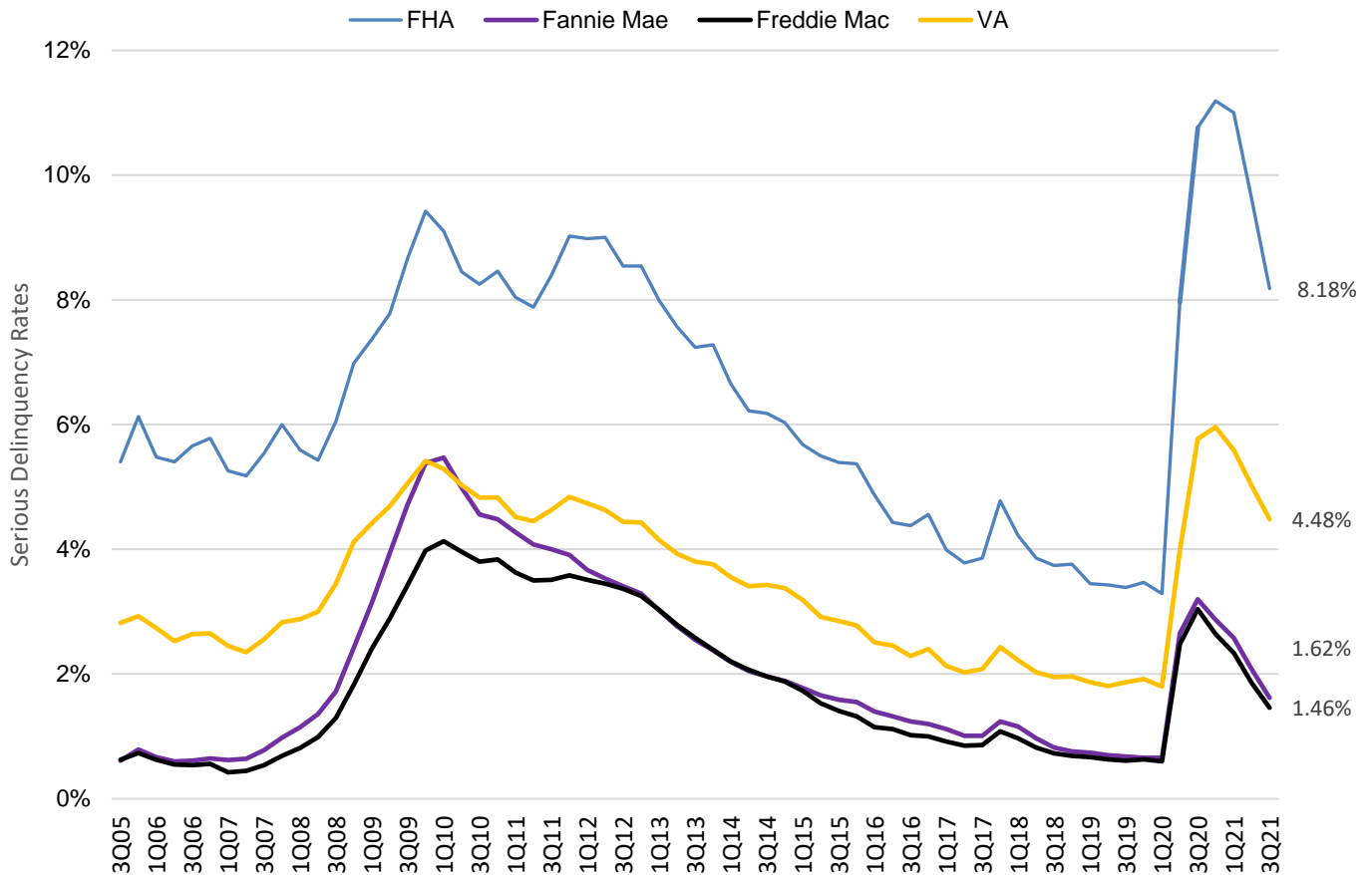


Source: Federal Reserve Flow of Funds Data. Notes: Data as of Q2 2021.

2.3 Serious Delinquency Rates

Serious delinquency rates for single family GSE, FHA, and VA loans all fell sharply in Q3 2021. From Q2 2021 to Q3 2021, Fannie and Freddie decreased 46 and 40 bps, respectively, or 22% each, as a percentage change. Ginnie Mae collateral's serious delinquency rates decreased more than the GSE rates in absolute terms, with FHA and VA dropping 144 and 54 bps respectively. This decline in serious delinquency rates is consistent with the decrease in the number of loans in forbearance captured in Section 2.4 below.

Serious Delinquency Rates: Single Family Loans



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

Note: Serious delinquency is defined as 90 days or more past due or in the foreclosure process. Data as of Q3 2021.

2.4 Characteristics of Ginnie Mae Loans in Forbearance

211,636 Ginnie Mae loans were in forbearance as of the end of September 2021. This represents a 4% decrease MoM, continuing the trend of decline in forbearance observed since May 2020. 6,642 of loans in forbearance were removed from pools and 204,994 still actively remain in pools. Most liquidated loans (5,080) were FHA and within that subset, 2,775 of those loans were originated by nonbanks. Almost 97% of the loans in forbearance are due to COVID-19 circumstances, down from over 98% from the prior month.

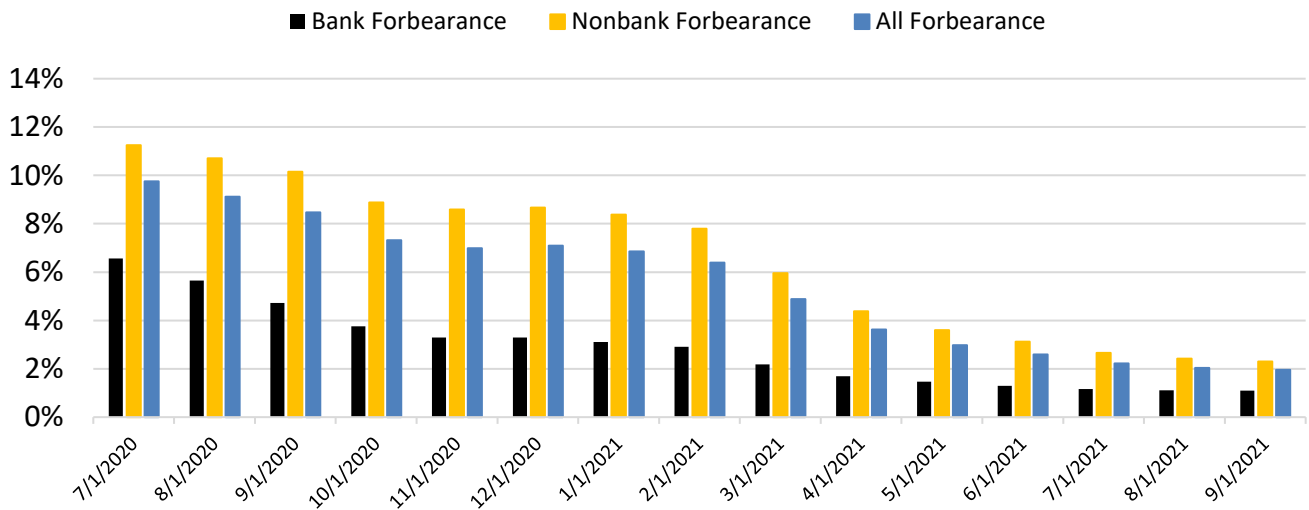
All Loans in Forbearance – September 2021						
	FICO Score*	Note Rate*	Current Principal Balance Median	First Time Homebuyer Share (%)	Purchase Share (%)	Loan Count
Ginnie	658	3.7	\$ 169,551.97	76.8	67.3	211,636
Bank	672	4.0	\$ 123,285.79	75.0	78.9	33,296
Nonbank	657	3.6	\$ 178,113.33	77.0	66.1	178,340
FHA	653	3.8	\$ 164,000.00	79.3	73.0	148,209
Bank	665	4.1	\$ 113,428.98	78.3	82.4	25,039
Nonbank	652	3.7	\$ 174,422.90	79.4	72.0	123,170
VA	669	3.4	\$ 221,211.55	65.2	47.3	44,424
Bank	684	3.6	\$ 182,173.00	65.4	70.0	6,470
Nonbank	667	3.3	\$ 227,210.75	65.2	44.3	37,954
Loans in Forbearance and Removed from Pools – September 2021						
	FICO Score*	Note Rate*	Current Principal Balance Median	First Time Homebuyer Share (%)	Purchase Share (%)	Loan Count
Ginnie	662	3.9	\$ 137,243.65	73.5	68.4	6,642
Bank	679	4.0	\$ 109,610.18	74.7	81.2	2,899
Nonbank	655	3.9	\$ 161,764.85	72.8	63.1	3,743
FHA	657	4.1	\$ 130,174.37	75.8	74.7	5,080
Bank	674	4.1	\$ 106,100.00	77.3	84.2	2,305
Nonbank	649	4.1	\$ 153,493.44	74.9	70.5	2,775
VA	677	3.5	\$ 192,346.88	59.3	45.9	1,184
Bank	695	3.6	\$ 145,435.22	60.0	65.4	408
Nonbank	672	3.5	\$ 217,981.77	59.0	40.0	776
Loans in Forbearance that Remain in Pools – September 2021						
	FICO Score*	Note Rate*	Current Principal Balance Median	First Time Homebuyer Share (%)	Purchase Share (%)	Loan Count
Ginnie	658	3.7	\$ 170,564.46	76.9	67.3	204,994
Bank	671	4.0	\$ 124,847.23	75.0	78.7	30,397
Nonbank	657	3.6	\$ 178,502.67	77.1	66.1	174,597
FHA	653	3.8	\$ 165,217.49	79.4	72.9	143,129
Bank	664	4.1	\$ 114,189.87	78.4	82.2	22,734
Nonbank	652	3.7	\$ 174,902.75	79.5	72.0	120,395
VA	669	3.4	\$ 221,915.41	65.3	47.4	43,240
Bank	684	3.6	\$ 185,203.48	65.6	70.2	6,062
Nonbank	667	3.3	\$ 227,356.89	65.3	44.4	37,178

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 September 2021; *Averages weighted by remaining principal balance of the loans.

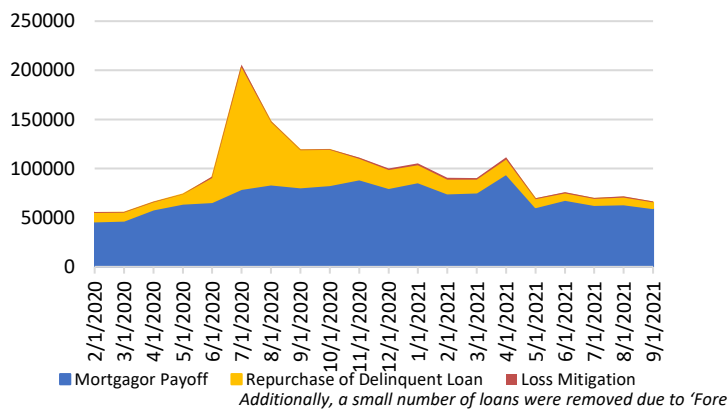
The current forbearance rate stands at just under 2% as of the end of September, down from a peak of 11% in May of 2020 just after the CARES Act Mortgage Payment Forbearance Program was first introduced. The forbearance rate still remains significantly higher than the forbearance rate prevailing in the period prior to the pandemic between Jan 2019 and February 2020 (approximately 0.1%) but may decline substantially as the first batch of forbore borrowers exits their forbearance plans in October 2021.⁴

Share of Ginnie Mae Loans in Forbearance

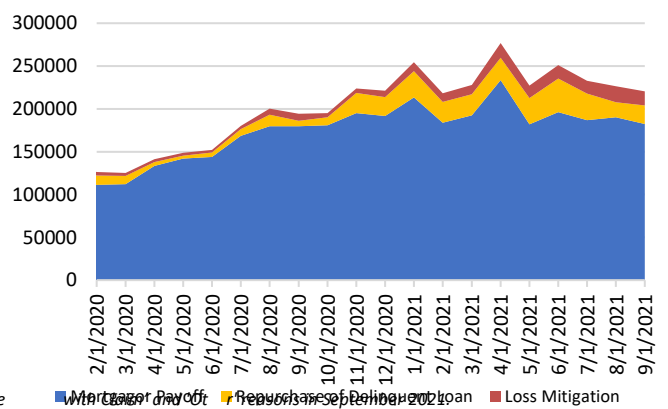


Sources: eMBS and Urban Institute. Data beginning May 2021 sourced from Ginnie Mae forbearance disclosure files and IOPP Peer Group list. Notes: Data as of September 2021.

Number of Loans Removed from Pools: Bank



Number of Loans Removed from Pools: Nonbank

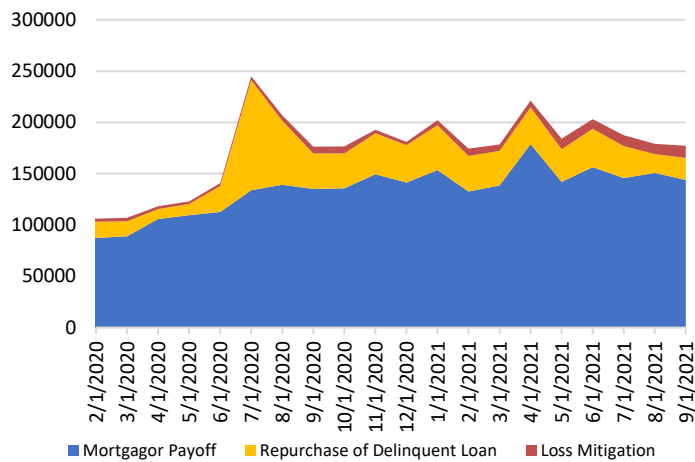


Sources: eMBS and Urban Institute. Data beginning June 2021 sourced from Ginnie Mae Loan Level MBS disclosure files and IOPP Peer Group list. Notes: Data as of September 2021.

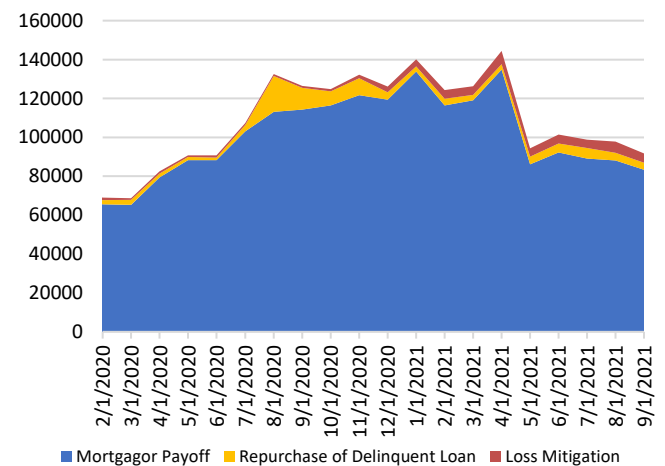
⁴ Baseline forbearance rate source: Khater, Sam, et al. "Mortgage Forbearance Rates during the COVID-19 Crisis." *Freddie Mac*, http://www.freddiemac.com/research/insight/20201117_mortgage_forbearance_rate_during_COVID-19.page.

Of the Ginnie Mae loans that were liquidated from pools due to mortgage delinquency (these counts include all delinquent buyouts, regardless of forbearance status), a higher share of the loans were FHA versus VA loans (top charts, yellow areas). Liquidated loans across FHA and VA are also more likely to have coupons greater than or equal to 3.5% (bottom charts: “Number of Loans Removed from Pools by Coupon”). In September 2021, the number of loans repurchased due to delinquency increased 16% to 21,560 for FHA and 13% to 4,240 for VA loans. High refinance activity (blue areas) continues to be driving the repurchase activity for both FHA and VA.

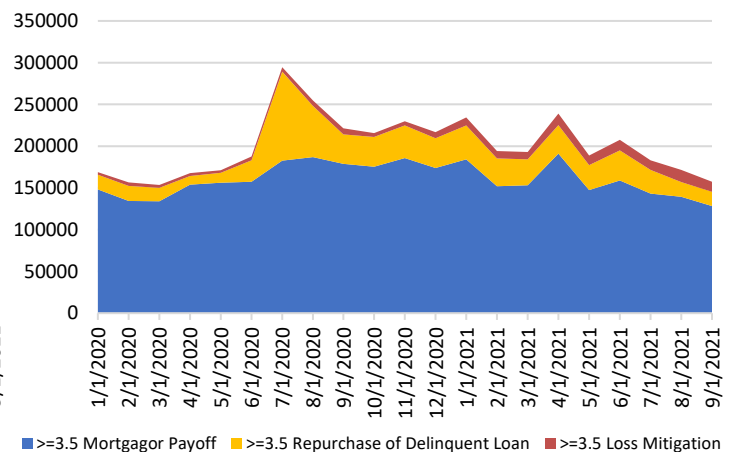
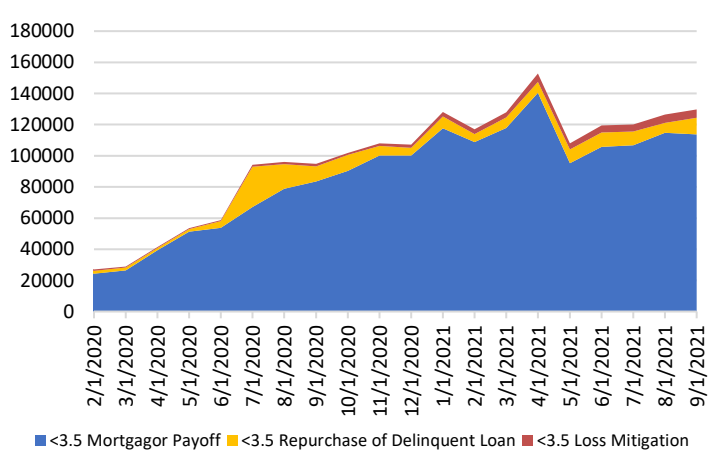
Number of Loans Removed from Pools: FHA



Number of Loans Removed from Pools: VA



Number of Loans Removed from Pools by Coupon



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

Sources: eMBS and Urban Institute. Data beginning June 2021 sourced from Ginnie Mae Loan Level MBS disclosure files, Ginnie Mae Pool Level MBS disclosure files and IOPP Peer Group list. Notes: Data as of September 2021.

