Global Markets Analysis Report

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Ginnie Mae
Our Guaranty Matters

PREPARED FOR GINNIE MAE
BY STATE STREET GLOBAL ADVISORS
URBAN INSTITUTE, HOUSING FINANCE POLICY CENTER

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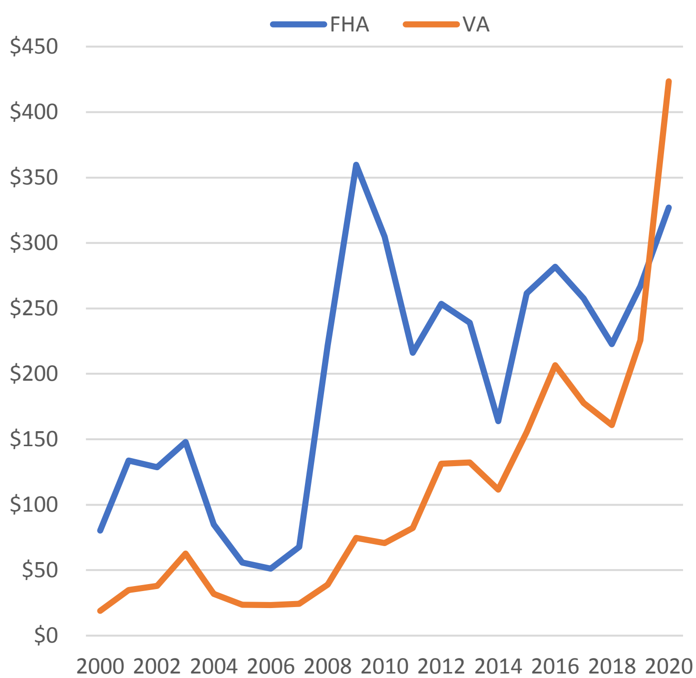
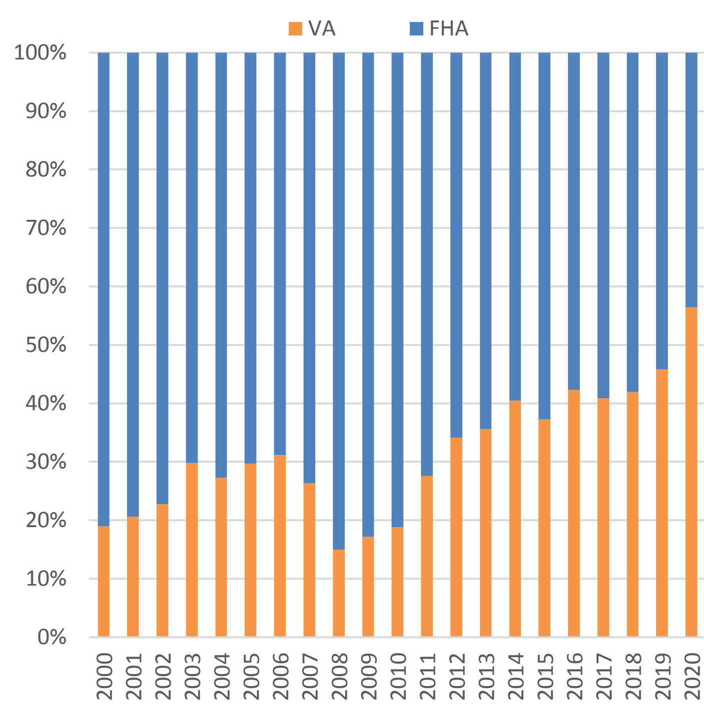
HIGHLIGHTS

2020 was a Historic Year for Ginnie Mae's VA-backed Issuances

Record low mortgage rates since April 2020 have strongly boosted refinance volumes across the board. As a result, 2020 became a record year for mortgage originations, with over $4 trillion in total volume across the market (see page 22). Although lending volume spiked across all channels, VA lending registered the largest year-over-year increase in the government lending market. Growth was so strong that not only did VA-backed issuance volume hit a record high, it also exceeded FHA-insured issuances for the first time ever. As figure 1 shows, VA gross issuance totaled $424 billion in 2020 compared to $226 billion in 2019. FHA issuances totaled $327 billion in 2020 (the second highest level ever), in comparison to $267 billion the prior year. Also noteworthy is the split between the FHA and VA shares—VA's share of Ginnie Mae issuances has been trending up since 2009, when it stood at 16.5 percent. In 2020 it reached 55 percent, thus constituting the majority of Ginnie Mae issuances.

Figure 1: FHA and VA Annual Issuances





Source: eMBS and Urban Institute

Digging deeper into these numbers by loan purpose, as table 1 shows, non-cashout refinances registered the largest increase in 2020 compared to 2019, with FHA's non-cashout issuances more than doubling and VA's more than tripling. Purchase originations increased too, reflecting improved payment affordability amidst lower rates. Lastly, cash-out refinances, which represent a much smaller portion of issuances in any given year, fell in 2020 because of tightened eligibility criteria for FHA cash-outs as well as pooling restrictions that Ginnie Mae put in place in 2019 to combat the churning problem (See APM 19-05). In particular, the decline in VA's cash-out issuances, even as house prices continue to appreciate, strongly suggests that Ginnie Mae 2019 actions have had an impact.

HIGHLIGHTS

Table 1: FHA and VA issuances Volume by Loan Purpose ($ billions)

	FHA			VA		
	Purchase	Refinance (non-cashout)	Cash-out refinance	Purchase	Refinance (non-cashout)	Cash-out refinance
2013	$103.2	$67.6	$6.6	$50.6	$45.8	$12.3
2014	$105.1	$21.9	$6.8	$64.8	$27.8	$14.5
2015	$149.5	$68.4	$14.4	$77.1	$49.5	$23.4
2016	$173.8	$60.5	$21.9	$90.6	$77.1	$32.9
2017	$172.8	$31.1	$29.7	$98.3	$33.2	$38.3
2018	$157.1	$13.8	$30.0	$101.0	$12.9	$35.6
2019	$167.8	$42.8	$35.8	$111.3	$65.9	$40.6
2020	$193.2	$96.7	$20.5	$136.4	$232.5	$37.0

Source: eMBS and Urban Institute

Lastly, it is worth highlighting that issuance volumes tell only one side of the story. Despite a hefty increase in VA's 2020 issuance volume, the FHA nevertheless remains the predominant provider of government mortgages by loan count. Out of a total 1.3 million government loans originated in 2020, FHA accounted for over 842,000 loans, almost two-thirds. FHA's 2020 purchase issuance volume of $193.2 billion enabled over 840,000 families to purchase their homes, whereas VA's purchase volume of $136.4 billion did the same for 438,000 families. Additionally, a much higher share of FHA loans—about 78 percent by count—went to first time homebuyers, in comparison to 53 percent for VA. These trends are consistent with FHA's mission to enable homeownership for first-time homebuyers and households of limited wealth and with VA's mission to provide a homeownership benefit for our veterans.

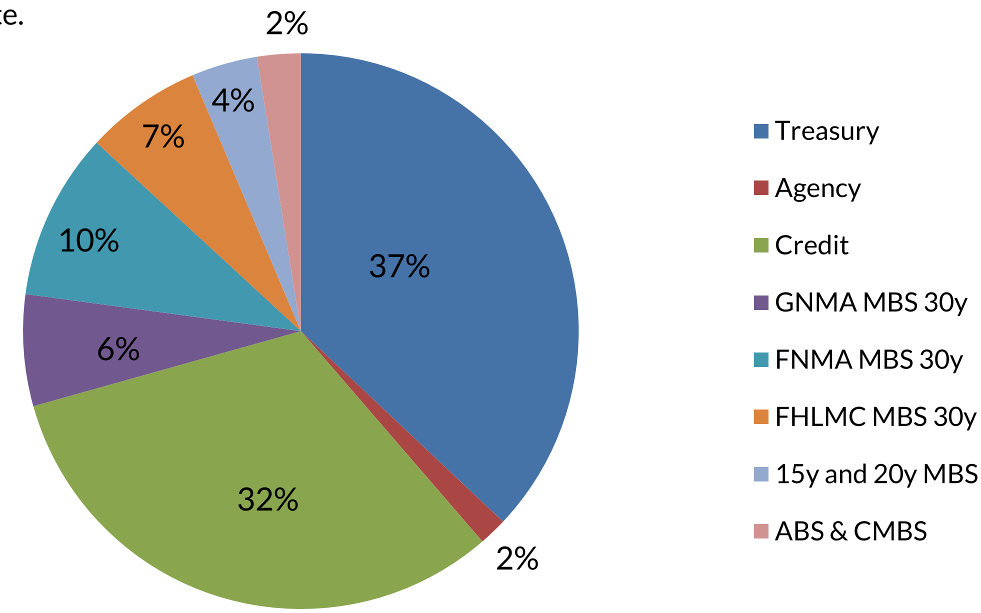
***Highlights this month*:**

- Mortgage originations in 2020 totaled $4.04 trillion, a new record, which exceeded the 2003 record volume of $3.5 trillion by $320 billion (page 22).
- 2020 was the first calendar year in which the volume of VA-backed issuances ($424 billion) exceeded the volume of FHA-insured issuances ($327 billion.) This is a new milestone for the VA program (page 24).
- Serious delinquency rates for single-family GSE loans fell slightly in Q4 2020 while FHA and VA serious delinquency rates continued to rise but at a slower rate (page 13).

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

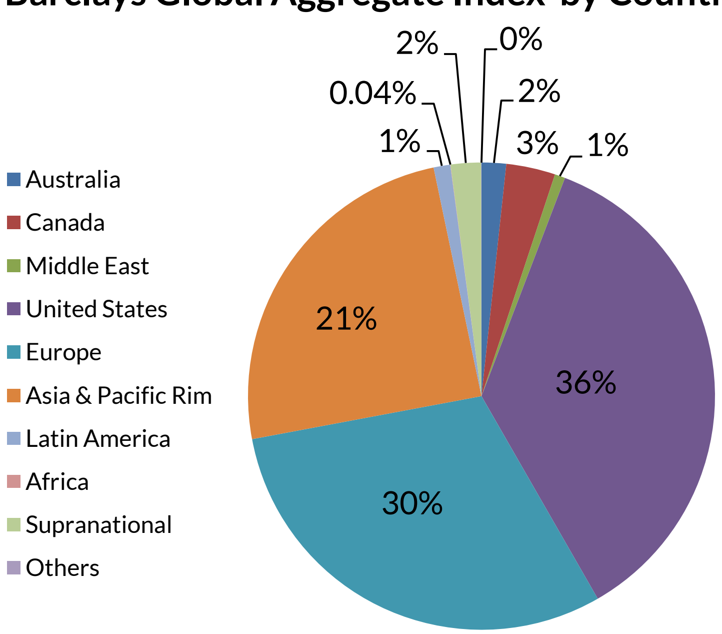
US MBS (Ginnie Mae, Fannie Mae, and Freddie Mac) comprise 27 percent of the Barclays US Aggregate Index—less than either the US Treasury share (37 percent) or the US Credit share (32 percent). Fannie Mae 30-year MBS accounts for 10 percent of the overall index, the largest MBS component, while Freddie Mac 30-year MBS and Ginnie Mae 30-year MBS comprise 7 and 6 percent of the market, respectively. Mortgages with terms of 15 and 20 years comprise the remaining balance (4 percent) of the Barclays US Aggregate Index. US securities are the single largest contributor to the Barclays Global Aggregate, accounting for 36 percent of the global total. US MBS comprises 10 percent of the global aggregate.

Barclays US Aggregate Index



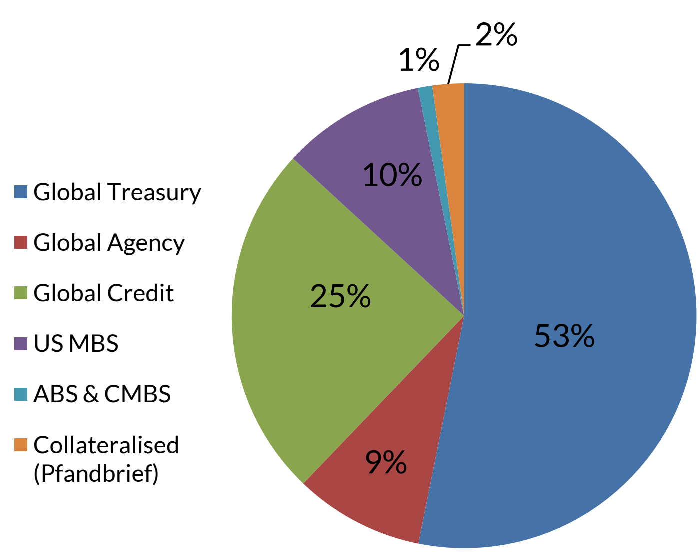
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of December 2020.*
Note*: Numbers in chart may not add to 100 percent due to rounding.*

Barclays Global Aggregate Index by Country



Sources: *Bloomberg and State Street Global Advisors.*
Note: *Data as of December 2020.*

Barclays Global Aggregate Index by Sector

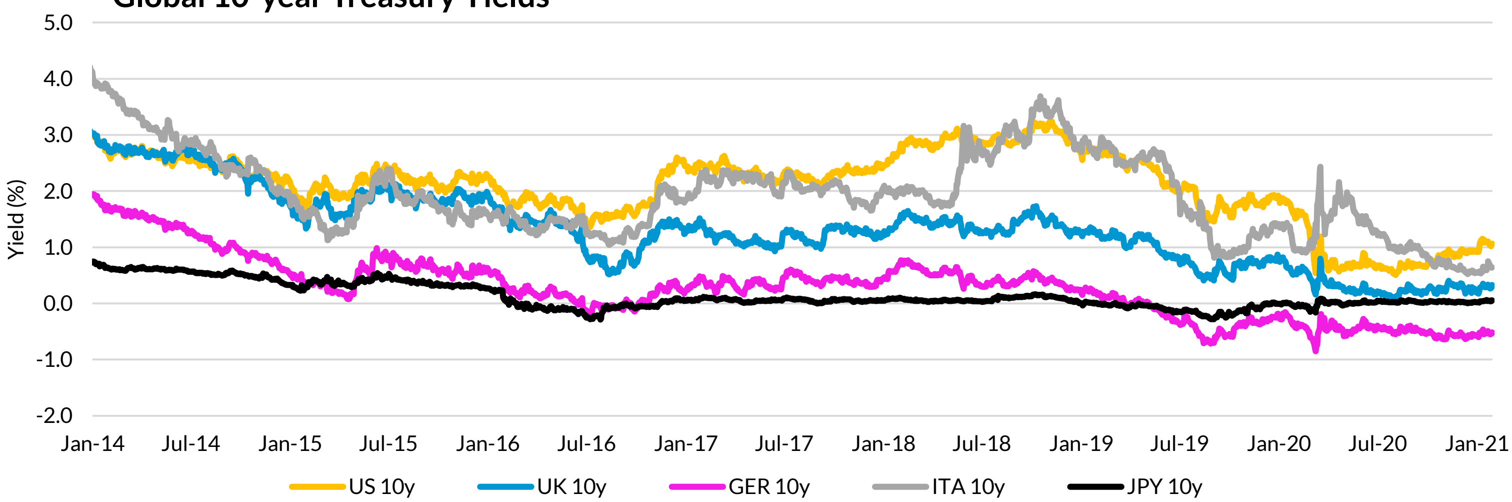


Sources: *Bloomberg and State Street Global Advisors*
Note*: Data as of December 2020.*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

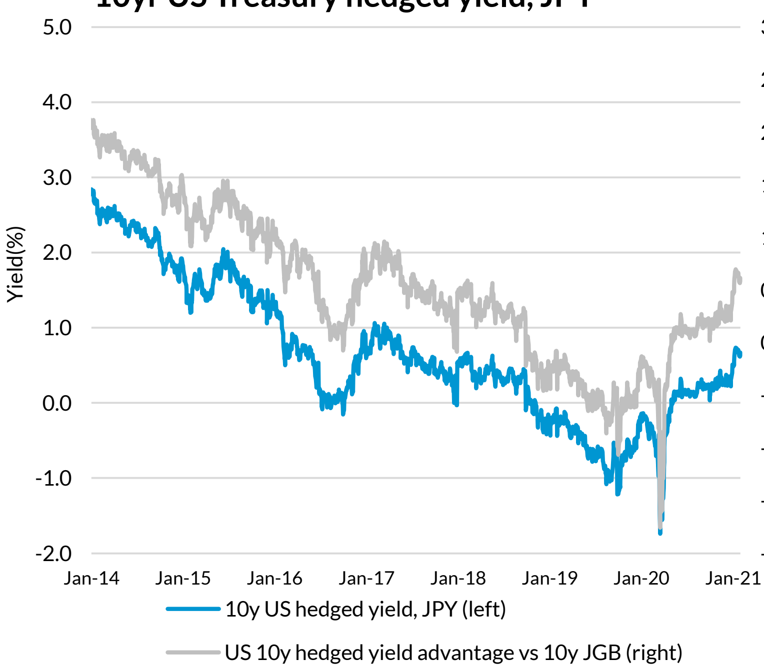
After experiencing COVID-19 related volatility in March and April of 2020, government bond yields across the globe stabilized. Yields on the 10-year treasury increased by 15 bps to 1.07 percent in January 2021, remaining the highest of the developed world. The yield on the Italian 10-year note, which was higher than the 10-year sovereign debt of the US, Japan, and Europe for much of 2020, increased by 10 bps to 0.64 percent. The yield on the UK 10-year bond rose by 13 bps to 0.33 percent, while the Japanese 10-year government bond increased more slightly by 3 bp to 0.05 percent in January. The German 10-year yield rose by 5 bps to negative 0.52 percent in January. At the end of January 2021, the hedged yield differential between the 10-year Treasury and the 10-year JGB stood at 62 bps, a widening of 16 bps from the previous month. The hedged yield differential between the 10-year Treasury and the 10-year Bund stood at 79 bps, an expansion of 13 bps since the end of December 2020.

Global 10-year Treasury Yields



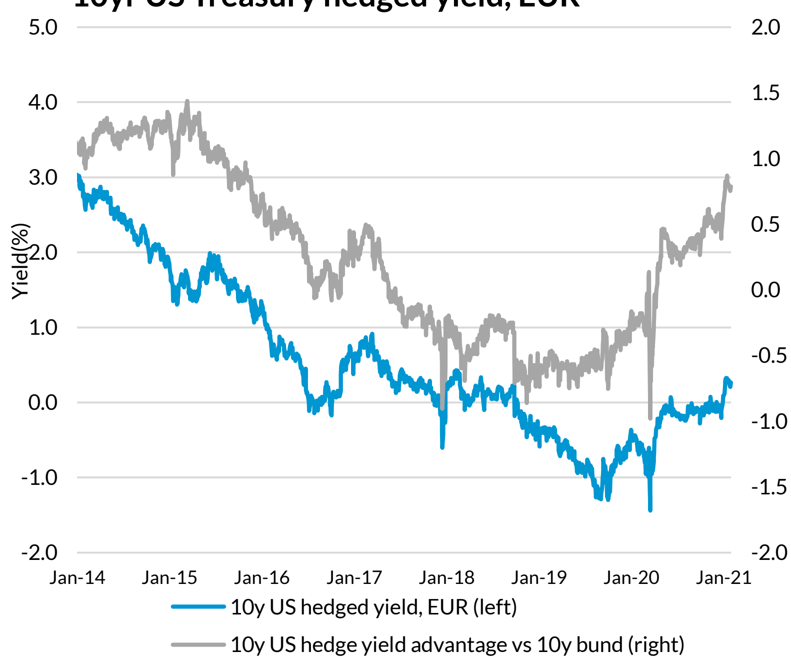
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of January 2021.*

10yr US Treasury hedged yield, JPY



Sources: *Bloomberg and State Street Global Advisors.*
Note: *Data as of January 2021.*

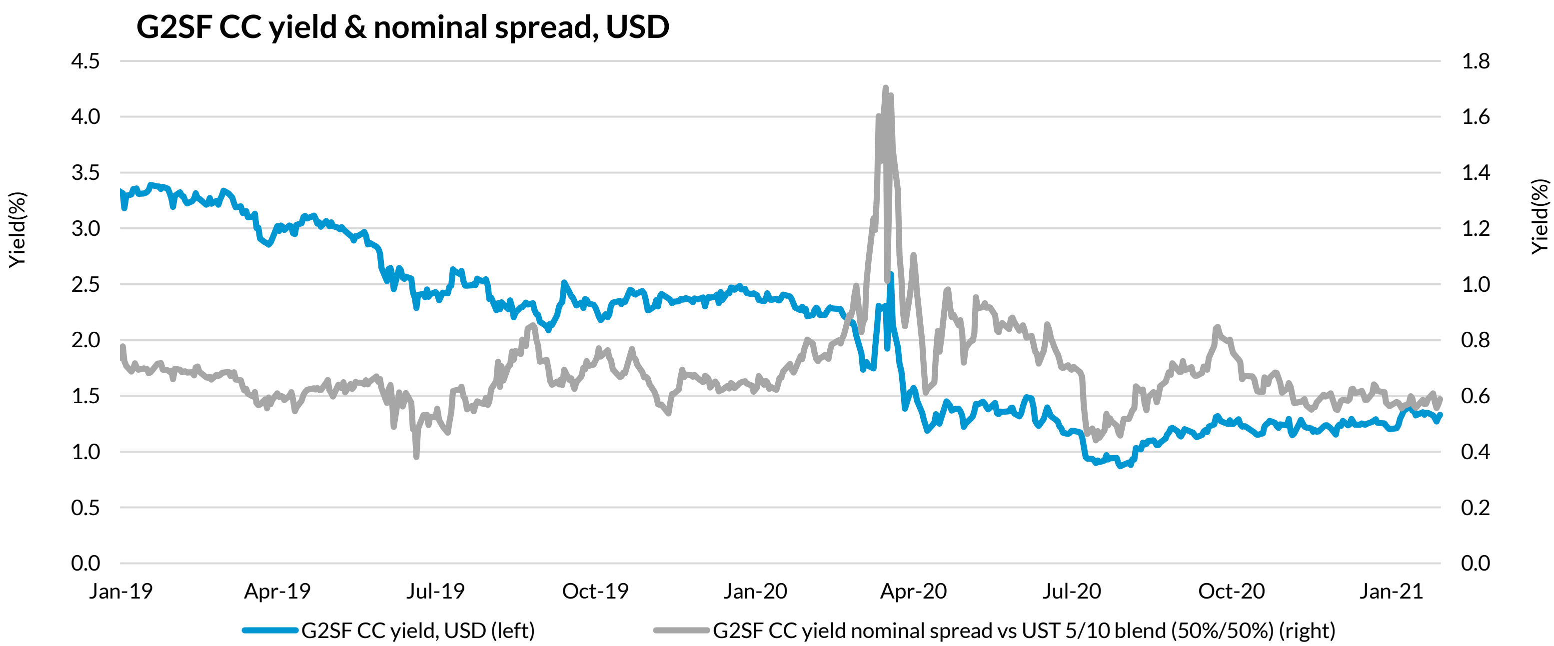
10yr US Treasury hedged yield, EUR



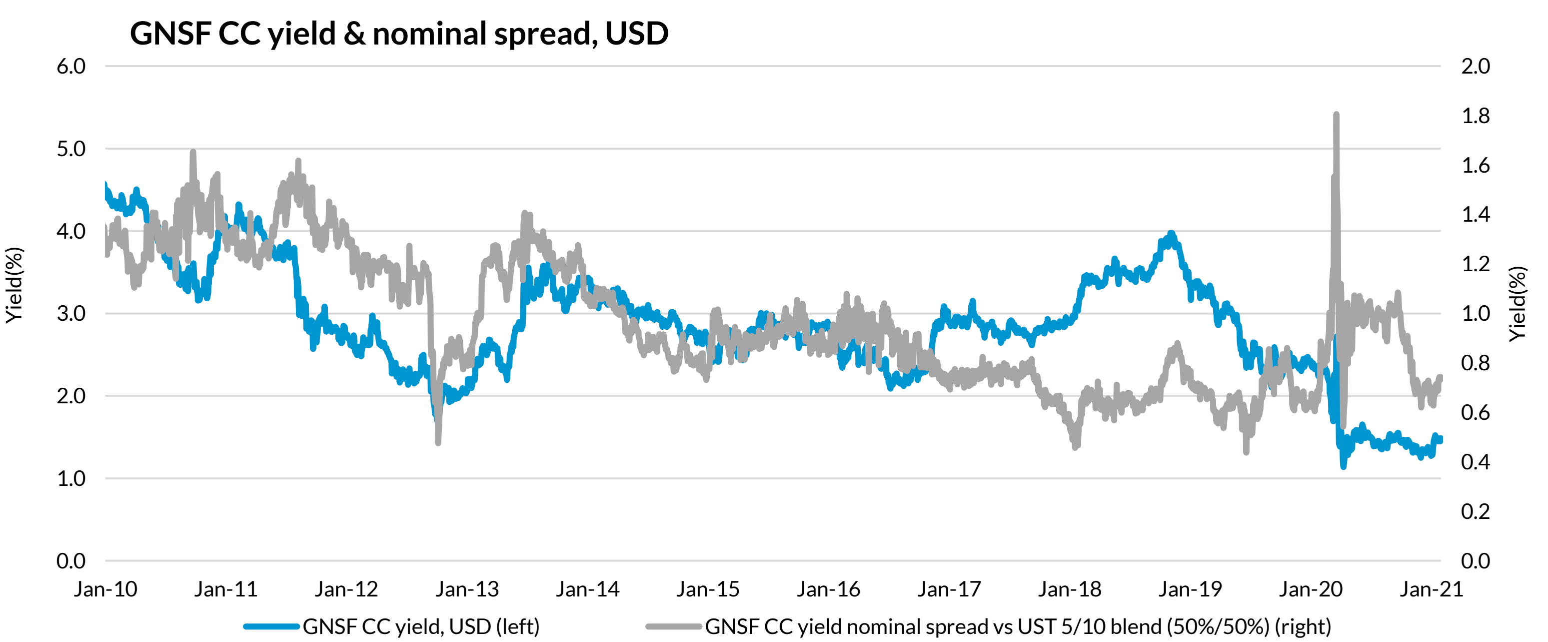
Sources: *Bloomberg and State Street Global Advisors*
Note*: Data as of January 2021.*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

Nominal yields were up in January 2021, with GNMA II yields rising 13 bps to 1.33 percent and GNMA I yields up 21 bps to 1.49 percent. At the end of January, current coupon Ginnie Mae securities outyield their Treasury counterparts (relative to the average of 5- and 10-year Treasury yields) by 59 bps on the G2SF and 74 bps on the GNSF, a widening of 3 and 11 bps on the G2SF and GNSF, respectively, since last month.



Sources: *Bloomberg and State Street Global Advisors.* ***Note****: Data as of January 2021.*

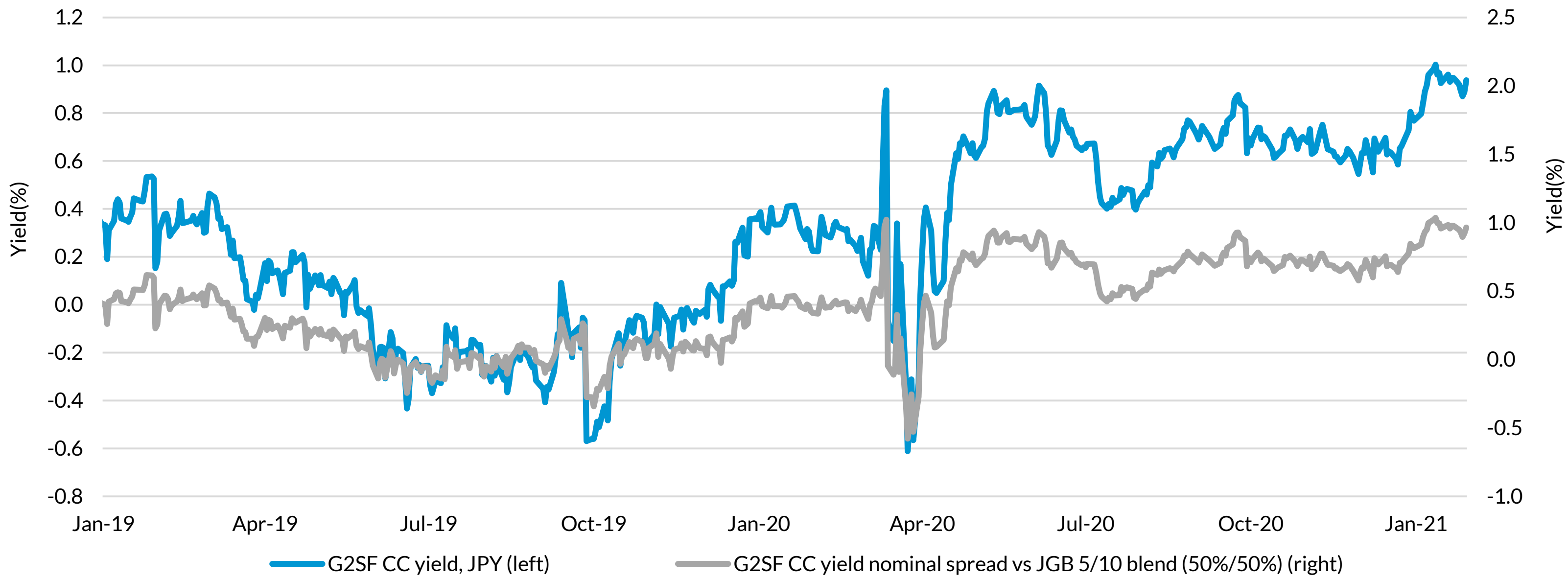


Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of January 2021.*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

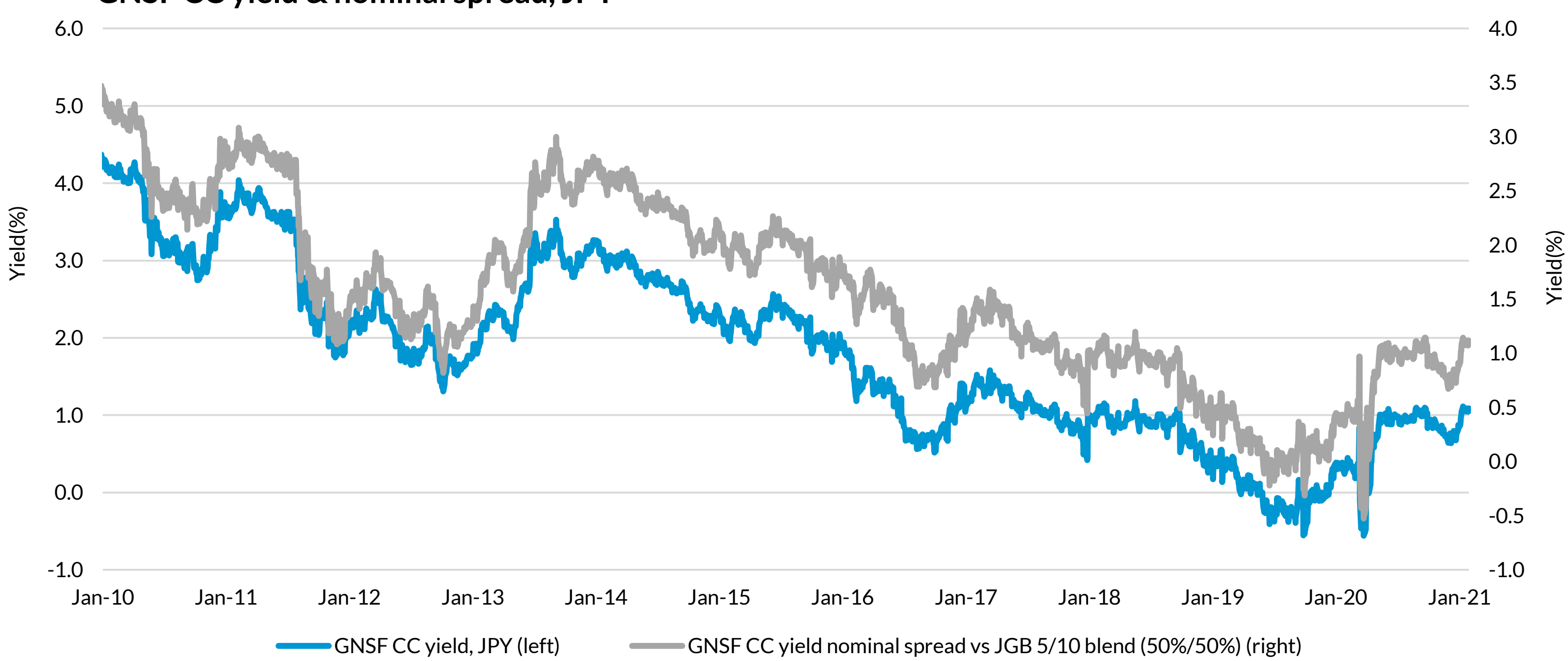
If Ginnie Mae securities are hedged into Japanese Yen, they look favorable on a yield basis versus the JGB 5/10 blend at the end of January 2021. More precisely, hedged into Japanese yen, the G2SF and GNSF have a 96 and 112 bp yield, respectively, versus the JGB 5/10 blend. This represents a 15 bp widening for G2SF and a 23 bp widening for GNSF since the end of December 2020.

G2SF CC yield & nominal spread, JPY



Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of January 2021.*

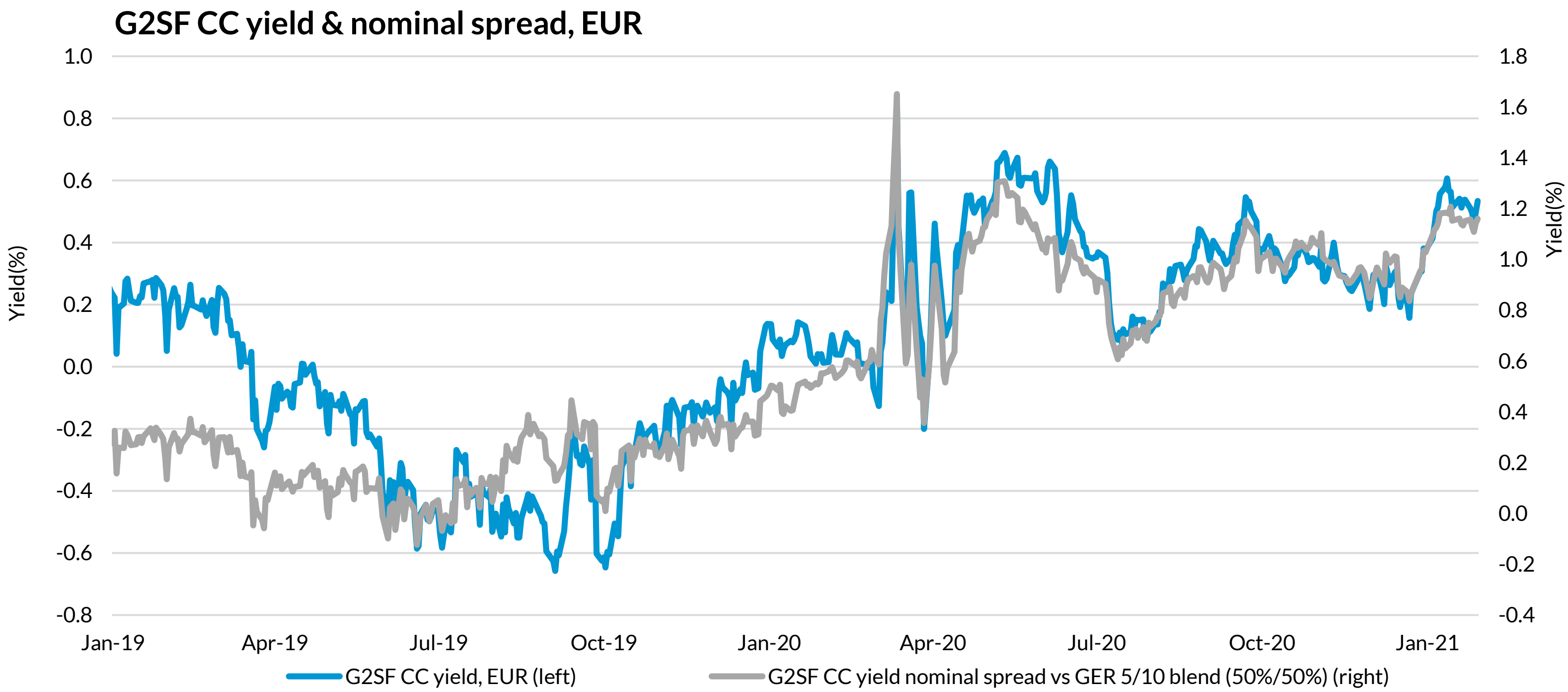
GNSF CC yield & nominal spread, JPY



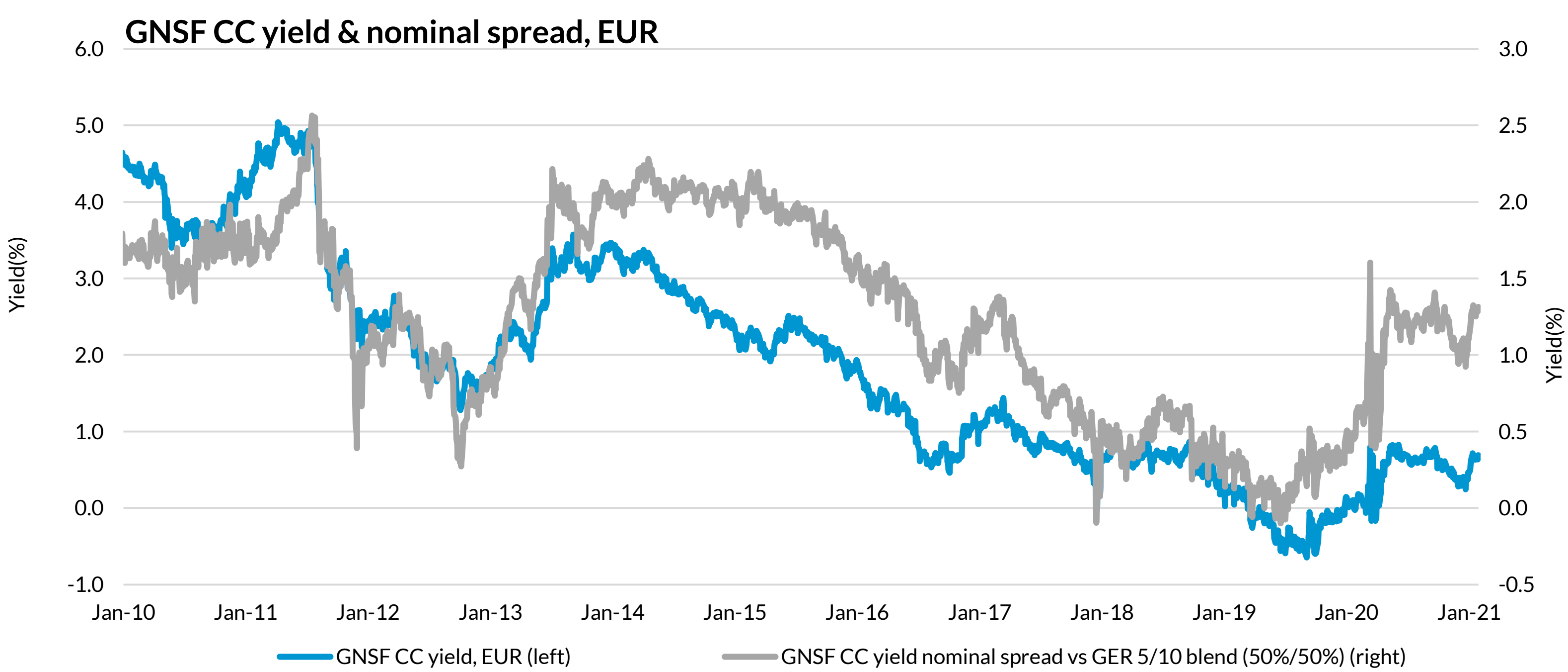
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of January 2021.*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

If Ginnie Mae securities are hedged into Euros, they look favorable on a yield basis versus the German 5/10 Blend. The figures below show that at the end of January 2021, the current coupon G2SF and GNSF hedged into euros have a 116 and 131 bp higher yield than the average of the German 5/10, respectively. This represents a 13 and 21 bp expansion for the G2SF and GNSF, respectively, since the end of December 2020.



