

Global Markets Analysis Report

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

JULY
2021



 **GinnieMae**
Our Guaranty Matters

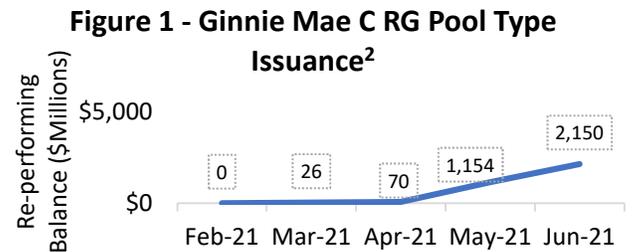
Table of Contents

Section	Page
Highlights	2
1.0 Relative Attractiveness of US Fixed Income and Ginnie Mae MBS	4
1.1 Barclays US Aggregate and Global Indices	4
1.2 Global 10-Year Treasury Yields.....	5
1.3 Ginnie Mae Yields– USD	6
1.4 Ginnie Mae Yield Spreads – Intermediate Credit.....	7
1.5 Global Treasury Yield Per Duration	8
2.0 State of the US Housing Market	9
2.1 Serious Delinquency Rates	9
2.2 National HPI	10
2.3 Ginnie Mae Agency Issuance and Agency Outstanding by State	11
2.4 Size and Value of the US Housing Market.....	12
2.5 Outstanding Agency MBS.....	13
2.6 Outstanding Ginnie Mae MBS Volume by Coupon and Vintage Over Time	14
2.7 Characteristics of Ginnie Mae Loans in Forbearance.....	15
2.8 Origination Volume Over Time	18
3.0 US Agency Market, Originations	19
4.0 Agency Nonbank Originators	23
4.1 Agency Nonbank Originator Share (All, Purchase, Refi)	23
4.2 Ginnie Mae Nonbank Originator Share (All, Purchase, Refi).....	24
4.3 Bank vs. Nonbank Originators Historical Credit Box, Ginnie Mae vs. GSE (FICO, LTV, DTI)	25
5.0 Market Conditions	29
5.1 Average Daily Trading Volume and Turnover by Sector	29
6.0 Prepayments	30
6.1 Aggregate Prepayments	30
7.0 MBS Ownership	31
7.1 Commercial Bank Holdings of Agency MBS	31
7.2 Bank and Thrift Residential MBS Holdings.....	32
7.3 Foreign Ownership of MBS	34
7.4 Agency MBS + Agency Debt	35

Highlights

Ginnie Mae MBS issuance has recently benefited from the introduction of new Custom pool types that allow for the securitization of re-performing and modified loans. As servicers emerge from the pandemic with inventories of re-performing and modified loans, Ginnie Mae has responded by introducing two new pool types, C RG and C-ET, to assist with the securitization of these loans.

The C RG pool type was implemented in December 2020 and allows for re-performing loans to be securitized in newly developed Ginnie Mae II Custom RG pools (C RG pools) if such loans meet the established criteria.¹ Since March 2021, Ginnie Mae has seen an increase of the C RG volume within CMO issuance with issuance in June 2021 reaching \$2 billion (**Figure 1**).



The more recently introduced C-ET pool type is expected to be implemented in October 2021. To be eligible for securitization in C-ET pools, loans are required to be modified and have terms between 361 and 480 months.³ Through these pools, Ginnie Mae intends to provide issuers the ability to securitize loans bought out of MBS early to further promote liquidity in the marketplace.

Figure 2- Agency Gross and Net MBS Issuance²

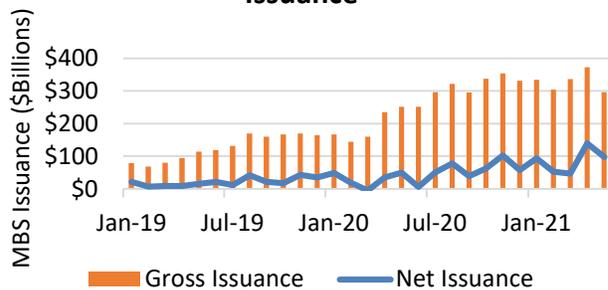
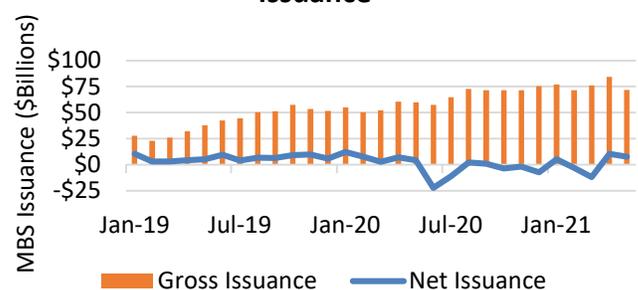


Figure 3- Ginnie Mae Gross and Net MBS Issuance²



While gross MBS issuance has increased dramatically during the pandemic, net issuance has remained relatively flat. Despite strong issuance trends, GSE MBS outstanding has not increased proportionately due to both voluntary and involuntary prepayments (see *Section 6.0 Prepayments*); as illustrated in **Figure 2** and **Figure 3**. Borrowers continue to take advantage of the historically low interest rate environment by refinancing their mortgages. Additionally, an increasing number of borrowers have participated in loan forbearance or modification plans which has also resulted in accelerated loan buyouts and involuntary prepayments (see page 30).

Demand for Agency MBS has continued to be supported by investor demand for Agency CMOs and Fed purchases. Year to date Fed purchases of Agency MBS has exceeded \$658 billion as of June 11, 2021 according to the Federal Reserve Bank of New York.

¹ [Ginnie Mae Announces Temporary Pooling Restrictions for Re-performing Mortgage Loans](#); published June 29, 2020

² eMBS

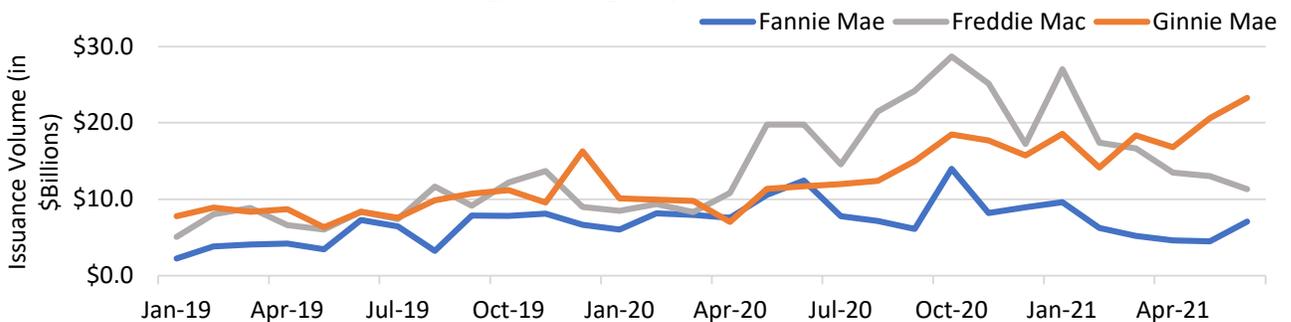
³ [Ginnie Mae to Enable Securitization of Mortgage Modifications with Terms up to 40 Years](#); published June 25, 2021

Agency CMO issuance volume also increased \$179 billion in 2020 versus 2019⁴, from \$284.7 billion in 2019 to \$463.7 billion in 2020. Out of the three Agencies, Freddie Mac saw the largest year over year increase in CMO issuance volume in 2020 versus 2019 with a 96% increase. Fannie Mae CMO issuance volume increased 61% and Ginnie Mae CMO issuance volume increased 33% from 2019 to 2020. The rise in Agency CMO issuance volume demonstrates high investor demand for a customizable product that can suit a variety of fixed income investment needs. Higher levels of Agency CMO issuance volume continued into 2021; as issuance volume in the first half of calendar year 2021 was \$59.5 billion higher than the issuance volume in the first half of calendar year 2020 as shown below in **Figure 4**. Ginnie Mae CMO issuance volume saw the largest increase of the Agencies in the first half of 2021 with an 86.5% increase.

Ginnie Mae CMO Issuance Volume (\$)

	January	February	March	April	May	June	Total YTD
2020	10.1 billion	10.0 billion	9.8 billion	7.0 billion	11.3 billion	11.7 billion	59.9 billion
2021	18.6 billion	14.1 billion	18.3 billion	16.8 billion	20.6 billion	23.3 billion	111.7 billion
YoY	83.3%	42.2%	87.3%	139.4%	81.6%	99.1%	86.5%

Figure 4- Agency CMO Issuance Volume



Stakeholders expect the origination and fixed income investment markets to continue to evolve through 2021 and into 2022. According to the Mortgage Bankers Association (MBA), from 2020 to 2022 the production of mortgage loan refinances is expected to decline, with MBA’s current projections showing a production decline from \$2.4 trillion in 2020 to \$621 billion in 2022.⁵ Issuance and secondary market activity for MBS and CMO products could be impacted by mortgage loan refinance origination volume declines from 2020 volume through projected 2022 origination volume; as well as the potential decline in new forbearance activity and the successful re-securitization of loans impacted by forbearance through 2020 and 2021. Expect the Agencies to continue to introduce structures to provide products that suit fixed income investor needs and enhance liquidity in the market for issuers. Issuers have already begun to leverage Ginnie Mae’s new pool types that allow for re-performing loans to be securitized in Ginnie Mae II Custom RG pools or C RG pools in CMO issuances.

⁴ Ginnie Mae and Agency CMO issuance data, including all data within the Ginnie Mae and Agency CMO Issuance Volume graph, has been compiled from Offering Circular Supplements posted on the respective Agency websites: [Ginnie Mae](#), [Freddie Mac](#), [Fannie Mae](#)
⁵ [MBA’s July 21 Mortgage Finance Forecast](#); published July 21, 2021

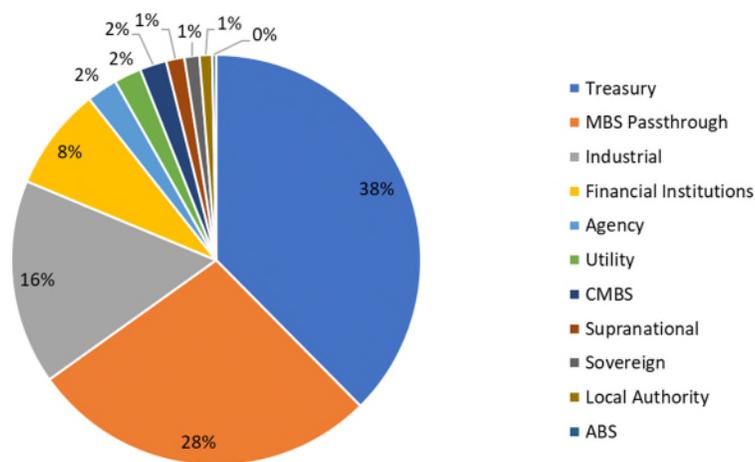
Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

1.0 Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

US MBS (Ginnie Mae, Fannie Mae, and Freddie Mac) contribute approximately 28% of the Barclays US Aggregate Index. US MBS follow only US Treasuries which contribute approximately 38% of the Barclays US Aggregate Index. In Global Markets, the US share of fixed income still represents the largest share of total outstanding issuance, representing approximately 37% of the total Barclays Global Aggregate Index.

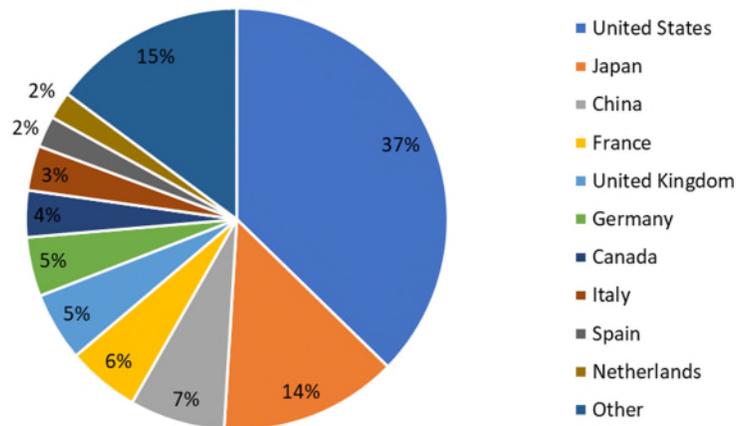
1.1 Barclays US Aggregate and Global Indices

Barclays US Aggregate Index



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

Barclays Global Aggregate Index by Country



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

1.2 Global 10-Year Treasury Yields

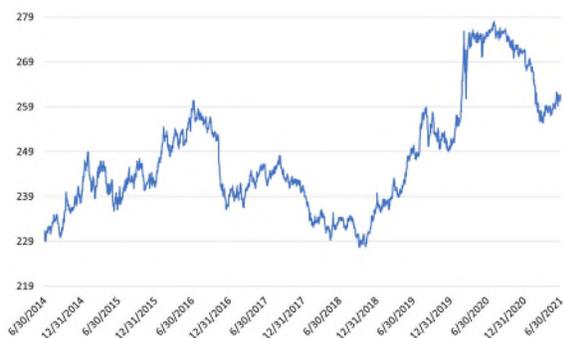
US 10-year treasury yields decreased by 13 basis points (“bps”) to 1.47% in June 2021, maintaining the decreasing yield trend of the last 3 months. US Treasury yields remain the highest of the all the government treasury yields depicted in the figure below. The yield on the Italian 10-year note decreased modestly by 9 bps to 0.82%. The yields on the UK 10-year and Japanese 10-year government notes remained steady at 0.71% and 0.05%, respectively, in June; also, a modest decrease of less than 10 bps. The German 10-year yield remained stable at -0.2%, only decreasing by 2 bps in June. At the end of June 2021, the hedged yield for the 10-year Treasury JPY stood at 262 bps, an increase of 2 bps from the previous month. The hedged yield for the 10-year Treasury EUR stood at 149 bps, an increase of 2 bps from the previous month.