2.5 Ginnie Mae Agency Issuance and Agency Outstanding by State

Ginnie Mae MBS represent approximately 23% of new Agency issuance over the past year. The share of Ginnie Mae outstanding varies across states, with the highest Ginnie Mae share in Alaska (48%) and the lowest in the District of Columbia (13%). The difference between Ginnie Mae share of Agency Issuance (23%) over the past year and Ginnie Mae’s share of overall outstanding Agency MBS (26%) is reflective of ebbs and flows in FHA and VA first lien origination market share, discussed in Section 2.8 below.

	Agency Issuance (past 1 year)				Agency Outstanding			
	GNMA Share	GNMA Loan Count	GNMA Avg. Loan Size (000)	GSE Avg. Loan Size (000)	GNMA Share by UPB	GNMA Loan Count	GNMA Avg. Loan Size (000)	GSE Avg. Loan Size (000)
National	23%	3,027,544	273.33	294.65	26%	10,651,066	186.01	215.38
AK	51%	10,913	328.23	288.91	48%	36,859	251.65	215.65
AL	36%	59,849	211.11	228.37	41%	232,976	145.11	170.13
AR	33%	31,727	173.10	206.64	40%	136,179	123.18	153.36
AZ	23%	103,909	273.17	275.06	26%	281,231	197.27	209.80
CA	16%	262,183	423.59	413.98	17%	684,906	307.23	312.62
CO	23%	87,034	356.29	339.11	24%	217,471	268.09	263.99
CT	22%	26,593	261.91	279.61	26%	103,752	193.15	205.09
DC	11%	2,884	480.87	461.89	13%	8,699	359.30	348.30
DE	28%	14,370	260.28	269.46	32%	50,349	194.46	202.97
FL	31%	264,034	266.39	263.46	33%	835,282	194.36	196.92
GA	30%	138,561	237.24	263.34	35%	493,938	164.74	194.17
HI	37%	14,663	580.86	461.93	32%	32,772	446.15	347.77
IA	18%	18,074	192.85	198.10	22%	82,213	126.33	146.25
ID	21%	21,005	286.36	276.43	24%	66,906	192.84	207.07
IL	18%	86,956	217.51	242.38	22%	350,266	152.36	175.16
IN	26%	66,624	185.73	197.25	31%	280,246	124.10	143.81
KS	25%	23,053	197.62	219.21	30%	97,369	132.26	158.27
KY	29%	40,668	193.16	204.62	35%	162,375	134.26	149.78
LA	35%	46,949	198.45	233.27	40%	189,876	150.31	173.50
MA	14%	35,536	356.80	356.46	16%	112,030	266.85	264.36
MD	31%	92,125	348.04	325.86	34%	283,944	254.19	244.10
ME	21%	10,627	215.04	249.18	27%	37,950	166.64	184.22
MI	16%	65,146	186.55	209.15	21%	276,779	125.03	151.62
MN	15%	40,369	249.85	256.25	19%	161,876	172.93	192.44
MO	24%	58,709	196.66	212.09	30%	246,204	133.15	156.49
MS	41%	25,861	198.48	211.21	48%	117,479	133.88	155.42
MT	21%	10,162	234.78	276.07	25%	33,770	194.11	204.44
NC	26%	119,075	234.97	260.10	30%	417,455	162.08	190.34
ND	23%	5,130	249.23	238.76	23%	16,441	185.37	182.12
NE	20%	14,954	194.47	208.59	27%	66,210	138.93	155.41
NH	20%	11,766	290.68	278.80	24%	39,441	213.80	206.52
NJ	18%	63,461	312.01	335.20	22%	225,974	226.85	248.48
NM	34%	23,523	229.43	234.63	39%	94,840	156.33	170.17
NV	30%	49,291	305.54	287.09	32%	132,119	228.49	220.15
NY	16%	54,592	311.92	341.30	20%	304,251	196.90	239.89
OH	24%	92,129	182.71	201.92	30%	421,131	122.58	143.56
OK	37%	40,511	198.39	211.08	44%	188,931	132.28	154.80
OR	19%	39,625	319.96	318.19	20%	113,130	235.66	240.82
PA	20%	83,329	210.19	245.65	27%	388,437	143.52	176.06
RI	25%	10,319	268.81	273.01	30%	34,777	216.25	205.79
SC	32%	70,202	235.07	245.06	35%	228,449	169.33	182.31
SD	26%	8,021	227.38	223.31	30%	29,379	161.76	171.64
TN	28%	74,050	239.58	256.05	34%	277,555	160.66	191.06
TX	29%	280,119	250.58	270.93	33%	1,064,493	168.61	198.36
UT	18%	36,759	321.52	313.49	20%	100,965	233.60	247.37
VA	34%	146,271	343.14	330.60	36%	436,523	244.94	245.63
VT	17%	3,218	235.81	249.60	19%	12,241	174.77	174.07
WA	21%	86,902	364.39	367.80	22%	238,757	263.45	276.79
WI	15%	33,673	209.02	217.33	17%	123,919	147.89	158.99
WV	39%	13,856	195.27	197.31	44%	56,800	136.90	140.50
WY	34%	8,184	257.61	251.17	36%	25,151	196.07	195.36

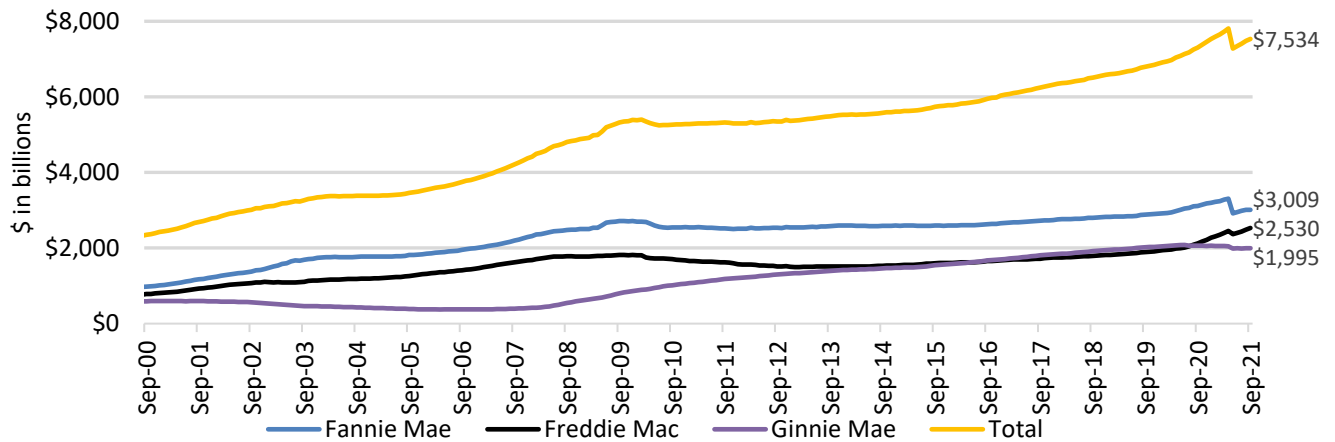
Sources: eMBS, Ginnie Mae/Freddie Mac/Fannie Mae Loan Level MBS Disclosure Files. Notes: Outstanding balance is based on loan balance as of September 2021. Ginnie Mae issuance is based on the last 12 months, from October 2020 to September 2021.

2.6 Outstanding Single Family Agency MBS

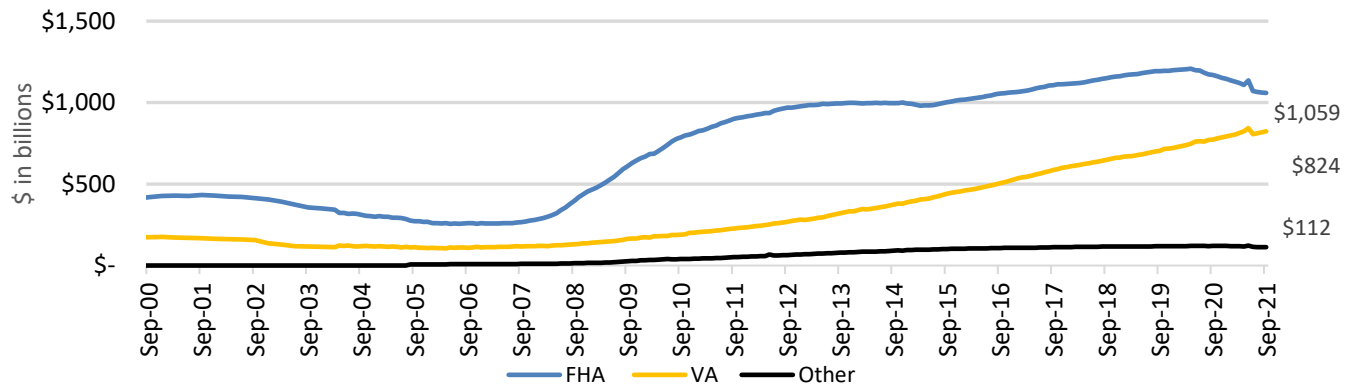
As of September 2021, outstanding single family securities in the Agency market totaled \$7.53 trillion: 39.9% Fannie Mae, 33.6% Freddie Mac, and 26.5% Ginnie Mae MBS. Over the past twelve months Freddie Mac’s total outstanding issuance has increased by approximately 17%, while Fannie and Freddie have decreased outstanding issuance by 4% and 3% respectively. Despite this, Fannie outstanding remains larger than either Freddie or Ginnie.

Ginnie Mae MBS collateral composition has changed dramatically over the past ten years. In September 2011, close to 77% of Ginnie Mae outstanding collateral was FHA and under 20% was VA. In September 2021, FHA collateral comprised 53% of Ginnie Mae MBS outstanding and VA collateral comprised 41% of Ginnie Mae MBS outstanding.

Outstanding Agency Mortgage-Backed Securities



Composition of Outstanding Ginnie Mae Mortgage-Backed Securities

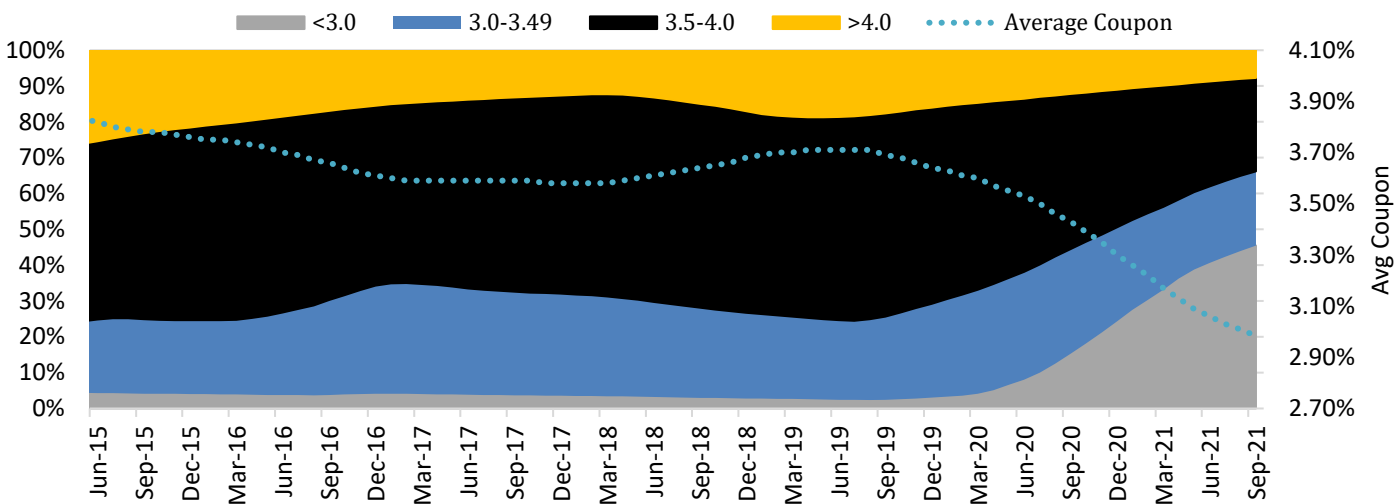


Sources: Data beginning in May 21 is based on outstanding balances in the Ginnie Mae/Freddie Mac/Fannie Mae Loan Level MBS Disclosure Files. Note: Data as of September 2021. Beginning with the October 2021 GMAR, the Fannie Mae and Freddie Mac data within the Outstanding Agency MBS graph have been updated to reflect the Current UPB of the portfolio. July 2021 through September 2021 GMAR reflect the UPB at Security issuance for Fannie Mae and Freddie Mac for data from May 2021 through July 2021.

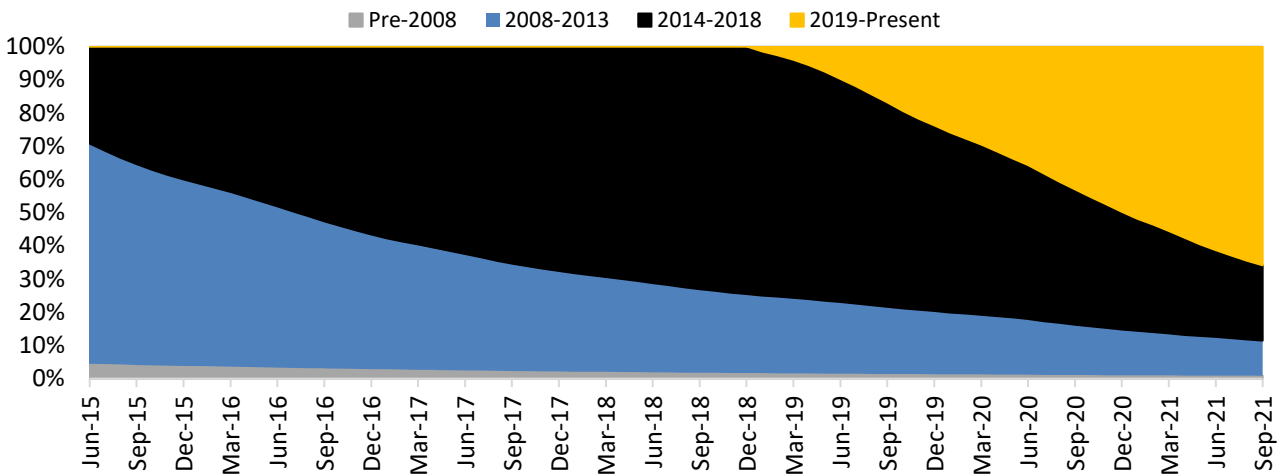
2.7 Outstanding Ginnie Mae MBS Volume by Coupon and Vintage Over Time

As of September 2021, the weighted average coupon on outstanding Ginnie Mae pools was 2.98%, down 3 bps since August. The share of outstanding MBS pools with coupons below 3.0% (46% as of September 2021) began a rapid expansion in 2020. The bottom chart illustrates that loans originated since 2014 comprise almost 90% of Ginnie MBS collateral outstanding, with loans originated since 2019 accounting for 66% of Ginnie MBS collateral outstanding. Approximately 24% of the outstanding MBS coupons are between 2.5 and 3.0%, 21% has coupons between 2.0 and 2.5%, while approximately half a percent (0.45%) have coupons under 2.0%.

