Global Markets Analysis Report

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

DEC
2020

Ginnie Mae
Our Guaranty Matters

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

CONTENTS

HIGHLIGHTS

2020: Already a year of Record Issuance in the Ginnie Mae Program

2020 has been a tumultuous year for the US economy. The shock caused by COVID-19 has severely disrupted households and businesses. US real gross domestic product plunged at an annualized rate of 31.4 percent from Q1 2020 to Q2 2020. This was followed by a 33.1 percent bounce back in Q3. Despite the Q3 improvement, real GDP was down 1.6 percent compared to Q3 of 2019. The unemployment rate remains close to 7 percent, double its level before the pandemic.

Despite these challenges, the housing market has remained very strong. Housing price appreciation continued to grow in 2020 as demand for housing significantly outpaces supply. Origination volumes skyrocketed as lower rates gave existing homeowners a strong incentive to refinance and improved payment affordability for first-time homebuyers. Page 23 shows gross issuance volumes for Ginnie Mae, Fannie Mae and Freddie Mac. In the first 10 months of 2020 (i.e., Jan to Oct), Ginnie Mae's gross issuance totaled $626 billion, the highest ever and 23 percent greater than the full-year 2019 gross issuance of $509 billion.

Origination of VA guaranteed loans, both in purchase and refinance activity, was the main driver of Ginnie Mae's year-over-year jump in issue volume. FHA-insured loans totaled $269 billion from Jan to Oct 2020. VA-guaranteed loans added up to $337 billion, representing 54% of total Ginnie Mae issuance volume, a record high. The YTD 2020 gain in VA lending is noteworthy because it increased a hefty 49 percent compared to full-year 2019 volume of $226 billion, which was the previous record. FHA-insured volume YTD 2020 is up 1 percent compared to full year 2019. The relatively smaller increase largely reflects FHA's mission of enabling first-time home purchase for low- and moderate-income households. 2020 was a large refinance year, a space in which FHA plays a smaller role than VA or Fannie and Freddie. As page 26 shows, FHA's refinance share has historically been the lowest of any agency. While lower rates have pushed refinance shares for Fannie Mae, Freddie Mac, and VA close to 70 percent as of Oct 2020, FHA's current refi share, while up over last year, currently stands at 32 percent.

Table 1 shows historical purchase and issuance volumes for FHA, VA, Ginnie Mae and the GSEs.

Table 1: Origination Volumes by Loan Type: FHA, VA, Ginnie Mae, GSEs, $ Billions.

	FHA		VA		Ginnie Mae		GSEs	
	Purchase	Refi	Purchase	Refi	Purchase	Refi	Purchase	Refi
2014	$108.3	$30.2	$65.3	$42.7	$193.2	$73.2	$323.7	$298.3
2015	$152.8	$84.3	$77.6	$73.2	$248.0	$157.9	$363.6	$454.0
2016	$177.1	$83.9	$91.0	$110.3	$286.3	$194.6	$429.9	$534.5
2017	$175.4	$62.0	$98.6	$71.6	$292.8	$134.5	$472.8	$368.9
2018	$159.3	$44.7	$101.4	$48.6	$277.2	$93.6	$504.1	$258.3
2019	$169.5	$79.3	$111.5	$106.6	$296.3	$186.3	$557.9	$468.3
2020 (YTD Oct)	$158.5	$97.6	$112.1	$212.3	$288.5	$311.5	$571.3	$1,276.8

Source: eMBS and Urban Institute.

HIGHLIGHTS

VA's and the GSEs' purchase volume YTD 2020 have already surpassed their respective levels in 2019, indicating a record year for purchase originations despite the pandemic. This reflects a combination of factors – strong demand for housing and improved payment affordability caused by plummeting mortgage rates in 2020. We expect the full 2020 calendar year totals to reflect historic purchase volumes for FHA and VA programs reflecting their resiliency even during a time of economic shock.

***Highlights this month*:**

- We have added several new charts this month: outstanding Ginnie Mae volume by vintage and coupon over time (page 18) and characteristics of Ginnie Mae loans in forbearance (pages 19-21). We have also updated the coupons used in the prepayment analysis (pages 45-48).

- Serious delinquency rates continued to remain elevated in Q3 2020 with FHA at 10.8 percent, VA at 5.77 percent, and the GSEs well over 3 percent (page 13).

- Ginnie Mae loans originated since 2019 now comprise 45.4 percent of outstanding loans, as older vintages continue to refinance in substantial numbers (page 19).

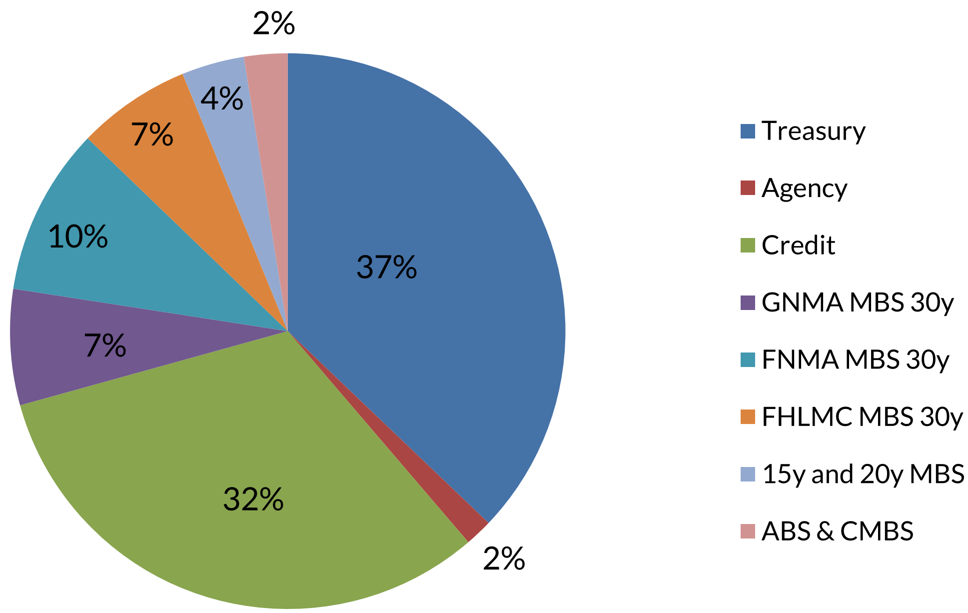
- Total origination volume added up to $2.7 trillion in the first three quarters of 2020. These three quarters alone were higher than any year since 2003, when originations exceeded $3.5 trillion (page 22).

- The first time homebuyer (FTHB) share of VA purchase lending fell to 50.4 percent in September 2020, the lowest level since October 2015. This reflects a bigger increase in VA repeat buyers than FTHBs YTD 2020 (page 25).

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

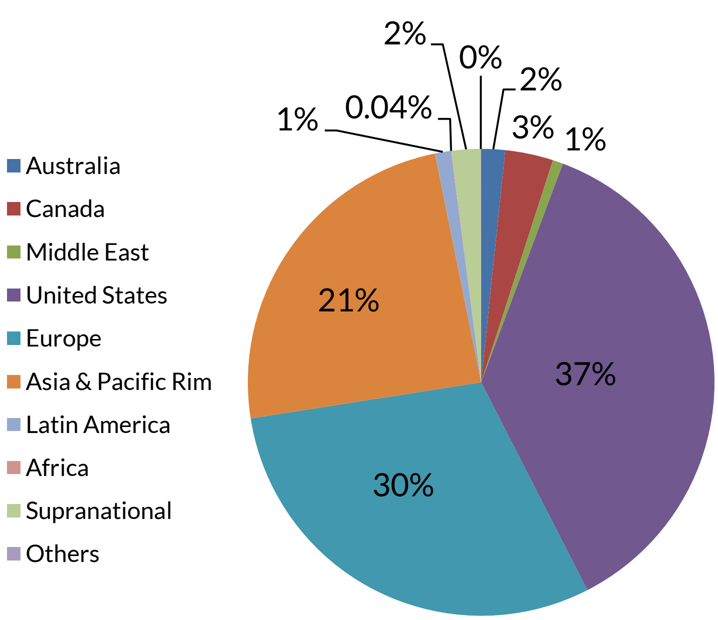
US MBS (Ginnie Mae, Fannie Mae, and Freddie Mac) comprise 28 percent of the Barclays US Aggregate Index—less than either the US Treasury share (37 percent) or the US Credit share (32 percent). Fannie Mae 30-year MBS accounts for 10 percent of the overall index, the largest MBS component, while Ginnie Mae 30-year MBS and Freddie Mac 30-year MBS both comprise 7 of the market. 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 37 percent of the global total. US MBS comprises 10 percent of the global aggregate.

Barclays US Aggregate Index



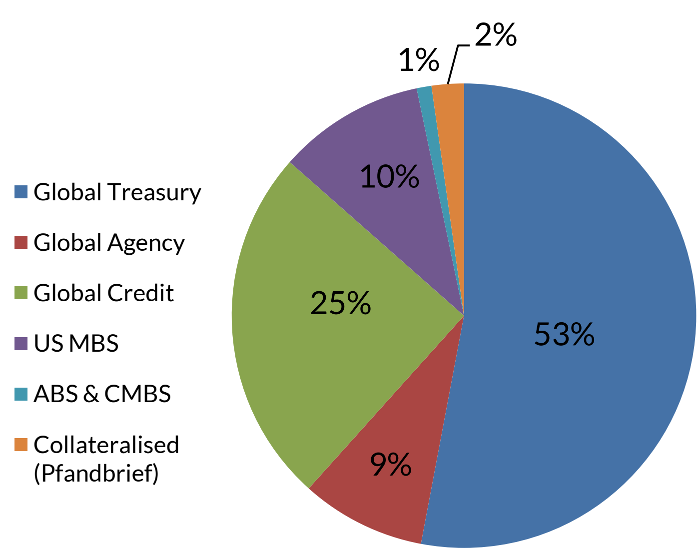
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of September 2020.*
Note*: Numbers in chart may not add to 100 percent due to rounding.*

Barclays Global Aggregate Index by Country



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

Barclays Global Aggregate Index by Sector

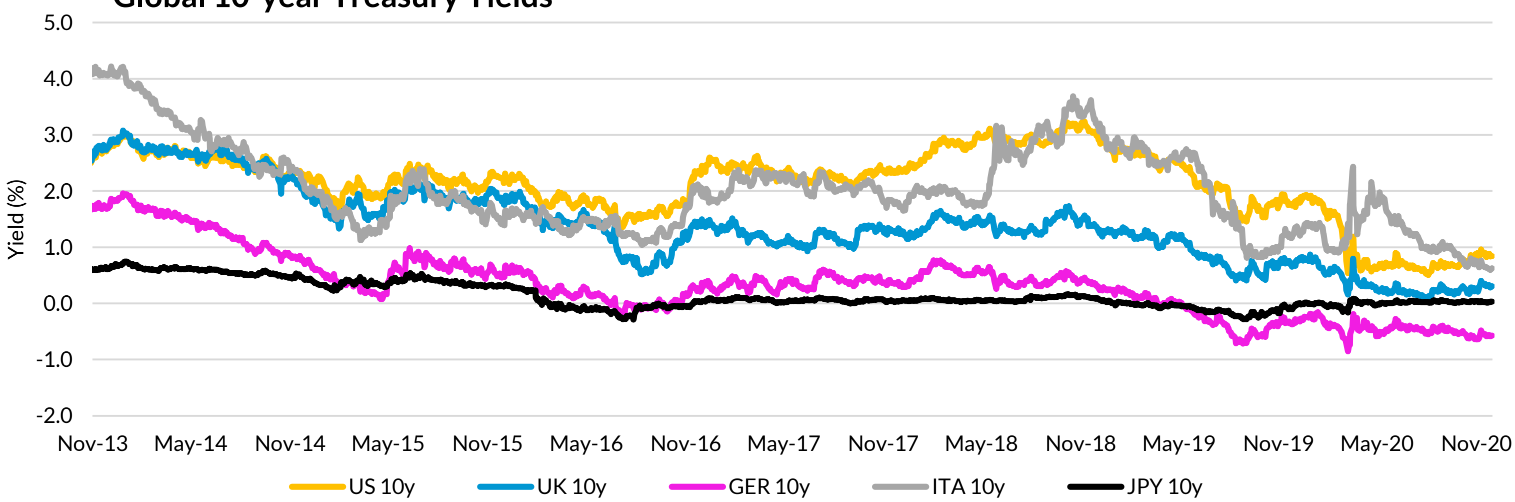


Sources: *Bloomberg and State Street Global Advisors*
Note*: Data as of September 2020.*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

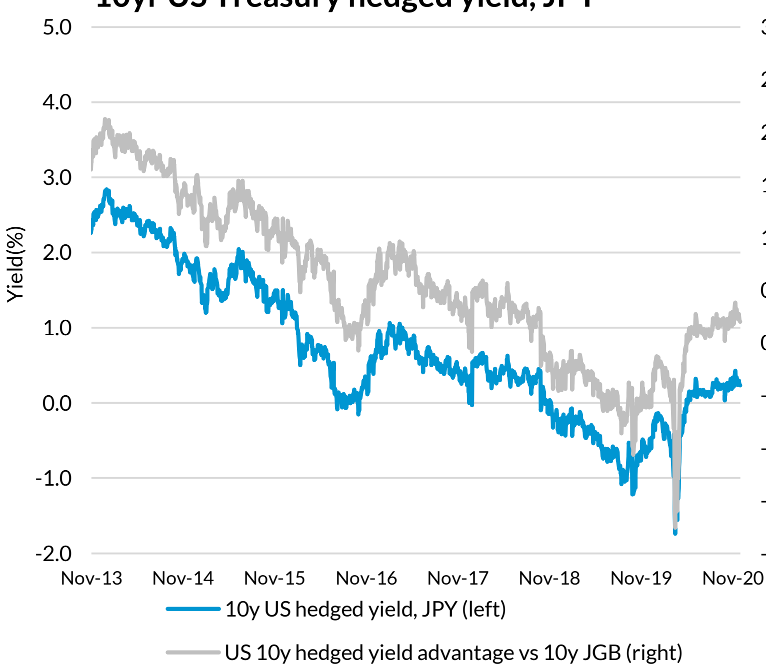
After experiencing COVID-19 related volatility in March and April of this year, government bond yields across the globe stabilized. Yields on the 10-year treasury fell slightly by 3 bps to 0.84 percent in November, though US treasuries remain the highest of the developed world. The yield on the Italian 10-year note, which has been higher than the 10-year sovereign debt of the US, Japan, and Europe for much of 2020, fell by 13 bps to 0.63 percent. The yield on the UK 10-year bond grew by a modest 4 bps to 0.31 percent, while the Japanese 10-year government bond fell ever so slightly by 1 bp to 0.03 percent in November. The German 10-year yield grew by 6 bps to negative 0.57 percent in November. At the end of November, the hedged yield differential between the 10-year Treasury and the 10-year JGB stood at 20 bps, a tightening of 9 bps since October 2020. The hedged yield differential between the 10-year Treasury and the 10-year Bund stood at 44 bps, a contraction of 17 bps since the end of October 2020.

Global 10-year Treasury Yields



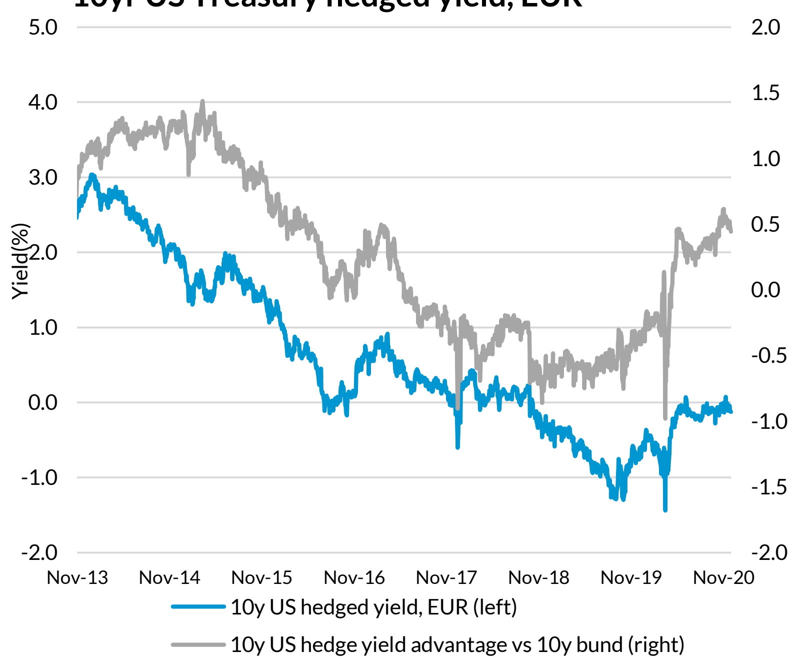
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of November 2020.*

10yr US Treasury hedged yield, JPY



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

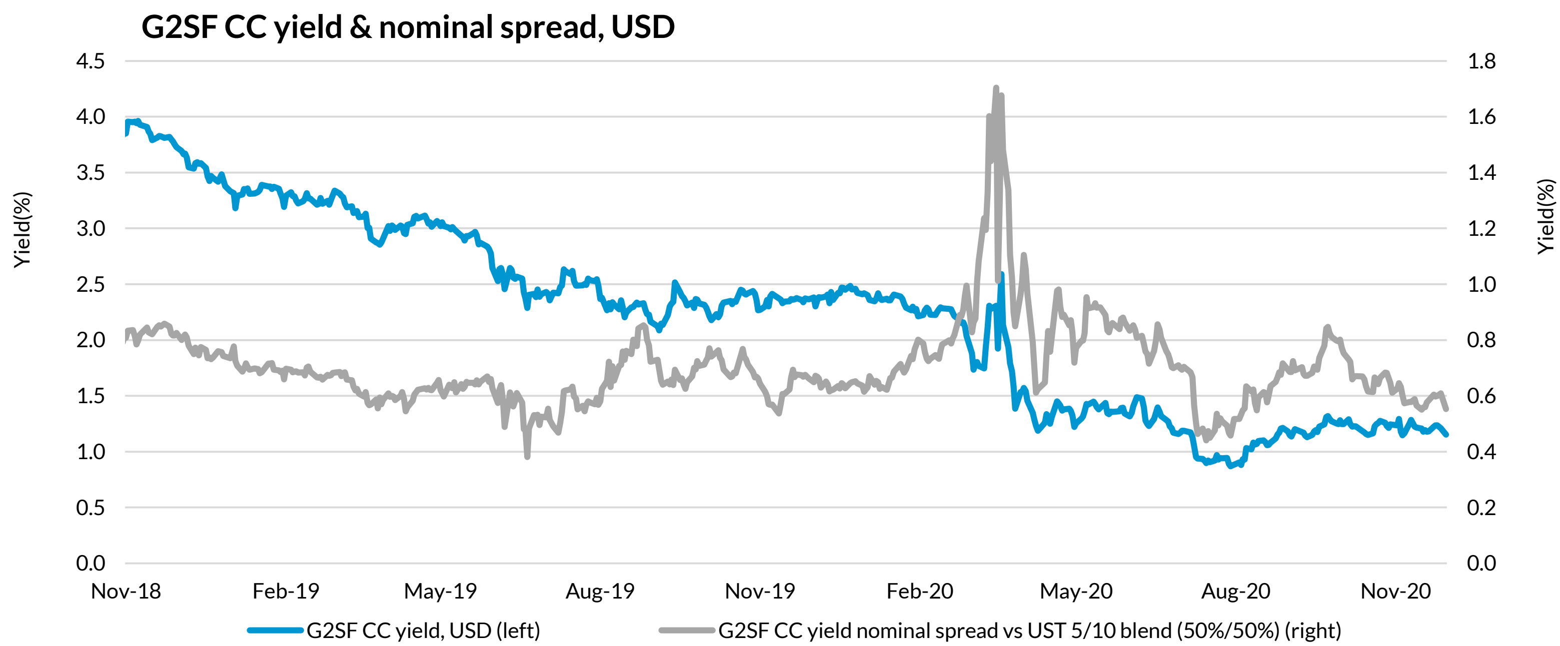
10yr US Treasury hedged yield, EUR



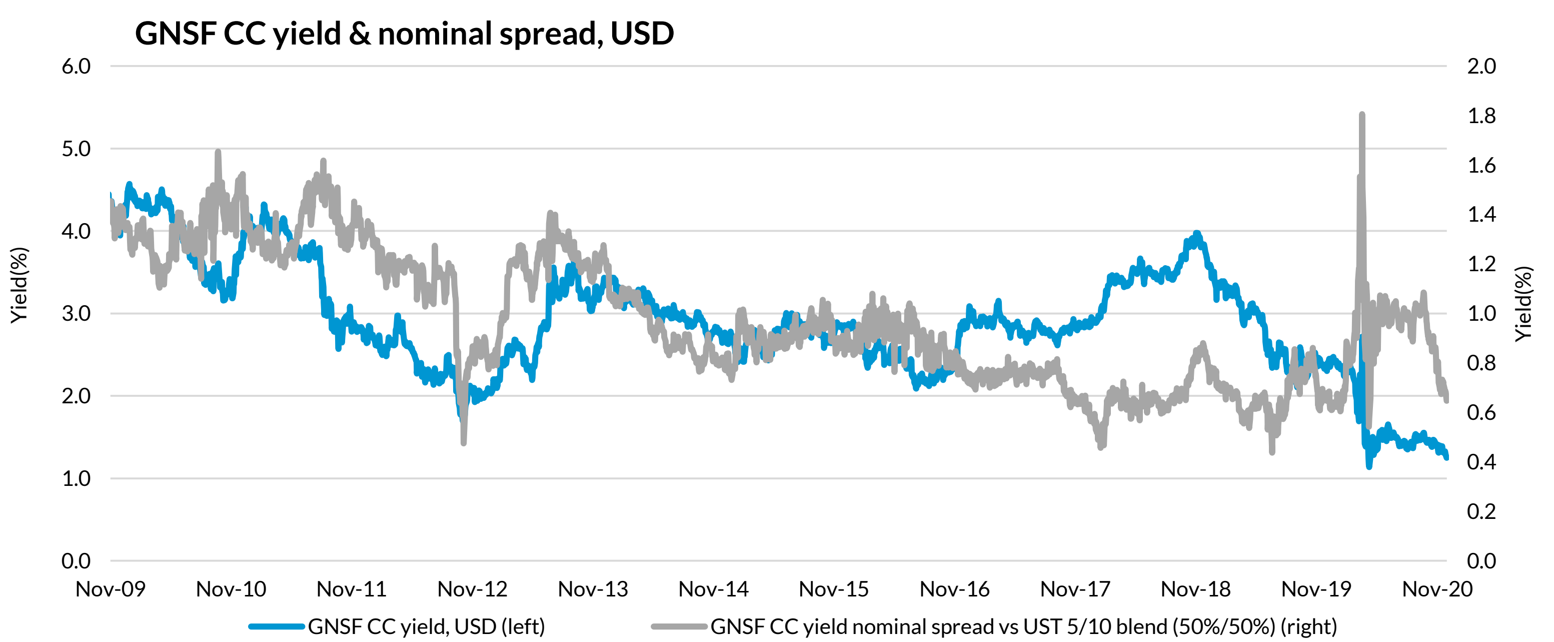
Sources: *Bloomberg and State Street Global Advisors*
Note*: Data as of November 2020.*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

Nominal yields fell in November 2020, with GNMA II yields decreasing 9 bps to 1.15 percent and GNMA I yields down 15 bps to 1.25 percent. At the end of November, current coupon Ginnie Mae securities outyield their Treasury counterparts (relative to the average of 5- and 10-year Treasury yields) by 55 bps on the G2SF and 65 bps on the GNSF, a tightening of 6 and 12 bps, respectively, since last month.



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

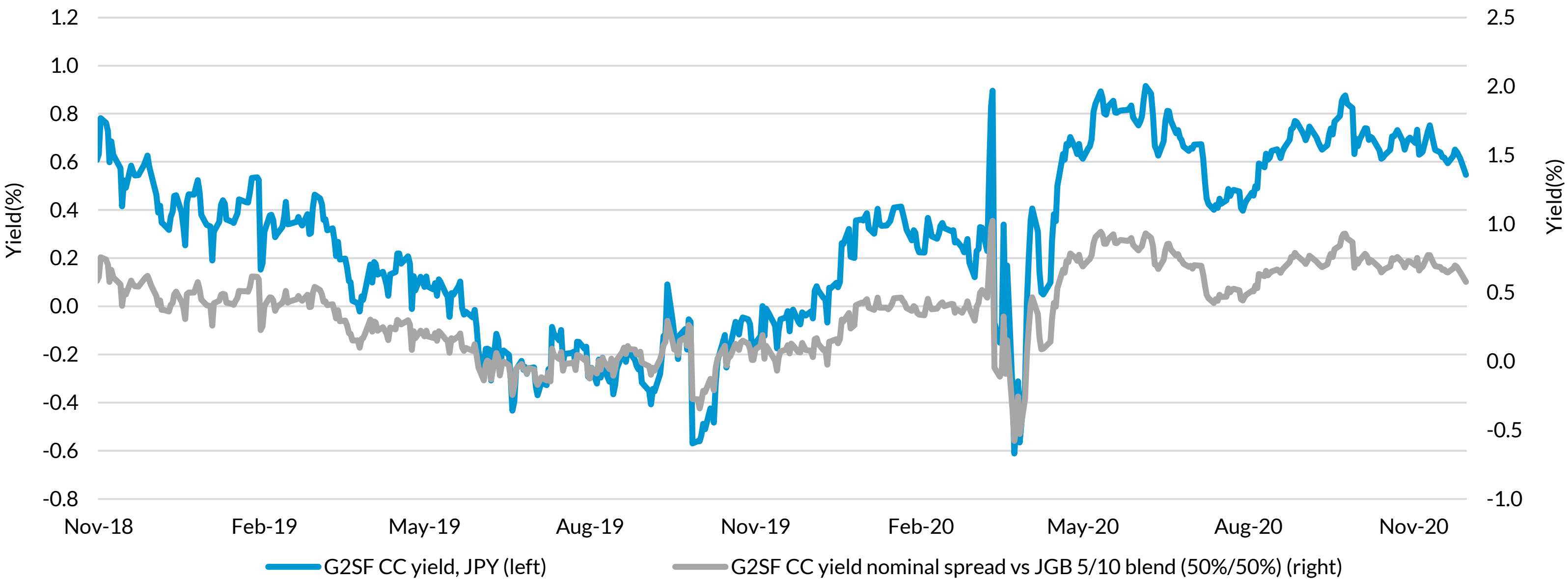


Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of November 2020.*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

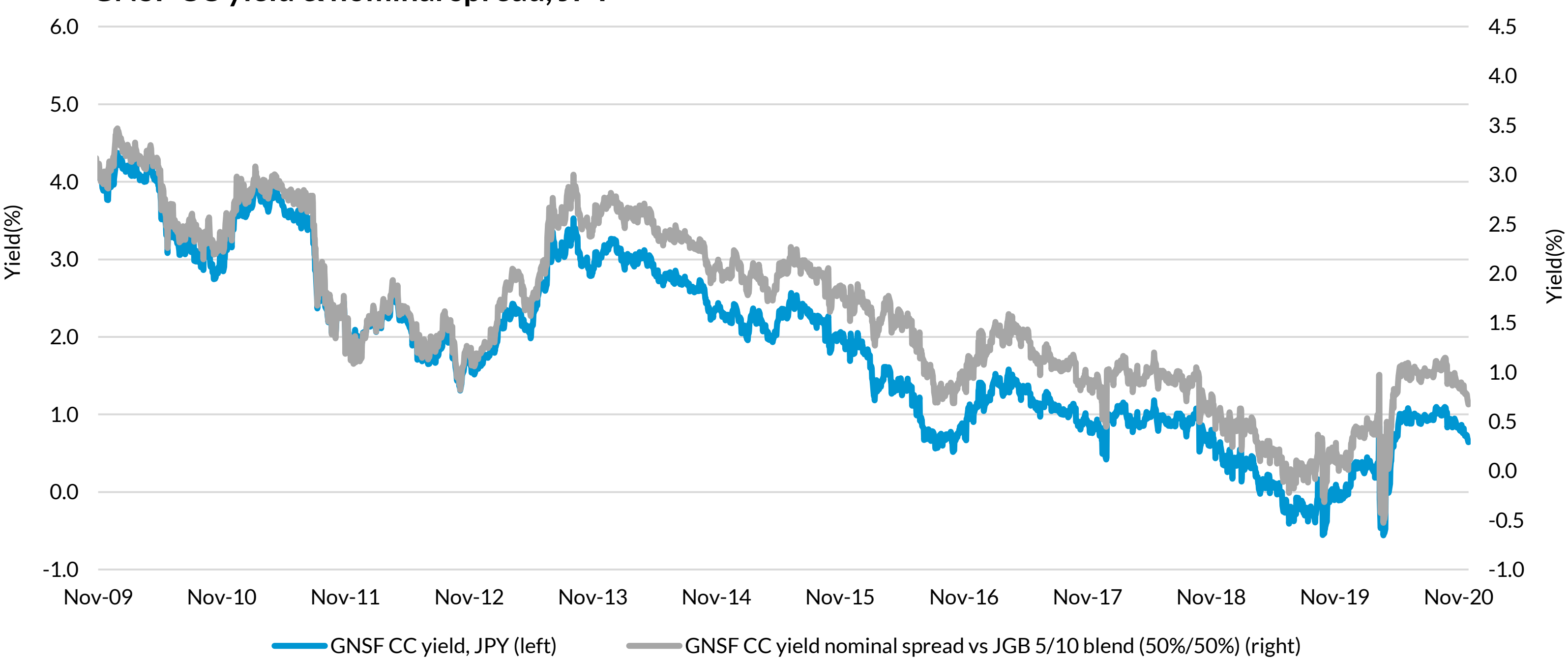
If Ginnie Mae securities are hedged into Japanese Yen, they look favorable on a yield basis versus the JGB 5/10 blend at the end of November. More precisely, hedged into Japanese yen, the G2SF and GNSF have a 58 and 67 bp yield, respectively, versus the JGB 5/10 blend. This represents a 15 bp tightening for G2SF and a 21 bp tightening for GNSF since the end of October 2020.