Global 10-Year Treasury Yields



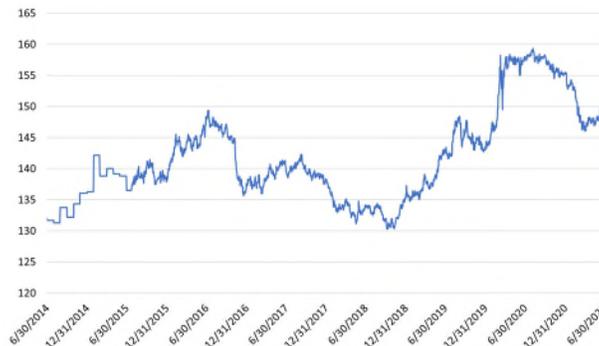
Sources: Bloomberg. Note: Data as of June 2021

7– 10yr Total Return Hedged Index, JPY



Sources: Bloomberg. Note: Data as of June 2021

7 – 10yr Total Return Hedged Index, EUR



Sources: Bloomberg. Note: Data as of June 2021

1.3 Ginnie Mae Yields– USD

Ginnie Mae MBS yields were stable in June 2021. GNMA II yields remained at 1.71% and GNMA I yields at 1.89%, down only 1 bps from the prior month. At the end of June, Ginnie Mae II SF yields were 24 bps higher than the 10-year Treasury yield, representing an increase in spread of 11 bps since last month. The security yields on the Ginnie Mae I SF were 42 bps higher than the 10-year Treasury yield at the end of June, representing an increase in spread of 13 bps since last month.

Ginnie Mae II SF Yield, USD



Ginnie Mae I SF Yield, USD

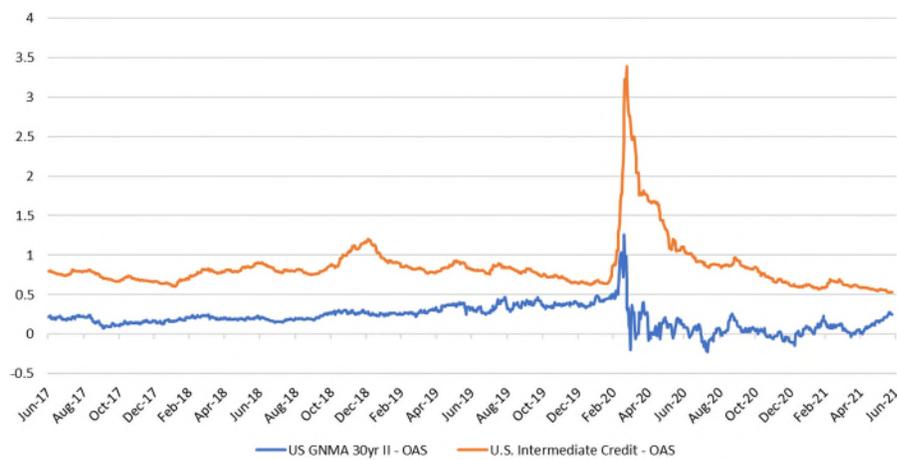


Sources: Bloomberg. Note: Data as of June 2021

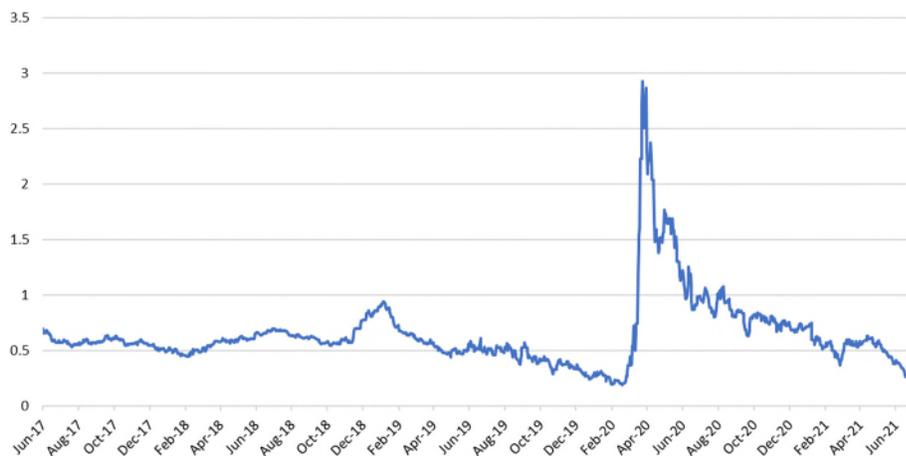
1.4 Ginnie Mae Yield Spreads – Intermediate Credit

The yield differential between US Intermediate Credit and GNMA II 30-year OAS increased in February 2020 in response to the COVID-19 pandemic. This was followed by tightening over the remainder of 2020 and into June of 2021. The OAS on intermediate credit recovered from its widening in early 2020, while the Ginnie Mae II 30-year fell to multi-year lows and has been recovering at a slower pace. The differential between the two has nearly reached pre-COVID levels, ending June 2021 at 25 bps and closer to the approximately 21 bps during January 2020.

G2 30 MBS versus Intermediate Credit



Spread between Intermediate Credit and 30-year G2 30 MBS OAS

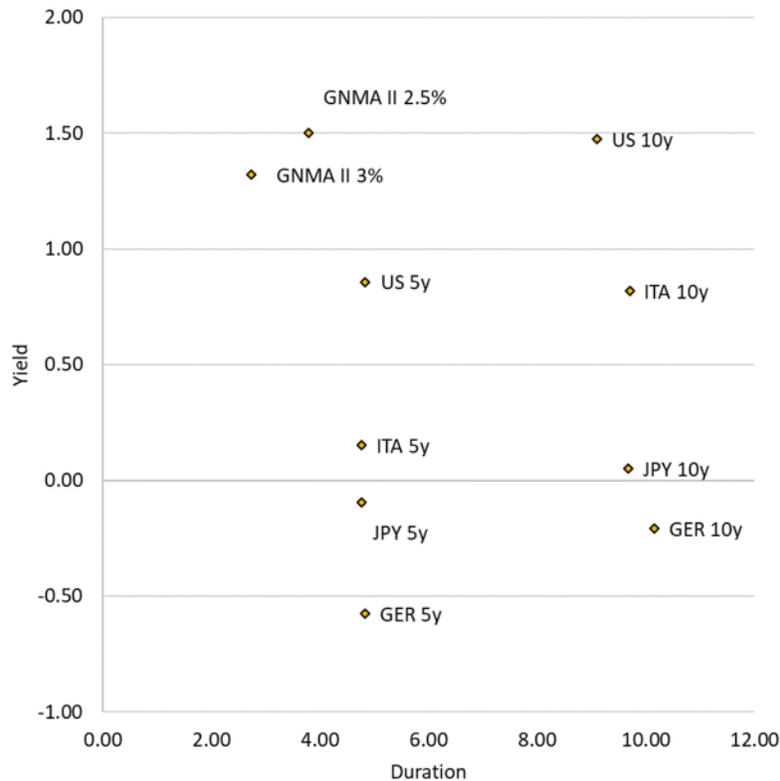


Sources: Bloomberg. Note: Data as of June 2021

1.5 Global Treasury Yield Per Duration

GNMA MBS, a short duration product, offers a higher yield in comparison to other government fixed income securities of various tenors with similar or longer duration.

Yield vs. Duration



Security	Duration	Yield
US 5y	4.83	0.86
US 10y	9.10	1.47
JPY 5y	4.76	-0.10
JPY 10y	9.68	0.05
GER 5y	4.82	-0.58
GER 10y	10.16	-0.21
ITA 5y	4.76	0.15
ITA 10y	9.70	0.82
GNMA II 2.5%	3.79	1.50
GNMA II 3%	2.73	1.32

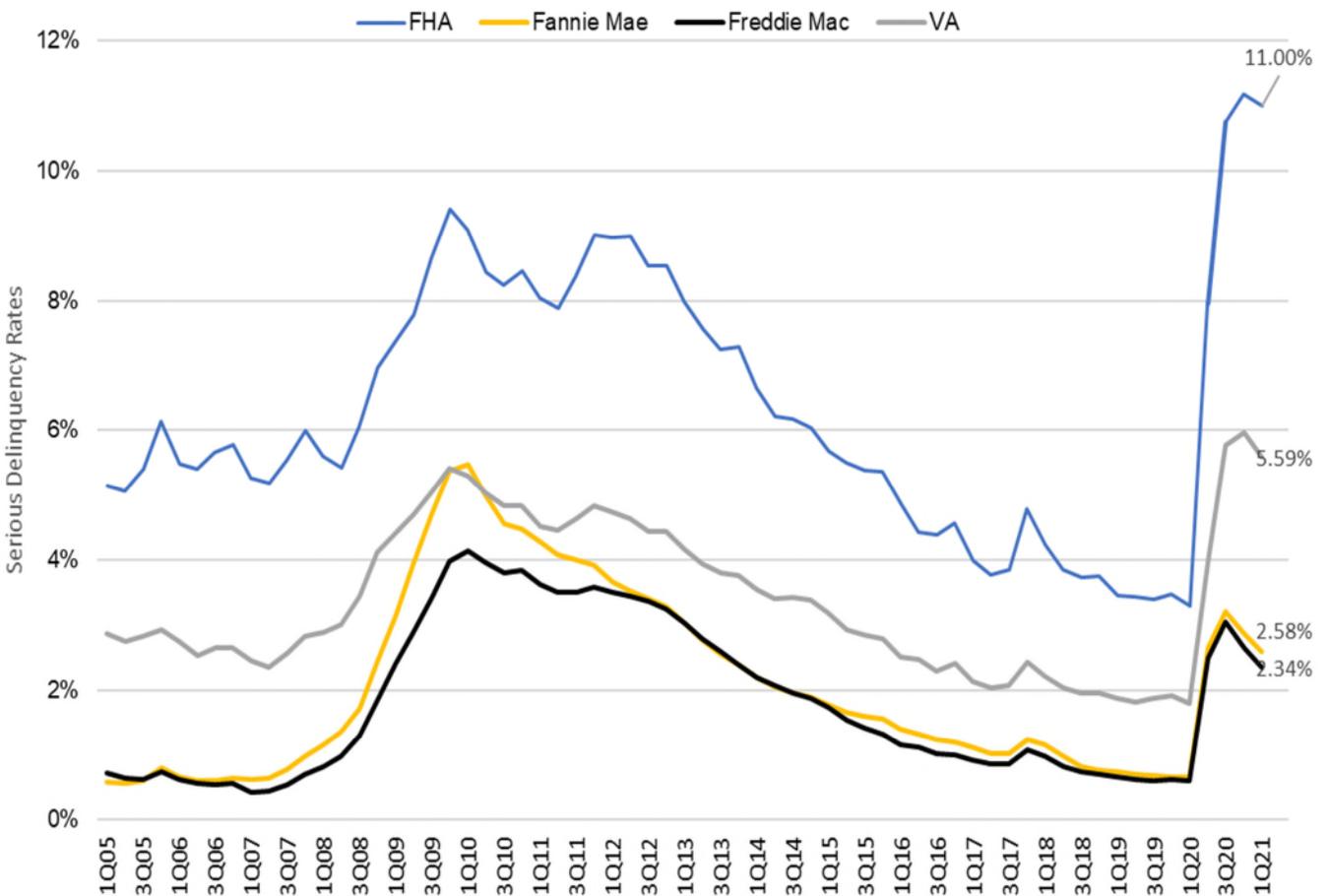
Sources: Bloomberg. Note: Yield and modified duration for GNMA II securities is from illustrative TBA using base prepayment assumptions and an assumed settlement of 8/19. All other data is as of June 2021. Yields are in base currency of security and unhedged.

2.0 State of the US Housing Market

2.1 Serious Delinquency Rates

Serious delinquency rates for single family GSE, FHA, and VA loans all fell slightly in Q1 2021. The increase in delinquencies from Q2 2020 to Q1 2021 reflects the impact of the pandemic on mortgage payments.

Serious Delinquency Rates: Single Family Loans



Sources: Fannie Mae and Freddie Mac Monthly Summary Reports, FHA Single Family Loan Performance Trends Report, and MBA Delinquency Survey.
Note: Serious delinquency is defined as 90 days or more past due or in the foreclosure process. Data as of Q1 2021.

2.2 National HPI

Nationally, nominal home prices have increased by 79.1% since the trough (see footnote), and now exceed their pre-crisis peak valuation on a nominal basis by 41.4%. Two states, Illinois and Connecticut, surpassed their 2007 peak only recently in March of 2021, currently 6.1% and 8% above their respective peaks.