Outstanding Ginnie MBS Balance, by Coupon



Outstanding Ginnie MBS Balance, by Vintage

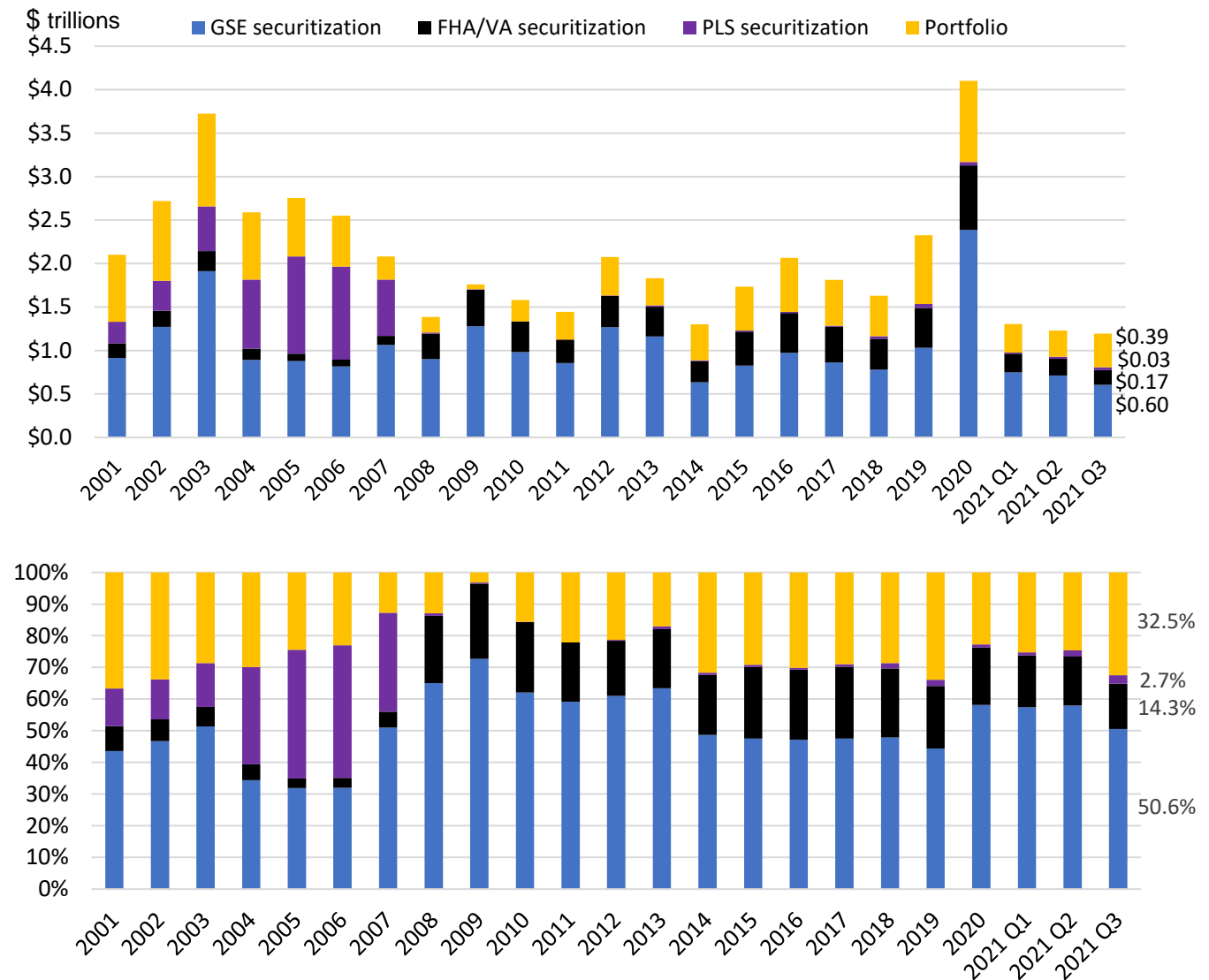


Sources: Ginnie Mae Pool Level MBS Disclosure Files. Note: August 2021 data points reflect the current composition of balances by coupon and vintage; factor data is not applied to prior date balance compositions. Average coupon is weighted by remaining principal balance.

2.8 Origination Volume and Share Over Time

Strong origination volume trends have continued in Q3 2021, with \$3.73 trillion in originations year to date, which outpaces Q1-Q3 2020 issuance by approximately 32%. Ginnie Mae collateral continued to decrease as a percentage of total originations, with Ginnie Mae’s share of total origination declining to under 15% in Q3 2021.

First Lien Origination Volume & Share



Source: Inside Mortgage Finance. Note: Data as of Q3 2021.

3.0 US Agency Market, Originations

Securitized first lien originations, comprised of GSE, Ginnie Mae, and Private Label securitizations, declined as a percentage of total originations from 75% to 68% from Q2 to Q3 2021. MoM, Agency gross MBS issuance decreased 1.6% (from August to September), driven by a decline in both Fannie and Freddie Issuance. Ginnie Mae MBS gross issuance increased approximately 2% in September. Ginnie Mae gross issuance through September outpaces that of the first nine months of 2020 by approximately 18.6%, \$656.0 billion to \$553.3 billion. Agency net issuance in September was approximately \$75.1 billion, which represents a 3% decline in net issuance relative to August. Ginnie Mae net issuance has decreased to below zero year-to-date in 2021. As noted in Section 2.6, VA production continues to outpace FHA.

Agency Gross Issuance (\$ in billions)					
Issuance Year	Fannie Mae	Freddie Mac	GSE Total	Ginnie Mae	Total
2000	\$202.8	\$157.9	\$360.6	\$102.2	\$462.8
2001	\$506.9	\$378.2	\$885.1	\$171.5	\$1,056.6
2002	\$710.0	\$529.0	\$1,238.9	\$169.0	\$1,407.9
2003	\$1,174.4	\$700.5	\$1,874.9	\$213.1	\$2,088.0
2004	\$517.5	\$355.2	\$872.6	\$119.2	\$991.9
2005	\$514.1	\$379.9	\$894.0	\$81.4	\$975.3
2006	\$500.2	\$352.9	\$853.0	\$76.7	\$929.7
2007	\$633.0	\$433.3	\$1,066.2	\$94.9	\$1,161.1
2008	\$562.7	\$348.7	\$911.4	\$267.6	\$1,179.0
2009	\$817.1	\$462.9	\$1,280.0	\$451.3	\$1,731.3
2010	\$626.6	\$377.0	\$1,003.5	\$390.7	\$1,394.3
2011	\$578.2	\$301.2	\$879.3	\$315.3	\$1,194.7
2012	\$847.6	\$441.3	\$1,288.8	\$405.0	\$1,693.8
2013	\$749.9	\$426.7	\$1,176.6	\$393.6	\$1,570.2
2014	\$392.9	\$258.0	\$650.9	\$296.3	\$947.2
2015	\$493.9	\$351.9	\$845.7	\$436.3	\$1,282.0
2016	\$600.5	\$391.1	\$991.6	\$508.2	\$1,499.8
2017	\$531.3	\$345.9	\$877.3	\$455.6	\$1,332.9
2018	\$480.9	\$314.1	\$795.0	\$400.6	\$1,195.6
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 YTD	\$1,096.3	\$975.8	\$2,072.1	\$656.0	\$2,728.1

Ginnie Mae Gross Issuance Collateral Composition (\$ in billions)				
Issuance Year	FHA	VA	Other	Total
2000	\$80.2	\$18.8	\$3.2	\$102.2
2001	\$133.8	\$34.7	\$3.1	\$171.5
2002	\$128.6	\$37.9	\$2.5	\$169.0
2003	\$147.9	\$62.7	\$2.5	\$213.1
2004	\$85.0	\$31.8	\$2.5	\$119.2
2005	\$55.7	\$23.5	\$2.1	\$81.4
2006	\$51.2	\$23.2	\$2.3	\$76.7
2007	\$67.7	\$24.2	\$3.0	\$94.9
2008	\$221.7	\$39.0	\$6.9	\$267.6
2009	\$359.9	\$74.6	\$16.8	\$451.3
2010	\$304.9	\$70.6	\$15.3	\$390.7
2011	\$216.1	\$82.3	\$16.9	\$315.3
2012	\$253.4	\$131.3	\$20.3	\$405.0
2013	\$239.2	\$132.2	\$22.2	\$393.6
2014	\$163.9	\$111.4	\$21.0	\$296.3
2015	\$261.5	\$155.6	\$19.2	\$436.3
2016	\$281.8	\$206.5	\$19.9	\$508.2
2017	\$257.6	\$177.8	\$20.2	\$455.6
2018	\$222.6	\$160.8	\$17.2	\$400.6
2019	\$266.9	\$225.7	\$16.0	\$508.6
2020	\$327.0	\$423.5	\$24.9	\$775.4
2021 YTD	\$295.0	\$341.5	\$19.6	\$656.1

US Agency Market, Originations

Agency Net Issuance (\$ in billions)					
Issuance Year	Fannie Mae	Freddie Mac	GSE	Ginnie Mae	Total
2000	\$92.0	\$67.8	\$159.8	\$29.3	\$189.1
2001	\$216.6	\$151.8	\$368.4	-\$9.9	\$358.5
2002	\$218.9	\$138.3	\$357.2	-\$51.2	\$306.1
2003	\$293.7	\$41.1	\$334.9	-\$77.6	\$257.3
2004	\$32.3	\$50.2	\$82.5	-\$40.1	\$42.4
2005	\$62.5	\$111.7	\$174.2	-\$42.2	\$132.0
2006	\$164.3	\$149.3	\$313.6	\$0.2	\$313.8
2007	\$296.1	\$218.8	\$514.9	\$30.9	\$545.7
2008	\$213.0	\$101.8	\$314.8	\$196.4	\$511.3
2009	\$208.1	\$42.5	\$250.6	\$257.4	\$508.0
2010	-\$156.4	-\$146.8	-\$303.2	\$198.3	-\$105.0
2011	-\$32.6	-\$95.8	-\$128.4	\$149.6	\$21.2
2012	\$32.9	-\$75.3	-\$42.4	\$119.1	\$76.8
2013	\$53.5	\$11.8	\$65.3	\$89.6	\$154.9
2014	-\$4.0	\$30.0	\$26.0	\$61.6	\$87.7
2015	\$3.5	\$65.0	\$68.4	\$97.3	\$165.7
2016	\$60.5	\$66.8	\$127.4	\$126.1	\$253.5
2017	\$83.7	\$77.0	\$160.7	\$132.3	\$293.0
2018	\$81.9	\$67.6	\$149.4	\$112.0	\$261.5
2019	\$87.4	\$110.3	\$197.7	\$95.7	\$293.5
2020	\$289.3	\$343.5	\$632.8	\$19.9	\$652.7
2021 YTD	\$287.0	\$381.7	\$668.8	-\$8.0	\$660.7

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 YTD	-\$62.0	\$59.3	-\$5.3	-\$8.0