G2SF CC yield & nominal spread, JPY



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

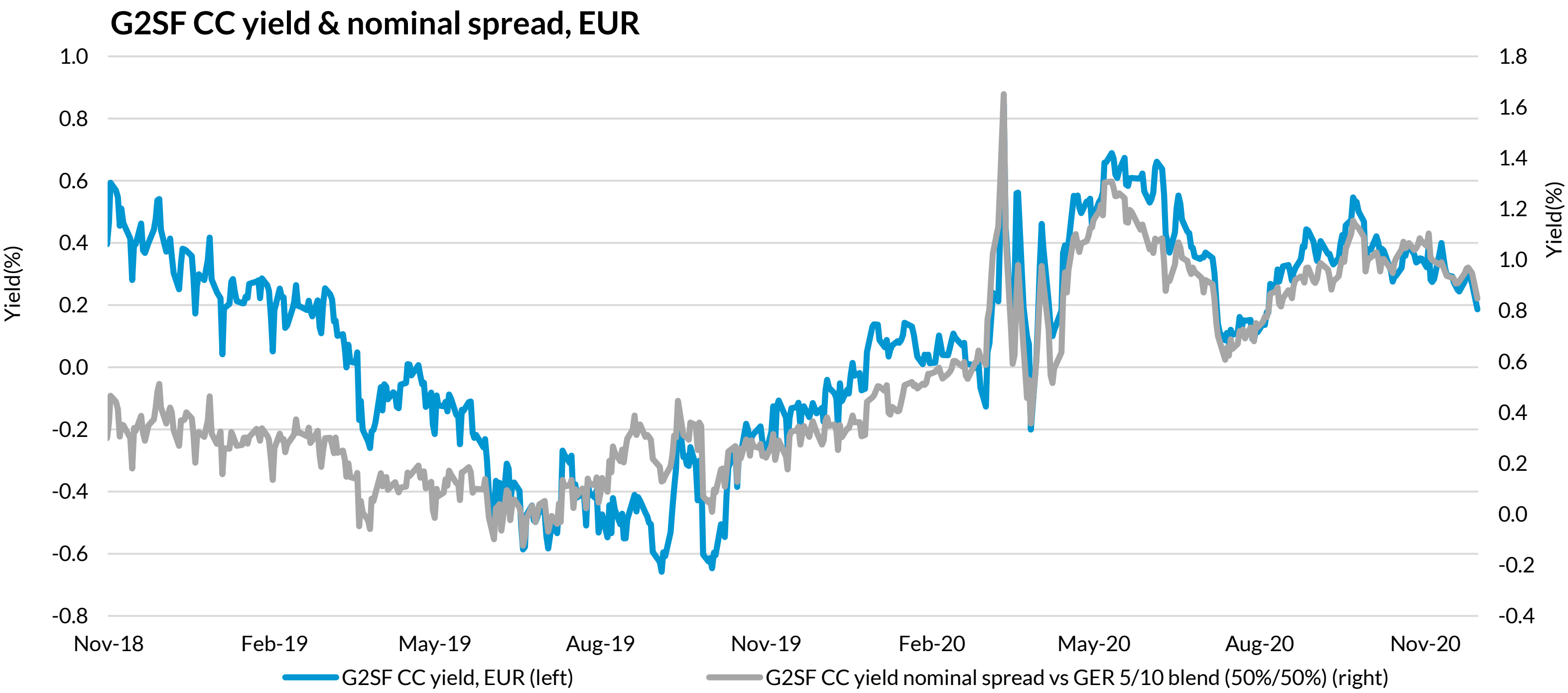
GNSF CC yield & nominal spread, JPY



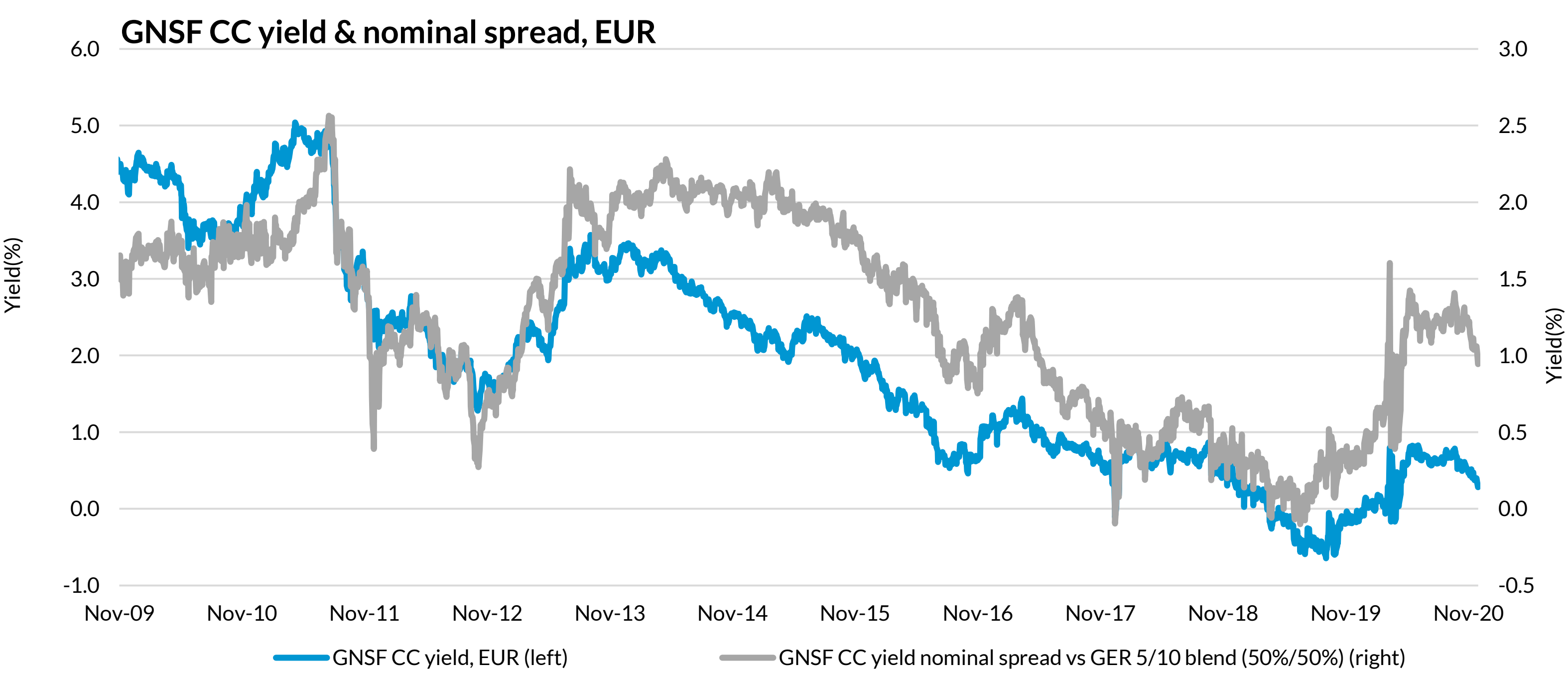
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of November 2020.*

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 November, the current coupon G2SF and GNSF hedged into euros have a 85 and 94 bp higher yield than the average of the German 5/10, respectively. This represents a 23 and 28 bp tightening for the G2SF and GNSF, respectively, since the end of last month.



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

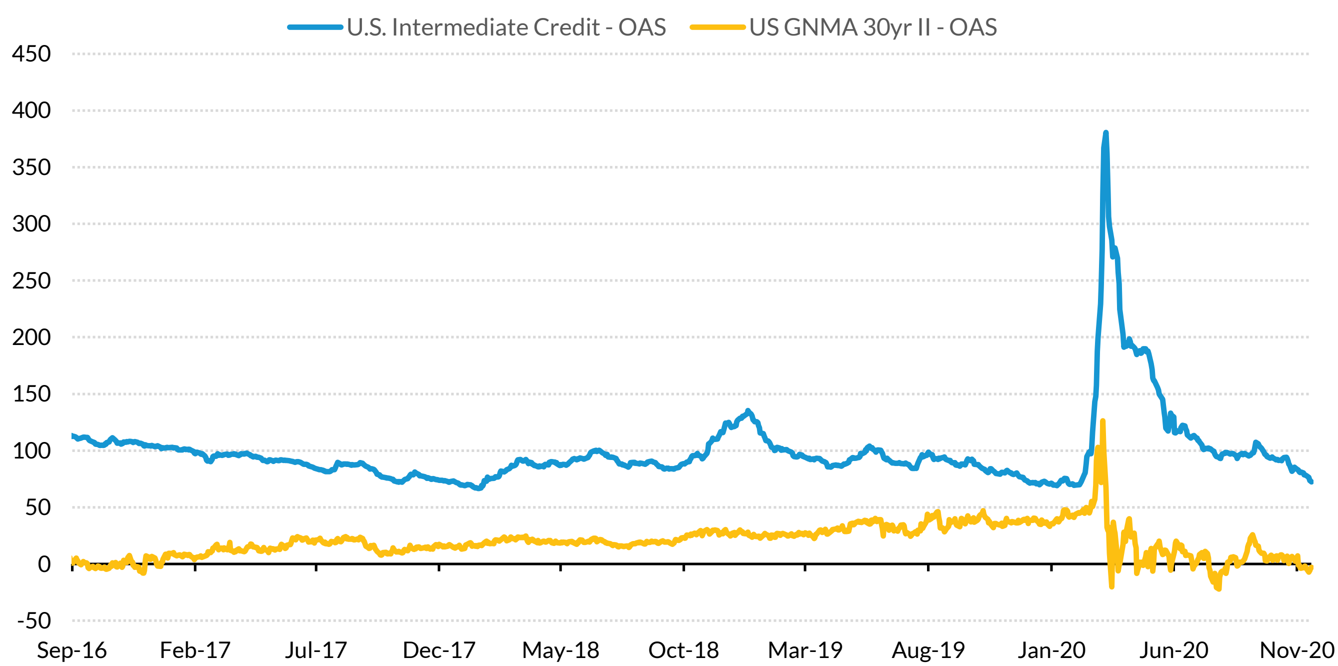


Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of November 2020.*

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 period of March-November 2020. The OAS on intermediate credit partially recovered from its enormous widening early in the year, while the Ginnie Mae II 30-year fell to multi-year lows. Despite this tightening, the spread between the two remains much elevated, ending November 2020 at 75 basis points in comparison to 21 basis points at the end of January, reflecting heightened investor concern about corporate credit risk.

G2 30 MBS versus Intermediate Credit



Sources: *State Street Global Advisors.* ***Note:*** *Data as of November 2020.*

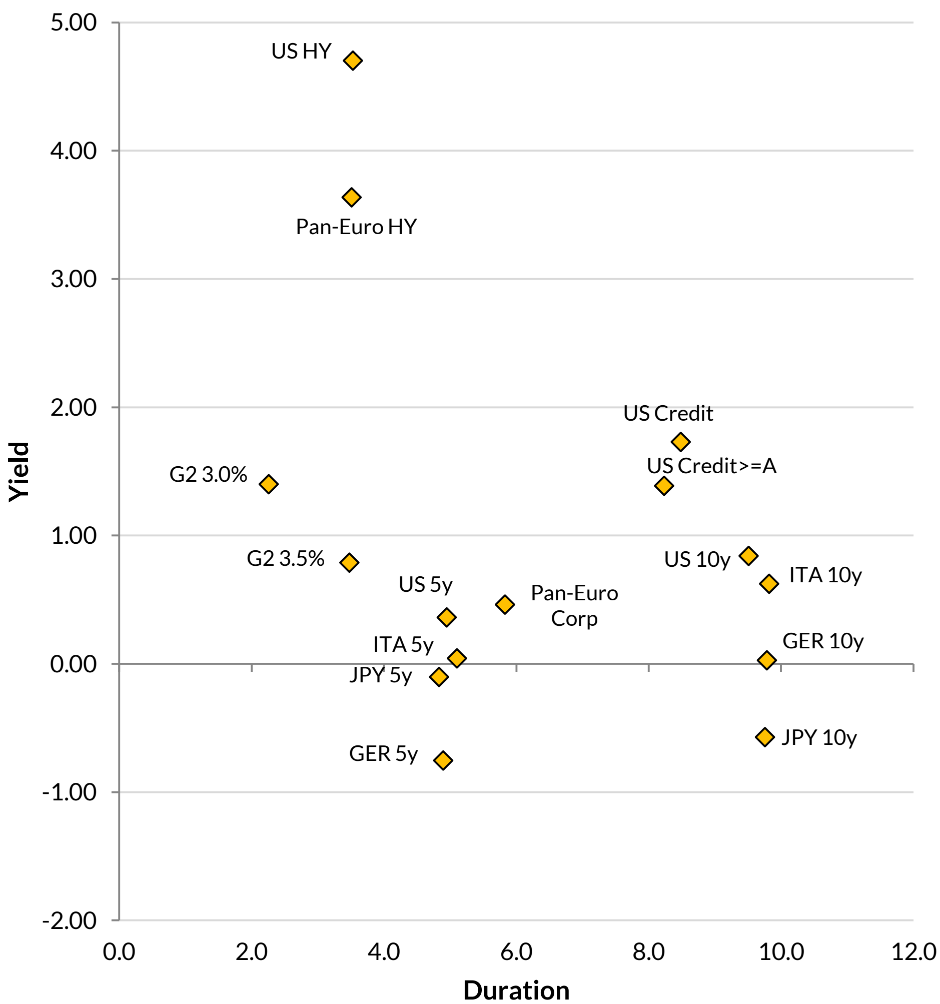
Spread between Intermediate credit and 30-year GNMA MBS OAS

Sources: *State Street Global Advisors.* ***Note:*** *Data as of November 2020.*

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.

Yield versus duration



Security	Duration	Yield
US 5y	4.9	0.36
US 10y	9.5	0.84
GNMA II 3.0%	3.5	0.79
GNMA II 3.5%	2.3	1.40
JPY 5y	4.8	-0.10
JPY 10y	9.8	0.03
GER 5y	4.9	-0.75
GER 10y	9.8	-0.57
ITA 5y	5.1	0.04
ITA 10y	9.8	0.63
US credit	8.5	1.73
US credit >= A	8.2	1.39
US HY	3.5	4.70
Pan-Euro Corp	5.8	0.46
Pan-Euro HY	3.5	3.64

Sources: *Bloomberg and State Street Global Advisors.* ***Note****: Yields are in base currency of security and unhedged. Data as of November 2020.*

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 third highest over 5-year horizons.

	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	0.30	0.62	0.82	0.24	0.67	0.24
3 year	0.29	0.44	0.60	0.25	0.50	0.25
5 year	0.23	0.32	0.54	0.20	0.64	0.20
10 year	0.23	0.27	0.46	0.37	0.57	0.37

	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	0.27	0.59	0.79	0.29	0.64	0.29
3 year	0.17	0.32	0.48	0.30	0.38	0.30
5 year	0.14	0.22	0.45	0.26	0.55	0.26
10 year	0.19	0.22	0.41	0.39	0.52	0.39

	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	0.53	1.37	3.06	2.76	4.39	2.76
3 year	0.65	1.23	2.01	1.64	2.70	1.64
5 year	0.59	1.14	1.69	1.41	2.29	1.41
10 year	0.64	1.05	1.47	1.37	2.04	1.37

	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	0.50	0.43	0.26	0.11	0.14	0.11
3 year	0.26	0.26	0.24	0.18	0.14	0.18
5 year	0.23	0.20	0.26	0.18	0.24	0.18
10 year	0.29	0.21	0.28	0.29	0.26	0.29

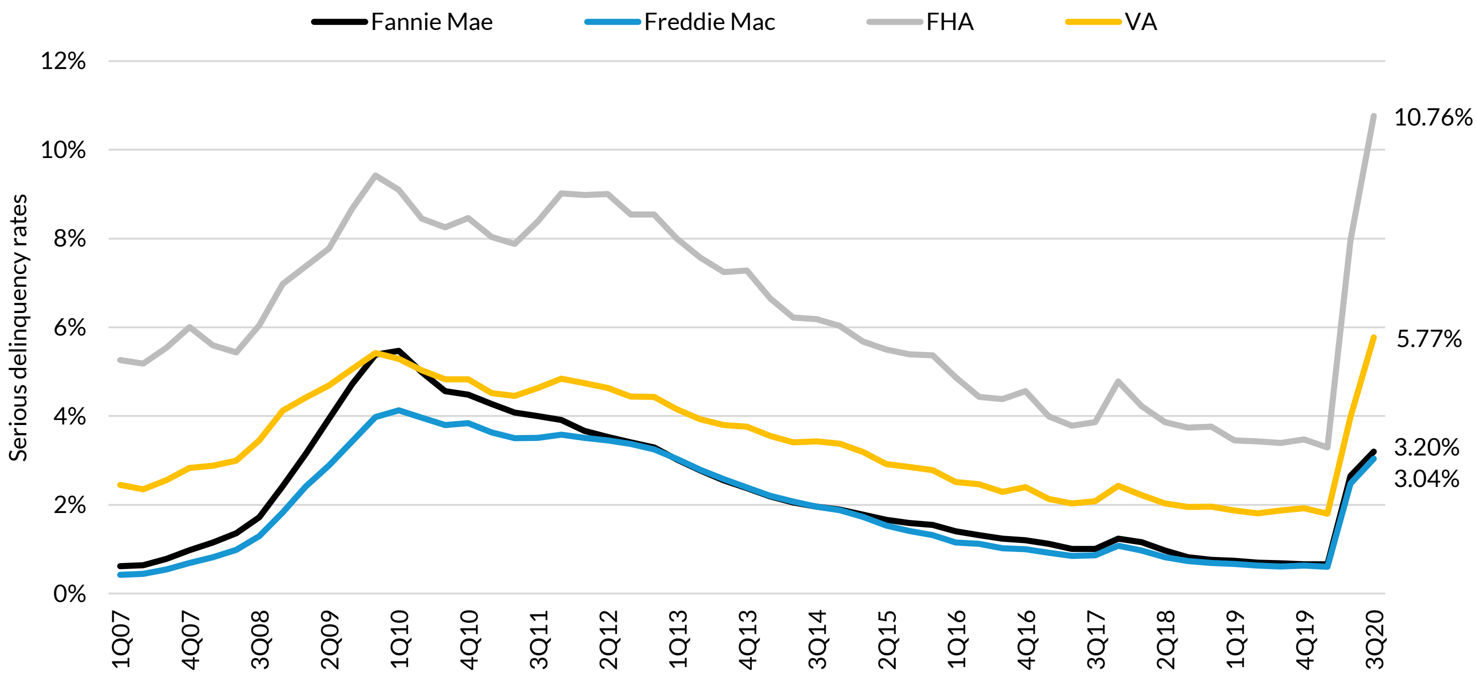
**Assumes 2% capitalization max per issuer on high yield indices*

***Sources:** Barclays Indices, Bloomberg and State Street Global Advisors* ***Note:** Data as of November 2020.*

State of the US Housing Market

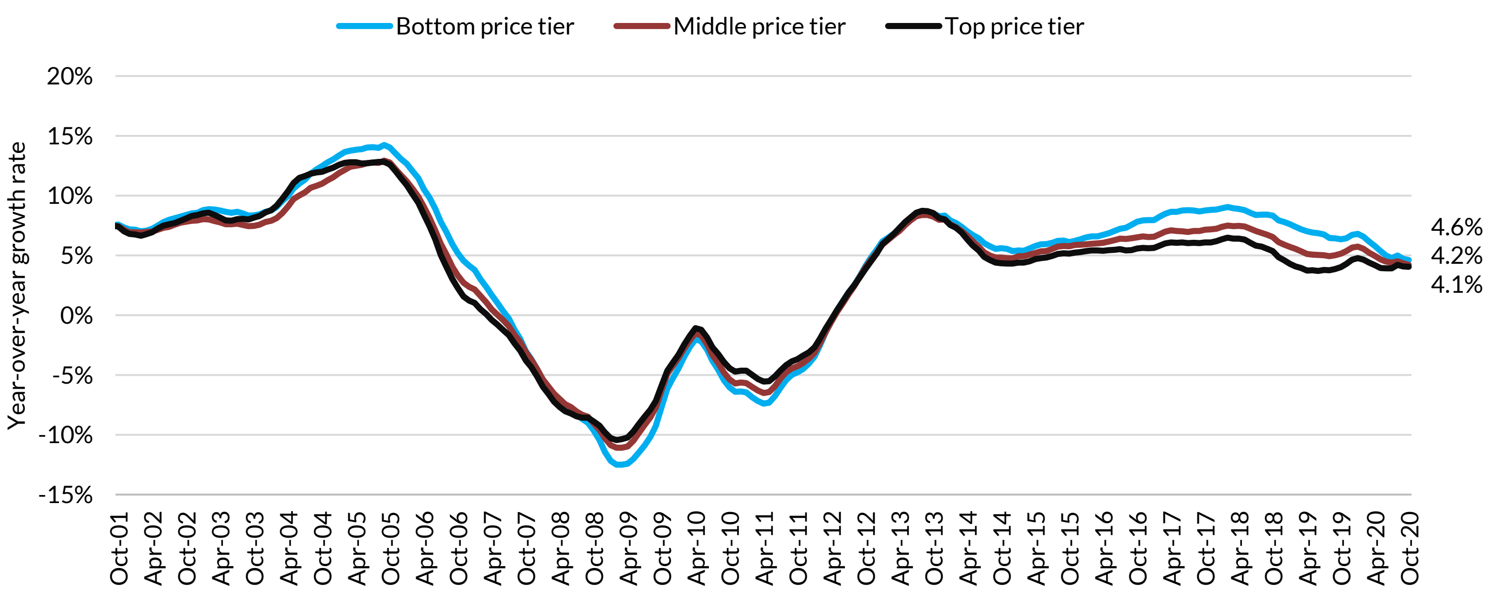
Serious delinquency rates for single-family GSE loans, FHA loans and VA loans rose in Q3 2020, reflecting the impact of the COVID-19 pandemic. These delinquency numbers include loans in COVID-19 forbearance. The bottom chart shows nationwide house prices for the bottom, middle and the top quintiles by 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 October 2020, higher than the 4.1 percent for the top end of the market. Year-over-year price growth in October was lower than in September for the bottom and middle price tiers; top price tier growth remained steady from last month.

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 Q3 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 October 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 19.6 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	74.9%	-25.2%	59.9%	4.0%	19.6%
Alabama	36.1%	-15.4%	36.7%	4.5%	15.7%
Alaska	69.5%	-3.0%	26.8%	3.5%	22.9%
Arizona	109.9%	-47.8%	93.4%	5.2%	0.9%
Arkansas	41.4%	-9.8%	29.0%	3.6%	16.4%
California	154.7%	-43.3%	97.6%	4.1%	12.1%
Colorado	40.3%	-12.9%	86.8%	4.1%	62.7%
Connecticut	92.2%	-24.7%	18.9%	3.1%	-10.4%
Delaware	94.6%	-23.5%	35.2%	4.4%	3.5%
District of Columbia	174.4%	-13.7%	62.5%	5.1%	40.3%
Florida	128.2%	-46.8%	80.2%	5.2%	-4.2%
Georgia	38.4%	-31.3%	71.3%	3.9%	17.7%
Hawaii	163.1%	-22.5%	57.3%	4.2%	21.9%
Idaho	71.9%	-28.7%	100.9%	6.9%	43.2%
Illinois	61.6%	-34.4%	41.2%	1.8%	-7.3%
Indiana	21.5%	-7.9%	41.5%	3.5%	30.3%
Iowa	28.2%	-4.7%	30.2%	2.5%	24.1%
Kansas	34.6%	-9.1%	51.0%	6.4%	37.2%
Kentucky	29.6%	-7.5%	36.8%	3.3%	26.6%
Louisiana	48.7%	-5.1%	26.9%	3.2%	20.4%
Maine	82.0%	-12.4%	47.4%	6.2%	29.2%
Maryland	129.2%	-28.6%	31.3%	3.2%	-6.3%
Massachusetts	92.3%	-22.4%	60.8%	3.5%	24.8%
Michigan	23.8%	-39.3%	82.0%	3.2%	10.4%
Minnesota	66.4%	-27.7%	61.7%	3.8%	16.9%
Mississippi	41.0%	-13.8%	32.5%	4.5%	14.3%
Missouri	42.6%	-15.3%	41.7%	3.6%	20.0%
Montana	82.3%	-11.3%	59.6%	4.4%	41.5%
Nebraska	26.7%	-6.7%	46.8%	3.3%	37.0%
Nevada	126.9%	-59.0%	129.2%	4.3%	-6.1%
New Hampshire	90.5%	-23.1%	48.3%	4.2%	14.0%
New Jersey	117.7%	-28.0%	31.9%	3.4%	-5.0%
New Mexico	66.7%	-16.3%	33.1%	6.2%	11.3%
New York	98.3%	-15.2%	47.3%	4.1%	24.9%
North Carolina	40.6%	-15.8%	43.0%	4.3%	20.4%
North Dakota	53.5%	-4.0%	58.8%	3.4%	52.4%
Ohio	21.1%	-18.3%	42.5%	3.5%	16.5%
Oklahoma	37.4%	-2.5%	25.2%	4.5%	22.1%
Oregon	81.8%	-28.0%	87.2%	4.4%	34.7%
Pennsylvania	70.0%	-11.7%	28.9%	2.6%	13.9%
Rhode Island	130.4%	-34.1%	62.1%	5.3%	6.8%
South Carolina	44.9%	-19.4%	41.7%	4.2%	14.2%
South Dakota	45.3%	-3.9%	52.8%	4.9%	46.9%
Tennessee	35.0%	-11.9%	52.4%	4.9%	34.3%
Texas	33.5%	-5.8%	56.4%	3.8%	47.4%
Utah	54.8%	-22.1%	85.2%	5.2%	44.2%
Vermont	83.5%	-7.5%	41.0%	4.1%	30.5%
Virginia	99.6%	-22.8%	32.4%	4.2%	2.2%
Washington	85.1%	-28.6%	97.6%	5.9%	41.0%
West Virginia	40.3%	-5.9%	24.9%	0.6%	17.6%
Wisconsin	44.7%	-16.4%	39.7%	2.2%	16.9%
Wyoming	77.6%	-7.2%	39.5%	5.2%	29.4%

Sources: *Black Knight and Urban Institute.* ***Note:*** *HPI data as of October 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 10/2020, the latest HPI data period.*

State of the US Housing Market

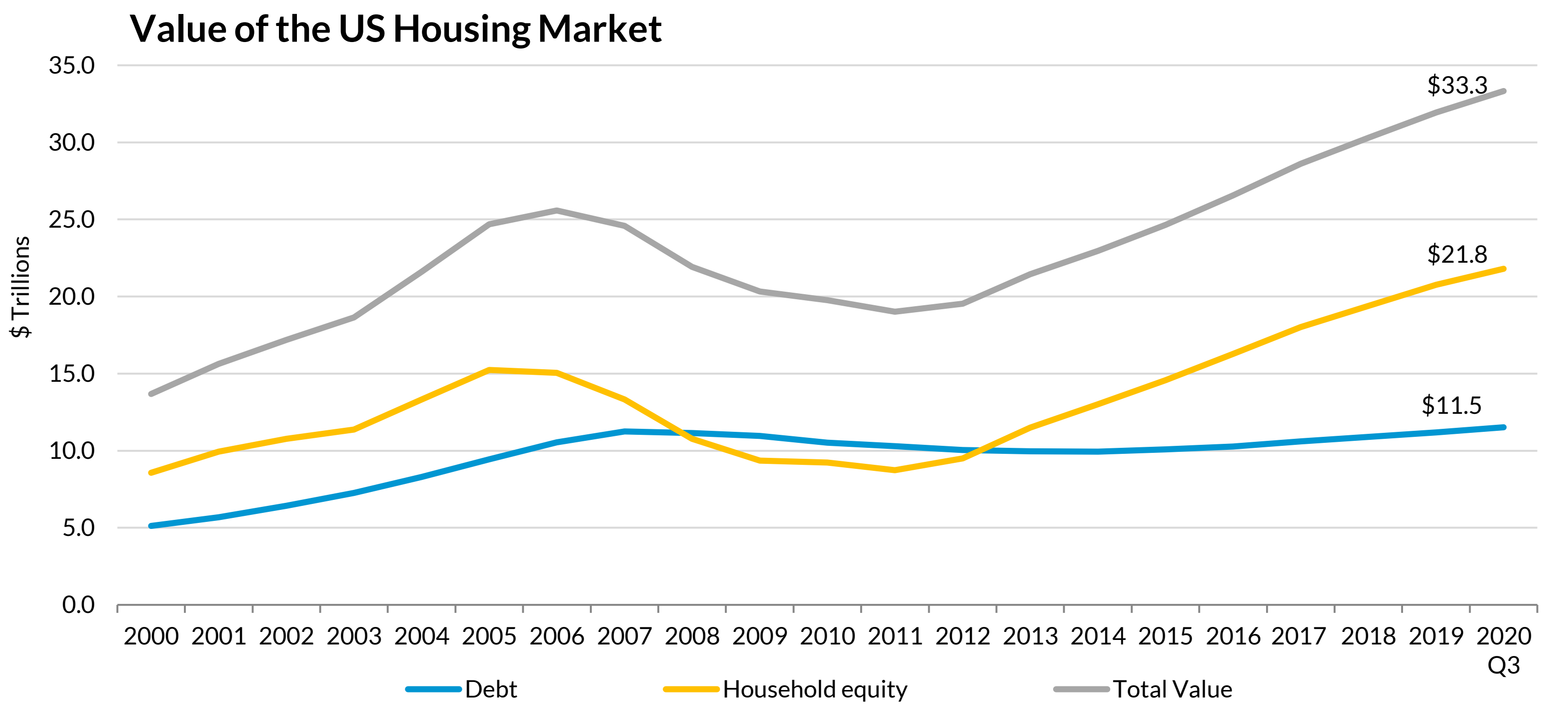
Ginnie Mae MBS constitute 25.6 percent of outstanding agency issuance by loan balance and 26.8 percent of new issuance over the past year. However, the Ginnie Mae share varies widely across states, with the share of outstanding (by loan balance) as low as 11.9 percent in the District of Columbia and as high as 46.6 percent in Mississippi. In general, the Ginnie Mae share is higher in states with lower home prices.

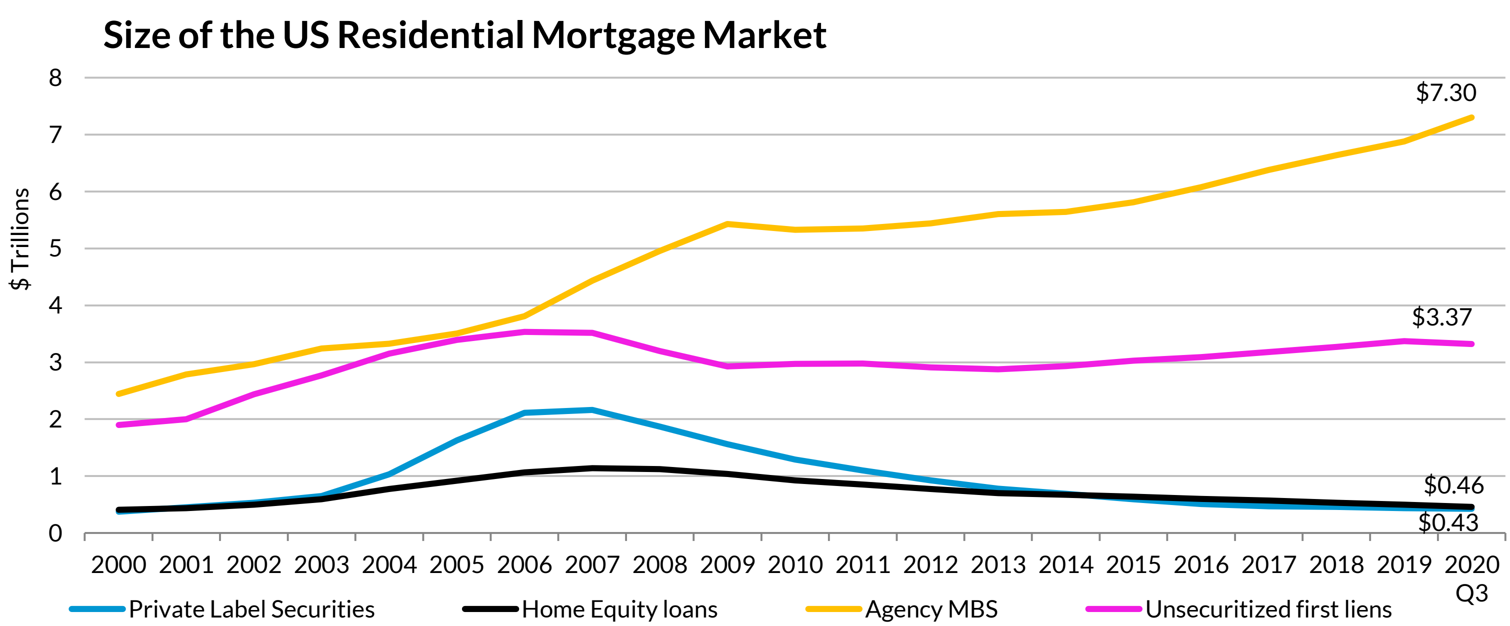
	Agency Issuance (past 1 year)				Agency Outstanding			
State	GNMA Share	GNMA Loan Count	GNMA Avg. Loan Size (000)	GSE Avg. Loan Size (000)	GNMA Share	GNMA Loan Count	GNMA Avg. Loan Size (000)	GSE Avg. Loan Size (000)
National	26.8%	2,783,986	253.9	278.0	25.6%	11,216,521	164.9	199.9
Alabama	39.6%	51,158	195.4	220.4	39.9%	237,365	128.7	159.5
Alaska	49.3%	9,025	311.6	278.6	45.2%	37,600	229.8	206.6
Arizona	27.7%	104,794	248.5	255.9	24.5%	308,970	168.6	193.0
Arkansas	37.0%	27,047	166.7	199.1	39.5%	139,286	111.1	144.3
California	19.7%	257,268	392.1	387.0	16.3%	758,796	270.0	287.0
Colorado	26.3%	86,931	331.5	319.8	21.8%	233,739	228.7	244.8
Connecticut	26.1%	21,919	237.6	263.9	25.9%	108,321	180.6	193.9
Delaware	33.2%	12,312	240.2	258.4	32.3%	52,247	179.8	190.9
District of Columbia	14.8%	2,428	495.3	435.5	11.9%	9,460	297.1	321.9
Florida	37.3%	237,617	243.9	246.4	31.3%	852,065	171.2	182.0
Georgia	35.1%	127,023	216.7	250.0	33.5%	513,637	145.7	180.4
Hawaii	42.6%	12,469	553.9	441.9	25.5%	32,520	381.6	327.6
Idaho	25.8%	21,927	251.8	248.6	24.9%	76,891	161.8	186.4
Illinois	19.1%	76,545	202.4	235.1	21.2%	365,643	140.0	166.5
Indiana	28.6%	65,137	170.1	191.3	31.6%	299,787	111.8	134.7
Iowa	18.2%	17,050	171.8	196.1	21.7%	86,064	114.2	138.6
Kansas	26.9%	20,440	182.7	212.0	30.2%	103,067	119.5	147.4
Kentucky	32.1%	36,483	176.9	198.4	34.3%	168,287	121.4	140.3
Louisiana	36.9%	40,462	193.1	228.0	37.9%	190,439	137.4	165.3
Maine	26.8%	9,857	210.8	234.6	27.3%	40,491	152.8	171.1
Maryland	37.3%	79,212	321.5	313.4	33.4%	298,500	228.9	228.2
Massachusetts	16.0%	33,125	329.9	337.4	15.8%	121,590	240.7	245.2
Michigan	18.1%	62,199	172.1	203.9	21.2%	299,768	114.2	142.5
Minnesota	17.7%	40,166	229.7	246.9	18.9%	180,482	156.3	181.1
Mississippi	45.0%	23,090	177.3	203.3	46.6%	117,305	121.3	147.3
Missouri	26.6%	55,578	179.6	208.3	30.0%	261,800	120.5	146.7
Montana	25.7%	9,338	252.7	256.7	23.9%	36,009	170.6	190.0
Nebraska	25.5%	14,646	196.1	203.5	27.8%	71,400	123.1	145.3
Nevada	35.5%	48,510	285.2	268.4	28.6%	139,720	196.0	205.2
New Hampshire	24.3%	11,319	265.6	263.1	24.2%	43,740	194.8	192.4
New Jersey	22.2%	55,909	283.1	315.3	22.8%	242,569	210.0	230.2
New Mexico	38.2%	19,786	210.1	223.8	38.1%	98,003	141.2	159.8
New York	20.7%	47,314	279.5	310.0	22.1%	323,538	186.5	222.8
North Carolina	30.5%	105,722	216.5	246.2	28.9%	431,002	142.5	176.5
North Dakota	21.8%	4,180	236.1	231.8	22.0%	16,779	167.3	173.5
Ohio	27.5%	86,357	169.7	191.4	30.5%	444,814	112.1	133.9
Oklahoma	41.3%	35,380	180.4	203.2	43.1%	195,514	119.6	146.2
Oregon	22.7%	38,843	295.9	296.9	19.1%	124,244	205.2	222.9
Pennsylvania	25.6%	73,336	193.1	234.0	28.4%	411,728	134.9	164.8
Rhode Island	29.1%	8,995	263.4	259.7	29.4%	36,668	192.8	193.0
South Carolina	36.3%	62,065	217.9	232.9	32.9%	231,694	149.0	170.1
South Dakota	26.3%	7,611	208.7	218.2	29.3%	30,708	143.2	161.3
Tennessee	33.4%	71,066	219.1	242.8	33.3%	293,655	141.1	177.0
Texas	33.1%	255,686	232.0	255.0	30.8%	1,089,894	147.1	185.7
Utah	20.1%	38,911	288.9	288.5	20.3%	118,648	199.7	228.4
Vermont	20.4%	2,694	216.1	232.7	18.6%	12,768	163.9	164.0
Virginia	38.5%	120,877	318.9	318.2	34.2%	448,204	215.2	228.5
Washington	24.4%	83,646	334.2	343.2	21.4%	264,224	225.5	252.4
West Virginia	44.8%	11,845	180.4	186.0	42.7%	56,382	125.9	132.1
Wisconsin	15.9%	31,577	195.5	211.2	17.0%	133,844	133.4	149.6
Wyoming	35.5%	7,111	240.7	248.5	34.4%	26,652	177.6	185.7