State	2000 to Peak	Peak to Trough	Trough to Current	YOY	Current HPI % Above Peak
National	59.6%	-21.1%	79.1%	8.6%	41.4%
AK	66.9%	-5.0%	37.5%	6.6%	30.6%
AL	41.7%	-15.0%	56.3%	6.9%	32.8%
AR	39.8%	-11.0%	48.6%	7.3%	32.3%
AZ	110.2%	-49.5%	157.4%	11.7%	30.1%
CA	144.8%	-47.0%	124.8%	10.2%	19.2%
CO	32.4%	-10.1%	127.1%	9.6%	104.1%
CT	72.9%	-19.6%	32.0%	11.1%	6.1%
DC	162.5%	-12.1%	110.7%	7.7%	85.3%
DE	88.5%	-23.4%	47.7%	10.1%	13.2%
FL	130.1%	-46.5%	127.5%	8.8%	21.6%
GA	35.9%	-27.0%	102.1%	8.8%	47.5%
HI	138.5%	-26.8%	82.0%	3.9%	33.2%
IA	27.8%	-5.3%	48.5%	5.7%	40.5%
ID	73.3%	-32.2%	170.8%	15.8%	83.6%
IL	49.9%	-23.8%	41.7%	6.8%	8.0%
IN	19.1%	-8.7%	70.0%	8.7%	55.2%
KS	31.0%	-7.6%	59.1%	7.7%	47.0%
KY	28.9%	-5.4%	56.6%	7.1%	48.1%
LA	51.5%	-6.5%	40.0%	4.4%	30.9%
MA	69.8%	-18.1%	68.3%	8.9%	37.9%
MD	126.5%	-26.4%	48.8%	9.0%	9.5%
ME	72.0%	-12.3%	63.9%	9.9%	43.8%
MI	18.4%	-31.5%	101.8%	8.6%	38.2%
MN	52.6%	-23.0%	76.6%	7.5%	36.0%
MO	39.2%	-14.9%	66.2%	7.9%	41.4%
MS	38.9%	-12.8%	37.8%	5.3%	20.2%
MT	79.3%	-13.8%	85.1%	11.2%	59.6%
NC	39.8%	-14.0%	72.8%	9.0%	48.6%
ND	51.7%	-0.8%	64.6%	4.4%	63.3%
NE	24.3%	-6.0%	70.2%	8.1%	60.0%
NH	72.7%	-21.9%	70.9%	10.6%	33.5%
NJ	102.3%	-22.6%	43.7%	9.3%	11.2%
NM	66.6%	-18.0%	50.5%	8.7%	23.3%
NV	117.5%	-59.2%	181.4%	8.8%	14.8%
NY	75.8%	-10.4%	49.9%	8.4%	34.2%
OH	19.6%	-16.5%	70.5%	8.6%	42.4%
OK	36.9%	-4.7%	53.2%	6.8%	46.0%
OR	85.8%	-28.6%	117.6%	10.0%	55.4%
PA	69.1%	-10.8%	50.9%	8.0%	34.6%
RI	108.1%	-28.0%	69.7%	10.6%	22.3%
SC	40.5%	-15.9%	73.4%	7.0%	45.9%
SD	40.1%	-2.4%	66.1%	10.1%	62.0%
TN	38.6%	-12.8%	87.9%	9.7%	63.9%
TX	35.8%	-3.0%	87.0%	8.3%	81.4%
UT	65.2%	-26.1%	133.8%	13.9%	72.9%
VA	95.1%	-18.8%	53.9%	8.2%	25.0%
VT	78.0%	-10.0%	42.8%	7.6%	28.6%
WA	83.5%	-27.3%	130.8%	10.7%	67.8%
WI	38.6%	-14.1%	61.8%	7.2%	38.9%
WV	39.4%	-5.7%	36.3%	7.5%	28.5%
WY	85.0%	-9.7%	45.6%	5.2%	31.4%

Source: FHFA. Notes: HPI data as of March 2021. 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 2005 to 2008. Trough represents the month when HPI fell to the lowest level for each state/US after the housing bust, ranging from 2009 to 2012. Current is 3/2021, the latest HPI data period.

2.3 Ginnie Mae Agency Issuance and Agency Outstanding by State

Ginnie Mae MBS represent 27% of overall outstanding Agency issuance by unpaid loan balance and approximately 22% of new Agency issuance over the past year. The share of Ginnie Mae issuance varies across states, with the highest Ginnie Mae share in Mississippi (49%) and the lowest in the District of Columbia (13%). There continues to be a strong correlation between home prices and Ginnie Mae share, with the Ginnie Mae share higher in states with lower home prices.

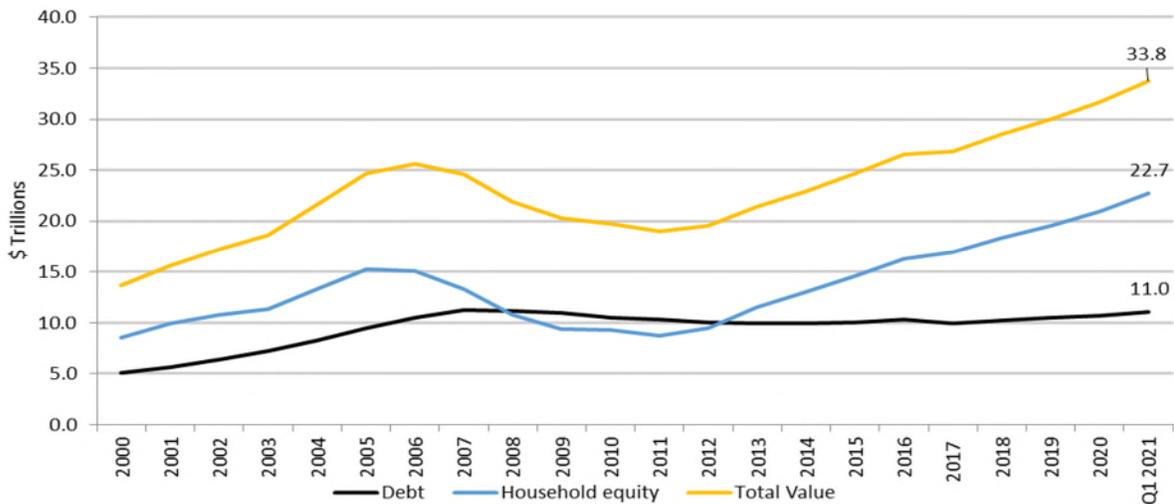
	Agency Issuance (past 1 year)				Agency Outstanding			
	GNMA Share	GNMA Loan Count	GNMA Avg. Loan Size	GSE Avg. Loan Size	GNMA Share by UPB	GNMA Loan Count	GNMA Avg. Loan Size	GSE Avg. Loan Size
National	22%	2,954,330	282,718.50	299,673.70	27%	10,831,660	182,557.91	211,306.70
AK	45%	11,156	342,788.63	298,208.71	48%	37,212	247,911.68	213,501.24
AL	35%	56,900	214,653.25	235,006.87	42%	233,948	141,732.42	166,815.03
AR	32%	30,119	179,302.77	212,062.90	41%	136,892	120,781.89	150,597.06
AZ	23%	106,366	276,191.08	274,166.17	27%	291,900	192,369.53	204,990.58
CA	15%	262,730	428,316.94	417,381.74	17%	709,621	301,649.11	307,147.96
CO	22%	89,086	359,218.73	342,160.52	25%	223,551	260,836.66	258,399.75
CT	20%	24,792	267,714.59	287,610.36	27%	104,671	190,376.13	201,800.83
DC	10%	2,798	480,814.87	476,697.32	13%	8,884	348,190.95	342,574.59
DE	27%	13,577	267,452.31	273,460.56	33%	50,753	191,855.33	199,292.90
FL	32%	258,940	274,105.97	264,939.40	34%	841,767	190,091.76	192,135.64
GA	30%	133,637	246,608.65	269,068.53	36%	501,521	161,273.25	189,873.78
HI	37%	15,075	591,442.12	467,395.52	32%	32,844	437,490.47	343,034.39
IA	15%	16,708	198,085.35	204,406.03	23%	83,110	123,627.28	144,066.35
ID	21%	21,596	285,077.79	270,166.71	26%	70,468	185,799.10	200,394.89
IL	16%	80,533	228,490.68	246,961.01	22%	352,511	150,058.91	172,630.10
IN	24%	63,891	192,136.29	202,536.98	33%	285,934	121,739.47	140,988.80
KS	21%	21,897	182,698.54	224,390.84	31%	99,063	129,637.16	154,960.72
KY	28%	38,517	198,635.93	209,181.78	36%	163,739	131,597.90	146,788.81
LA	32%	44,098	210,205.45	243,247.12	40%	189,511	147,902.70	171,371.69
MA	12%	33,744	369,179.71	361,764.80	16%	114,789	260,952.98	259,543.45
MD	30%	88,420	359,429.20	333,791.13	35%	287,510	249,922.13	239,877.73
ME	21%	10,187	234,121.92	252,197.53	28%	38,724	163,649.30	180,107.73
MI	15%	61,046	190,984.83	213,649.50	22%	284,112	123,011.99	148,980.62
MN	14%	40,399	259,657.42	261,256.92	19%	167,061	169,609.90	188,769.20
MO	22%	56,151	202,698.97	216,809.16	31%	251,139	130,615.97	153,589.76
MS	40%	24,037	205,439.11	217,618.47	49%	117,239	131,272.64	152,914.25
MT	20%	10,314	237,608.11	278,457.59	26%	34,654	189,564.52	199,686.08
NC	26%	116,064	240,986.09	264,666.25	31%	423,273	158,737.51	186,365.63
ND	20%	4,889	256,698.71	244,806.94	24%	16,530	182,107.46	179,440.81
NE	19%	14,758	208,956.50	214,229.88	28%	67,778	135,885.99	152,640.79
NH	19%	11,725	295,604.26	281,427.81	25%	40,837	209,739.67	202,039.23
NJ	16%	59,938	317,608.53	342,591.37	23%	230,865	223,406.48	244,127.33
NM	34%	22,621	235,422.84	239,625.25	40%	95,812	153,633.71	167,018.80
NV	31%	50,642	313,913.75	287,112.56	32%	134,812	223,337.27	215,401.14
NY	15%	48,620	317,135.54	336,755.19	21%	309,941	194,499.58	234,846.71
OH	23%	86,534	192,315.97	207,071.81	31%	428,063	120,713.86	140,447.75
OK	37%	39,466	205,963.11	217,373.39	45%	191,163	129,914.64	152,059.95
OR	18%	40,553	325,858.26	320,325.66	21%	116,817	229,847.98	235,455.67
PA	20%	78,282	217,332.34	251,667.99	28%	395,920	142,176.13	172,720.87
RI	24%	9,756	296,653.34	277,500.00	30%	35,194	210,543.82	202,495.01
SC	31%	67,333	245,352.95	249,925.85	36%	229,463	165,528.40	178,714.16
SD	23%	8,258	233,204.17	227,306.94	31%	29,805	157,980.44	168,887.43
TN	28%	73,254	247,064.73	261,107.89	35%	284,092	157,130.90	186,859.65
TX	29%	278,836	260,191.62	273,560.44	34%	1,073,462	165,142.01	193,943.34
UT	17%	37,680	321,524.42	309,639.33	21%	107,371	226,759.71	241,436.68
VA	33%	143,262	356,002.15	341,199.50	37%	439,321	239,880.35	241,201.25
VT	16%	2,949	241,814.17	252,127.75	20%	12,374	172,567.74	170,451.72
WA	20%	89,240	368,573.06	371,734.52	23%	246,743	255,826.60	269,989.11
WI	13%	32,017	217,320.49	221,239.76	18%	126,952	144,957.51	156,024.09
WV	38%	12,969	200,995.45	200,914.86	45%	56,386	135,046.25	137,828.65
WY	31%	7,970	263,335.01	258,637.76	37%	25,558	192,726.26	192,365.70

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

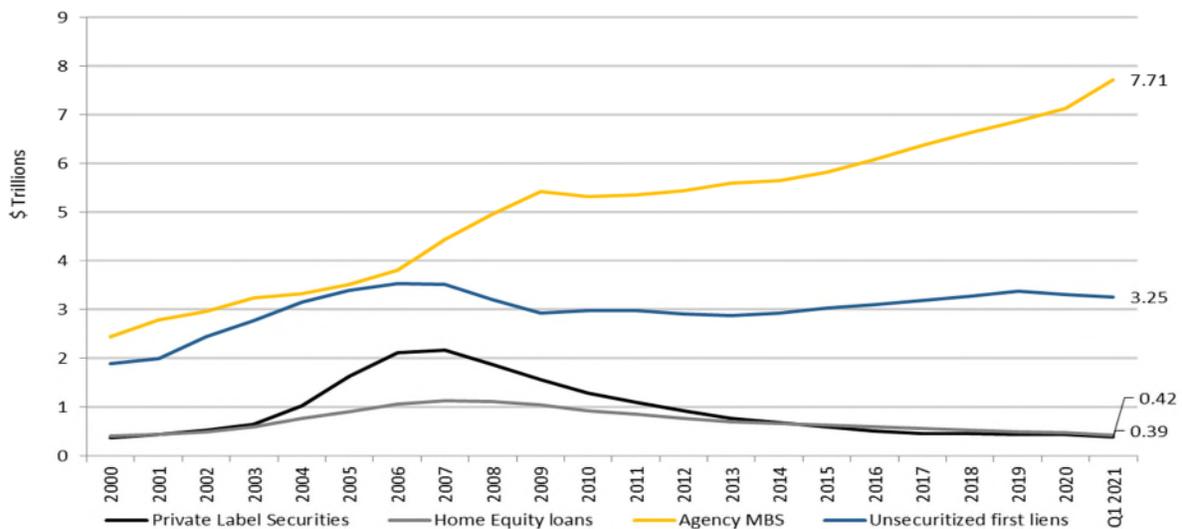
2.4 Size and Value of the US Housing Market

The trending increase in total value of the US housing market has been driven primarily by growing home equity since the recovery from the Global Financial Crisis. Mortgage debt outstanding has been relatively flat in the past six months, increasing from \$10.8 trillion in Q3 2020 to \$11.0 trillion in Q1 2021 while total household equity increased from \$21.2 trillion to \$22.7 trillion. The total value of the single-family housing market reached \$33.8 trillion in Q1 2021. Agency MBS account for 65.5% of the total mortgage debt outstanding.

Value of the US Housing Market



Size of the US Residential Mortgage Market

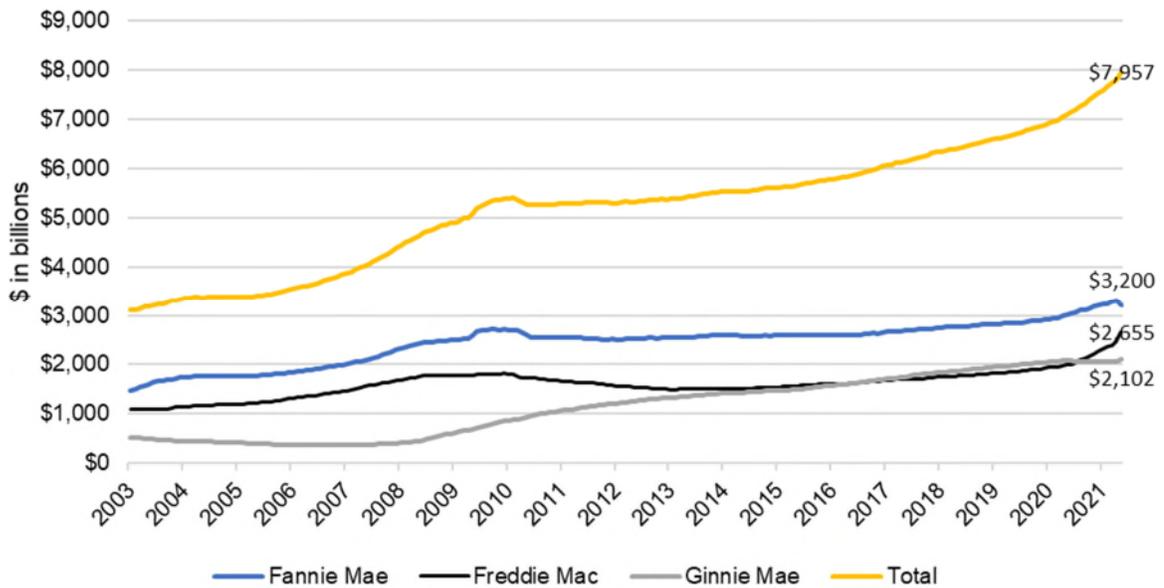


Source: Federal Reserve Flow of Funds Data. Notes: Data as of Q1 2021.