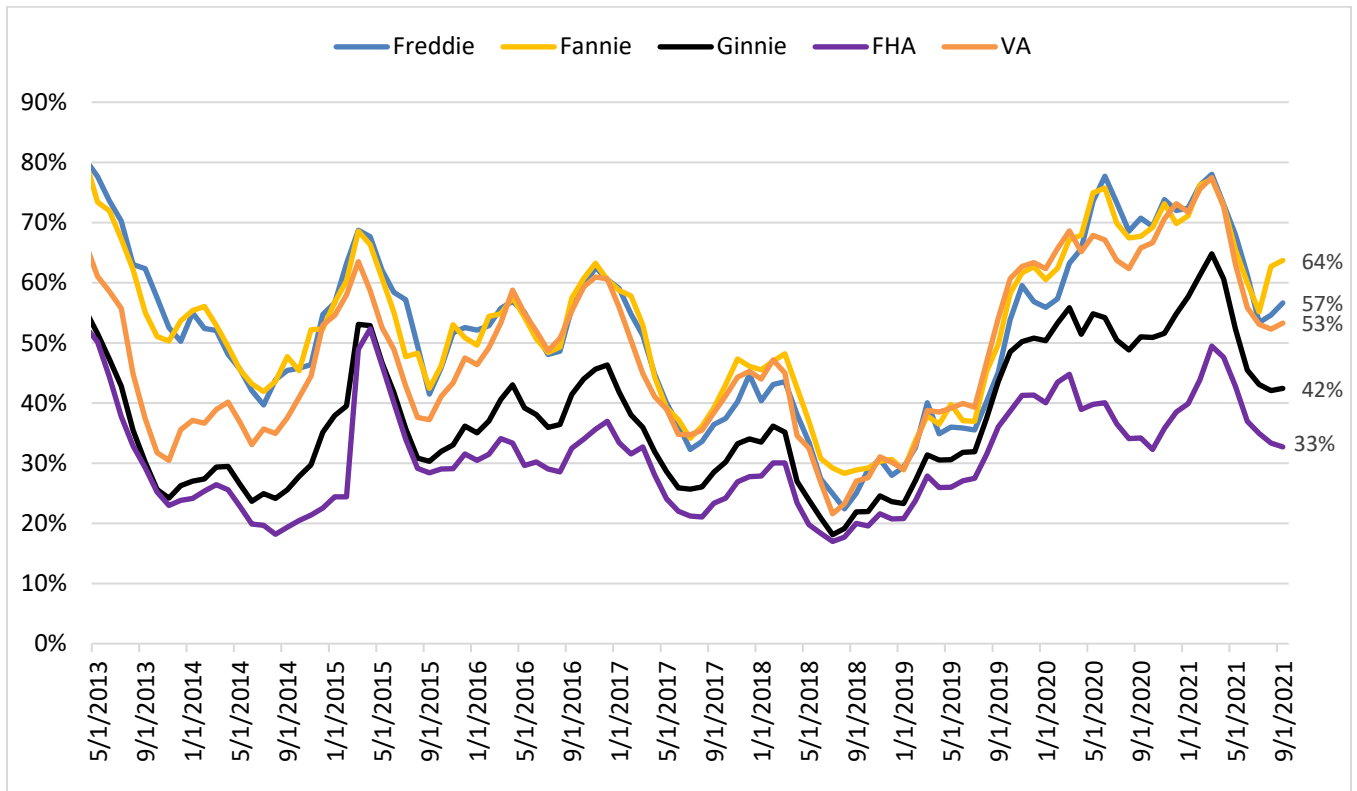
US Agency Market, Originations

Month	Agency Gross Issuance Amount (in \$ Billions)					Agency Net Issuance Amount (in \$ Billions)				
	Fannie Mae	Freddie Mac	Ginnie Mae	GSEs	Total	Fannie Mae	Freddie Mac	Ginnie Mae	GSEs	Total
Feb-17	\$37.6	\$27.4	\$33.1	\$65.0	\$98.1	\$2.5	\$6.5	\$9.4	\$9.0	\$18.5
Mar-17	\$39.5	\$24.4	\$31.3	\$63.9	\$95.2	\$9.7	\$6.2	\$9.7	\$15.9	\$25.6
Apr-17	\$39.3	\$21.2	\$36.4	\$60.6	\$97.0	\$3.3	\$0.4	\$11.7	\$3.7	\$15.4
May-17	\$40.3	\$22.6	\$36.4	\$62.9	\$99.3	\$7.7	\$2.7	\$13.3	\$10.4	\$23.8
Jun-17	\$45.7	\$25.1	\$39.9	\$70.8	\$110.7	\$7.9	\$2.4	\$13.3	\$10.3	\$23.5
Jul-17	\$45.3	\$27.6	\$40.6	\$72.9	\$113.5	\$5.6	\$3.5	\$12.3	\$9.2	\$21.5
Aug-17	\$49.1	\$29.3	\$42.8	\$78.4	\$121.1	\$12.0	\$6.7	\$15.4	\$18.7	\$34.1
Sep-17	\$47.3	\$27.9	\$40.2	\$75.3	\$115.5	\$7.7	\$3.8	\$10.6	\$11.4	\$22.0
Oct-17	\$42.9	\$34.6	\$38.4	\$77.6	\$115.9	\$5.5	\$12.5	\$11.0	\$17.9	\$28.9
Nov-17	\$43.5	\$37.2	\$37.8	\$80.7	\$118.5	\$3.9	\$13.6	\$8.3	\$17.5	\$25.8
Dec-17	\$45.3	\$30.0	\$36.2	\$75.3	\$111.5	\$9.2	\$8.1	\$7.0	\$17.4	\$24.4
Jan-18	\$47.4	\$21.4	\$35.4	\$68.8	\$104.2	\$12.1	\$0.2	\$7.7	\$12.3	\$20.0
Feb-18	\$40.3	\$21.5	\$32.0	\$61.8	\$93.8	\$8.3	\$2.2	\$7.1	\$10.5	\$17.6
Mar-18	\$35.6	\$21.3	\$29.1	\$56.9	\$86.0	\$4.9	\$3.0	\$6.3	\$7.9	\$14.1
Apr-18	\$36.3	\$26.2	\$32.8	\$62.5	\$95.3	\$1.7	\$6.0	\$8.8	\$7.7	\$16.5
May-18	\$38.9	\$27.5	\$33.8	\$66.4	\$100.2	\$5.1	\$7.2	\$10.5	\$12.3	\$22.8
Jun-18	\$38.2	\$28.8	\$35.6	\$67.0	\$102.6	\$2.5	\$6.8	\$10.3	\$9.3	\$19.6
Jul-18	\$40.3	\$26.2	\$35.6	\$66.5	\$102.2	\$4.2	\$3.7	\$10.4	\$7.8	\$18.3
Aug-18	\$50.4	\$29.9	\$37.5	\$80.3	\$117.8	\$15.8	\$7.9	\$12.5	\$23.6	\$36.1
Sep-18	\$41.8	\$30.1	\$34.8	\$71.8	\$106.6	\$5.9	\$6.2	\$9.0	\$12.1	\$21.1
Oct-18	\$39.8	\$27.4	\$33.2	\$67.1	\$100.3	\$9.7	\$7.1	\$11.4	\$16.8	\$28.2
Nov-18	\$35.1	\$30.1	\$32.4	\$65.2	\$97.6	\$3.6	\$11.0	\$9.8	\$14.6	\$24.4
Dec-18	\$36.9	\$23.9	\$28.4	\$60.7	\$89.1	\$2.3	\$6.4	\$8.2	\$14.6	\$22.8
Jan-19	\$33.3	\$19.2	\$29.0	\$52.6	\$81.6	\$5.9	\$2.5	\$9.2	\$8.3	\$17.6
Feb-19	\$27.3	\$19.9	\$23.5	\$47.2	\$70.7	\$1.4	\$3.4	\$4.6	\$4.7	\$9.3
Mar-19	\$29.6	\$27.3	\$26.6	\$56.9	\$83.5	\$1.8	\$10.3	\$5.6	\$12.0	\$17.6
Apr-19	\$33.1	\$30.8	\$32.9	\$63.9	\$96.8	\$1.3	\$10.8	\$8.3	\$12.0	\$20.4
May-19	\$44.5	\$34.3	\$38.8	\$78.8	\$117.6	\$6.7	\$9.8	\$9.4	\$16.6	\$26.0
Jun-19	\$44.6	\$34.0	\$43.3	\$78.6	\$121.9	\$1.9	\$5.9	\$9.0	\$7.8	\$16.8
Jul-19	\$51.7	\$36.9	\$45.9	\$88.6	\$134.5	\$10.9	\$10.1	\$11.0	\$21.0	\$32.0
Aug-19	\$71.1	\$50.4	\$51.2	\$121.4	\$172.6	\$20.8	\$17.1	\$8.7	\$37.9	\$46.6
Sep-19	\$67.1	\$43.0	\$52.0	\$110.1	\$162.1	\$14.1	\$7.5	\$6.5	\$21.5	\$28.0
Oct-19	\$65.0	\$46.2	\$58.4	\$111.2	\$169.6	\$7.4	\$7.1	\$11.9	\$14.6	\$26.5
Nov-19	\$68.1	\$50.7	\$54.3	\$118.7	\$173.1	\$5.2	\$8.6	\$4.1	\$13.8	\$18.0
Dec-19	\$62.1	\$52.5	\$52.7	\$114.6	\$167.3	\$10.1	\$17.3	\$7.4	\$27.3	\$34.7
Jan-20	\$61.7	\$51.4	\$56.0	\$113.1	\$169.0	\$9.1	\$16.5	\$8.6	\$25.6	\$34.2
Feb-20	\$56.5	\$39.5	\$51.2	\$96.0	\$147.2	\$9.4	\$7.9	\$7.1	\$17.4	\$24.4
Mar-20	\$69.5	\$41.4	\$53.0	\$110.8	\$163.9	\$17.9	\$6.3	\$8.8	\$24.2	\$33.0
Apr-20	\$101.6	\$76.3	\$61.4	\$177.9	\$239.3	\$30.5	\$27.5	\$10.2	\$58.0	\$68.2
May-20	\$124.3	\$70.6	\$60.8	\$194.9	\$255.7	\$35.2	\$8.2	\$5.7	\$43.4	\$49.1
Jun-20	\$118.9	\$78.1	\$58.5	\$197.0	\$255.4	\$30.0	\$15.9	\$1.3	\$45.9	\$47.2
Jul-20	\$125.0	\$108.1	\$66.5	\$233.1	\$299.5	\$23.4	\$38.0	-\$15.5	\$61.4	\$45.9
Aug-20	\$137.6	\$113.6	\$73.6	\$251.3	\$324.8	\$34.2	\$43.4	-\$4.1	\$77.6	\$73.5
Sep-20	\$122.9	\$102.1	\$72.4	\$225.0	\$297.5	\$16.5	\$29.9	\$1.0	\$46.5	\$47.5
Oct-20	\$142.3	\$124.8	\$72.6	\$267.1	\$339.7	\$28.9	\$48.3	-\$0.3	\$77.2	\$76.9
Nov-20	\$152.4	\$131.5	\$72.6	\$283.9	\$356.5	\$31.4	\$48.4	-\$4.5	\$79.8	\$75.3
Dec-20	\$130.8	\$126.7	\$76.9	\$257.5	\$334.4	\$22.8	\$53.1	\$1.7	\$75.8	\$77.5
Jan-21	\$141.6	\$117.3	\$78.2	\$258.9	\$337.1	\$25.9	\$37.9	-\$6.5	\$63.8	\$57.3
Feb-21	\$118.8	\$115.5	\$72.3	\$234.3	\$306.6	\$16.8	\$44.3	-\$0.9	\$61.1	\$60.2
Mar-21	\$143.9	\$118.9	\$76.9	\$262.8	\$339.7	\$37.6	\$44.0	\$1.0	\$81.6	\$82.6
Apr-21	\$148.0	\$142.3	\$85.6	\$290.3	\$375.9	\$26.2	\$57.0	-\$4.2	\$83.3	\$79.0
May-21	\$132.3	\$91.4	\$71.7	\$223.7	\$295.4	\$64.9	\$38.8	-\$3.1	\$103.7	\$100.6
Jun-21	\$108.5	\$91.2	\$67.7	\$199.7	\$267.4	\$34.0	\$33.7	\$2.6	\$67.8	\$70.4
Jul-21	\$95.4	\$84.6	\$69.0	\$180.0	\$249.0	\$27.6	\$31.9	-\$1.4	\$59.5	\$58.0
Aug-21	\$104.8	\$109.3	\$66.6	\$214.1	\$280.8	\$27.5	\$48.5	\$1.4	\$76.1	\$77.4
Sep-21	\$102.9	\$105.3	\$68.0	\$208.3	\$276.3	\$26.4	\$45.6	\$3.1	\$72.0	\$75.1

Source: Beginning May 2021, data for Gross and Net Issuance was sourced from Fannie Mae, Freddie Mac, and Ginnie Mae loan level disclosure files. Net issuance is defined here as the difference between prior period UPB and current period UPB. Data as of September 2021. 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 September 2021 GMAR net issuance data reflect the UPB at security issuance for Fannie Mae and Freddie Mac for data from May 2021 through July 2021.

The total Ginnie Mae refinance share stood at 42% in September. The FHA refinance share stood at 33% in September 2021, below the 64% share for Fannie, the 57% refi share for Freddie originations, and the 53% share for the VA. Refinances as a share of all Agency originations have continued their rebound to 56% in September after having dropped from 57% to 51% from June to July. This interrupts the trend of refinances representing a decreasing proportion of overall issuance since recent refinance peaks in early 2021 and mid-2020.

Percent Refi at Issuance



Sources: eMBS and Urban Institute; Beginning January 2021 data sourced from Ginnie Mae loan level disclosure files and IOPP. Notes: Data as of September 2021.

4.0 High LTV Loans: Ginnie Mae vs. GSEs

The share of high-LTV Agency loans going to borrowers with FICO scores above 750 has increased by 4% between periods August - October 2019 and August - October 2021. The share of borrowers with DTIs below 35% has decreased by approximately 2% over the same period. The share of high-LTV loans decreased in both the Ginnie Mae guarantee book and the GSE portfolios by approximately 3% and 24%, respectively, from August to October 2019 to August to October 2021. Still, Ginnie Mae maintains its key role of expanding credit access to low-to-moderate income borrowers as it continues to dominate high-LTV lending, with 62.55% of its issuances between August and October 2021 having LTVs of 95 or above, compared to 5.08% for the GSEs.

Share of Loans with LTV \geq 95

	Ginnie Mae	GSE	All
Aug 2019 - Oct 2019	64.62%	6.65%	26.68%
Aug 2021 - Oct 2021	62.55%	5.08%	21.32%

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

Aug 2019-Oct 2019

DTI	FICO				NA	All
	<650	650-700	700-750	\geq 750		
<35	4.47%	6.16%	3.39%	4.96%	1.29%	20.28%
35-45	6.66%	8.71%	4.26%	4.30%	0.20%	24.13%
\geq 45	5.26%	8.03%	4.06%	3.46%	0.13%	20.93%
NA	5.52%	7.08%	4.27%	5.90%	11.89%	34.66%
All	21.91%	29.98%	15.98%	18.62%	13.51%	100.00%

Aug 2021-Oct 2021

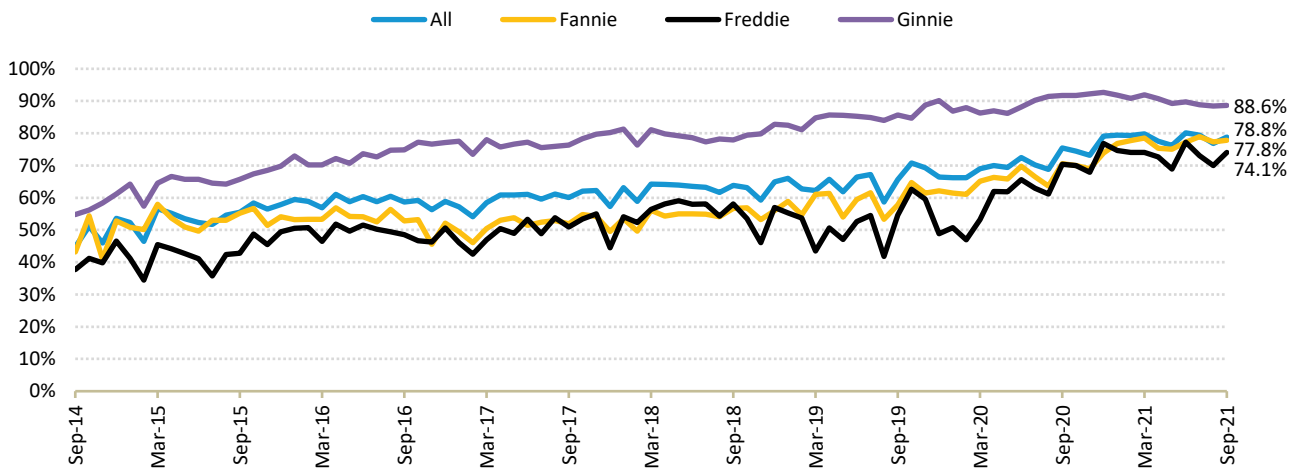
DTI	FICO				NA	All
	<650	650-700	700-750	\geq 750		
<35	4.37%	6.00%	3.17%	5.17%	1.16%	19.85%
35-45	6.48%	8.52%	3.86%	3.96%	0.23%	23.06%
\geq 45	5.17%	7.92%	3.70%	3.14%	0.16%	20.10%
NA	5.01%	6.60%	4.30%	7.15%	13.94%	36.99%
All	21.02%	29.05%	15.03%	19.40%	15.50%	100.00%

Sources: eMBS, Recursion and Ginnie Mae. Data as of September 2021

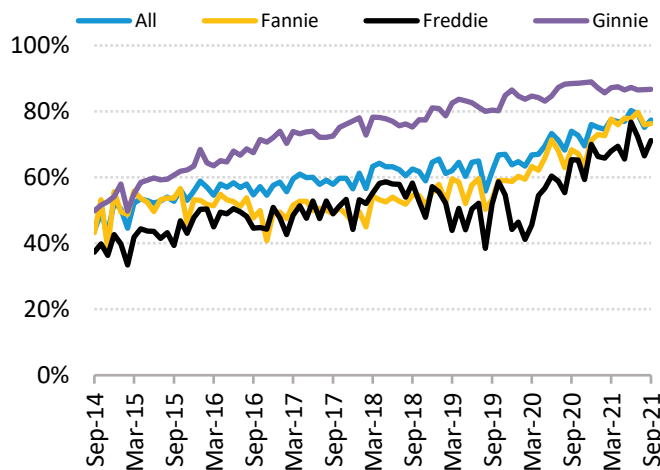
5.0 Agency Nonbank Originators

Total Agency nonbank origination share rebounded in September after two consecutive months of decline, up approximately 3% from August 2021. This increase in nonbank origination share was driven primarily by Freddie Mac (nonbank origination share up 6% MoM). The Ginnie Mae nonbank share has been consistently higher than the GSEs, at 88.6% in September 2021. Ginnie Mae nonbank origination share of refinance mortgage loans (91.2%) has continued to drive Ginnie Mae’s relatively higher nonbank origination share (88.6%). The nonbank originator share of Ginnie Mae’s refinance loans is significantly higher than for purchase loans. GSE nonbank origination share differs less on the basis of loan purpose.

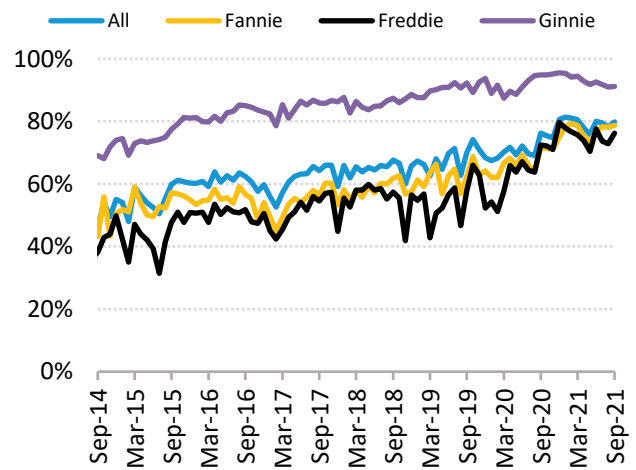
5.1 Agency Nonbank Originator Share (All, Purchase, Refi)



Nonbank Origination Share: Purchase Loans



Nonbank Origination Share: Refi Loans

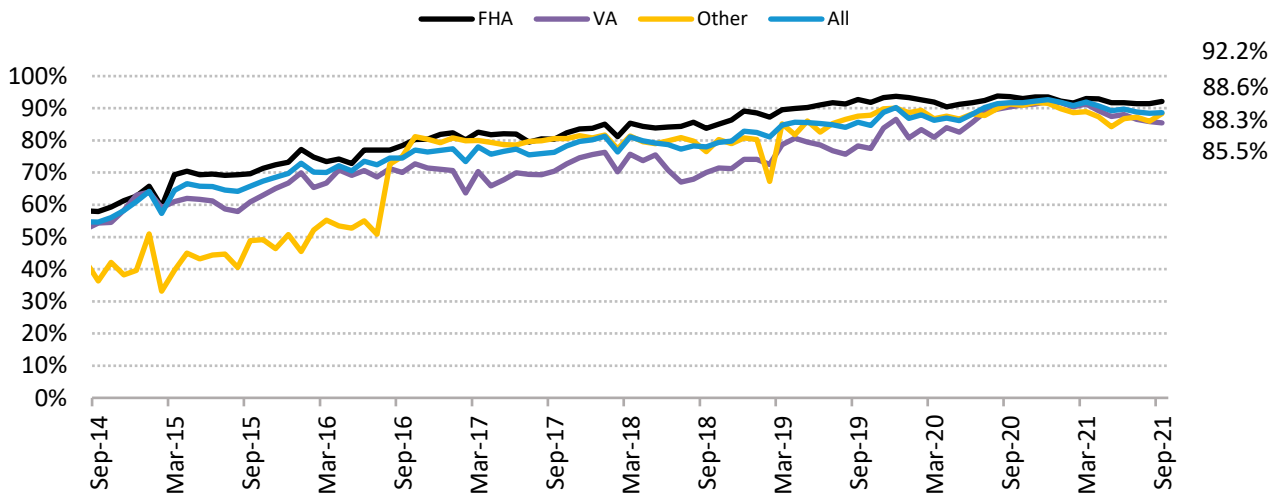


Sources: eMBS and Urban Institute; Beginning January 2021 data sourced from Ginnie Mae loan level disclosure files and IOPP. Notes: Data as of September 2021.

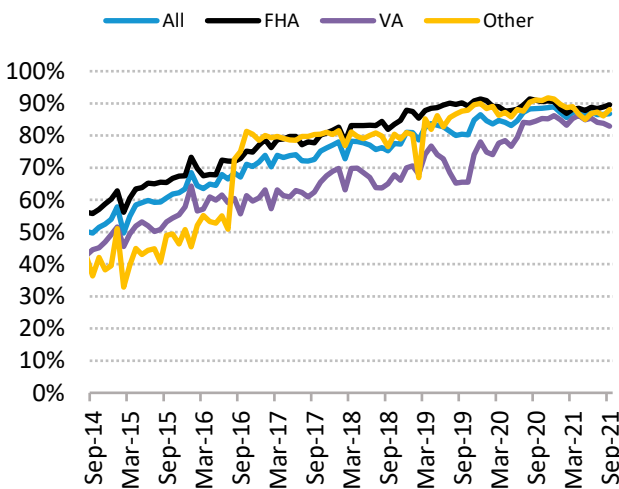
Agency Nonbank Originators

Ginnie Mae’s total nonbank originator share increased slightly in September, up 0.17% MoM. This increase in Ginnie Mae nonbank origination share was driven primarily by FHA and PIH- and RD- insured (“Other”) origination, while VA-insured loans decreased their nonbank origination share in September MoM. In September 2021 there was a slight increase in nonbank origination share for both purchase and refi loans. The increase in nonbank origination share for refi loans was primarily driven by “Other” loans, with an approximately 8.5% increase MoM.