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



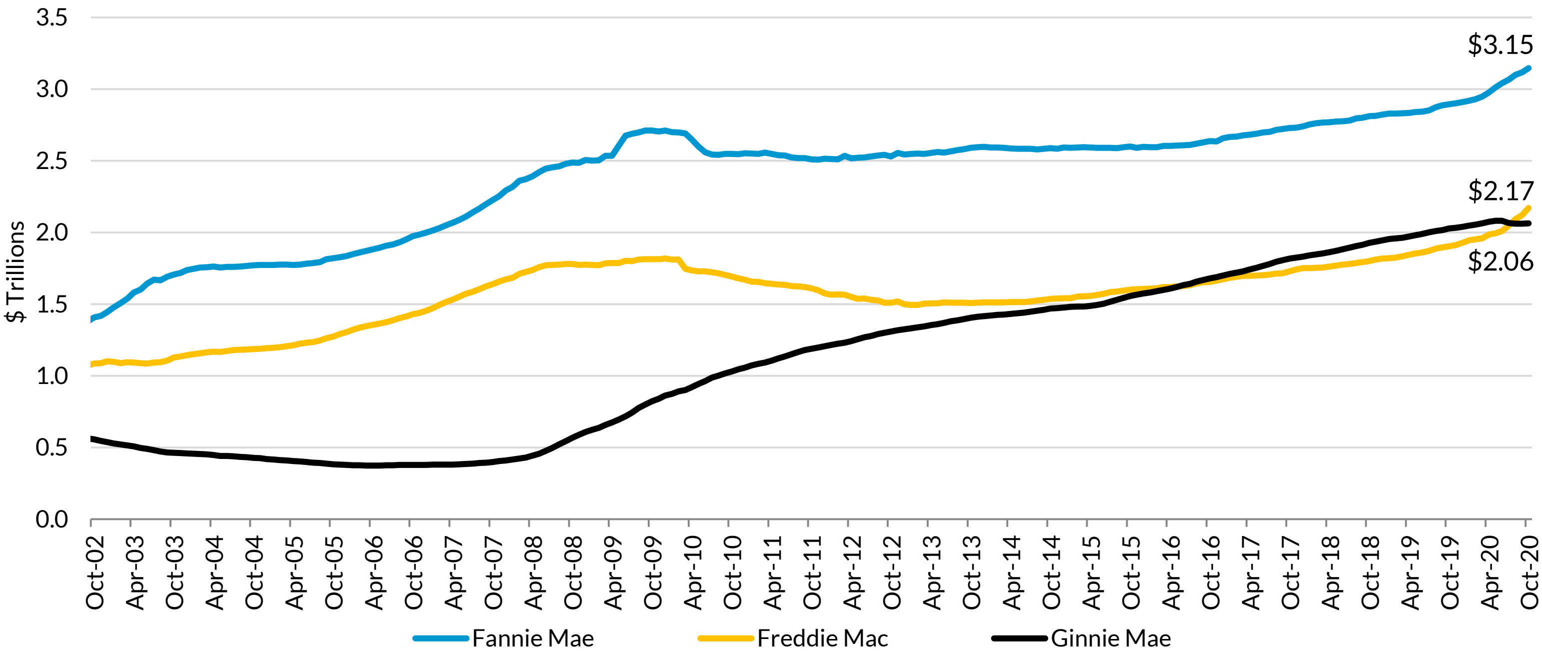


Sources: *Federal Reserve Flow of Funds, eMBS and Urban Institute. Last updated December 2020.*
Note Top: *Single family includes 1-4 family mortgages. The home equity number is grossed up from Fed totals to include the value of households and the non-financial business sector.* **Note Bottom**: *Unsecuritized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

State of the US Housing Market

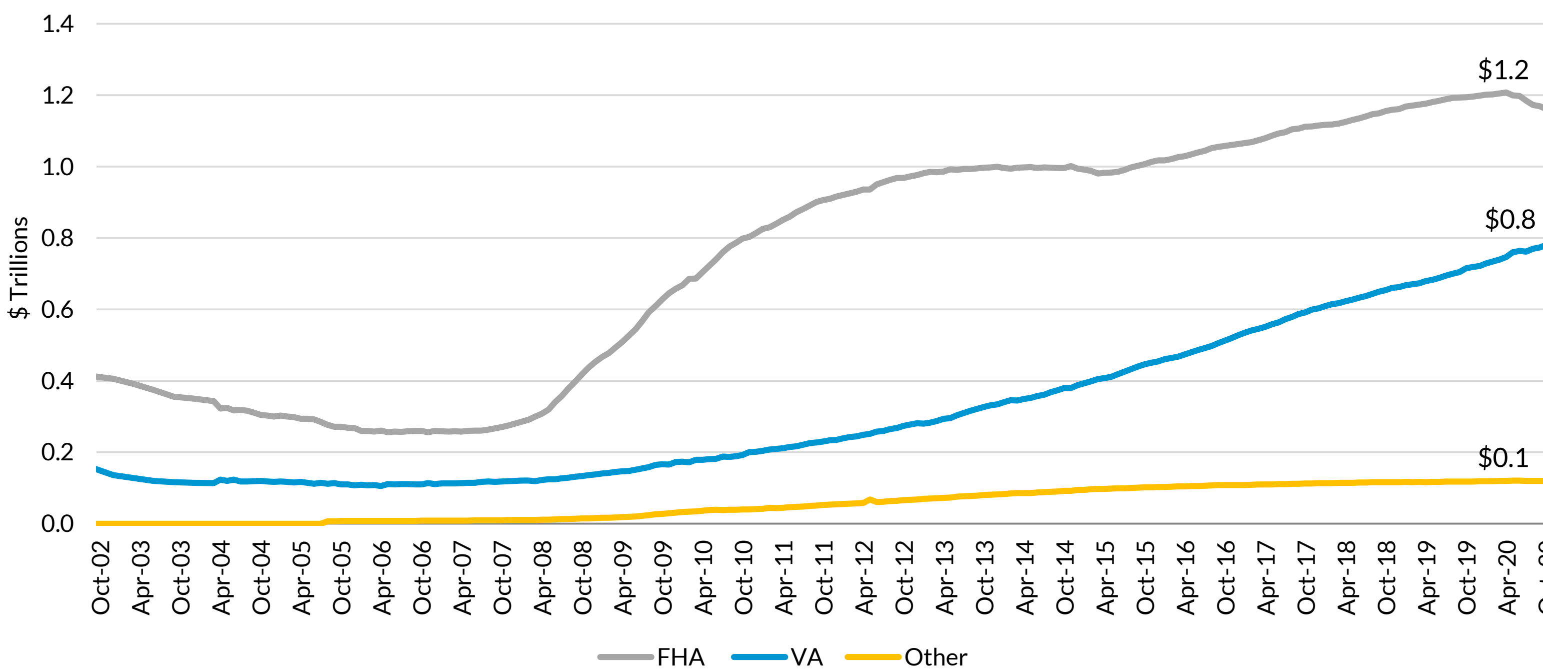
As of October 2020, outstanding securities in the agency market totaled $7.38 trillion: 42.6 percent Fannie Mae, 29.4 percent Freddie Mac, and 28.0 percent Ginnie Mae MBS. Within the Ginnie Mae market, both FHA and VA have grown very rapidly since 2009, although since May 2020, FHA has contracted. FHA comprises 56.3 percent of total Ginnie Mae MBS outstanding, while VA comprises 37.9 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 October 2020.*

Outstanding Ginnie Mae Mortgage-Backed Securities

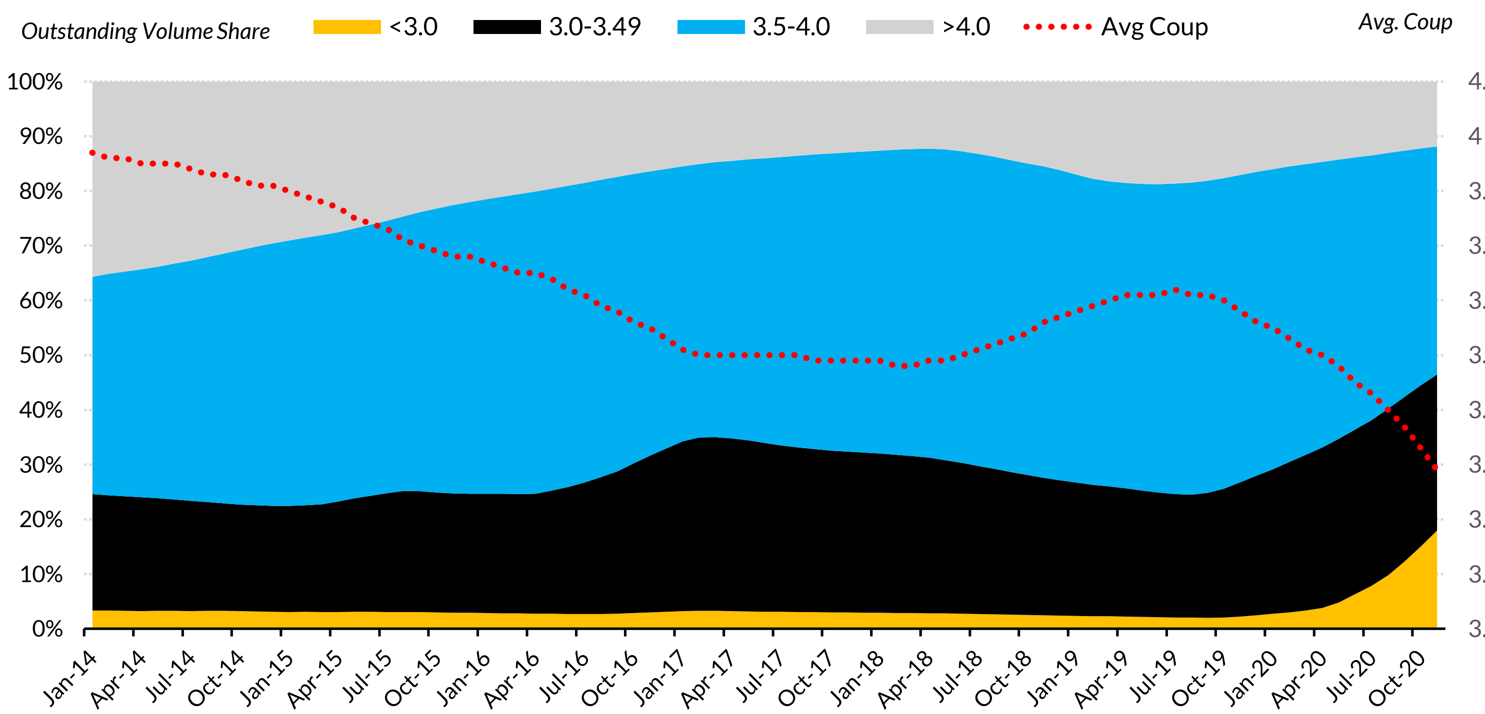


Sources: *eMBS and Urban Institute.* **Note:** *Data as of October 2020.*

State of the US Housing Market

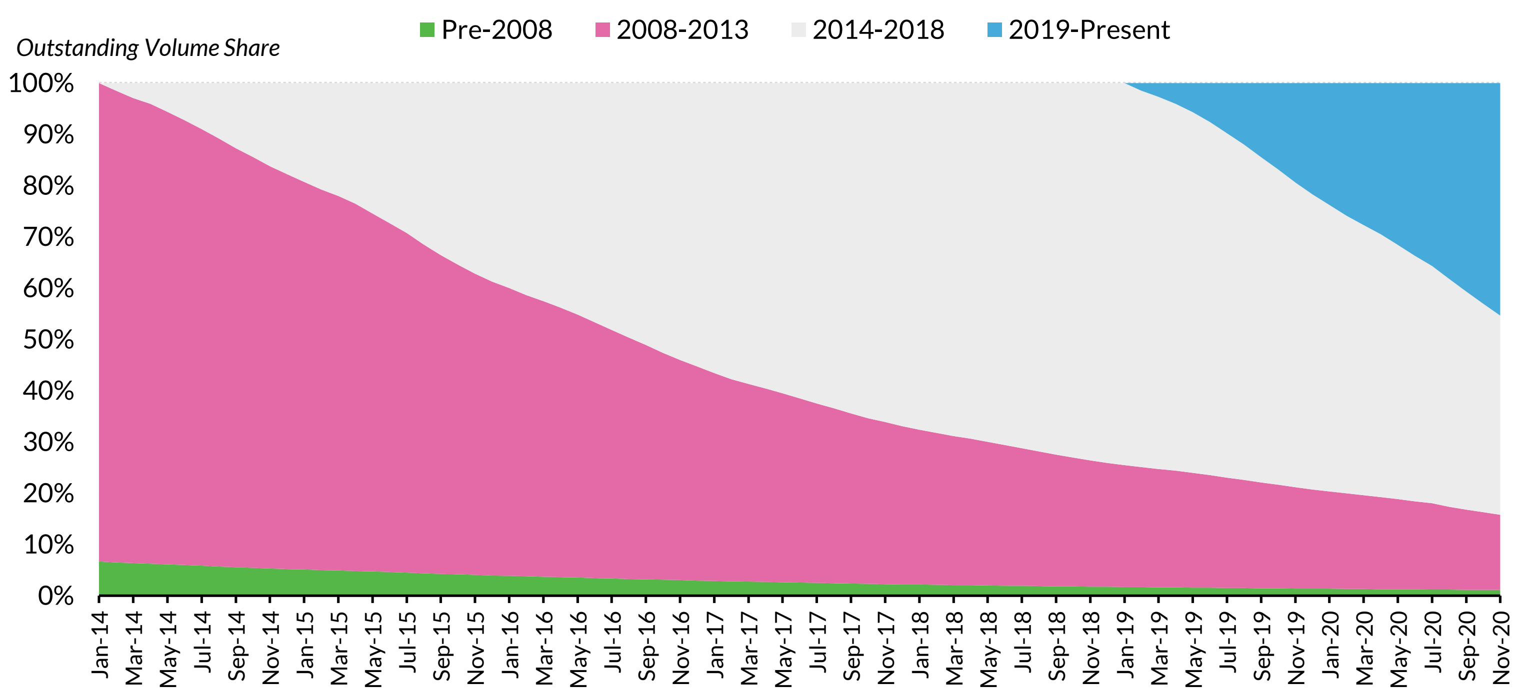
As of November 2020, the average coupon on outstanding Ginnie Mae pools was 3.39 percent, declining steadily over time. The share of outstanding MBS pools with coupons below 3.0 percent has grown exponentially in 2020 due to plummeting rates. The bottom chart shows that loans originated since 2019 now comprise a hefty 45.4 percent share 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 November 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 November 2020.*

State of the US Housing Market

In October 2020, a total of 790,158 Ginnie Mae loans were in forbearance, 27,066 of which were removed from pools (i.e. liquidated) during the month. Most liquidated loans (22,753) were FHA. Forborne loans removed from pools in October 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 – October 2020

	FICO Score*	Note Rate*	Current Principal Balance Median	FTHB Share	Purchase Share	Loan Count
Ginnie	662	4.1	$173,673	77.0%	70.8%	790,158
Bank	677	4.1	$137,600	72.0%	76.4%	124,033
Nonbank	660	4.1	$180,448	77.9%	69.9%	666,125
FHA	659	4.2	$171,000	77.6%	73.0%	596,375
Bank	671	4.2	$127,444	73.0%	78.6%	91,461
Nonbank	657	4.2	$179,240	78.4%	72.1%	504,914
VA	671	3.8	$218,693	68.4%	51.3%	135,596
Bank	687	3.8	$197,179	65.8%	64.9%	25,411
Nonbank	668	3.8	$223,303	69.2%	48.1%	110,185

Loans in forbearance and removed from pools – October 2020

	FICO Score*	Note Rate*	Current Principal Balance Median	FTHB Share	Purchase Share	Loan Count
Ginnie	663	4.5	$155,000	75.1%	81.6%	27,066
Bank	678	4.3	$138,000	73.4%	82.4%	14,422
Nonbank	652	4.7	$178,000	76.7%	80.8%	12,644
FHA	657	4.6	$151,000	76.2%	84.5%	22,753
Bank	673	4.4	$132,000	74.7%	85.1%	11,371
Nonbank	647	4.8	$173,000	77.5%	84.1%	11,382
VA	689	3.8	$210,000	60.0%	58.5%	3,208
Bank	691	3.9	$191,967	60.3%	65.2%	2,145
Nonbank	686	3.7	$247,000	59.3%	45.9%	1,063

Loans in forbearance that remain in pools – October 2020

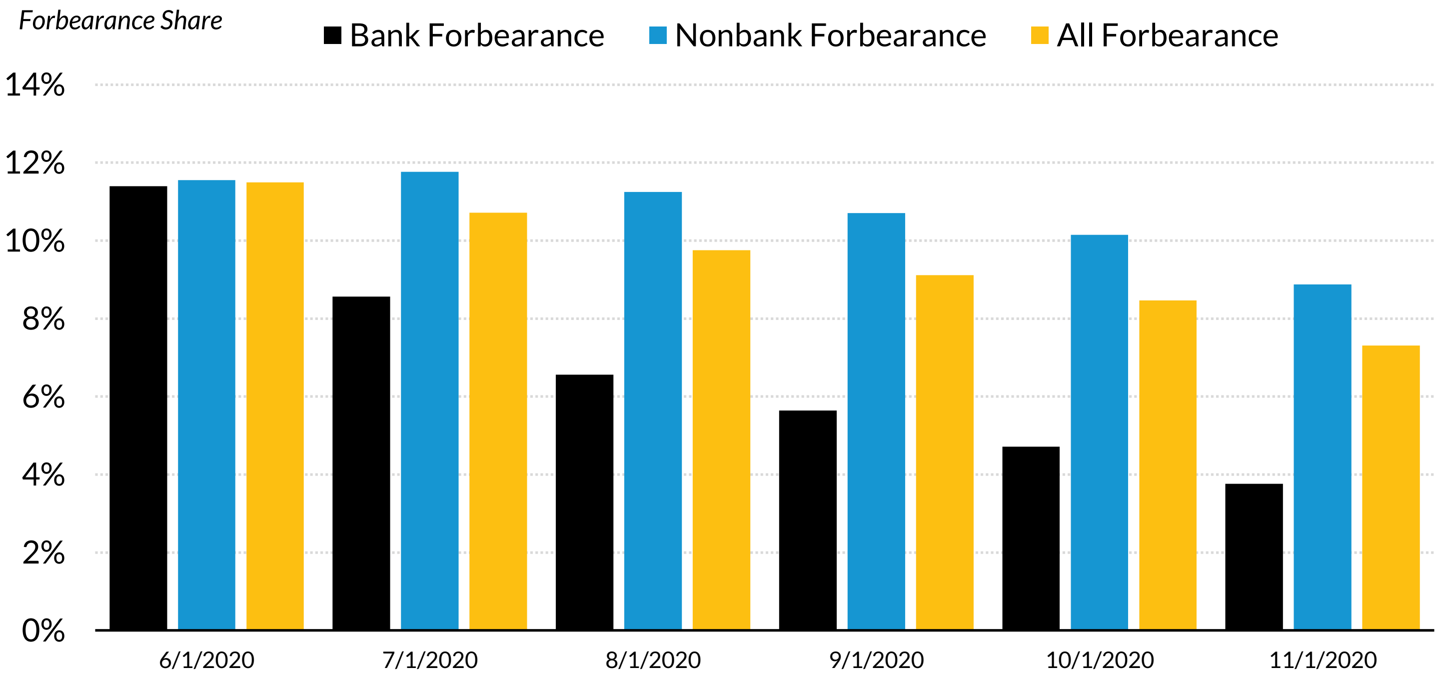
	FICO Score*	Note Rate*	Current Principal Balance Median	FTHB Share	Purchase Share	Loan Count
Ginnie	662	4.1	$172,608	76.9%	71.0%	817,661
Bank	677	4.1	$136,352	72.3%	76.8%	137,349
Nonbank	660	4.1	$180,025	77.8%	70.0%	680,312
FHA	659	4.2	$169,805	77.5%	73.2%	619,532
Bank	671	4.2	$126,801	73.4%	79.0%	101,797
Nonbank	657	4.2	$178,704	78.3%	72.3%	517,735
VA	672	3.8	$218,050	68.2%	51.5%	138,837
Bank	687	3.8	$195,033	65.5%	65.1%	27,569
Nonbank	668	3.8	$223,385	69.0%	48.1%	111,268

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

State of the US Housing Market

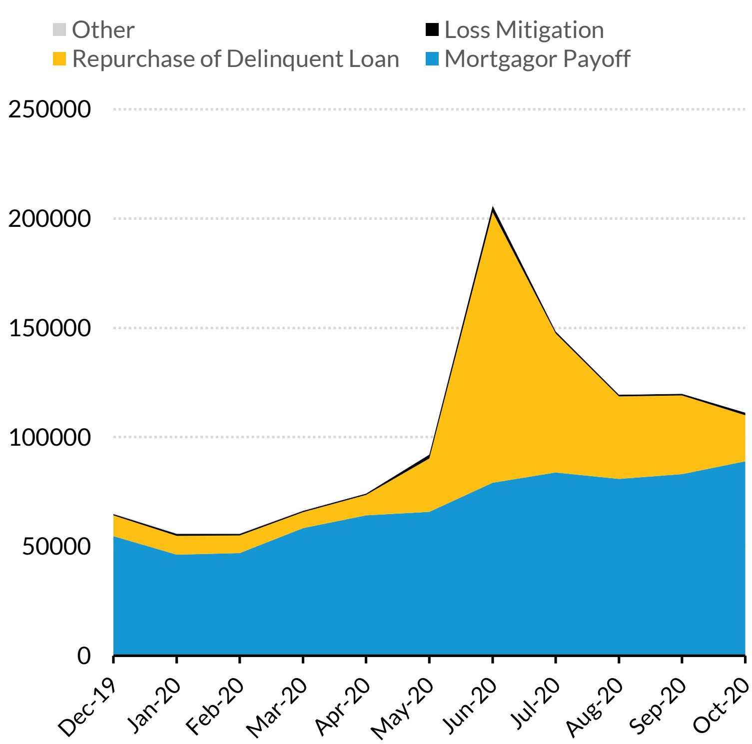
The share of Ginnie Mae loans in forbearance is higher for nonbank issuers than for bank issuers for two reasons: (1) more recent origination is more likely to be forborne and comprises a larger share of the non-bank servicing portfolio, and (2) banks have been more aggressive in buying forborne loans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

Share of Ginnie Mae Loans in Forbearance



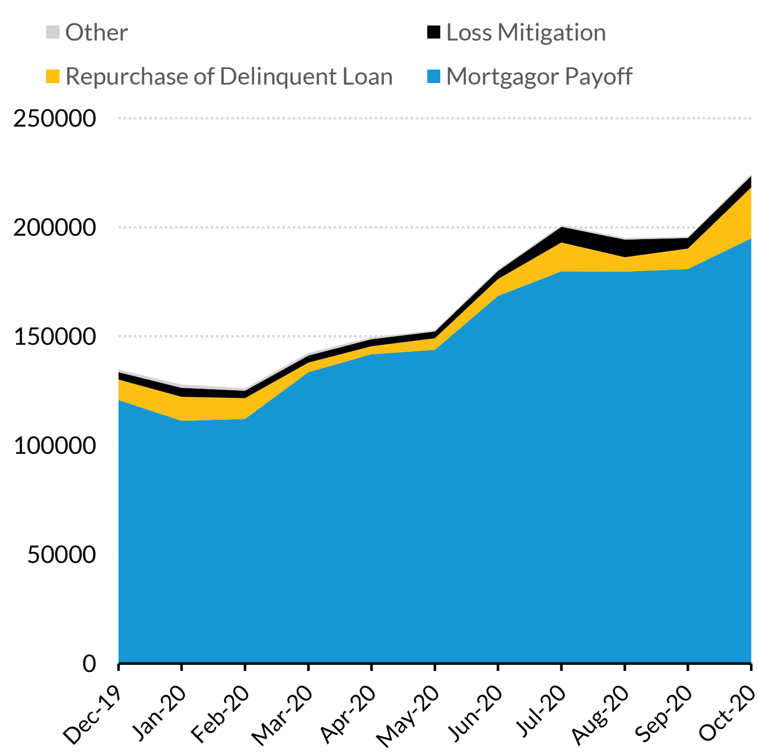
Sources: *eMBS and Urban Institute.* **Note:** *Data as of November 2020.*

Number of Loans Removed from Pools: Bank Issuers



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

Number of Loans Removed from Pools: Nonbank Issuers

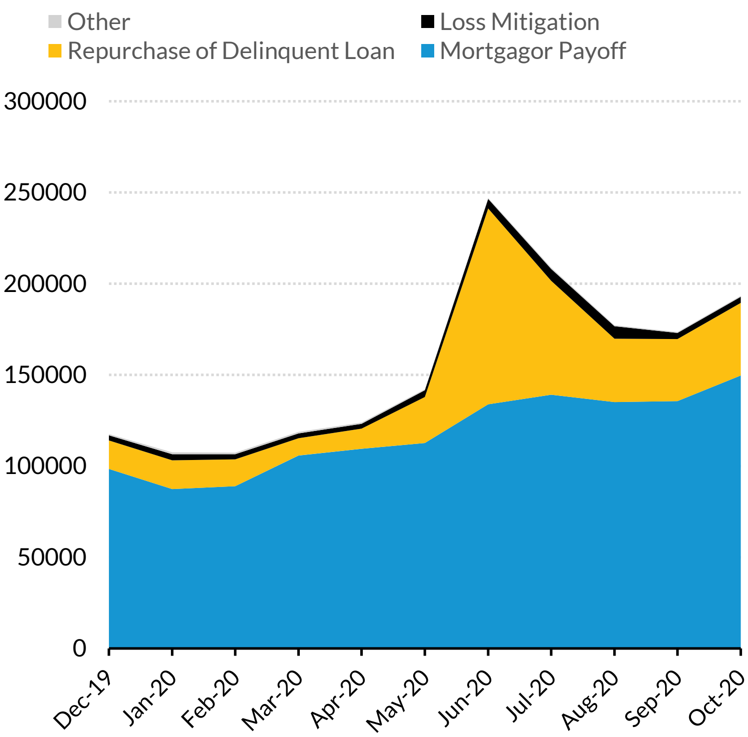


Sources: *eMBS and Urban Institute.* **Note:** *Data as of November 2020.*

State of the US Housing Market

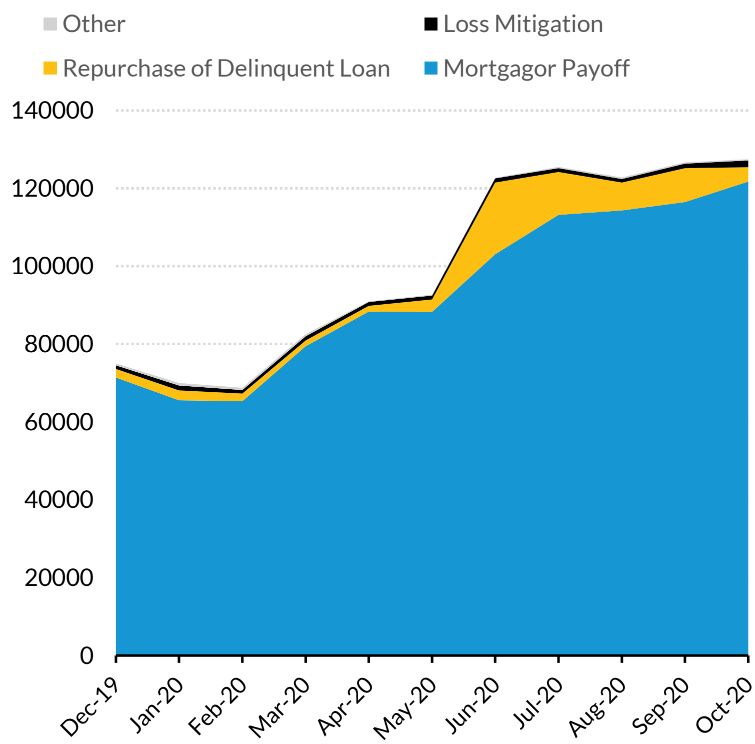
Ginnie Mae delinquent loans bought out of pools are more likely to be FHA than VA (top charts, yellow areas) and more likely to be higher coupons (bottom chart). In November 2020, 39,929 FHA and 3,698 VA loans were bought out. (These counts include all delinquent buyouts, regardless of forbearance status). 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



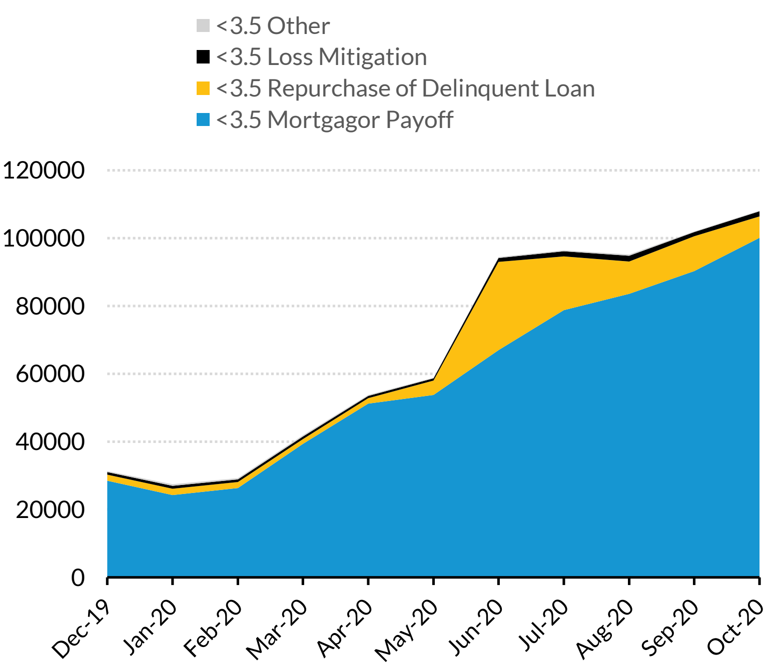
Sources: *eMBS and Urban Institute.* ***Note:*** *Data as of November 2020.*