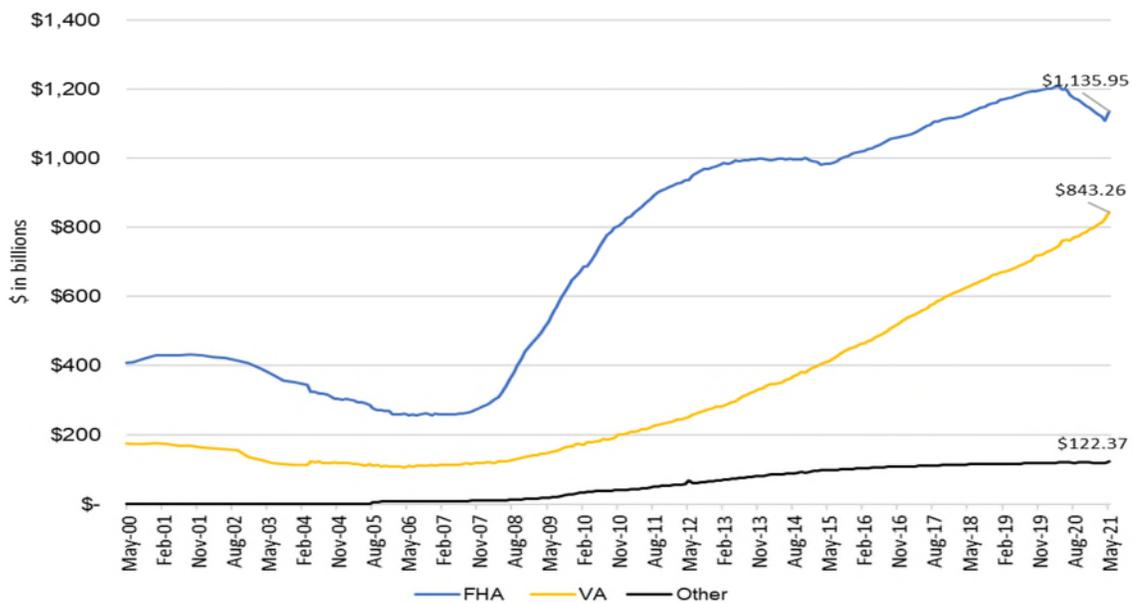
2.5 Outstanding Agency MBS

As of May 2021, according to the Agency MBS disclosure files, outstanding securities in the Agency market totaled \$7.96 trillion: 40.2% Fannie Mae, 33.4% Freddie Mac, and 26.4% Ginnie Mae MBS. Within the Ginnie Mae market, both FHA and VA have grown rapidly since 2009, although since May 2020, FHA has contracted. FHA comprises 53.7% of total Ginnie Mae MBS outstanding, while VA comprises 40.4%.

Outstanding Agency Mortgage-Backed Securities



Composition of Outstanding Ginnie Mae Mortgage-Backed Securities

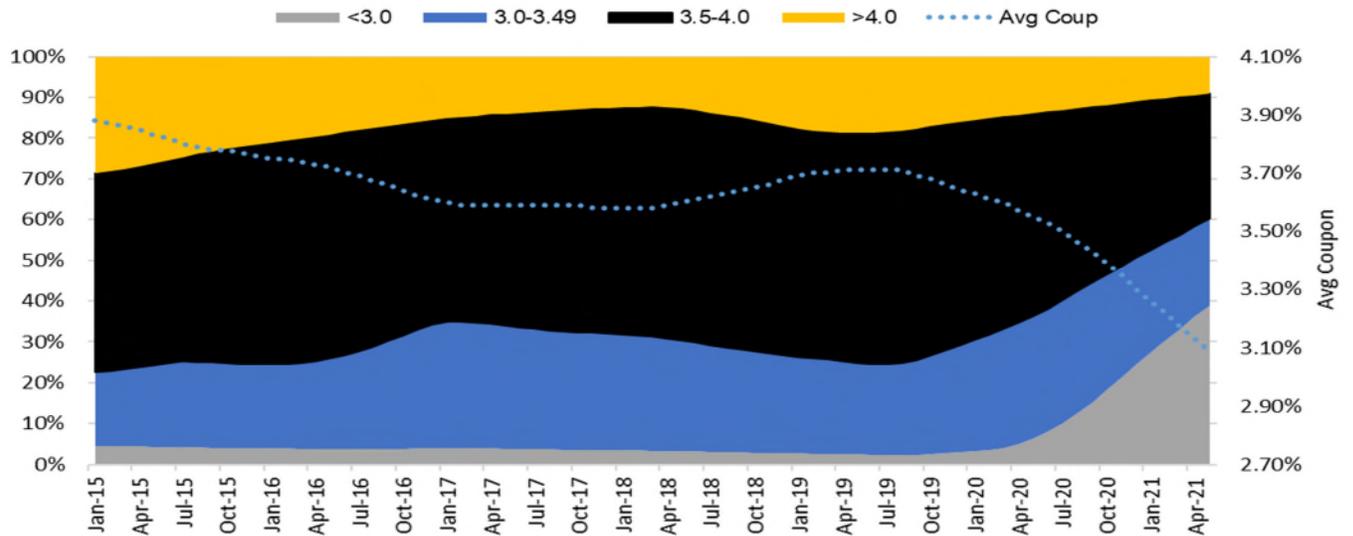


Sources: Data as of May 2021 is based on outstanding balances in the Ginnie Mae/Freddie Mac/Fannie Mae Loan Level MBS Disclosure Files.

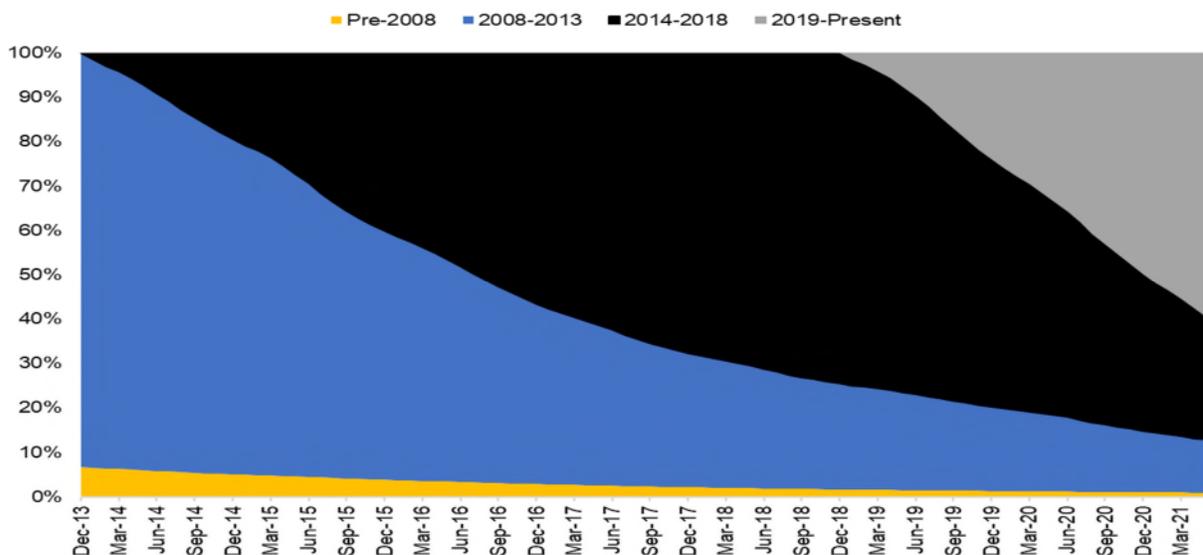
2.6 Outstanding Ginnie Mae MBS Volume by Coupon and Vintage Over Time

As of May 2021, the average coupon on outstanding Ginnie Mae pools was 3.09%. The share of outstanding MBS pools with coupons below 3.0% has grown significantly since 2020 due to declining interest rates and attendant refinance opportunities. The bottom chart shows that loans originated since 2019 now comprise approximately 60% of Ginnie MBS collateral outstanding, as older vintages continue to refinance in substantial numbers.

Outstanding Ginnie Balance, by Coupon



Outstanding Ginnie Balance, by Vintage



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

2.7 Characteristics of Ginnie Mae Loans in Forbearance

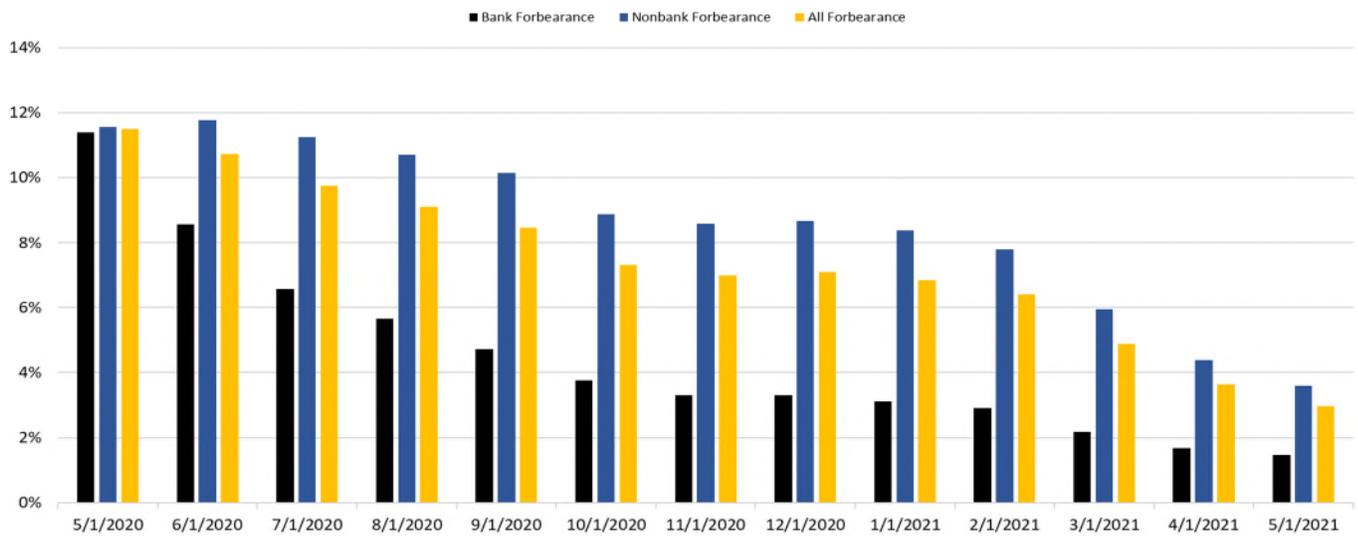
In May 2021, a total of 473,767 Ginnie Mae loans were in forbearance, 36,330 of which were removed from pools and 437,437 which still actively remain in pools. Most liquidated loans (27,951) were FHA and within that subset, 23,293 of those loans were originated by nonbanks. Of the loans in forbearance that have been liquidated from pools, there is a higher concentration of purchase loans (as opposed to refi loans) when compared to loans in forbearance that have not been liquidated from pools.

All Loans in Forbearance – May 2021						
	FICO Score*	Note Rate*	Current Principal Balance Median	FTHB Share (%)	Purchase Share (%)	Loan Count
Ginnie	659	4.0	\$ 168,300.18	76.6	67.9	473,767
Bank	674	4.1	\$ 132,561.83	72.2	76.6	62,200
Nonbank	658	4.0	\$ 173,542.27	77.1	67.0	411,567
FHA	655	4.1	\$ 164,842.10	78.4	72.7	336,110
Bank	666	4.2	\$ 120,905.26	75.1	81.1	45,211
Nonbank	654	4.0	\$ 171,649.96	78.7	72.0	290,899
VA	668	3.7	\$ 215,761.80	66.4	48.2	93,962
Bank	685	3.8	\$ 195,033.00	64.4	66.3	13,361
Nonbank	665	3.7	\$ 218,949.66	66.8	45.5	80,601
Loans in Forbearance and Removed from Pools – May 2021						
	FICO Score*	Note Rate*	Current Principal Balance Median	FTHB Share (%)	Purchase Share (%)	Loan Count
Ginnie	659	4.1	\$ 167,573.52	76.7	72.3	36,330
Bank	673	4.1	\$ 147,602.19	77.3	80.2	6,202
Nonbank	657	4.1	\$ 171,233.88	76.6	70.9	30,128
FHA	656	4.2	\$ 165,865.94	77.7	74.5	27,951
Bank	667	4.2	\$ 142,129.96	79.5	85.1	4,658
Nonbank	654	4.2	\$ 170,427.65	77.3	72.8	23,293
VA	668	3.8	\$ 220,654.80	68.5	57.0	5,363
Bank	685	3.9	\$ 194,729.50	66.5	63.7	1,186
Nonbank	663	3.8	\$ 228,506.18	69.0	55.4	4,177
Loans in Forbearance that Remain in Pools – May 2021						
	FICO Score*	Note Rate*	Current Principal Balance Median	FTHB Share (%)	Purchase Share (%)	Loan Count
Ginnie	659	4.0	\$ 168,351.40	76.6	67.6	437,437
Bank	674	4.1	\$ 130,850.52	71.5	76.1	55,998
Nonbank	658	3.9	\$ 173,718.05	77.1	66.7	381,439
FHA	655	4.0	\$ 164,752.22	78.4	72.6	308,159
Bank	666	4.2	\$ 118,793.59	74.4	80.4	40,553
Nonbank	654	4.0	\$ 171,755.50	78.9	71.9	267,606
VA	668	3.7	\$ 215,394.06	66.2	47.7	88,599
Bank	685	3.8	\$ 195,110.29	64.2	66.6	12,175
Nonbank	665	3.7	\$ 218,391.89	66.6	45.0	76,424

Sources: Ginnie Mae loan level MBS disclosure and forbearance file and Ginnie Mae Issuer Operational Performance Profile (IOPP) -Peer Group Listings.
Notes: Data as of May 2021; *Averages weighted by remaining principal balance of the loans.