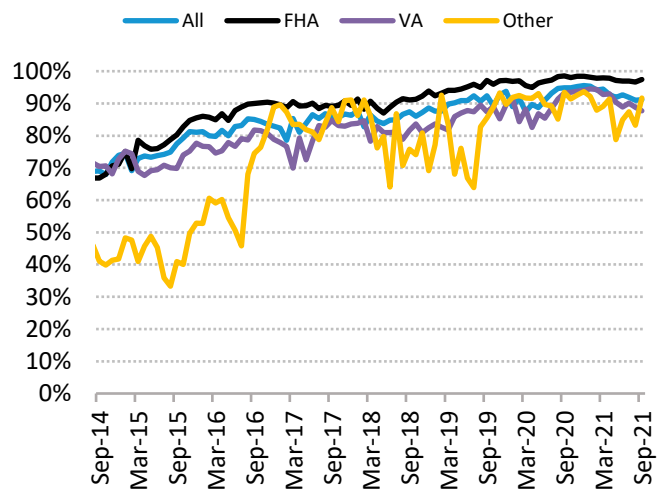
5.2 Ginnie Mae Nonbank Originator Share (All, Purchase, Refi)



Ginnie Mae Nonbank Share: Purchase Loans



Ginnie Mae Nonbank Share: Refi Loans

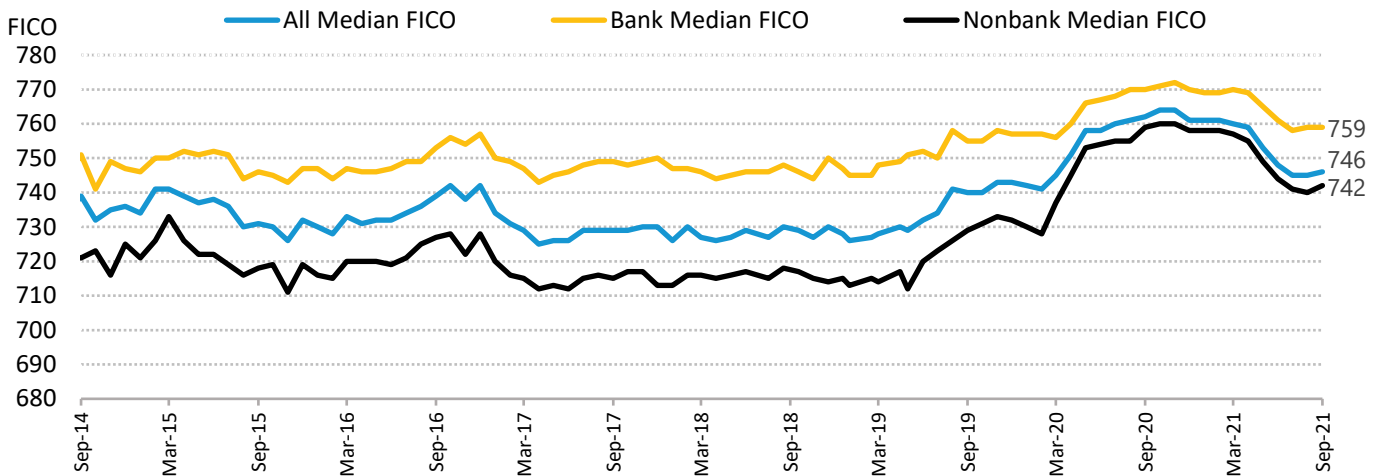


Sources: eMBS and Urban Institute; Beginning January 2021 data sourced from Ginnie Mae loan level disclosure files and IOPP. Notes: “Other” refers to loans guaranteed by HUD’s Office of Public and Indian Housing and the Department of Agriculture’s Rural Development. Data as of September 2021.

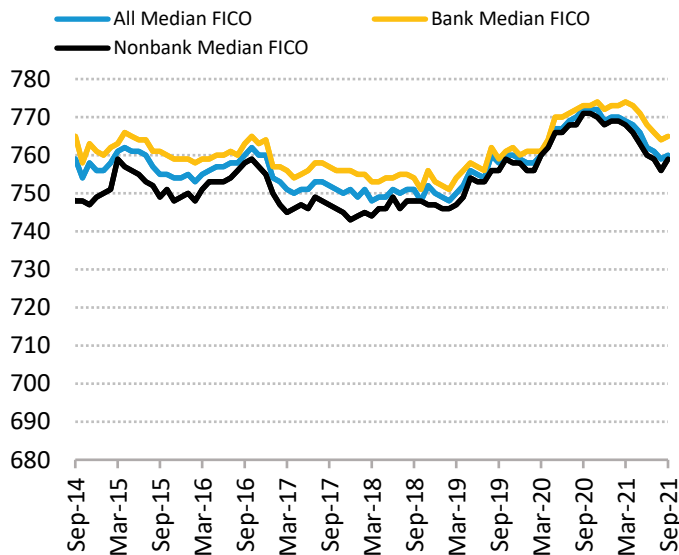
5.3 Bank vs. Nonbank Originators Historical Credit Box, Ginnie Mae vs. GSE (FICO, LTV, DTI)

The mortgage loan originations of nonbanks continue to have a lower median FICO score than their bank counterparts across the Agencies. The spread between nonbank and bank FICO scores dropped by 2 points from August 2021 to September 2021 to 17 points, approximately 8 points below the 5-year average spread. The Agency median FICO increased 1 bp to 746 MoM. Ginnie median FICO is down 19 points since January.

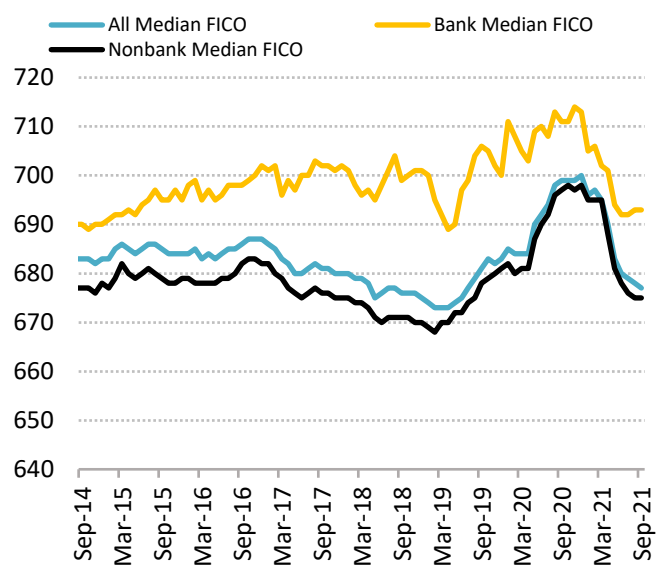
Agency FICO: Bank vs. Nonbank



GSE FICO: Bank vs. Nonbank



Ginnie Mae FICO: Bank vs. Nonbank

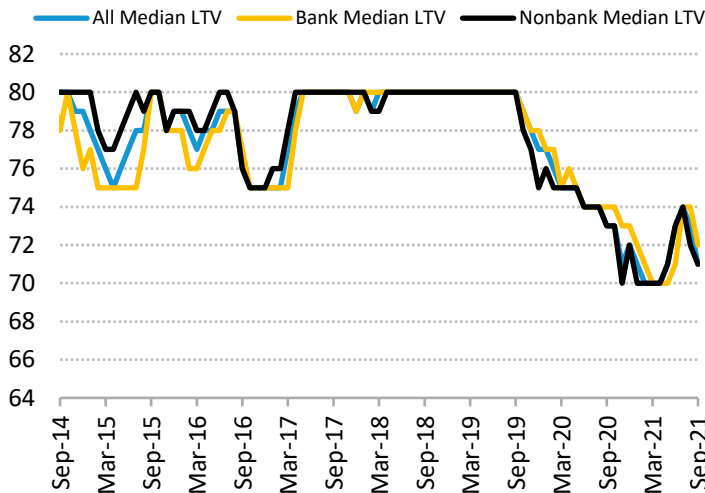


Sources: eMBS and Urban Institute; Beginning January 2021 data sourced from Ginnie Mae loan level disclosure files and IOPP. Notes: Data as of September 2021.

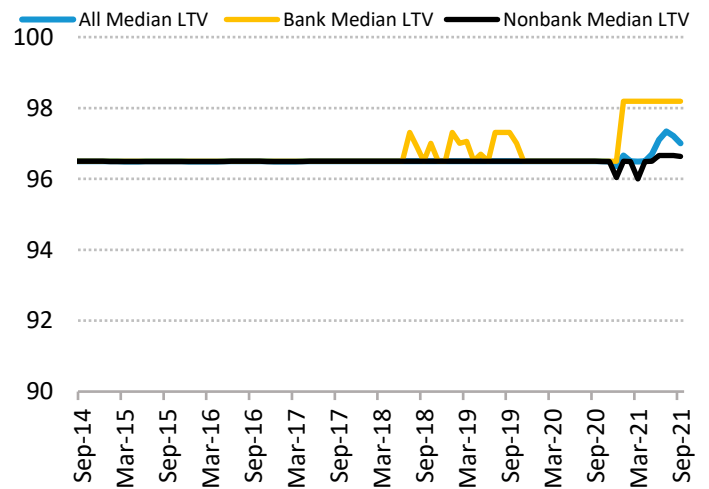
Agency Nonbank Originators

The median LTV for GSE bank and nonbank originators declined again in September 2021. Ginnie Mae median LTV also had another slight MoM decline to 97%. The decline in the GSEs' median LTV in September is attributable to the high volume of refis in the GSE space (see Section 3.0). Ginnie Mae median DTI experienced a slight MoM decrease in September 2021, driven evenly by declines in DTI for bank and nonbank originations.

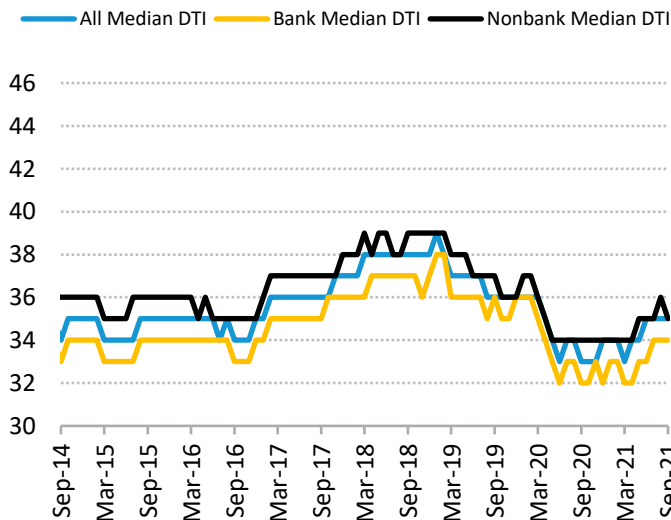
GSE LTV: Bank vs Nonbank



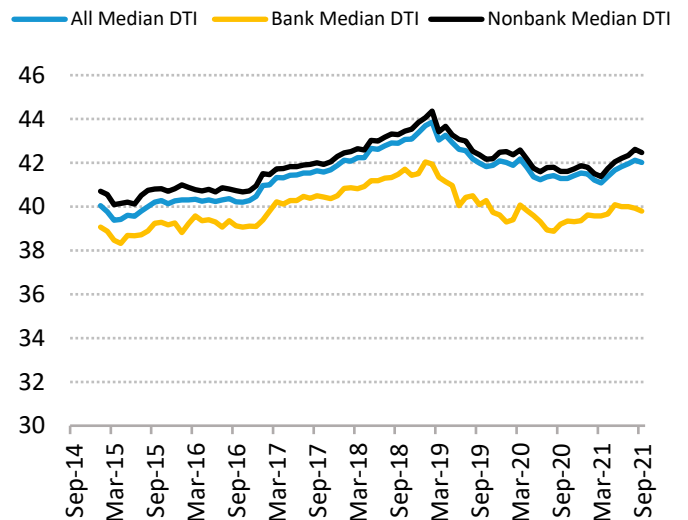
Ginnie Mae LTV: Bank vs. Nonbank



GSE DTI: Bank vs Nonbank



Ginnie Mae DTI: Bank vs. Nonbank

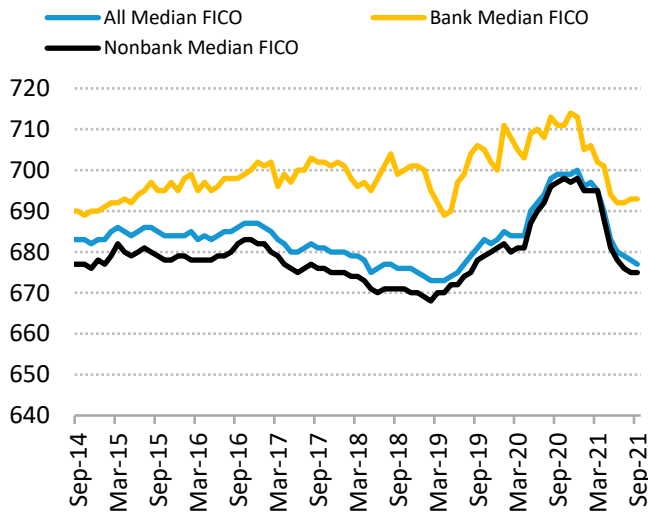


Sources: eMBS and Urban Institute; Beginning January 2021 data sourced from Ginnie Mae loan level disclosure files and IOPP. Notes: Data as of September 2021.

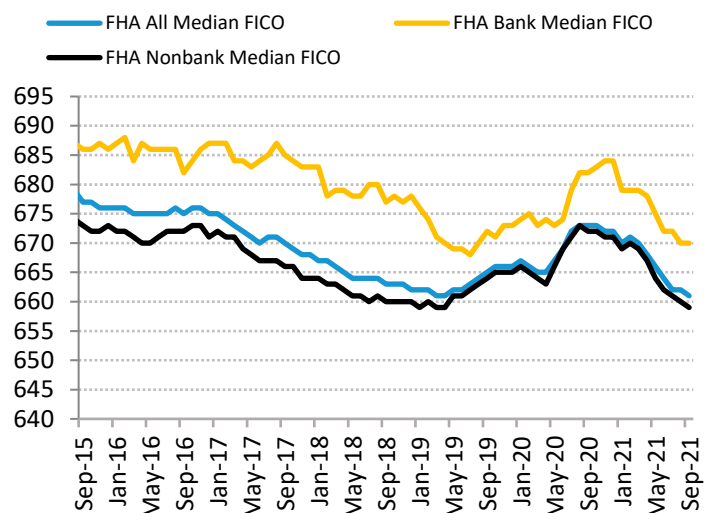
Agency Nonbank Originators

September 2021 marked the seventh consecutive month of decline in the median FICO score for Ginnie Mae bank and nonbank originators. The median FICO for all Ginnie originations declined to 677. The gap between banks and non-banks remains most apparent in VA lending (32 point spread).

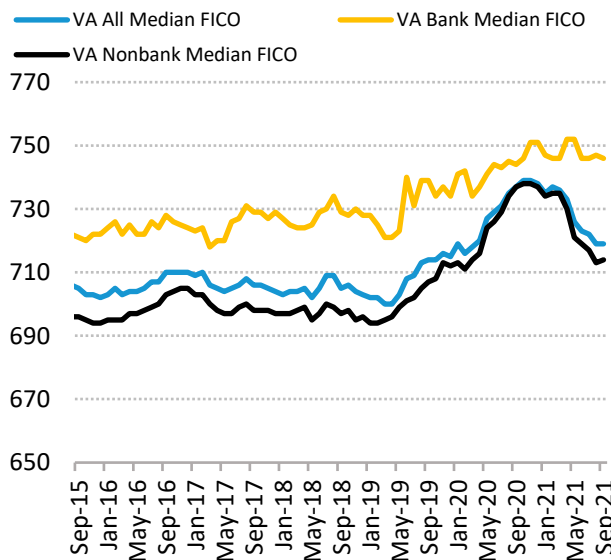
Ginnie Mae FICO Score: Bank vs. Nonbank



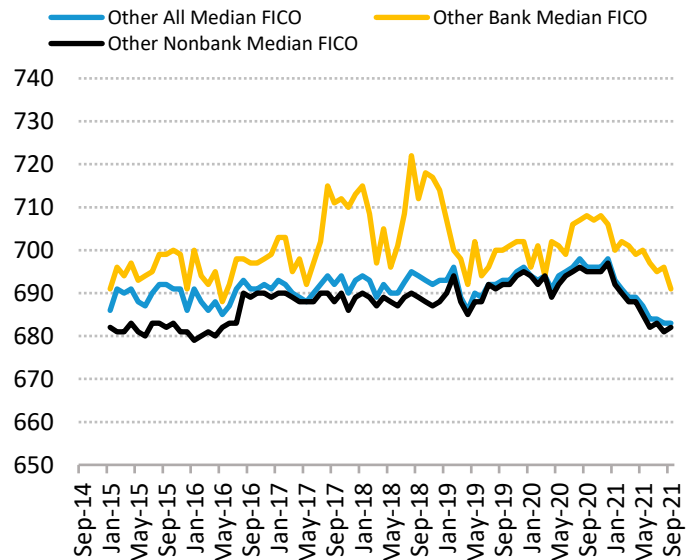
Ginnie Mae FHA FICO Score: Bank vs. Nonbank



Ginnie Mae VA FICO Score: Bank vs. Nonbank



Ginnie Mae Other FICO Score: Bank vs. Nonbank

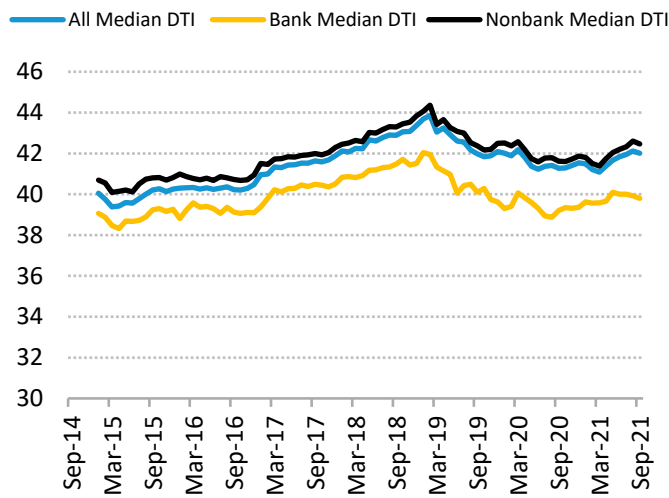


Sources: eMBS and Urban Institute; Beginning January 2021 data sourced from Ginnie Mae loan level disclosure files and IOPP. Notes: "Other" refers to loans guaranteed by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of September 2021.