Number of Loans Removed from Pools: VA

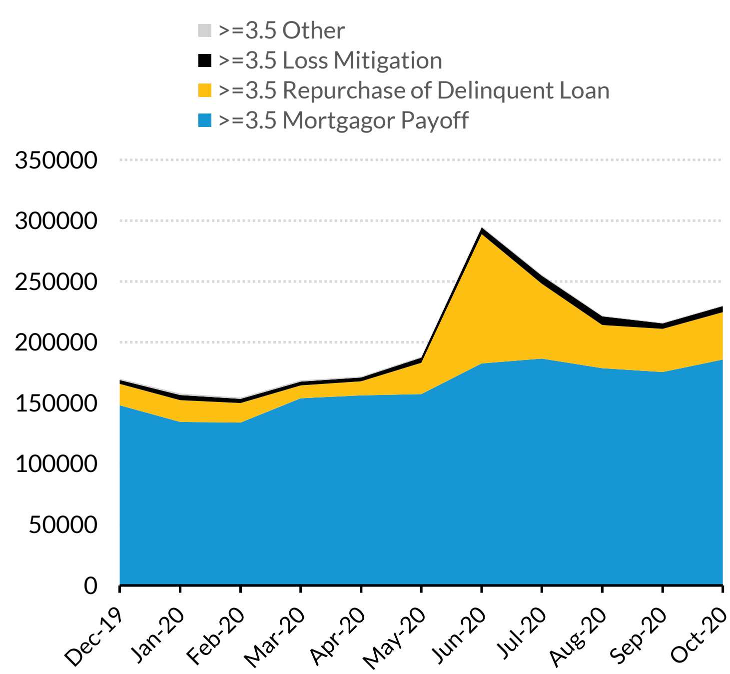


Sources: *eMBS and Urban Institute.* ***Note:*** *Data as of November 2020.*

Number of Loans Removed from Pools by Coupon



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

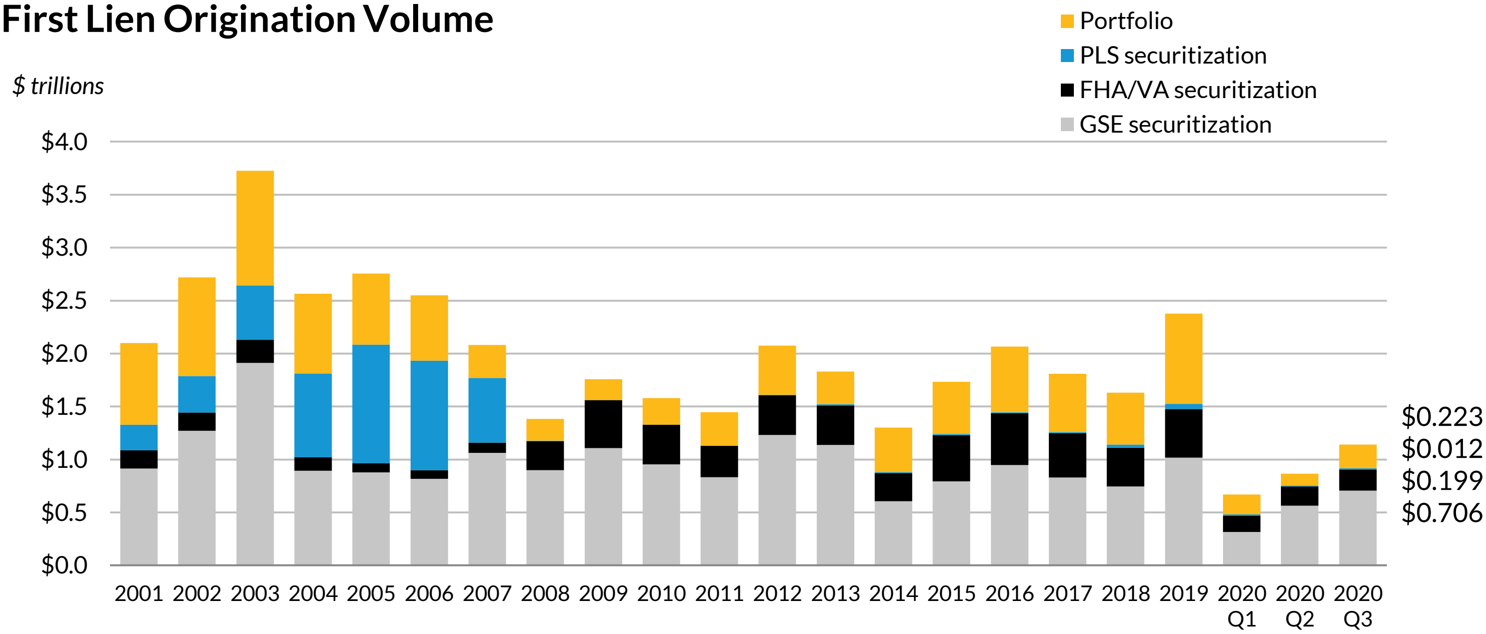


Sources: *eMBS and Urban Institute.* ***Note:*** *Data as of November 2020.*

State of the US Housing Market

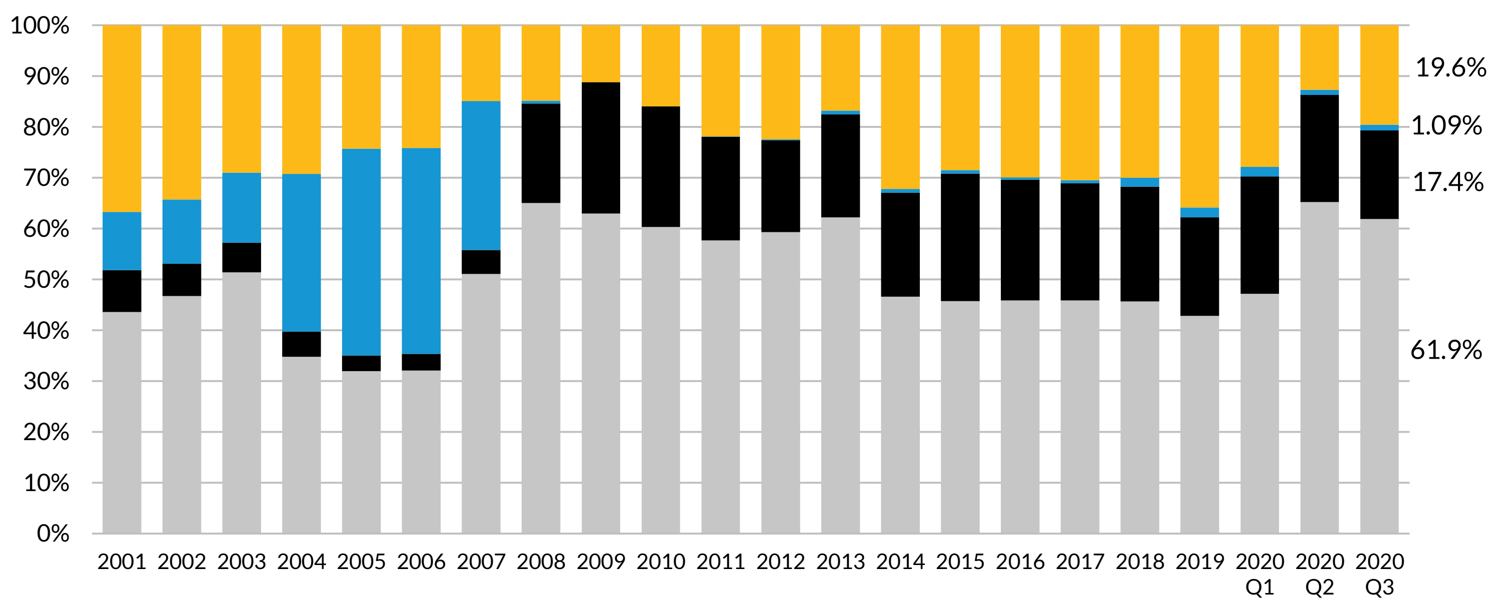
In the third quarter of 2020, first lien originations totaled $1.14 trillion, up from Q3 2019 volume of $700 billion. The share of portfolio originations was 19.6 percent in Q3 2020, a significant decline from the 33.3 percent share in the same period of 2019. The Q3 2020 GSE share was up significantly at 61.9 percent, compared to 45.3 percent in Q3 2019. The FHA/VA share fell to 17.4 percent, down slightly compared to 19.5 percent last year. The PLS share was 1.1 percent in Q3 2020, down from 1.8 percent one year ago, and a fraction of its share in the pre-bubble years. The smaller share of portfolio and PLS in Q3 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. Total origination volume added up to $2.7 trillion in the first three quarters of 2020—these three quarters alone were higher than any year since 2003, when originations exceeded $3.5 trillion.

First Lien Origination Volume



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

First Lien Origination Share



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

US Agency Market, Originations

Agency gross issuance in the first ten months of 2020 was very strong at $2.49 trillion, already surpassing every full year of agency origination in the 21st century, including the previous high of $2.09 trillion in 2003. On an annualized basis, we expect 2020 to come in at about $2.99 trillion, as compared with the 2019 full year volume of $1.55 trillion. Compared to the same 10-month period of 2019, agency gross issuance was up 105.8 percent. Ginnie Mae gross issuance was up by 55.9 percent and GSE gross issuance was up by 130.6 percent. Within the Ginnie Mae market, FHA was up by 25.7 percent and VA origination was up by 92.7 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 YTD	$1,060.2	$805.9	$1,866.1	$626.0	$2,492.1
2020 % Change YOY	126.9%	135.7%	130.6%	55.9%	105.8%
2020 Ann.	$1,272.3	$967.1	$2,239.4	$751.1	$2,990.5

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 YTD	$269.3	$336.5	$20.2	$626.0
2020 % Change YOY	25.7%	92.7%	58.0%	55.9%
2020 Ann.	$323.2	$403.8	$24.2	$751.1

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 October 2020.*

US Agency Market, Originations

The first ten months of 2020 have been very robust for agency net issuance, with $499.8 billion of net new supply, up 107.6 percent compared with the same period of 2019. 2020 YTD Ginnie Mae net issuance is $22.7 billion, comprising 4.5 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 YTD	$235.1	$242.1	$477.1	$22.7	$499.8
2020 % Change YOY	225.6%	186.8%	204.7%	-73.1%	107.6%
2020 Ann.	$282.1	$290.5	$572.6	$27.2	$599.8

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 YTD	-$37.8	$59.1	$1.4	$22.7
2020 % Change YOY	-220.8%	14.6%	6.9%	-73.1%
2020 Ann.	-$45.4	$70.9	$1.7	$27.2

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 October 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 October 2020 gross agency issuance of $339.7 billion is the highest single monthly issuance on record, significantly higher than the same month in 2019, as lower rates gave borrowers a stronger incentive to refinance.

Monthly Agency Issuance

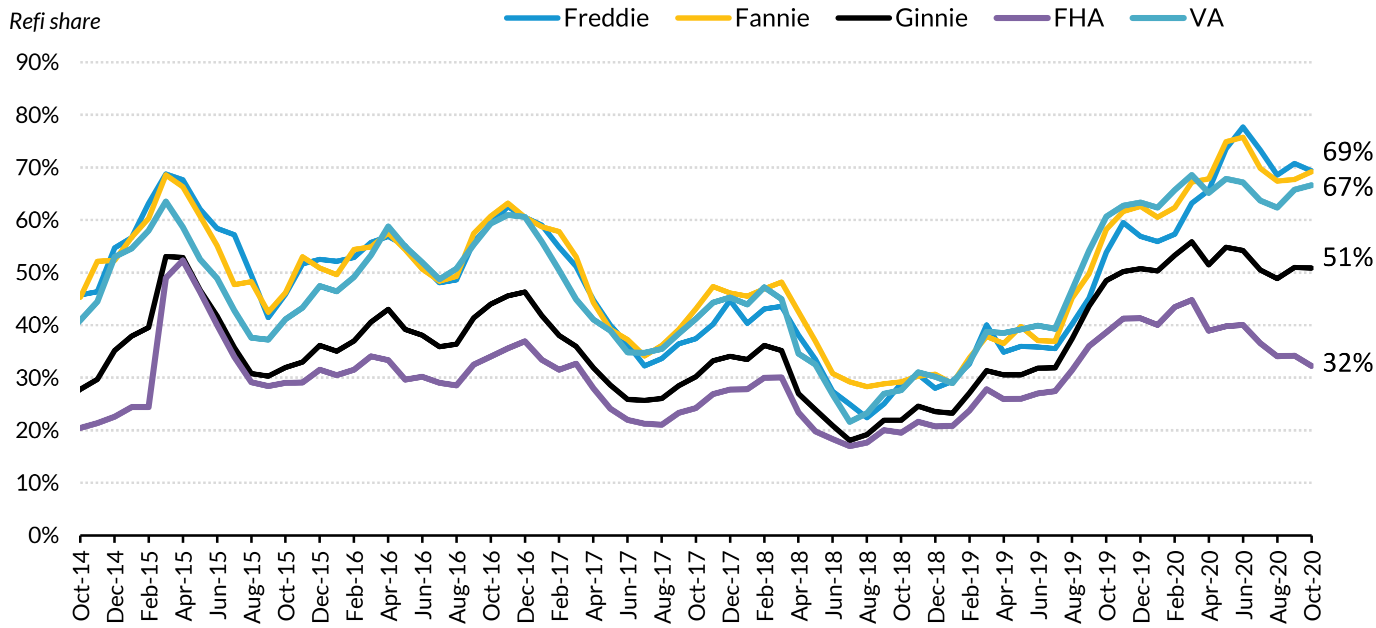
	Gross Issuance				Net Issuance			
Date	Fannie Mae	Freddie Mac	Ginnie Mae	Total	Fannie Mae	Freddie Mac	Ginnie Mae	Total
Jan-17	$55.6	$38.5	$42.6	$136.6	$8.5	$10.7	$10.3	$29.5
Feb-17	$37.6	$27.4	$33.1	$98.1	$2.5	$6.5	$9.4	$18.5
Mar-17	$39.5	$24.4	$31.3	$95.2	$9.7	$6.2	$9.7	$25.6
Apr-17	$39.3	$21.2	$36.4	$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

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 October 2020.*

US Agency Market, Originations

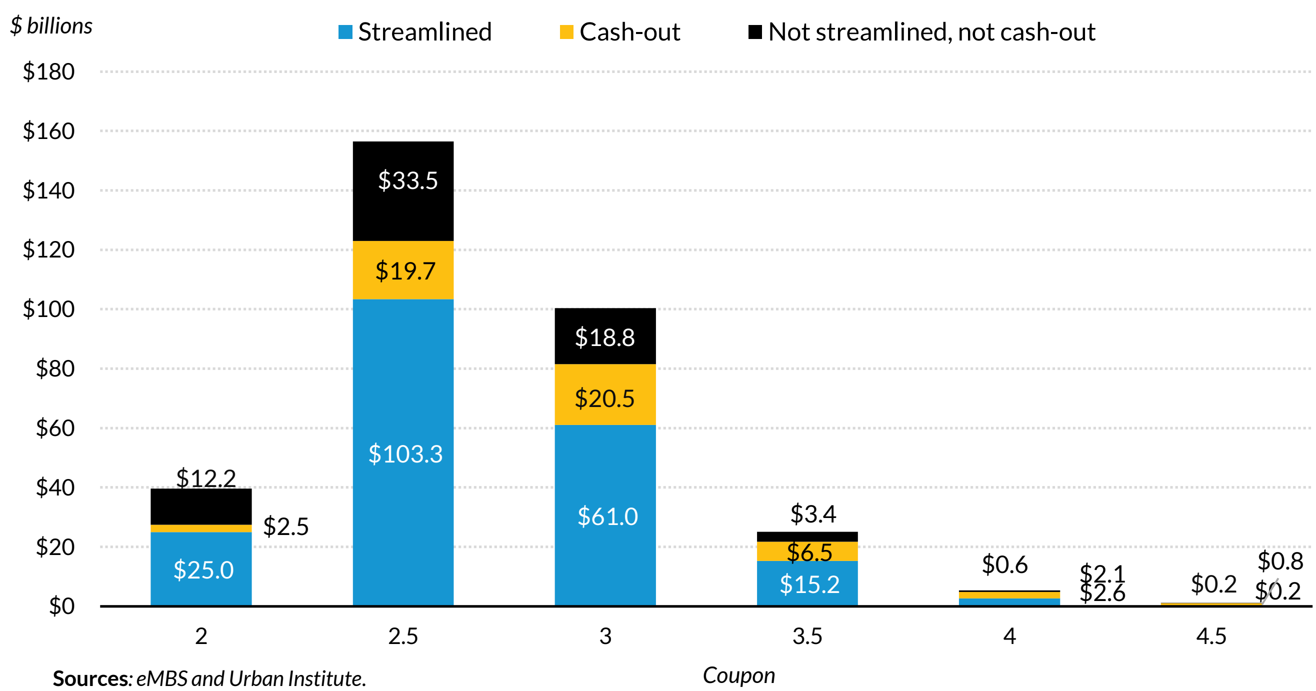
The FHA refinance share stood at 32.3 percent in October 2020, below the 69.4 percent refi share for Freddie originations, the 69.2 percent share for Fannie, and the 66.6 percent share for the VA. The total Ginnie refinance share stood at 50.9 percent in October. Refinances as a share of all originations grew during 2019 and early 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 YTD Ginnie Mae refinances, predominantly streamlined, were securitized in lower coupon pools. Cash-out refinances are typically securitized in higher coupons, but their volume has fallen sharply in recent months 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 October 2020.*

Ginnie Mae Refinance Issuance by Type: 2020 YTD

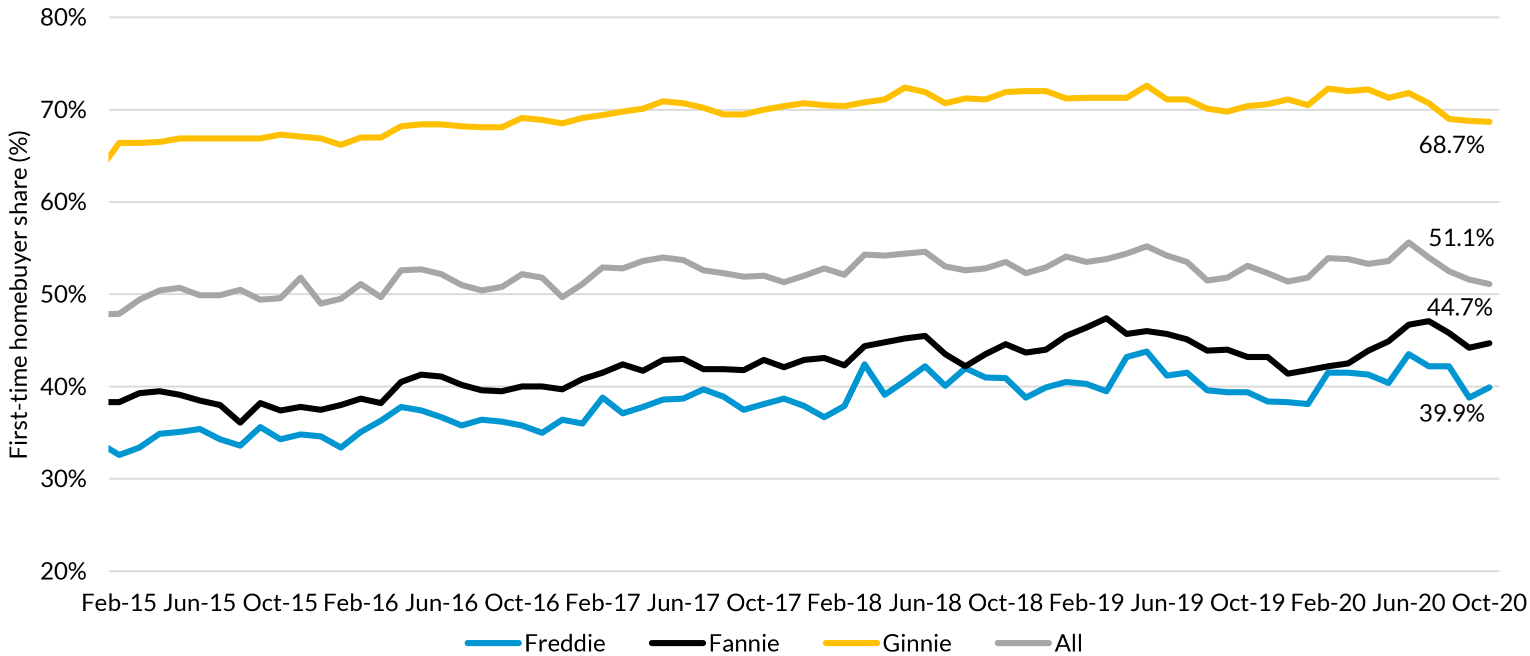


Sources: *eMBS and Urban Institute.*
Note: *Based on at-issuance balance. Data as of October 2020.*

Credit Box

The first time homebuyer share of Ginnie Mae purchase loans was 68.7 percent in October 2020, down slightly from 70.4 percent in October 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 44.7 percent and 39.9 percent of Fannie Mae and Freddie Mac purchase originations, respectively. The bottom table shows that based on mortgages originated in October 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: Purchase Only Loans



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

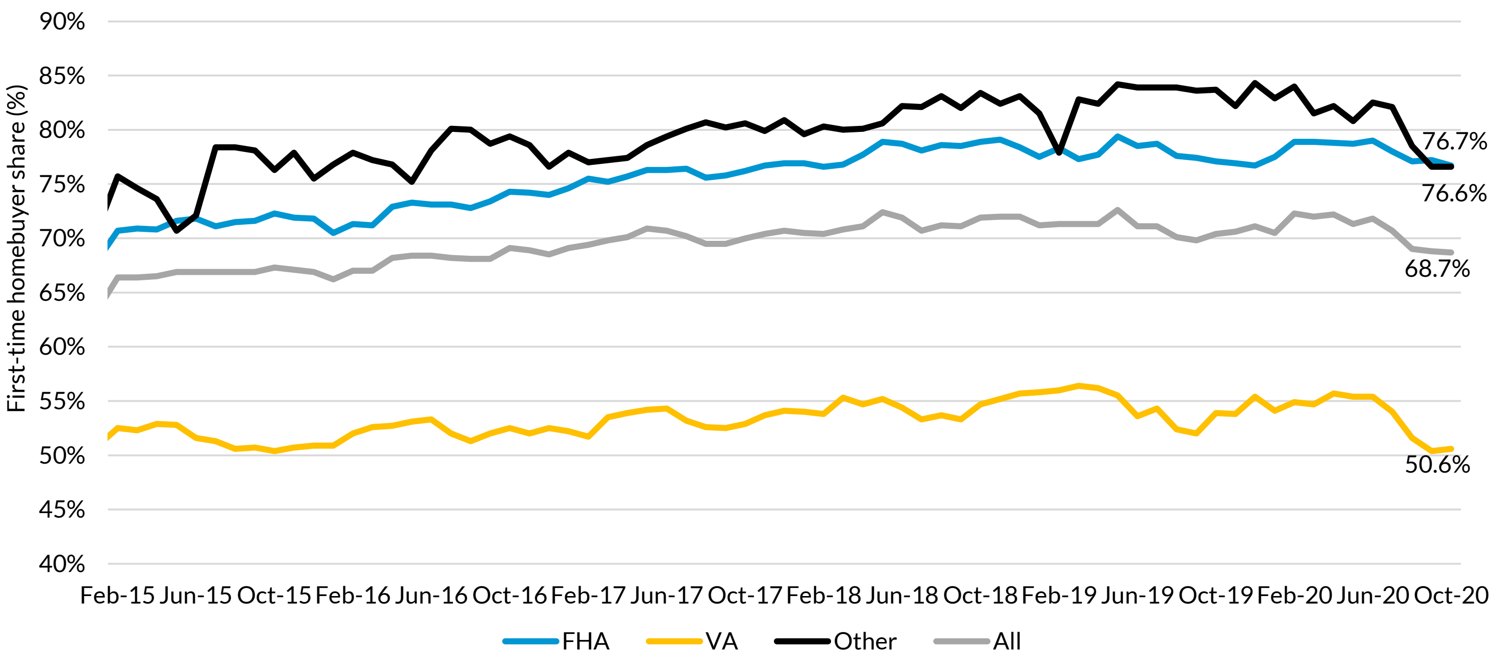
	Fannie Mae		Freddie Mac		Ginnie Mae		All	
	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat
Loan Amount ($)	299,486	322,921	276,401	298,793	240,081	293,722	265,919	306,112
Credit Score	750.4	760.2	746.7	756.8	689.6	704.5	722.6	744.8
LTV (%)	87.4	79.9	87.8	79.1	96.9	96.0	91.7	83.7
DTI (%)	34.0	35.0	34.4	35.6	41.1	41.6	37.2	36.9
Loan Rate (%)	3.0	2.9	3.0	2.9	3.0	3.0	3.0	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 October 2020.*

Credit Box

Within the Ginnie Mae purchase market, 76.7 percent of FHA loans, 50.6 percent of VA loans and 76.6 percent of other loans represent financing for first-time home buyers in October 2020. The bottom table shows that based on mortgages originated in September 2020, the average first-time homebuyer was more likely than an average repeat buyer to take out a smaller loan, have a higher LTV, lower DTI and pay a comparable rate.

First Time Homebuyer Share: Ginnie Mae Breakdown



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

	FHA		VA		Other		Ginnie Mae Total	
	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat
Loan Amount ($)	232,556	249,280	297,238	352,288	171,522	179,570	240,081	293,722
Credit Score	679.1	677.6	714.7	730.3	700.7	695.3	689.6	704.5
LTV (%)	95.6	94.2	99.5	97.1	99.4	99.0	96.9	96.0
DTI (%)	42.8	43.6	39.4	40.8	34.8	35.4	41.1	41.6
Loan Rate (%)	3.1	3.1	2.9	2.8	3.0	3.2	3.0	3.0

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 October 2020.*

October 2020 Credit Box at a Glance

In October 2020, the median Ginnie Mae FICO score was 699 versus 772 for Fannie Mae and 771 for Freddie Mac. Note that the FICO score for the 10th percentile was 639 for Ginnie Mae, versus 701 for Fannie Mae and 700 for Freddie Mac. Within the Ginnie Mae market, FHA loans have a median FICO score of 673, VA loans have a median FICO score of 739 and other loans have a median FICO score of 696.

Purchase FICO							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	412,181	656	718	744	782	801	735
Fannie	154,973	692	737	762	795	803	754
Freddie	123,355	696	730	766	791	804	757
Ginnie	133,853	634	655	685	731	775	694
Refi FICO							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	723,061	692	732	772	795	807	759
Fannie	344,853	705	743	776	797	808	765
Freddie	287,592	702	739	774	795	807	763
Ginnie	90,616	646	679	726	776	800	724
All FICO							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	1,135,242	675	718	763	791	805	751
Fannie	499,826	701	737	772	795	807	762
Freddie	410,947	700	736	771	794	806	761
Ginnie	224,469	639	662	699	753	790	706

Purchase FICO: Ginnie Mae Breakdown By Source							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	133,853	634	655	685	731	775	694
FHA	78,962	629	647	672	704	742	679
VA	41,014	647	676	724	772	797	722
Other	13,877	644	663	695	735	767	699
Refi FICO: Ginnie Mae Breakdown By Source							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	90,616	646	679	726	776	800	724
FHA	22,477	625	648	676	708	749	680
VA	67,192	662	698	747	785	803	739
Other	947	659	678	716	755	787	717
All FICO: Ginnie Mae Breakdown By Source							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	224,469	639	662	699	753	790	706
FHA	101,439	628	648	673	705	744	679
VA	108,206	655	689	739	781	801	732
Other	14,824	645	664	696	737	768	701

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 October 2020.*

October 2020 Credit Box at a Glance

In October 2020, the median loan-to-value ratio (LTV) was 96.5 percent for Ginnie Mae, compared to 73 percent for both Fannie Mae and Freddie Mac. The 90th percentile was 100.4 percent for Ginnie Mae, versus 93 percent for Freddie and 95 percent for Fannie. Within the Ginnie Mae market, the median LTV was 96.5 for FHA, 95.0 for VA and 101.0 for other programs.

Purchase LTV							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	412,495	71.0	80.0	94.8	96.5	100.0	87.1
Fannie	155,065	65.0	80.0	83.0	95.0	95.0	82.6
Freddie	123,412	65.0	80.0	80.0	95.0	95.0	82.4
Ginnie	134,018	94.4	96.5	96.5	100.0	101.0	96.6
Refi LTV							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	754,455	44.0	57.0	70.0	80.0	90.0	67.8
Fannie	344,865	41.0	54.0	66.0	75.0	80.0	63.8
Freddie	287,605	43.0	55.0	68.0	75.0	81.0	64.7
Ginnie	121,985	68.1	80.6	90.0	96.8	99.8	86.6
All LTV							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	1,166,950	48.0	62.0	77.0	90.0	96.5	74.6
Fannie	499,930	45.0	58.0	73.0	80.0	95.0	69.6
Freddie	411,017	46.0	59.0	73.0	80.0	93.0	70.0
Ginnie	256,003	77.3	89.3	96.5	98.6	100.4	91.8

Purchase LTV: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	134,018	94.4	96.5	96.5	100.0	101.0	96.6
FHA	79,071	94.5	95.8	96.5	96.5	96.5	95.3
VA	41,048	92.7	100.0	100.0	100.0	102.3	98.3
Other	13,899	95.9	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	121,985	68.1	80.6	90.0	96.8	99.8	86.6
FHA	36,707	76.0	81.6	92.0	96.5	97.8	88.5
VA	84,259	64.9	78.7	89.4	97.1	100.4	85.6
Other	1,019	78.2	89.7	97.0	100.2	101.0	93.0
All LTV: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	256,003	77.3	89.3	96.5	98.6	100.4	91.8
FHA	115,778	82.7	94.1	96.5	96.5	96.5	93.1
VA	125,307	69.8	83.0	95.0	100.0	101.5	89.8
Other	14,918	94.6	99.1	101.0	101.0	101.0	98.9

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 October 2020.*

October 2020 Credit Box at a Glance

In October 2020, the median Ginnie Mae debt-to-income ratio (DTI) was 41.3 percent, considerably higher than the 33.0 percent median DTI for both Freddie Mac and Fannie Mae. The 90th percentile for Ginnie Mae was 53.3 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 43.7 percent, versus 39.1 percent for VA and 35.6 percent for other lending programs.