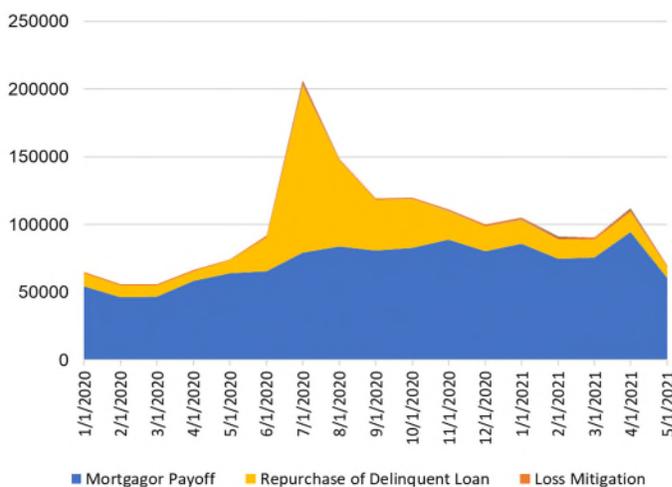
The share of Ginnie Mae loans in forbearance hit its one-year trough (3%) in May 2021. The forbearance rate for Ginnie Mae MBS issued by nonbanks continues to be higher than that of Ginnie Mae MBS issued by banks. This is partly due to banks continuing to buy out loans in forbearance more aggressively than nonbanks. In May 2021 of the 62,200 Ginnie Mae bank loans in forbearance, approximately 10% were liquidated from pools; whereas, of the 411,567 nonbank Ginnie Mae loans in forbearance, approximately 7% were liquidated. The number of loans liquidated from pools dropped off for both bank and nonbank issuers in May 2021 from the previous month (charts below).

Share of Ginnie Mae Loans in Forbearance



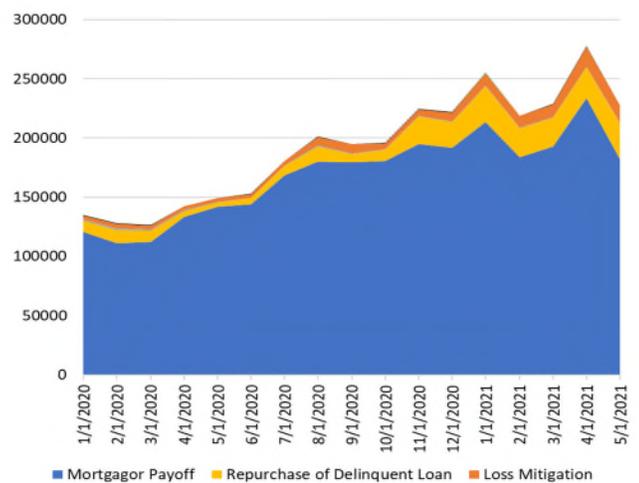
Sources: eMBS and Urban Institute. Data beginning May 2021 sourced from Ginnie Mae forbearance disclosure files and IOPP Peer Group list. Notes: Data as of May 2021.

Number of Loans Removed from Pools: Bank



Additionally, 11 loans removed due to 'Foreclosure with Claim' and 256 loans removed due to 'Other' in May 2021.

Number of Loans Removed from Pools: Nonbank

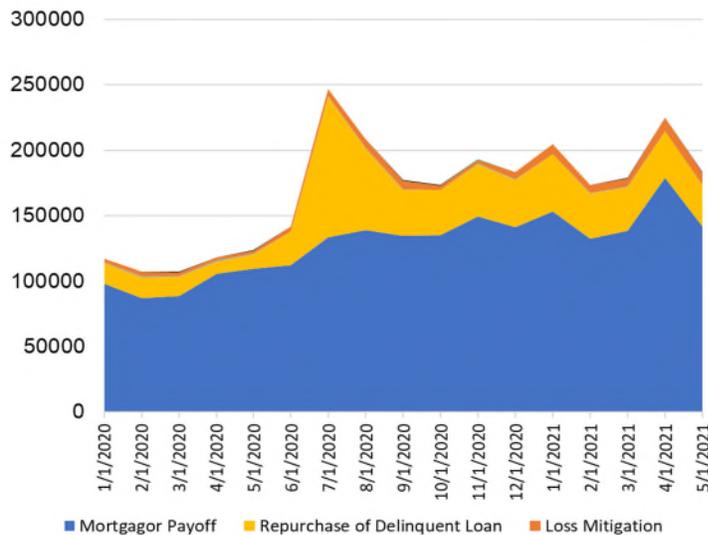


Additionally, 440 loans removed due to 'Foreclosure with Claim', 2 loans removed due to 'Substitution' and 157 loans removed due to 'Other' in May 2021.

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

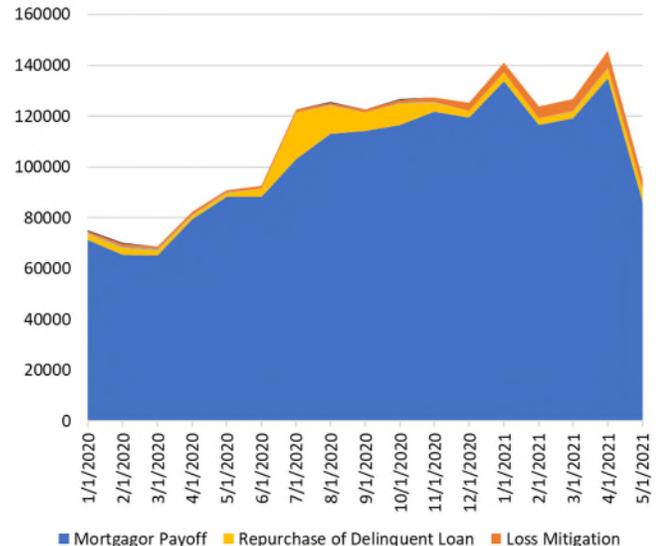
Of the Ginnie Mae loans that are liquidated from pools due to mortgage delinquency, a higher share of the loans are FHA versus VA loans (top charts, yellow areas). Liquidated loans across FHA and VA are also more likely to have coupons greater than or equal to 3.5% (bottom charts). In May 2021, 31,616 FHA and 4,614 VA loans were bought out of pools (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 interest rates (blue areas).

Number of Loans Removed from Pools: FHA



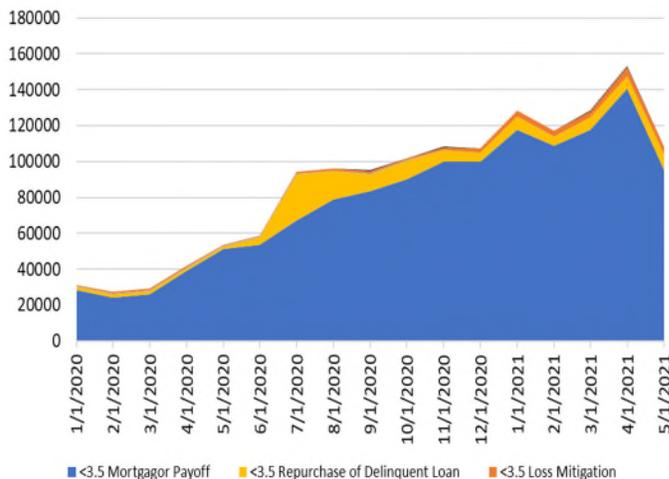
Additionally, 218 loans removed due to 'Foreclosure with Claim', 2 loans removed due to 'Substitution' and 267 loans removed due to 'Other' in May 2021.

Number of Loans Removed from Pools: VA

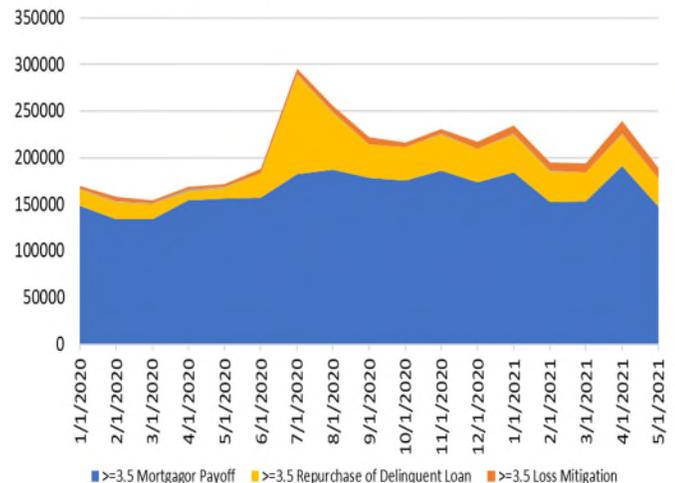


Additionally, 146 loans removed due to 'Foreclosure with Claim' and 112 loans removed due to 'Other' in May 2021.

Number of Loans Removed from Pools by Coupon



Additionally, 89 loans removed due to 'Foreclosure with Claim', 2 loans removed due to 'Substitution' and 204 loans removed due to 'Other' in May 2021.



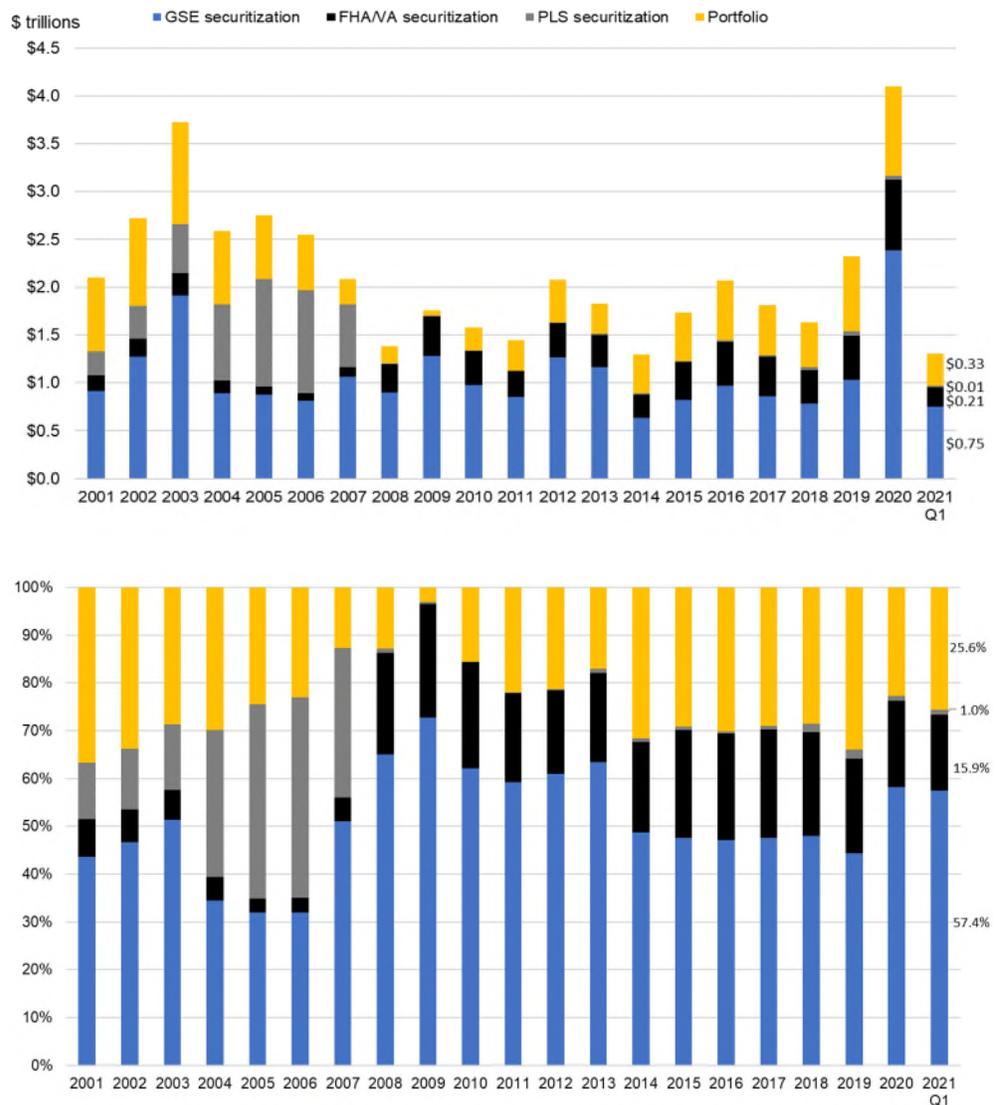
Additionally, 362 loans removed due to 'Foreclosure with Claim' and 209 loans removed due to 'Other' in May 2021.

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

2.8 Origination Volume Over Time

2020 was a record year for first-lien mortgage originations with \$4.1 trillion during the year. This mortgage loan origination number exceeds the 2003 volume of \$3.73 trillion, the previous record holder, by \$375 billion. Strong origination volume trends have continued into Q1 2021, with \$1.3 trillion in originations, which outpaces Q1 2020 issuance by approximately 89%. At this rate, 2021 originations would be set to outpace record-level origination volume of 2020. As of Q1 2021, the share of private label securitizations (PLS) is up approximately 84% from Q4 2020 and is at its highest level (\$13.4 billion) since Q4 2019. While GSE securitization share is down by 6.7% Q4 2020-Q1 2021, GSE share is still up 137.8% from Q1 2020-Q1 2021, which reflects the large number of refinances done through this channel.

First Lien Origination Volume & Share



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

3.0 US Agency Market, Originations

2021 year to date Agency gross issuance is on pace to exceed the historic issuance observed in 2020 of \$3.18 trillion. Within the Ginnie Mae market, VA production is outpacing FHA's significantly. Despite Agency gross issuance set to exceed record levels in 2021, net issuance has remained stagnant.