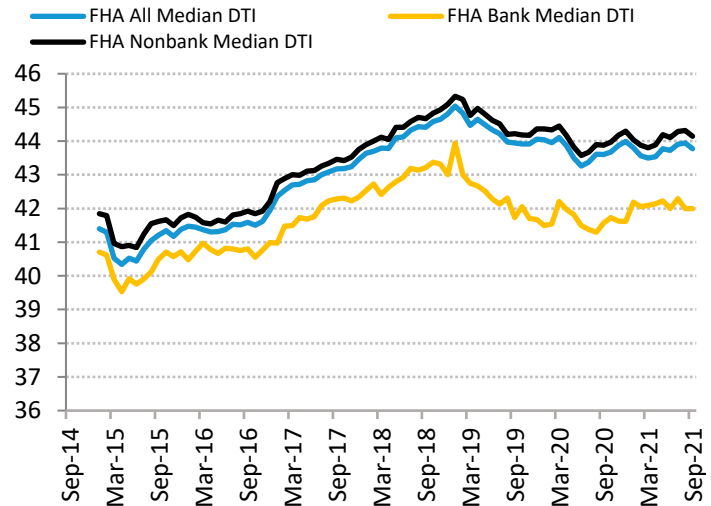
Agency Nonbank Originators

Median DTI for Ginnie Mae nonbank originations has been consistently higher than 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.

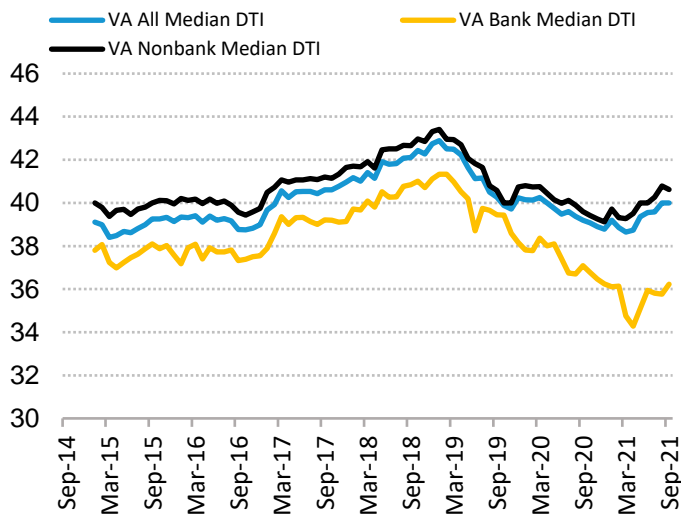
Ginnie Mae DTI: Bank vs. Nonbank



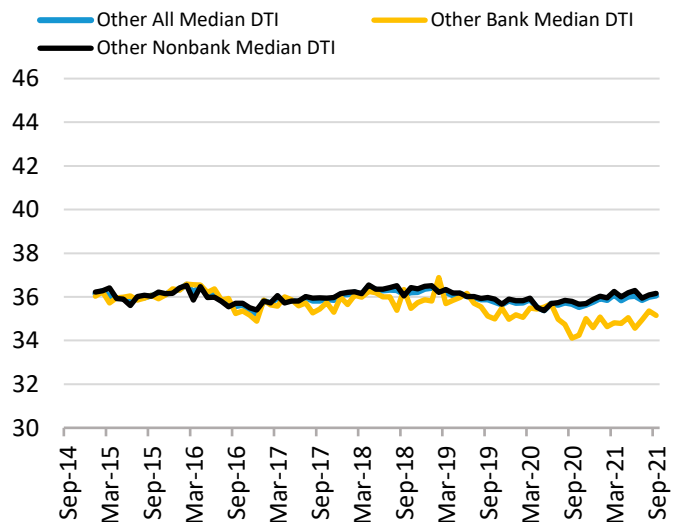
Ginnie Mae FHA DTI: Bank vs. Nonbank



Ginnie Mae VA DTI: Bank vs. Nonbank



Ginnie Mae Other DTI: Bank vs. Nonbank



Sources: eMBS and Urban Institute; Beginning January 2021 data sourced from Ginnie Mae loan level disclosure files and IOPP. Notes: “Other” refers to loans insured by HUD’s Office of Public and Indian Housing and the Department of Agriculture’s Rural Development. Data as of September 2021.

6.0 Holders of Ginnie Mae Mortgage Servicing Rights

This table shows the 30 largest owners of mortgage servicing rights (MSR) by UPB for Ginnie Mae MBS. The top 30 firms collectively own 81.9% of Ginnie Mae MSRs (see Cumulative Share). Twenty-two of these top 30 are non-depository institutions, the remaining 8 are depository institutions. As of October 2021, over half (51.0%) of the Ginnie Mae MSRs are owned by the top six firms.

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

Rank	MSR Holder	UPB (\$ millions)	Share	Cumulative Share
1	Freedom Home Mortgage	\$ 259,310	13.4%	13.4%
2	PennyMac	\$ 216,419	11.1%	24.5%
3	Lakeview	\$ 201,763	10.4%	34.9%
4	Wells Fargo	\$ 127,464	6.6%	41.5%
5	Rocket Mortgage	\$ 97,360	5.0%	46.5%
6	Nationstar	\$ 87,101	4.5%	51.0%
7	Newrez	\$ 58,985	3.0%	54.0%
8	Caliber Home Loans	\$ 48,323	2.5%	56.5%
9	US Bank	\$ 47,711	2.5%	58.9%
10	Carrington Mortgage	\$ 43,854	2.3%	61.2%
11	United Wholesale Mortgage	\$ 40,210	2.1%	63.3%
12	USAA Federal Savings Bank	\$ 33,906	1.7%	65.0%
13	Loan Depot	\$ 32,274	1.7%	66.7%
14	Mortgage Research Center	\$ 28,655	1.5%	68.2%
15	Navy Federal Credit Union	\$ 28,474	1.5%	69.6%
16	Planet Home Lending	\$ 27,333	1.4%	71.0%
17	Truist Bank	\$ 22,709	1.2%	72.2%
18	The Money Source	\$ 21,435	1.1%	73.3%
19	Guild Mortgage	\$ 20,224	1.0%	74.3%
20	Home Point Financial Corporation	\$ 17,464	0.9%	75.2%
21	Crosscountry Mortgage	\$ 14,828	0.8%	76.0%
22	New American Funding	\$ 14,395	0.7%	76.7%
23	Midfirst Bank	\$ 13,852	0.7%	77.5%
24	Village Capital	\$ 13,797	0.7%	78.2%
25	Citizens Bank	\$ 12,950	0.7%	78.8%
26	Idaho Housing and Finance Association	\$ 12,511	0.6%	79.5%
27	JP Morgan Chase	\$ 11,935	0.6%	80.1%
28	CMG Mortgage, INC	\$ 11,915	0.6%	80.7%
29	PHH Mortgage Corporation	\$ 11,787	0.6%	81.3%
30	Amerihome Mortgage Company	\$ 11,527	0.6%	81.9%

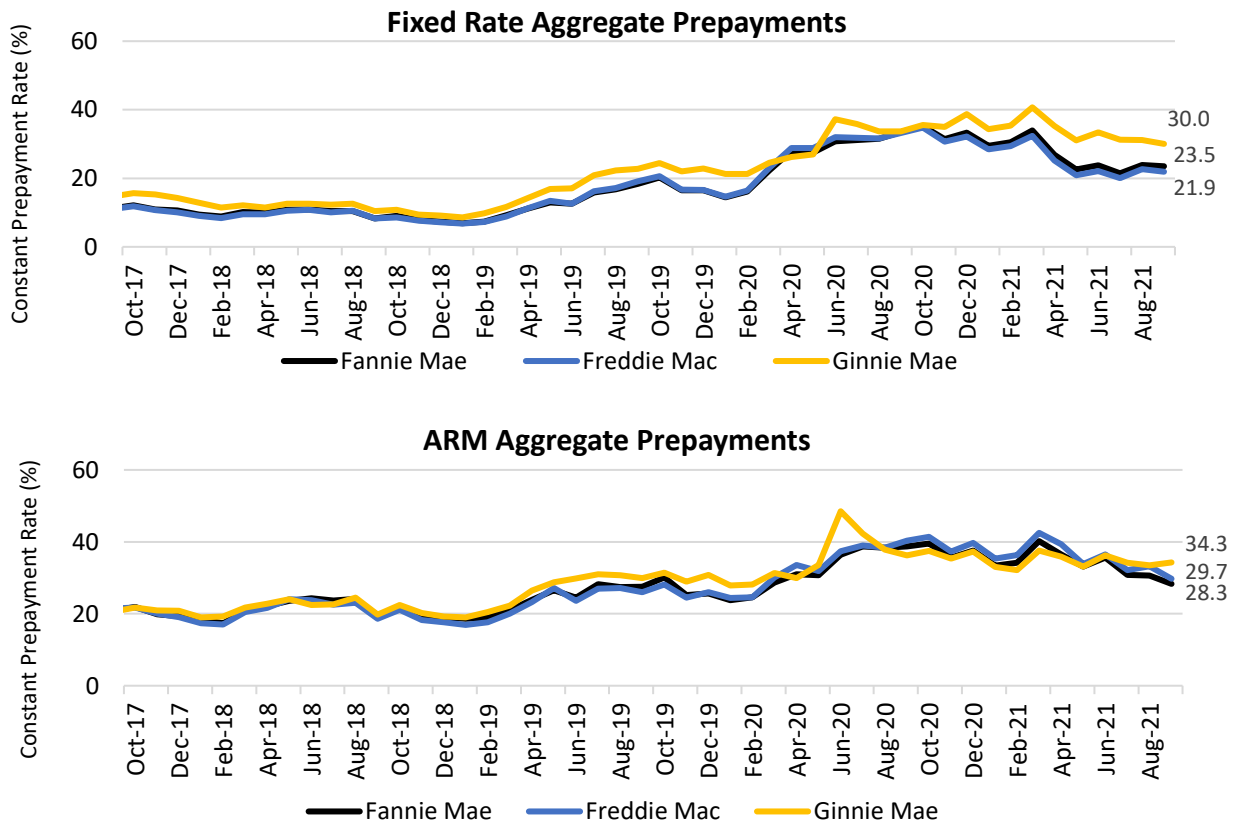
Source: Deloitte and Ginnie Mae. Data as of October 2021.

7.0 Prepayments

In September 2021, Ginnie Mae fixed rate prepayment speeds decreased by 4%, to 30.0 CPR. The slowdown was mainly driven by voluntary prepayment decreases. On the other hand, Ginnie Mae II 30-year posted a small increase, up by 1% in its Conditional Buyout Rate (CBR), while Ginnie Mae I posted a 12% increase in its CBR.⁵ Ginnie Mae prepayment outlook is expected to get more clarity by late Q1 2022 when indicators of seriously delinquent portfolio performance become available. Mortgage industry is calling for a cut in FHA mortgage insurance premium after the favorable FHA’s annual actuarial audit of the Mutual Mortgage Insurance Fund came out on November 15, 2021.⁶

After a jump in August 2021, Fannie Mae and Freddie Mac fixed rate prepayment speeds went down by 2% and 4%, respectively. ARM MBS prepayments for both Fannie Mae and Freddie Mac posted a significant decline, down by 8% and 11%, respectively, while the rate went up by 2% in the Ginnie Mae space.

7.1 Aggregate Prepayments



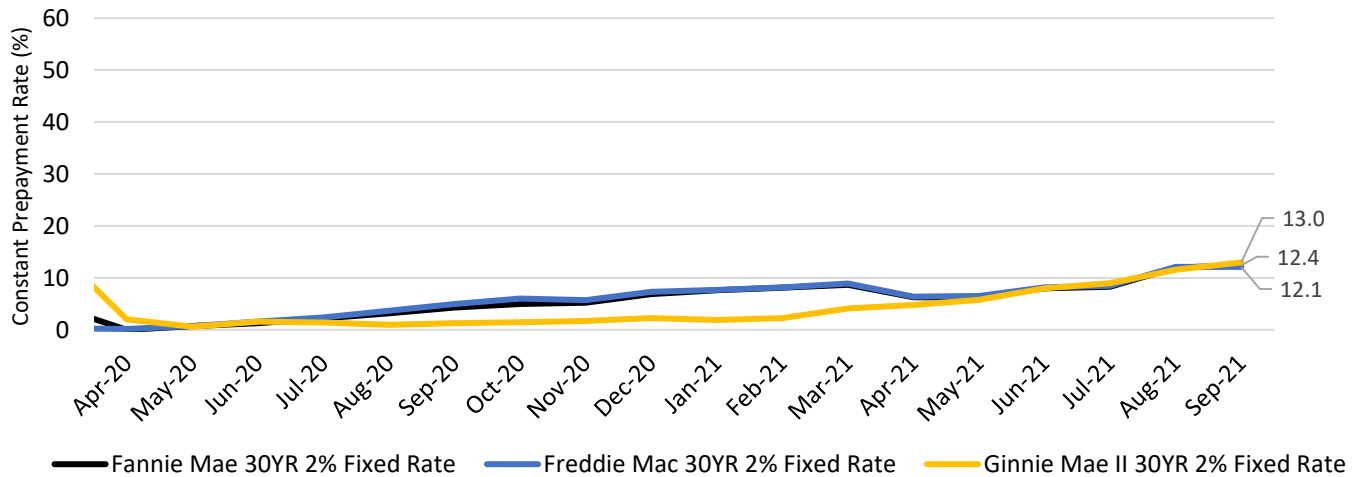
Source: eMBS; Note: Data as of September 2021.

⁵ Ahlgren R and Ichaso M (2021, October 7). US Structured Products Trading Desk Strategy | RMBS Strategy | Drop in VPRs Pull Speeds Lower While CBRs Come in Flat, pp. 1.

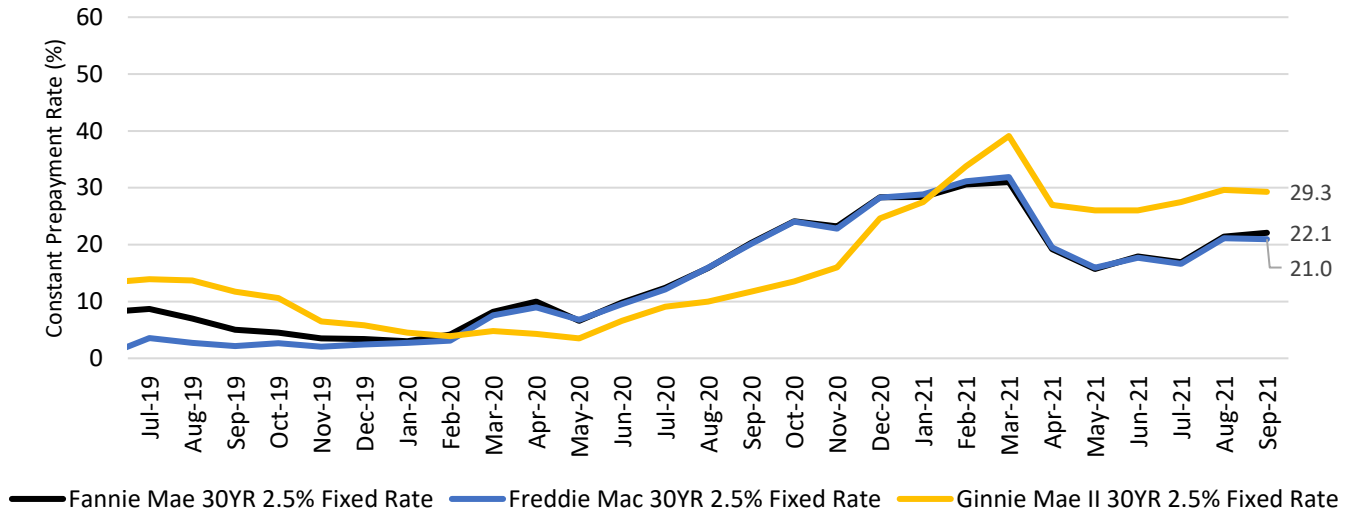
⁶ <https://www.insidemortgagefinance.com/articles/223010-time-to-cut-the-mip-fhas-insurance-fund-ends-fy21-with-a-capital-ratio-north-of->

30-year fixed rate MBS with 2-2.5% coupons accounted for 44% of Agency remaining principal balance. Production of these Agency MBS ramped up in 2019. After the spike in August 2021, Fannie Mae speed increased by 3% in those coupon cohorts while Freddie Mac speeds remained relatively flat in September 2021. Ginnie Mae prepayment speeds jumped by 12% in the 2% coupon cohort but declined by 1% in the 2.5% coupon cohort.