***Sources:** Bloomberg and State Street Global Advisors. **Note:** Data as of January 2021.*

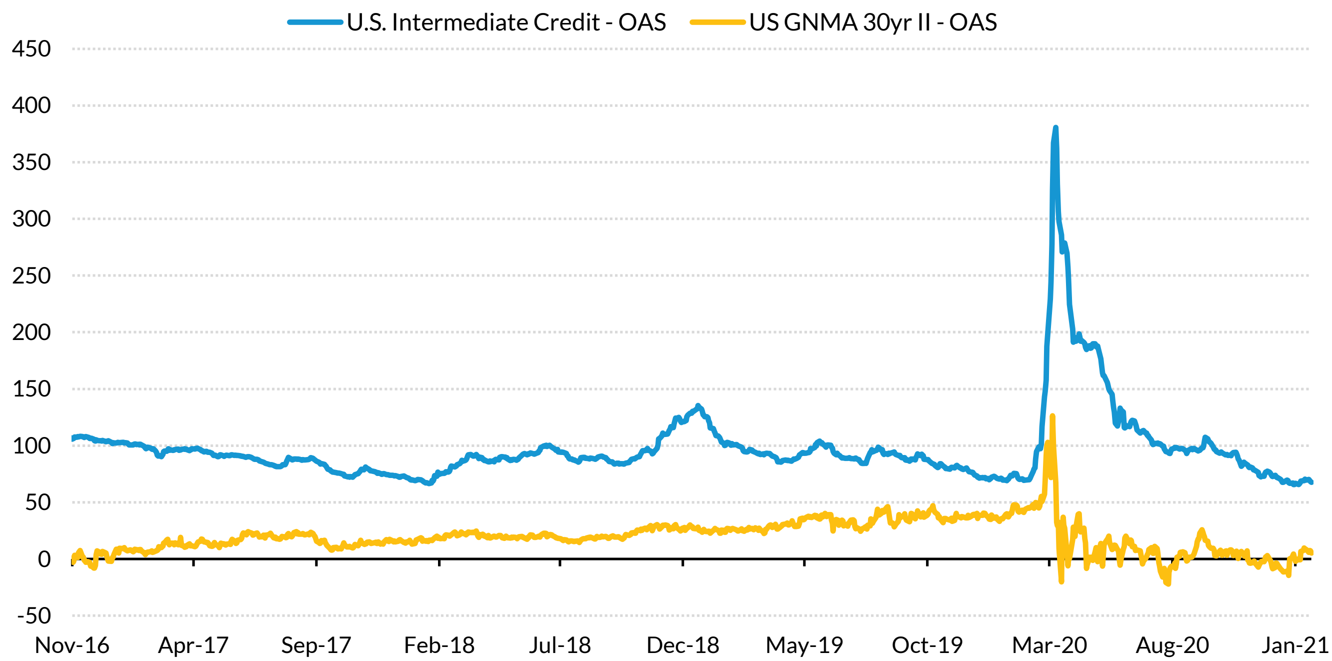


***Sources:** Bloomberg and State Street Global Advisors. **Note:** Data as of January 2021.*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

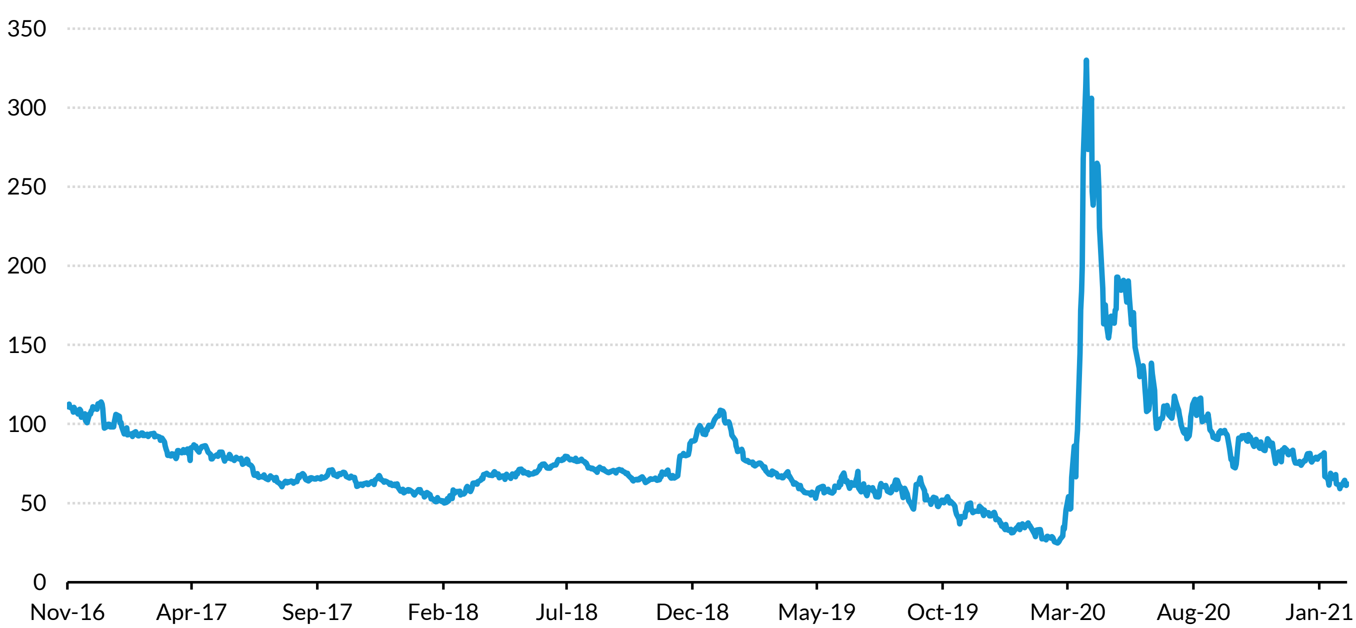
After tightening steadily from mid-2016 to January 2020, the spread between US Intermediate Credit and GNMA II 30 year OAS skyrocketed in February 2020 in response to the COVID-19 panic. This was followed by substantial tightening over the remainder of 2020 and into the first month of 2021. The OAS on intermediate credit partially recovered from its enormous widening in early 2020, while the Ginnie Mae II 30-year fell to multi-year lows. Despite this tightening, the spread between the two remains much elevated, ending January 2021 at 62 bps, higher than the 21 bps in January 2020, but similar to levels in 2018 an early 2019.

G2 30 MBS versus Intermediate Credit



Sources: *State Street Global Advisors.* ***Note:*** *Data as of January 2021.*

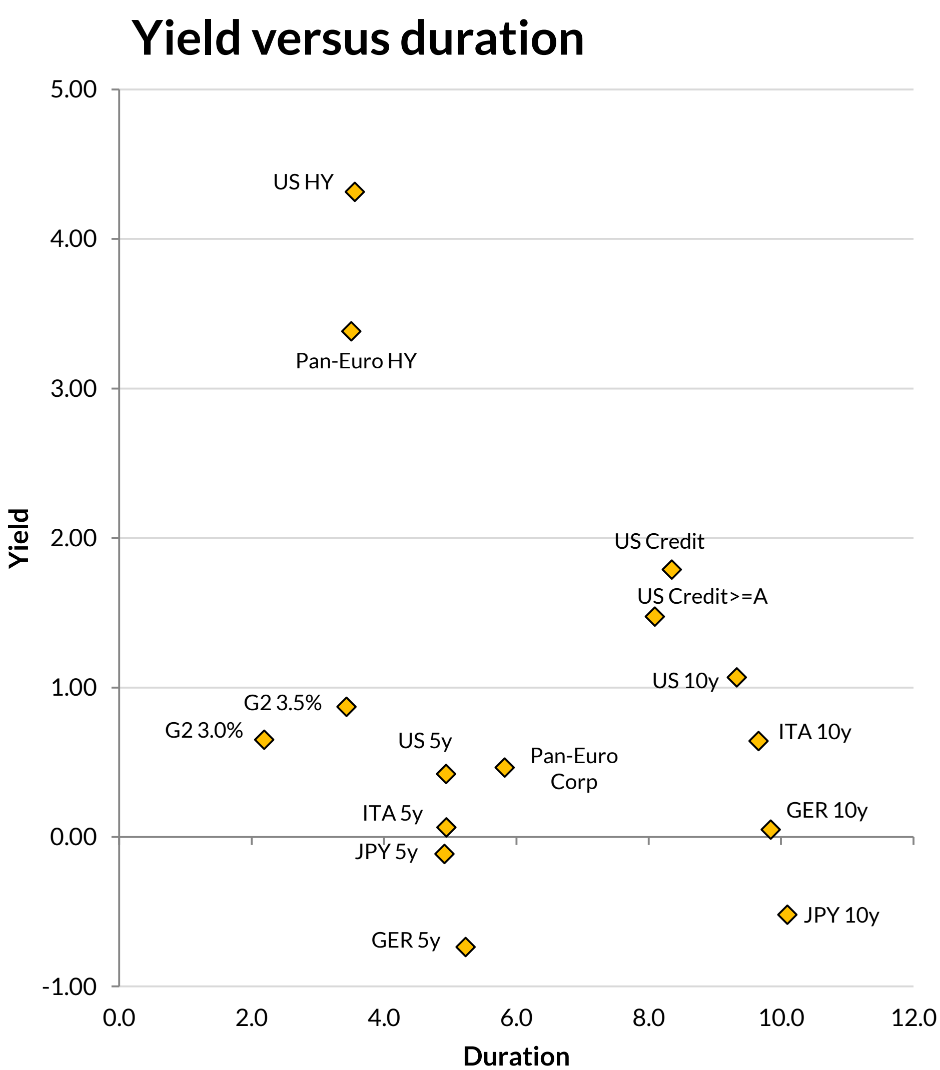
Spread between Intermediate credit and 30-year GNMA MBS OAS



Sources: *State Street Global Advisors.* ***Note:*** *Data as of January 2021.*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

US MBS yields are about the same or higher than most government securities with the same or longer durations. The only asset classes with significantly more yield are the US and Pan-Euro high yield and credit indices. Duration, a measure of sensitivity to interest rate changes, does not fully capture the volatility of the high yield asset classes, as there is a large credit component, which has moved front and center in light of COVID-19.



Security	Duration	Yield
US 5y	4.9	0.42
US 10y	9.3	1.07
GNMA II 3.0%	3.4	0.87
GNMA II 3.5%	2.2	0.65
JPY 5y	4.9	-0.11
JPY 10y	9.8	0.05
GER 5y	5.2	-0.74
GER 10y	10.1	-0.52
ITA 5y	4.9	0.06
ITA 10y	9.7	0.64
US credit	8.4	1.79
US credit >= A	8.1	1.47
US HY	3.6	4.31
Pan-Euro Corp	5.8	0.46
Pan-Euro HY	3.5	3.38

***Sources:** Bloomberg and State Street Global Advisors. **Note**: Yields are in base currency of security and unhedged. Data as of January 2021.*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

The average return on the Ginnie Mae index over the past decade is less than other indices. However, the standard deviation of the Ginnie Mae index is the lowest of any sector, as it has the least price volatility over a 1, 3, 5 and 10 year horizon. The result: The Sharpe Ratio, or excess return per unit of risk for the Ginnie Mae index is highest among all asset classes over 1, 3 and 10-year horizons and in the middle of the pack over 5-year horizon.

	Average Return (Per Month)					
Time Period	US MBS Ginnie Mae	US Treasury	US Credit Corp	Pan Euro Credit Corp	US High Yield*	Pan Euro High Yield*
1 year	0.25	0.37	0.53	0.12	0.69	0.28
3 year	0.31	0.44	0.58	0.26	0.53	0.31
5 year	0.21	0.26	0.53	0.24	0.75	0.44
10 year	0.24	0.27	0.46	0.38	0.55	0.54

	Average Excess Return (Per Month)					
Time Period	US MBS Ginnie Mae	US Treasury	US Credit Corp	Pan Euro Credit Corp	US High Yield*	Pan Euro High Yield*
1 year	0.23	0.35	0.52	0.18	0.67	0.33
3 year	0.20	0.33	0.47	0.32	0.42	0.37
5 year	0.12	0.17	0.44	0.30	0.66	0.50
10 year	0.19	0.22	0.41	0.41	0.51	0.57

	Standard Deviation					
Time Period	US MBS Ginnie Mae	US Treasury	US Credit Corp	Pan Euro Credit Corp	US High Yield*	Pan Euro High Yield*
1 year	0.54	1.29	3.08	2.73	4.39	4.90
3 year	0.61	1.22	2.01	1.64	2.71	2.91
5 year	0.58	1.12	1.70	1.38	2.25	2.36
10 year	0.63	1.04	1.47	1.36	2.04	2.04

	Sharpe Ratio					
Time Period	US MBS Ginnie Mae	US Treasury	US Credit Corp	Pan Euro Credit Corp	US High Yield	Pan Euro High Yield*
1 year	0.43	0.27	0.17	0.07	0.15	0.07
3 year	0.33	0.27	0.23	0.19	0.15	0.13
5 year	0.20	0.15	0.26	0.22	0.29	0.21
10 year	0.30	0.21	0.28	0.30	0.25	0.28

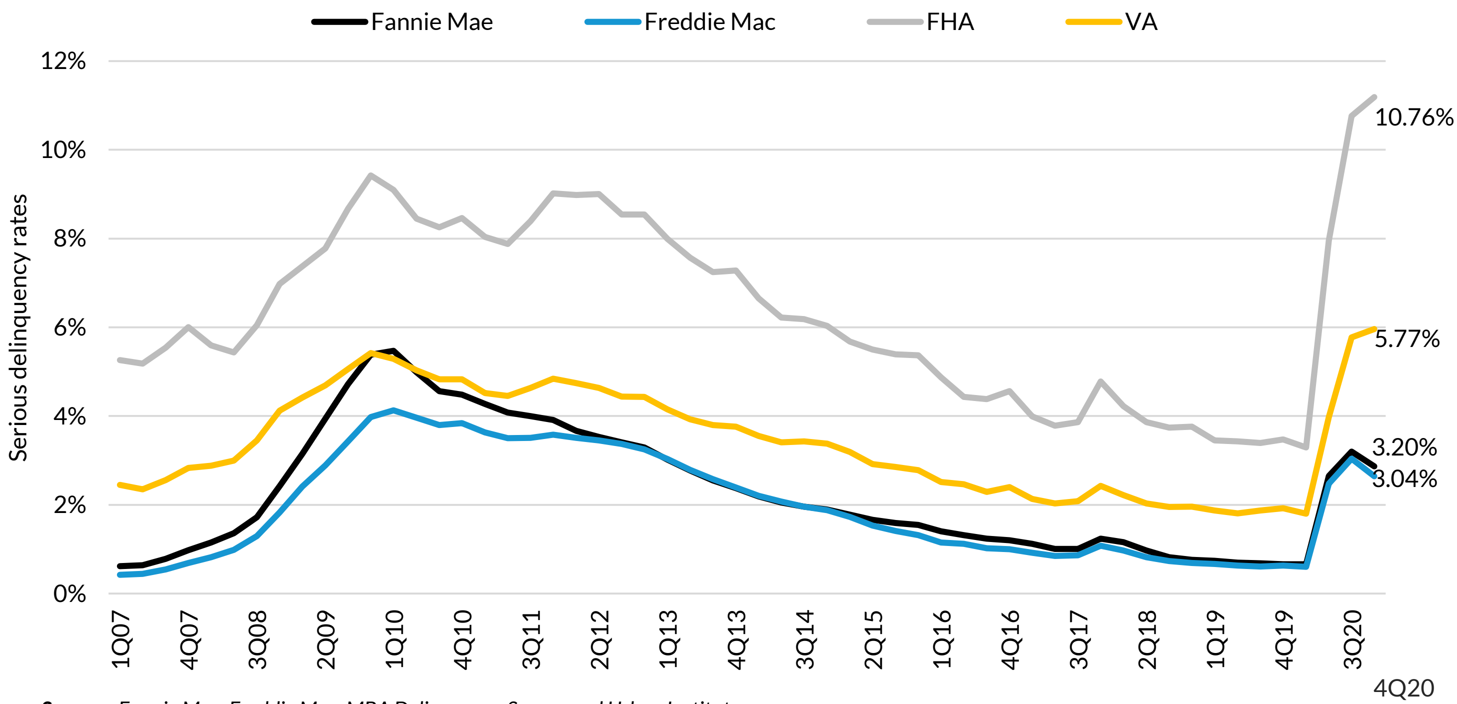
**Assumes 2% capitalization max per issuer on high yield indices*

Sources: *Barclays Indices, Bloomberg and State Street Global Advisors* ***Note:*** *Data as of January 2021.*

State of the US Housing Market

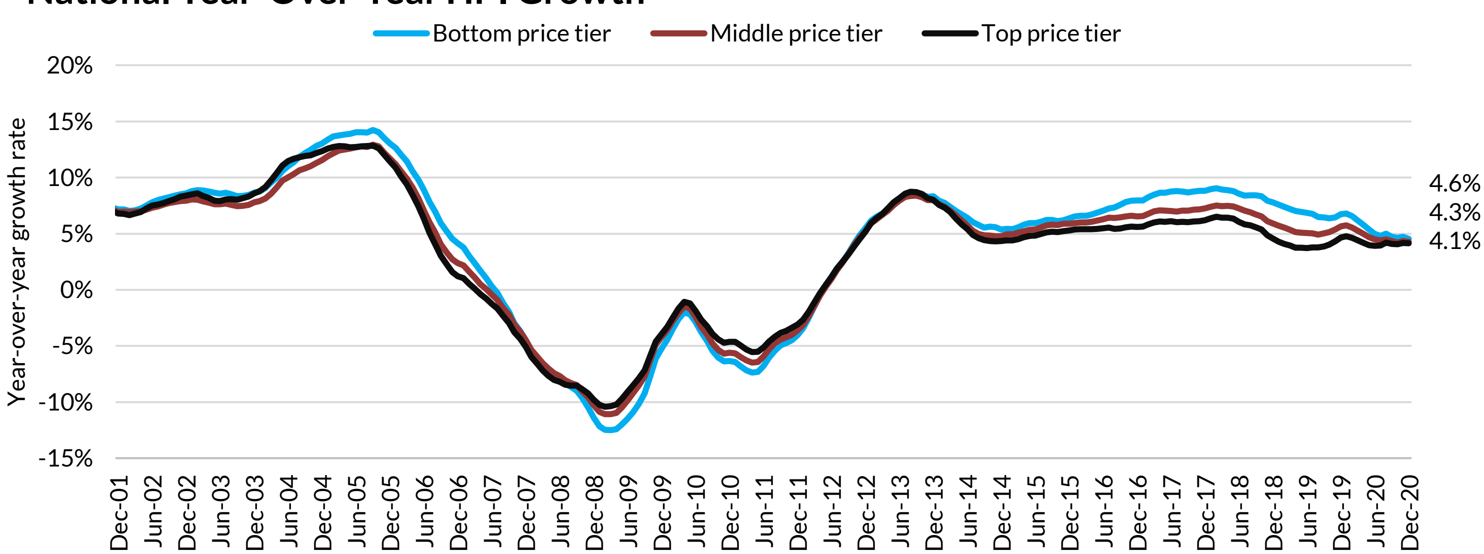
Serious delinquency rates for single-family GSE loans fell slightly in Q4 2020 while FHA and VA serious delinquency rates continued to rise but at a slower rate. The increase in delinquencies from Q2-Q4 2020 reflects the impact of the pandemic on mortgage payments. The bottom chart shows nationwide house prices for the bottom, middle and the top quintiles by price. House prices have risen most at the lower end of the market where Ginnie Mae plays a major role. Prices at the lower end of the market rose by 4.6 percent for 12 months ended December 2020, higher than the 4.1 percent for the top end of the market. Year-over-year price growth in December was lower than in November for all price tiers.

Serious Delinquency Rates: Single-Family Loans



Sources: *Fannie Mae, Freddie Mac, MBA Delinquency Survey and Urban Institute.*
Note: *Serious delinquency is defined as 90 days or more past due or in the foreclosure process. Data as of Q4 2020.*

National Year-Over-Year HPI Growth



Sources: *Black Knight and Urban Institute.* ***Note:*** *Black Knight divides home prices in each region into quintiles; this figure shows the performance of the bottom, middle and top quintiles. Data as of December 2020.*

State of the US Housing Market

Nationally, nominal home prices have increased by 59.9 percent since the trough, and now exceed their pre-crisis peak valuation on a nominal basis by 19.7 percent. The picture is very different across states, with most states well in excess of the prior peak; six states remain below their 2007 peak, with Connecticut, at 10.4 percent below peak level, the most underwater.

State	2000 to Peak	Peak to Trough	Trough to Current	HPI Changes YOY	Current HPI % Above Peak
National	74.8%	-25.2%	59.9%	4.1%	19.7%
Alabama	36.0%	-15.4%	37.4%	4.5%	16.3%
Alaska	69.3%	-3.1%	26.1%	3.4%	22.3%
Arizona	109.8%	-47.8%	93.5%	4.9%	1.0%
Arkansas	41.3%	-9.6%	26.6%	4.0%	14.4%
California	154.5%	-43.3%	97.7%	4.2%	12.2%
Colorado	40.3%	-12.9%	86.6%	4.1%	62.6%
Connecticut	92.1%	-24.7%	19.0%	3.4%	-10.4%
Delaware	94.1%	-23.4%	35.3%	4.2%	3.6%
District of Columbia	174.1%	-13.8%	62.3%	4.7%	39.9%
Florida	128.0%	-46.8%	80.8%	4.9%	-3.7%
Georgia	38.5%	-31.2%	71.4%	4.0%	17.9%
Hawaii	163.0%	-22.5%	58.0%	4.1%	22.4%
Idaho	71.7%	-28.7%	102.0%	6.3%	44.1%
Illinois	61.6%	-34.3%	40.7%	2.7%	-7.6%
Indiana	21.4%	-8.0%	41.5%	3.8%	30.2%
Iowa	28.3%	-4.7%	29.6%	3.0%	23.5%
Kansas	34.5%	-9.2%	56.5%	10.3%	42.1%
Kentucky	29.6%	-7.5%	36.8%	3.8%	26.6%
Louisiana	48.6%	-5.2%	27.1%	3.6%	20.5%
Maine	82.0%	-12.4%	55.6%	11.5%	36.3%
Maryland	129.1%	-28.6%	31.2%	3.6%	-6.3%
Massachusetts	92.2%	-22.4%	60.4%	3.8%	24.5%
Michigan	23.8%	-39.2%	81.0%	3.6%	9.9%
Minnesota	66.3%	-27.7%	60.7%	4.1%	16.2%
Mississippi	41.2%	-13.9%	36.5%	6.8%	17.6%
Missouri	42.6%	-15.3%	41.0%	3.7%	19.4%
Montana	82.5%	-11.4%	59.7%	4.4%	41.4%
Nebraska	26.8%	-6.8%	46.1%	3.5%	36.2%
Nevada	126.7%	-59.0%	129.2%	4.2%	-5.9%
New Hampshire	90.5%	-23.1%	47.7%	4.3%	13.5%
New Jersey	117.6%	-27.9%	31.9%	3.7%	-4.9%
New Mexico	66.7%	-16.4%	33.6%	5.6%	11.8%
New York	98.3%	-15.2%	47.4%	4.2%	25.0%
North Carolina	40.6%	-15.8%	43.2%	4.3%	20.6%
North Dakota	53.2%	-4.0%	58.9%	3.6%	52.6%
Ohio	21.1%	-18.3%	42.0%	3.8%	16.0%
Oklahoma	37.3%	-2.6%	26.2%	4.5%	23.0%
Oregon	81.8%	-28.0%	85.8%	4.0%	33.7%
Pennsylvania	70.1%	-11.7%	28.7%	3.2%	13.6%
Rhode Island	130.2%	-34.1%	62.1%	5.1%	6.8%
South Carolina	44.7%	-19.4%	41.6%	4.2%	14.2%
South Dakota	45.3%	-3.7%	57.2%	8.0%	51.4%
Tennessee	34.9%	-11.9%	52.9%	4.8%	34.8%
Texas	33.5%	-5.8%	57.1%	4.1%	48.1%
Utah	54.8%	-22.2%	85.5%	5.0%	44.4%
Vermont	83.5%	-7.5%	40.9%	3.5%	30.4%
Virginia	99.9%	-22.7%	32.7%	4.2%	2.5%
Washington	85.0%	-28.6%	97.4%	5.3%	40.9%
West Virginia	40.8%	-5.8%	32.2%	8.0%	24.5%
Wisconsin	44.8%	-16.3%	38.5%	3.0%	15.9%
Wyoming	77.6%	-7.3%	39.7%	4.9%	29.5%

Sources: *Black Knight and Urban Institute.* ***Note:*** *HPI data as of December 2020. Negative sign indicates that state is above earlier peak. Peak refers to the month when HPI reached the highest level for each state/US during the housing boom period, ranging from 09/2005 to 09/2008. Trough represents the month when HPI fell to the lowest level for each state/US after the housing bust, ranging from 01/2009 to 03/2012. Current is 12/2020, the latest HPI data period.*

State of the US Housing Market

Ginnie Mae MBS constitute 24.5 percent of outstanding agency issuance by loan balance and 24.7 percent of new issuance over the past year. However, the Ginnie Mae share varies widely across states, with the share of outstanding (by loan balance) as low as 11.1 percent in the District of Columbia and as high as 45.7 percent in Mississippi. In general, the Ginnie Mae share is higher in states with lower home prices.

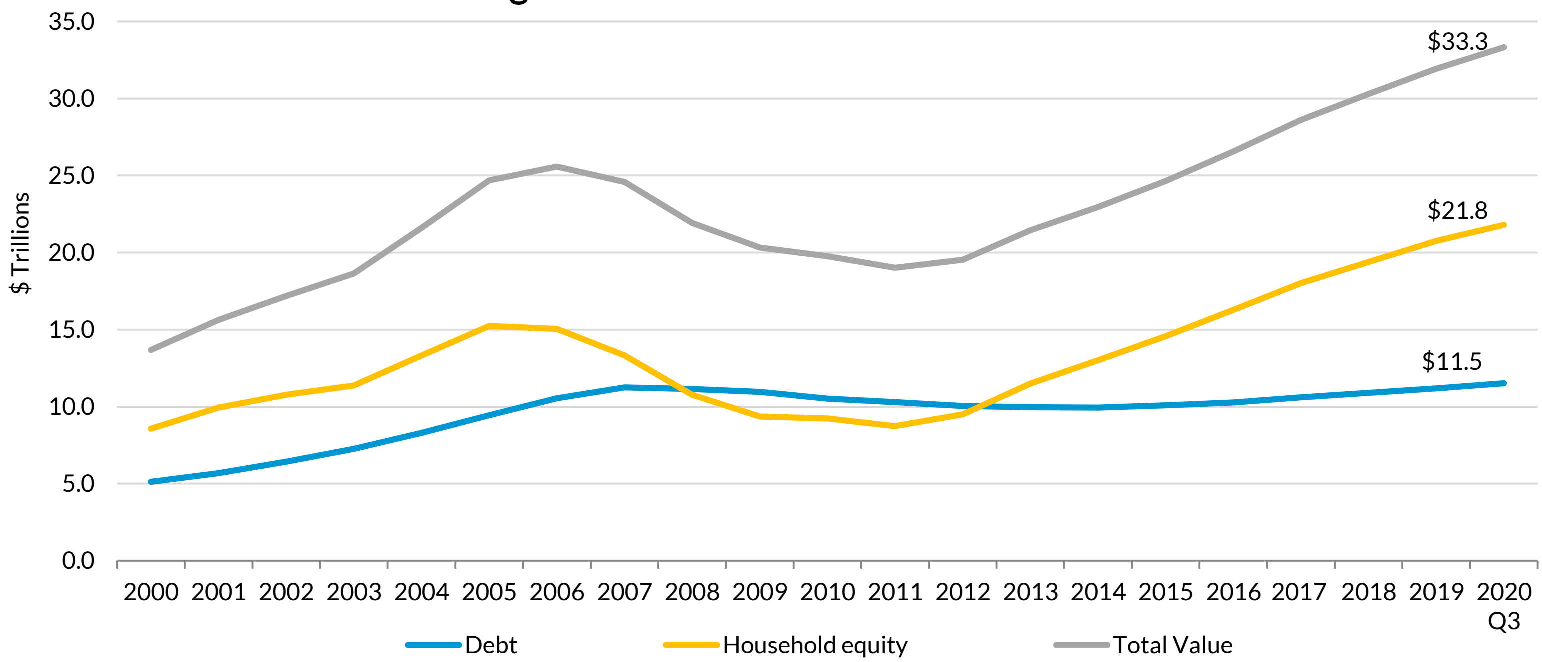
	Agency Issuance (past 1 year)				Agency Outstanding			
State	GNMA Share	GNMA Loan Count	GNMA Avg. Loan Size (000)	GSE Avg. Loan Size (000)	GNMA Share	GNMA Loan Count	GNMA Avg. Loan Size (000)	GSE Avg. Loan Size (000)
National	24.7%	2,879,830	256.6	282.1	24.5%	11,106,722	165.1	203.4
Alabama	37.7%	53,291	198.1	223.0	38.9%	236,315	129.1	161.6
Alaska	46.7%	9,405	312.1	280.3	44.5%	37,463	231.6	208.8
Arizona	25.9%	107,647	251.3	257.9	23.2%	303,504	169.3	196.5
Arkansas	35.4%	28,653	169.6	202.3	38.3%	138,597	111.1	146.4
California	17.3%	261,408	395.2	391.1	15.2%	745,606	270.0	293.4
Colorado	24.5%	88,856	334.4	321.4	20.7%	231,294	230.0	248.9
Connecticut	23.7%	22,921	240.7	268.7	24.8%	107,623	180.6	196.4
Delaware	30.6%	12,638	241.9	260.7	31.2%	51,941	179.9	193.5
District of Columbia	13.2%	2,527	506.2	441.4	11.1%	9,269	298.5	328.7
Florida	35.4%	246,467	246.6	249.2	30.4%	849,191	172.3	184.8
Georgia	33.1%	132,023	219.6	252.8	32.5%	509,938	146.3	183.1
Hawaii	40.9%	13,594	555.0	442.3	24.7%	32,782	384.7	331.3
Idaho	24.3%	22,279	255.7	251.8	23.5%	75,184	163.0	190.3
Illinois	17.4%	78,786	204.6	237.4	20.3%	362,126	139.9	168.4
Indiana	26.7%	66,432	171.9	193.5	30.4%	295,529	111.9	136.7
Iowa	16.7%	17,091	174.1	197.8	20.9%	85,260	114.5	140.6
Kansas	24.8%	21,168	184.6	215.0	28.9%	101,803	119.6	150.1
Kentucky	30.3%	37,594	179.5	200.6	33.3%	167,071	121.7	142.3
Louisiana	35.0%	42,090	195.3	229.8	36.9%	190,112	137.8	167.3
Maine	24.5%	10,001	212.2	238.2	25.9%	40,011	152.8	174.0
Maryland	34.6%	83,189	325.7	316.2	31.9%	295,296	228.7	231.6
Massachusetts	14.2%	33,297	333.2	340.5	14.8%	119,786	241.0	249.8
Michigan	16.5%	62,694	174.1	205.7	20.2%	295,004	114.1	144.6
Minnesota	16.1%	40,942	232.7	249.0	17.8%	176,079	156.4	183.8
Mississippi	43.0%	23,791	179.9	206.2	45.7%	117,268	121.7	149.0
Missouri	24.6%	56,767	182.2	210.7	28.9%	258,882	120.7	148.9
Montana	24.2%	9,748	255.2	259.8	22.9%	35,727	171.2	193.0
Nebraska	23.6%	15,135	198.6	205.6	26.3%	70,320	123.4	147.9
Nevada	33.9%	49,828	287.8	269.6	27.6%	138,277	197.4	207.8
New Hampshire	22.2%	11,438	269.4	265.0	22.8%	42,984	194.8	195.7
New Jersey	19.5%	57,624	284.7	320.5	21.4%	239,449	209.7	234.7
New Mexico	36.5%	20,883	213.0	226.2	36.8%	97,402	141.0	162.0
New York	17.9%	46,458	282.5	316.8	21.1%	319,319	185.7	225.8
North Carolina	28.6%	110,809	219.4	249.5	27.9%	428,424	143.1	179.5
North Dakota	20.5%	4,308	237.3	232.7	21.1%	16,815	168.5	175.7
Ohio	25.4%	87,846	171.8	194.9	29.3%	439,704	112.2	136.2
Oklahoma	39.3%	36,977	183.8	206.1	41.9%	194,199	119.8	148.1
Oregon	20.8%	39,440	298.8	299.0	18.2%	122,457	206.3	226.5
Pennsylvania	23.2%	75,922	195.2	238.2	27.1%	407,451	134.4	167.4
Rhode Island	27.0%	9,288	266.9	261.3	28.0%	36,265	193.5	196.1
South Carolina	34.4%	64,877	221.0	236.1	31.8%	231,233	149.6	172.6
South Dakota	24.3%	7,891	211.5	219.9	27.9%	30,504	143.6	164.2
Tennessee	31.4%	73,232	221.6	245.6	32.0%	290,751	141.7	180.0
Texas	31.7%	272,962	234.0	257.7	29.9%	1,084,598	148.1	188.3
Utah	18.4%	39,103	292.6	290.1	18.9%	115,524	200.9	232.5
Vermont	18.7%	2,774	219.0	236.4	17.7%	12,656	163.2	166.7
Virginia	35.9%	129,289	323.9	322.5	32.7%	445,087	215.0	232.7
Washington	22.4%	86,704	337.5	347.0	20.1%	259,818	226.7	258.1
West Virginia	41.6%	12,168	182.5	189.2	41.7%	56,448	126.0	133.8
Wisconsin	14.7%	32,090	197.8	213.0	16.2%	132,007	133.7	151.7
Wyoming	33.6%	7,485	242.1	248.7	33.2%	26,368	178.3	187.8

***Sources:** eMBS and Urban Institute. **Note:** Ginnie Mae outstanding share are based on loan balance as of December 2020. Ginnie Mae issuance is based on the last 12 months, from December 2019 to December 2020.*

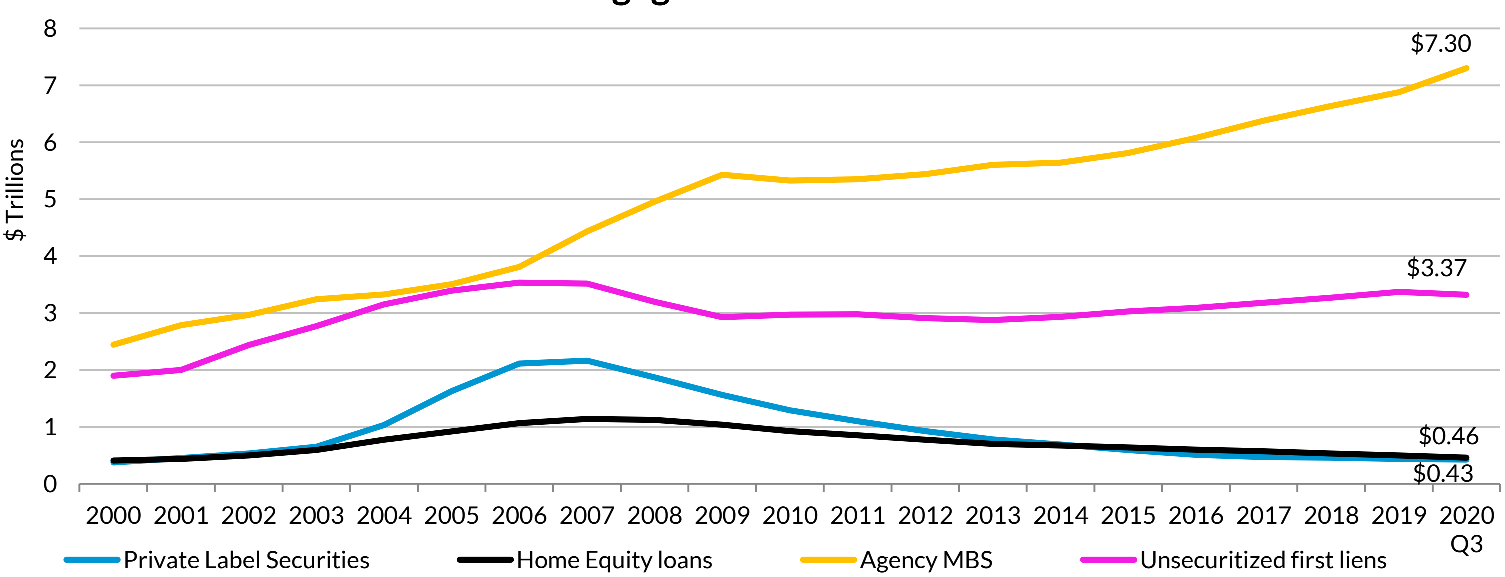
State of the US Housing Market

The Federal Reserve's Flow of Fund Report has indicated a gradually increasing total value of the housing market, driven primarily by growing home equity since 2012. The Q3 2020 numbers show that while mortgage debt outstanding remained steady at $11.5 trillion, total home equity grew slightly from $21.5 trillion in Q2 2020 to $21.8 trillion in the third quarter of 2020, bringing the total value of the housing market to $33.3 trillion, 30.3 percent higher than the pre-crisis peak in 2006. Agency MBS account for 63.4 percent of the total mortgage debt outstanding, private-label securities make up 3.7 percent, and unsecuritized first liens make up 28.9 percent. Home equity loans comprise the remaining 4.0 percent of the total.