Purchase DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	412,137	23.0	30.0	38.0	44.0	49.0	36.8
Fannie	155,054	21.0	28.0	36.0	43.0	46.0	34.9
Freddie	123,409	21.0	28.0	36.0	42.0	46.0	34.5
Ginnie	133,674	28.3	34.9	42.0	48.4	53.5	41.3
Refi DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	661,881	19.0	25.0	32.0	40.0	45.0	32.2
Fannie	344,809	18.0	24.0	32.0	40.0	45.0	31.9
Freddie	287,597	19.0	25.0	32.0	40.0	45.0	32.1
Ginnie	29,475	22.0	30.0	37.2	45.7	52.0	37.3
All DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	1,074,018	20.0	26.0	35.0	42.0	47.0	34.0
Fannie	499,863	19.0	25.0	33.0	41.0	46.0	32.8
Freddie	411,006	19.0	25.0	33.0	41.0	45.0	32.8
Ginnie	163,149	27.0	33.8	41.3	48.0	53.3	40.5

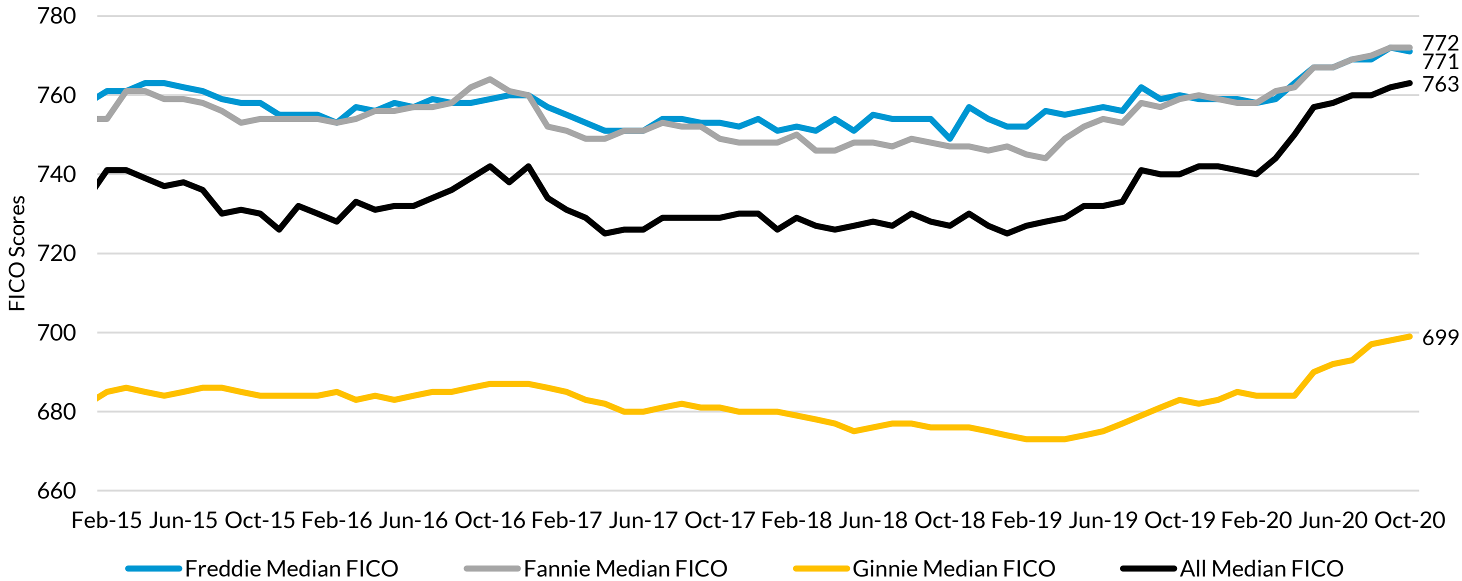
Purchase DTI: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	133,674	28.3	34.9	42.0	48.4	53.5	41.3
FHA	79,048	30.6	37.3	44.0	49.6	54.1	43.0
VA	40,748	26.1	33.0	40.7	47.5	53.1	40.1
Other	13,878	25.5	30.5	35.7	40.2	43.2	35.0
Refi DTI: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	29,475	22.0	30.0	37.2	45.7	52.0	37.3
FHA	11,477	27.1	33.3	41.4	48.3	53.5	40.5
VA	17,433	20.2	27.7	35.0	43.4	50.5	35.4
Other	565	17.2	22.1	30.1	36.7	41.9	29.7
All DTI: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	163,149	27.0	33.8	41.3	48.0	53.3	40.5
FHA	90,525	30.0	36.9	43.7	49.5	54.0	42.7
VA	58,181	24.0	31.5	39.1	46.5	52.6	38.7
Other	14,443	25.0	30.2	35.6	40.2	43.2	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 October 2020.*

Credit Box: Historical

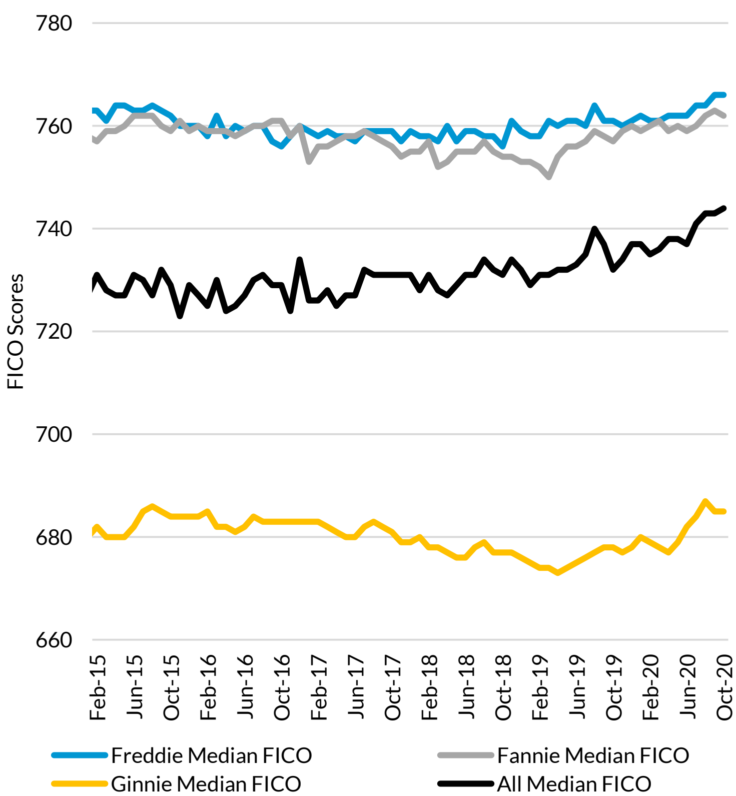
The median FICO score for all agency loans originated in October 2020 was 763, up considerably since the start of last year, owing to the refinance wave, which higher FICO borrowers take advantage of with greater frequency. In addition, the increases in refinance activity have been much more dramatic at the GSEs than at Ginnie Mae, shifting the composition toward higher FICO scores borrowers. Note since early 2019, the median FICO scores for Fannie, Freddie and Ginnie borrowers have moved up for both purchase and refinance loans. The difference between Ginnie Mae and GSE borrower FICOs is considerably wider for purchase loans than for refi loans.

FICO Scores for All Loans



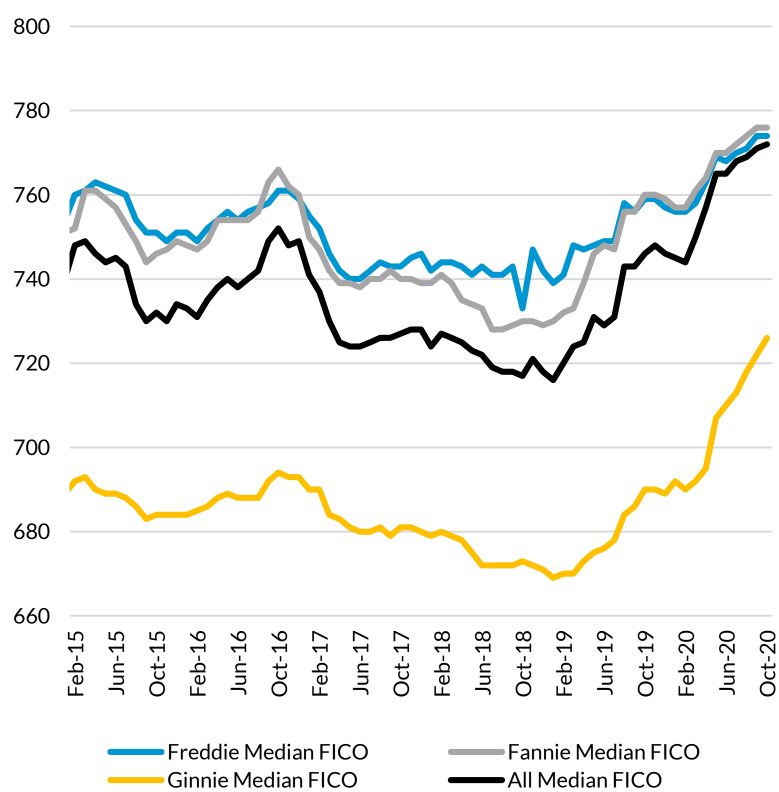
Sources: *eMBS and Urban Institute.* **Note**: *Data as of October 2020.*

FICO Scores for Purchase Loans



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

FICO Scores for Refinance Loans

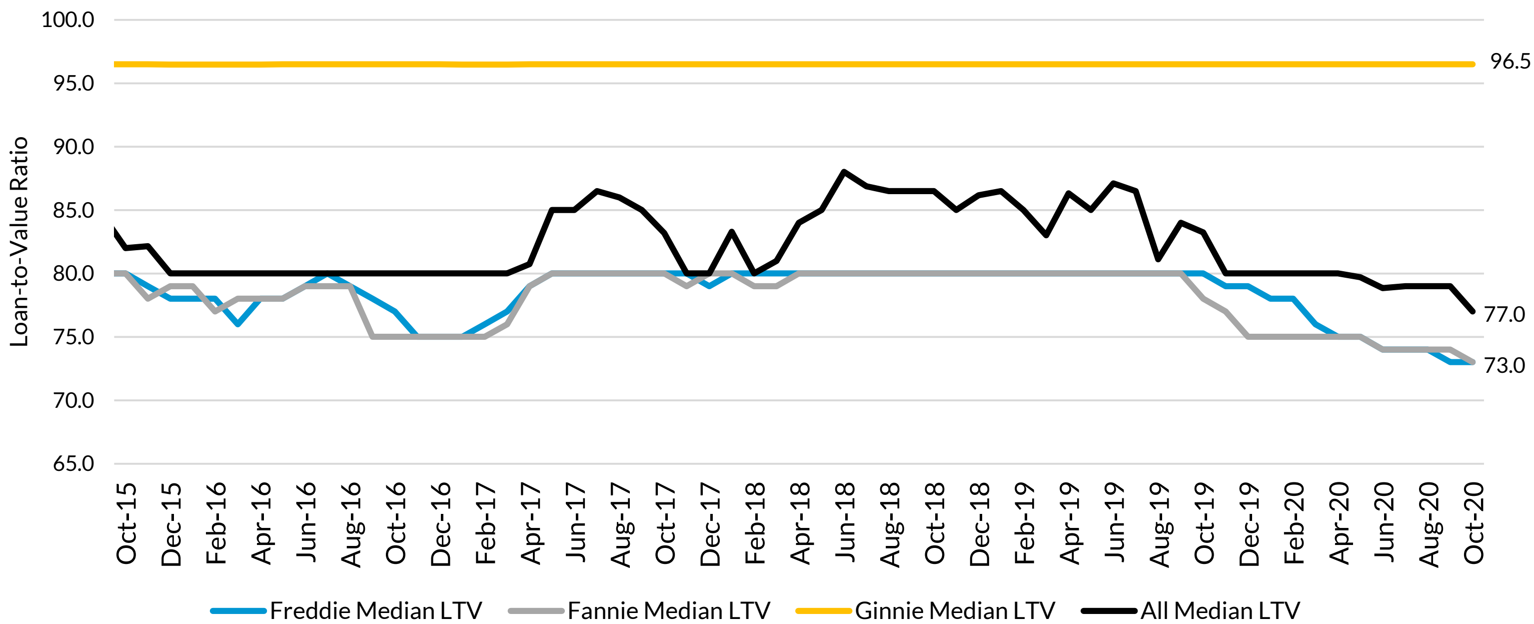


Sources: *eMBS and Urban Institute.* **Note:** *Data as of October 2020.*

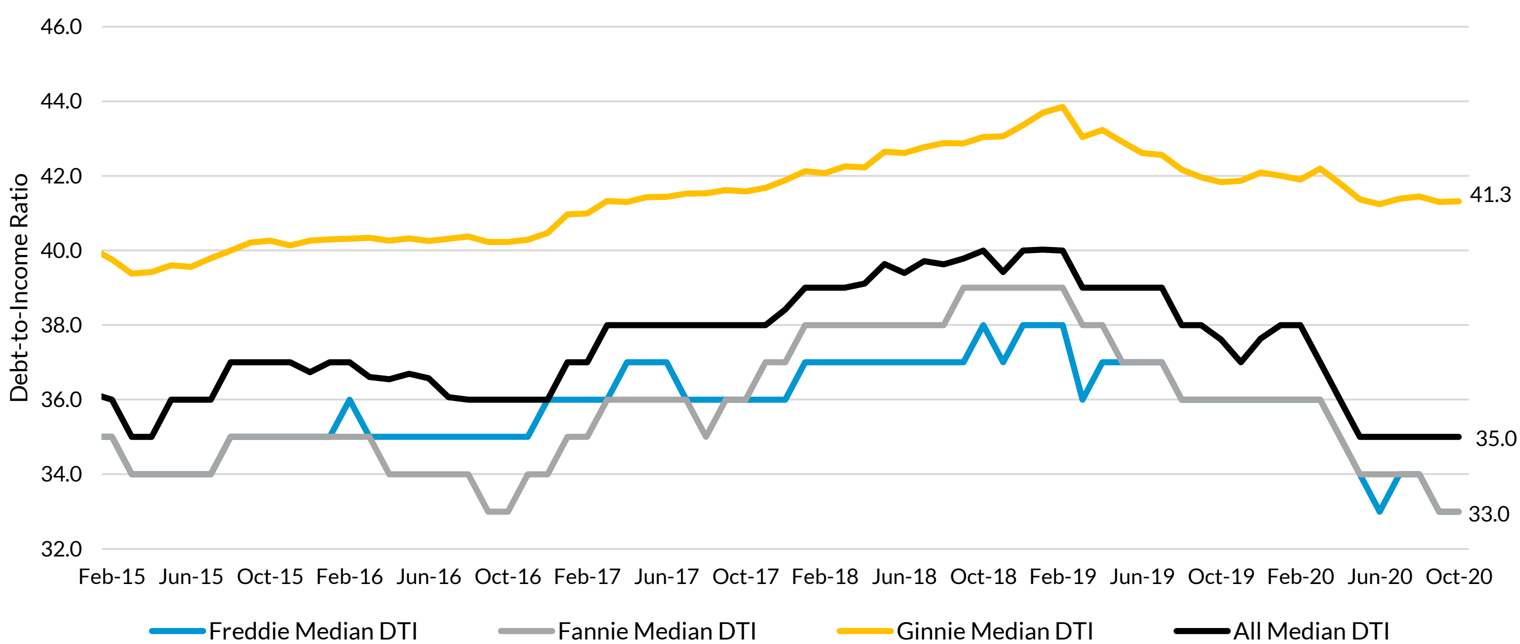
Credit Box: Historical

Median LTVs for Ginnie Mae loans have historically been at 96.5 percent, much higher than the 73–74 LTVs 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

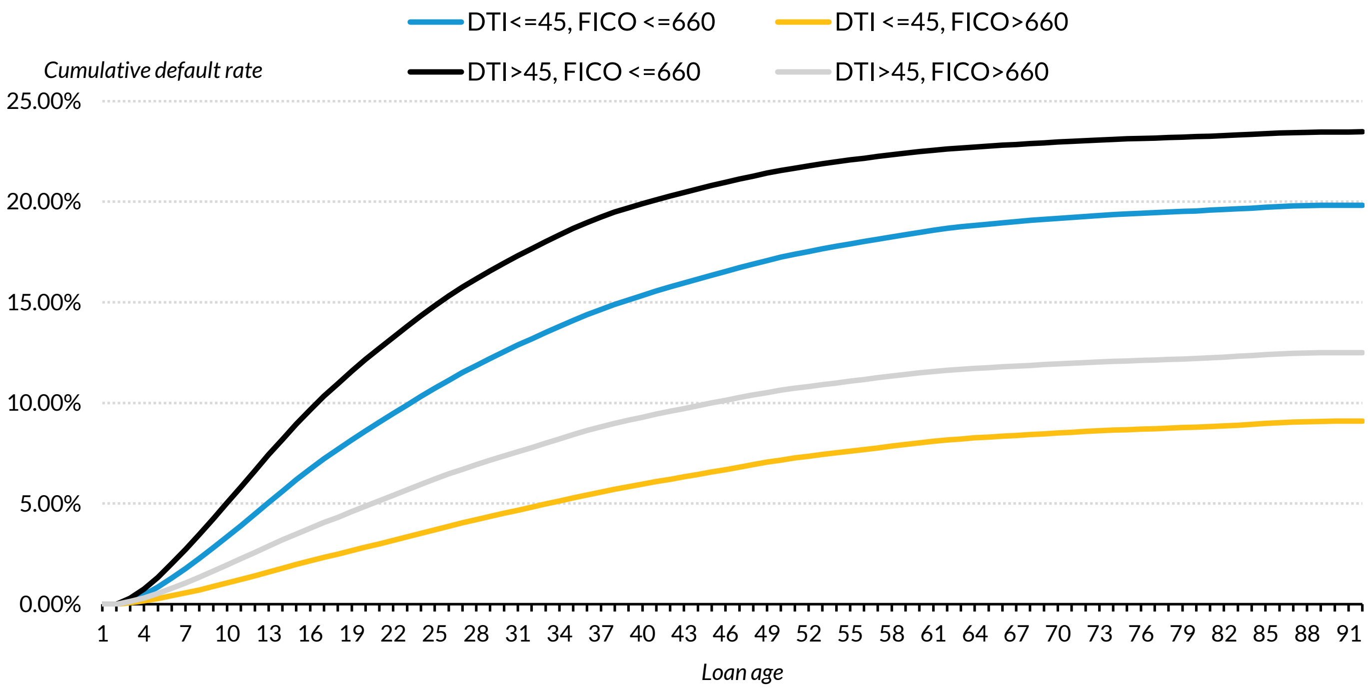


Sources: *eMBS and Urban Institute.* **Note:** *In May 2017 Ginnie Mae began disclosing issuer-reported LTV for FHA loans, which includes the financed upfront mortgage insurance premium. To make it consistent with the previously reported LTV, we removed the financed upfront mortgage insurance premium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

Credit Box: Historical

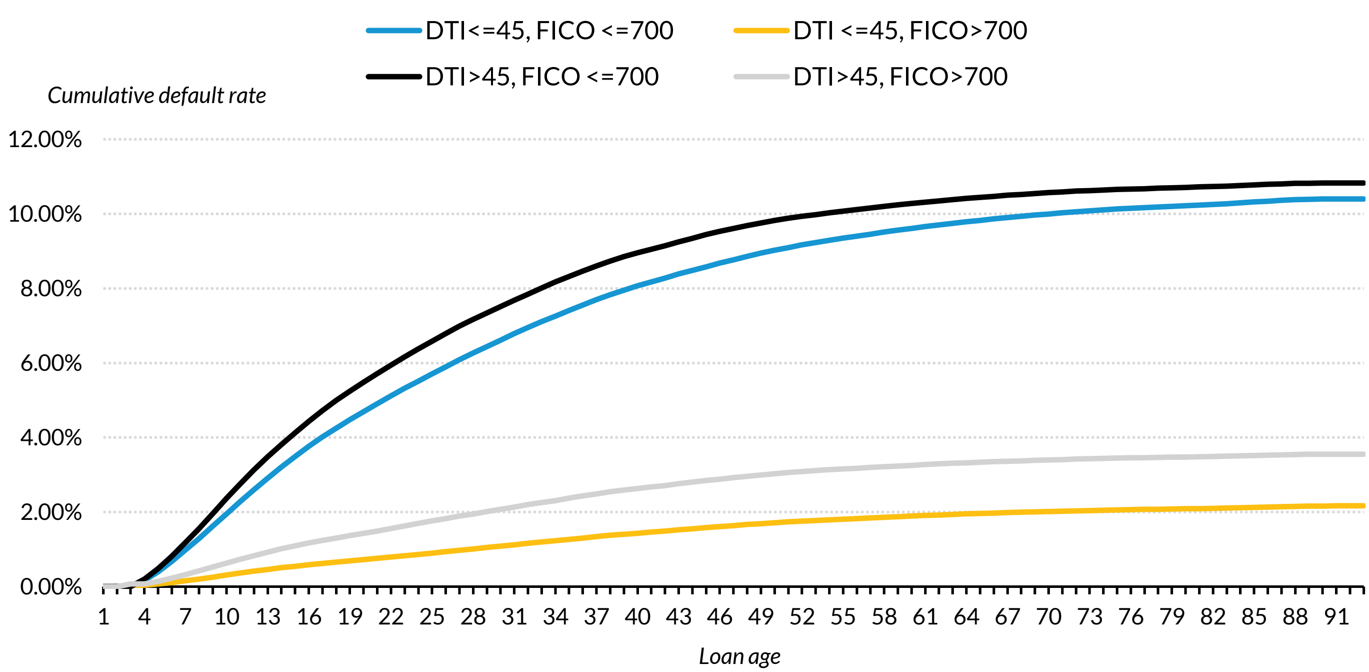
DTI is a much weaker predictor of performance than FICO score. The top chart shows FHA borrowers with higher DTIs do default more than those with lower DTIs, but the differences are modest, as evidenced by the fact that the black line is very close to the blue line and the grey line is not that much 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 November 2020.*

VA Cumulative Default Rate by DTI and FICO

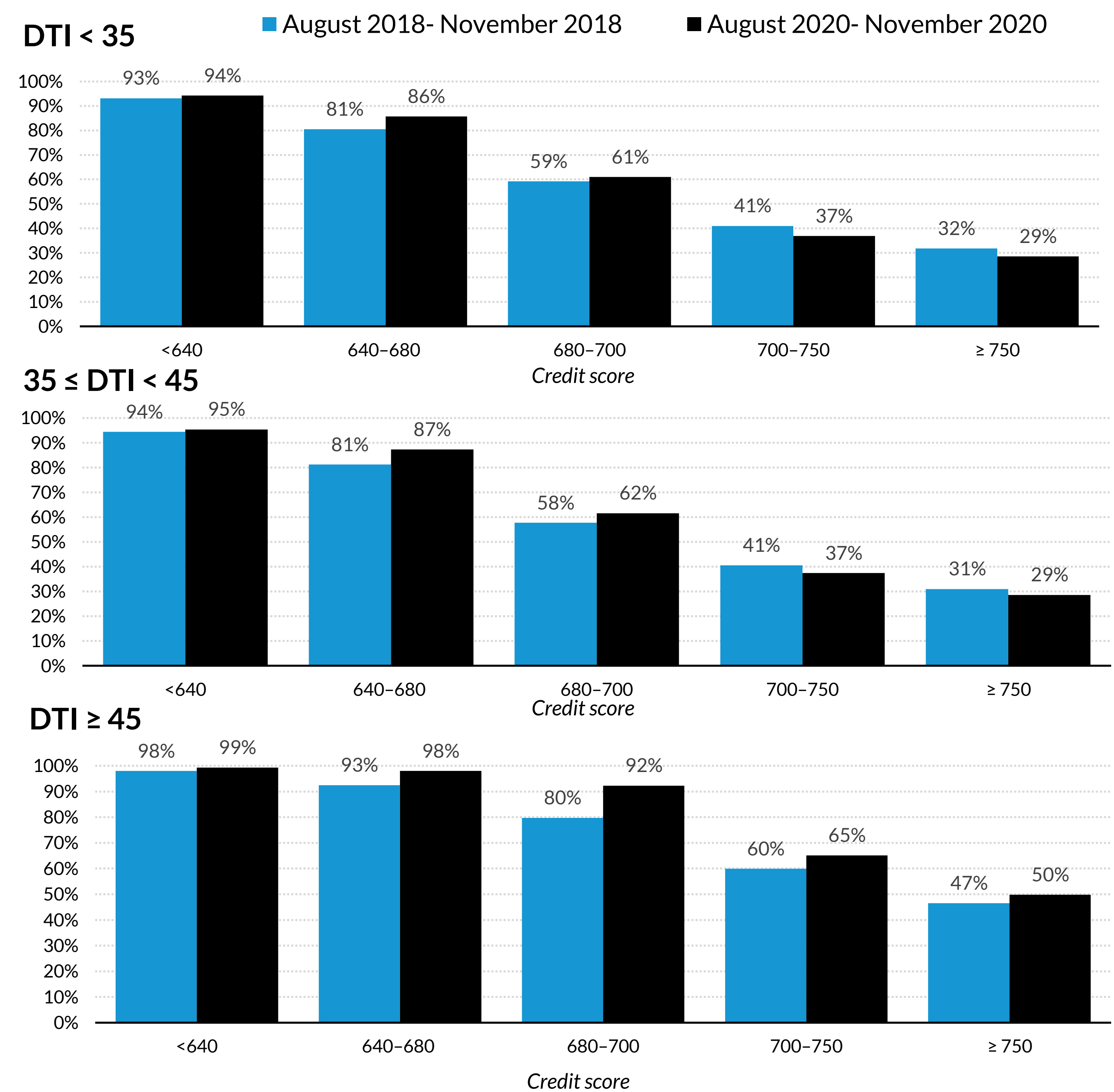


Sources: *eMBS and Urban Institute*. **Note:** Defaults = 180 days delinquent. *Data as of November 2020.*

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 August 2020- November 2020, Ginnie Mae accounted for 94 percent of agency issuance for DTIs under 35 and FICOs below 640, compared to just 29 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 August 2020– November 2020, 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 92 percent; it was between 61-62 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 71.9 percent of its issuances in the August 2020- November 2020 period having LTVs of 95 or above, compared to 10.4 percent for the GSEs. The GSEs have decreased their high-LTV lending share from 22.3 percent in August 2018– November 2018. Ginnie Mae's high-LTV remained stable over the same period. The share of high-LTV agency loans going to highest FICO borrowers (i.e. above 750) has increased from the August 2018-November 2018 period to the August 2020-November 2020 period, as has the share of lower DTI borrowers (below 35).

Share of Loans with LTV ≥ 95

	Ginnie Mae	GSE	All
August 2018- November 2018	71.5%	22.3%	38.4%
August 2020- November 2020	71.9%	10.4%	20.1%

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

August 2018-November 2018

	FICO					
DTI	<640	640–680	680–700	700–750	≥ 750	All
< 35	2.7%	4.5%	2.6%	6.8%	8.9%	25.5%
35 –45	5.2%	8.9%	4.8%	11.4%	10.1%	40.5%
≥ 45	4.8%	8.8%	4.3%	9.3%	6.7%	34.0%
All	12.7%	22.2%	11.7%	27.6%	25.8%	100.0%

August 2020-November 2020

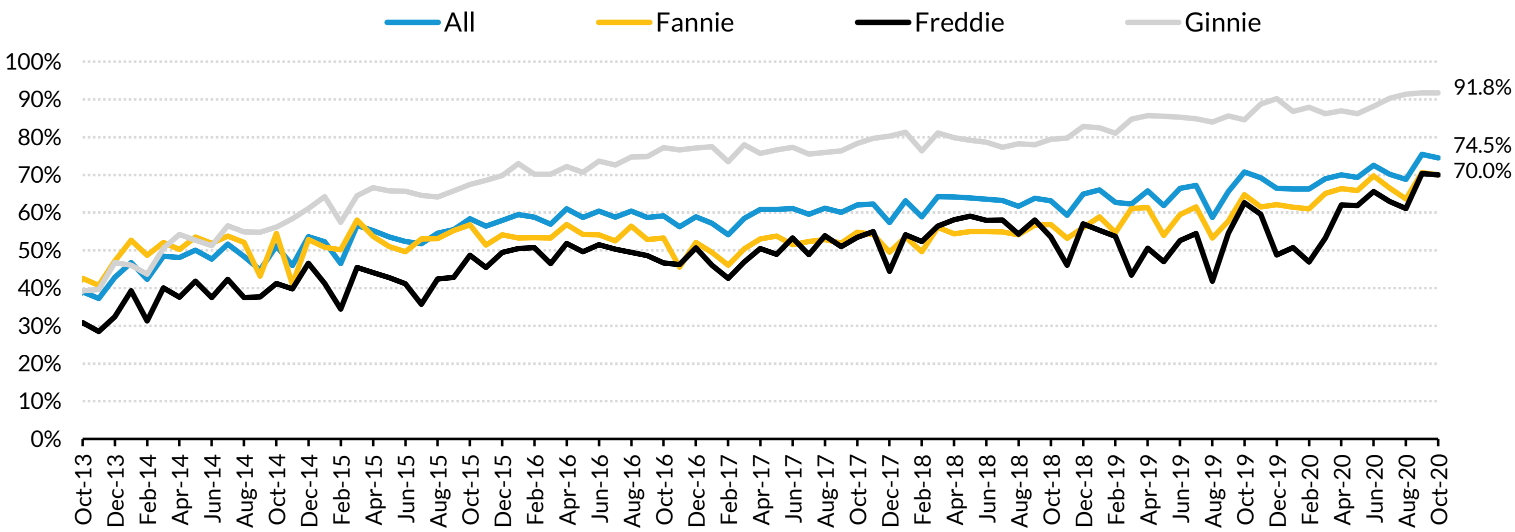
	FICO					
DTI	<640	640–680	680–700	700–750	≥ 750	All
< 35	1.6%	4.8%	3.0%	8.7%	13.1%	31.2%
35 –45	2.9%	8.7%	5.1%	13.0%	12.7%	42.4%
≥ 45	2.3%	7.0%	3.4%	7.7%	6.0%	26.4%
All	6.8%	20.5%	11.4%	29.4%	31.9%	100.0%

Sources: *eMBS and Urban Institute.*

Nonbank Originators

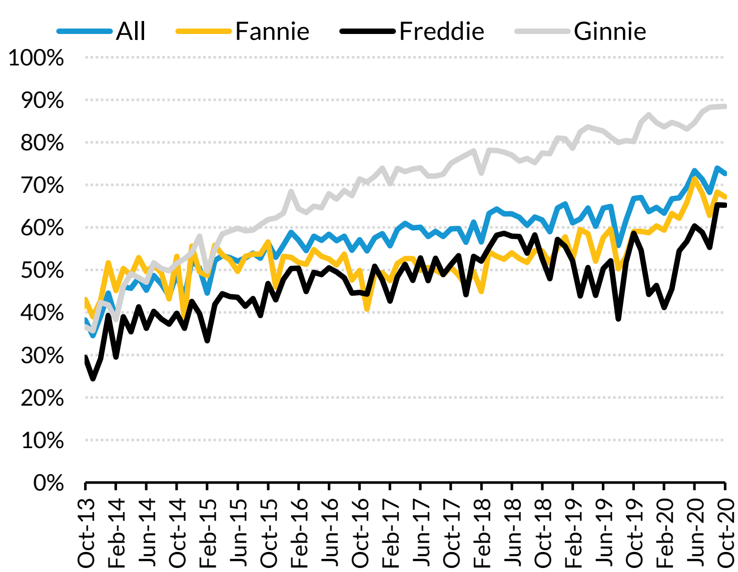
The nonbank origination share has been rising steadily for all three agencies since 2013. The Ginnie Mae nonbank share has been consistently higher than the GSEs, standing at 91.8 percent in October 2020, a new record high. Freddie and Fannie's nonbank shares both declined very slightly to 70.0 percent in October (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; Fannie Mae has the lowest nonbank share for refi loans.

Nonbank Origination Share: All Loans

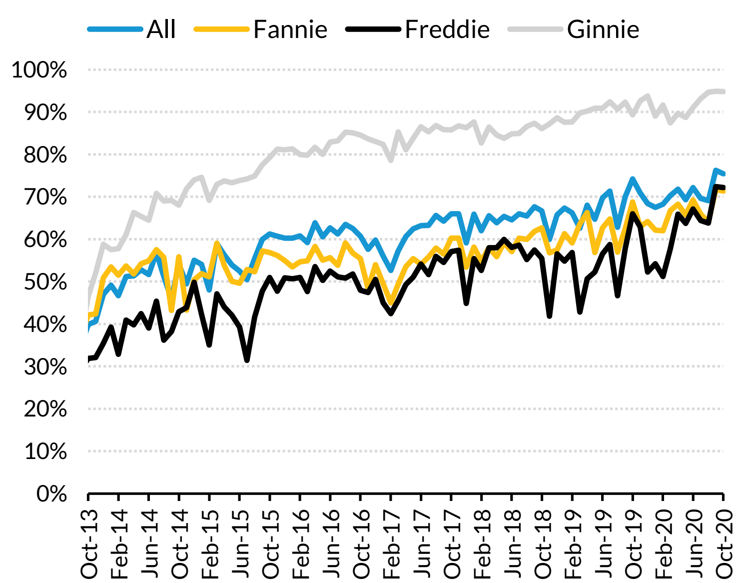


Sources: *eMBS and Urban Institute*
Note: *Data as of October 2020.*

Nonbank Origination Share: Purchase Loans



Nonbank Origination Share: Refinance Loans

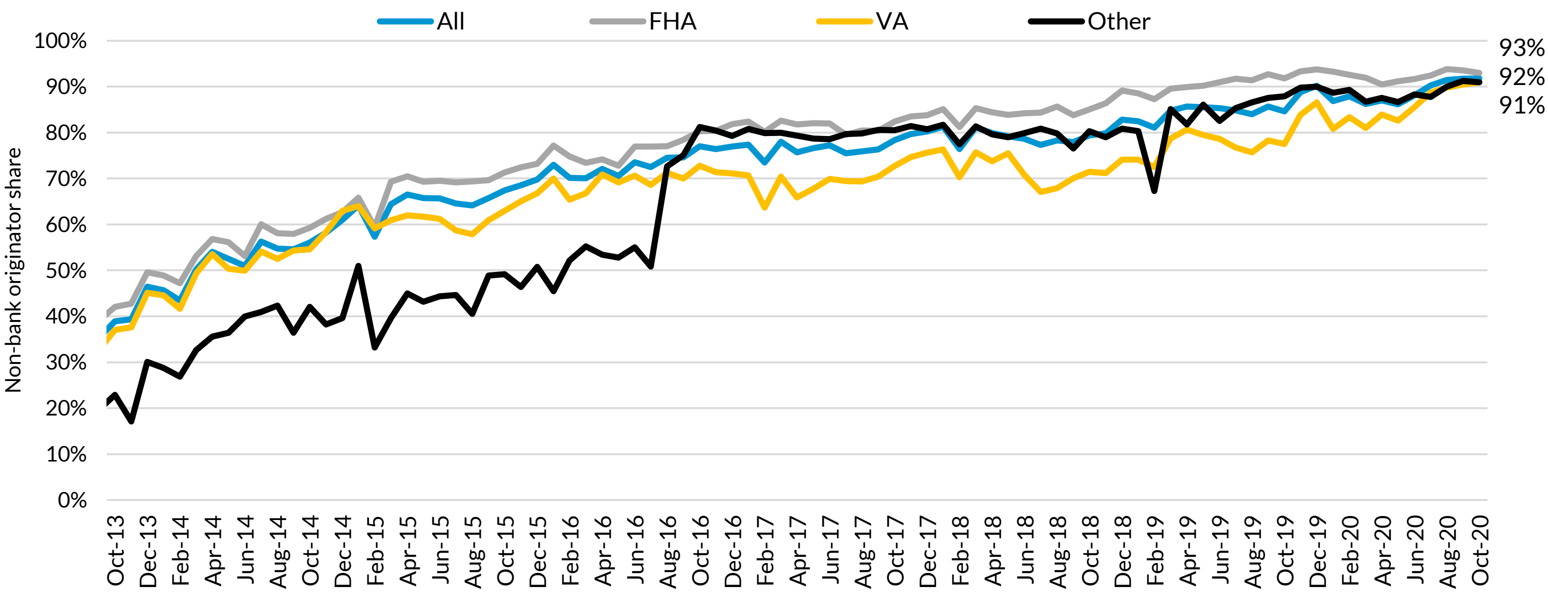


Sources: *eMBS and Urban Institute.* **Note:** *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of October 2020.*

Ginnie Mae Nonbank Originators

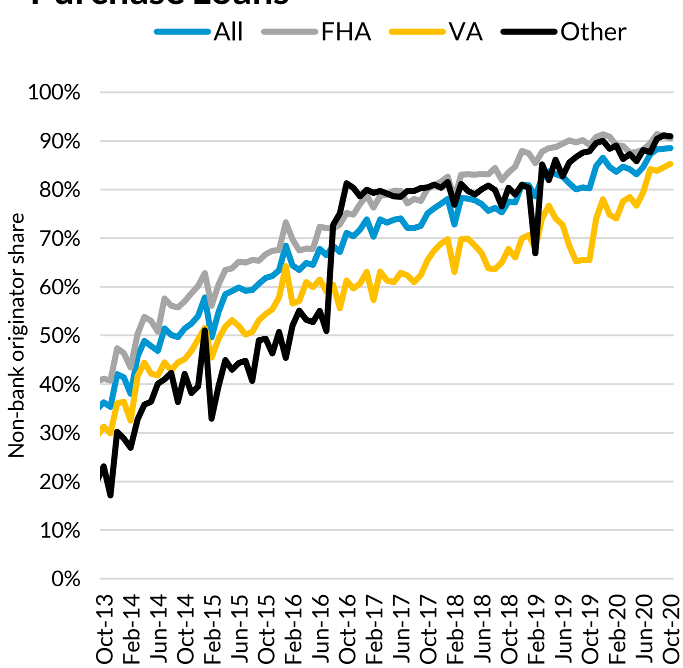
In October 2020, Ginnie Mae's nonbank share rose very slightly to 91.8 percent. The nonbank originator share for FHA fell slightly to 93.0 percent in October, compared to 93.6 percent the previous month. The nonbank originator share for VA was higher than last month at 91.0 percent and the nonbank originator share for other loans, which can fluctuate quite a bit month to month, fell to 90.9 percent.