Agency Gross Issuance (\$ in billions)					
Issuance Year	Fannie Mae	Freddie Mac	GSE Total	Ginnie Mae	Total
2000	\$202.8	\$157.9	\$360.6	\$102.2	\$462.8
2001	\$506.9	\$378.2	\$885.1	\$171.5	\$1,056.6
2002	\$710.0	\$529.0	\$1,238.9	\$169.0	\$1,407.9
2003	\$1,174.4	\$700.5	\$1,874.9	\$213.1	\$2,088.0
2004	\$517.5	\$355.2	\$872.6	\$119.2	\$991.9
2005	\$514.1	\$379.9	\$894.0	\$81.4	\$975.3
2006	\$500.2	\$352.9	\$853.0	\$76.7	\$929.7
2007	\$633.0	\$433.3	\$1,066.2	\$94.9	\$1,161.1
2008	\$562.7	\$348.7	\$911.4	\$267.6	\$1,179.0
2009	\$817.1	\$462.9	\$1,280.0	\$451.3	\$1,731.3
2010	\$626.6	\$377.0	\$1,003.5	\$390.7	\$1,394.3
2011	\$578.2	\$301.2	\$879.3	\$315.3	\$1,194.7
2012	\$847.6	\$441.3	\$1,288.8	\$405.0	\$1,693.8
2013	\$749.9	\$426.7	\$1,176.6	\$393.6	\$1,570.2
2014	\$392.9	\$258.0	\$650.9	\$296.3	\$947.2
2015	\$493.9	\$351.9	\$845.7	\$436.3	\$1,282.0
2016	\$600.5	\$391.1	\$991.6	\$508.2	\$1,499.8
2017	\$531.3	\$345.9	\$877.3	\$455.6	\$1,332.9
2018	\$480.9	\$314.1	\$795.0	\$400.6	\$1,195.6
2019	\$597.4	\$445.2	\$1,042.6	\$508.6	\$1,551.2
2020	\$1,343.4	\$1,064.1	\$2,407.5	\$775.4	\$3,182.9
2021 YTD	\$684.7	\$585.4	\$1,270.0	\$384.7	\$1,654.7

Ginnie Mae Gross Issuance (\$ in billions)				
Issuance Year	FHA	VA	Other	Total
2000	\$80.2	\$18.8	\$3.2	\$102.2
2001	\$133.8	\$34.7	\$3.1	\$171.5
2002	\$128.6	\$37.9	\$2.5	\$169.0
2003	\$147.9	\$62.7	\$2.5	\$213.1
2004	\$85.0	\$31.8	\$2.5	\$119.2
2005	\$55.7	\$23.5	\$2.1	\$81.4
2006	\$51.2	\$23.2	\$2.3	\$76.7
2007	\$67.7	\$24.2	\$3.0	\$94.9
2008	\$221.7	\$39.0	\$6.9	\$267.6
2009	\$359.9	\$74.6	\$16.8	\$451.3
2010	\$304.9	\$70.6	\$15.3	\$390.7
2011	\$216.1	\$82.3	\$16.9	\$315.3
2012	\$253.4	\$131.3	\$20.3	\$405.0
2013	\$239.2	\$132.2	\$22.2	\$393.6
2014	\$163.9	\$111.4	\$21.0	\$296.3
2015	\$261.5	\$155.6	\$19.2	\$436.3
2016	\$281.8	\$206.5	\$19.9	\$508.2
2017	\$257.6	\$177.8	\$20.2	\$455.6
2018	\$222.6	\$160.8	\$17.2	\$400.6
2019	\$266.9	\$225.7	\$16.0	\$508.6
2020	\$327.0	\$423.5	\$24.9	\$775.4
2021 YTD	\$160.9	\$213.0	\$10.8	\$384.7



US Agency Market, Originations

Agency Net Issuance (\$ in billions)					
Issuance Year	Fannie Mae	Freddie Mac	GSE	Ginnie Mae	Total
2000	\$92.0	\$67.8	\$159.8	\$29.3	\$189.1
2001	\$216.6	\$151.8	\$368.4	-\$9.9	\$358.5
2002	\$218.9	\$138.3	\$357.2	-\$51.2	\$306.1
2003	\$293.7	\$41.1	\$334.9	-\$77.6	\$257.3
2004	\$32.3	\$50.2	\$82.5	-\$40.1	\$42.4
2005	\$62.5	\$111.7	\$174.2	-\$42.2	\$132.0
2006	\$164.3	\$149.3	\$313.6	\$0.2	\$313.8
2007	\$296.1	\$218.8	\$514.9	\$30.9	\$545.7
2008	\$213.0	\$101.8	\$314.8	\$196.4	\$511.3
2009	\$208.1	\$42.5	\$250.6	\$257.4	\$508.0
2010	-\$156.4	-\$146.8	-\$303.2	\$198.3	-\$105.0
2011	-\$32.6	-\$95.8	-\$128.4	\$149.6	\$21.2
2012	\$32.9	-\$75.3	-\$42.4	\$119.1	\$76.8
2013	\$53.5	\$11.8	\$65.3	\$89.6	\$154.9
2014	-\$4.0	\$30.0	\$26.0	\$61.6	\$87.7
2015	\$3.5	\$65.0	\$68.4	\$97.3	\$165.7
2016	\$60.5	\$66.8	\$127.4	\$126.1	\$253.5
2017	\$83.7	\$77.0	\$160.7	\$132.3	\$293.0
2018	\$81.9	\$67.6	\$149.4	\$112.0	\$261.5
2019	\$87.4	\$110.3	\$197.7	\$95.7	\$293.5
2020	\$289.3	\$343.5	\$632.8	\$19.9	\$652.7
2021 YTD	\$171.5	\$222.0	\$393.5	-\$13.7	\$379.8

Ginnie Mae Net Issuance (\$ in billions)				
Issuance Year	FHA	VA	Other	Total
2000	\$29.0	\$0.3	\$0.0	\$29.3
2001	\$0.7	-\$10.6	\$0.0	-\$9.9
2002	-\$22.5	-\$28.7	\$0.0	-\$51.2
2003	-\$56.5	-\$21.1	\$0.0	-\$77.6
2004	-\$45.2	\$5.1	\$0.0	-\$40.1
2005	-\$37.3	-\$12.1	\$7.2	-\$42.2
2006	-\$4.7	\$3.8	\$1.2	\$0.2
2007	\$20.2	\$8.7	\$2.0	\$30.9
2008	\$173.3	\$17.7	\$5.4	\$196.4
2009	\$206.4	\$35.1	\$15.8	\$257.4
2010	\$158.6	\$29.6	\$10.0	\$198.3
2011	\$102.8	\$34.0	\$12.8	\$149.6
2012	\$58.9	\$45.9	\$14.3	\$119.1
2013	\$20.7	\$53.3	\$13.9	\$87.9
2014	-\$4.8	\$53.9	\$12.5	\$61.6
2015	\$22.5	\$66.9	\$7.9	\$97.3
2016	\$45.6	\$73.2	\$6.0	\$124.9
2017	\$50.1	\$76.1	\$5.0	\$131.3
2018	\$49.2	\$61.2	\$3.5	\$113.9
2019	\$35.9	\$58.0	\$1.9	\$95.7
2020	-\$52.5	\$71.0	\$1.3	\$19.9
2021 YTD	-\$46.5	\$35.7	-\$2.9	-\$13.7

Source: Beginning May 2021, data for Gross and Net Issuance was sourced from Fannie Mae, Freddie Mac, and Ginnie Mae loan level disclosure files. Prior months data was sourced from eMBS and Urban Institute.



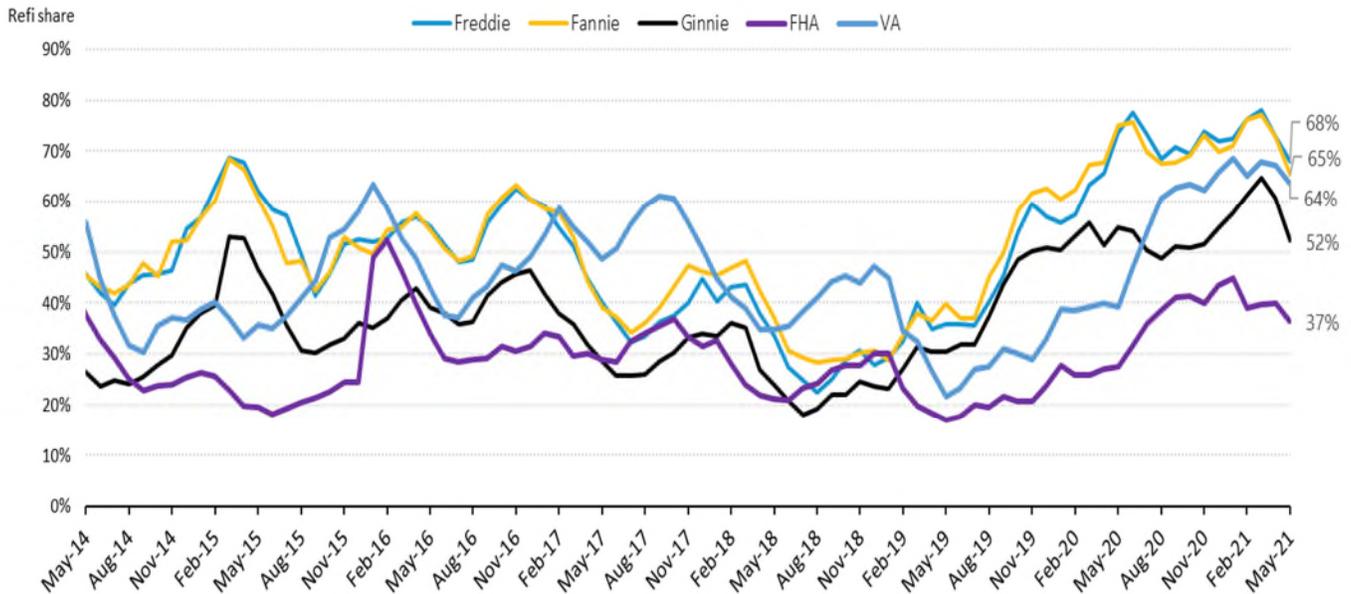
US Agency Market, Originations

Agency Gross Issuance Amount (\$ in billions)						Agency Net Issuance Amount (\$ in Billions)				
Month	Fannie Mae	Freddie Mac	Ginnie Mae	GSEs	Total	Fannie Mae	Freddie Mac	Ginnie Mae	GSEs	Total
Jan-18	\$47.4	\$21.4	\$35.4	\$68.8	\$104.2	\$12.1	\$0.2	\$7.7	\$12.3	\$20.0
Feb-18	\$40.3	\$21.5	\$32.0	\$61.8	\$93.8	\$8.3	\$2.2	\$7.1	\$10.5	\$17.6
Mar-18	\$35.6	\$21.3	\$29.1	\$56.9	\$86.0	\$4.9	\$3.0	\$6.3	\$7.9	\$14.1
Apr-18	\$36.3	\$26.2	\$32.8	\$62.5	\$95.3	\$1.7	\$6.0	\$8.8	\$7.7	\$16.5
May-18	\$38.9	\$27.5	\$33.8	\$66.4	\$100.2	\$5.1	\$7.2	\$10.5	\$12.3	\$22.8
Jun-18	\$38.2	\$28.8	\$35.6	\$67.0	\$102.6	\$2.5	\$6.8	\$10.3	\$9.3	\$19.6
Jul-18	\$40.3	\$26.2	\$35.6	\$66.5	\$102.2	\$4.2	\$3.7	\$10.4	\$7.8	\$18.3
Aug-18	\$50.4	\$29.9	\$37.5	\$80.3	\$117.8	\$15.8	\$7.9	\$12.5	\$23.6	\$36.1
Sep-18	\$41.8	\$30.1	\$34.8	\$71.8	\$106.6	\$5.9	\$6.2	\$9.0	\$12.1	\$21.1
Oct-18	\$39.8	\$27.4	\$33.2	\$67.1	\$100.3	\$9.7	\$7.1	\$11.4	\$16.8	\$28.2
Nov-18	\$35.1	\$30.1	\$32.4	\$65.2	\$97.6	\$3.6	\$11.0	\$9.8	\$14.6	\$24.4
Dec-18	\$36.9	\$23.9	\$28.4	\$60.7	\$89.1	\$8.2	\$6.4	\$8.2	\$14.6	\$22.8
Jan-19	\$33.3	\$19.2	\$29.0	\$52.6	\$81.6	\$5.9	\$2.5	\$9.2	\$8.3	\$17.6
Feb-19	\$27.3	\$19.9	\$23.5	\$47.2	\$70.7	\$1.4	\$3.4	\$4.6	\$4.7	\$9.3
Mar-19	\$29.6	\$27.3	\$26.6	\$56.9	\$83.5	\$1.8	\$10.3	\$5.6	\$12.0	\$17.6
Apr-19	\$33.1	\$30.8	\$32.9	\$63.9	\$96.8	\$1.3	\$10.8	\$8.3	\$12.0	\$20.4
May-19	\$44.5	\$34.3	\$38.8	\$78.8	\$117.6	\$6.7	\$9.8	\$9.4	\$16.6	\$26.0
Jun-19	\$44.6	\$34.0	\$43.3	\$78.6	\$121.9	\$1.9	\$5.9	\$9.0	\$7.8	\$16.8
Jul-19	\$51.7	\$36.9	\$45.9	\$88.6	\$134.5	\$10.9	\$10.1	\$11.0	\$21.0	\$32.0
Aug-19	\$71.1	\$50.4	\$51.2	\$121.4	\$172.6	\$20.8	\$17.1	\$8.7	\$37.9	\$46.6
Sep-19	\$67.1	\$43.0	\$52.0	\$110.1	\$162.1	\$14.1	\$7.5	\$6.5	\$21.5	\$28.0
Oct-19	\$65.0	\$46.2	\$58.4	\$111.2	\$169.6	\$7.4	\$7.1	\$11.9	\$14.6	\$26.5
Nov-19	\$68.1	\$50.7	\$54.3	\$118.7	\$173.1	\$5.2	\$8.6	\$4.1	\$13.8	\$18.0
Dec-19	\$62.1	\$52.5	\$52.7	\$114.6	\$167.3	\$10.1	\$17.3	\$7.4	\$27.3	\$34.7
Jan-20	\$61.7	\$51.4	\$56.0	\$113.1	\$169.0	\$9.1	\$16.5	\$8.6	\$25.6	\$34.2
Feb-20	\$56.5	\$39.5	\$51.2	\$96.0	\$147.2	\$9.4	\$7.9	\$7.1	\$17.4	\$24.4
Mar-20	\$69.5	\$41.4	\$53.0	\$110.8	\$163.9	\$17.9	\$6.3	\$8.8	\$24.2	\$33.0
Apr-20	\$101.6	\$76.3	\$61.4	\$177.9	\$239.3	\$30.5	\$27.5	\$10.2	\$58.0	\$68.2
May-20	\$124.3	\$70.6	\$60.8	\$194.9	\$255.7	\$35.2	\$8.2	\$5.7	\$43.4	\$49.1
Jun-20	\$118.9	\$78.1	\$58.5	\$197.0	\$255.4	\$30.0	\$15.9	\$1.3	\$45.9	\$47.2
Jul-20	\$125.0	\$108.1	\$66.5	\$233.1	\$299.5	\$23.4	\$38.0	-\$15.5	\$61.4	\$45.9
Aug-20	\$137.6	\$113.6	\$73.6	\$251.3	\$324.8	\$34.2	\$43.4	-\$4.1	\$77.6	\$73.5
Sep-20	\$122.9	\$102.1	\$72.4	\$225.0	\$297.5	\$16.5	\$29.9	\$1.0	\$46.5	\$47.5
Oct-20	\$142.3	\$124.8	\$72.6	\$267.1	\$339.7	\$28.9	\$48.3	-\$0.3	\$77.2	\$76.9
Nov-20	\$152.4	\$131.5	\$72.6	\$283.9	\$356.5	\$31.4	\$48.4	-\$4.5	\$79.8	\$75.3
Dec-20	\$130.8	\$126.7	\$76.9	\$257.5	\$334.4	\$22.8	\$53.1	\$1.7	\$75.8	\$77.5
Jan-21	\$141.6	\$117.3	\$78.2	\$258.9	\$337.1	\$25.9	\$37.9	-\$6.5	\$63.8	\$57.3
Feb-21	\$118.8	\$115.5	\$72.3	\$234.3	\$306.6	\$16.8	\$44.3	-\$0.9	\$61.1	\$60.2
Mar-21	\$143.9	\$118.9	\$76.9	\$262.8	\$339.7	\$37.6	\$44.0	\$1.0	\$81.6	\$82.6
Apr-21	\$148.0	\$142.3	\$85.6	\$290.3	\$375.9	\$26.2	\$57.0	-\$4.2	\$83.3	\$79.0
May-21	\$132.3	\$91.4	\$71.7	\$223.7	\$295.4	\$64.9	\$38.8	-\$3.1	\$103.7	\$100.6