Value of the US Housing Market



Size of the US Residential Mortgage Market

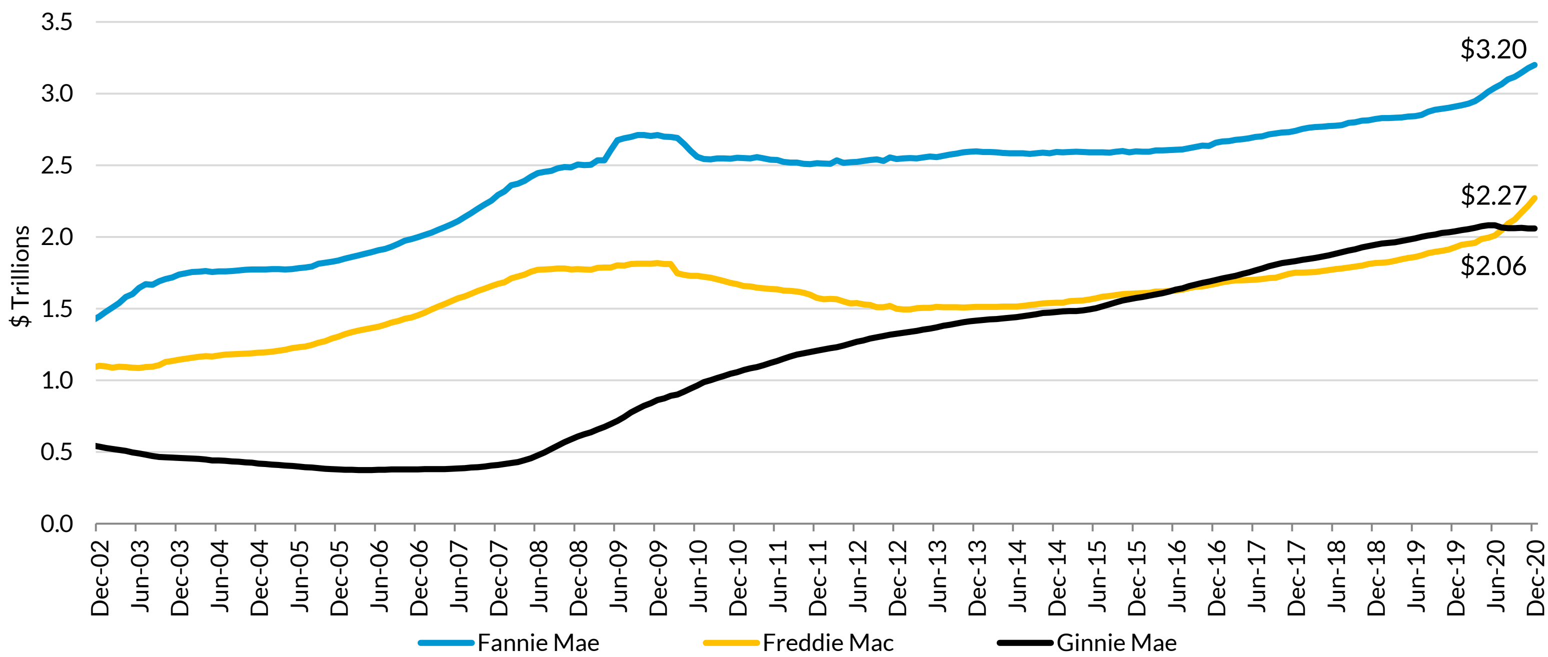


Sources: *Federal Reserve Flow of Funds, eMBS and Urban Institute. Last updated December 2020.*
Note Top: *Single family includes 1-4 family mortgages. The home equity number is grossed up from Fed totals to include the value of households and the non-financial business sector.* **Note Bottom**: *Unsecuritized first liens includes loans held by commercial banks, GSEs, savings institutions, credit unions and other financial companies.*

State of the US Housing Market

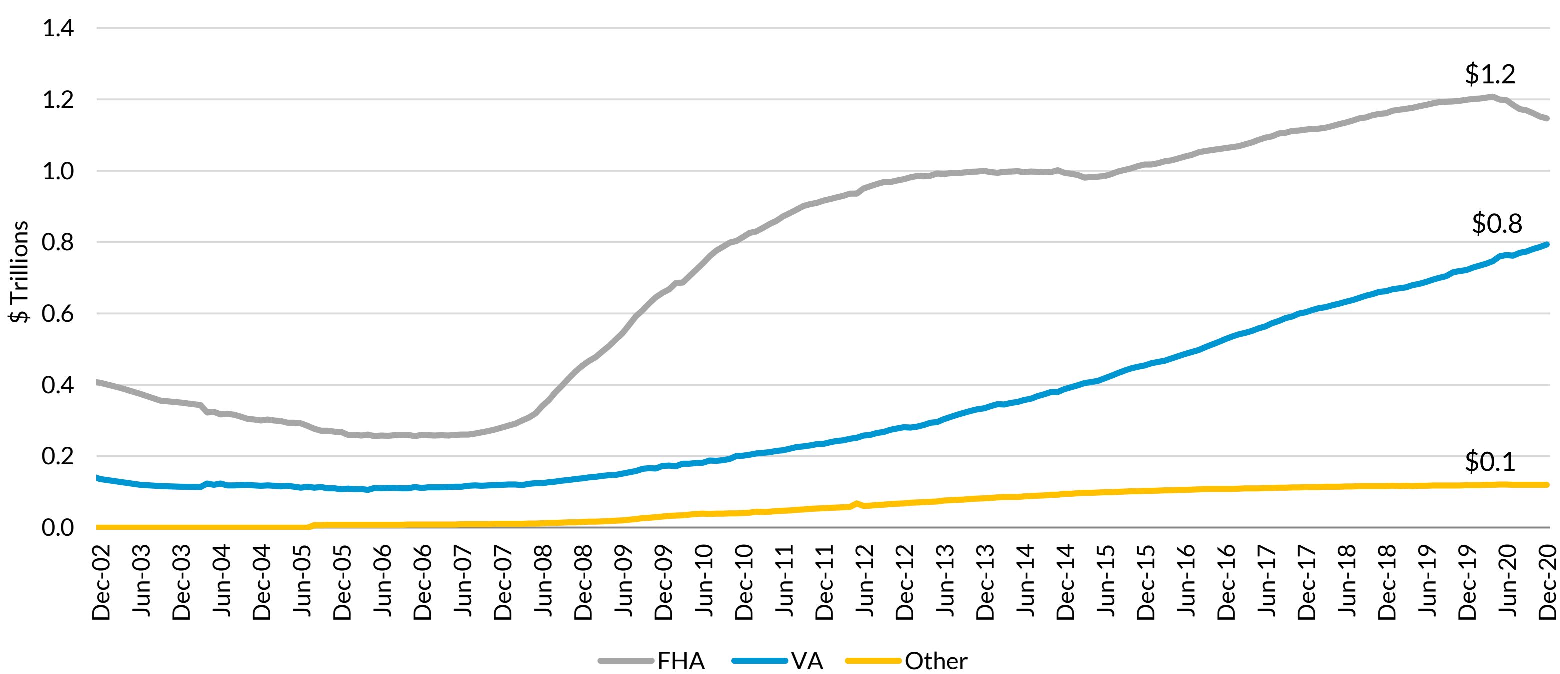
As of December 2020, outstanding securities in the agency market totaled $7.53 trillion: 42.5 percent Fannie Mae, 30.2 percent Freddie Mac, and 27.4 percent Ginnie Mae MBS. Within the Ginnie Mae market, both FHA and VA have grown very rapidly since 2009, although since May 2020, FHA has contracted. FHA comprises 55.7 percent of total Ginnie Mae MBS outstanding, while VA comprises 38.5 percent. Note that during the pandemic the GSEs have been growing faster than Ginnie Mae, courtesy of borrowers with home prices appreciating moving from FHA to conventional refinances and saving on the mortgage insurance premium.

Outstanding Agency Mortgage-Backed Securities



Sources: *eMBS and Urban Institute* **Note:** *Data as of December 2020.*

Outstanding Ginnie Mae Mortgage-Backed Securities

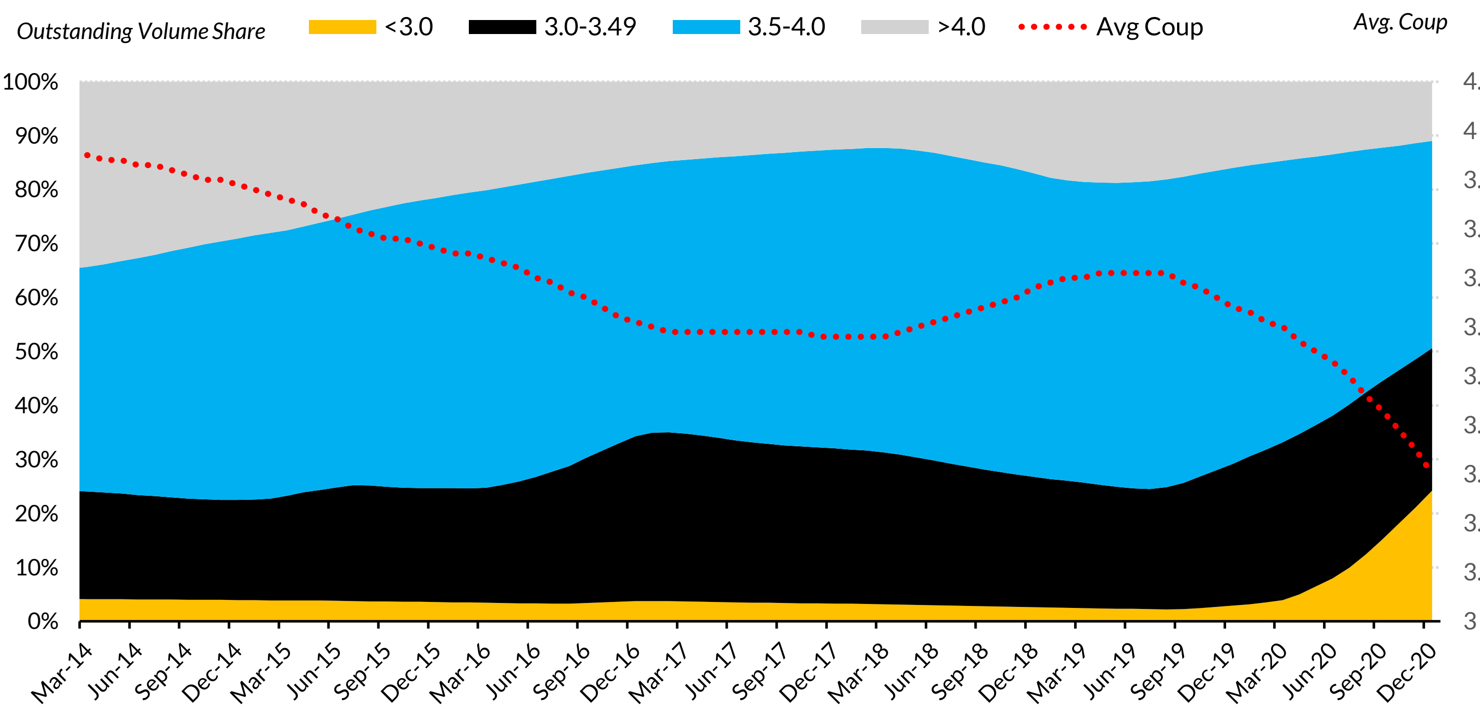


Sources: *eMBS and Urban Institute.* **Note:** *Data as of December 2020.*

State of the US Housing Market

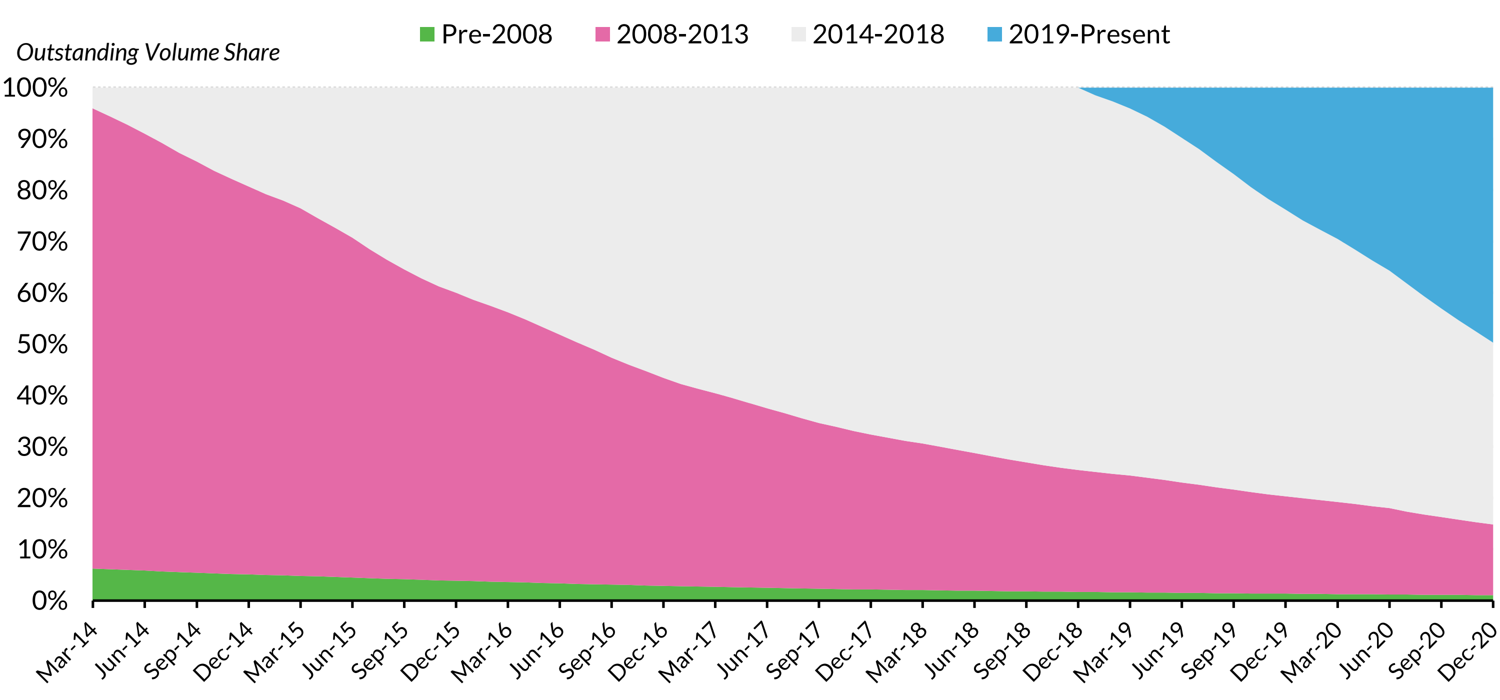
As of December 2020, the average coupon on outstanding Ginnie Mae pools was 3.30 percent, declining steadily over time. The share of outstanding MBS pools with coupons below 3.0 percent has grown exponentially in 2020 due to plummeting rates. The bottom chart shows that loans originated since 2019 now comprise a hefty 49.8 percent of outstanding as older vintages continue to refinance in substantial numbers.

Outstanding Ginnie Balance, by Coupon



Sources: *eMBS and Urban Institute*
Note: *Data as of December 2020. Average coupon is weighted by remaining principal balance.*

Outstanding Ginnie Volume, by Vintage



Sources: *eMBS and Urban Institute.* **Note: "***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 December 2020.*

State of the US Housing Market

In December 2020, a total of 785,393 Ginnie Mae loans were in forbearance, 28,202 of which were removed from pools (i.e. liquidated) during the month. Most liquidated loans (24,436) were FHA. Forborne loans removed from pools in December had measurably higher note rates and lower outstanding loan balances, and were more likely to be purchase loans than forborne loans that remain in pools.

All loans in forbearance – December 2020

	FICO Score*	Note Rate*	Current Principal Balance Median	FTHB Share	Purchase Share	Loan Count
Ginnie	661	4.1	$172,036	77.6%	71.1%	785,393
Bank	676	4.1	$134,498	73.6%	77.0%	113,622
Nonbank	659	4.1	$178,253	78.2%	70.2%	671,771
FHA	657	4.1	$169,529	78.2%	73.2%	584,395
Bank	669	4.2	$124,301	74.7%	79.3%	83,157
Nonbank	656	4.1	$177,185	78.7%	72.3%	501,238
VA	669	3.8	$217,857	69.4%	51.4%	137,719
Bank	687	3.8	$195,232	67.3%	65.7%	23,761
Nonbank	666	3.8	$222,261	69.9%	48.4%	113,958

Loans in forbearance and removed from pools – December 2020

	FICO Score*	Note Rate*	Current Principal Balance Median	FTHB Share	Purchase Share	Loan Count
Ginnie	664	4.2	$170,000	75.8%	78.0%	28,202
Bank	677	4.2	$137,581	74.4%	81.9%	11,857
Nonbank	658	4.3	$199,000	76.6%	75.7%	16,345
FHA	660	4.3	$168,000	76.4%	79.7%	24,436
Bank	674	4.3	$133,622	75.1%	84.0%	9,482
Nonbank	655	4.3	$196,000	77.2%	77.7%	14,954
VA	686	3.8	$215,000	63.9%	56.9%	2,706
Bank	690	3.9	$188,000	64.6%	64.8%	1,569
Nonbank	682	3.8	$254,000	63.0%	47.0%	1,137

Loans in forbearance that remain in pools – December 2020

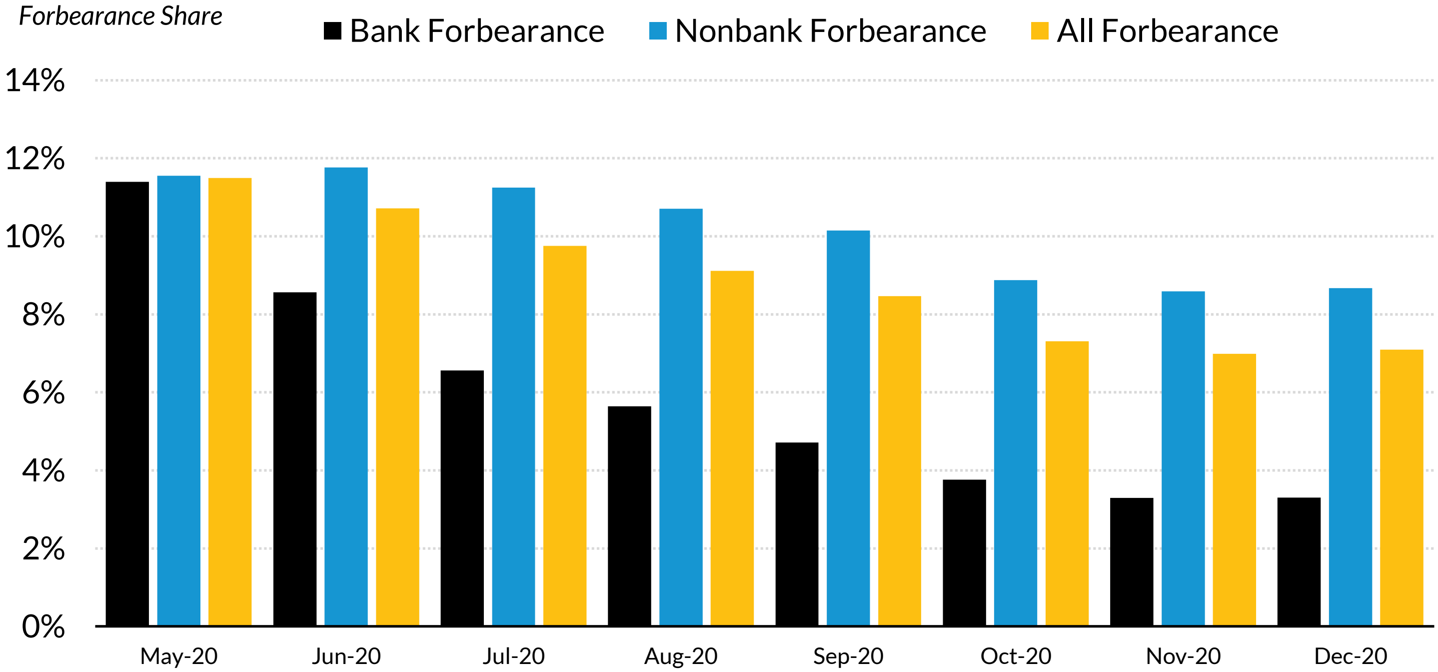
	FICO Score*	Note Rate*	Current Principal Balance Median	FTHB Share	Purchase Share	Loan Count
Ginnie	661	4.1	$172,569	77.6%	70.9%	757,048
Bank	675	4.1	$135,759	73.4%	76.7%	103,321
Nonbank	659	4.1	$178,164	78.3%	70.1%	653,727
FHA	657	4.1	$170,063	78.3%	73.0%	559,830
Bank	669	4.2	$124,960	74.4%	78.9%	75,080
Nonbank	656	4.1	$177,117	78.8%	72.2%	484,750
VA	669	3.8	$218,183	69.5%	51.3%	135,000
Bank	686	3.8	$197,179	67.5%	65.8%	22,235
Nonbank	666	3.8	$222,106	70.0%	48.4%	112,765

Sources: *eMBS and Urban Institute.* **Note**: *Data as of December 2020. *Averages weighted by remaining principal balance of loans.*

State of the US Housing Market

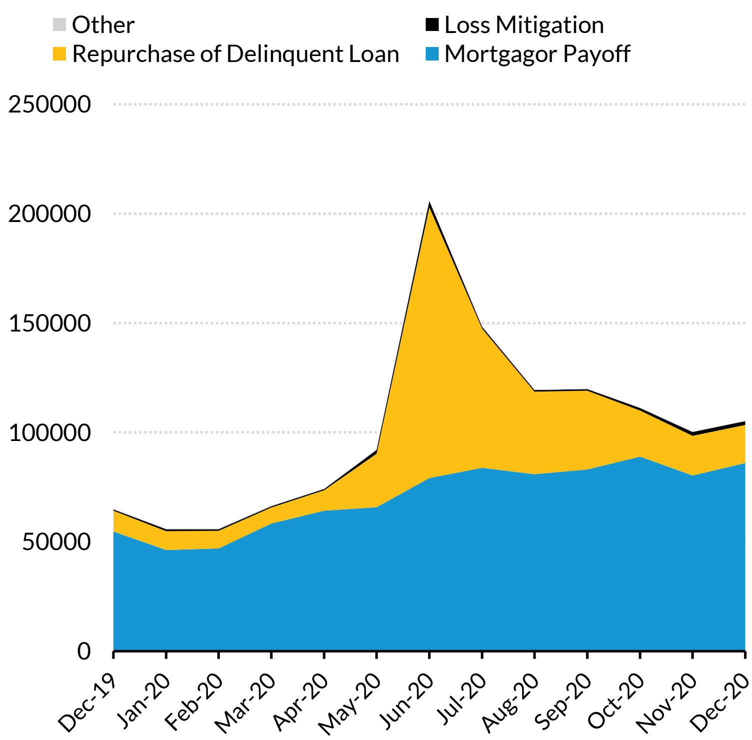
The share of Ginnie Mae loans in forbearance is higher for nonbank issuers than for bank issuers for two reasons: (1) more recent origination is more likely to be forborne and comprises a larger share of the non-bank servicing portfolio, and (2) banks have been more aggressive in buying forborne loans out of Ginnie Mae pools. Delinquent buyouts by nonbank issuers continue to remain muted relative to total nonbank loans removed from pools, but have edged up compared to delinquent buyouts by bank issuers (bottom charts, yellow areas).

Share of Ginnie Mae Loans in Forbearance



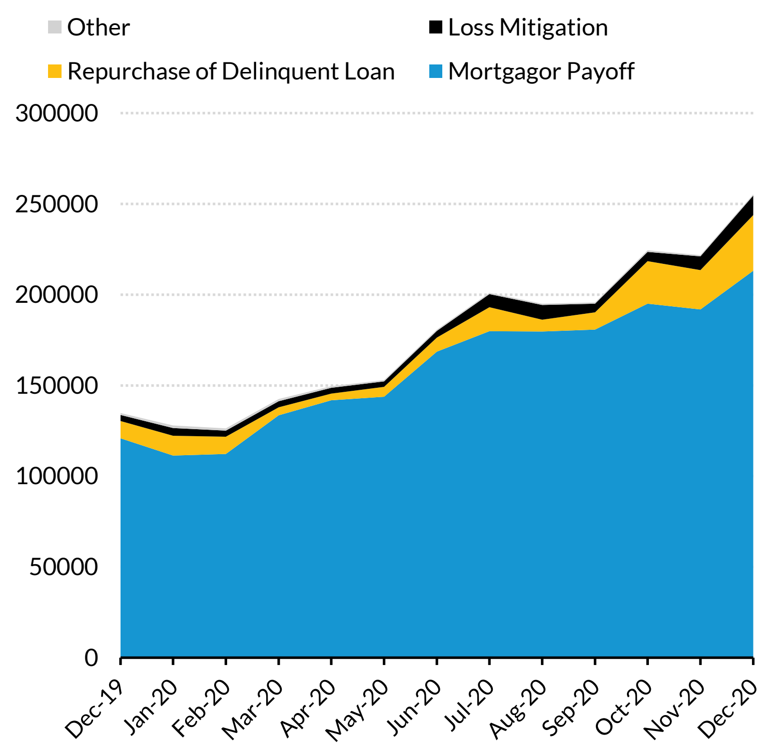
Sources: *eMBS and Urban Institute.* **Note:** *Data as of December 2020.*

Number of Loans Removed from Pools: Bank Issuers



Sources: *eMBS and Urban Institute.* **Note:** *Data as of December 2020.*

Number of Loans Removed from Pools: Nonbank Issuers

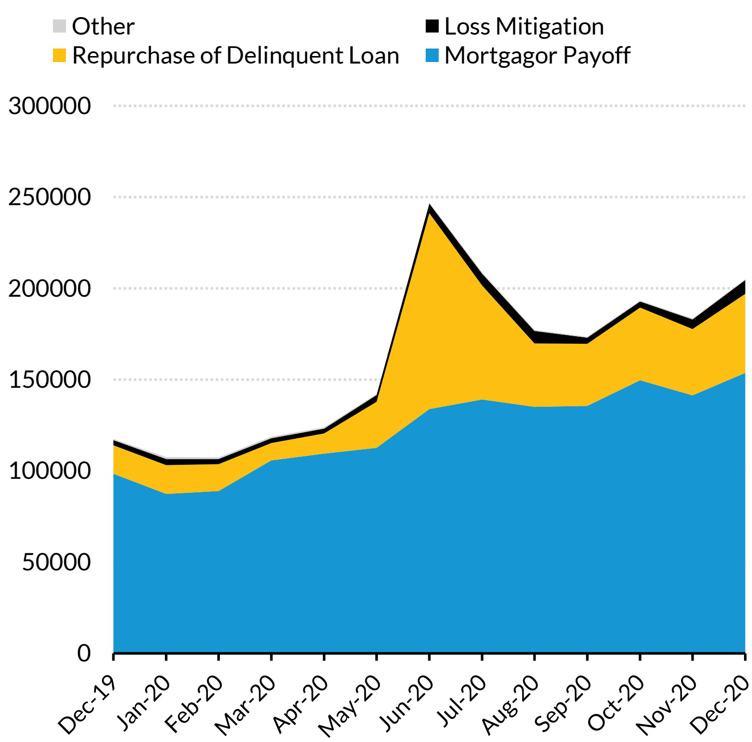


Sources: *eMBS and Urban Institute.* **Note:** *Data as of December 2020.*

State of the US Housing Market

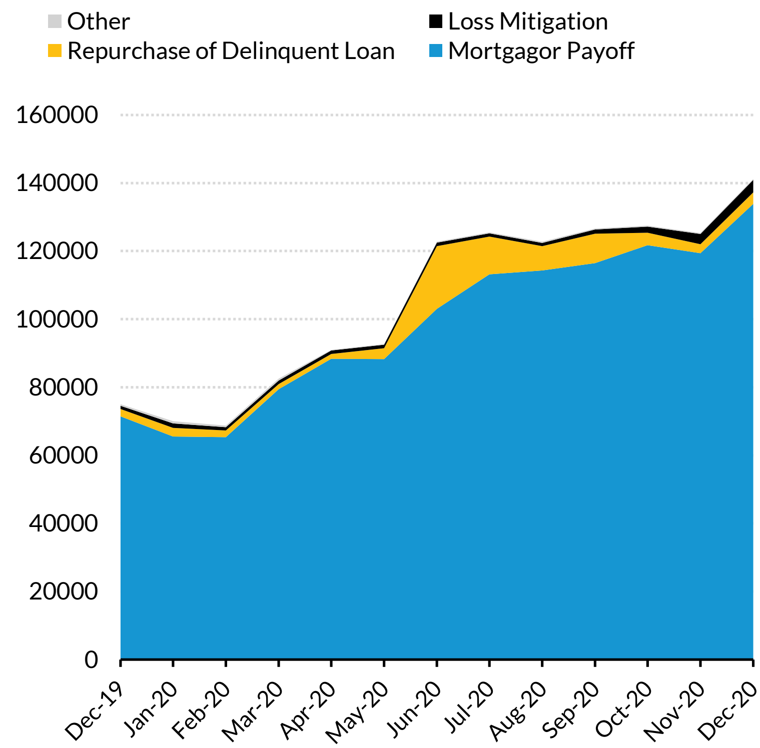
Ginnie Mae delinquent loans bought out of pools are more likely to be FHA than VA (top charts, yellow areas) and more likely to be higher coupons (bottom chart). In December 2020, 43,470 FHA and 3,406 VA loans were bought out. (These counts include all delinquent buyouts, regardless of forbearance status). Despite the increase in buyout activity during the pandemic, the vast majority of loans removed from pools have been payoffs triggered by ultra-low rates (blue areas).