Ginnie Mae Nonbank Originator Share: All Loans

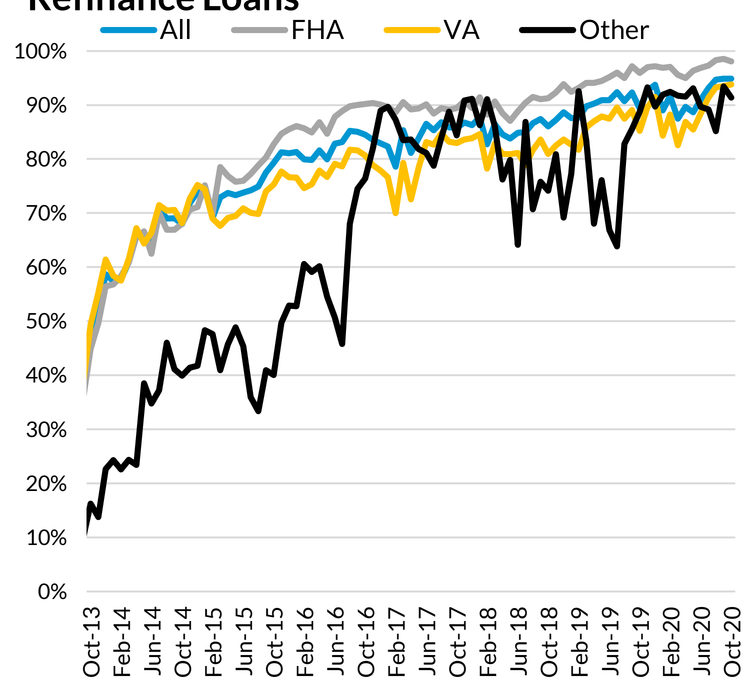


Sources: *eMBS and Urban Institute*
Note: *Data as of October 2020.*

Ginnie Mae Nonbank Share: Purchase Loans



Ginnie Mae Nonbank Share: Refinance Loans

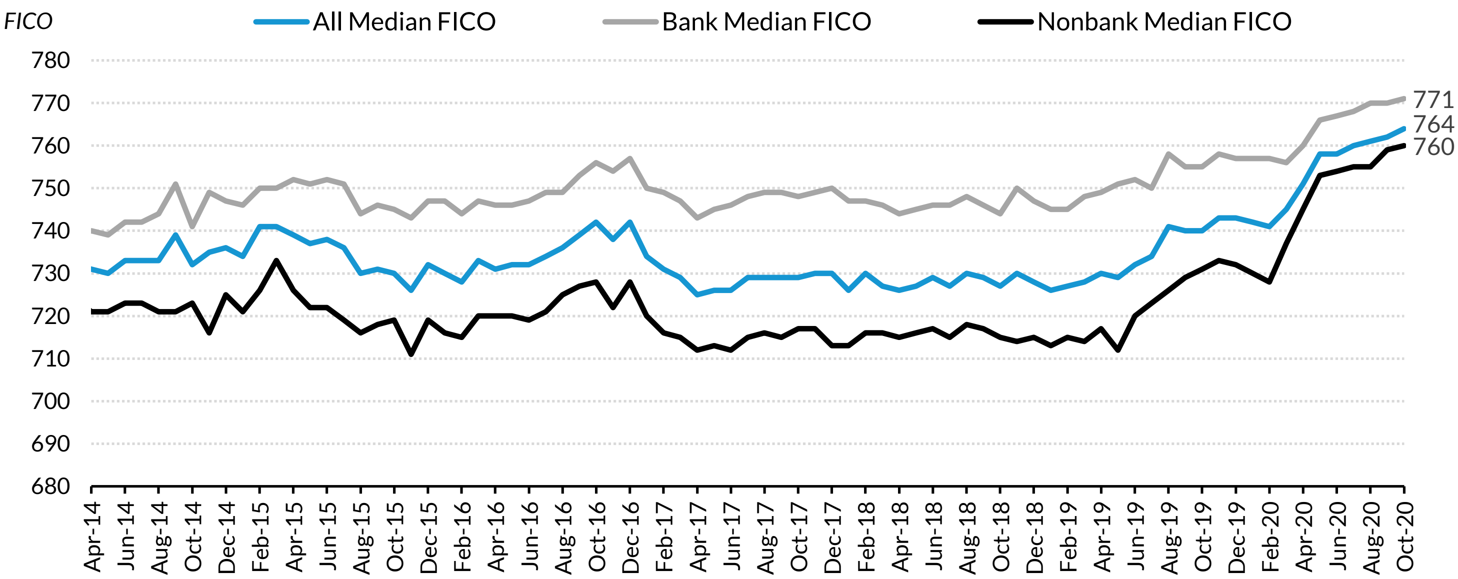


Sources: *eMBS and Urban Institute.* **Note: "***Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of October 2020.*

Nonbank Credit Box

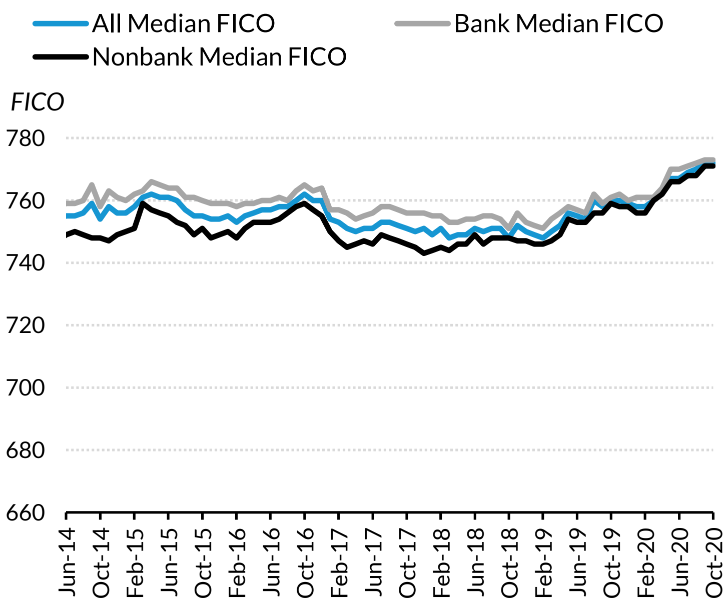
Nonbank originators have played a key role in opening up access to credit. FICO scores for loans originated by nonbanks are lower than their bank counterparts. Within the GSE space, where the differentials between banks and non-banks are small, FICO scores for both have increased since early 2014. The 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



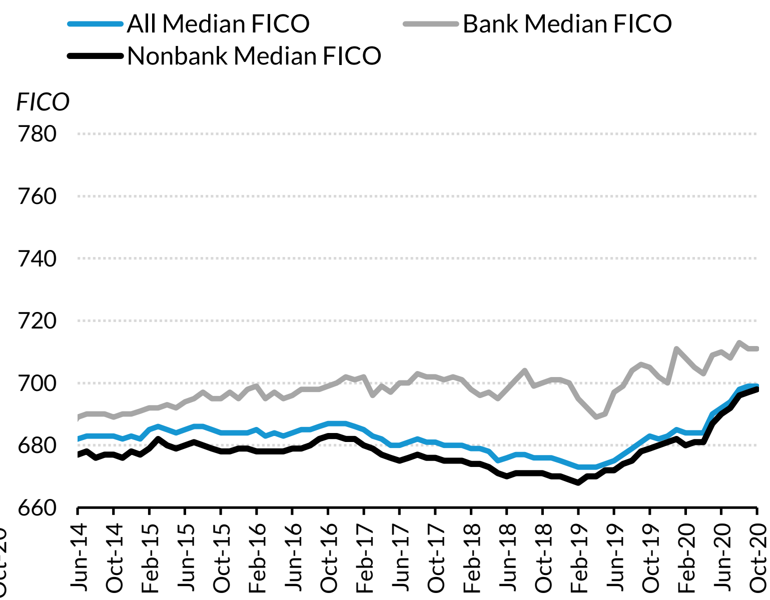
Sources: *eMBS and Urban Institute.* **Note**: *Data as of October 2020.*

GSE FICO: Bank vs. Nonbank



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

Ginnie Mae FICO: Bank vs. Nonbank

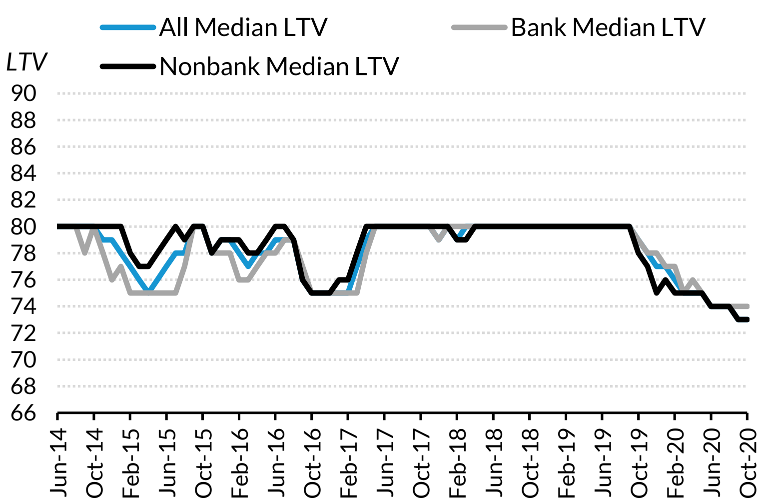


Sources: *eMBS and Urban Institute.*
Note: *Data as of October 2020.*

Nonbank Credit Box

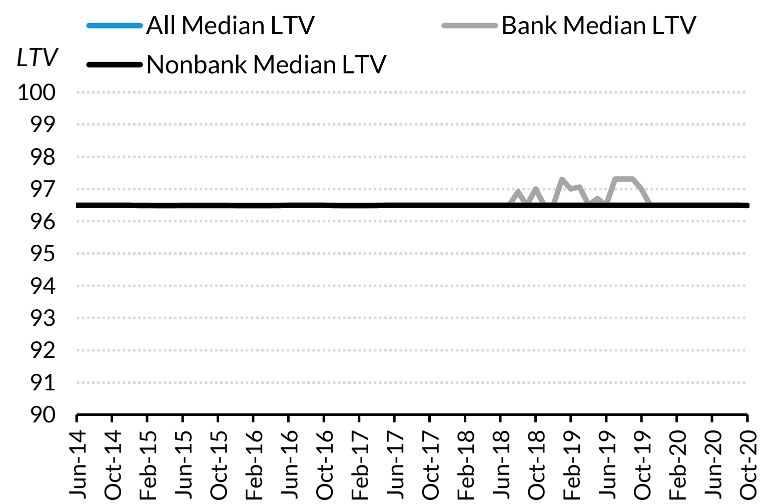
The median LTVs for nonbank and bank originations are comparable, while the median DTI for nonbank loans is higher than for bank loans, indicating that nonbanks are more accommodating in both this and the FICO dimension. Between early 2017 and early 2019, there was a substantial increase in DTIs; over the subsequent months, 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



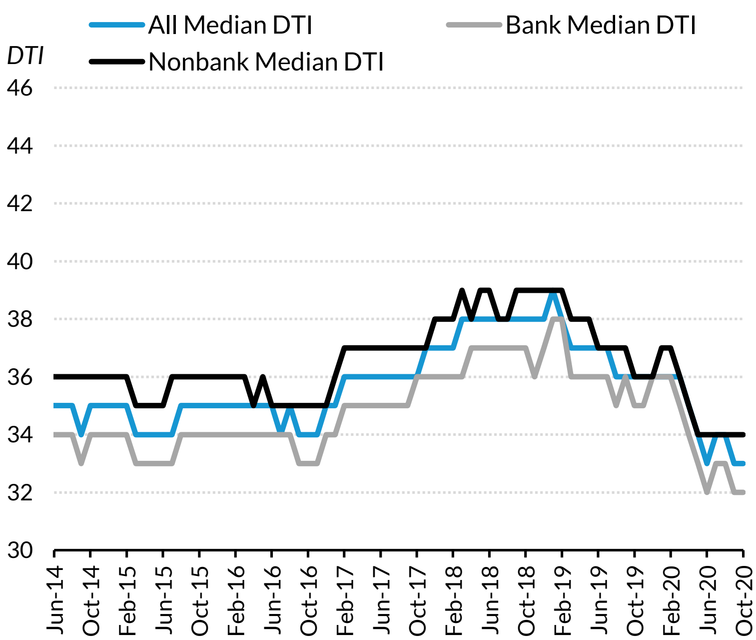
Sources: *eMBS and Urban Institute.* ***Note:*** *Data as of October 2020.*

Ginnie Mae LTV: Bank vs. Nonbank



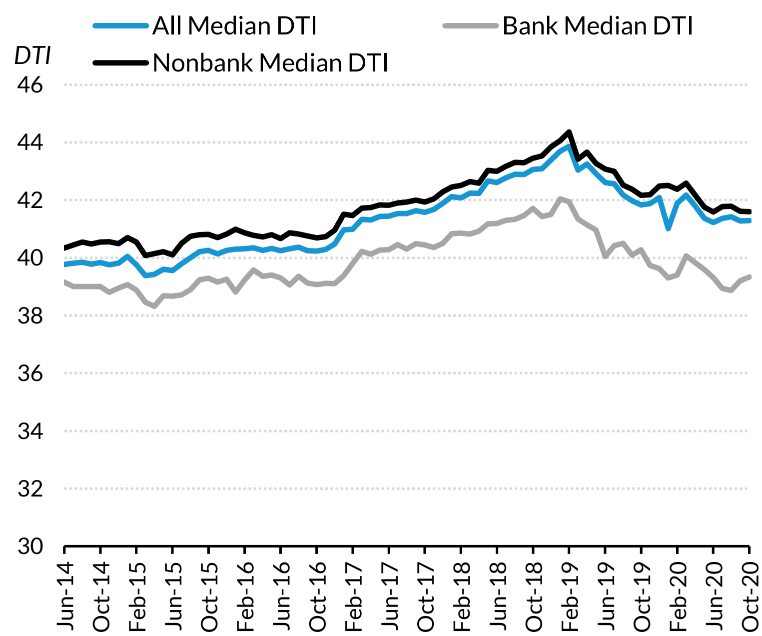
Sources: *eMBS and Urban Institute.* ***Note:*** *Data as of October 2020.*

GSE DTI: Bank vs. Nonbank



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

Ginnie Mae DTI: Bank vs. Nonbank

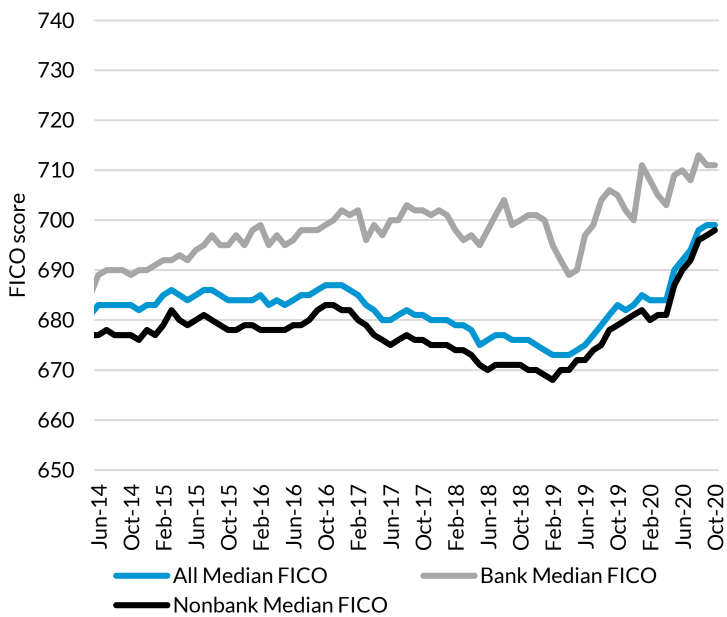


Sources: *eMBS and Urban Institute.* ***Note:*** *Data as of October 2020.*

Ginnie Mae Nonbank Originators: Credit Box

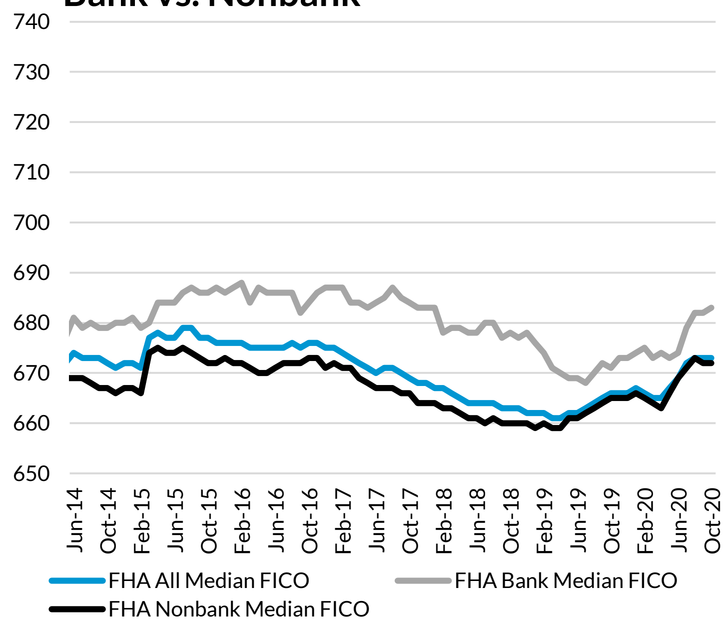
The median FICO score for Ginnie Mae nonbank originators grew slightly in October 2020. Bank FICOs are 13 points above non-banks. The gap between banks and non-banks is very apparent for all categories of government lending.

Ginnie Mae FICO Scores: Bank vs. Nonbank



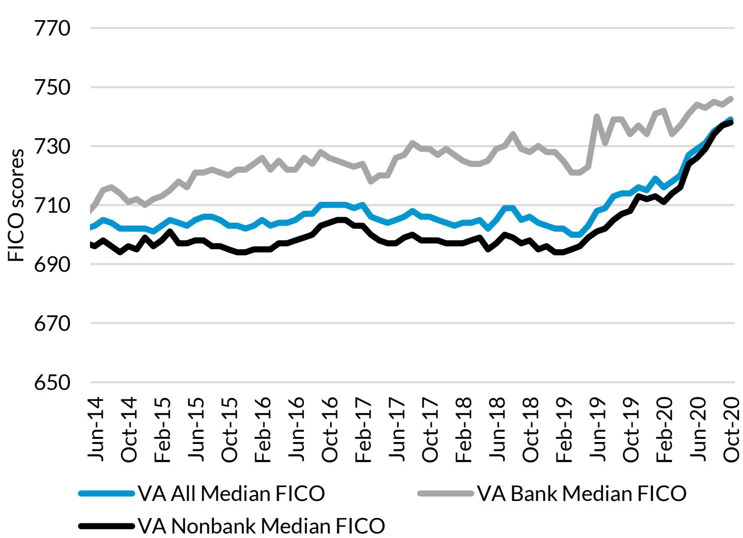
Sources: *eMBS and Urban Institute* **Note:** *Data as of October 2020.*

Ginnie Mae FHA FICO Scores: Bank vs. Nonbank



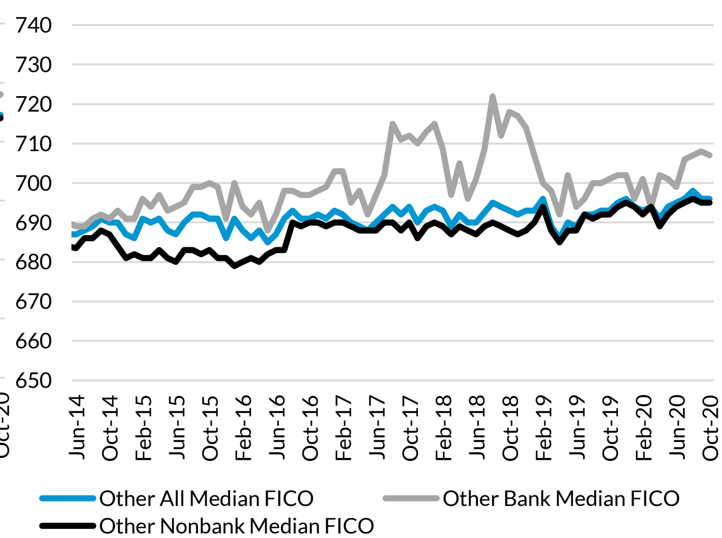
Sources: *eMBS and Urban Institute* **Note:** *Data as of October 2020.*

Ginnie Mae VA FICO Scores: Bank vs. Nonbank



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

Ginnie Mae Other FICO Scores: Bank vs. Nonbank

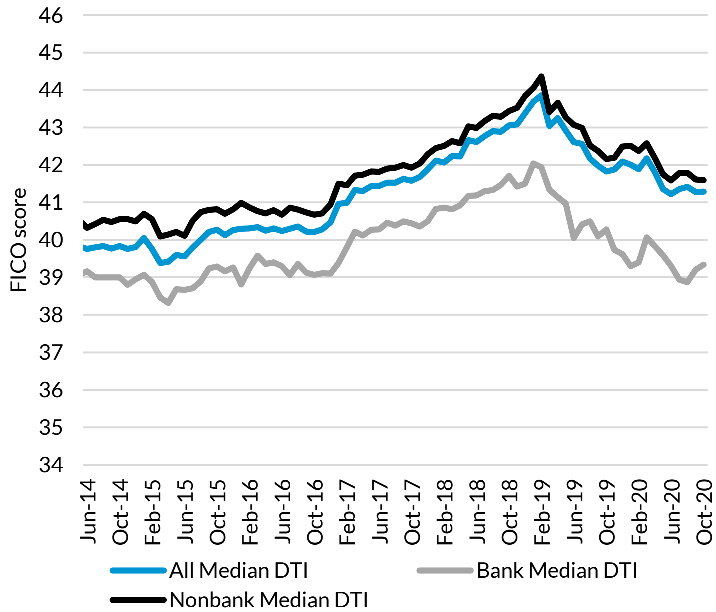


Sources: *eMBS and Urban Institute*
Note: *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of October 2020.*

Ginnie Mae Nonbank Originators: Credit Box

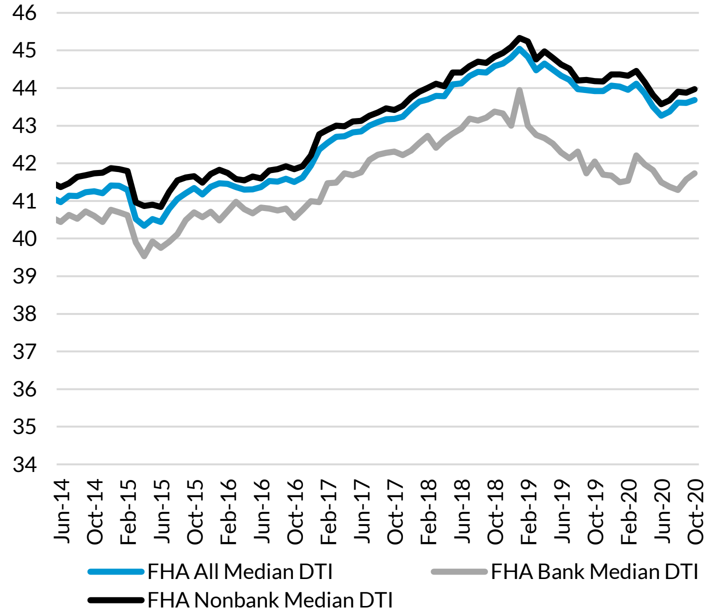
An analysis of borrowers' DTI ratios for bank versus non-bank originators indicates that the former have a lower median DTI. The DTIs for FHA and VA borrowers experienced notable increases during 2017 and 2018 for both banks and nonbank originators, while the Other origination DTIs stayed relatively 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



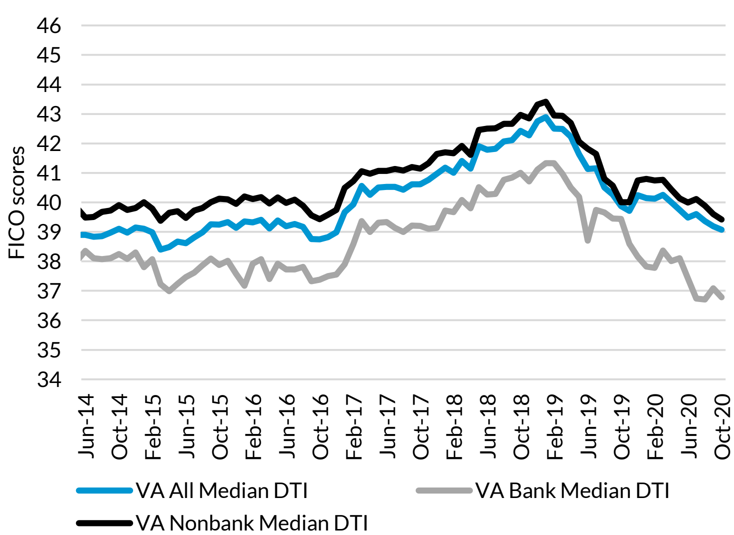
Sources: *eMBS and Urban Institute* **Note:** *Data as of October 2020.*

Ginnie Mae FHA DTI: Bank vs. Nonbank



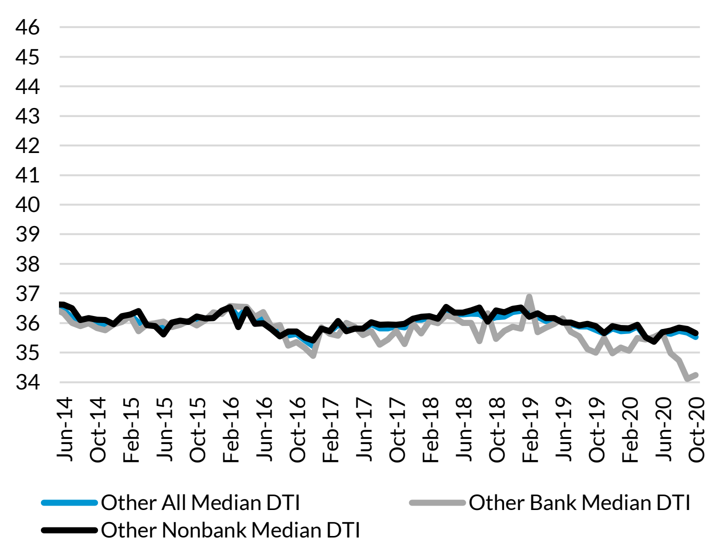
Sources: *eMBS and Urban Institute* **Note:** *Data as of October 2020.*

Ginnie Mae VA DTI: Bank vs. Nonbank



Sources: *eMBS and Urban Institute*
Note: *Data as of October 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 October 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 October 2020, over half (52.6 percent) of the Ginnie Mae MSRs are owned by the top six firms. The top 30 firms collectively own 85.8 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

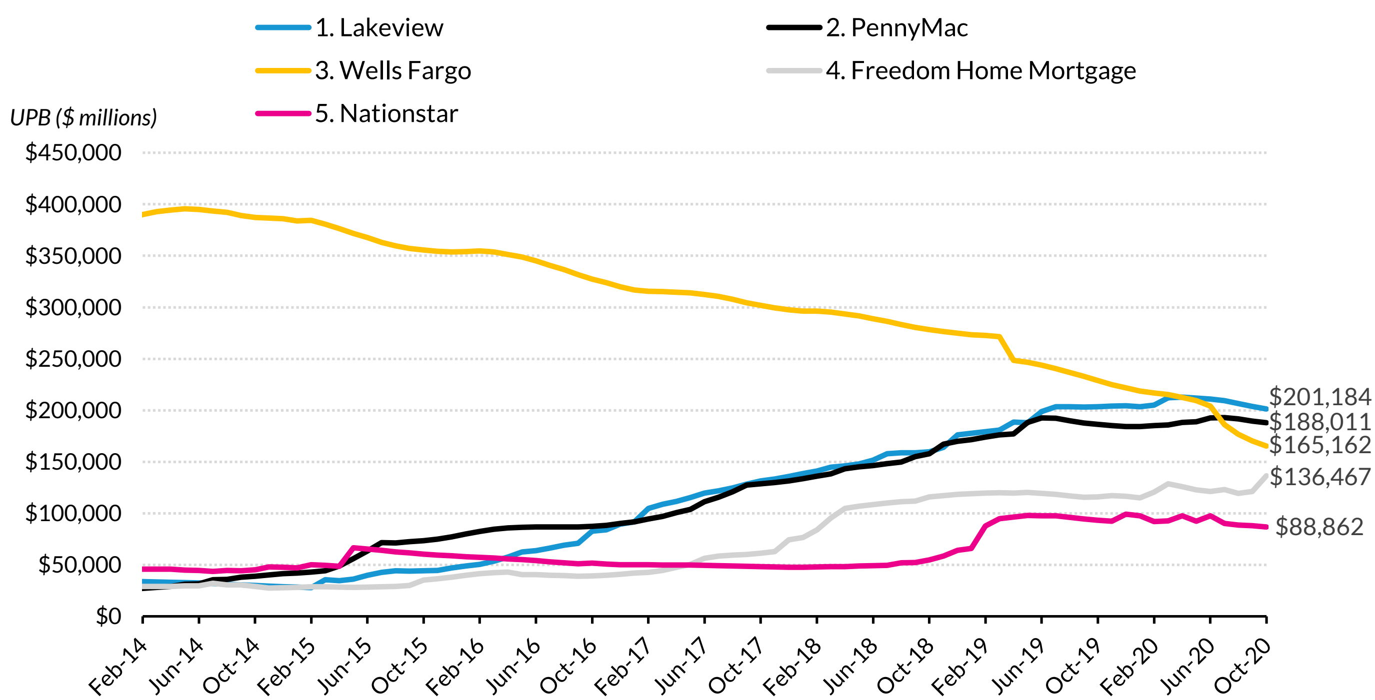
Rank	MSR Holder	UPB ($ millions)	Share	Cumulative Share
1	**Lakeview**	$201,184	12.5%	12.5%
2	**PennyMac**	$188,011	11.7%	24.2%
3	**Wells Fargo**	$165,162	10.2%	34.4%
4	**Freedom Home Mortgage**	$136,467	8.5%	42.9%
5	**Nationstar**	$97,684	5.4%	48.3%
6	**Quicken Loans**	$69,897	4.3%	52.6%
7	**Newrez**	$51,300	3.2%	55.8%
8	**US Bank**	$47,849	3.0%	58.8%
9	**Carrington Mortgage**	$41,999	2.6%	61.4%
10	**USAA Federal Savings Bank**	$38,044	2.4%	63.7%
11	**Caliber Home Loans**	$37,374	2.3%	66.0%
12	**Amerihome Mortgage**	$29,305	1.8%	67.9%
13	**Truist Bank**	$28,544	1.8%	69.6%
14	**Navy Federal Credit Union**	$26,754	1.7%	71.3%
15	**Home Point Financial Corporation**	$23,096	1.4%	72.7%
16	**The Money Source**	$20,358	1.3%	74.0%
17	**Shore Financial**	$19,345	1.2%	75.2%
18	**Loan Depot**	$18,850	1.2%	76.4%
19	**JP Morgan Chase**	$16,724	1.0%	77.4%
20	**Midfirst Bank**	$16,476	1.0%	78.4%
21	**Guild Mortgage**	$16,084	1.0%	79.4%
22	**M&T Bank**	$13,896	0.9%	80.3%
23	**Citizens Bank**	$13,696	0.8%	81.1%
24	**PHH Mortgage Corporation**	$12,891	0.8%	81.9%
25	**Planet Home Lending**	$12,877	0.8%	82.7%
26	**Flagstar Bank**	$12,405	0.8%	83.5%
27	**Pingora**	$9,981	0.6%	84.1%
28	**Bank of America**	$9,036	0.6%	84.7%
29	**New American Funding**	$8,916	0.6%	85.2%
30	**PNC Bank**	$8,743	0.5%	85.8%

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

Holders of Ginnie Mae MSRs

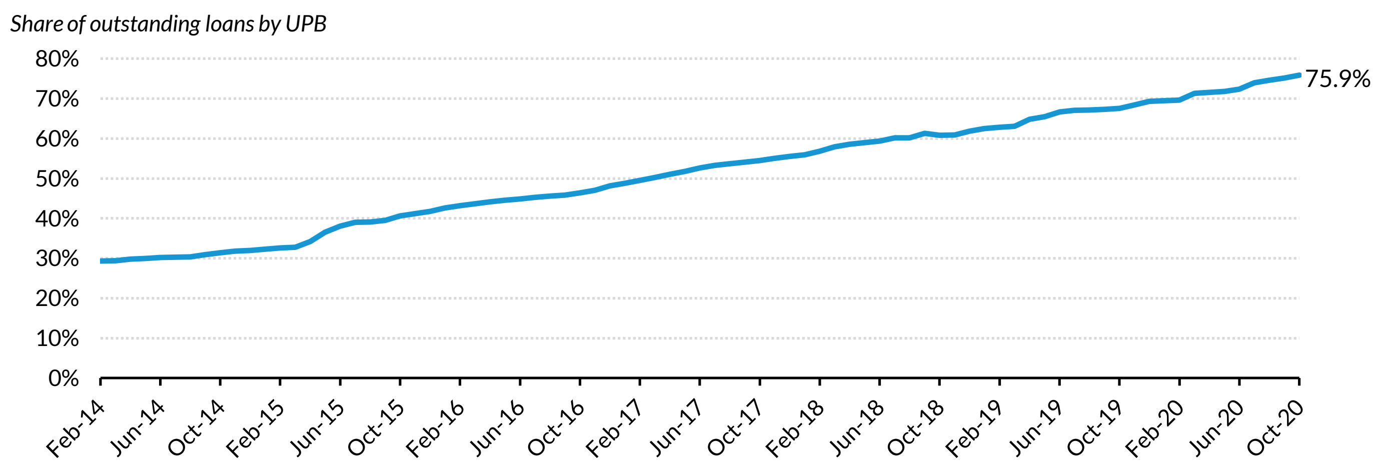
The composition of the largest owners of Ginnie Mae MSR has evolved quite a bit over time. In December 2013, Wells Fargo and JP Morgan Chase were the two largest owners of Ginnie Mae MSRs, holding $375 billion and $139 billion in servicing UPB respectively. In October 2020, Wells Fargo's holdings of MSRs dipped to $165.2 billion, below the $201.2 and $188.0 billion held by Lakeview and PennyMac, respectively (both nonbanks). Freedom Home Mortgage and Nationstar (both nonbanks) make up the remainder of the top five largest holders of MSRs, owning $136 billion and $89 billion respectively as of October 2020. Nonbanks collectively owned servicing rights for 75.9 percent of all outstanding unpaid principal balance guaranteed by Ginnie Mae in October 2020. In December 2013, the nonbank share was much smaller at 27.7 percent.