Source: Beginning May 2021, data for Gross and Net Issuance was sourced from Fannie Mae, Freddie Mac, and Ginnie Mae loan level disclosure files. Prior month data was sourced from eMBS and Urban Institute.

The FHA refinance share stood at 37% in May 2021, below the 68% refi share for Freddie originations, the 65% share for Fannie, and the 64% share for the VA. The total Ginnie refinance share stood at 52% in May. Refinances as a share of all originations grew during 2019 and 2020 as interest rates fell. Thus far in 2021, refinance as a share has begun to drop off from the increase witnessed in 2019 and 2020.

Percent Refi at Issuance

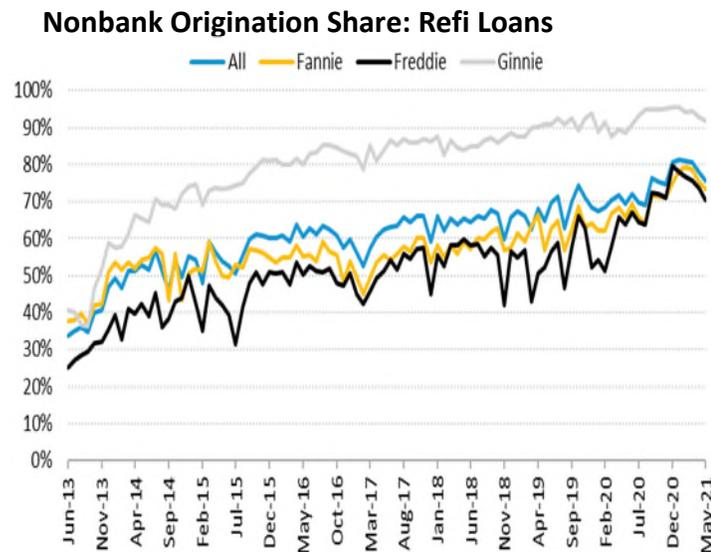
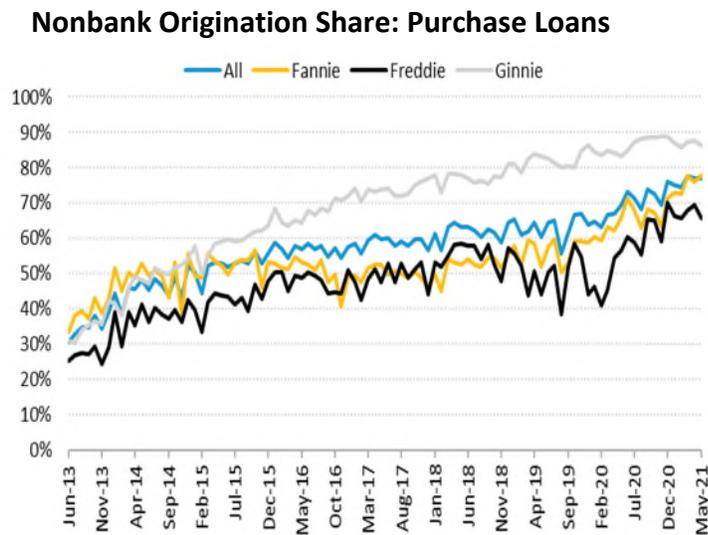
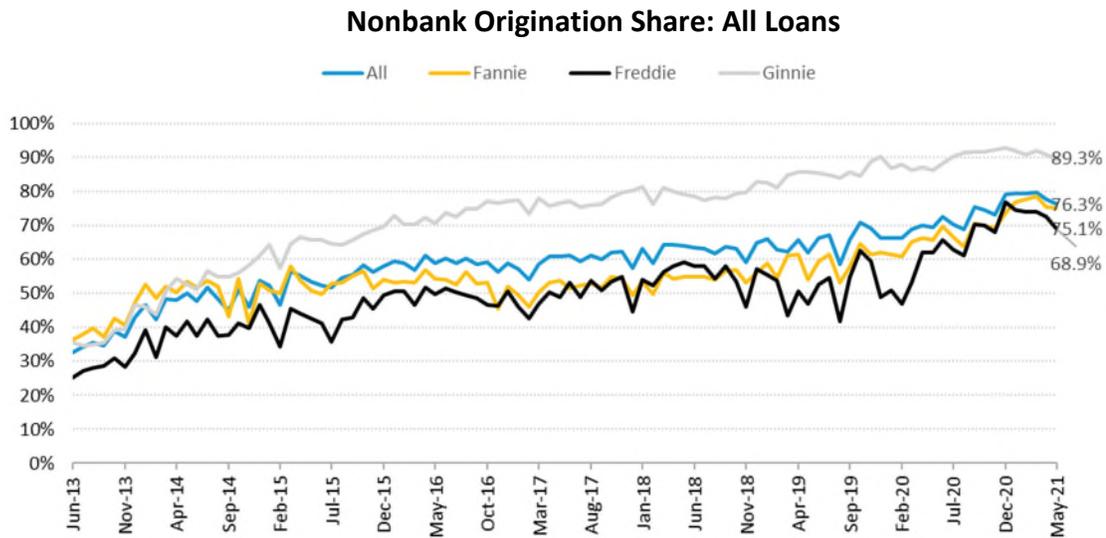


Sources: eMBS and Urban Institute; Beginning January 2021 data sourced from Ginnie Mae loan level disclosure files and IOPP. Notes: Data as of May 2021.

4.0 Agency 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 89.3% in May 2021. Fannie’s nonbank share remained steady in May at 75.1%, while Freddie’s declined slightly, to 68.9%. Freddie Mac’s nonbank share is the lowest among the three Agencies for both purchase and refi loans.

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

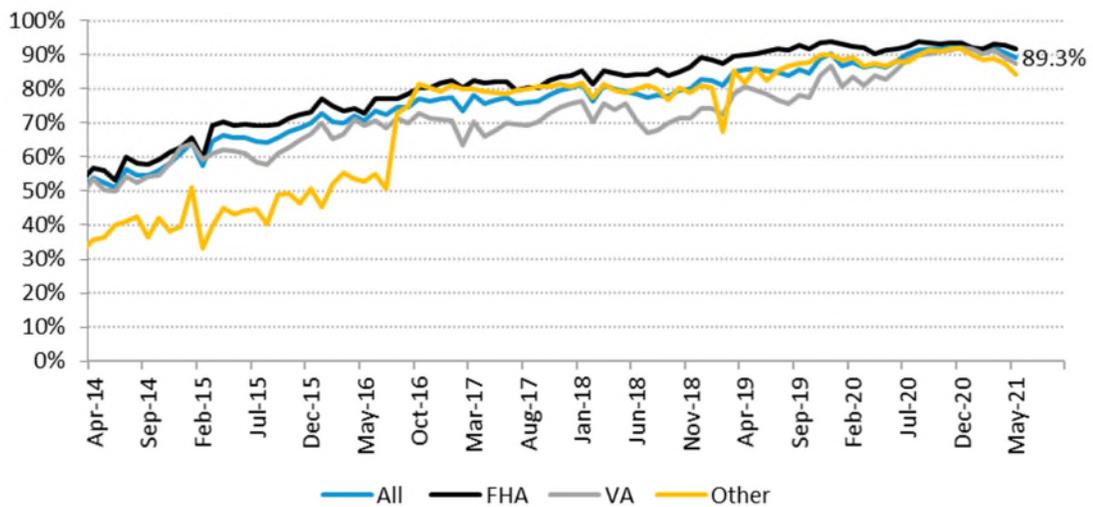


Sources: eMBS and Urban Institute; Beginning January 2021 data sourced from Ginnie Mae loan level disclosure files and IOPP. Notes: Data as of May 2021.

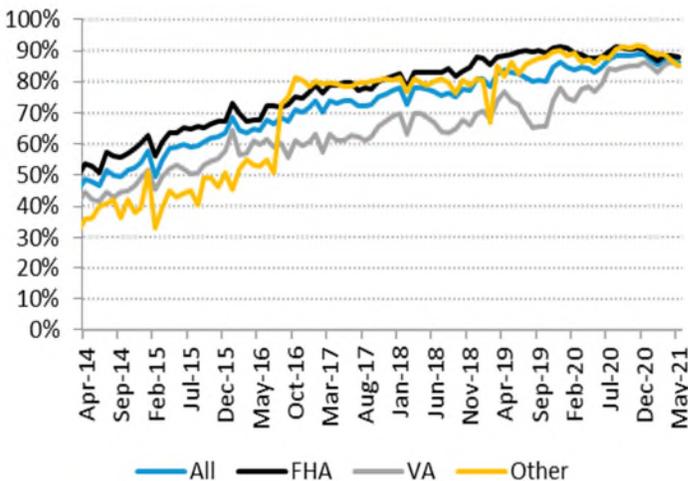
In May 2021, Ginnie Mae’s total nonbank originator share declined to 89.3%, down approximately 150 basis points from the prior month. In May 2021 there was a slight decline in nonbank origination share for both purchase and refi loans. The primary driver for the decline in the nonbank origination share for Ginnie Mae refi loans was the “other” category which had a decline by approximately 13% over the prior month.

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

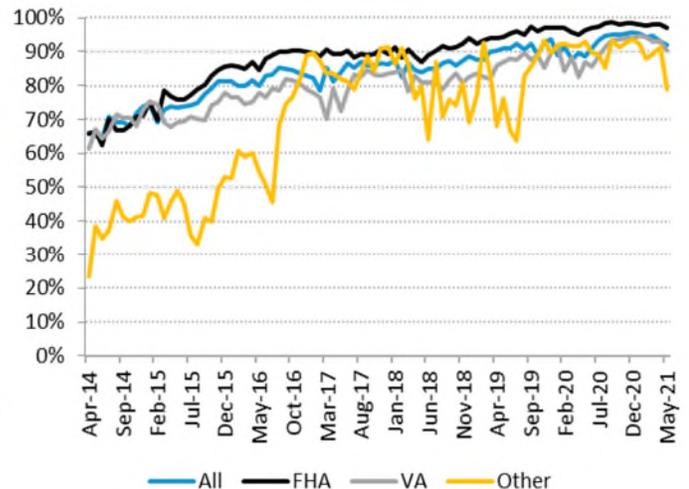
Ginnie Mae Nonbank Originator Share: All Loans



Ginnie Mae Nonbank Share: Purchase Loans



Ginnie Mae Nonbank Share: Refi Loans

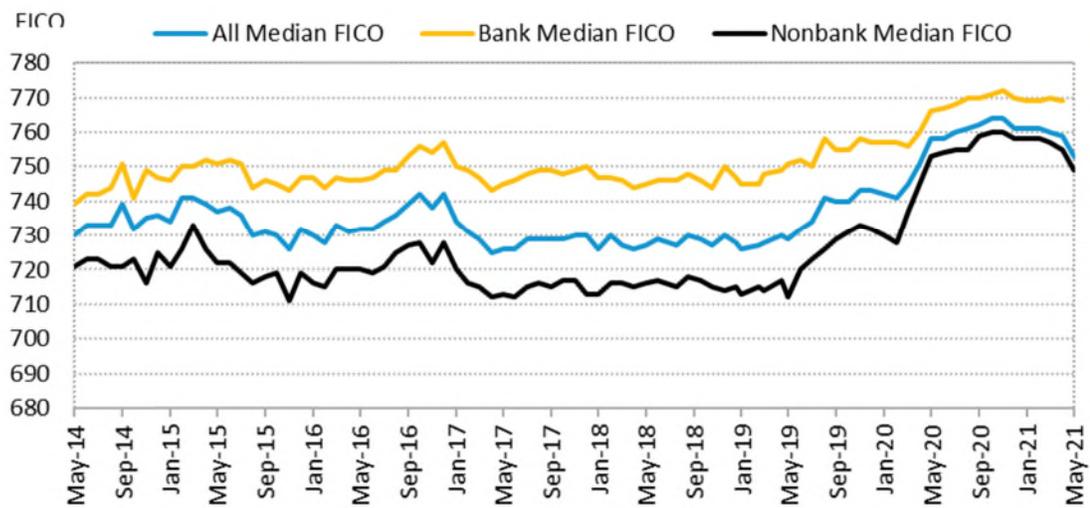


Sources: eMBS and Urban Institute; Beginning January 2021 data sourced from Ginnie Mae loan level disclosure files and IOPP. Notes: “Other” refers to loans insured by HUD’s Office of Public and Indian Housing and the Department of Agriculture’s Rural Development. Data as of May 2021.