Number of Loans Removed from Pools: FHA



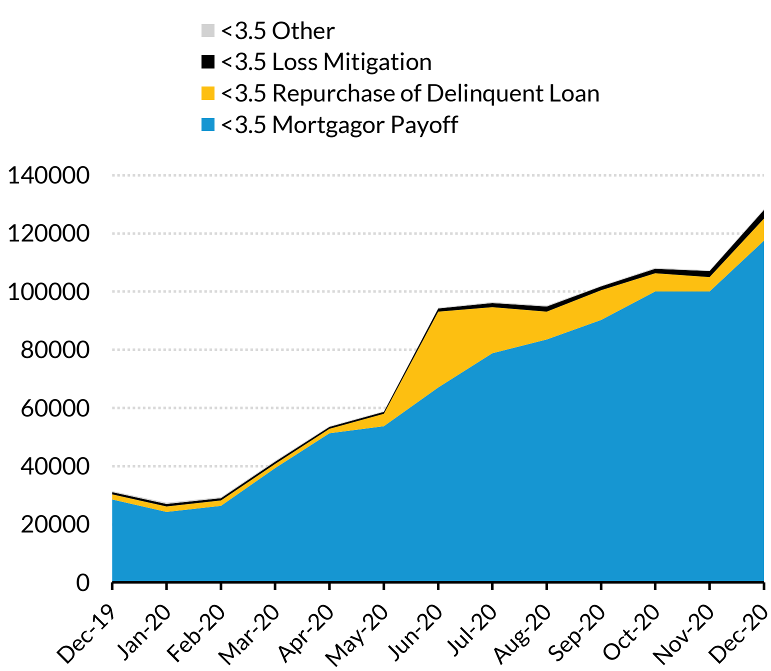
Sources: *eMBS and Urban Institute.* **Note:** *Data as of December 2020.*

Number of Loans Removed from Pools: VA

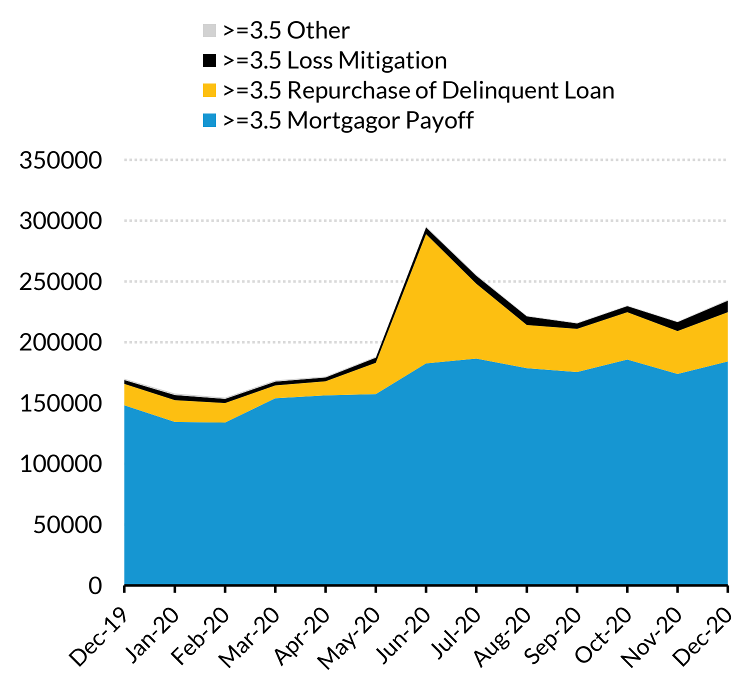


Sources: *eMBS and Urban Institute.* **Note:** *Data as of December 2020.*

Number of Loans Removed from Pools by Coupon



Sources: *eMBS and Urban Institute.* **Note:** *Data as of December 2020.*

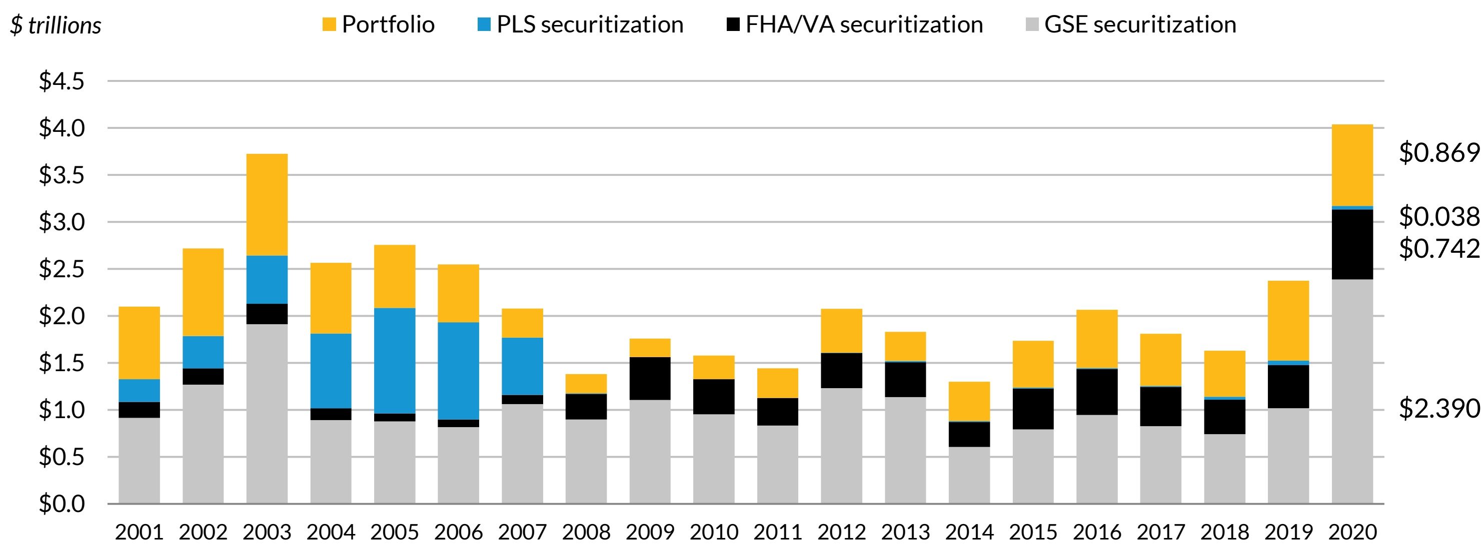


Sources: *eMBS and Urban Institute.* **Note:** *Data as of December 2020.*

State of the US Housing Market

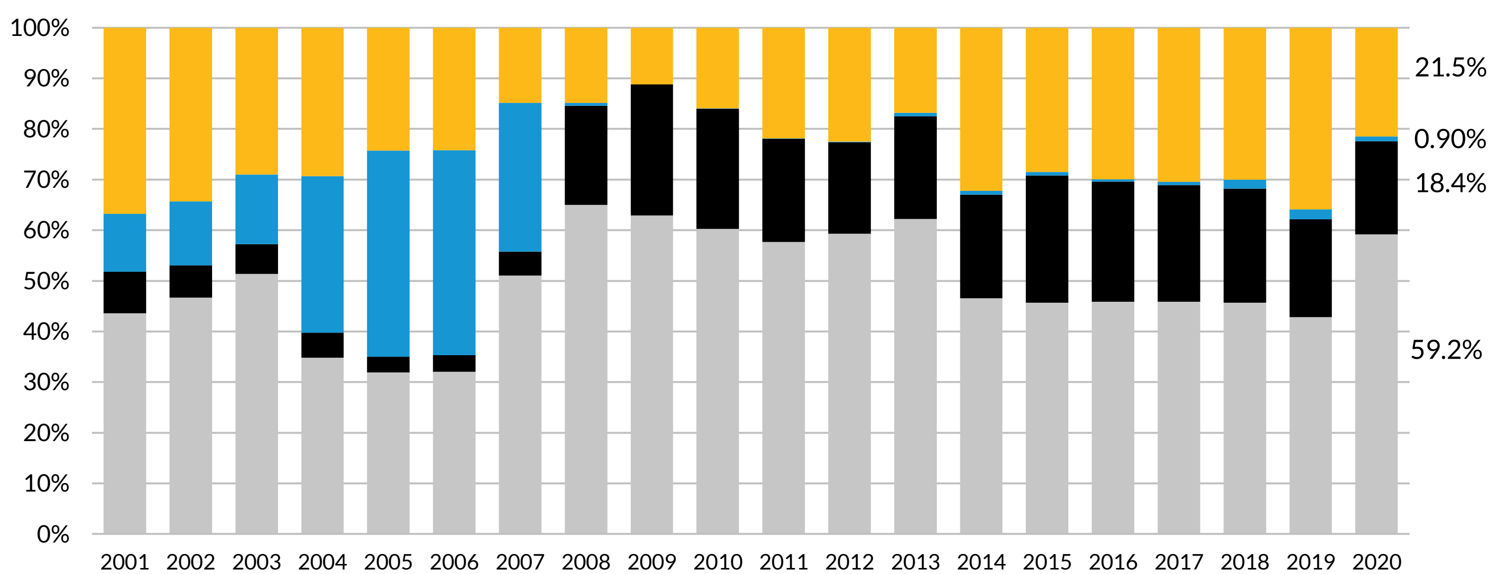
2020 was a record year for first-lien originations with $4.04 trillion in mortgages originated during the year. This number exceeds the 2003 volume of $3.73 trillion, the previous record holder, by $315 billion. The share of portfolio originations was 21.5 percent in 2020, a substantial decline from the 35.9 percent share in 2019. The 2020 GSE share was up significantly at 59.2 percent, compared to 42.9 percent in 2019. The FHA/VA share at the end of 2020 was 18.4 percent, down one percentage point compared to last year. The PLS share was 0.9 percent in 2020, down from 1.9 percent one year ago, and a fraction of its share in the pre-bubble years. The smaller share of portfolio and PLS in 2020 reflects the impact of COVID-19, which made it difficult to originate mortgages without government support. The higher GSE share reflects the large amount of refinances done through this channel.

First Lien Origination Volume



Sources: *Inside Mortgage Finance and Urban Institute.* ***Note:*** *Data as of Q4 2020.*

First Lien Origination Share



Sources: *Inside Mortgage Finance and Urban Institute.* ***Note:*** *Data as of Q4 2020.*

US Agency Market, Originations

Agency gross issuance in 2020 was historic at $3.18 trillion, surpassing every full year of agency origination in the 21st century, including the previous high of $2.09 trillion in 2003. 2020 agency issuance finished $1.63 trillion dollars higher than 2019 full year volume of $1.55 trillion, up 105.2 percent. Ginnie Mae gross issuance for the year was up by 52.5 percent and GSE gross issuance was up by 130.9 percent. Within the Ginnie Mae market, FHA was up by 22.5 percent and VA origination was up by 87.6 percent.

Agency Gross Issuance					
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	$1,195.3
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
2020 % Change YOY	124.9%	139.0%	130.9%	52.5%	105.2%

Ginnie Mae Breakdown: Agency Gross Issuance				
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
2020 % Change YOY	22.5%	87.6%	55.9%	52.5%

Sources: *eMBS and Urban Institute (top and bottom).*
Note : *Dollar amounts are in billions. "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. All data is as of December 2020.*

US Agency Market, Originations

2020 proved to be very robust for agency net issuance, with $652.7 billion of net new supply, up 122.4 percent compared with the same period of 2019. 2020 Ginnie Mae net issuance in 2020 was $19.9 billion, comprising 3.0 percent of total agency net issuance. This is down substantially from 2019 levels, reflecting a contraction in FHA securities outstanding.

Agency Net Issuance

Issuance Year	Fannie Mae	Freddie Mac	GSE Total	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	$172.5
2016	$60.5	$66.8	$127.4	$126.1	$261.6
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	$197.8	$95.7	$293.5
2020	$289.3	$343.5	$632.8	$19.9	$652.7
2020 % Change YOY	230.8%	211.4%	220.0%	-79.2%	122.4%

Ginnie Mae Breakdown: Net Issuance

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	$131.3
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
2020 % Change YOY	-246.3%	22.5%	-27.8%	-79.2%

Sources: *eMBS and Urban Institute.* ***Note :*** *Dollar amounts are in billions. "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. All data is as of December 2020.*

US Agency Market, Originations

Agency gross issuance moves inversely to interest rates, generally declining as interest rates rise, increasing when interest rates fall, but the seasonal trend is also very strong. This table allows for a comparison with the same month in previous years. The December 2020 gross agency issuance of $334.4 wrapped up a year of historic volume in monthly issuance, significantly higher than the same month in 2019, as lower rates gave borrowers a stronger incentive to refinance.

Monthly Agency Issuance

	Gross Issuance				Net Issuance			
Date	Fannie Mae	Freddie Mac	Ginnie Mae	Total	Fannie Mae	Freddie Mac	Ginnie Mae	Total
Jan-17	$55.6	$38.5	$42.6	$136.6	$8.5	$10.7	$10.3	$29.5
Feb-17	$37.6	$27.4	$33.1	$98.1	$2.5	$6.5	$9.4	$18.5
Mar-17	$39.5	$24.4	$31.3	$95.2	$9.7	$6.2	$9.7	$25.6
Apr-17	$39.3	$21.2	$36.4	$97.0	$3.3	$0.4	$11.7	$15.4
May-17	$40.3	$22.6	$36.4	$99.3	$7.7	$2.7	$13.3	$23.8
Jun-17	$45.7	$25.1	$39.9	$110.7	$7.9	$2.4	$13.3	$23.5
Jul-17	$45.3	$27.6	$40.6	$113.5	$5.6	$3.5	$12.3	$21.5
Aug-17	$49.1	$29.3	$42.8	$121.1	$12.0	$6.7	$15.4	$34.1
Sep-17	$47.3	$27.9	$40.2	$115.5	$7.7	$3.8	$10.6	$22.0
Oct-17	$42.9	$34.6	$38.4	$115.9	$5.5	$12.5	$11.0	$28.9
Nov-17	$43.5	$37.2	$37.8	$118.5	$3.9	$13.6	$8.3	$25.8
Dec-17	$45.3	$30.0	$36.2	$111.5	$9.2	$8.1	$7.0	$24.4
Jan-18	$47.4	$21.4	$35.2	$104.0	$12.1	$0.2	$7.7	$20.0
Feb-18	$40.3	$21.5	$31.9	$93.7	$8.3	$2.2	$7.1	$17.6
Mar-18	$35.6	$21.3	$29.0	$85.9	$4.9	$3.0	$6.3	$14.1
Apr-18	$36.3	$26.2	$32.7	$95.2	$1.7	$6.0	$8.8	$16.5
May-18	$38.9	$27.5	$33.7	$100.1	$5.1	$7.2	$10.5	$22.8
Jun-18	$38.2	$28.8	$35.6	$102.5	$2.5	$6.8	$10.3	$19.6
Jul-18	$40.3	$26.2	$35.6	$102.1	$4.2	$3.7	$10.4	$18.3
Aug-18	$50.4	$29.9	$37.5	$117.8	$15.8	$7.9	$12.5	$36.1
Sep-18	$41.8	$30.1	$34.8	$106.6	$5.9	$6.2	$9.0	$21.1
Oct-18	$39.8	$27.4	$33.2	$100.3	$9.7	$7.1	$11.4	$28.2
Nov-18	$35.1	$30.1	$32.4	$97.6	$3.6	$11.0	$9.8	$24.4
Dec-18	$36.9	$23.9	$28.4	$89.1	$8.2	$6.4	$8.2	$22.8
Jan-19	$33.3	$19.2	$29.0	$81.6	$5.9	$2.5	$9.2	$17.6
Feb-19	$27.3	$19.9	$23.5	$70.7	$1.4	$3.4	$4.6	$9.3
Mar-19	$29.6	$27.3	$26.6	$83.5	$1.8	$10.3	$5.6	$17.6
Apr-19	$33.1	$30.8	$32.9	$96.8	$1.3	$10.8	$8.3	$20.4
May-19	$44.5	$34.3	$38.8	$117.6	$6.7	$9.8	$9.4	$26.0
Jun-19	$44.6	$34.0	$43.3	$121.9	$1.9	$5.9	$9.0	$16.8
Jul-19	$51.7	$36.9	$45.9	$134.5	$10.9	$10.1	$11.0	$32.0
Aug-19	$71.1	$50.4	$51.2	$172.6	$20.8	$17.1	$8.7	$46.6
Sep-19	$67.1	$43.0	$52.0	$162.1	$14.1	$7.5	$6.5	$28.0
Oct-19	$65.0	$46.2	$58.4	$169.6	$7.4	$7.1	$11.9	$26.5
Nov-19	$68.1	$50.7	$54.3	$173.1	$5.2	$8.6	$4.1	$18.0
Dec-19	$62.1	$52.5	$52.7	$167.3	$10.1	$17.3	$7.4	$34.7
Jan-20	$61.7	$51.4	$56.0	$169.0	$9.1	$16.5	$8.6	$34.2
Feb-20	$56.5	$39.5	$51.2	$147.2	$9.4	$7.9	$7.1	$24.4
Mar-20	$69.5	$41.1	$53.0	$163.9	$17.9	$6.3	$8.8	$33.0
Apr-20	$101.6	$76.3	$61.4	$239.3	$30.5	$27.5	$10.2	$68.2
May-20	$124.3	$70.6	$60.8	$255.7	$35.2	$8.2	$5.7	$49.1
Jun-20	$118.9	$78.1	$58.5	$255.4	$30.0	$15.9	$1.3	$47.2
Jul-20	$125.0	$108.1	$66.5	$299.5	$23.4	$38.0	-$15.5	$45.9
Aug-20	$137.6	$113.6	$73.6	$324.8	$34.2	$43.4	-$4.1	$73.5
Sep-20	$122.9	$102.1	$72.4	$297.5	$16.5	$29.9	$1.0	$47.5
Oct-20	$142.3	$124.8	$72.6	$339.7	$28.9	$48.3	-$0.3	$76.9
Nov-20	$152.4	$131.5	$72.6	$356.5	$31.4	$48.4	-$4.5	$75.3
Dec-20	$130.8	$126.7	$76.9	$334.4	$22.8	$53.1	$1.7	$77.5

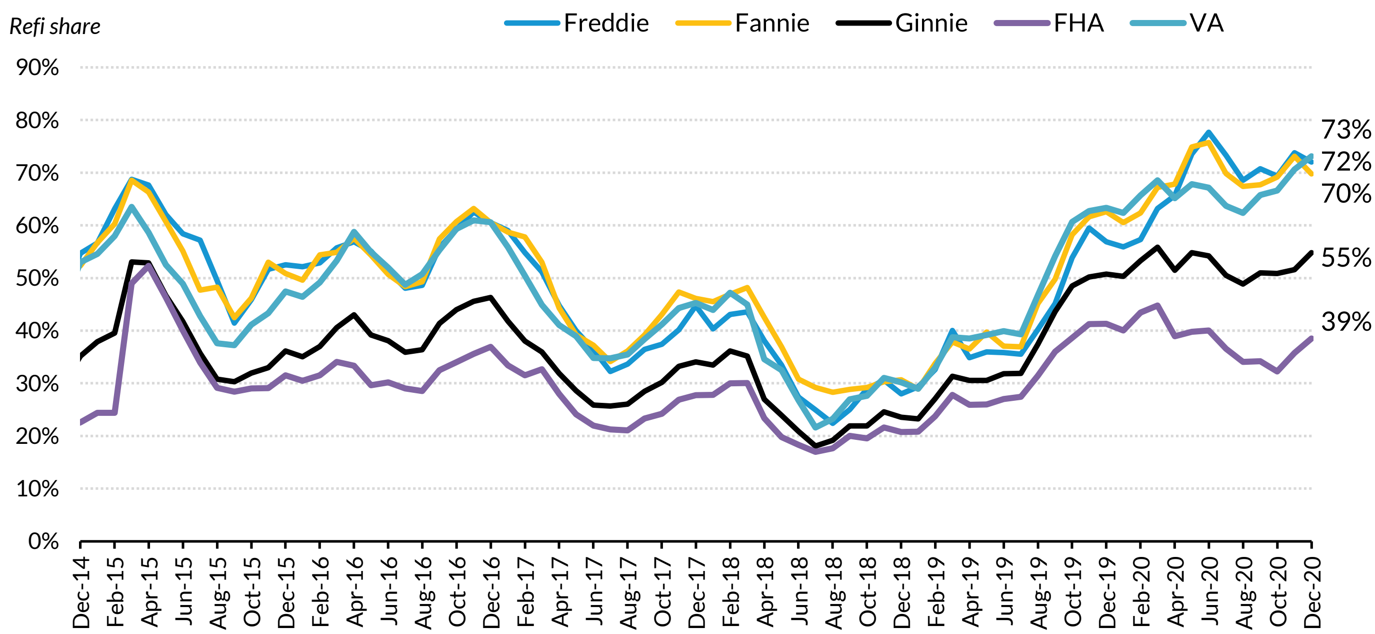
Sources: *eMBS and Urban Institute.*

Note : *Dollar amounts are in billions. "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. All data is as of December 2020.*

US Agency Market, Originations

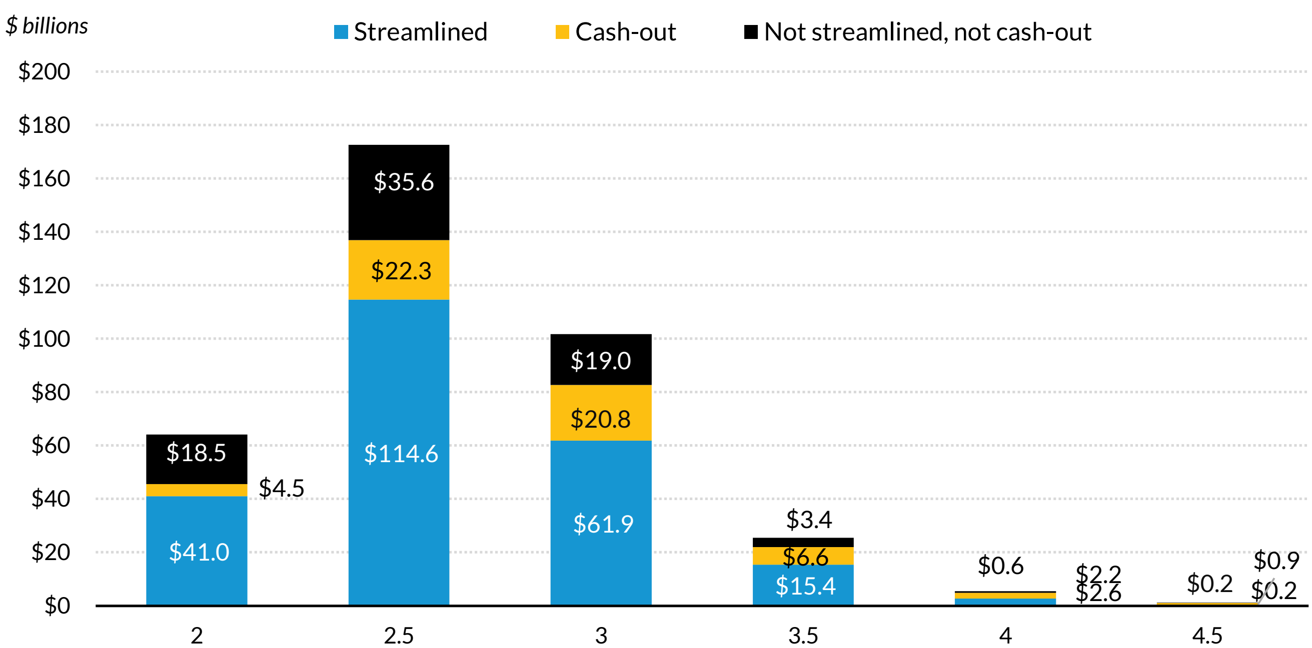
The FHA refinance share stood at 38.5 percent in December 2020, below the 72.0 percent refi share for Freddie originations, the 69.8 percent share for Fannie, and the 73.1 percent share for the VA. The total Ginnie refinance share stood at 54.8 percent in December. Refinances as a share of all originations grew during 2019 and 2020 as interest rates fell. Refinances have declined slightly from their peaks but remain at high levels, as interest rates have stabilized at generational lows. The bottom section shows that nearly all of 2020 Ginnie Mae refinances, predominantly streamlined, were securitized in lower coupon pools. Cash-out refinances are disproportionately securitized in higher coupons, but their volume has fallen sharply due to restrictions Ginnie Mae put in place in late 2019, to combat the “churning” problem.

Percent Refi at Issuance



Sources: *eMBS and Urban Institute.* **Note**: *Based on at-issuance balance. Data as of December 2020.*

Ginnie Mae Refinance Issuance by Type: Full Year 2020

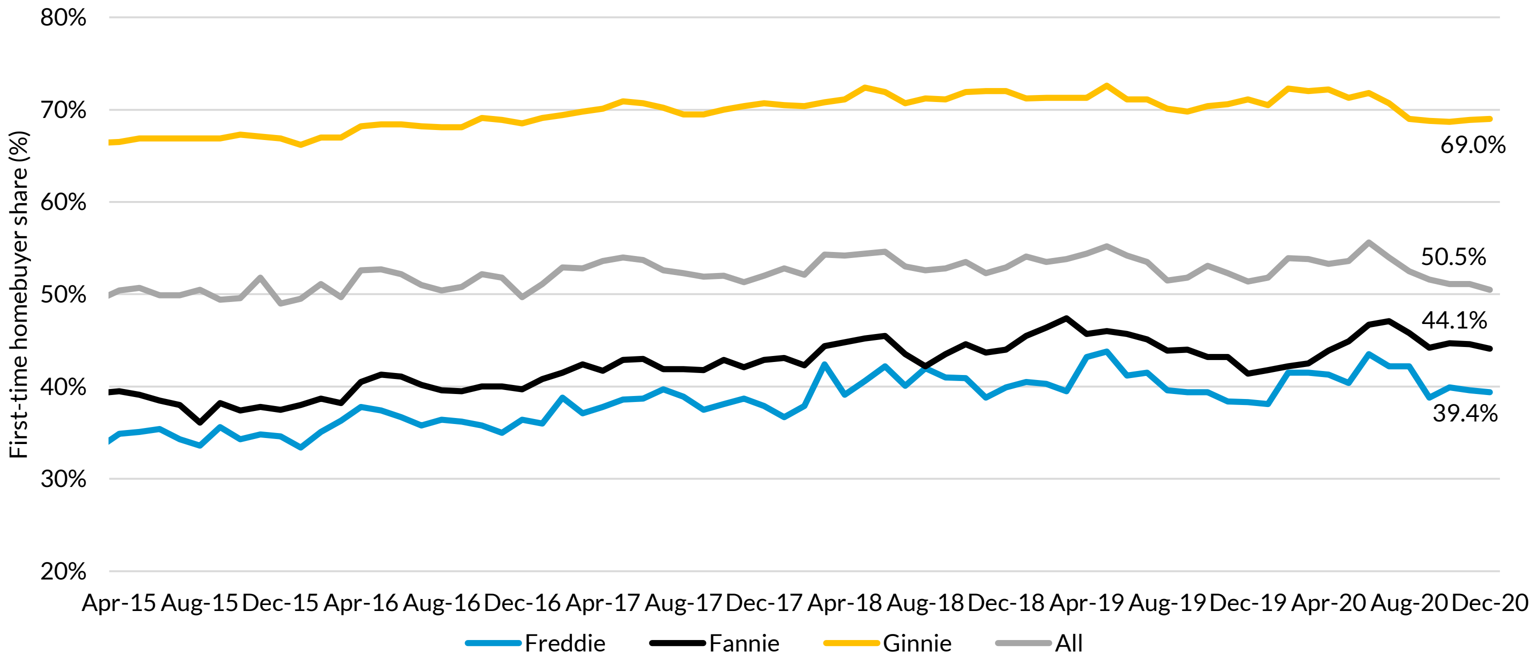


Sources: *eMBS and Urban Institute.*
Note: *Based on at-issuance balance. Data as of December 2020.*

Credit Box

The first time homebuyer share of Ginnie Mae purchase loans was 69.0 percent in December 2020, down from 71.1 percent in December 2019. First time homebuyers comprise a significantly higher share of the Ginnie Mae purchase market than of the GSE purchase market, with first time homebuyers accounting for 44.1 percent and 39.4 percent of Fannie Mae and Freddie Mac purchase originations, respectively. The bottom table shows that based on mortgages originated in December 2020, the average first-time homebuyer was more likely than an average repeat buyer to take out a smaller loan, have a lower credit score, a higher LTV, a similar DTI, and pay a similar rate.

First Time Homebuyer Share: Purchase Only Loans



Sources: *eMBS and Urban Institute.* **Note**: *Data as of December 2020.*

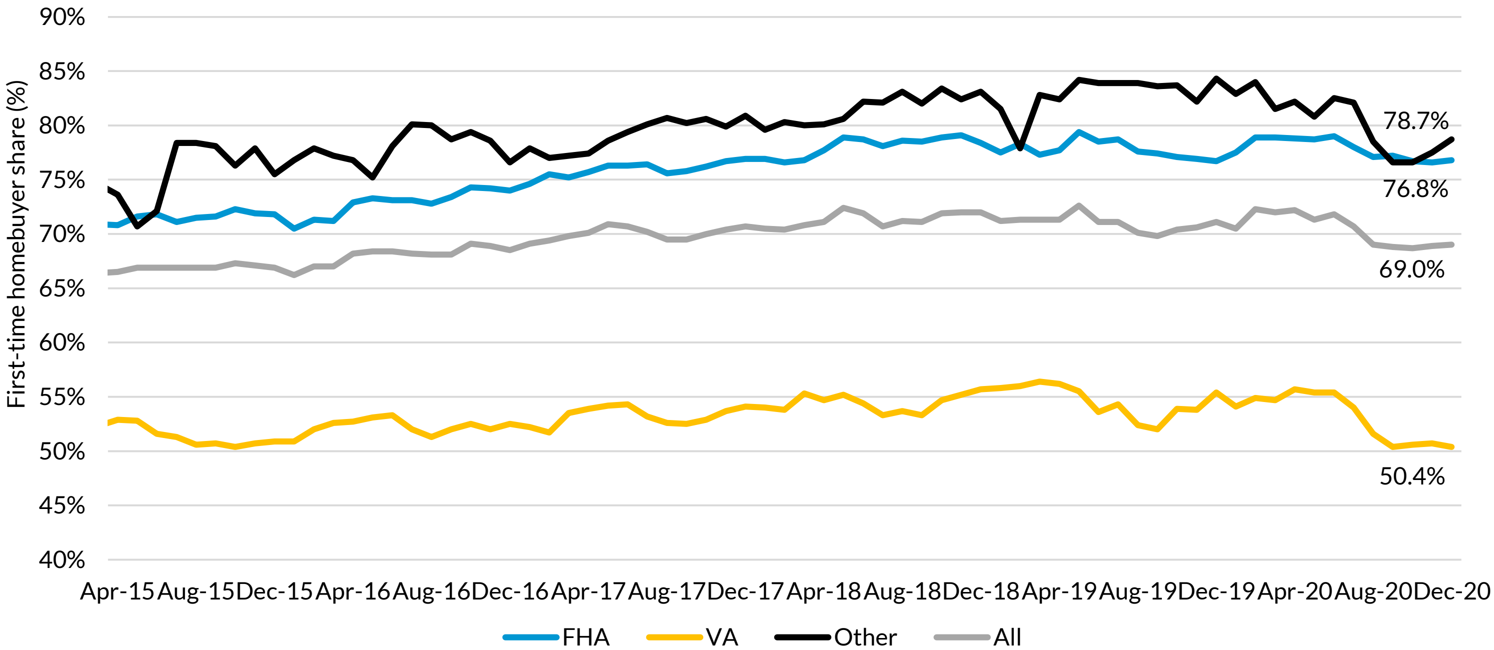
	Fannie Mae		Freddie Mac		Ginnie Mae		All	
	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat
Loan Amount ($)	305,134	322,287	264,303	282,194	245,013	299,887	265,734	301,435
Credit Score	750.4	759.3	744.7	755.1	688.5	705.1	722.0	744.4
LTV (%)	87.7	80.1	88.0	78.7	96.8	95.8	91.7	83.4
DTI (%)	34.1	34.9	34.4	35.5	41.5	42.0	37.4	36.8
Loan Rate (%)	2.9	2.8	2.9	2.9	3.0	2.9	2.9	2.9

Sources: *eMBS and Urban Institute.*
Note: *In May 2017 Ginnie Mae began disclosing issuer-reported LTV for FHA loans, which includes the financed upfront mortgage insurance premium. To make it consistent with the previously reported LTV, we removed the financed upfront mortgage insurance premium by subtracting 169 bps from this new issuer-reported LTV. Data as of December 2020.*

Credit Box

Within the Ginnie Mae purchase market, 76.8 percent of FHA loans, 50.4 percent of VA loans, and 78.7 percent of other loans represent financing for first-time home buyers in December 2020. The bottom table shows that based on mortgages originated in December 2020, the average first-time homebuyer was more likely than an average repeat buyer to take out a smaller loan, have a lower credit score, a higher LTV, a similar DTI, and pay a slightly higher rate.

First Time Homebuyer Share: Ginnie Mae Breakdown



Sources: *eMBS and Urban Institute.* **Note**: *Includes only purchase loans. Data as of December 2020.*

	FHA		VA		Other		Ginnie Mae Total	
	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat
Loan Amount ($)	237,630	253,186	299,448	358,634	174,011	182,037	245,013	299,887
Credit Score	678.6	677.4	713.3	731.9	701.1	700.4	688.5	705.1
LTV (%)	95.5	94.1	99.6	97.0	99.4	99.2	96.8	95.8
DTI (%)	43.1	43.8	39.5	41.0	34.9	35.5	41.5	42.0
Loan Rate (%)	3.1	3.0	2.8	2.7	2.9	3.0	3.0	2.9

Sources: *eMBS and Urban Institute.*
Note: *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. In May 2017 Ginnie Mae began disclosing issuer-reported LTV for FHA loans, which includes the financed upfront mortgage insurance premium. To make it consistent with the previously reported LTV, we removed the financed upfront mortgage insurance premium by subtracting 169 bps from this new issuer-reported LTV. Data as of December 2020.*

December 2020 Credit Box at a Glance

In December 2020, the median Ginnie Mae FICO score was 699 versus 770 for Fannie Mae and 769 for Freddie Mac. Note that the FICO score for the 10th percentile was 639 for Ginnie Mae, versus 697 for Fannie Mae and 698 for Freddie Mac. Within the Ginnie Mae market, FHA loans have a median FICO score of 672, VA loans have a median FICO score of 738 and other loans have a median FICO score of 698.

Purchase FICO

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	390,644	657	715	744	782	800	735
Fannie	149,448	689	732	760	794	803	752
Freddie	118,822	697	730	765	790	803	757
Ginnie	122,374	633	654	684	730	774	694

Refi FICO

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	756,007	687	727	768	793	806	756
Fannie	345,399	701	738	773	796	808	763
Freddie	305,726	698	734	771	794	806	760
Ginnie	104,882	645	676	723	774	799	722

All FICO

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	1,146,651	674	715	761	790	804	749
Fannie	494,847	697	732	770	794	807	760
Freddie	424,548	698	733	769	793	806	759
Ginnie	227,256	639	662	699	754	790	707

Purchase FICO: Ginnie Mae Breakdown By Source

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	122,374	633	654	684	730	774	694
FHA	74,844	628	647	671	703	741	678
VA	36,990	647	676	724	772	797	723
Other	10,540	645	664	696	735	767	701

Refi FICO: Ginnie Mae Breakdown By Source

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	104,882	645	676	723	774	799	722
FHA	26,986	626	648	675	705	745	679
VA	77,066	661	697	745	783	802	737
Other	830	652	679	714	753	784	715

All FICO: Ginnie Mae Breakdown By Source

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	227,256	639	662	699	754	790	707
FHA	101,830	628	647	672	704	742	678
VA	114,056	655	689	738	780	801	732
Other	11,370	646	665	698	737	768	702

Sources: *eMBS and Urban Institute.* **Note:** *"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 December 2020.*

December 2020 Credit Box at a Glance

In December 2020, the median loan-to-value ratio (LTV) was 96.4 percent for Ginnie Mae, compared to 72 percent for both Fannie Mae and Freddie Mac. The 90th percentile was 100 percent for Ginnie Mae, versus 92 percent for Freddie and 95 percent for Fannie. Within the Ginnie Mae market, the median LTV was 96.5 for FHA, 93.5 for VA and 101.0 for other programs.

Purchase LTV

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	390,987	70.0	80.0	94.6	96.5	99.2	86.8
Fannie	149,568	64.0	79.0	80.0	95.0	95.0	82.3
Freddie	118,841	65.0	80.0	82.0	95.0	95.0	82.6
Ginnie	122,578	93.9	96.5	96.5	100.0	101.0	96.5

Refi LTV

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	792,167	43.0	56.0	70.0	80.0	90.0	67.6
Fannie	345,417	40.0	52.0	65.0	75.0	80.0	63.0
Freddie	305,735	42.0	55.0	67.0	75.0	81.0	64.3
Ginnie	141,015	66.9	79.9	89.8	96.6	99.7	86.0

All LTV

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	1,183,154	47.0	60.0	76.0	90.0	96.5	74.0
Fannie	494,985	43.0	57.0	72.0	80.0	95.0	68.8
Freddie	424,576	45.0	59.0	72.0	80.0	92.0	69.4
Ginnie	263,593	74.9	87.0	96.4	97.8	100.0	90.9

Purchase LTV: Ginnie Mae Breakdown By Source

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	122,578	93.9	96.5	96.5	100.0	101.0	96.5
FHA	75,002	93.8	95.0	96.5	96.5	96.5	95.2
VA	37,018	92.6	100.0	100.0	100.0	102.3	98.3
Other	10,558	96.0	99.4	101.0	101.0	101.0	99.3

Refi LTV: Ginnie Mae Breakdown By Source

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	141,015	66.9	79.9	89.8	96.6	99.7	86.0
FHA	44,506	74.9	81.4	91.4	96.4	97.8	88.0
VA	95,645	63.7	77.6	89.0	96.8	100.4	85.1
Other	864	78.8	88.6	96.1	100.0	101.0	92.5

All LTV: Ginnie Mae Breakdown By Source

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	263,593	74.9	87.0	96.4	97.8	100.0	90.9
FHA	119,508	81.4	92.3	96.5	96.5	96.6	92.5
VA	132,663	67.8	82.0	93.5	100.0	101.4	88.8
Other	11,422	94.4	99.1	101.0	101.0	101.0	98.8

Sources: *eMBS and Urban Institute.* **Note:** *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. In May 2017 Ginnie Mae began disclosing issuer-reported LTV for FHA loans, which includes the financed upfront mortgage insurance premium. To make it consistent with the previously reported LTV, we removed the financed upfront mortgage insurance premium by subtracting 169 bps from this new issuer-reported LTV. Data as of December 2020.*

December 2020 Credit Box at a Glance

In December 2020, the median Ginnie Mae debt-to-income ratio (DTI) was 41.6 percent, considerably higher than the 34.0 percent median DTI for both Fannie Mae and Freddie Mac. The 90th percentile for Ginnie Mae was 53.5 percent, also much higher than the 46.0 percent DTI for Fannie Mae and 45.0 percent for Freddie Mac. Within the Ginnie Mae market, the median FHA DTI ratio was 44.0 percent, versus 38.8 percent for VA and 35.8 percent for other lending programs.