All Agency 2% Coupon CPR



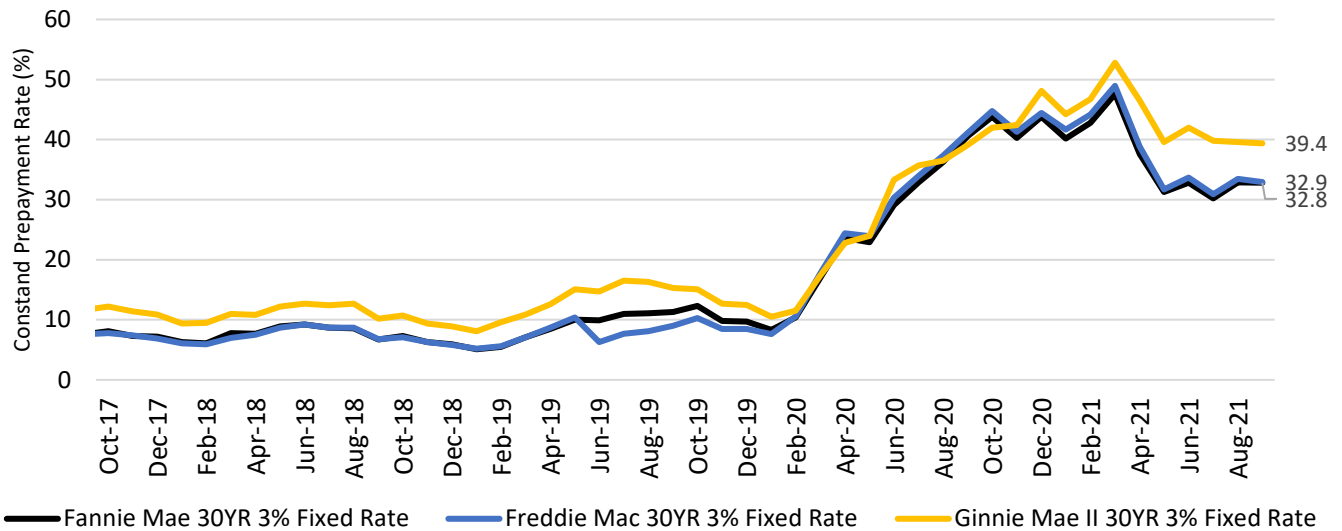
All Agency 2.5% Coupon CPR



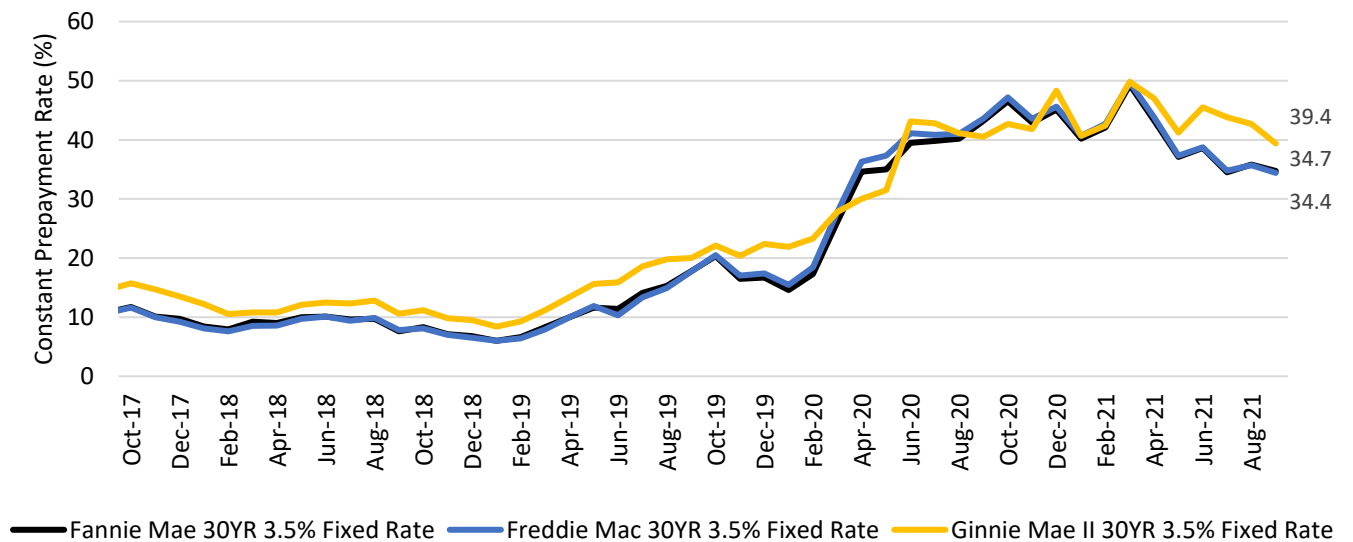
Source: eMBS. Note: Data as of September 2021. Freddie prepayment data is aggregated from 55-day UMBS and 45-day Gold PC, weighted average by September 2021 remaining principal balance.

30-year fixed rate MBS with 3-4% coupons accounted for 30% of Agency remaining principal balance. Of the 3-4% coupon cohorts, Ginnie Mae buyout rates were substantially higher than conventional rates, while its voluntary prepayment rates were close to conventional mortgage loans. In September 2021, prepayment differential was the most evident in the 4% coupon cohort where the difference widened by 6.8 CPR in August. The prepayment gap has narrowed since its recent peak in June-July 2021 period.

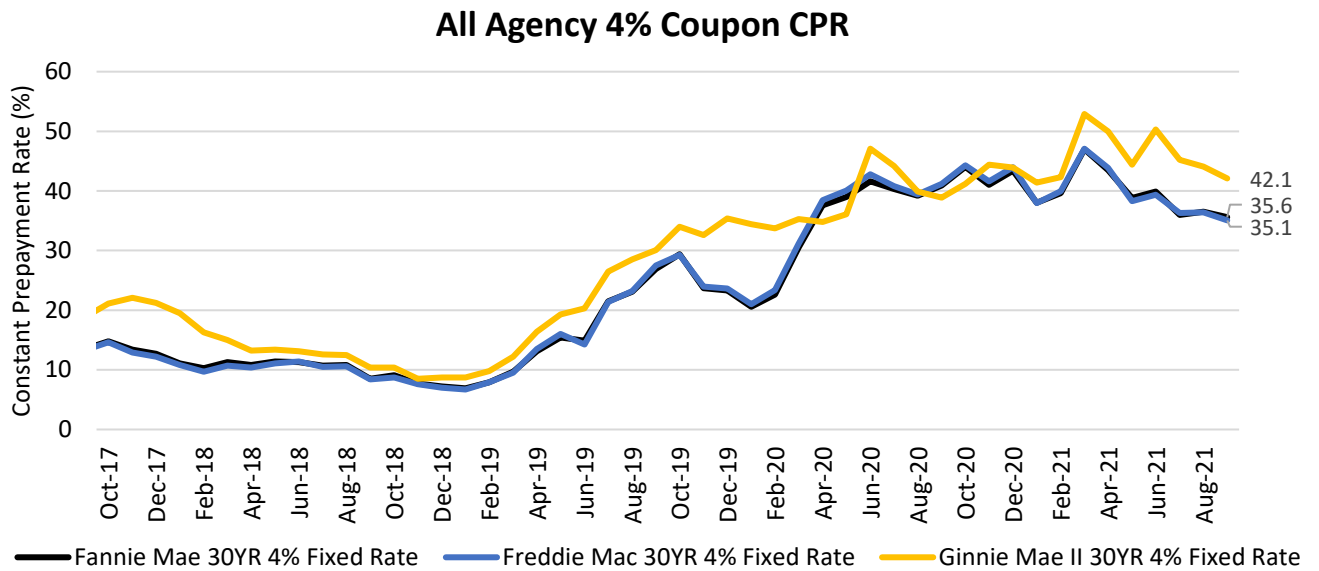
All Agency 3% Coupon CPR



All Agency 3.5% Coupon CPR



Source: eMBS. Note: Data as of September 2021. Freddie prepayment data is aggregated from 55-day UMBS and 45-day Gold PC, weighted average by September 2021 remaining principal balance.



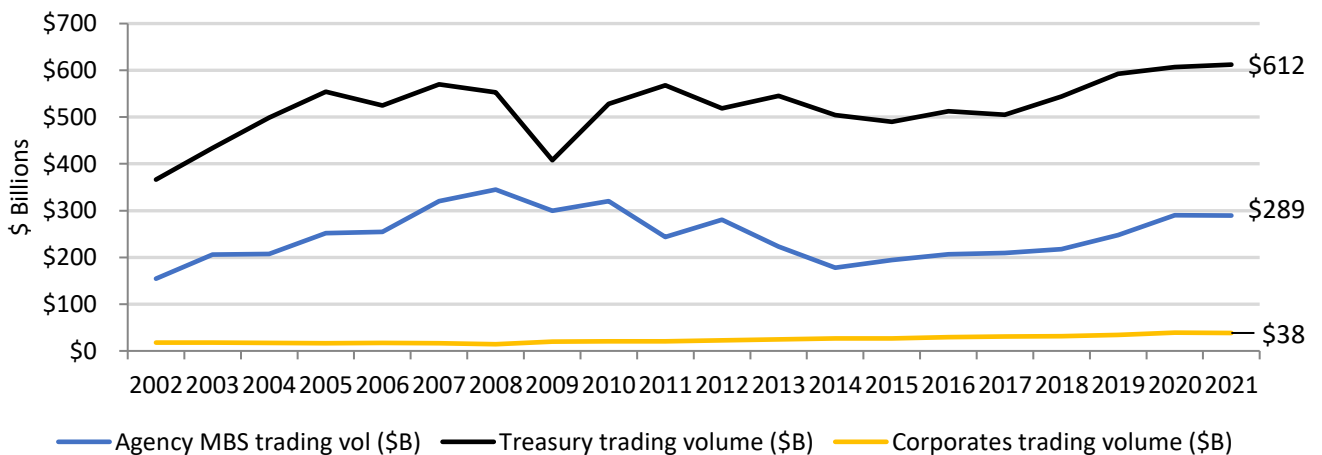
Source: eMBS. Note: Data as of September 2021. Freddie prepayment data is aggregated from 55-day UMBS and 45-day Gold PC, weighted average by September 2021 remaining principal balance.

8.0 Fixed Income Market Conditions

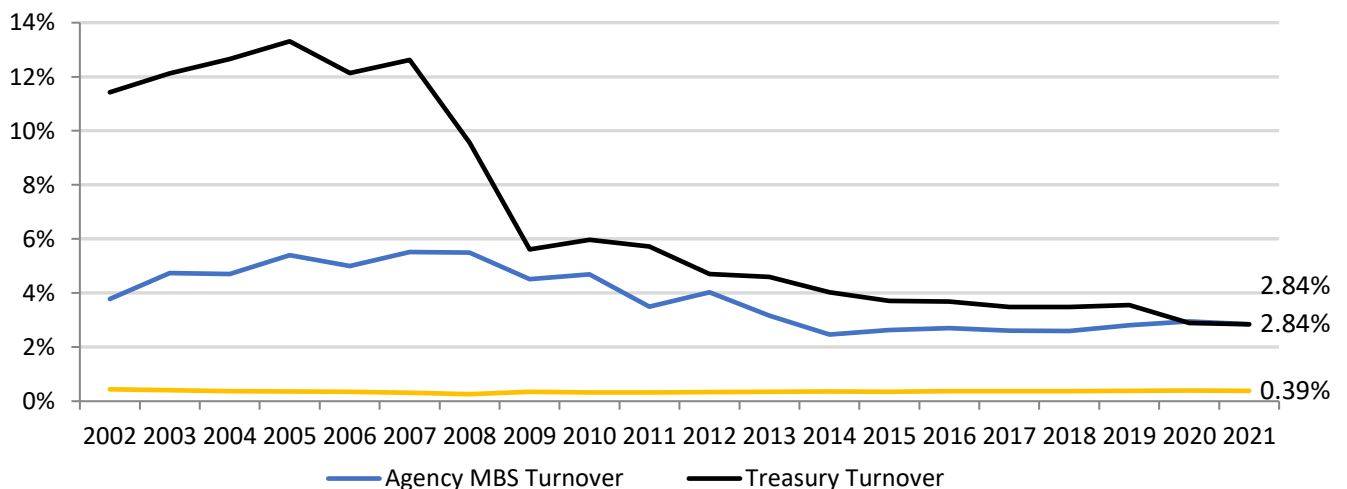
Agency MBS average daily trading volume was \$289 billion from January 2021 to September 2021. September 2021 was the lowest month of Agency MBS trading volume since June 2020, continuing a trend observed in August of lower trading volume. Agency MBS turnover in 2021 is 11 basis points lower than its 2020 average, at 2.84%. 2021 YTD Agency MBS turnover and US Treasury turnover are both 2.84%. Corporates turnover remains minimal relative to either Agency MBS or Treasury turnover.

8.1 Average Daily Trading Volume and Turnover by Sector

Average Daily Trading Volume by Sector



Average Daily Turnover by Sector

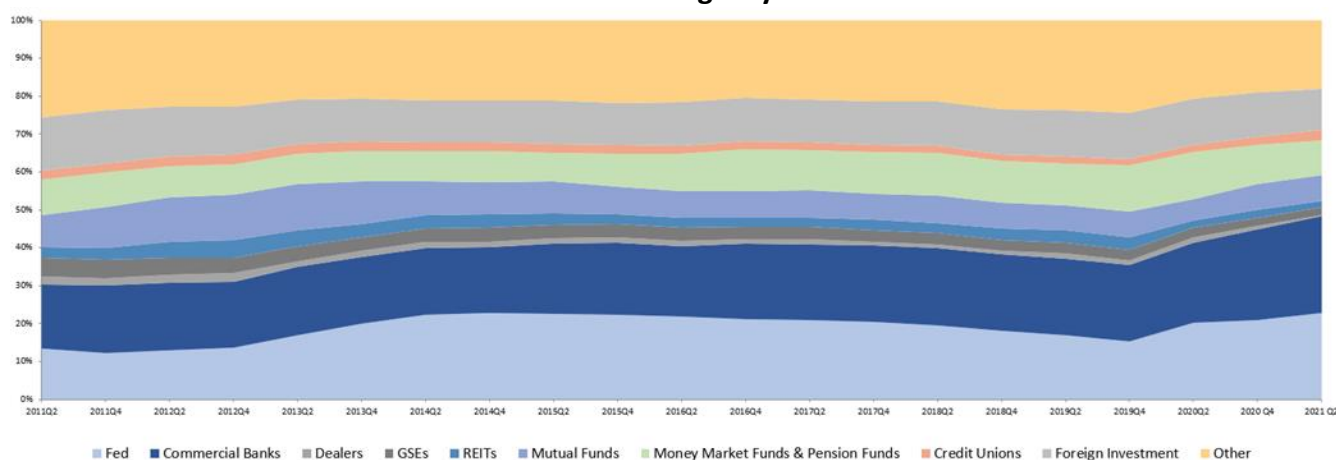


Source: SIFMA. Note: Data as of September 2021.

9.0 MBS Ownership

As of Q2 2021, the largest holders of Agency debt (Agency MBS + Agency notes and bonds) included commercial banks (26%), the Federal Reserve (23%), and foreign investors (11%). The Federal Reserve's share increased to 23% in the second quarter of 2021, the highest it's been since 2015. Despite large Federal Reserve purchases, commercial banks continue to be the largest holders of Agency MBS. Out of their \$2.9 trillion in holdings as of the end of August 2021, \$2.1 trillion was held by the top 25 domestic banks.

Who Owns Total Agency Debt?



Source: Federal Reserve Flow of Funds. Note: The "other" category includes primarily life insurance companies, state and local governments, households and nonprofits. Data as of Q2 2021.

9.1 Commercial Bank Holdings of Agency MBS

	Commercial Bank Holdings (\$Billions)								Week Ending			
	Sep-20	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	29-Sep	6-Oct	13-Oct	20-Oct
Largest 25 Domestic Banks	1,767.8	2,026.4	2,049.7	2,080.6	2,091.9	2,112.3	2,130.5	2,134.2	2,142.7	2,149.3	2,143.3	2,145.1
Small Domestic Banks	526.7	612.9	629.3	650.0	661.2	672.3	684.8	701.0	704.2	713.7	717.8	724.6
Foreign Related Banks	41.5	51.6	50.8	48.8	46.9	47.3	48.4	48.3	47.5	50.4	48.7	45.8
Total, Seasonally Adjusted	2,336.0	2,690.9	2,729.8	2,779.4	2,800.0	2,831.9	2,863.7	2,883.5	2,894.4	2,913.4	2,909.8	2,915.5

Source: Federal Reserve Bank. Note: Small domestic banks include all domestically chartered commercial banks not included in the top 20. Data as of October 2021.

9.2 Bank and Thrift Residential MBS Holdings

In Q2 2021, MBS holdings at banks and thrifts increased for the eleventh consecutive quarter. The increase was driven by both GSE pass-throughs and Private CMO holdings, with the increase in GSE pass-throughs making the larger contribution. Total bank and thrift MBS holdings increased by 3% from Q1 2021. Out of the \$2.8 trillion in MBS holdings at banks and thrifts as of Q2 2021, \$2.2 trillion were Agency pass-throughs. \$1.8 trillion were GSE pass-throughs and \$353 billion were Ginnie Mae pass-throughs. Another \$555 billion were Agency CMOs, while non-Agency holdings totaled \$48 billion.