Top 5 MSR Holders: Outstanding Ginnie Mae Loans by UPB



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

Share of Ginnie Mae MSRs held by Nonbanks

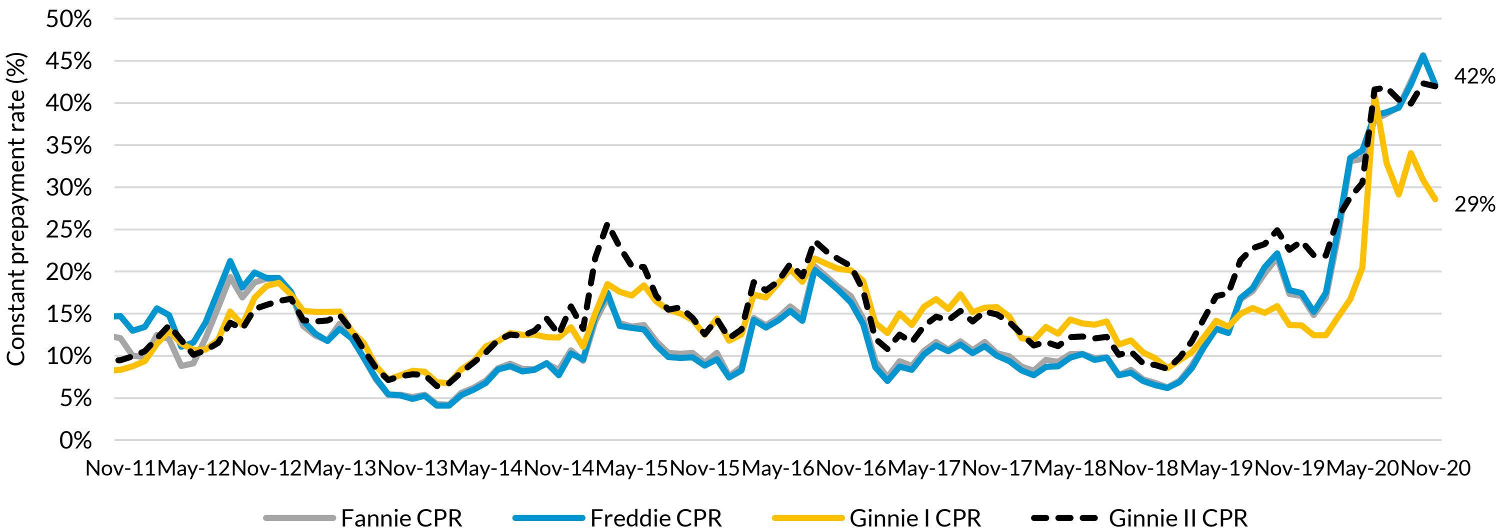


Sources: *eMBS and Urban Institute.* **Note:** *Data as of October 2020.*

Prepayments

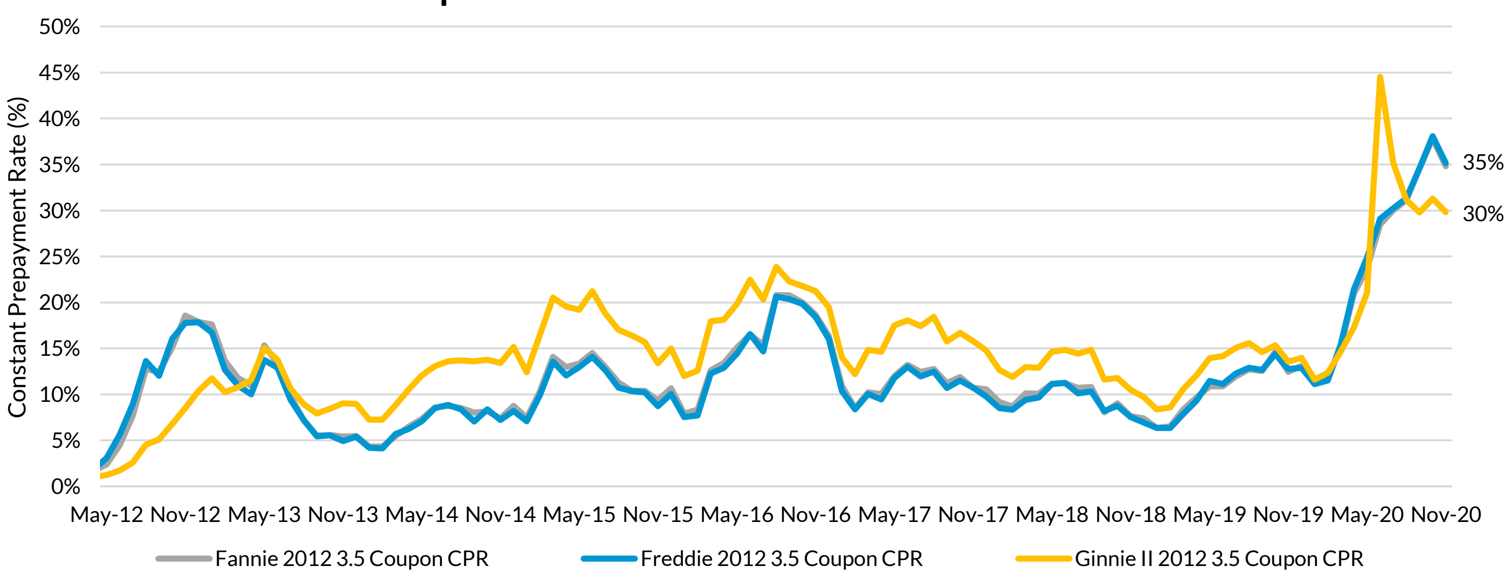
While prepayment speeds on all securities have risen since early 2019, the speed increase has been especially dramatic in 2020, with speeds on both Ginnie II and GSE securities rising rapidly due to a sharp drop in rates. At this point, the speeds on GSE securities have largely converged with those on Ginnie II securities, as the former have ramped up more quickly in the last few months. 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 November 2020.*

2012 Issued 3.5 Coupon CPR

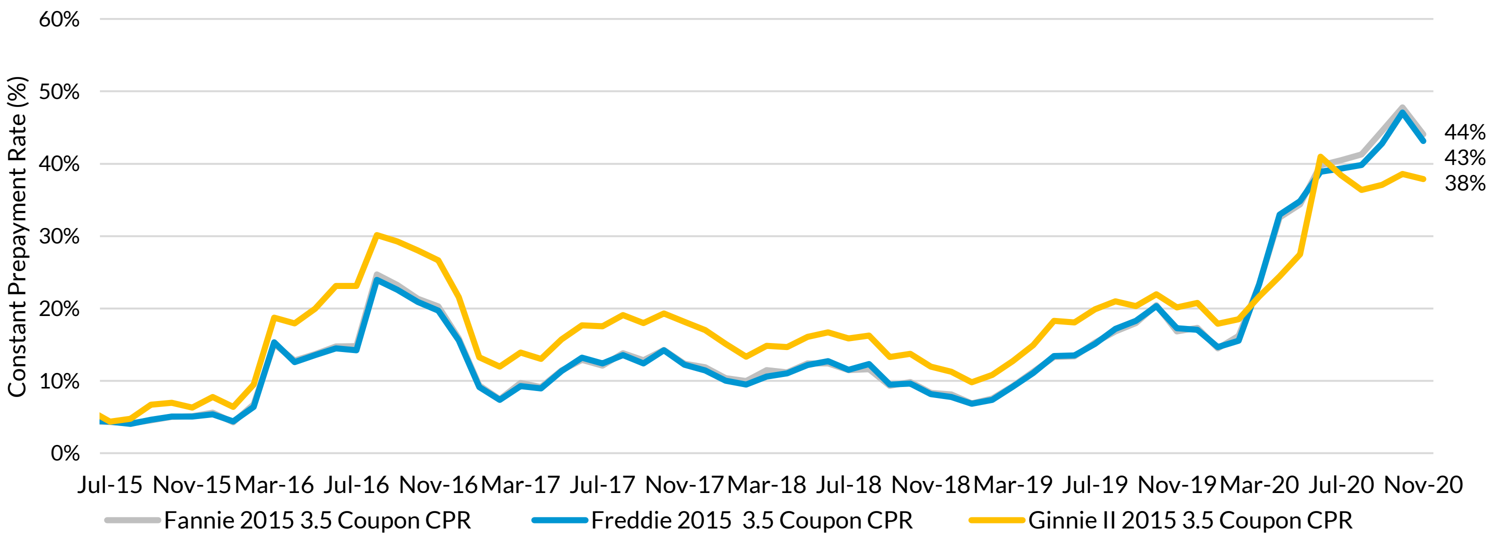


Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of November 2020.*

Prepayments

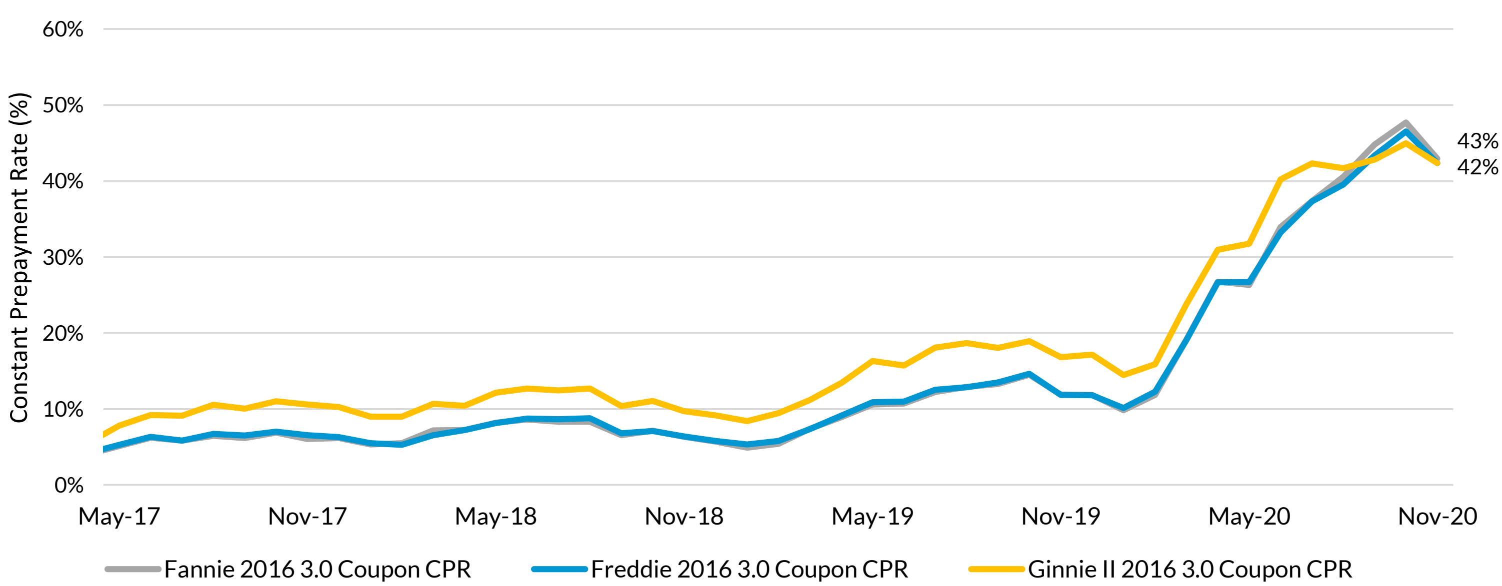
Speeds on the 2015 3.5s and the 2016 3.0s, the largest coupon cohorts of those vintage years, have been increasing since early 2019.; the speed increases have been especially dramatic in 2020 due to a sharp drop in rates, with speeds on both Ginnie II and GSE securities rising rapidly. The speeds on 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 November 2020.*

2016 Issued 3.0 Coupon CPR

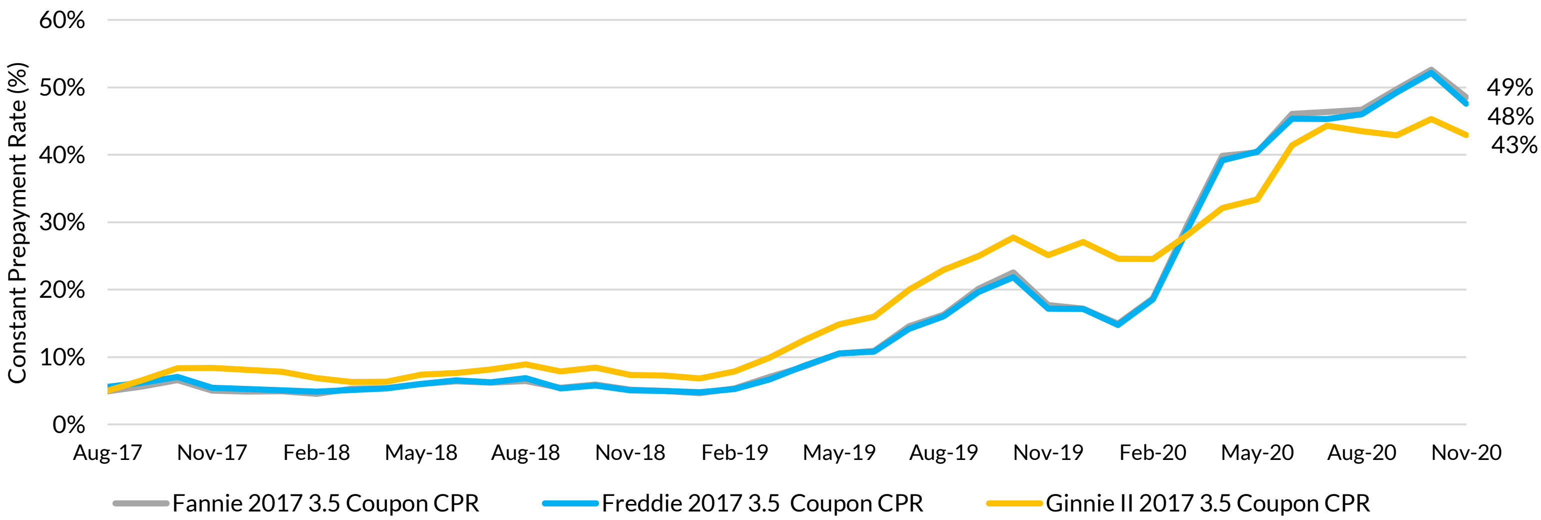


Sources: *Credit Suisse and Urban Institute*. **Note:** *Data as of November 2020.*

Prepayments

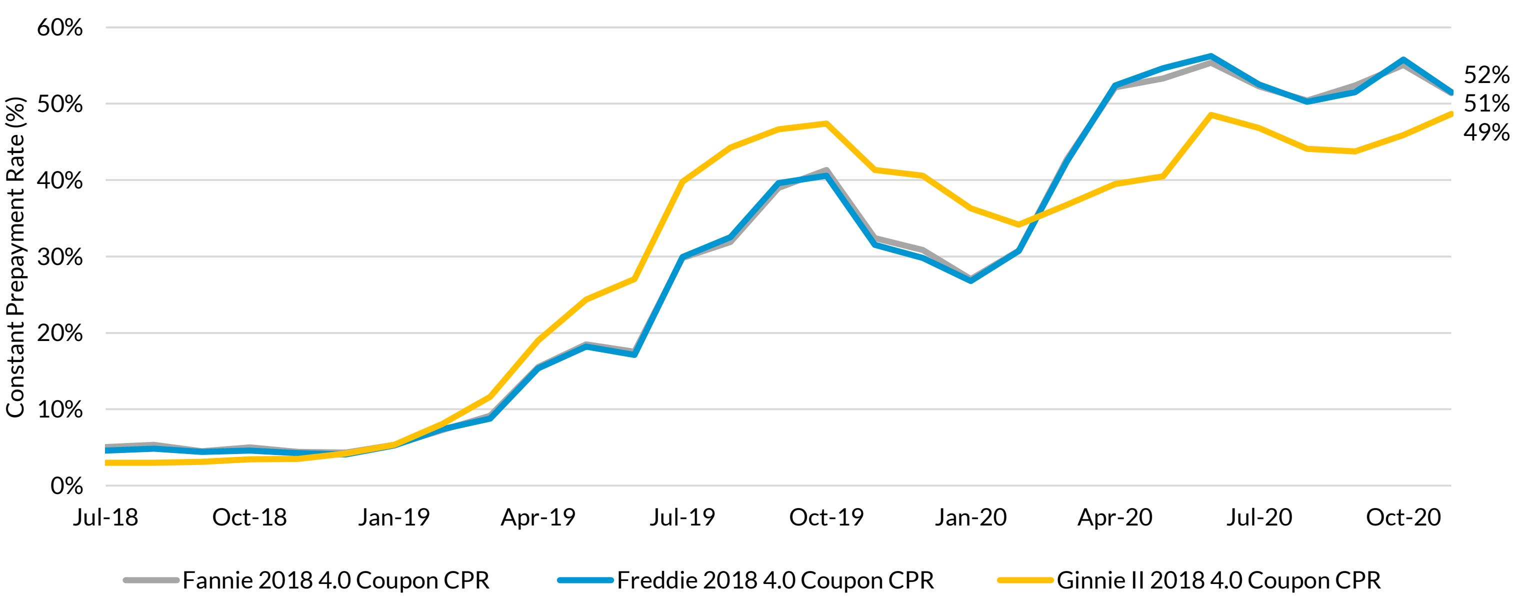
The charts below show the behavior of the 2017-issued 3.5s and the 2018-issued 4.0s, the largest coupon cohorts of those vintage years. Despite slower seasoning, 2017 Ginnie II 3.5s were prepaying faster than their conventional counterparts from late 2017 to March 2020, due primarily to fast VA prepayment 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; the expanded use of GSE appraisal waivers has played a role in this.

2017 Issued 3.5 Coupon CPR



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

2018 Issued 4.0 Coupon CPR

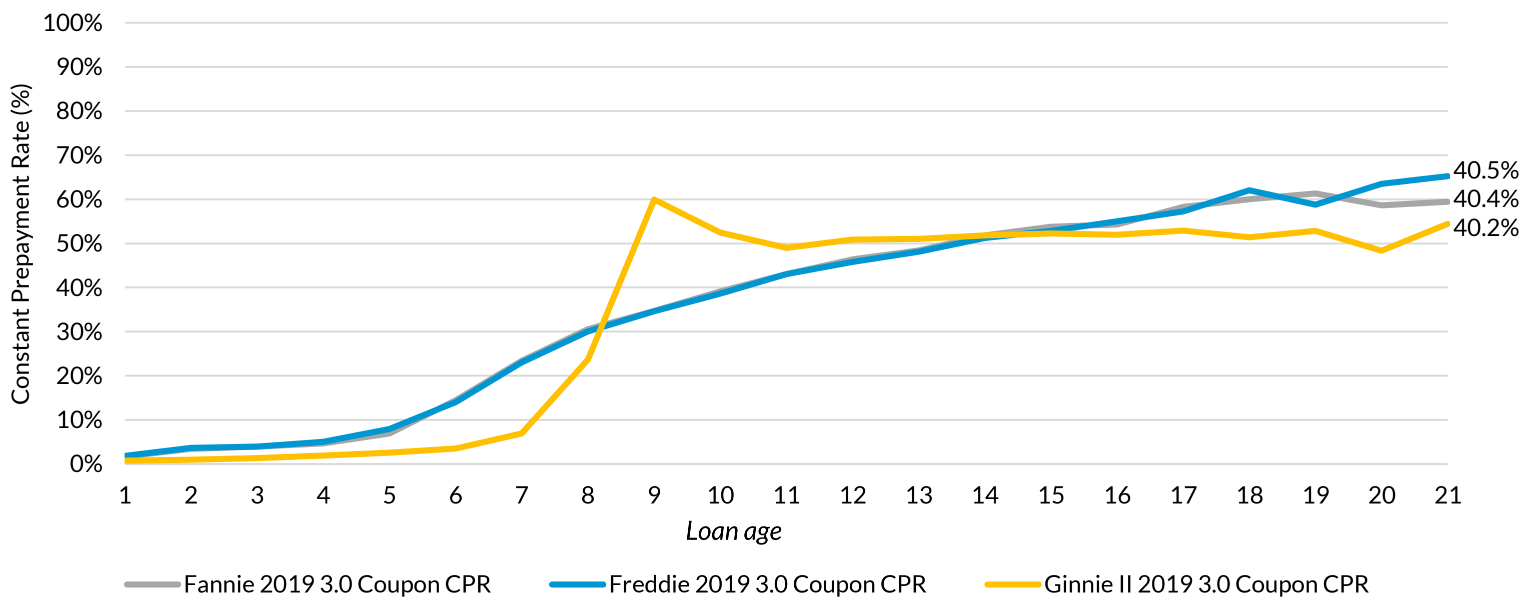


Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of November 2020.*

Prepayments

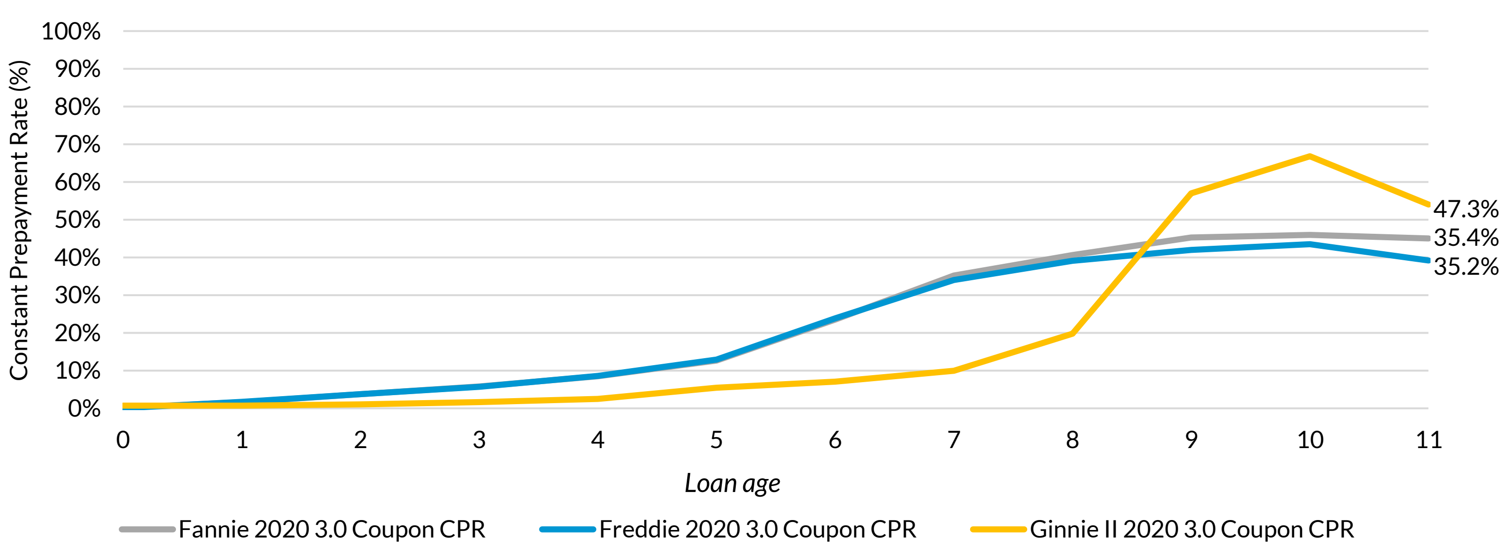
The charts below show prepayment speeds by loan age for 2019 and 2020 Ginnie II 3.0s. Prepayment speeds on both cohorts jumped at the 8-10 month loan age, a more muted jump than earlier cohorts at the same age; they then began to converge with conventional speeds more quickly, as a result of Ginnie Mae 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 14 month loan age onwards. 2020 Ginnie II 3.0s show a similar increase in speeds at the 9-10 month mark, with convergence beginning in month eleven.

2019 Issued 3.0 Coupon CPR, by Loan Age



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

2020 Issued 3.0 Coupon CPR, by Loan Age

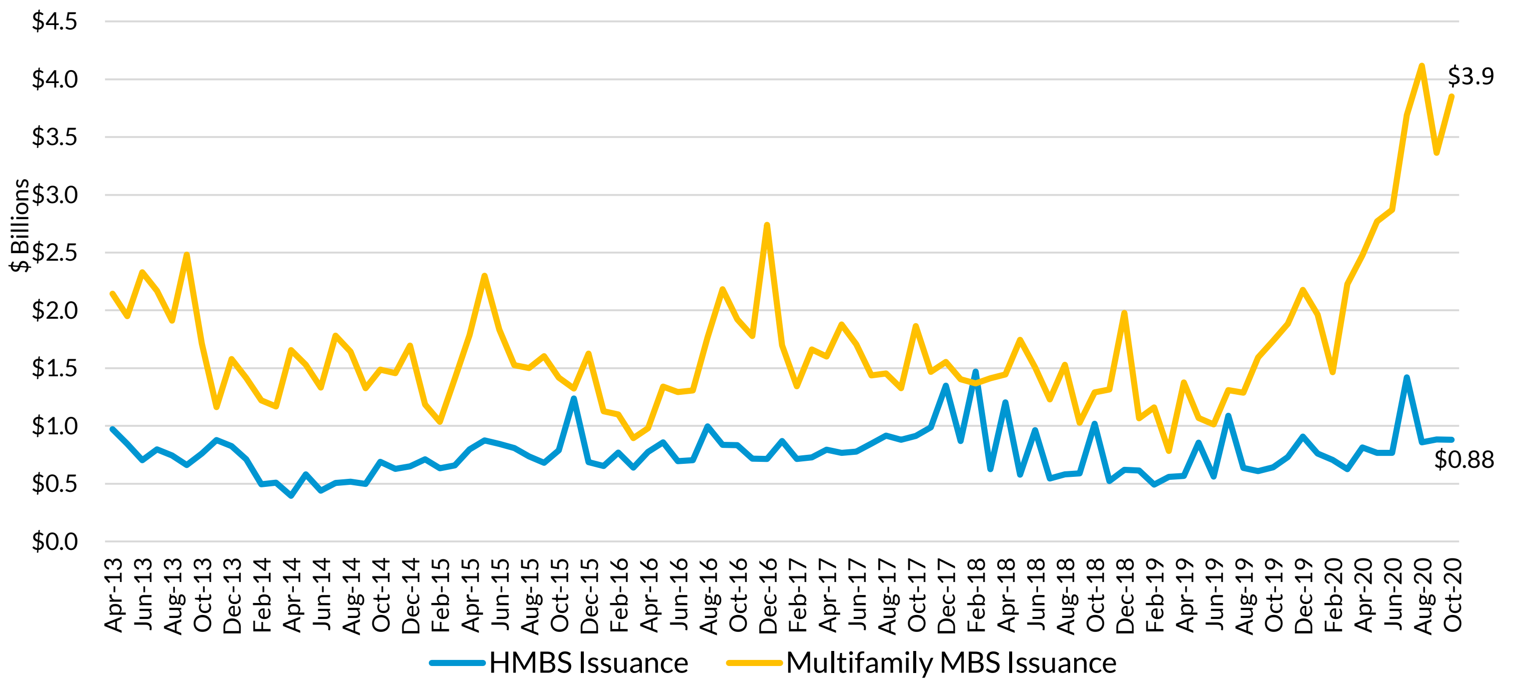


Sources: *Credit Suisse and Urban Institute*. **Note:** *Data as of November 2020.*

Other Ginnie Mae Programs Reverse and Multifamily Mortgages

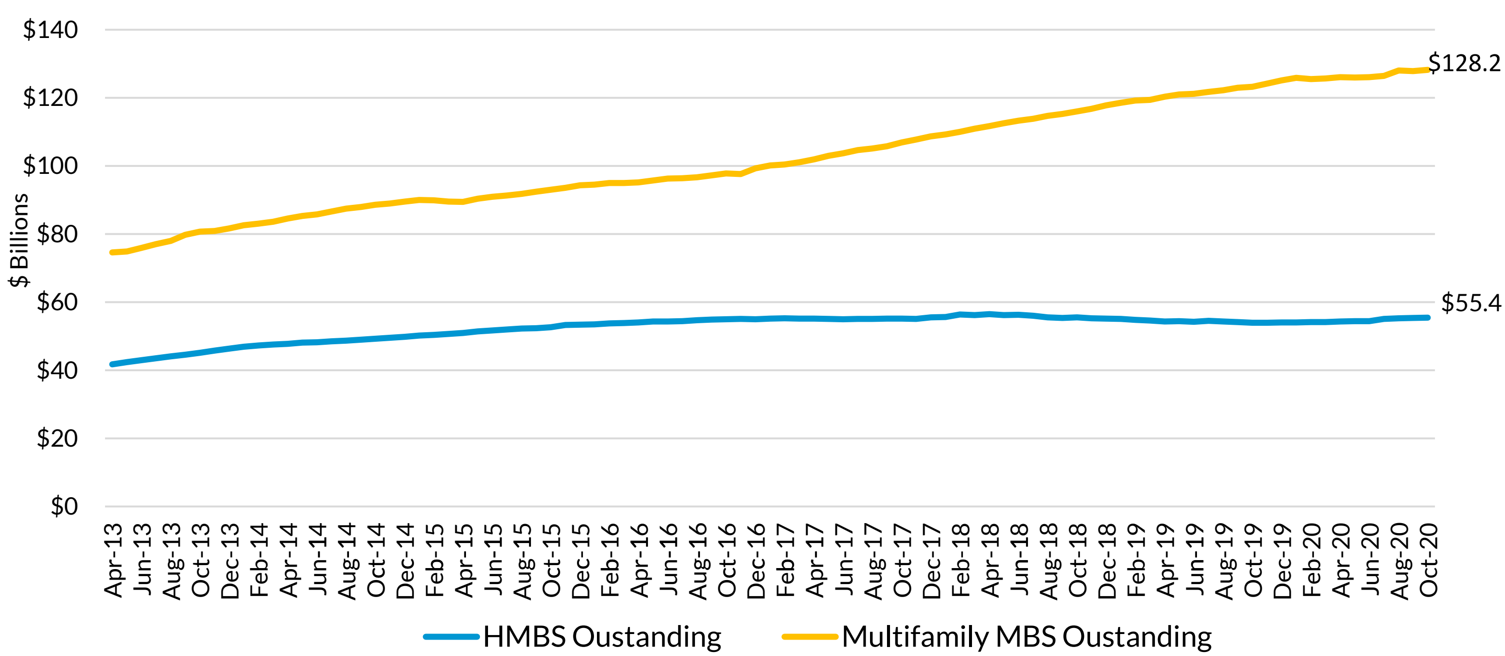
Ginnie Mae reverse mortgage issuance has been volatile over the past two years, but has been generally declining since early 2018 largely due to the implementation of the new, lower principal limit factors. In October issuance grew mildly to $0.88 billion. In October 2020, outstanding reverse mortgage securities totaled $55.4 billion, up slightly from last month, reflecting a higher volume of new issuances relative to paydowns. After falling in September, Ginnie Mae multifamily issuance volume in October 2020 grew to $3.9 billion. Outstanding multifamily securities totaled $128.2 billion as of the tenth month of 2020.