Purchase DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	389,647	23.0	30.0	38.0	44.0	49.0	36.8
Fannie	149,560	21.0	28.0	36.0	43.0	46.0	34.8
Freddie	118,832	21.0	28.0	36.0	42.0	46.0	34.5
Ginnie	121,255	28.6	35.3	42.4	48.7	53.7	41.6
Refi DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	685,851	19.0	25.0	33.0	41.0	46.0	32.6
Fannie	345,398	18.0	25.0	33.0	41.0	45.0	32.3
Freddie	305,719	19.0	25.0	33.0	41.0	45.0	32.5
Ginnie	34,734	22.5	30.1	37.4	45.9	52.3	37.4
All DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	1,075,498	20.0	27.0	35.0	42.0	47.0	34.1
Fannie	494,958	19.0	26.0	34.0	41.0	46.0	33.0
Freddie	424,551	19.0	26.0	34.0	41.0	45.0	33.0
Ginnie	155,989	27.1	33.8	41.6	48.3	53.5	40.7

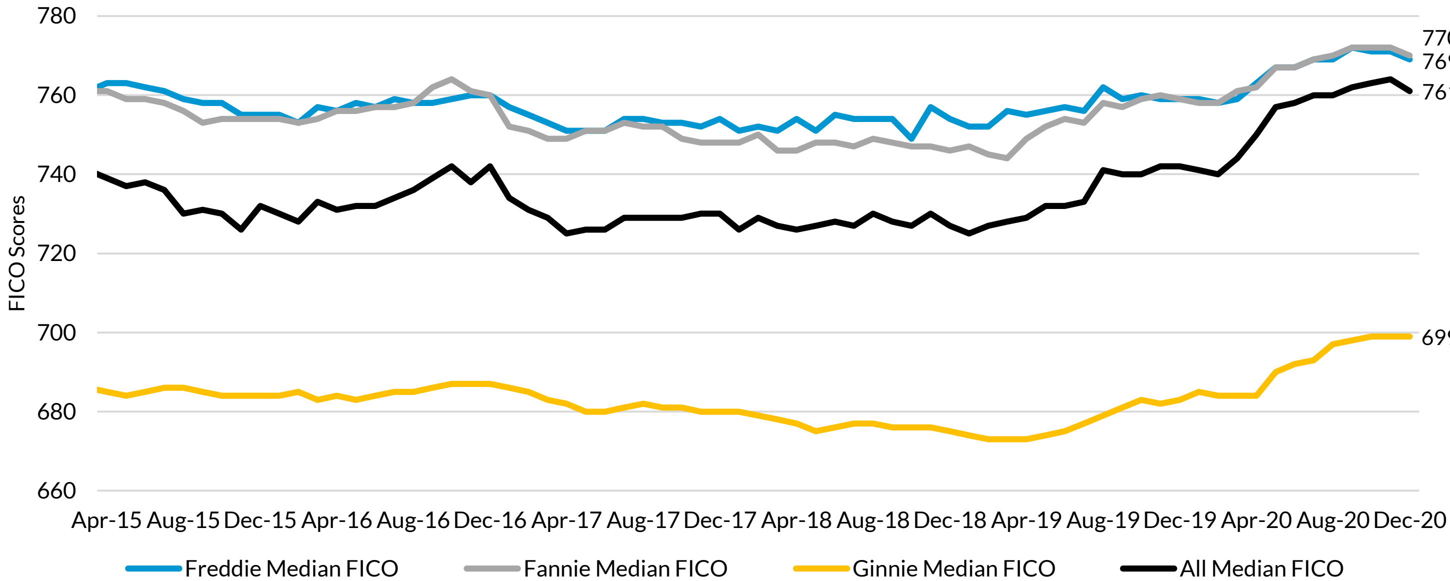
Purchase DTI: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	121,255	28.6	35.3	42.4	48.7	53.7	41.6
FHA	74,431	30.9	37.7	44.3	49.8	54.3	43.2
VA	36,287	26.4	33.2	40.8	47.7	53.3	40.3
Other	10,537	25.4	30.4	35.9	40.3	43.3	35.0
Refi DTI: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	34,734	22.5	30.1	37.4	45.9	52.3	37.4
FHA	14,078	27.1	33.3	41.8	48.6	53.7	40.8
VA	20,183	20.3	27.8	34.7	43.4	50.4	35.3
Other	473	17.8	23.2	30.8	37.5	41.7	30.4
All DTI: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	155,989	27.1	33.8	41.6	48.3	53.5	40.7
FHA	88,509	30.1	37.0	44.0	49.6	54.2	42.9
VA	56,470	23.9	31.3	38.8	46.5	52.6	38.5
Other	11,010	24.9	30.1	35.8	40.3	43.3	34.8

Sources: *eMBS and Urban Institute.* **Note**: *"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 December 2020.*

Credit Box: Historical

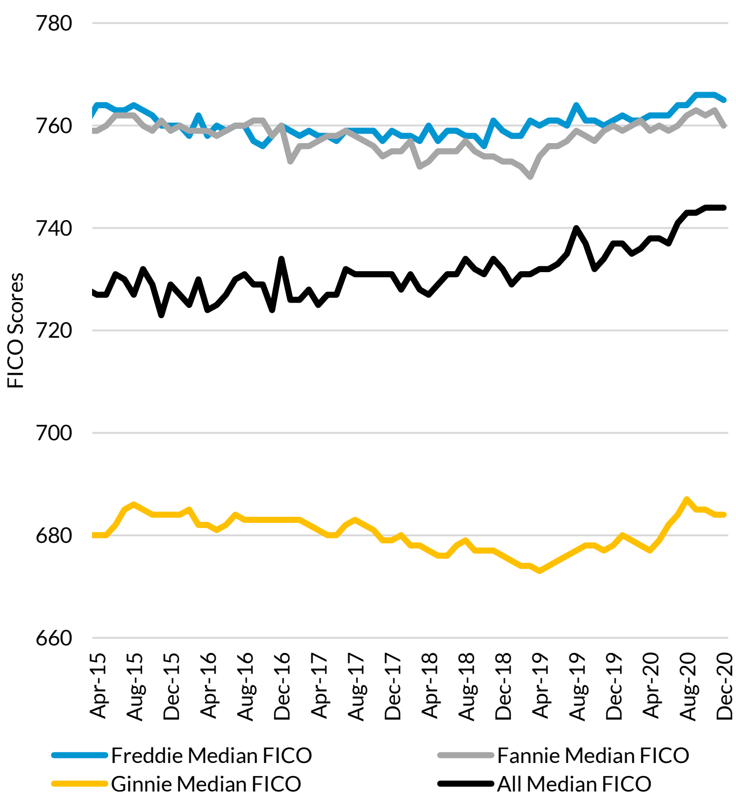
The median FICO score for all agency loans originated in December 2020 was 761, up considerably since the start of 2019, owing to the refinance wave, which higher FICO borrowers take advantage of with greater frequency. In addition, the increases in refinance activity have been much more dramatic at the GSEs than at Ginnie Mae, shifting the composition toward higher FICO score borrowers. Note since early 2019, the median FICO scores for Fannie, Freddie and Ginnie borrowers have moved up for both purchase and refinance loans, although refinance FICOs have started to dip a bit. The difference between Ginnie Mae and GSE borrower FICOs is considerably wider for purchase loans than for refi loans.

FICO Scores for All Loans



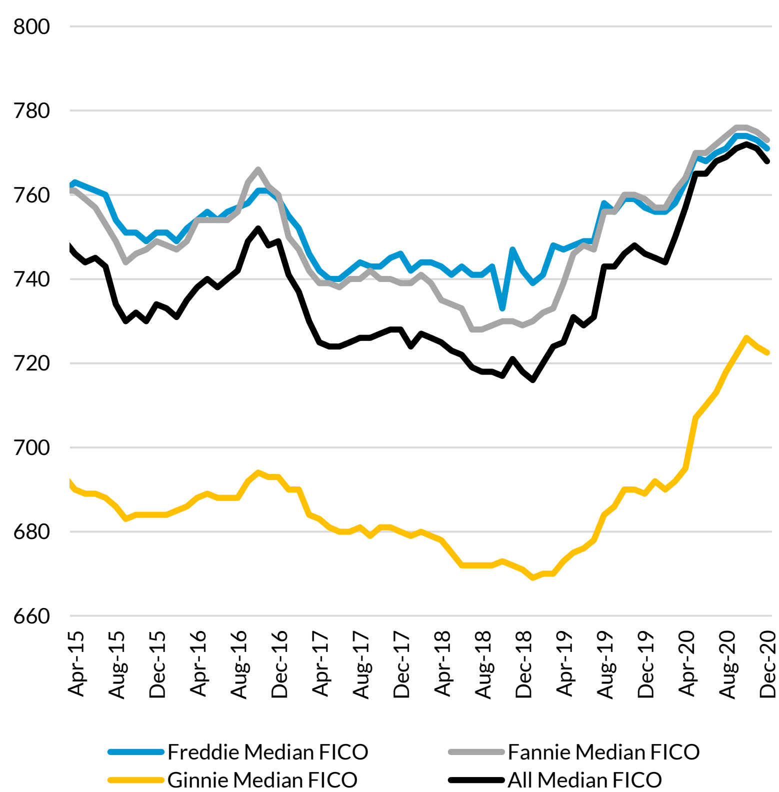
Sources: *eMBS and Urban Institute.* **Note**: *Data as of December 2020.*

FICO Scores for Purchase Loans



Sources: *eMBS and Urban Institute.* **Note:** *Data as of December 2020.*

FICO Scores for Refinance Loans

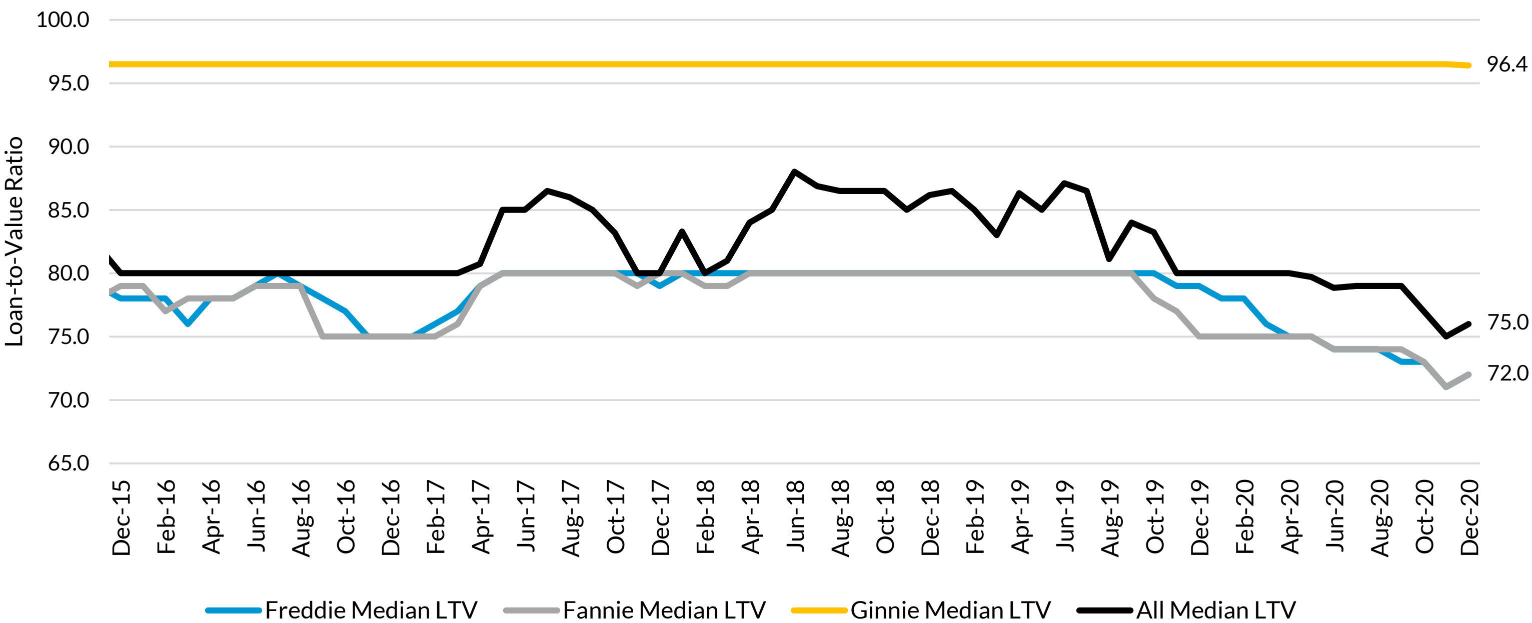


Sources: *eMBS and Urban Institute.* **Note:** *Data as of December 2020.*

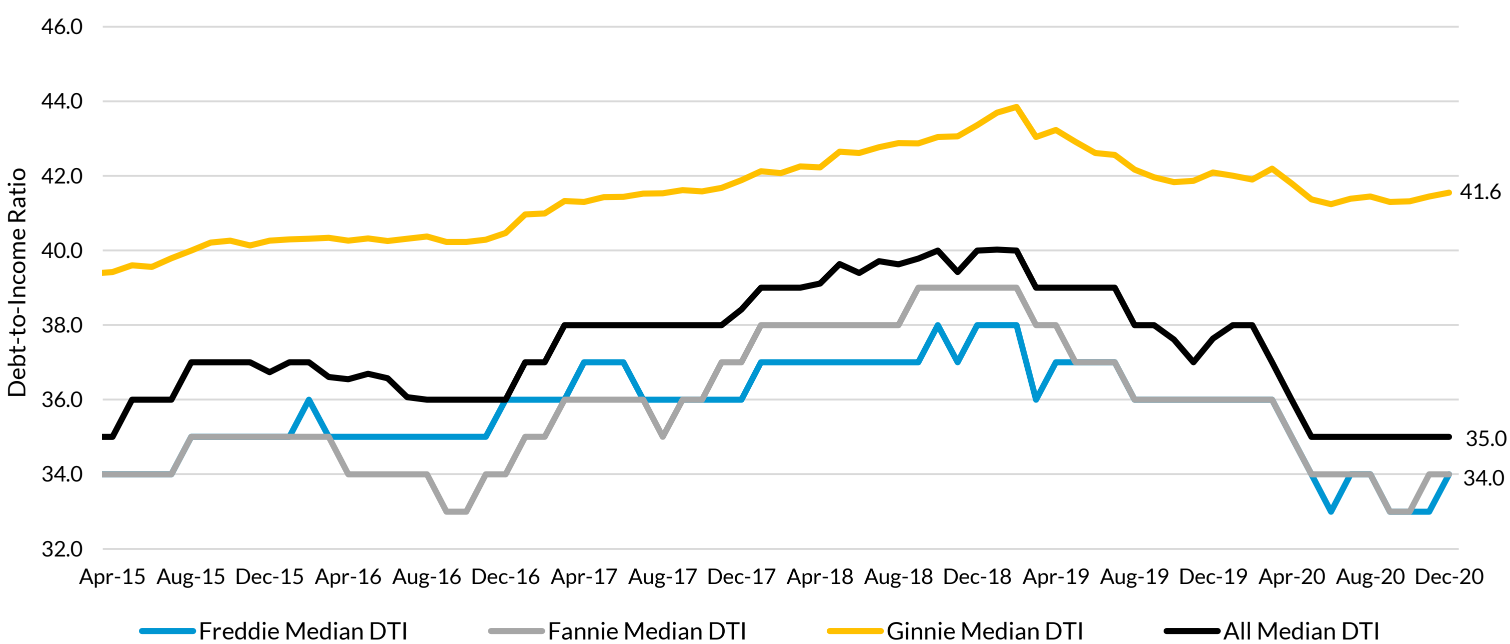
Credit Box: Historical

The median LTV for Ginnie Mae loans was 96.4 percent in December 2020, much higher than the 72 percent LTV for the GSEs. Median debt-to-income ratios for Ginnie Mae loans have historically been in the low 40s, considerably higher than for the GSEs. DTIs increased in the 2017-2018 period for both Ginnie Mae and GSE loans, with the movement more pronounced for Ginnie Mae. Increases in DTI are very typical in an environment of rising interest rates and rising home prices. All three agencies witnessed measurable declines in DTI, beginning in early 2019, driven by lower interest rates, with larger declines in GSE securities.

LTV Ratio for All Loans



DTI Ratio for All Loans

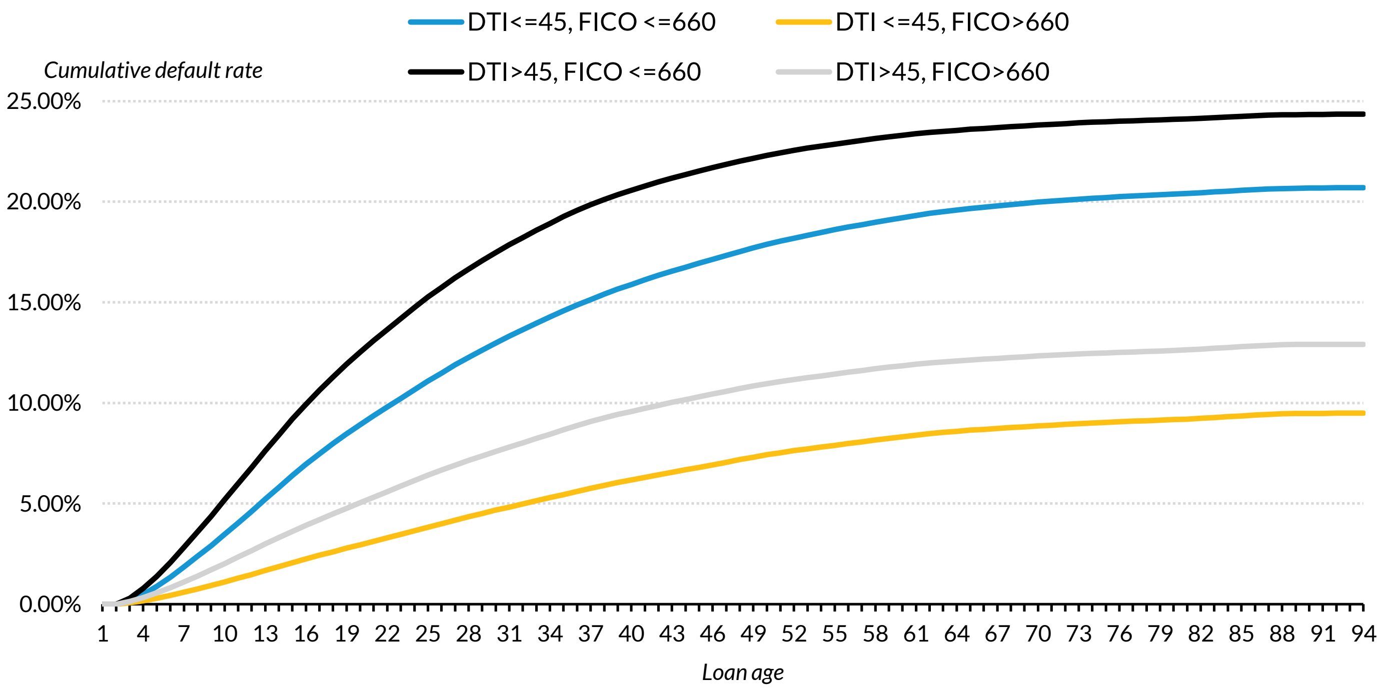


Sources: *eMBS and Urban Institute.* **Note:** *In May 2017 Ginnie Mae began disclosing issuer-reported LTV for FHA loans, which includes the financed upfront mortgage insurance premium. To make it consistent with the previously reported LTV, we removed the financed upfront mortgage insurance premium by subtracting 169 bps from this new issuer-reported LTV. Sources and note apply to all three graphs. Data as of December 2020.*

Credit Box: Historical

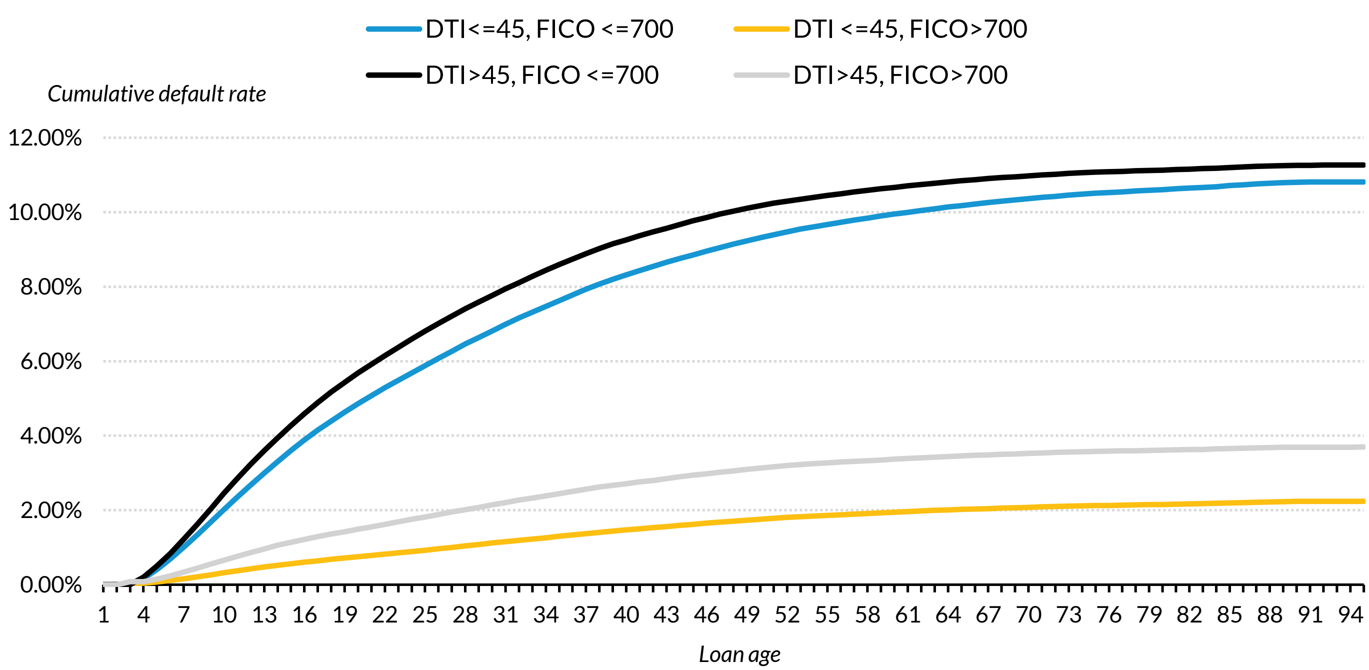
DTI is a much weaker predictor of performance than FICO score. The top chart shows FHA borrowers with higher DTIs do default more than those with lower DTIs, but the differences are modest, as evidenced by the fact that the black line is very close to the blue line and the grey line is not that much above the yellow line. By contrast, FICO makes a much larger difference, as can be seen by comparing the blue line to the yellow line or the black line to the gray line. And low DTI/low FICO borrowers default much less than high DTI/high FICO borrowers, as can be seen by comparing the blue line to the gray line. The bottom chart, for VA borrowers illustrates the same point; DTI is a much weaker predictor of loan performance than credit score.

FHA Cumulative Default Rate by DTI and FICO



Sources: *eMBS and Urban Institute*. **Note:** Defaults = 180 days delinquent. *Data as of January 2020.*

VA Cumulative Default Rate by DTI and FICO

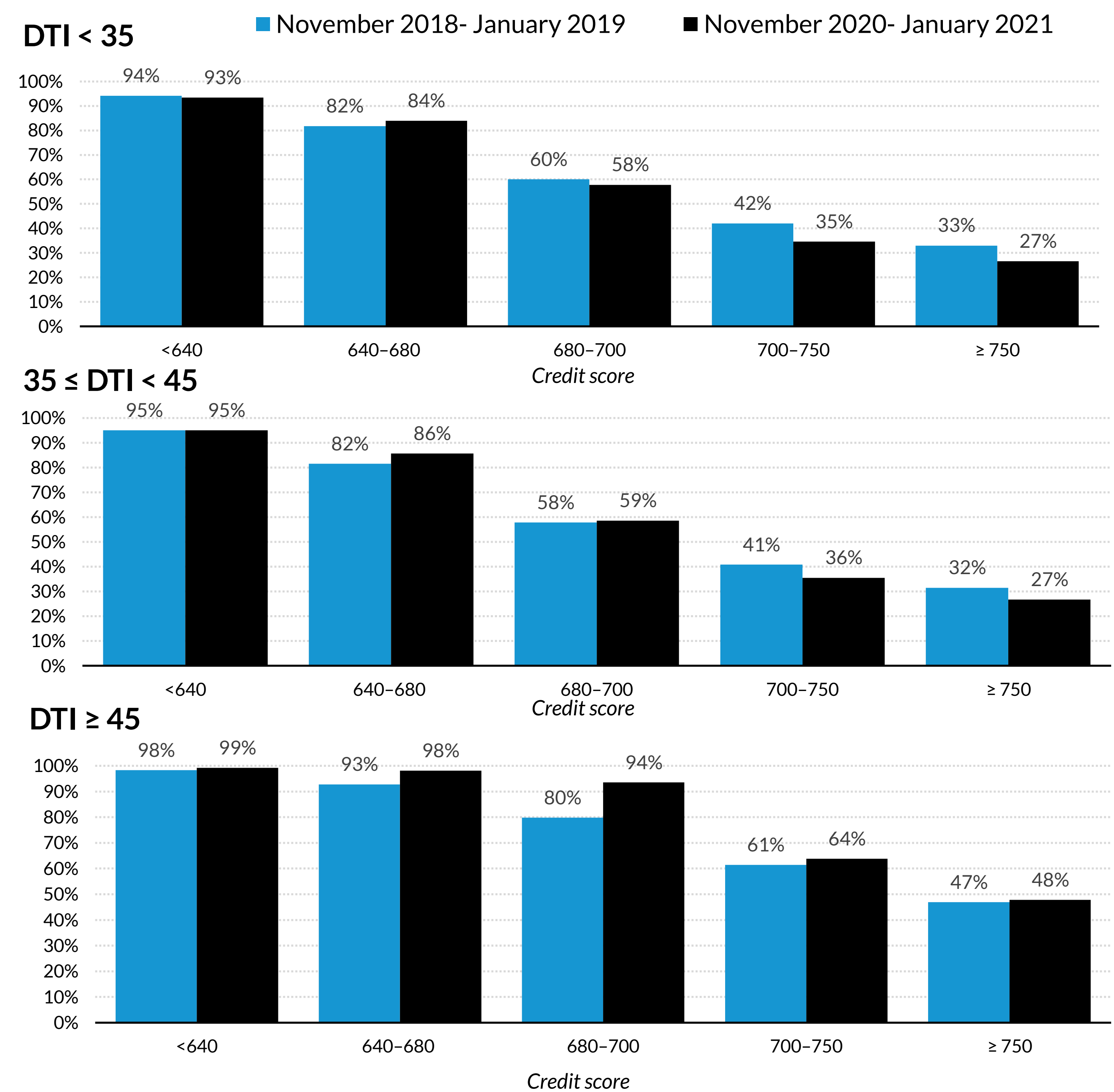


Sources: *eMBS and Urban Institute*. **Note:** Defaults = 180 days delinquent. *Data as of January 2020.*

Credit Box: Historical

This table shows Ginnie Mae's share of agency high-LTV lending by DTI and FICO. In each DTI bucket, Ginnie Mae's share is more concentrated in lower FICO scores than in higher FICO scores. In November 2020- January 2021, Ginnie Mae accounted for 93 percent of agency issuance for DTIs under 35 and FICOs below 640, compared to just 27 percent for DTIs below 35 and FICO 750 and higher. The Ginnie/GSE split in the 35-45 DTI bucket looks a lot like the below 35 percent DTI bucket. In November 2020– January 2021, Ginnie Mae's share of issuance was higher for DTIs of 45 and above, as compared with the two lower DTI buckets. Ginnie Mae share of loans with a DTI of 45 and above and a FICO of 680-700 was 94 percent; it was 58-59 percent for the same FICO in the lower DTI buckets. Comparing this period to 2 years earlier, it is clear the GSEs have stepped up their higher LTV lending for borrowers with FICOs of 700 or higher for DTIs less than 45 (the less than 35 and the 35-45 buckets).

Ginnie Mae Share of Agency Market by DTI and FICO for Loans with LTV ≥ 95



Sources: *eMBS and Urban Institute.*

High LTV Loans: Ginnie Mae vs. GSEs

Ginnie Mae dominates high-LTV lending, with 66.7 percent of its issuances in the November 2020- January 2021 period having LTVs of 95 or above, compared to 8.9 percent for the GSEs. Both the GSEs and Ginnie Mae have decreased their high-LTV lending share from November 2018– January 2019, with the GSEs falling more dramatically from 20.7 percent. The share of high-LTV agency loans going to highest FICO borrowers (i.e. above 750) has increased from the November 2018-January 2019 period to the November 2020-January 2021 period, as has the share of lower DTI borrowers (below 35).

Share of Loans with LTV ≥ 95

	Ginnie Mae	GSE	All
November 2018- January 2019	70.1%	20.7%	37.0%
November 2020- January 2021	66.7%	8.9%	17.1%

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

November 2018-January 2019

	FICO					
DTI	<640	640–680	680–700	700–750	≥ 750	All
< 35	2.8%	4.5%	2.5%	6.5%	8.3%	24.5%
35 –45	5.4%	8.9%	4.7%	11.2%	9.9%	40.3%
≥ 45	5.3%	9.1%	4.6%	9.5%	6.9%	35.3%
All	13.5%	22.5%	11.8%	27.2%	25.1%	100.0%

November 2020-January 2021

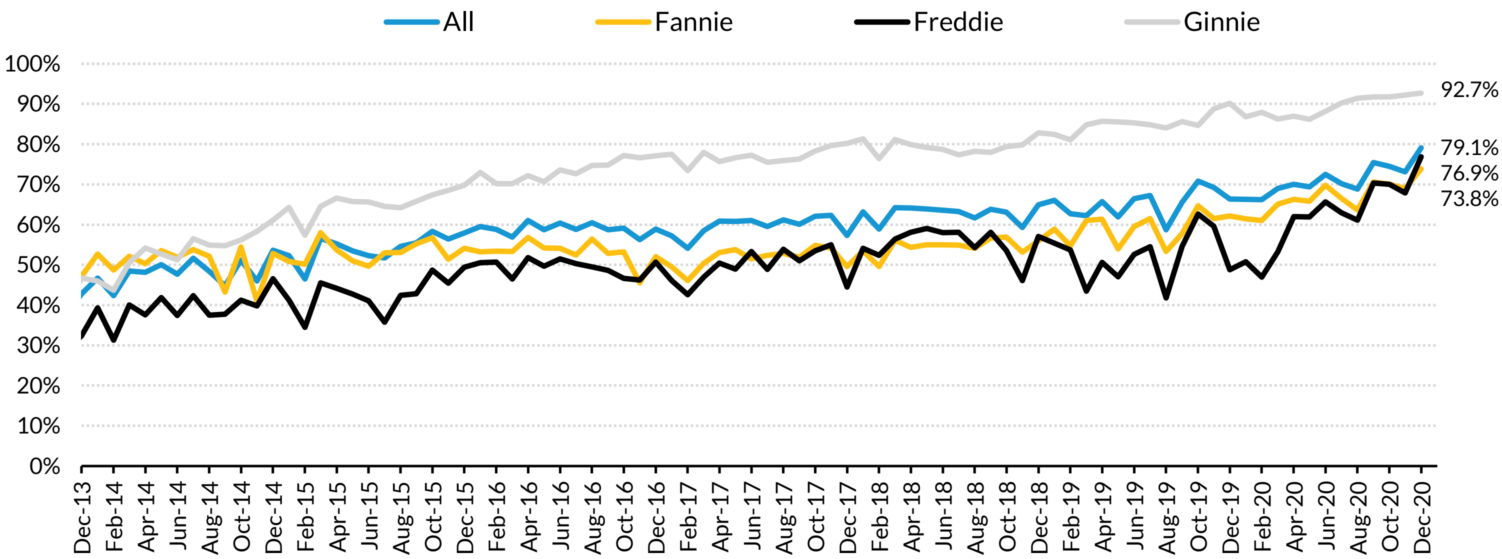
	FICO					
DTI	<640	640–680	680–700	700–750	≥ 750	All
< 35	1.6%	4.6%	3.0%	8.8%	13.3%	31.3%
35 –45	3.0%	8.4%	5.0%	13.0%	12.8%	42.1%
≥ 45	2.5%	7.1%	3.3%	7.7%	6.0%	26.6%
All	7.1%	20.1%	11.2%	29.5%	32.1%	100.0%

Sources: *eMBS and Urban Institute.*

Nonbank Originators

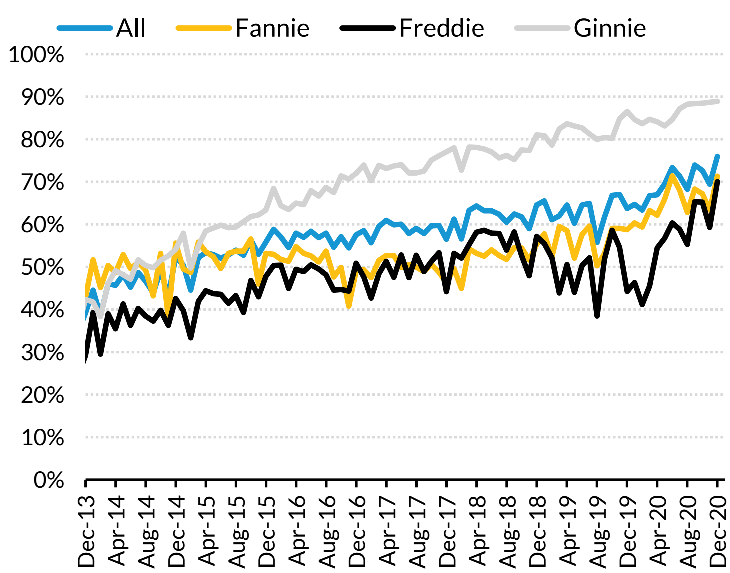
The nonbank origination share has been rising steadily for all three agencies since 2013. The Ginnie Mae nonbank share has been consistently higher than the GSEs, standing at 92.7 percent in December 2020, a new record high. Fannie and Freddie's nonbank shares also reached record highs in December, standing at 73.8 percent and 76.9 percent respectively (note that these numbers can be volatile on a month-to-month basis). Ginnie Mae, Fannie Mae, and Freddie Mac all have higher nonbank origination shares for refi activity than for purchase activity. Freddie Mac's nonbank share is the lowest among the three agencies for purchase loans, while Fannie Mae's nonbank share is the lowest for refi loans.

Nonbank Origination Share: All Loans

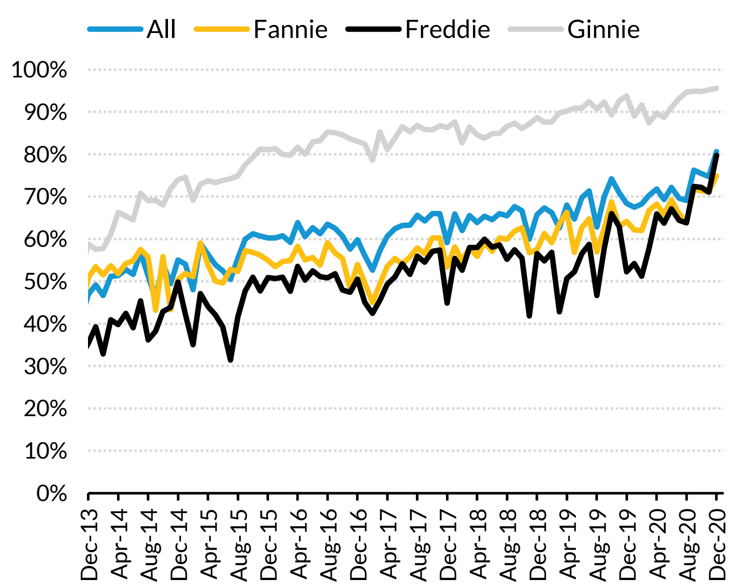


Sources: *eMBS and Urban Institute*
Note: *Data as of December 2020.*

Nonbank Origination Share: Purchase Loans



Nonbank Origination Share: Refinance Loans

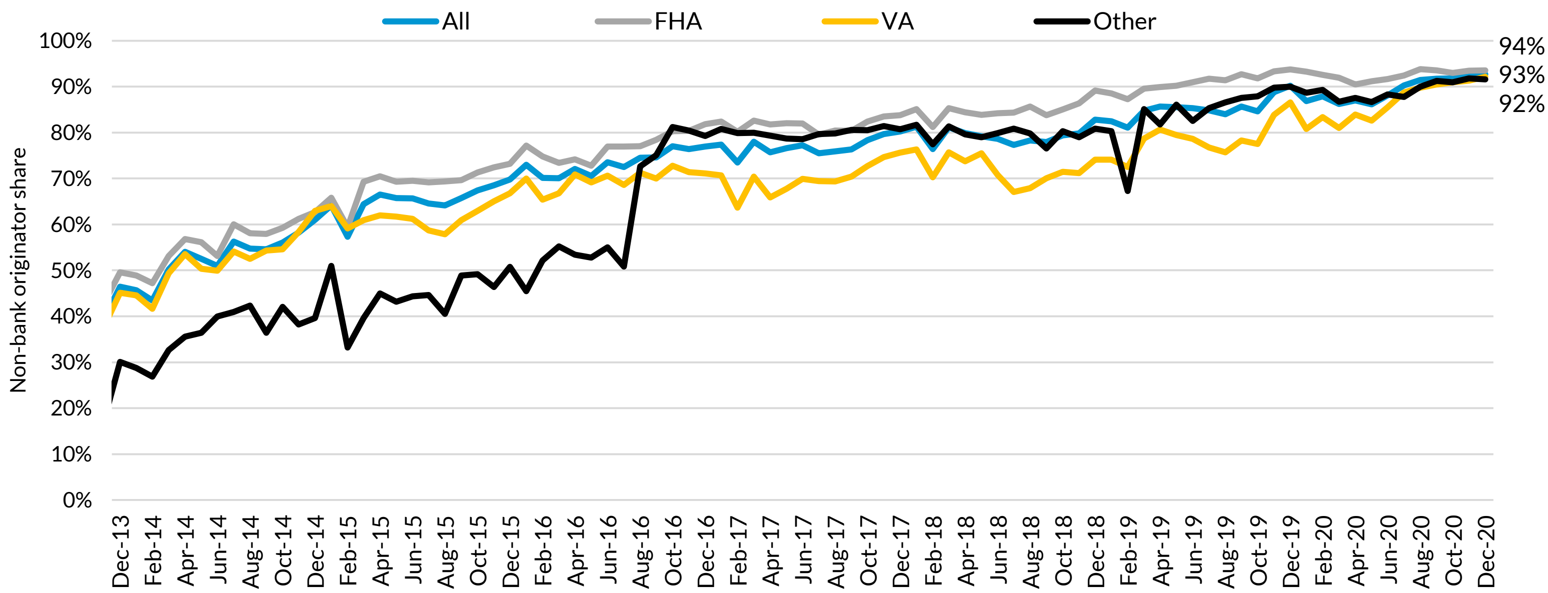


Sources: *eMBS and Urban Institute.* **Note:** *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of December 2020.*

Ginnie Mae Nonbank Originators

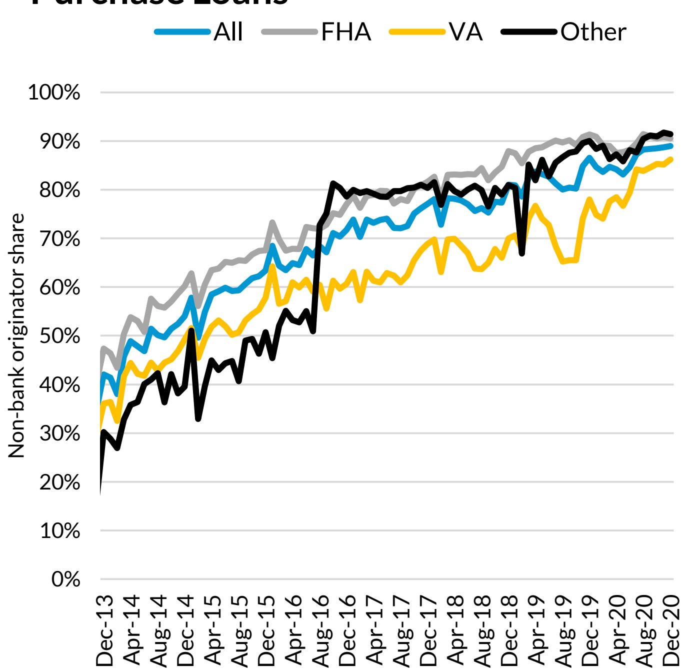
In December 2020, Ginnie Mae's nonbank share rose very slightly to 92.7 percent. The nonbank originator share for FHA also rose slightly 93.6 percent in December, up very marginally from the previous month. The nonbank originator share for VA was higher than last month at 92.1 percent and the nonbank originator share for other loans, which can fluctuate quite a bit month to month, fell to 91.6 percent.