Bank and Thrift Residential MBS Holdings

Year	All Banks & Thrifts (\$ in billions)						All MBS (\$ in billions)	
	Total	GSE PT	GNMA PT	Private MBS	Agency CMO	Private CMO	Banks	Thrifts
2000	683.90	234.01	84.26	21.57	198.04	71.43	470.47	212.65
2001	810.50	270.59	109.53	37.62	236.91	76.18	606.91	203.37
2002	912.36	376.11	101.46	20.08	244.98	89.88	702.44	209.66
2003	982.08	461.72	75.11	19.40	236.81	106.86	775.66	206.45
2004	1,113.89	572.40	49.33	20.55	208.18	160.55	879.75	234.31
2005	1,033.77	566.81	35.92	29.09	190.70	211.25	897.06	242.69
2006	1,124.46	628.52	31.13	42.32	179.21	243.28	983.49	223.42
2007	1,149.10	559.75	31.58	26.26	174.27	357.24	971.42	264.59
2008	1,218.77	638.78	100.36	12.93	207.66	259.04	1,088.00	211.73
2009	1,275.52	629.19	155.00	7.53	271.17	212.64	1,161.67	184.07
2010	1,433.38	600.80	163.13	7.34	397.30	181.61	1,233.28	200.09
2011	1,566.88	627.37	214.81	3.28	478.82	167.70	1,359.24	207.64
2012	1,578.86	707.87	242.54	17.16	469.27	138.67	1,430.63	148.22
2013	1,506.60	705.97	231.93	26.11	432.60	114.15	1,363.65	142.94
2014	1,539.32	733.71	230.45	20.33	449.90	104.94	1,409.84	129.48
2015	1,643.56	823.10	292.30	11.14	445.39	71.63	1,512.67	130.89
2016	1,736.93	930.67	323.46	7.40	419.80	55.60	1,576.07	160.86
2017	1,844.15	1,010.83	367.70	4.63	413.97	47.01	1,672.93	171.22
1Q18	1,809.98	991.57	360.71	3.92	412.41	41.37	1,635.52	174.46
2Q18	1,806.58	976.92	368.88	7.45	414.41	38.92	1,631.65	174.93
3Q18	1,794.39	966.52	373.21	2.42	416.20	36.04	1,618.29	176.10
4Q18	1,814.97	980.56	380.43	2.69	416.59	34.69	1,634.99	179.98
1Q19	1,844.99	1,001.61	383.49	3.06	422.18	34.65	1,673.40	171.59
2Q19	1,907.13	1,037.93	407.97	2.90	421.56	36.76	1,727.65	179.47
3Q19	1,975.78	1,079.82	427.10	4.74	428.69	35.44	1,786.74	189.04
4Q19	1,985.38	1,089.41	426.85	4.62	428.99	35.52	1,796.29	189.09
1Q20	2,107.66	1,173.36	448.34	4.65	443.73	37.57	1,907.02	200.64
2Q20	2,195.19	1,228.87	441.06	5.00	478.11	42.14	1,946.36	248.83
3Q20	2,310.42	1,349.48	415.24	4.43	499.50	41.78	2,040.61	269.81
4Q20	2,520.90	1,537.54	390.66	3.94	548.65	40.10	2,210.22	310.68
1Q21	2,690.92	1,713.78	374.63	4.88	555.35	42.28	2,350.94	339.98
2Q21	2,781.91	1,825.80	352.77	4.77	555.45	43.12	2,431.76	350.15
Change:								
1Q21-2Q21	3%	7%	-6%	-2%	0%	2%	3%	3%
2Q20-2Q21	27%	49%	-20%	-5%	16%	2%	25%	41%

Source: Inside Mortgage Finance. Notes: Data as of Q2 2021.

Bank and Thrift Residential MBS Holdings

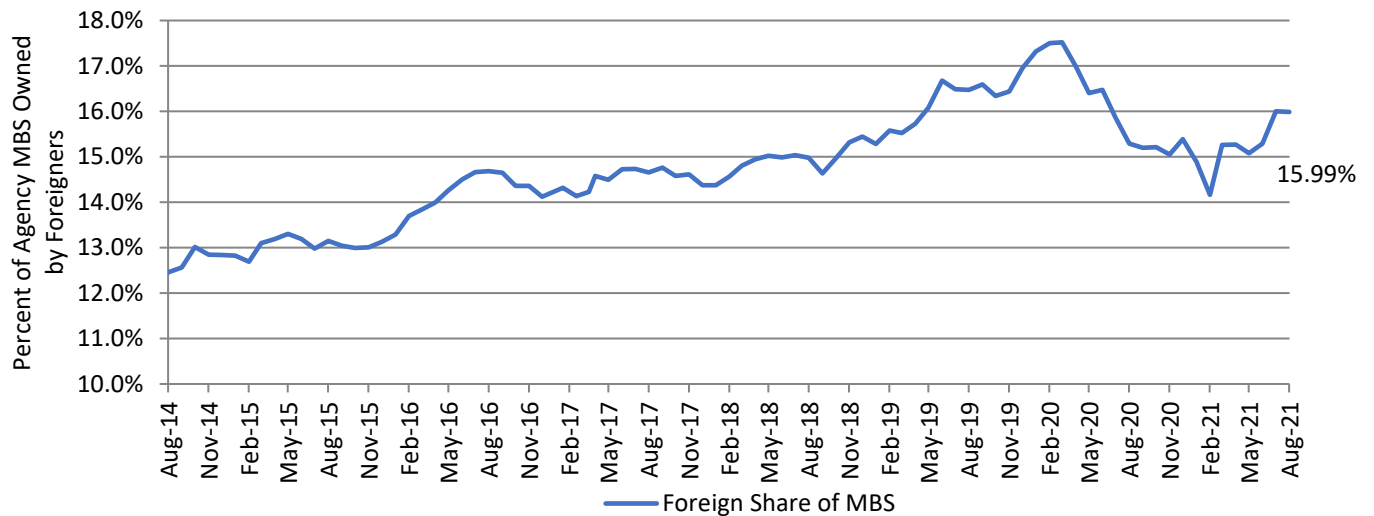
Top Bank & Thrift Residential MBS Investors (\$ in millions)							
	Institution	Total	GSE PT	GNMA PT	Agency CMO	Non-Agency	Share
1	Bank of America Corporation	611,942.0	510,382.0	89,844.0	11,484.0	232.0	22%
2	Wells Fargo & Company	277,627.0	206,837.0	65,204.0	5,170.0	416.0	10%
3	Charles Schwab Bank	180,800.0	91,697.0	10,560.0	78,543.0	-	7%
4	JPMorgan Chase & Co.	170,868.0	97,339.0	59,649.0	135.0	13,745.0	6%
5	Truist Bank	124,588.0	53,308.0	11,609.0	59,164.0	507.0	5%
6	U.S. Bancorp	120,203.0	84,365.2	21,545.5	14,291.9	0.4	4%
7	Citigroup Inc.	96,396.0	89,447.0	1,784.0	4,004.0	1,161.0	4%
8	Capital One Financial Corporation	77,750.4	45,284.1	9,903.8	22,018.6	543.9	3%
9	PNC Bank, National Corporation	57,478.7	48,260.8	6,794.5	1,100.7	1,322.7	2%
10	Bank of New York Mellon Corp	56,473.0	42,325.0	2,415.0	9,203.0	2,530.0	2%
11	Silicon Valley Bank	54,124.3	45,380.0	2,797.2	5,947.1	-	2%
12	USAA Federal Savings Bank	45,810.4	39,747.6	1,985.5	4,077.4	-	2%
13	State Street Bank and Trust Company	41,711.7	17,771.0	4,976.0	16,559.7	2,405.0	2%
14	E*Trade Bank	34,917.2	27,426.9	5,270.2	2,220.1	-	1%
15	Morgan Stanley	32,548.0	21,163.0	3,910.0	7,475.0	-	1%
16	The Huntington National Bank	24,589.1	16,904.6	2,600.0	4,942.2	142.2	1%
17	Ally Bank	24,144.0	18,093.0	868.0	2,297.0	2,886.0	1%
18	HSBC Bank USA, National Association	23,563.2	7,776.0	7,591.4	8,194.3	1.6	1%
19	TD Bank USA/TD Bank NA	23,494.6	1,379.5	122.8	21,895.8	96.4	1%
20	BMO Harris Bank National Association	23,258.0	4,410.4	391.7	18,450.3	5.6	1%
Total Top 20		2,102,286.60	1,469,297.1	309,821.6	297,173.1	25,994.8	76%

Source: Inside Mortgage Finance. Notes: Data as of Q2 2021.

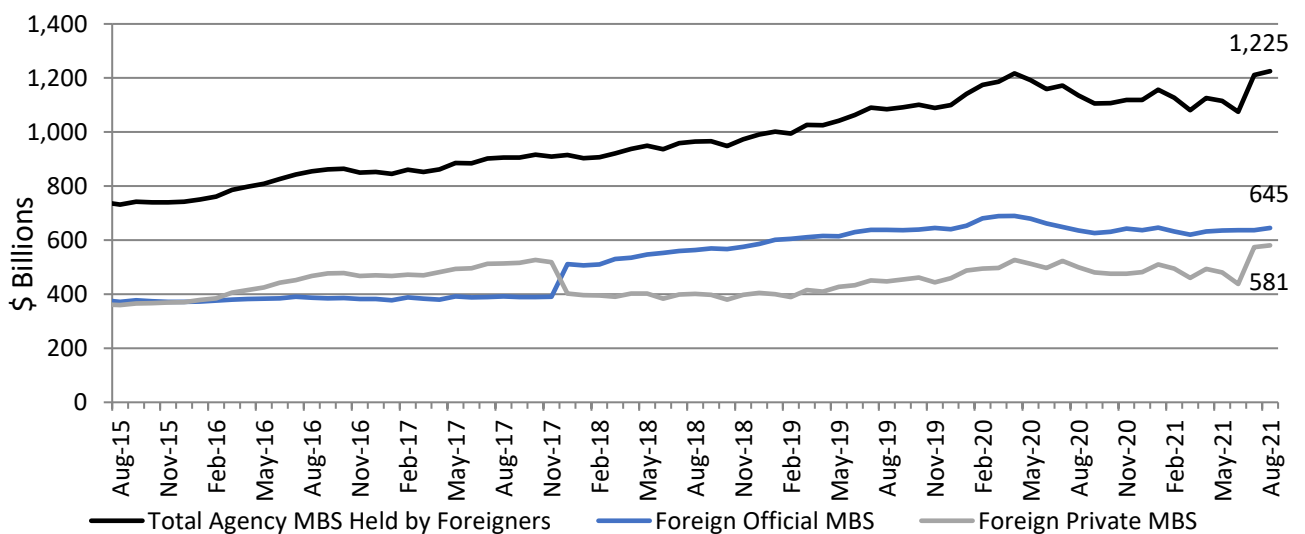
9.3 Foreign Ownership of MBS

For the month of August 2021, foreign ownership of MBS represents \$1.23 trillion in Agency MBS, which includes \$581 billion held by foreign private institutions and \$645 billion held by foreign official institutions. This is the highest volume of foreign holdings of Agency MBS since April 2020.

Foreign Share of Agency MBS Market



Monthly Foreign MBS Holdings



Sources: Treasury International Capital (TIC). Notes: In December 2017, there was a data correction that moved about \$120 billion from privately held U.S. Agency bonds to officially held U.S. Agency bonds; this resulted in a series break at December 2017 in the split between the portion held by foreign private and the portion held by foreign official. Data as of August 2021.

9.4 Foreign Ownership of Agency Debt and Agency MBS

The largest non-US holders of Agency MBS are in Japan, Taiwan, and China. These three own 70% of all US MBS held by investors outside of the United States. Between June 2020 and June 2021, these top three have decreased their Agency MBS holdings by over \$4.6 billion. Japan has decreased their holdings by \$1.4 billion, Taiwan has decreased their holdings by \$208 million and China has decreased their holdings by \$3.0 billion.

All Agency Debt

Country	Level of Holdings (\$ Millions)				Change in Holdings (\$ Millions)		
	9/1/2020	12/1/2020	3/1/2021	6/1/2021	Q4 2020	Q1 2021	Q2 2021
Japan	305,064	308,033	319,771	311,375	2,969	11,738	-8,396
Taiwan	264,270	262,453	253,036	250,081	-1,817	-9,417	-2,955
China	206,861	212,317	200,972	217,842	5,456	-11,345	16,870
Luxembourg	35,626	36,223	34,371	35,497	597	-1,852	1,126
Ireland	28,286	31,064	26,965	21,453	2,778	-4,099	-5,512
South Korea	40,303	42,628	43,032	43,201	2,325	404	169
Cayman Islands	34,495	34,264	37,111	36,027	-231	2,847	-1,084
Bermuda	35,751	27,988	26,443	23,806	-7,763	-1,545	-2,637
Netherlands	10,964	12,344	13,049	12,544	1,380	705	-505
Malaysia	19,808	19,147	19,047	19,089	-661	-100	42
Other	190,175	197,462	173,905	166,009	7,287	-23,557	-7,896
Total	1,171,603	1,183,923	1,147,702	1,136,924	12,320	-36,221	-10,778

Agency MBS

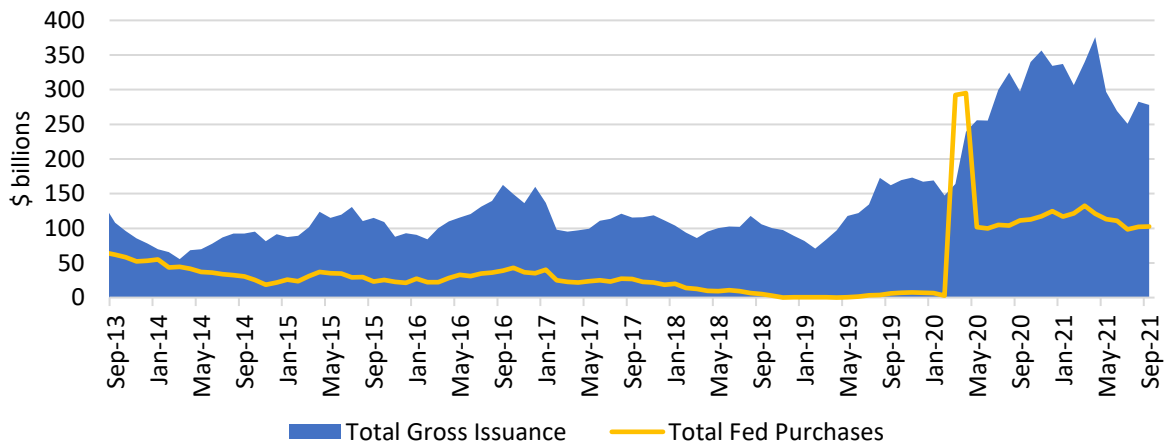
Country	Level of Holdings (\$ Millions)		
	6/1/2020	6/1/2021	YoY Change in Holdings (\$ Millions)
Japan	306,963	305,580	-1,383
Taiwan	267,700	267,492	-208
China	235,078	232,076	-3,002
Luxembourg	40,207	34,255	-5,952
Ireland	21,091	25,336	4,245
South Korea	28,743	34,313	5,570
Cayman Islands	28,431	29,682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

Sources: Treasury International Capital (TIC). Notes: Level of Agency debt Holdings by month data as of Q2 2021. Agency MBS as of June 2021. Revised to include top 10 holders of Agency debt listed as of June 2018.

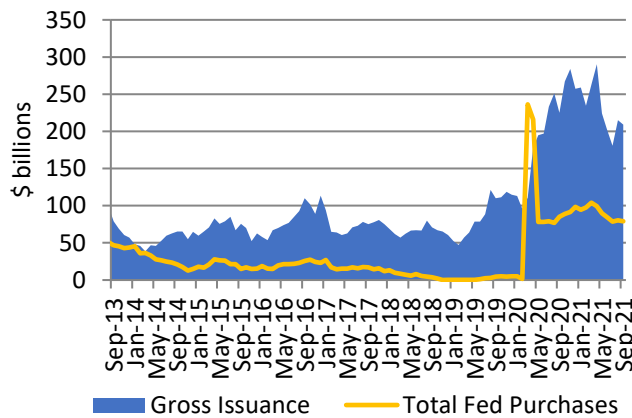
9.5 Federal Reserve Absorption of Agency MBS

The Fed purchased \$102.3 billion in September 2021 (36.8% of monthly gross issuance) which was a slight increase from the \$102.1 billion purchased in August 2021 (36.1% of monthly gross issuance). Fed purchases of Ginnie Mae MBS increased MoM, with \$23.7 billion (33.6% of gross Ginnie Mae Issuance) compared to \$21.7 billion in Fed purchases (32.1% of gross Ginnie Mae issuance) in August 2021. In their most recent press release on November 3, 2021, the FOMC outlined a plan to reduce the monthly pace of its net asset purchases by \$10 billion for Treasury securities and \$5 billion for agency MBS. The FOMC’s plan involves scheduled increases in holdings of at least \$35 billion in Agency MBS in November, then at least \$30 billion in December, with similar reductions in net asset purchases continuing into 2022.

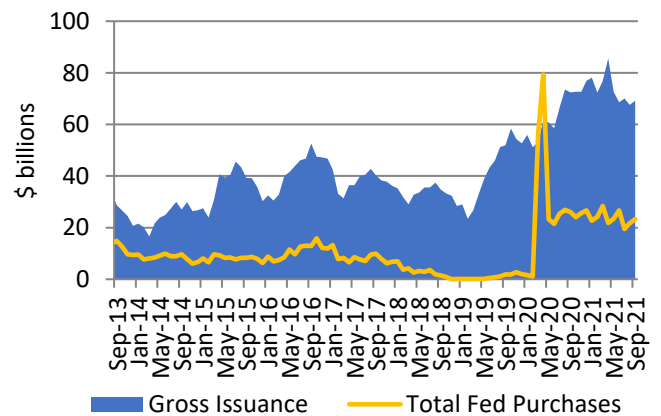
Total Fed Absorption



Fed Absorption of GSE MBS



Fed Absorption of Ginnie Mae MBS



Sources: eMBS, Federal Reserve Bank of New York and <https://fred.stlouisfed.org/series/WSHOMCB>. Notes: Data as of September 2021.

Disclosure:

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