Issuance Volume



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

Outstanding Volume

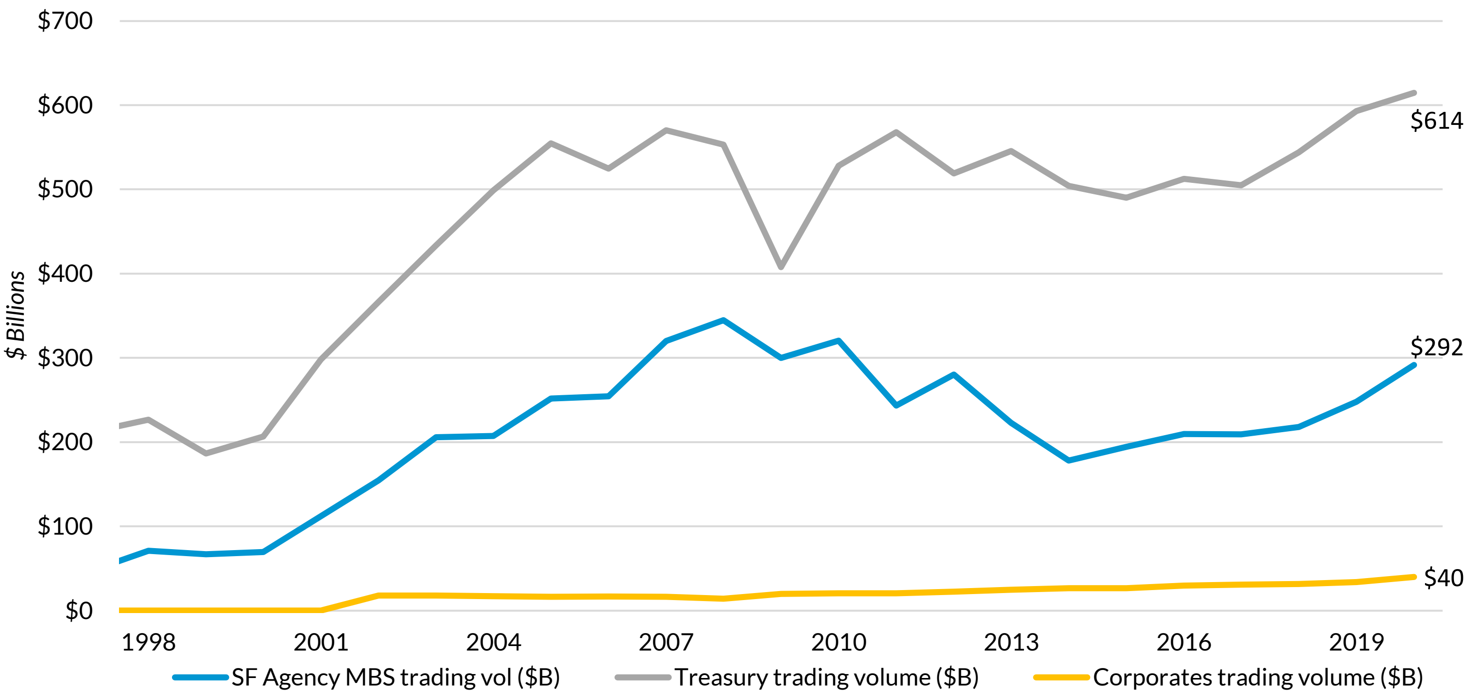


Sources: *Ginnie Mae and Urban Institute.* **Note:** *Data as of October 2020.*

Market Conditions

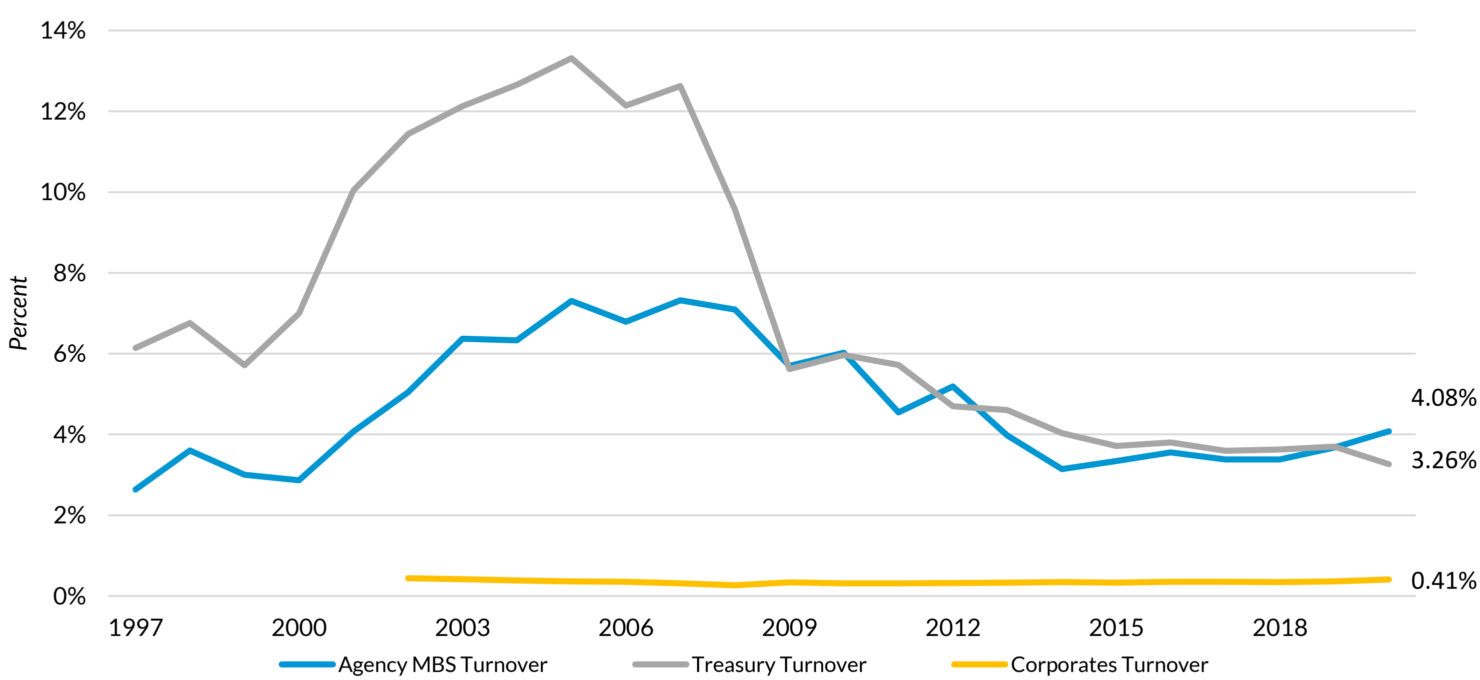
Agency MBS trading volume is $292 billion/day on average for the first ten months of 2020, more robust than in the 2014-2019 period, but still below the pre-crisis peak of $345 billion in 2008. Average daily trading volume for Treasuries now exceeds the pre-crisis peak. Agency MBS turnover in 2020 YTD (through October) has also been 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 the first ten months of 2020 has been 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 December 2020.*

Average Daily Turnover by Sector

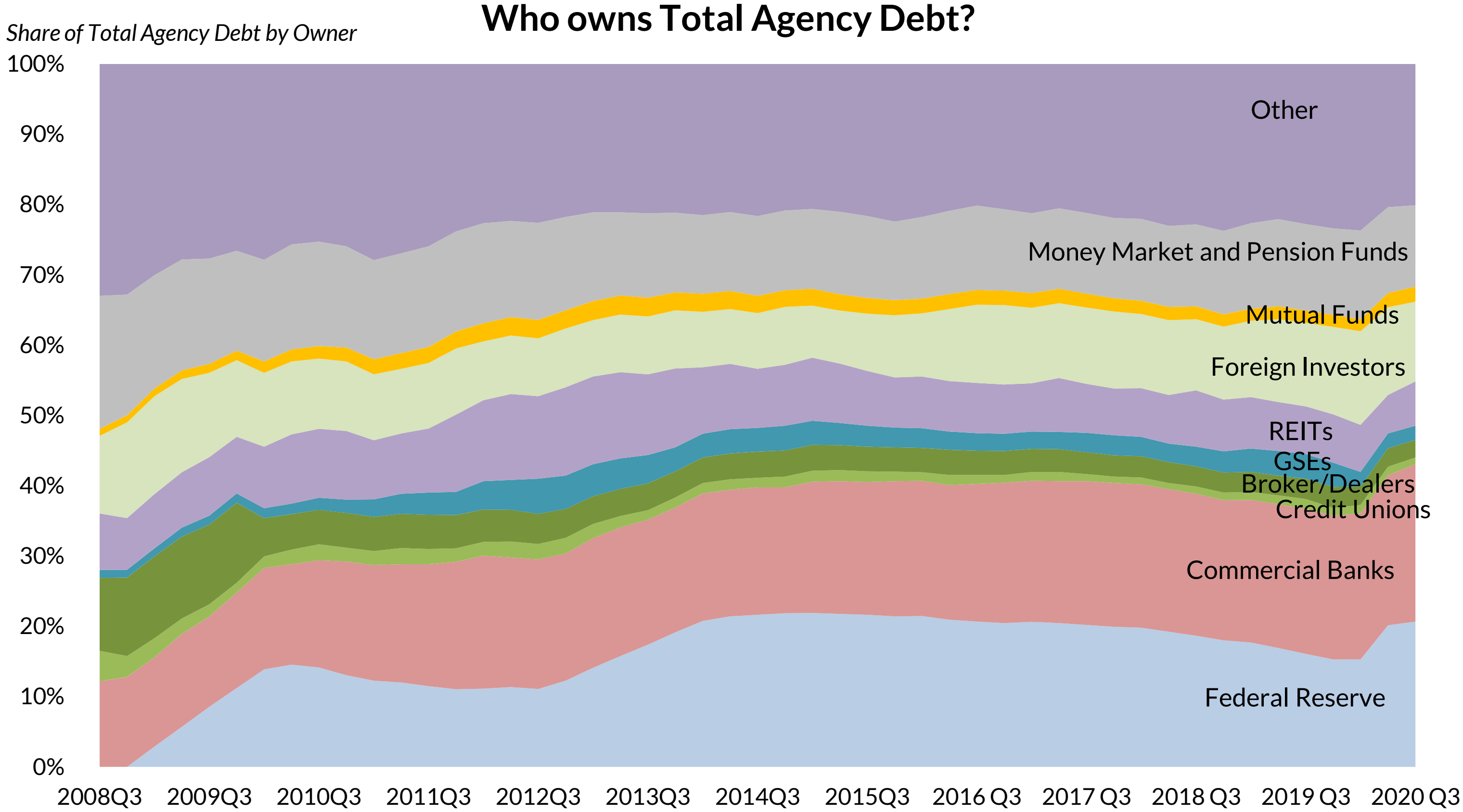


Sources: *SIFMA and Urban Institute.* ***Note:*** *Updated December 2020.*

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 $2.5 trillion in holdings as of the end of October 2020, $1.8 trillion was held by the top 25 domestic banks.

Who owns Total Agency Debt?



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			
	Oct-19	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Oct 30	Oct 04	Oct 11	Oct 18
Largest 25 Domestic Banks	1511.1	1637.9	1636.7	1630.5	1662.0	1716.5	1701.6	1746.3	1770.9	1816.7	1812.5	1823.7
Small Domestic Banks	509.4	541.1	543.0	551.8	559.7	570.6	583.6	604.3	605.7	603.1	604.7	612
Foreign Related Banks	37	46.1	43.5	43.7	43.2	41.5	39.5	39	39	42.8	41.5	43.9
Total, Seasonally Adjusted	2057.5	2225.1	2223.2	2226.0	2264.9	2328.6	2324.7	2389.6	2415.6	2462.6	2458.7	2479.6

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 October 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

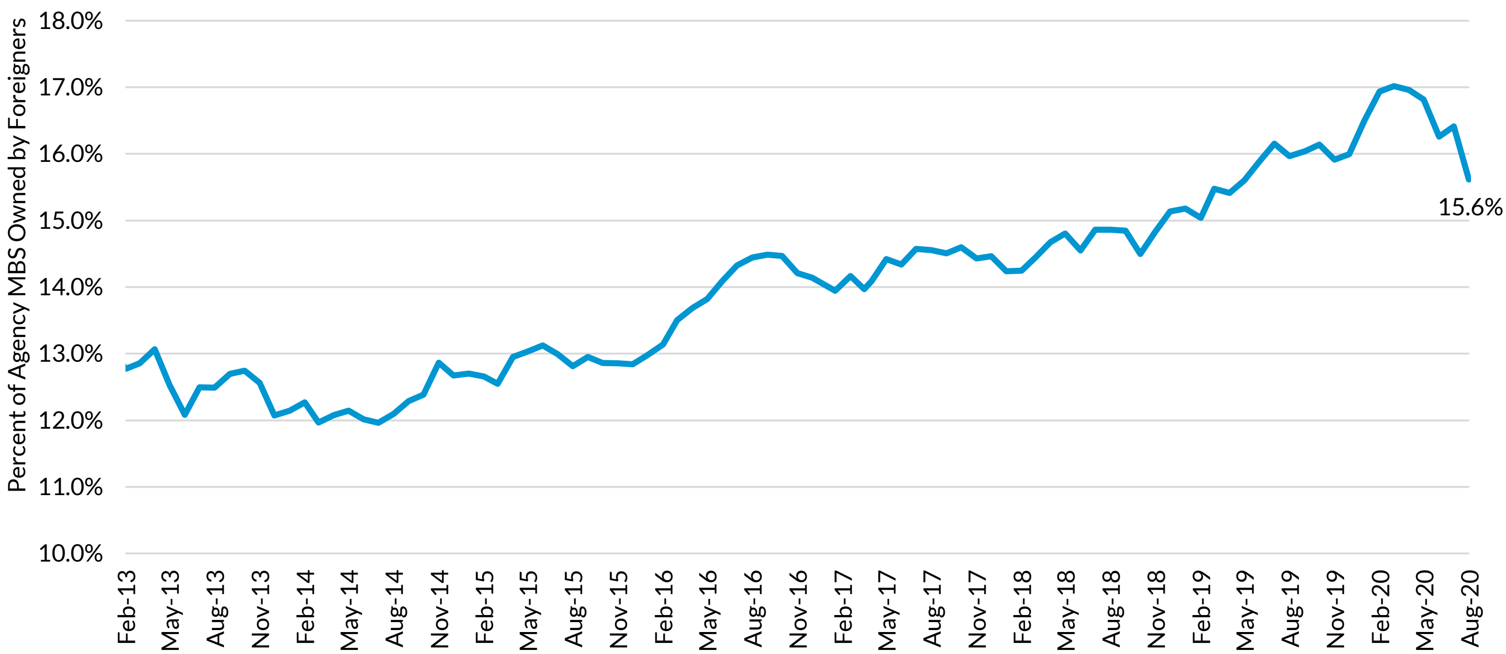
	Top Bank & Thrift Residential MBS Investors	Total ($MM)	GSE PT ($MM)	GNMA PT ($MM)	Agency REMIC ($MM)	Non-Agency ($MM)	Market Share
1	Bank Of America Corporation	$395,969.0	$256,271.0	$127,087.0	$12,327.0	$284.0	17.10
2	Wells Fargo & Company	$254,767.0	$181,758.0	$65,210.0	$7,244.0	$555.0	11.00
3	JP 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

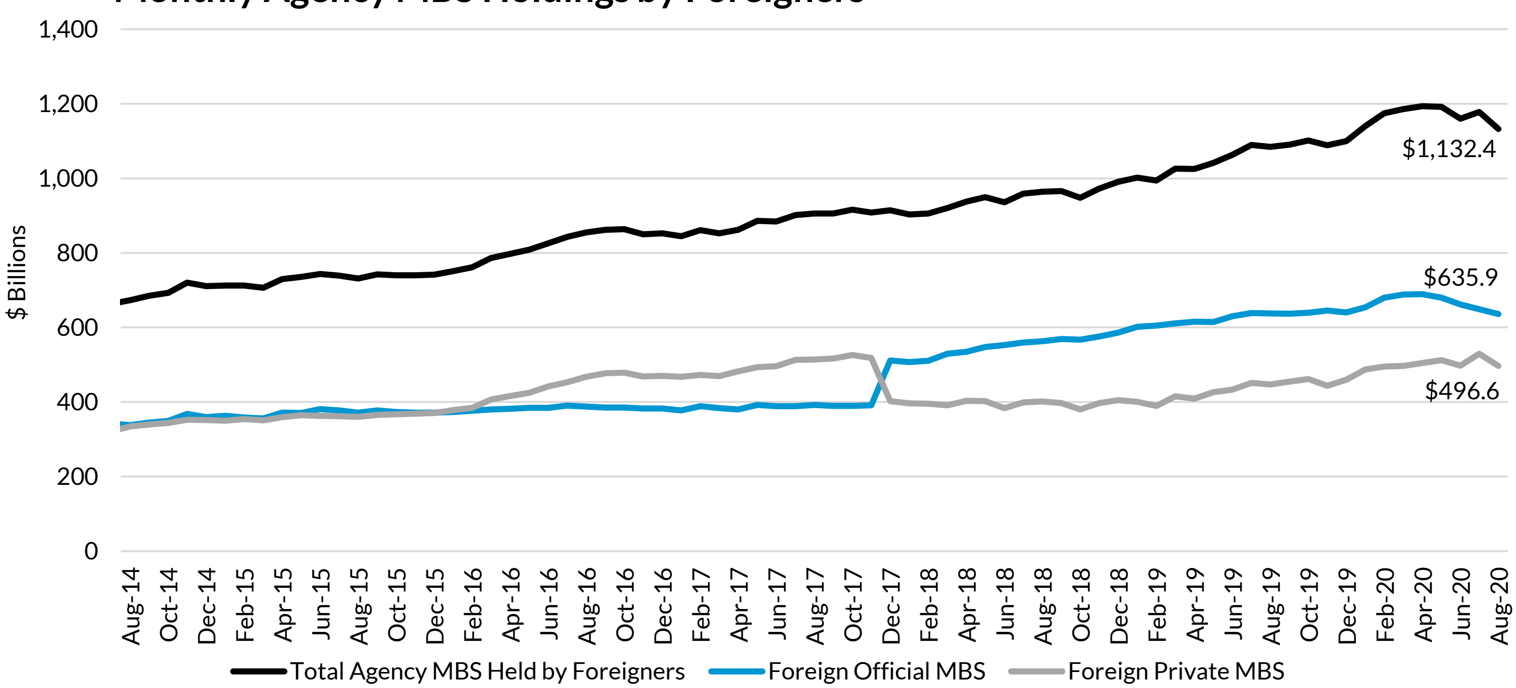
Foreign investors held 15.6 percent of agency MBS in August 2020, up from a low of 12.0 percent in July 2014, but down from 17.0 percent in spring 2020. For the month of August 2020, this represents $1.13 trillion in Agency MBS, $497 billion held by foreign private institutions and $636 billion held by foreign institutions. This represents a $61.2 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 August 2020.*

Monthly Agency MBS Holdings by Foreigners



***Sources**: Treasury International Capital (TIC) and Urban Institute. **Note**: Data as of August 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 August 2020, we estimate that Japan has increased their agency MBS holdings by $4.24 billion, Taiwan has decreased their holdings by $1.42 billion and China has decreased their holdings by $8.20 billion. All three countries have experienced declines since March.

Agency MBS+ Agency Debt

	Level of Holdings ($Millions)*							Change in Holdings ($Millions)*					
Country	Jun-19	Sep-19	Dec-19	Mar-20	Jun-20	Jul-20	Aug-20	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Jul-20	Aug-20
Japan	297,016	311,047	305,332	322,155	310,268	312,967	301,290	14,031	-5,715	16,823	-11,887	2,699	-11,677
Taiwan	265,524	263,018	261,740	269,133	267,918	266,096	264,037	-2,506	-1,278	7,393	-1,215	-1,822	-2,059
China	227,357	233,783	231,753	260,479	239,045	227,007	217,596	6,426	-2,030	28,726	-21,434	-12,038	-9,411
Luxembourg	47,646	46,641	39,015	36,789	42,389	38,099	37,061	-1,005	-7,626	-2,226	5,600	-4,290	-1,038
Ireland	45,829	41,367	38,731	26,131	29,399	28,602	26,864	-4,462	-2,636	-12,600	3,268	-797	-1,738
South Korea	42,879	41,485	40,810	40,964	38,891	39,478	40,008	-1,394	-675	154	-2,073	587	530
Cayman Islands	34,967	29,540	31,827	27,154	34,564	34,495	34,514	-5,427	2,287	-4,673	7,410	-69	-6,065
Bermuda	29,365	29,184	33,897	27,790	27,790	29,182	28,430	-181	4,713	-6,107	0	1,392	5,332
Netherlands	14,074	10,549	10,902	10,886	13,255	12,937	10,359	-3,525	353	-16	2,369	-318	-2,578
Malaysia	12,167	15,585	16,600	21,399	20,390	19,375	19,161	3,418	1,015	4,799	-1,009	-1,015	-214
Rest of world	128,142	135,515	152,489	202,143	201,165	235,979	219,970	7,373	16,974	49,654	-978	34,814	-16,009
Total	1,144,971	1,157,714	1,163,096	1,245,023	1,225,074	1,244,217	1,199,290	12,743	5,382	81,927	-19,949	19,143	-44,927

Agency MBS Only (Estimates)

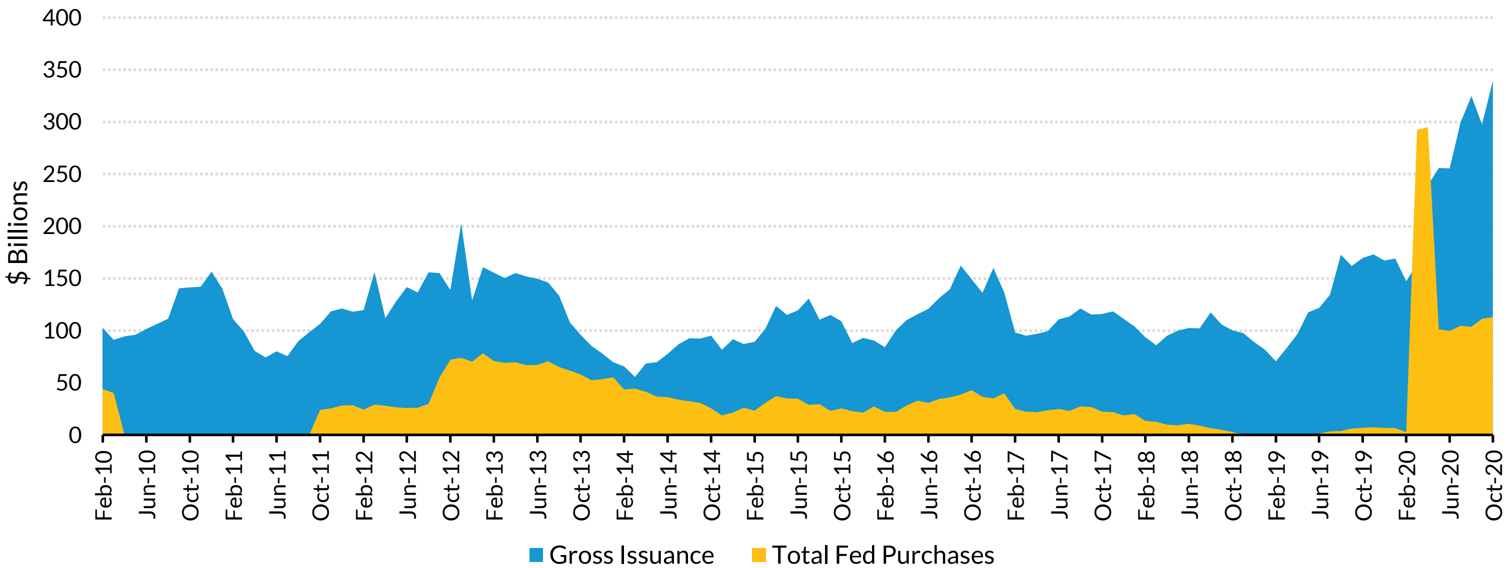
	Level of Holdings ($Millions)*							Change in Holdings ($Millions)*					
Country	Jun-19	Sep-19	Dec-19	Mar-20	Jun-20	Jul-20	Aug-20	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Jul-20	Aug-20
Japan	293,662	307,738	302,212	319,241	306,963	309,635	297,905	14,076	-5,526	16,823	-12,278	2,672	-11,730
Taiwan	265,234	262,732	261,470	268,881	267,700	265,876	263,814	-2,502	-1,262	7,393	-1,181	-1,824	-2,062
China	221,738	228,240	226,526	255,596	235,078	223,008	213,534	6,502	-1,714	28,726	-20,518	-12,070	-9,475
Luxembourg	43,978	43,023	35,603	33,602	40,207	35,899	34,826	-955	-7,420	-2,226	6,605	-4,308	-1,073
Ireland	37,674	33,322	31,145	19,045	21,091	20,227	18,356	-4,352	-2,177	-12,600	2,047	-865	-1,871
South Korea	34,969	33,682	33,452	34,091	28,743	29,248	29,615	-1,287	-230	154	-5,347	504	367
Cayman Islands	29,896	24,538	27,110	22,748	28,431	28,312	28,233	-5,358	2,572	-4,673	5,684	-119	-79
Bermuda	26,394	26,253	31,133	25,208	25,111	26,482	25,687	-141	4,880	-6,107	-97	1,370	-795
Netherlands	13,904	10,381	10,744	10,738	12,739	12,417	9,831	-3,523	363	-16	2,001	-322	-2,586
Malaysia	11,881	15,303	16,334	21,150	20,028	19,011	18,791	3,422	1,031	4,799	-1,122	-1,018	-220
Rest of world	97,585	105,371	124,063	175,591	173,716	208,307	191,858	7,786	18,692	49,654	-1,874	34,590	-16,449
Total	1,076,916	1,090,579	1,099,788	1,185,887	1,159,808	1,178,419	1,132,446	13,663	9,209	81,927	-26,079	18,611	-45,973

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 August 2020.*

MBS Ownership

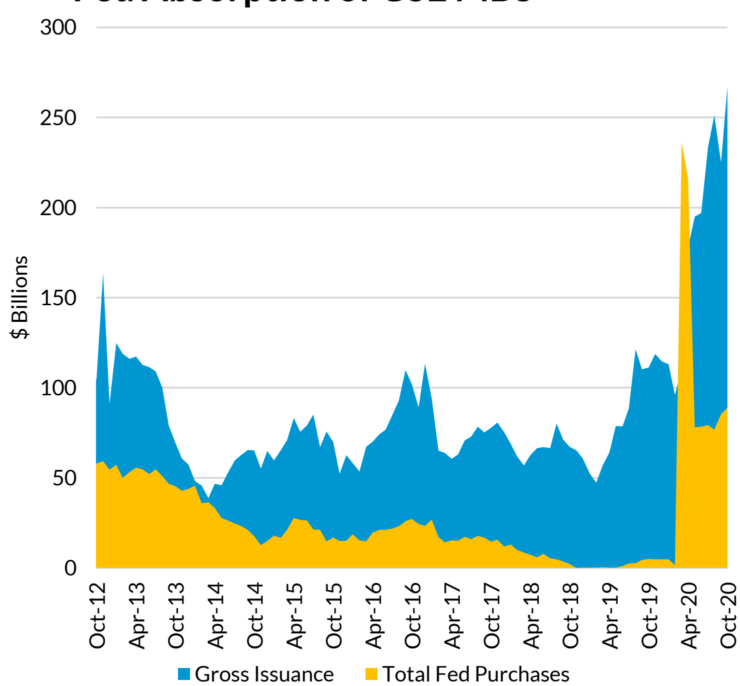
On March 23, 2020, in response to the market dislocations caused by the coronavirus pandemic, the Fed announced they would purchase Treasuries and agency MBS in an amount necessary to support smooth functioning markets. In March the Fed bought $292.2 billion in agency MBS, and April clocked in at $295.1 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 -$104 billion per month in May through August. In September and October, Fed purchases were up slightly at $111.3 and $112.9 billion, respectively. October Fed purchases totaled 33 percent of monthly issuance. Prior to the COVID-19 intervention, the Fed was winding down its MBS portfolio from its 2014 prior peak.

Total Fed Absorption



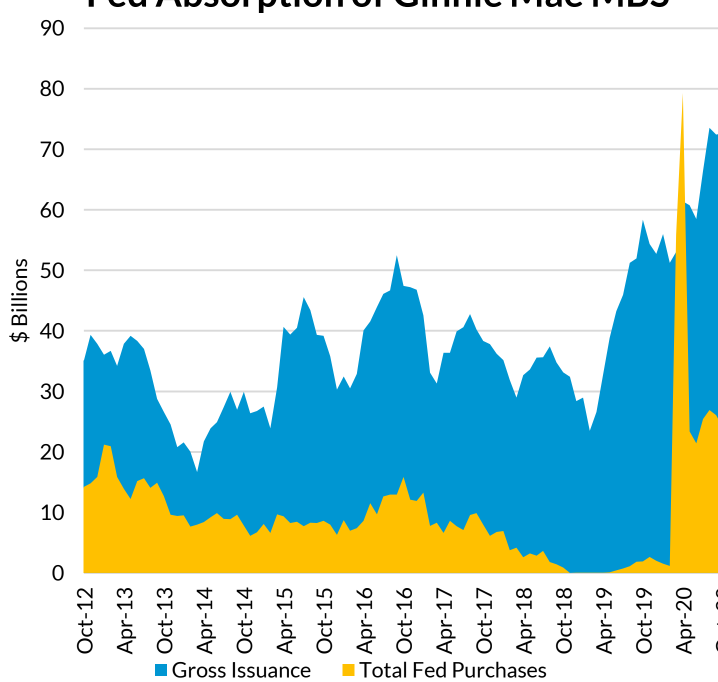
***Sources**: eMBS, Federal Reserve Bank of New York and Urban Institute. **Note:** Data as of October 2020.*

Fed Absorption of GSE MBS



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

Fed Absorption of Ginnie Mae MBS



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