Ginnie Mae Nonbank Originator Share: All Loans

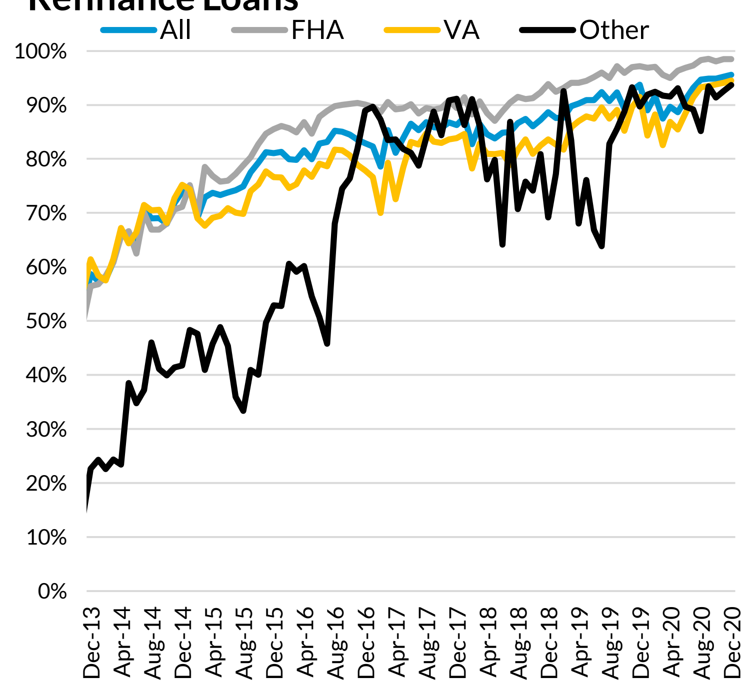


Sources: *eMBS and Urban Institute*
Note: *Data as of December 2020.*

Ginnie Mae Nonbank Share: Purchase Loans



Ginnie Mae Nonbank Share: Refinance Loans

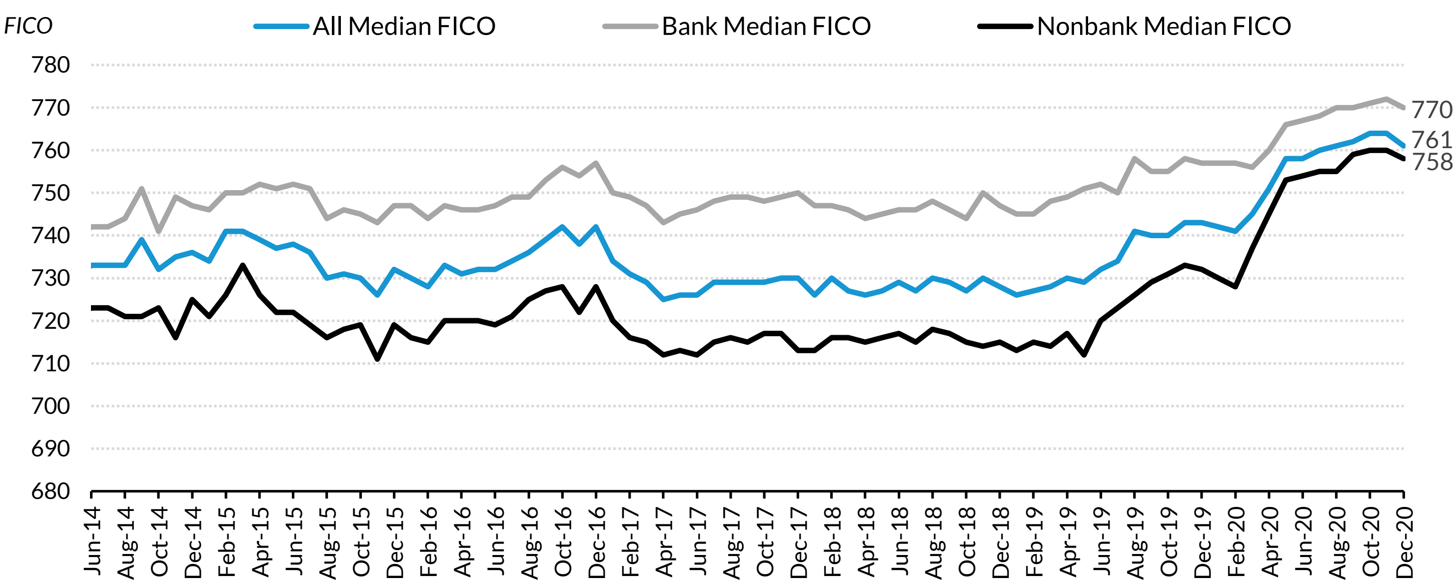


Sources: *eMBS and Urban Institute.* **Note:** *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of December 2020.*

Nonbank Credit Box

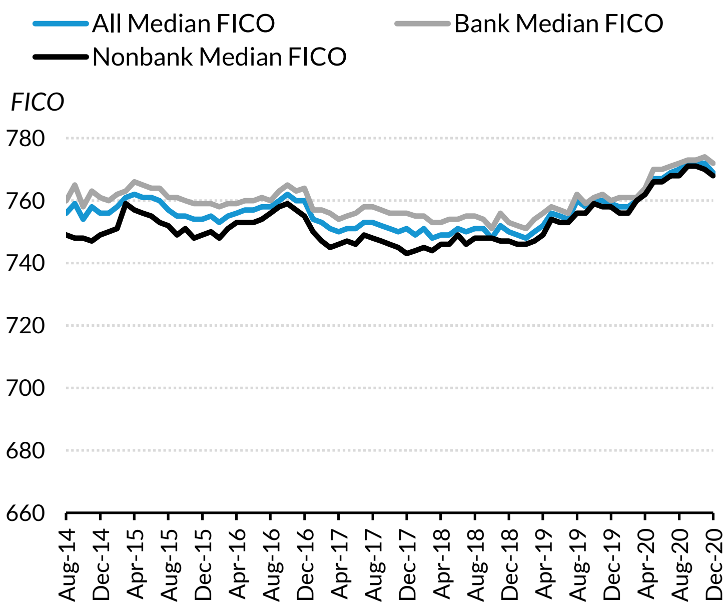
Nonbank originators have played a key role in opening up access to credit. FICO scores for loans originated by nonbanks are lower than their bank counterparts. Within the GSE space, where the differentials between banks and non-banks are small, FICO scores for both have increased since early 2014. The sharp rise in bank and non-bank FICOs reflects an increase in GSE refinance activity, producing a shift in their business mix toward higher FICO borrowers. Within the Ginnie Mae space, FICO scores for bank originations are much higher since early 2014 while nonbank FICOs are up somewhat less. This reflects both the sharp cut-back in FHA lending by many banks, and increased refi activity for higher FICO borrowers.

Agency FICO: Bank vs. Nonbank



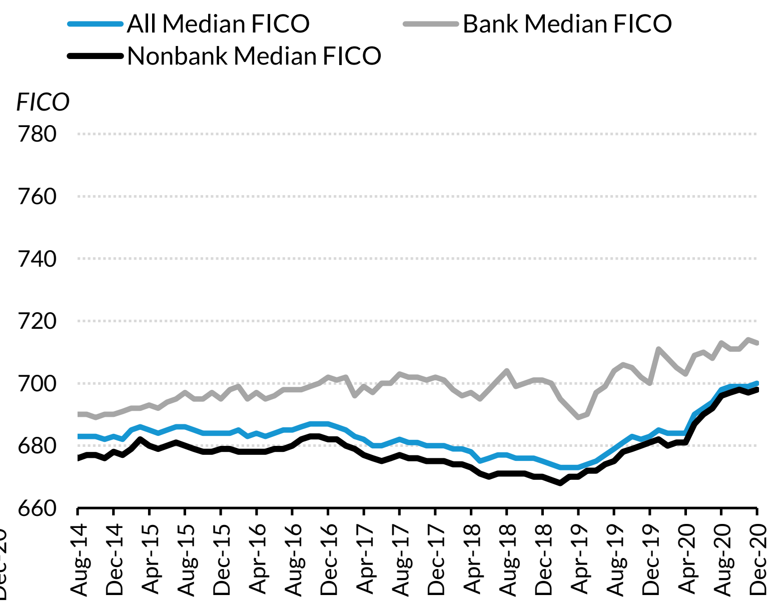
Sources: *eMBS and Urban Institute.* **Note**: *Data as of December 2020.*

GSE FICO: Bank vs. Nonbank



Sources: *eMBS and Urban Institute.*
Note: *Data as of December 2020.*

Ginnie Mae FICO: Bank vs. Nonbank

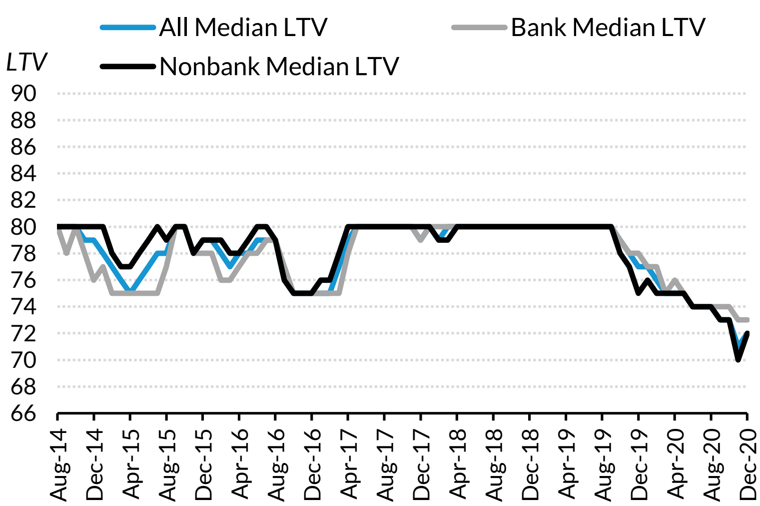


Sources: *eMBS and Urban Institute.*
Note: *Data as of December 2020.*

Nonbank Credit Box

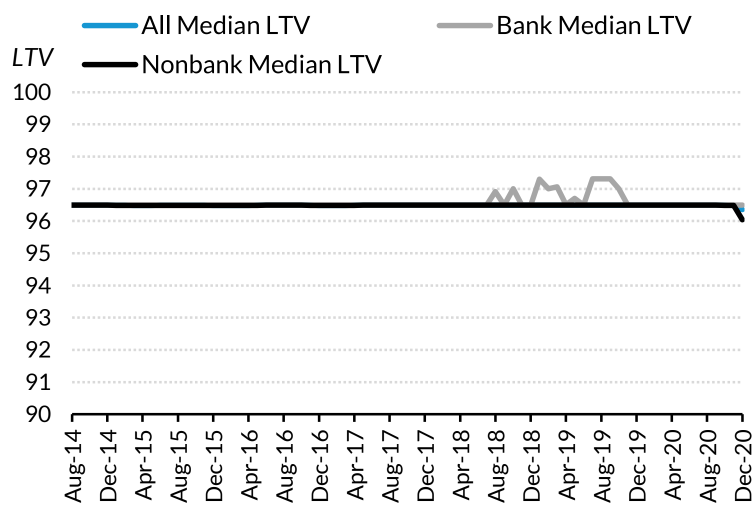
The median LTVs for nonbank and bank originations are comparable, while the median DTI for nonbank loans is higher than for bank loans, indicating that nonbanks are more accommodating in both this and the FICO dimension. Between early 2017 and early 2019, there was a substantial increase in DTIs; over the subsequent two years, this has mostly reversed in the Ginnie Mae space, and more than completely reversed for the GSEs, leaving GSE DTIs lower than they have been at any point in the last 7 years. This is true for both Ginnie Mae and the GSEs, for banks and nonbanks. As interest rates increased, DTIs rose, because borrower payments were driven up relative to incomes. With the fall in interest rates in 2019 and 2020, DTIs have dropped.

GSE LTV: Bank vs. Nonbank



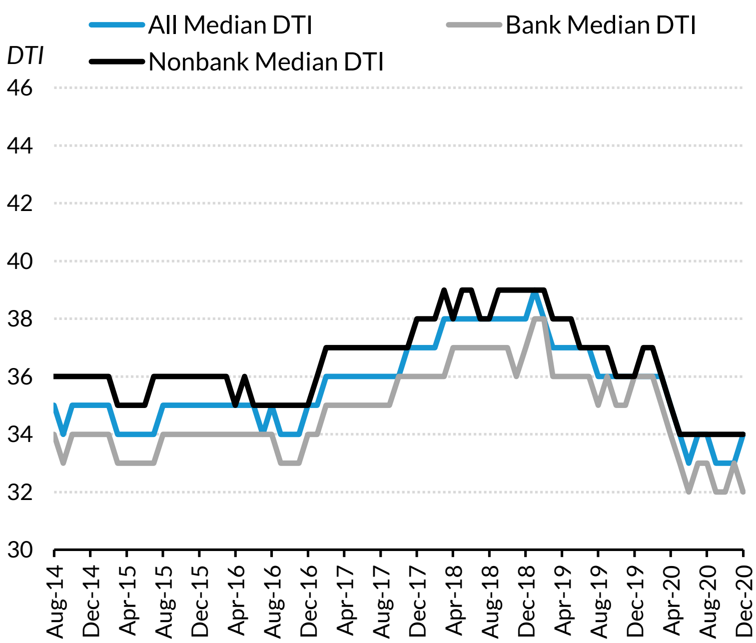
Sources: *eMBS and Urban Institute.* **Note**: *Data as of December 2020.*

Ginnie Mae LTV: Bank vs. Nonbank



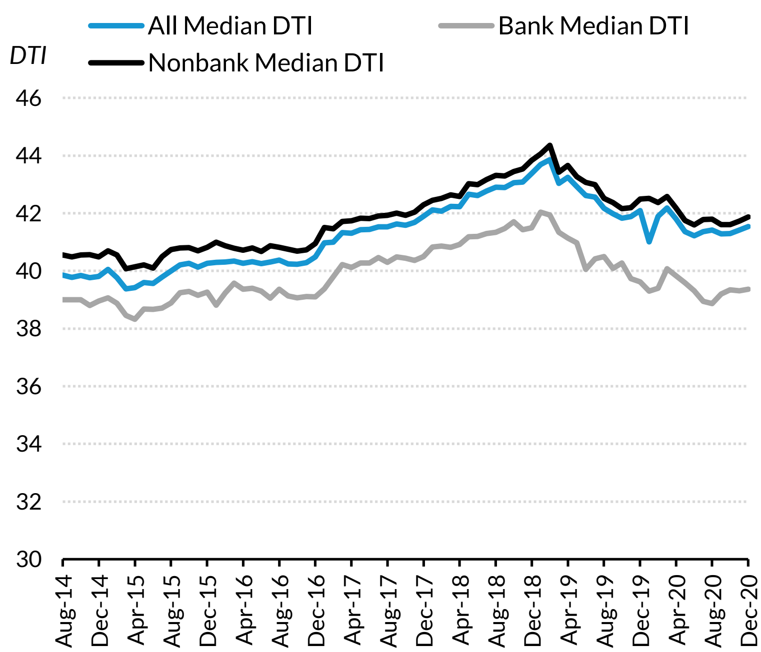
Sources: *eMBS and Urban Institute.* **Note**: *Data as of December 2020.*

GSE DTI: Bank vs. Nonbank



Sources: *eMBS and Urban Institute.* **Note**: *Data as of December 2020.*

Ginnie Mae DTI: Bank vs. Nonbank

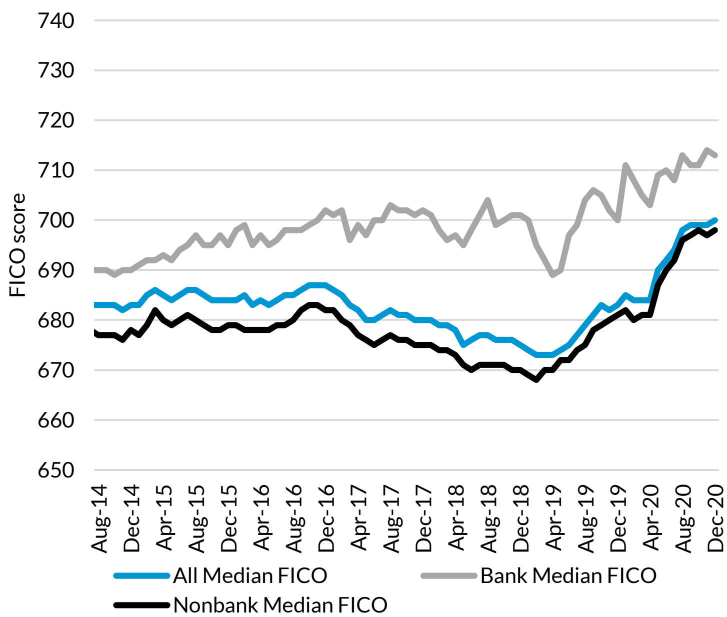


Sources: *eMBS and Urban Institute.* **Note**: *Data as of December 2020.*

Ginnie Mae Nonbank Originators: Credit Box

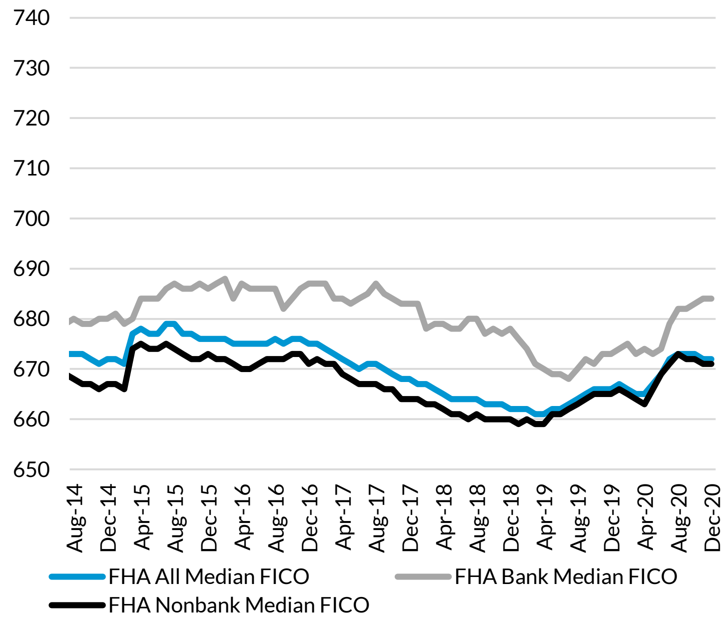
The median FICO score for Ginnie Mae nonbank originators increased slightly in December 2020. Bank FICOs are 15 points above non-banks. The gap between banks and non-banks is very apparent for all categories of government lending.

Ginnie Mae FICO Scores: Bank vs. Nonbank



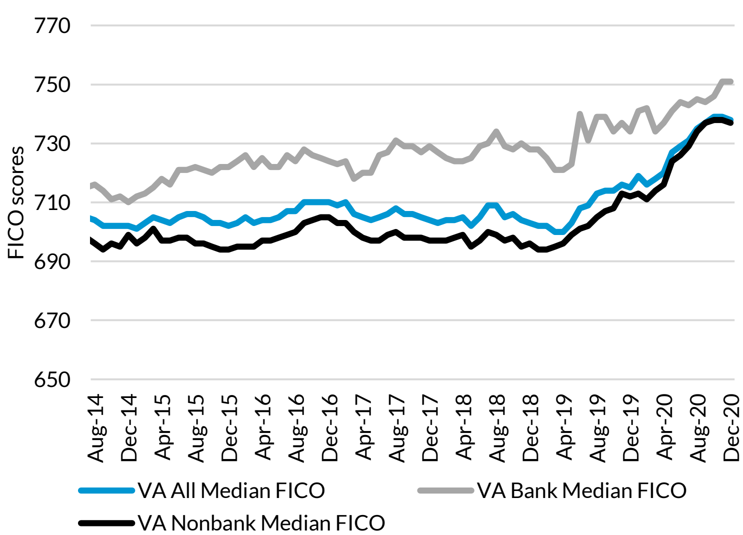
Sources: *eMBS and Urban Institute* **Note:** *Data as of December 2020.*

Ginnie Mae FHA FICO Scores: Bank vs. Nonbank



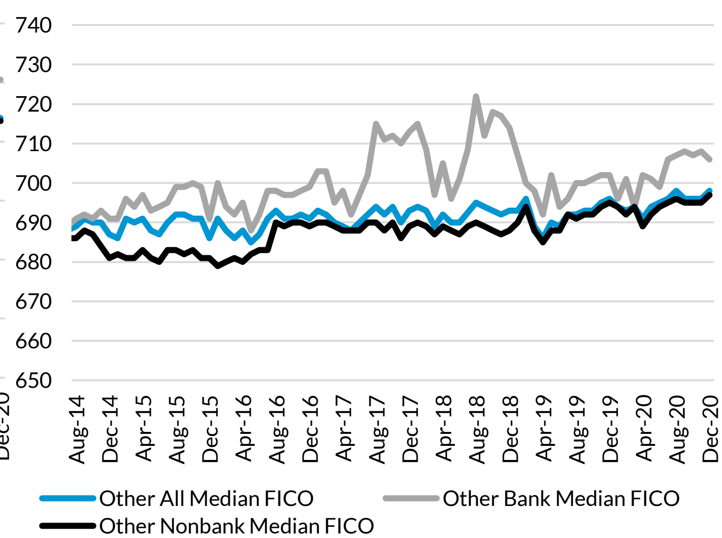
Sources: *eMBS and Urban Institute* **Note:** *Data as of December 2020.*

Ginnie Mae VA FICO Scores: Bank vs. Nonbank



Sources: *eMBS and Urban Institute*
Note: *Data as of December 2020.*

Ginnie Mae Other FICO Scores: Bank vs. Nonbank

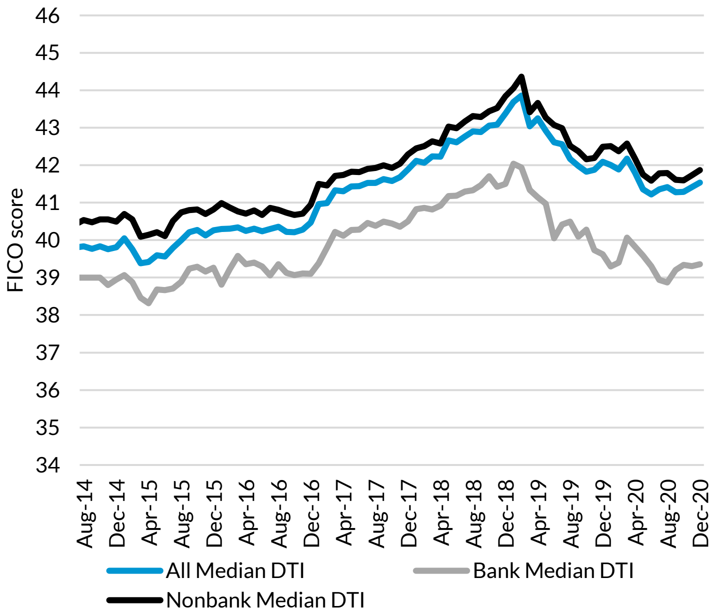


Sources: *eMBS and Urban Institute*
Note: *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of December 2020.*

Ginnie Mae Nonbank Originators: Credit Box

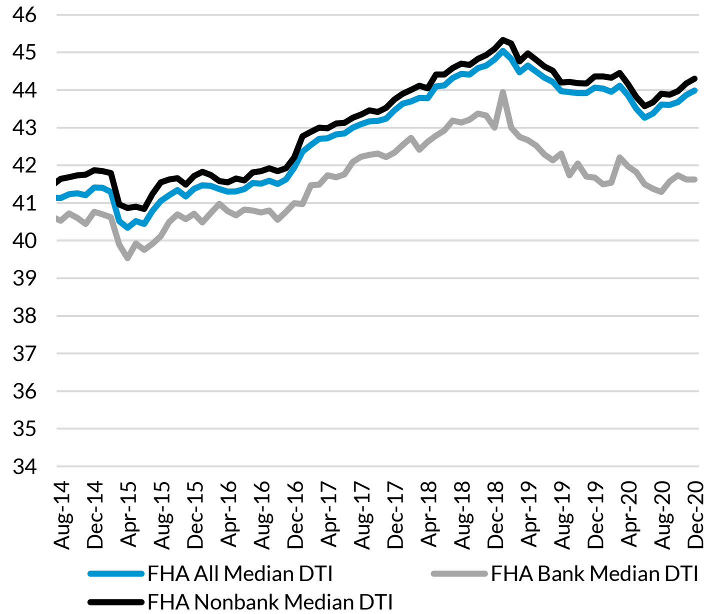
An analysis of borrowers' DTI ratios for bank versus non-bank originators indicates that the former have a lower median DTI. The DTIs for FHA and VA borrowers experienced notable increases during 2017 and 2018 for both banks and nonbank originators, while the Other origination DTIs stayed relatively flat. Rising DTIs are expected in a rising rate environment. After peaking in January 2019, Ginnie DTIs have reverted to 2017 levels, as rates have declined.

Ginnie Mae DTI: Bank vs. Nonbank



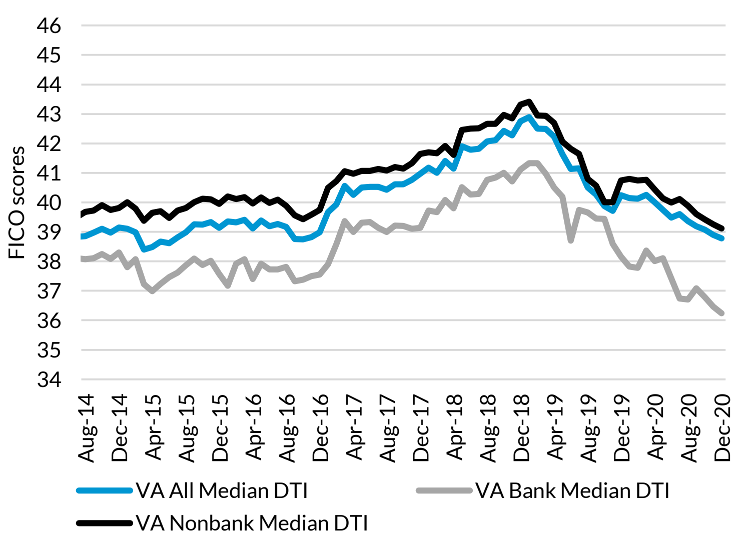
Sources: *eMBS and Urban Institute* **Note:** *Data as of December 2020.*

Ginnie Mae FHA DTI: Bank vs. Nonbank



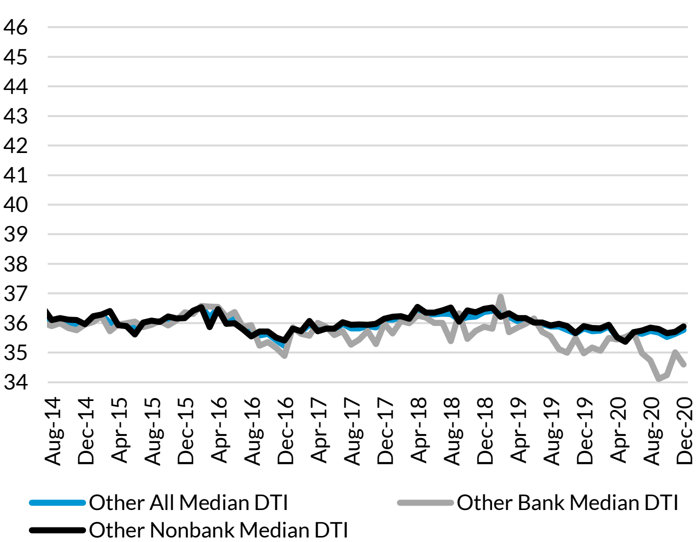
Sources: *eMBS and Urban Institute* **Note:** *Data as of December 2020.*

Ginnie Mae VA DTI: Bank vs. Nonbank



Sources: *eMBS and Urban Institute*
Note: *Data as of December 2020.*

Ginnie Mae Other DTI: Bank vs. Nonbank



Sources: *eMBS and Urban Institute*
Note: *"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 December 2020.*

Holders of Ginnie Mae MSRs

This table shows 30 largest owners of mortgage servicing rights (MSR) by UPB for Ginnie Mae securitizations. As of December 2020, over half (52.0 percent) of the Ginnie Mae MSRs are owned by the top six firms. The top 30 firms collectively own 84.5 percent. Eighteen of these 30 are non-depositories, the remaining 12 are depository institutions.

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

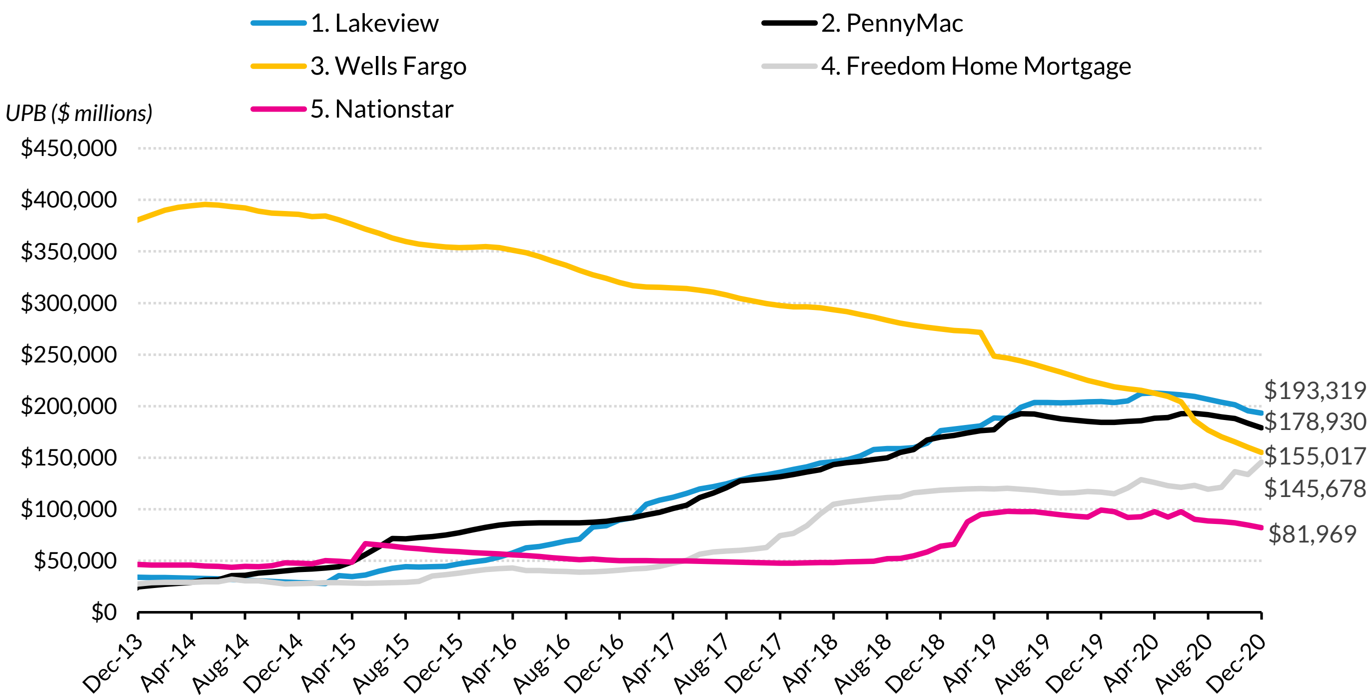
Rank	MSR Holder	UPB ($ millions)	Share	Cumulative Share
1	**Lakeview**	$193,319	12.2%	12.2%
2	**PennyMac**	$178,930	11.3%	23.6%
3	**Wells Fargo**	$155,017	9.8%	33.4%
4	**Freedom Home Mortgage**	$145,678	9.2%	42.6%
5	**Nationstar**	$97,684	5.2%	47.8%
6	**Quicken Loans**	$65,525	4.2%	52.0%
7	**Newrez**	$47,681	3.0%	55.0%
8	**US Bank**	$45,382	2.9%	57.9%
9	**Carrington Mortgage**	$40,390	2.6%	60.4%
10	**USAA Federal Savings Bank**	$37,133	2.4%	62.8%
11	**Caliber Home Loans**	$36,166	2.3%	65.1%
12	**Truist Bank**	$27,044	1.7%	66.8%
13	**Navy Federal Credit Union**	$26,903	1.7%	68.5%
14	**Amerihome Mortgage**	$24,754	1.6%	70.0%
15	**Home Point Financial Corporation**	$21,806	1.4%	71.4%
16	**The Money Source**	$20,571	1.3%	72.7%
17	**United WholeSale Mortgage**	$19,790	1.3%	74.0%
18	**Loan Depot**	$19,367	1.2%	75.2%
19	**Guild Mortgage**	$15,923	1.0%	76.2%
20	**Midfirst Bank**	$15,772	1.0%	77.2%
21	**JP Morgan Chase**	$15,762	1.0%	78.2%
22	**Citizens Bank**	$13,299	0.8%	79.1%
23	**Planet Home Lending**	$13,288	0.8%	79.9%
24	**M&T Bank**	$12,932	0.8%	80.7%
25	**PHH Mortgage Corporation**	$12,317	0.8%	81.5%
26	**Flagstar Bank**	$12,255	0.8%	82.3%
27	**New American Funding**	$9,252	0.6%	82.9%
28	**Idaho Housing and Finance Association**	$8,886	0.6%	83.4%
29	**Bank of America**	$8,665	0.5%	84.0%
30	**PNC Bank**	$8,424	0.5%	84.5%

Sources: *eMBS and Urban Institute*. **Note:** *Data as of December 2020.*

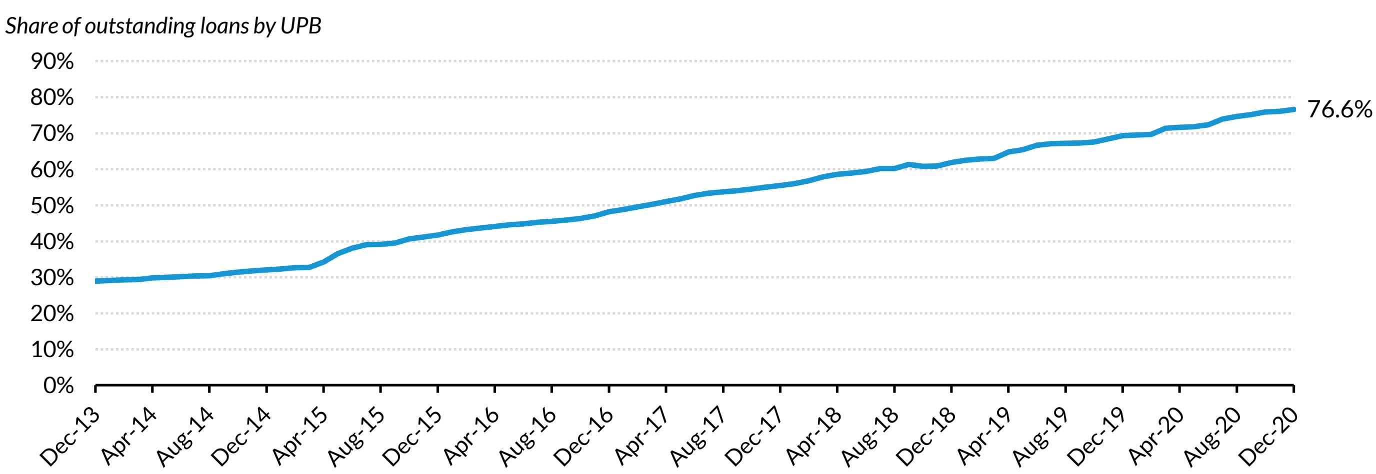
Holders of Ginnie Mae MSRs

The composition of the largest owners of Ginnie Mae MSR has evolved quite a bit over time. In December 2013, Wells Fargo and JP Morgan Chase were the two largest owners of Ginnie Mae MSRs, holding $375 billion and $139 billion in servicing UPB respectively. In December 2020, Wells Fargo's holdings of MSRs dipped to $155.0 billion, below the $193.3 and $178.9 billion held by Lakeview and PennyMac, respectively (both nonbanks). Freedom Home Mortgage and Nationstar (also both nonbanks) make up the remainder of the top five largest holders of MSRs, owning $145.7 billion and $82.0 billion respectively as of December 2020. Nonbanks collectively owned servicing rights for 76.6 percent of all outstanding unpaid principal balance guaranteed by Ginnie Mae in December 2020. In December 2013, the nonbank share was much smaller at 27.7 percent.

Top 5 MSR Holders: Outstanding Ginnie Mae Loans by UPB



Share of Ginnie Mae MSRs held by Nonbanks

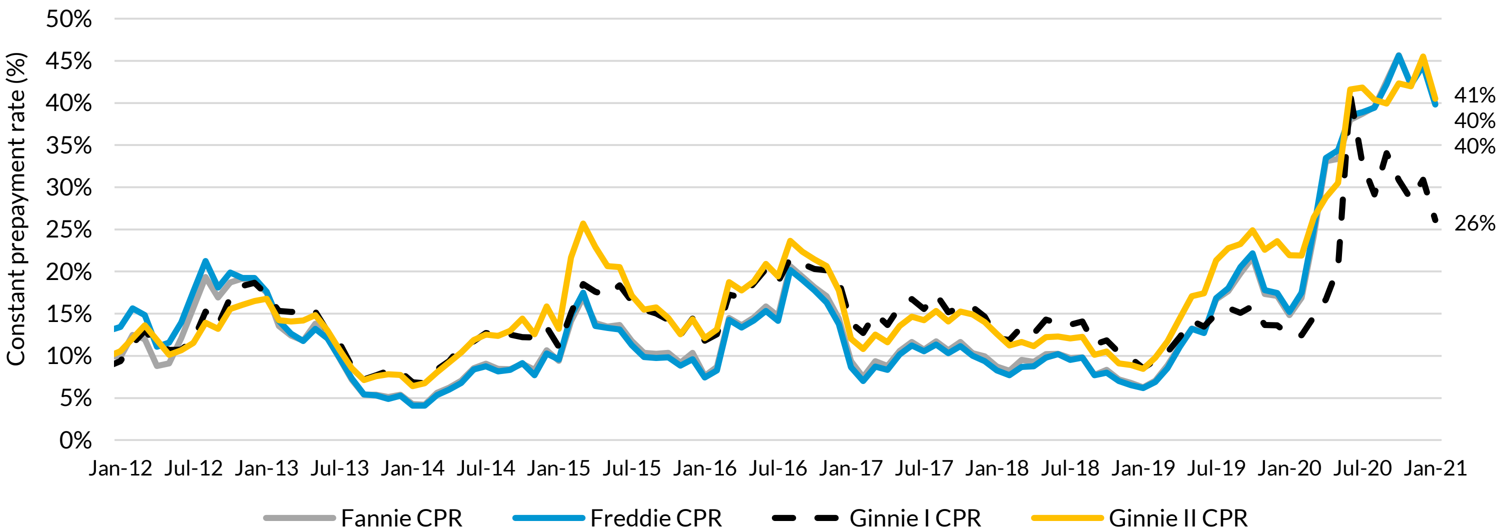


Sources: *eMBS and Urban Institute.* **Note:** *Data as of December 2020.*

Prepayments

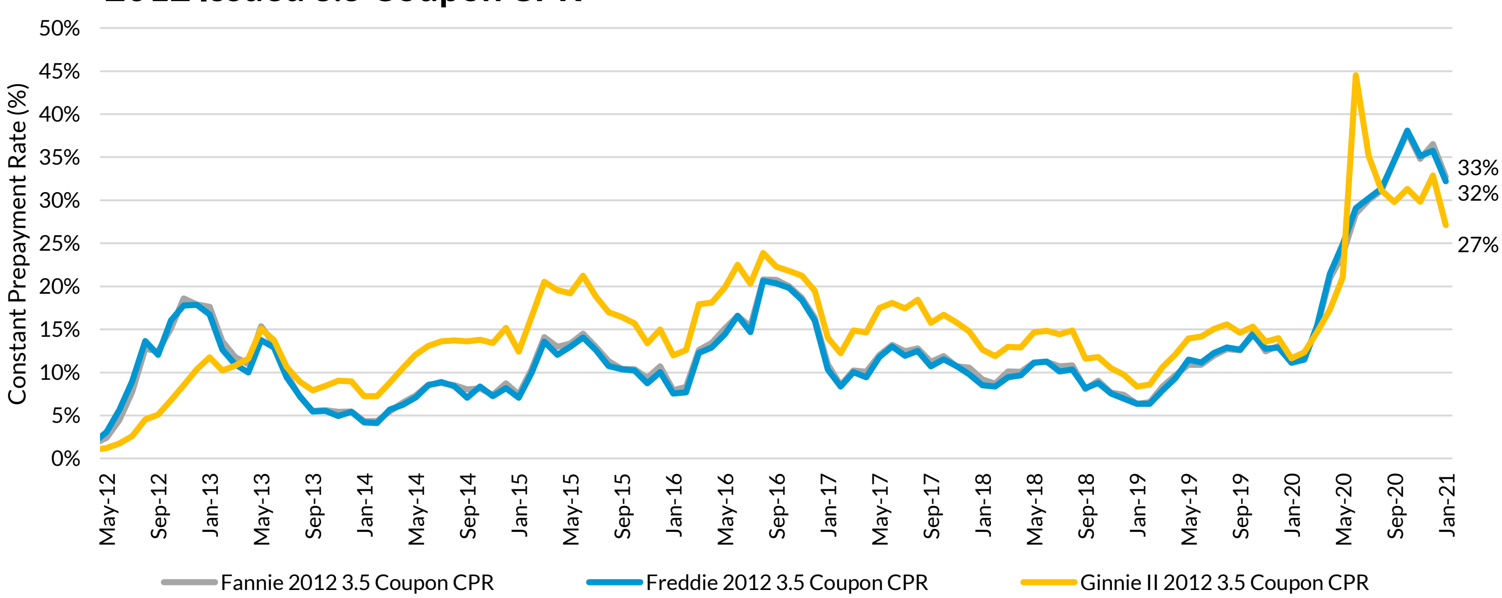
While prepayment speeds on all securities have risen since early 2019, the speed increase has been especially dramatic in 2020, with speeds on both Ginnie II and GSE securities rising rapidly due to a sharp drop in rates. At this point, the speeds on GSE securities have largely converged with those on Ginnie II securities, as the former have ramped up more quickly in 2020. The faster Ginnie speeds from 2013-early 2020 reflected the growing share of VA loans, which tend to prepay faster than either FHA or GSE loans. In addition, FHA puts fewer restrictions on streamlined refinances, and some of the upfront mortgage insurance premium can also be applied to the refinanced loan.

Aggregate Prepayments



Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of January 2021.*

2012 Issued 3.5 Coupon CPR

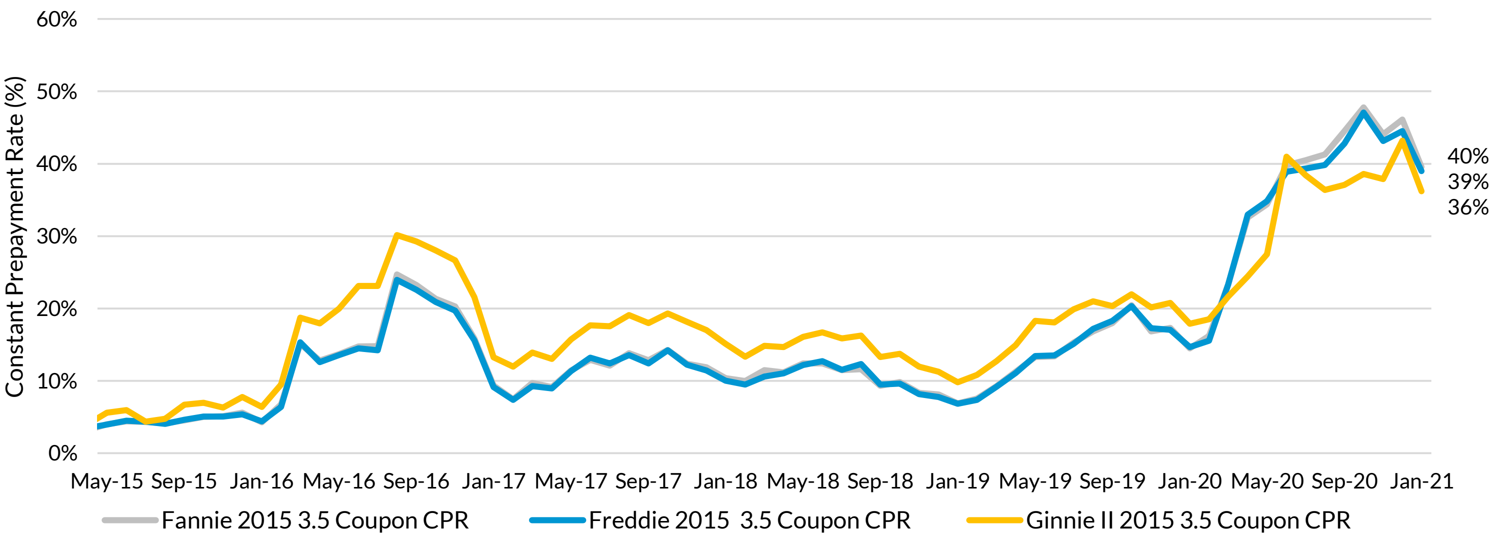


Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of January 2021.*

Prepayments

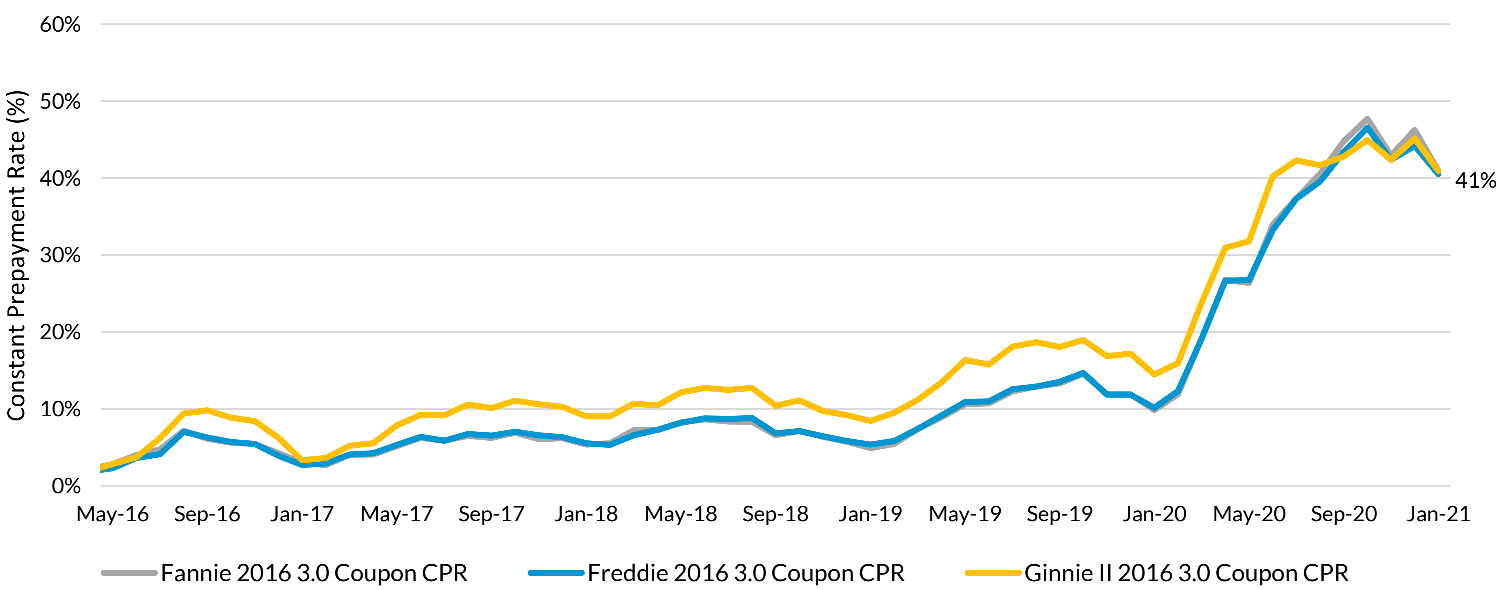
Speeds on the 2015 3.5s and the 2016 3.0s, the largest coupon cohorts of those vintage years, have been increasing since early 2019; the speed increases have been especially dramatic in 2020 due to a sharp drop in rates, with speeds on both Ginnie II and GSE securities rising rapidly. The speeds on the 2015-issued Ginnie 3.5s have been slightly lower than their conventional counterparts since August 2020, although the speeds on the 2016-issued Ginnie Mae 3.0s remain very comparable to their conventional counterparts. The faster historical speeds on the Ginnie Mae cohorts reflect the fact that 2015 and 2016 Ginnie originations consist of a large component of VA loans, which prepay faster than either FHA or GSE loans. The FHA streamlined programs are likely another contributor to the historically faster speeds.

2015 Issued 3.5 Coupon CPR



Sources: *Credit Suisse and Urban Institute*. **Note:** *Data as of January 2021.*

2016 Issued 3.0 Coupon CPR

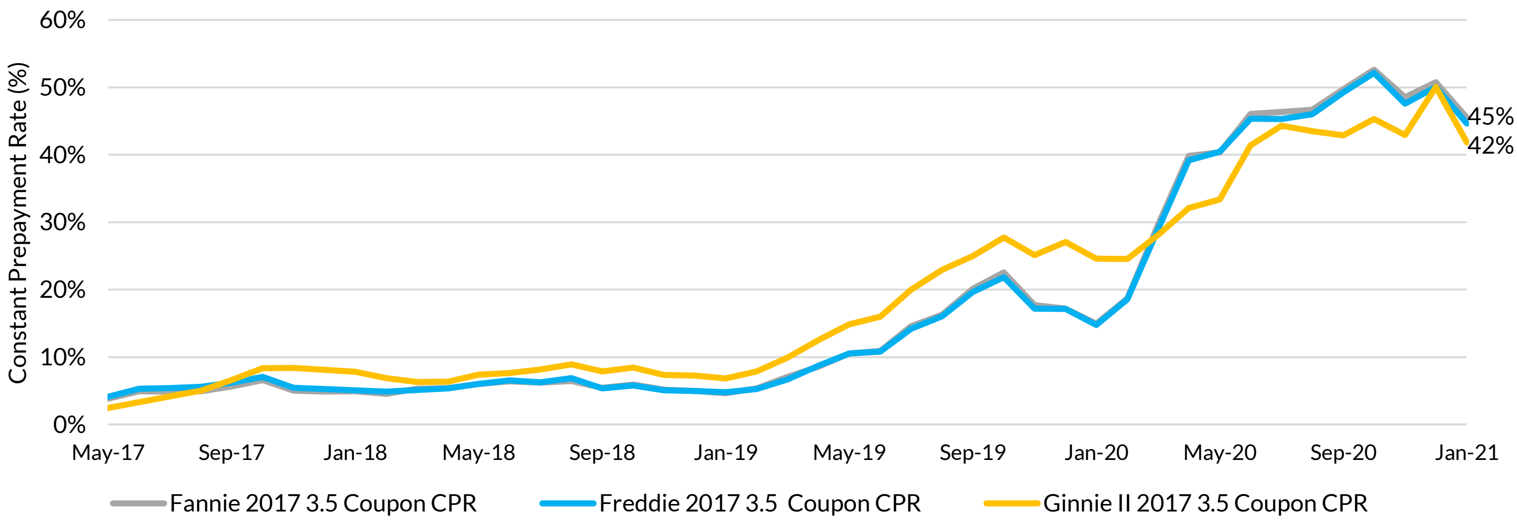


Sources: *Credit Suisse and Urban Institute*. **Note:** *Data as of January 2021.*

Prepayments

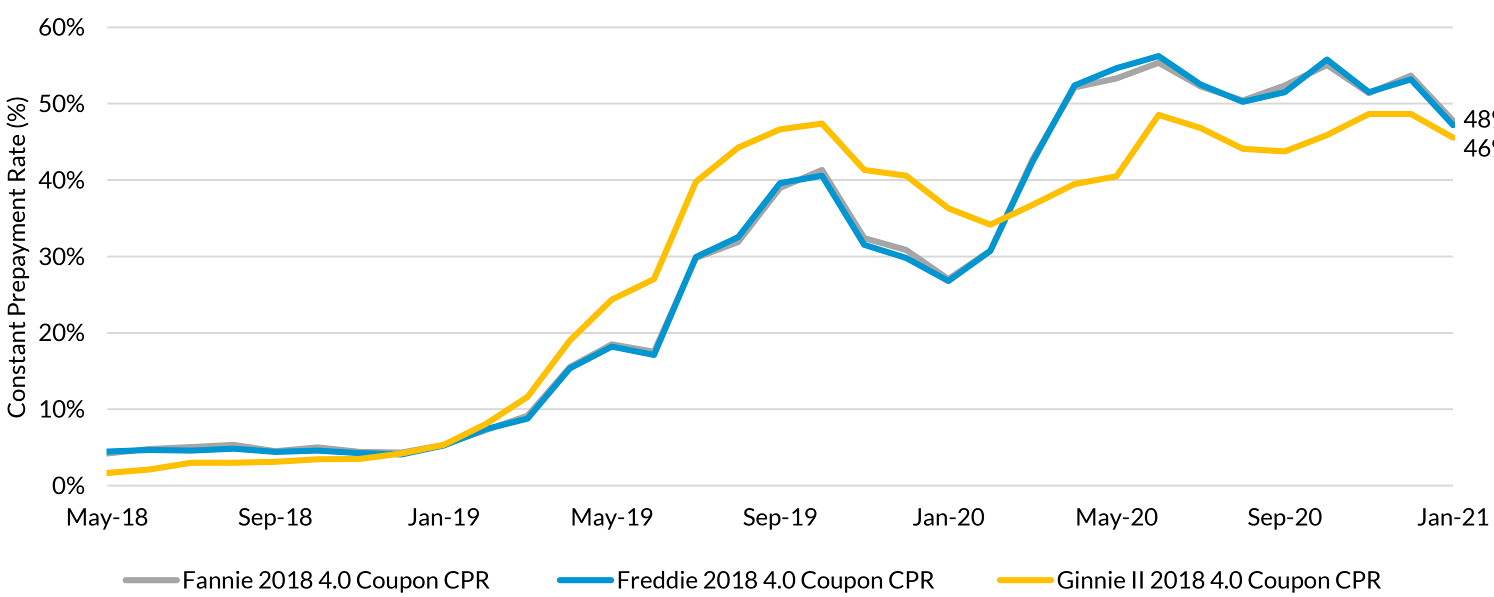
The charts below show the behavior of the 2017-issued 3.5s and the 2018-issued 4.0s, the largest coupon cohorts of those vintage years. Despite slower seasoning, 2017 Ginnie II 3.5s were prepaying faster than their conventional counterparts from late 2017 to March 2020, due primarily to fast VA prepayment speeds. Similarly, the 2018 Ginnie II 4.0s prepaid more slowly than their conventional counterparts until January of 2019. In 2019, speeds of 2018 4.0s and 2017 3.5s accelerated, and Ginnie II speeds accelerated more than their conventional counterparts. However, in early 2020 conventional speeds accelerated more than Ginnie speeds. Since March 2020, conventional speeds have exceeded those of the Ginnie cohorts, although the difference between the two has narrowed in the last two months.

2017 Issued 3.5 Coupon CPR



Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of January 2021.*

2018 Issued 4.0 Coupon CPR

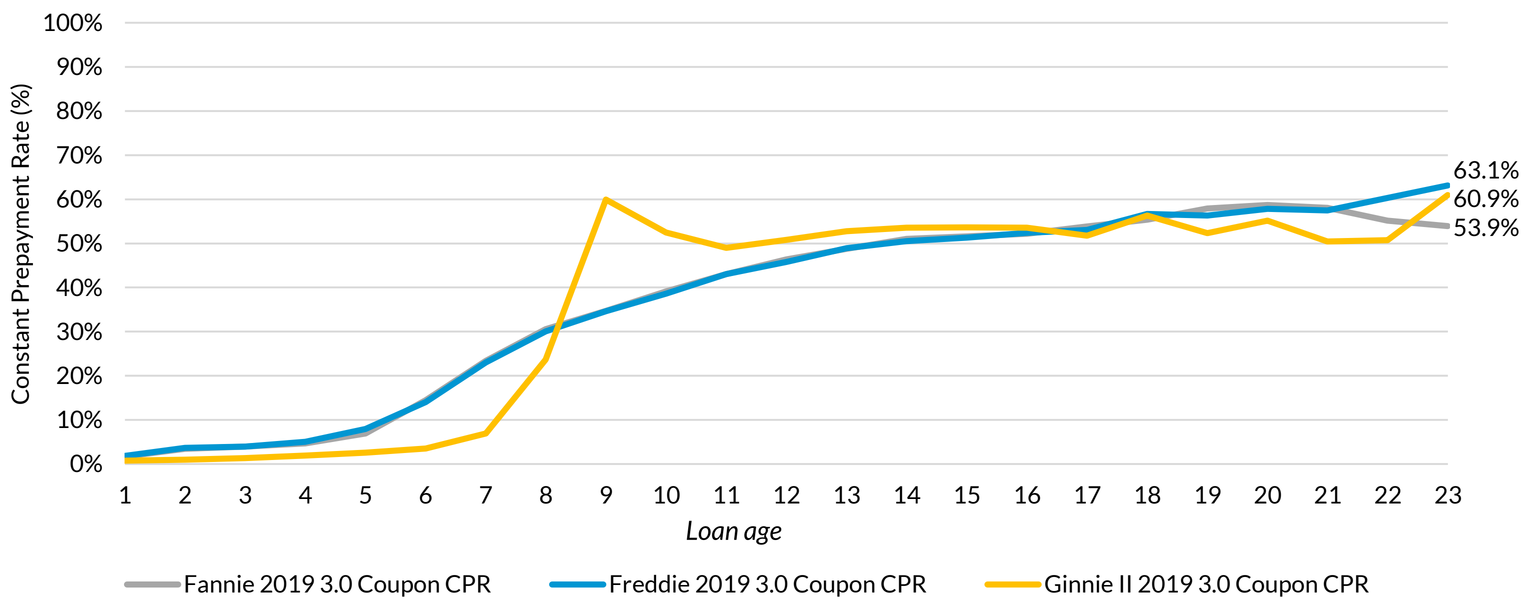


Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of December 2020.*

Prepayments

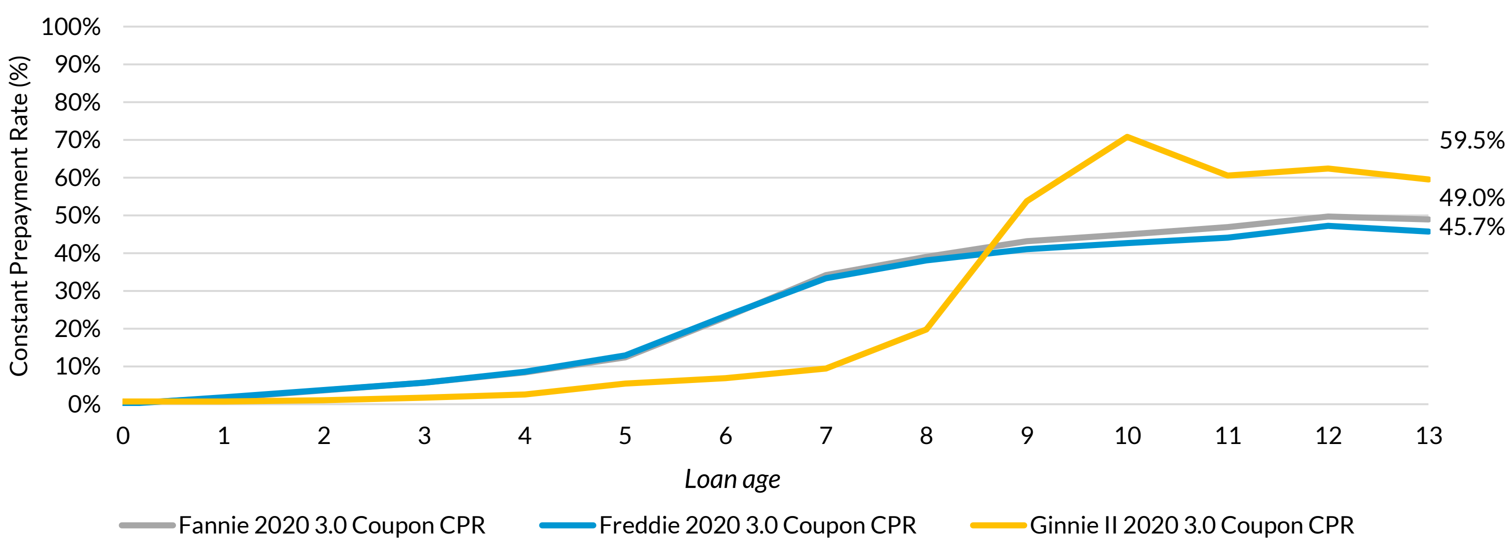
The charts below show prepayment speeds by loan age for 2019 and 2020 Ginnie II 3.0s. Prepayment speeds on both cohorts jumped at the 8-10 month loan age, a more muted jump than earlier cohorts at the same age; they then began to converge with conventional speeds more quickly, as a result of Ginnie Mae actions to curtail the "churning" problem. These actions have included suspending a few servicers whose VA speeds are especially high from selling VA loans into Ginnie Mae II securities, as well as rewriting the pooling requirements so that if loans that do not meet the seasoning requirement are refinanced, the new loan is ineligible for securitization. Ginnie's latest action on this front became effective for securities issued on or after November 1, 2019. It bars the securitization of over 90 percent LTV cash-out refinances into Ginnie I and Ginnie II pools (custom pools excepted). In addition, VA has implemented a net tangible benefit test, requiring the lender to show that the borrower has obtained a benefit from the refinance. The recent experience of these cohorts indicates that, as a result of these cumulative actions plus the acceleration of speeds in the conventional market in response to lower rates, Ginnie Mae speeds on 2019-issued 3.0s have been running below their conventional counterparts 17 month loan age onwards. 2020 Ginnie II 3.0s show a similar increase in speeds at the 9-10 month mark, pushing it well above conventional speeds, but the gaps are narrowing by months 11 and 12.

2019 Issued 3.0 Coupon CPR, by Loan Age



Sources: *Credit Suisse and Urban Institute*. **Note:** *Data as of January 2021.*

2020 Issued 3.0 Coupon CPR, by Loan Age

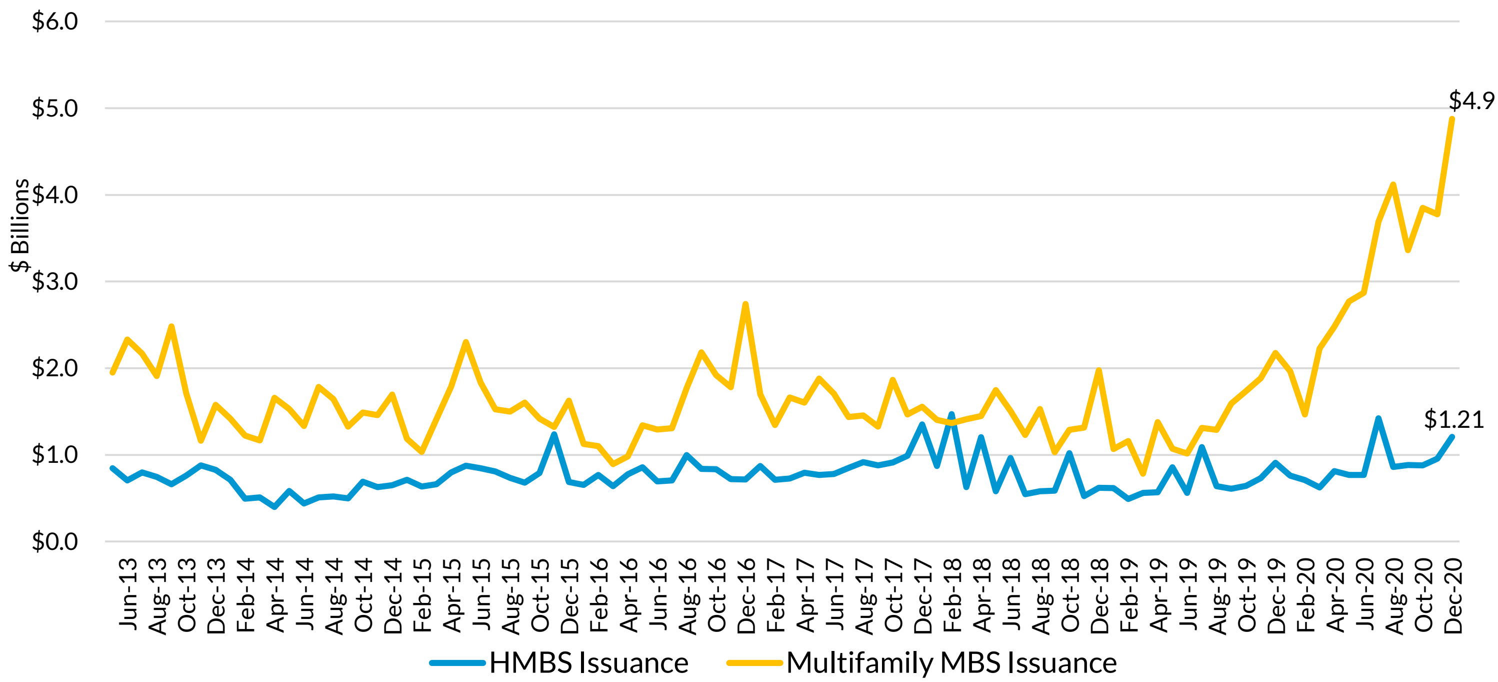


Sources: *Credit Suisse and Urban Institute*. **Note:** *Data as of January 2021.*

Other Ginnie Mae Programs Reverse and Multifamily Mortgages

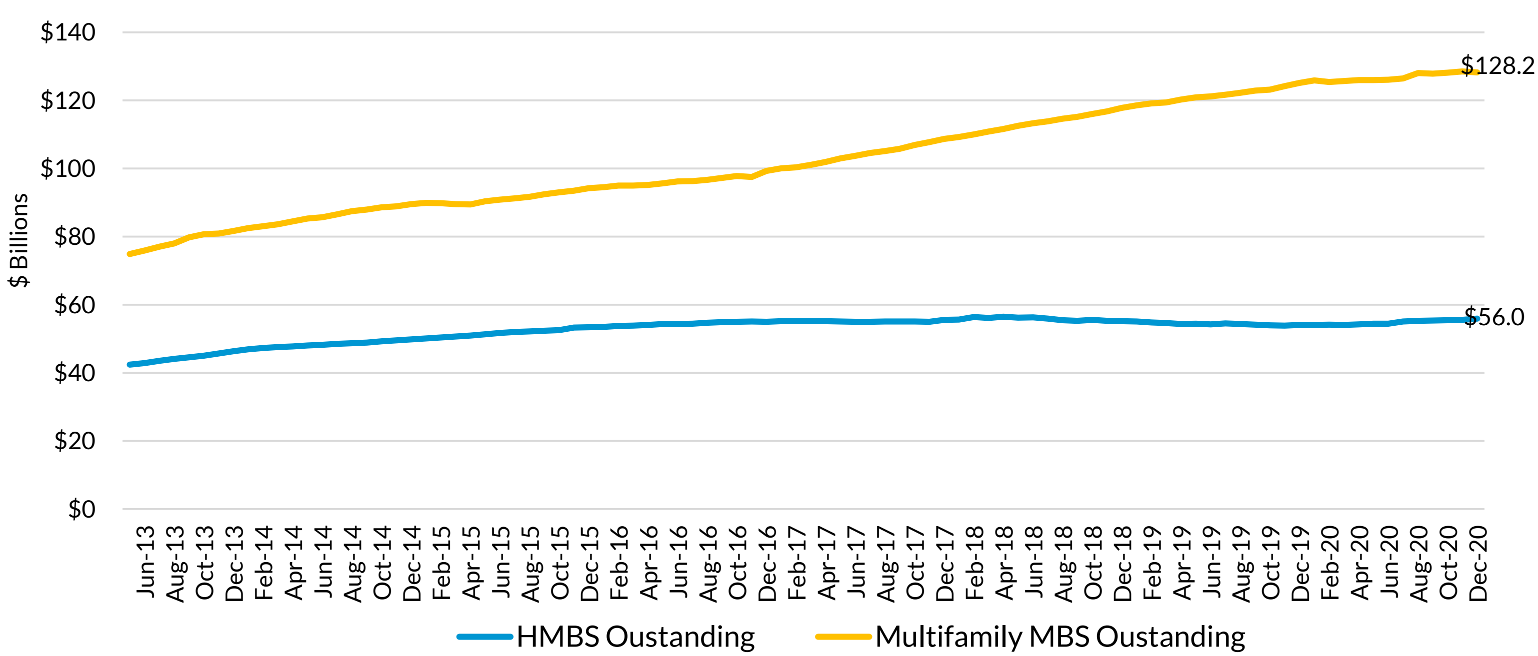
Ginnie Mae reverse mortgage issuance has been volatile over the past two years. After declining in 2018, volume has slowly improved over the course of 2019 and 2020. In December 2020, issuance grew to $1.21 billion. Outstanding reverse mortgage securities totaled $56.0 billion in December 2020, up slightly from the previous month, reflecting a higher volume of new issuances relative to paydowns. After falling slightly in November, Ginnie Mae multifamily issuance grew in December 2020 to $4.9 billion. Outstanding multifamily securities totaled $128.2 billion at the conclusion of 2020.

Issuance Volume



Sources: *Ginnie Mae and Urban Institute.* **Note:** *Data as of December 2020.*

Outstanding Volume

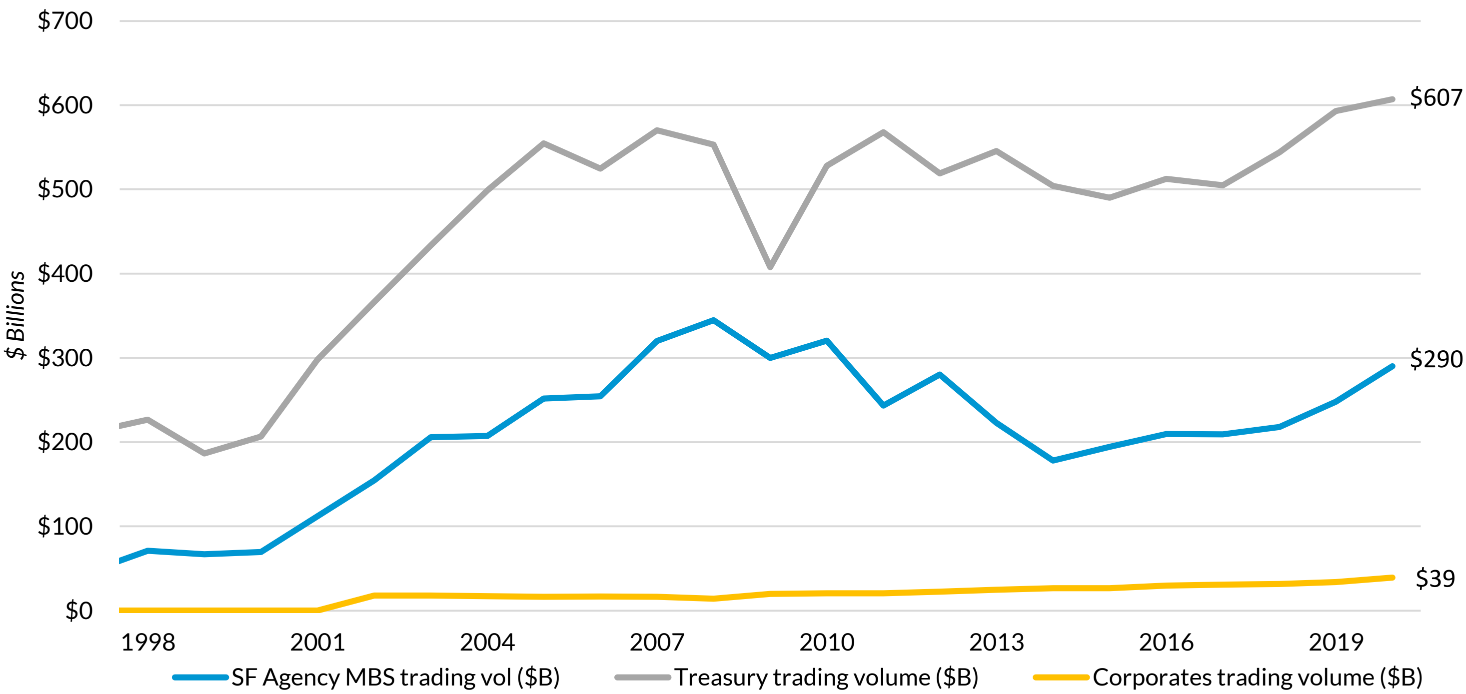


Sources: *Ginnie Mae and Urban Institute.* **Note:** *Data as of December 2020.*

Market Conditions

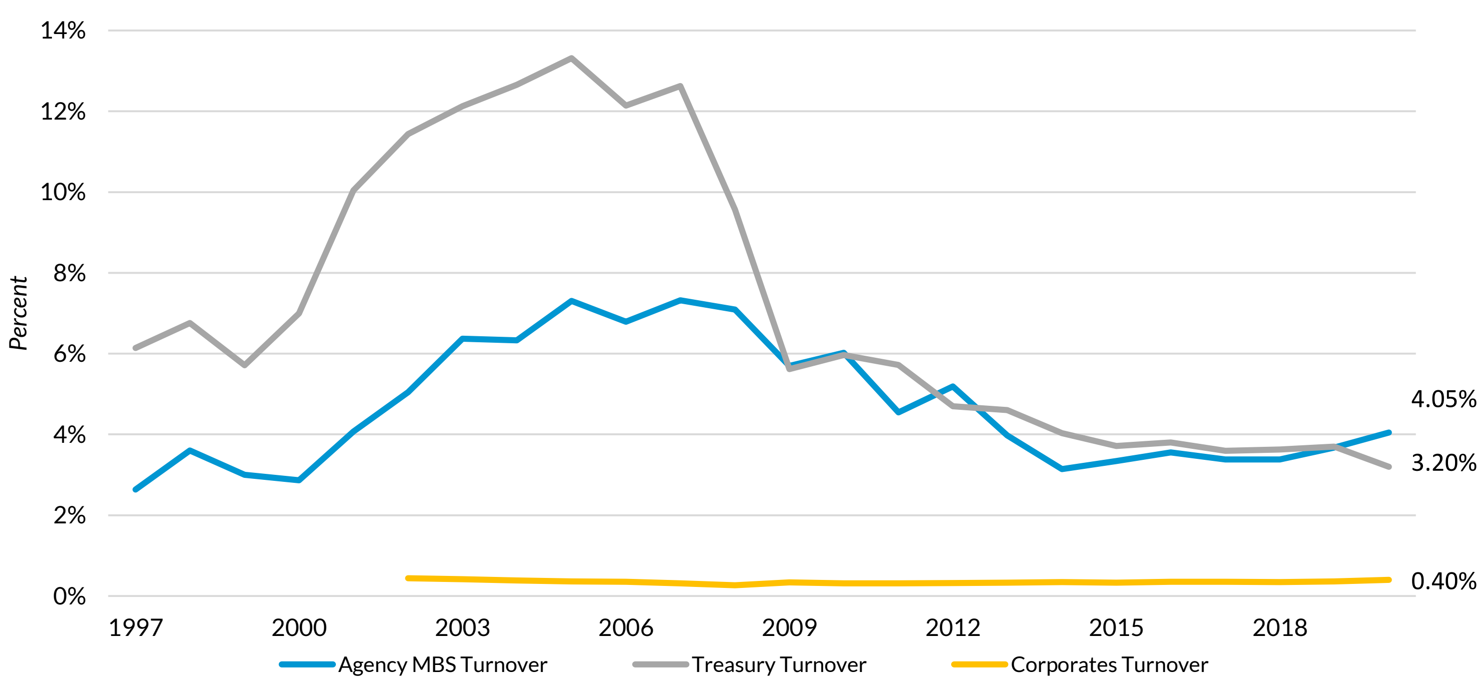
Agency MBS trading volume was $290 billion per day on average in 2020, more robust than in the 2014-2019 period, but still below the pre-crisis peak of $345 billion in 2008. Average daily trading volume for Treasuries now exceeds the pre-crisis peak. Agency MBS turnover in 2020 was also higher than the 2014-2019 period; in 2020, average daily MBS turnover was 4.08 percent, above the 2019 average of 3.67 percent. Note that agency MBS turnover in 2020 was higher than US Treasury turnover, a rare occurrence. Both average daily mortgage and Treasury turnover are down from their pre-crisis peaks. Corporate turnover is miniscule relative to either Agency MBS or Treasury turnover.

Average Daily Fixed Income Trading Volume by Sector



Sources: *SIFMA and Urban Institute.* ***Note:*** *Updated February 2020.*

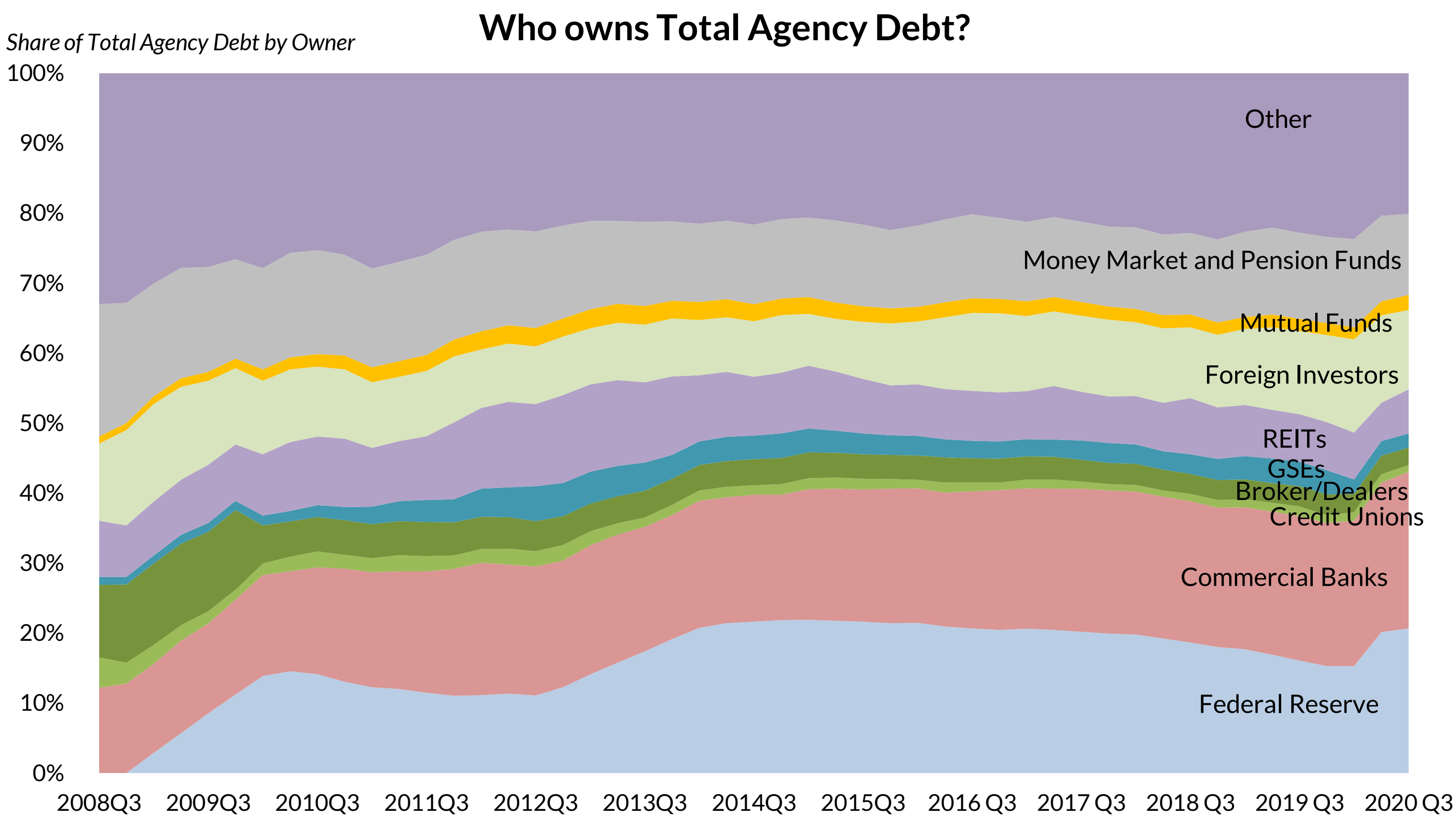
Average Daily Turnover by Sector



Sources: *SIFMA and Urban Institute.* ***Note:*** *Updated February 2020.*

MBS Ownership

The largest holders of agency debt (Agency MBS + Agency notes and bonds) include the Federal Reserve (21 percent), commercial banks (22 percent), foreign investors (12 percent), and money market & pension funds (11 percent). The broker/dealer and GSE shares are a fraction of what they once were. The Federal Reserve's share increased from 15 percent in the first quarter of 2020 to 21 percent in the third quarter due to substantial purchases of MBS in response to the COVID-19 crisis. Despite large Federal Reserve purchases, commercial banks continue to be the largest holders of Agency MBS. Out of their $2.6 trillion in holdings as of the end of January 2020, $1.9 trillion was held by the top 25 domestic banks.



Sources: *Federal Reserve Flow of Funds and Urban Institute.* ***Note****: The "other" category includes primarily life insurance companies, state and local govts, households, and nonprofits. Data as of Q3 2020.*

Commercial bank holdings of agency MBS

`	Commercial Bank Holdings ($Billions)								Week Ending			
	Dec-19	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Dec 30	Jan 06	Jan 13	Jan 20
Largest 25 Domestic Banks	1497.0	1613.5	1649.0	1703.9	1693.5	1740.8	1797.8	1829.1	1853.2	1875.4	1860.1	1863.7
Small Domestic Banks	542.0	569.6	577.5	588.8	599.2	611.0	626.8	644.7	645.6	655.4	661.4	666.3
Foreign Related Banks	37.7	43.7	43.4	41.7	40.2	39.3	45.3	46.9	46.9	47.9	48.5	47.6
Total, Seasonally Adjusted	2076.7	2226.8	2269.9	2334.4	2332.9	2391.1	2469.9	2520.7	2545.7	2578.7	2570.0	2577.6

Sources*: Federal Reserve Bank and Urban Institute.* ***Note****: Small domestic banks includes all domestically chartered commercial banks not included in the top 25. Data as of January 2020.*

MBS Ownership

Out of the $2.3 trillion in MBS holdings at banks and thrifts as of Q3 2020, $1.8 trillion was agency pass-throughs: $1.3 trillion in GSE pass-throughs and $415 billion in Ginnie Mae pass-throughs. Another $500 billion was agency CMOs, while non-agency holdings totaled $46 billion. In Q3 2020, MBS holdings at banks and thrifts increased for the ninth consecutive quarter. The increase was driven by both GSE pass-throughs and agency CMO holdings, with the increase in GSE pass-throughs making the larger contribution.

Bank and Thrift Residential MBS Holdings

	All Banks & Thrifts ($Billions)						
	Total	Agency MBS PT	GSE PT	GNMA PT	Agency CMO	Private MBS PT	Private CMO
2000	$683.90	$392.85	$234.01	$84.26	$198.04	$21.57	$71.43
2001	$810.50	$459.78	$270.59	$109.53	$236.91	$37.62	$76.18
2002	$912.36	$557.43	$376.11	$101.46	$244.98	$20.08	$89.88
2003	$982.08	$619.02	$461.72	$75.11	$236.81	$19.40	$106.86
2004	$1,113.89	$724.61	$572.40	$49.33	$208.18	$20.55	$160.55
2005	$1,139.68	$708.64	$566.81	$35.92	$190.70	$29.09	$211.25
2006	$1,207.09	$742.28	$628.52	$31.13	$179.21	$42.32	$243.28
2007	$1,236.00	$678.24	$559.75	$31.58	$174.27	$26.26	$357.24
2008	$1,299.76	$820.12	$638.78	$100.36	$207.66	$12.93	$259.04
2009	$1,345.74	$854.40	$629.19	$155.00	$271.17	$7.53	$212.64
2010	$1,433.38	$847.13	$600.80	$163.13	$397.30	$7.34	$181.61
2011	$1,566.88	$917.10	$627.37	$214.81	$478.82	$3.28	$167.70
2012	$1,578.86	$953.76	$707.87	$242.54	$469.27	$17.16	$138.67
2013	$1,506.60	$933.73	$705.97	$231.93	$432.60	$26.11	$114.15
2014	$1,539.32	$964.16	$733.71	$230.45	$449.90	$20.33	$104.94
2015	$1,643.56	$1,115.40	$823.10	$292.30	$445.39	$11.14	$71.63
2016	$1,736.93	$1,254.13	$930.67	$323.46	$419.80	$7.40	$55.60
1Q17	$1,762.38	$1,280.63	$950.72	$329.91	$419.34	$7.03	$55.39
2Q17	$1,798.66	$1,320.59	$985.12	$335.47	$417.89	$6.38	$53.79
3Q17	$1,838.93	$1,364.75	$1,012.89	$351.86	$418.08	$5.65	$50.45
4Q17	$1,844.15	$1,378.53	$1,010.83	$367.70	$413.97	$4.63	$47.01
1Q18	$1,809.98	$1,352.28	$991.57	$360.71	$412.37	$3.92	$41.37
2Q18	$1,806.58	$1,345.80	$976.92	$368.88	$414.41	$7.45	$38.92
3Q18	$1,794.39	$1,339.72	$966.52	$373.21	$416.20	$2.42	$36.04
4Q18	$1,814.97	$1,361.00	$980.56	$380.43	$419.59	$2.69	$34.69
1Q19	$1,844.99	$1,385.10	$1,001.61	$383.49	$422.18	$3.06	$34.65
2Q19	$1,907.13	$1,445.91	$1,037.93	$407.97	$421.56	$2.90	$36.76
3Q19	$1,975.78	$1,506.92	$1,079.82	$427.10	$428.69	$4.74	$35.44
4Q19	$1,985.38	$1,516.26	$1,089.41	$426.85	$428.99	$4.62	$35.52
1Q20	$2,107.66	$1,621.00	$1,173.36	$448.34	$443.73	$4.65	$37.56
2Q20	$2,195.19	$1,669.93	$1,228.87	$441.06	$478.11	$5.00	$42.14
3Q20	$2,310.42	$1,764.72	$1,349.48	$415.24	$499.50	$4.43	$41.78

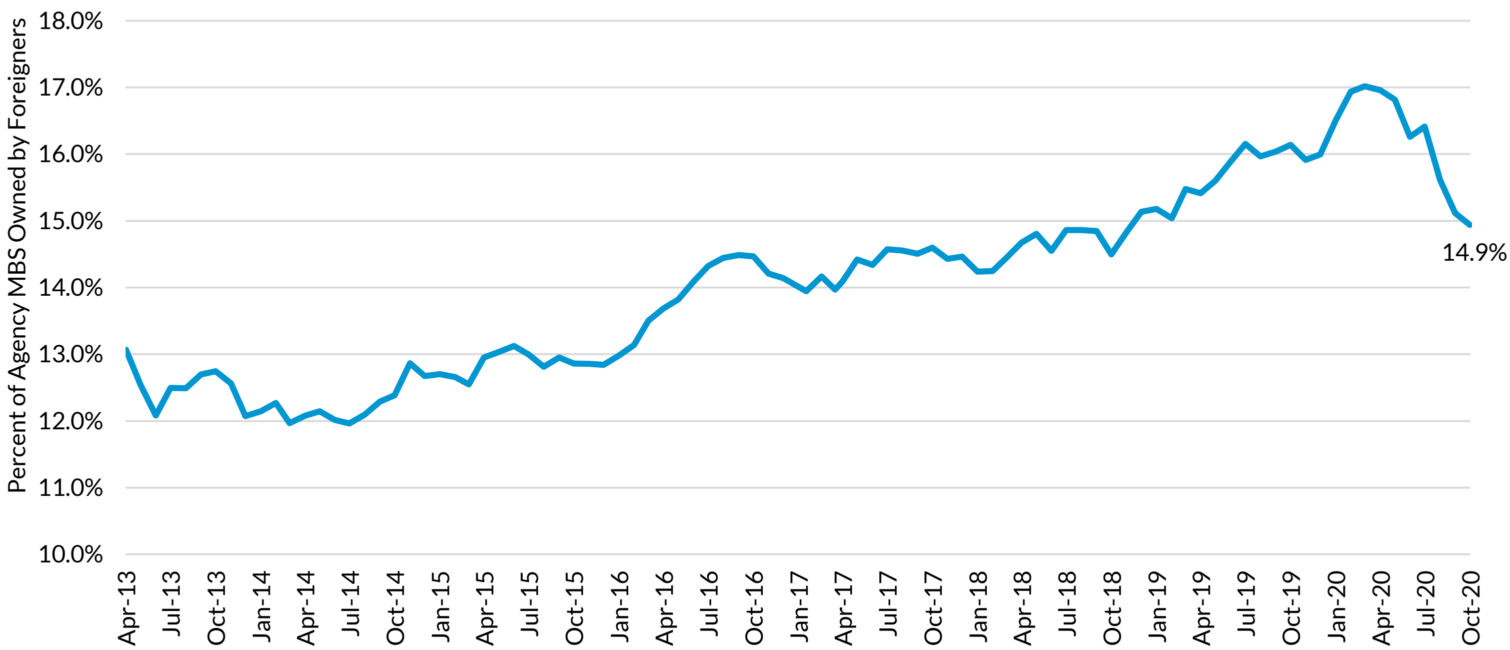
	Top Bank & Thrift Residential MBS Investors	Total ($MM)	GSE PT ($MM)	GNMA PT ($MM)	Agency REMIC ($MM)	Non-Agency ($MM)	Market Share
1	Bank Of America Corporation	$395,969.0	$256,271.0	$127,087.0	$12,327.0	$284.0	17.10
2	Wells Fargo & Company	$254,767.0	$181,758.0	$65,210.0	$7,244.0	$555.0	11.00
3	JP Morgan Chase & Co.	$196,629.0	$118,144.0	$62,066.0	$202.0	$16,217.0	8.50
4	Charles Schwab Bank	$142,727.0	$78,139.0	$16,680.0	$47,908.0	$0.0	6.20
5	U.S. Bancorp.	$98,302.0	$66,924.5	$16,077.8	$15,299.2	$0.5	4.30
6	Citigroup Inc.	$81,852.0	$72,727.0	$2,201.0	$5,244.0	$1,680.0	3.50
7	Truist Bank	$78,975.0	$31,335.0	$17,222.0	$30,418.0	$0.0	3.40
8	Capital One Financial Corporation	$76,011.5	$40,069.0	$10,906.5	$24,390.1	$645.9	3.30
9	Bank Of New York Mellon Corp.	$64,932.0	$46,335.0	$3,742.0	$12,843.0	$2,012.0	2.80
10	PNC Bank, National Association	$54,529.5	$45,555.4	$5,647.3	$1,724.0	$1,602.7	2.40
11	State Street Bank And Trust Company	$47,135.4	$22,085.0	$7,813.0	$14,870.4	$2,367.0	2.00
12	Morgan Stanley	$34,185.0	$20,304.0	$5,100.0	$8,781.0	$0.0	1.50
13	USAA Federal Savings Bank	$30,027.0	$24,676.1	$2,679.4	$2,671.6	$0.0	1.30
14	TD Bank	$27,154.6	$1,772.7	$151.0	$25,134.4	$96.5	1.20
15	HSBC Bank Usa, National Association	$26,482.1	$6,951.0	$10,655.6	$8,873.4	$2.2	1.10
16	E*TRADE Bank	$25,672.8	$14,338.2	$3861.9	$7,472.6	$0.0	1.10
17	Silicon Valley Bank	$24,800.4	$15,257.0	$143.2	$9,400.2	$0.0	1.10
18	Ally Bank	$23,949.0	$16,658.0	$1488.0	$2,820.0	$2983.0	1.00
19	BMO Harris Bank National Association	$19,964.2	$5,101.8	$533.3	$14329.0	$0.0	0.90
20	KeyBank National Association	$19,812.6	$1,126.0	$524.7	$18,162.0	$0.0	0.90
	Total Top 20	**$1,723,877**	**$1,065,528**	**$359,790**	**$270,114**	**$28,446**	**74.60%**

Sources: *Inside Mortgage Finance and Urban Institute.* ***Note:*** *Data as of Q3 2020.*

MBS Ownership

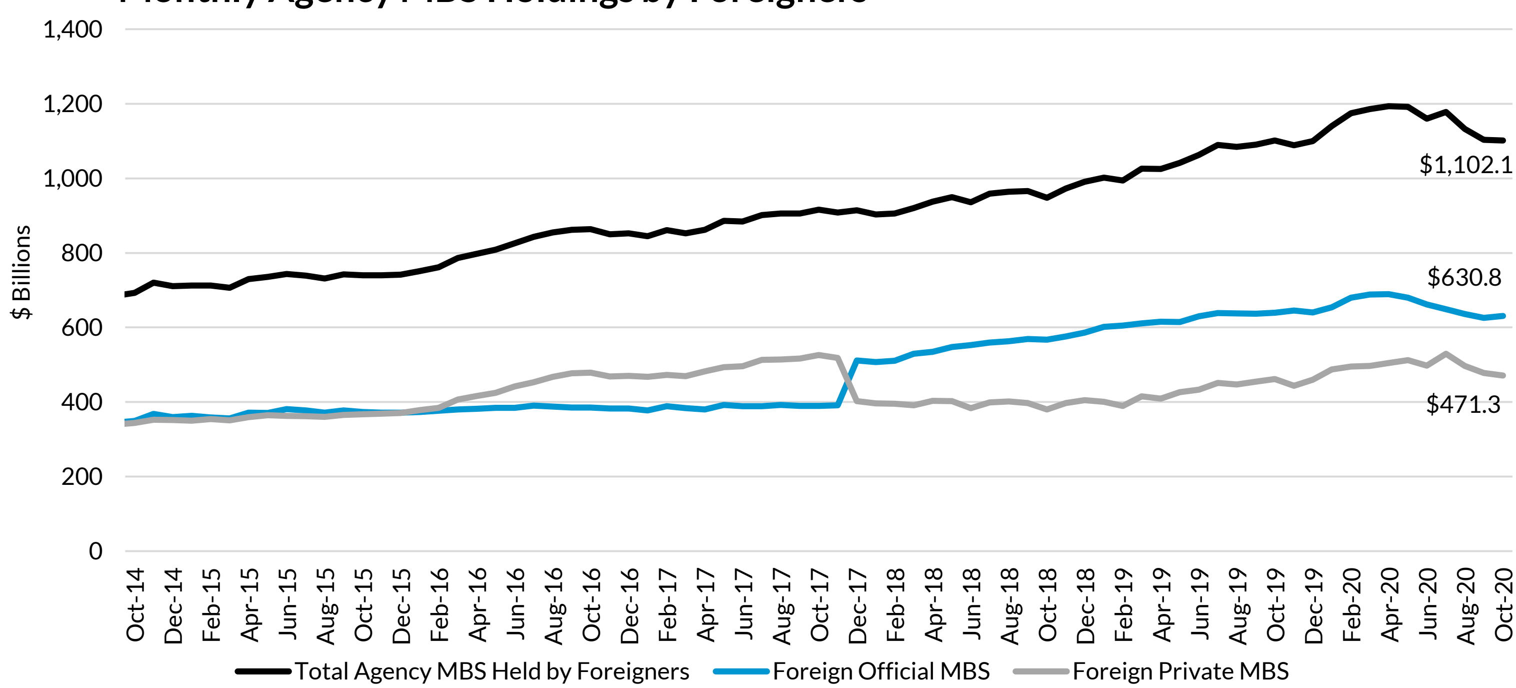
Foreign investors held 14.9 percent of agency MBS in October 2020, up from a low of 12.0 percent in July 2014, but down from 17.0 percent in spring 2020. For the month of October 2020, this represents $1.10 trillion in Agency MBS, $471 billion held by foreign private institutions and $630 billion held by foreign institutions. This represents a $91.6 billion drop in Agency MBS from the peak in spring 2020, all in official holdings.

Foreign Share of Agency MBS



***Sources**: SIFMA and Treasury International Capital (TIC). **Note**: Data as of October 2020.*

Monthly Agency MBS Holdings by Foreigners



***Sources**: Treasury International Capital (TIC) and Urban Institute. **Note**: Data as of October 2020. 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.*

MBS Ownership

The largest foreign holders of Agency MBS are Japan, Taiwan, and China; these three comprise just under 70 percent of all foreign holdings. Between June 2019 and October 2020, we estimate that Japan has increased their agency MBS holdings by $6.18 billion, Taiwan has decreased their holdings by $2.47 billion and China has decreased their holdings by $14.38 billion. All three countries have experienced declines since March of 2020; the declines in Chinese holdings have been especially dramatic, we estimate Chinese holdings of MBS are down by close to 20 percent from April through October of 2020.

Agency MBS+ Agency Debt

	Level of Holdings ($Millions)*							Change in Holdings ($Millions)*					
Country	Jun-19	Sep-19	Dec-19	Mar-20	Jun-20	Sep-20	Oct-20	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Oct-20
Japan	297,016	311,047	305,332	322,155	310,268	305,064	303,329	14,031	-5,715	16,823	-11,887	-5,204	-1,735
Taiwan	265,524	263,018	261,740	269,133	267,918	264,270	262,990	-2,506	-1,278	7,393	-1,215	-3,648	-1,280
China	227,357	233,783	231,753	260,479	239,045	206,861	211,545	6,426	-2,030	28,726	-21,434	-32,184	4,684
Luxembourg	47,646	46,641	39,015	36,789	42,389	35,626	33,896	-1,005	-7,626	-2,226	5,600	-6,763	-1,730
Ireland	45,829	41,367	38,731	26,131	29,399	28,286	27,433	-4,462	-2,636	-12,600	3,268	-1,113	-853
South Korea	42,879	41,485	40,810	40,964	38,891	40,303	40,706	-1,394	-675	154	-2,073	1,412	403
Cayman Islands	34,967	29,540	31,827	27,154	34,564	34,495	35,626	-5,427	2,287	-4,673	7,410	-69	1,131
Bermuda	29,365	29,184	33,897	27,790	27,790	35,751	28,345	-181	4,713	-6,107	0	7,961	-7,406
Netherlands	14,074	10,549	10,902	10,886	13,255	10,964	12,102	-3,525	353	-16	2,369	-2,291	1,138
Malaysia	12,167	15,585	16,600	21,399	20,390	19,808	19,750	3,418	1,015	4,799	-1,009	-582	-58
Rest of world	128,142	135,515	152,489	202,143	201,165	196,246	195,259	7,373	16,974	49,654	-978	-4,919	-987
Total	1,144,971	1,157,714	1,163,096	1,245,023	1,225,074	1,171,603	1,170,981	12,743	5,382	81,927	-19,949	-53,471	-622

Agency MBS Only (Estimates)

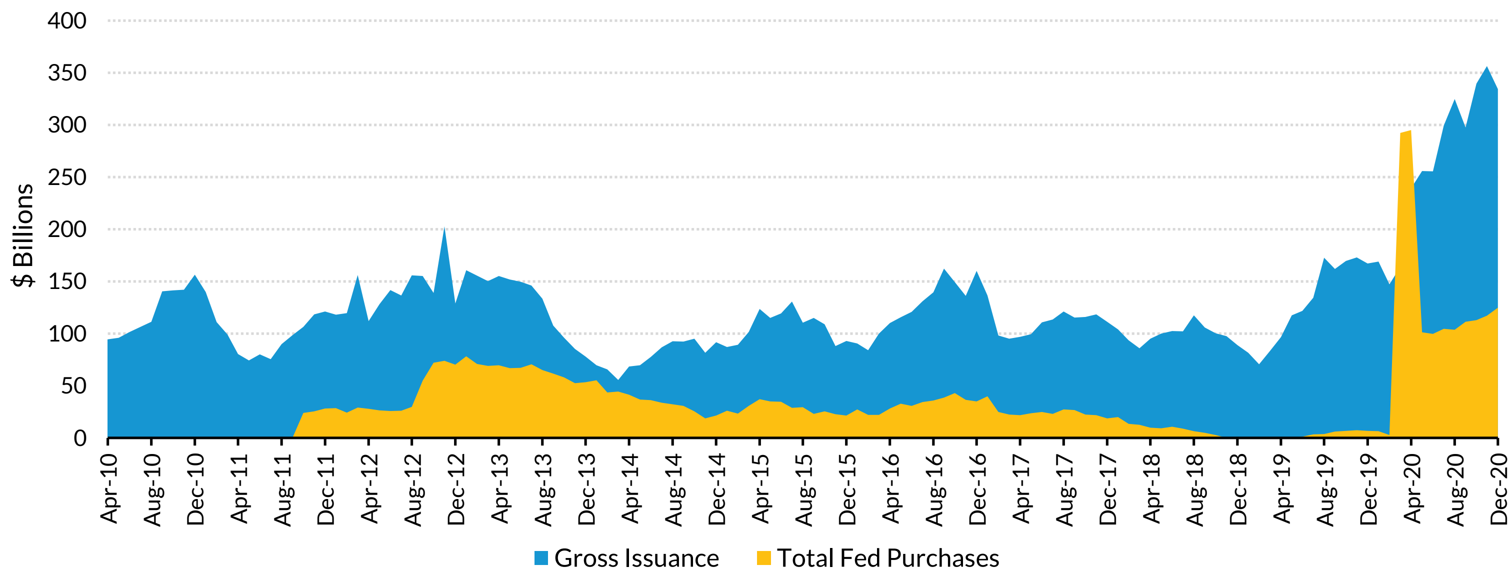
	Level of Holdings ($Millions)*							Change in Holdings ($Millions)*					
Country	Jun-19	Sep-19	Dec-19	Mar-20	Jun-20	Sep-20	Oct-20	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Oct-20
Japan	293,662	307,738	302,212	319,241	306,963	301,622	299,839	14,076	-5,526	16,823	-12,278	-5,341	-1,783
Taiwan	265,234	262,732	261,470	268,881	267,700	264,043	262,760	-2,502	-1,262	7,393	-1,181	-3,657	-1,283
China	221,738	228,240	226,526	255,596	235,078	202,730	207,356	6,502	-1,714	28,726	-20,518	-32,348	4,626
Luxembourg	43,978	43,023	35,603	33,602	40,207	33,354	31,592	-955	-7,420	-2,226	6,605	-6,853	-1,762
Ireland	37,674	33,322	31,145	19,045	21,091	19,635	18,660	-4,352	-2,177	-12,600	2,047	-1,457	-974
South Korea	34,969	33,682	33,452	34,091	28,743	29,736	29,990	-1,287	-230	154	-5,347	992	255
Cayman Islands	29,896	24,538	27,110	22,748	28,431	29,364	29,150	-5,358	2,572	-4,673	5,684	933	-214
Bermuda	26,394	26,253	31,133	25,208	25,111	25,635	25,516	-141	4,880	-6,107	-97	523	-118
Netherlands	13,904	10,381	10,744	10,738	12,739	10,427	11,557	-3,523	363	-16	2,001	-2,312	1,130
Malaysia	11,881	15,303	16,334	21,150	20,028	19,432	19,368	3,422	1,031	4,799	-1,122	-597	-63
Rest of world	97,585	105,371	124,063	175,591	173,716	167,661	166,274	7,786	18,692	49,654	-1,874	-6,055	-1,387
Total	1,076,916	1,090,579	1,099,788	1,185,887	1,159,808	1,103,636	1,102,062	13,663	9,209	81,927	-26,079	-56,172	-1,574

Sources *:Treasury International Capital (TIC) and Urban Institute.*
Note: **calculated based on June 2018 report with amount asset backed per country. Revised to include Top 10 holders of MBS listed as of June 2018. Monthly data as of October 2020.*

MBS Ownership

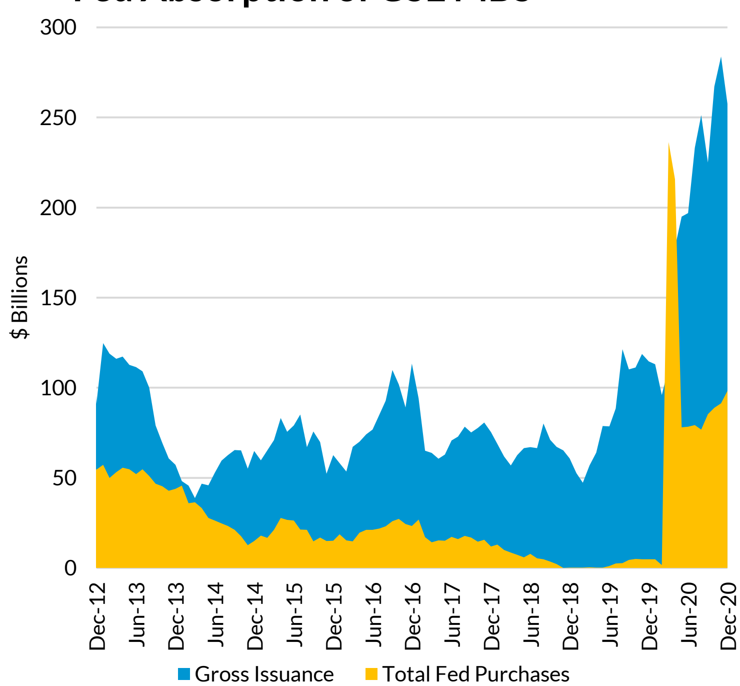
On March 23, 2020, in response to the market dislocations caused by the coronavirus pandemic, the Fed announced they would purchase Treasuries and agency MBS in an amount necessary to support smooth functioning markets. In March the Fed bought $292.2 billion in agency MBS, and April clocked in at $295.1 billion, the largest two months of mortgage purchases ever; and well over 100 percent of gross issuance for each of those two months. After the market stabilized, the Fed slowed its purchases to around $100 billion per month in May through August of 2020. Recently, Fed purchases have ramped up again slightly; purchases totaled $124.9 billion in December 2020. December Fed purchases totaled 37 percent of monthly issuance. As of December 2020, total agency MBS owned by the Fed equaled $2.07 trillion. Prior to the COVID-19 intervention, the Fed was winding down its MBS portfolio from its 2014 previous peak.

Total Fed Absorption



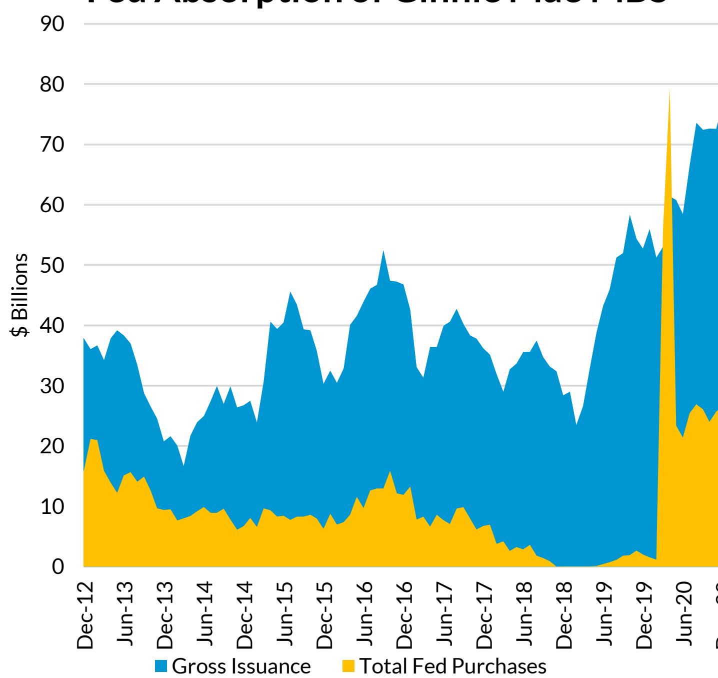
***Sources**: eMBS, Federal Reserve Bank of New York and Urban Institute.* ***Note:** Data as of December 2020.*

Fed Absorption of GSE MBS



***Sources**: eMBS, Federal Reserve Bank of New York and Urban Institute.* ***Note:** Data as of December 2020.*

Fed Absorption of Ginnie Mae MBS



***Sources**: eMBS, Federal Reserve Bank of New York and Urban Institute.* ***Note:** Data as of December2020.*

Disclosures:

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