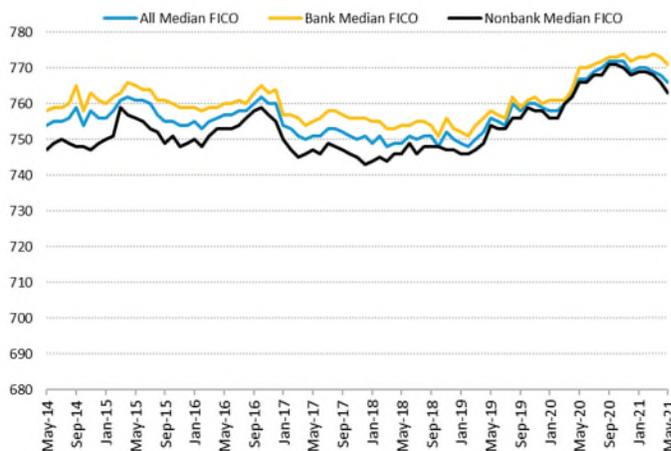
4.3 Bank vs. Nonbank Originators Historical Credit Box, Ginnie Mae vs. GSE (FICO, LTV, DTI)

Nonbank originators have played a key role in opening access to credit, as evidenced by the consistently lower median FICO score for nonbanks across all Agencies. Within the Ginnie Mae space, FICO scores for bank originations has been consistently higher than their nonbank counterparts. The bank/nonbank FICO differential has narrowed over the past 2 years, as nonbanks are relatively more active in refi lending.

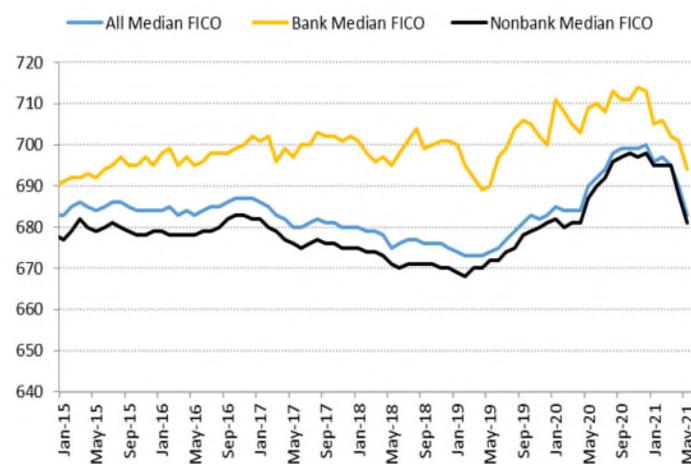
Agency FICO: Bank vs. Nonbank



GSE FICO: Bank vs. Nonbank



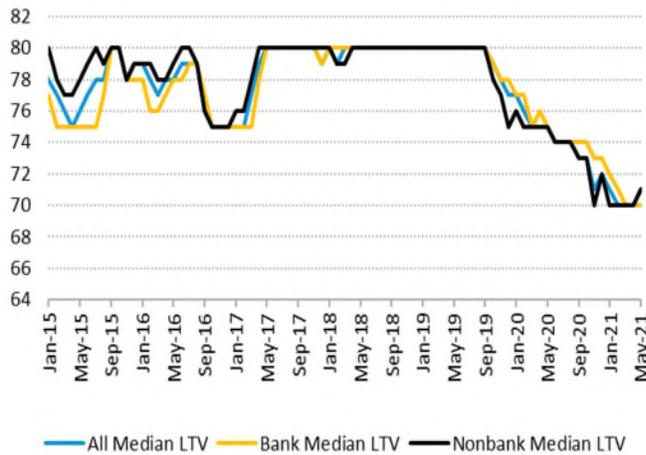
Ginnie Mae FICO: Bank vs. Nonbank



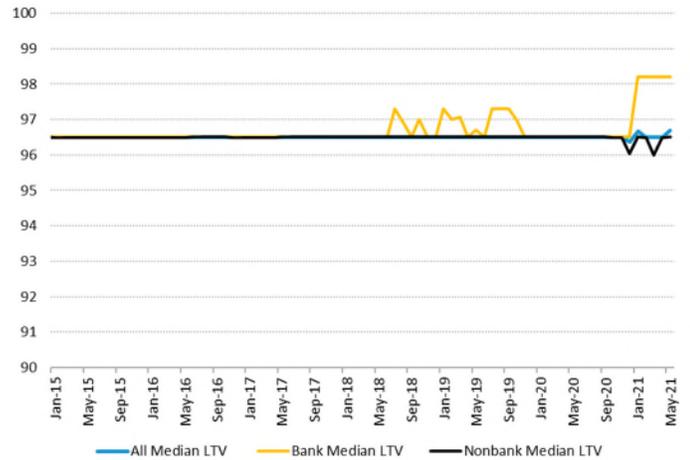
Sources: eMBS and Urban Institute; Beginning January 2021 data sourced from Ginnie Mae loan level disclosure files and IOPP. Notes: Data as of May 2021.

Between early 2017 and early 2019, there was a substantial increase in DTIs for Ginnie Mae collateral, for both banks and nonbanks. Over the subsequent two years, this has mostly reversed in the Ginnie Mae space. As interest rates increased, DTIs rose, because borrower payments were driven up relative to incomes. With the fall in interest rates over the past two and a half years, DTIs have dropped.

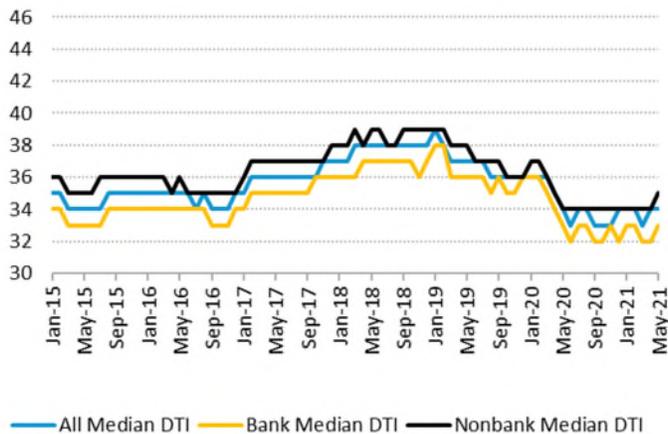
GSE LTV: Bank vs Nonbank



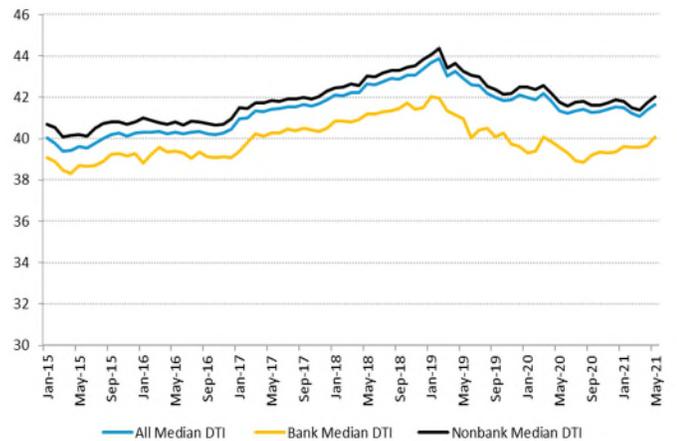
Ginnie Mae LTV: Bank vs. Nonbank



GSE DTI: Bank vs Nonbank



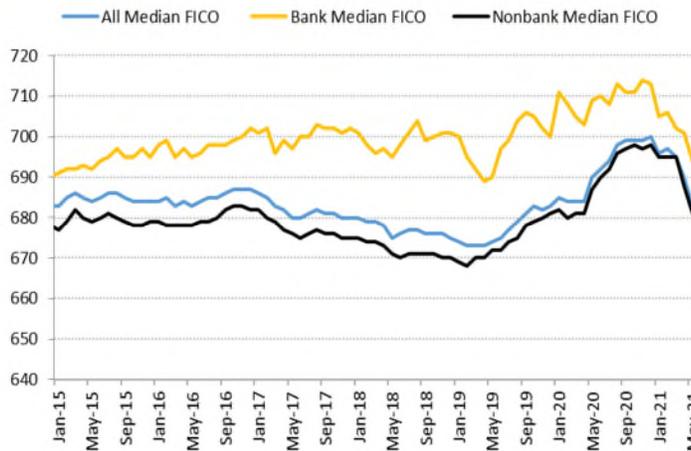
Ginnie Mae DTI: Bank vs. Nonbank



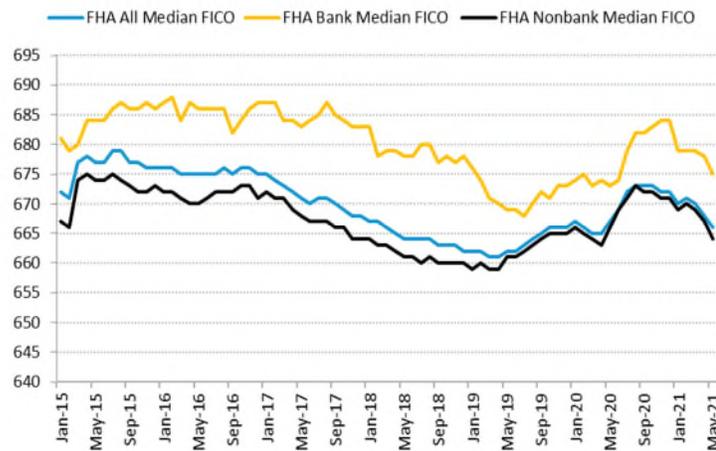
Sources: eMBS and Urban Institute; Beginning January 2021 data sourced from Ginnie Mae loan level disclosure files and IOPP. Notes: Data as of May 2021.

The median FICO score for Ginnie Mae bank and nonbank originators has been on a steady decline since the beginning Q1 2021, reverting to pre-COVID levels. Beginning Q2 2020 there was a shift in the distribution of median FICO scores for new FHA originations. Originations with borrower FICO scores within the 500-619 and 620-639 range decreased steadily throughout 2020 while borrowers with FICO scores in the ranges of 680-719 and 720-850 increased steadily. This rise in median FICO scores is partly due to borrowers increasing savings during the COVID-19 pandemic, government stimulus and unemployment benefits. Beginning Q1 2021 and through Q2 2021 FICO scores of new FHA originations have shifted to be more heavily distributed in the lower range buckets (see footnote). The gap between banks and non-banks is very apparent for all categories of government lending.

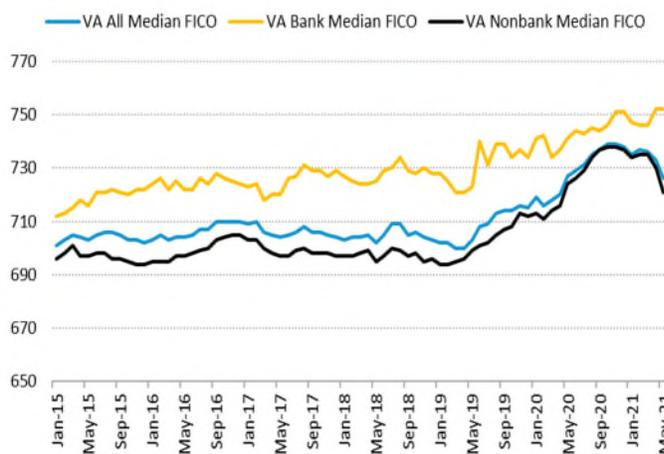
Ginnie Mae FICO Score: Bank vs. Nonbank



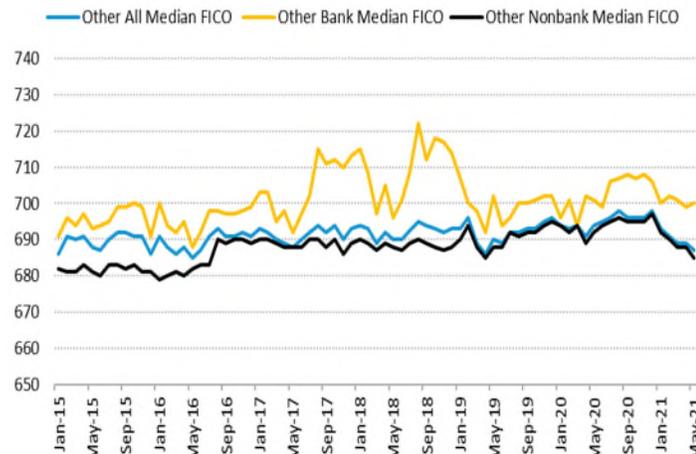
Ginnie Mae FHA FICO Score: Bank vs. Nonbank



Ginnie Mae VA FICO Score: Bank vs. Nonbank



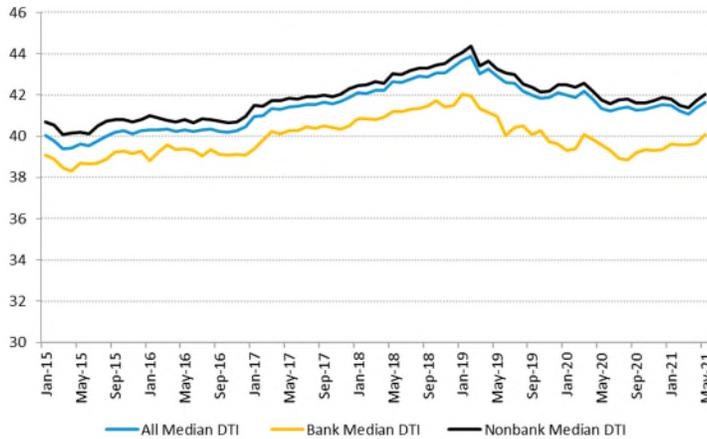
Ginnie Mae Other FICO Score: Bank vs. Nonbank



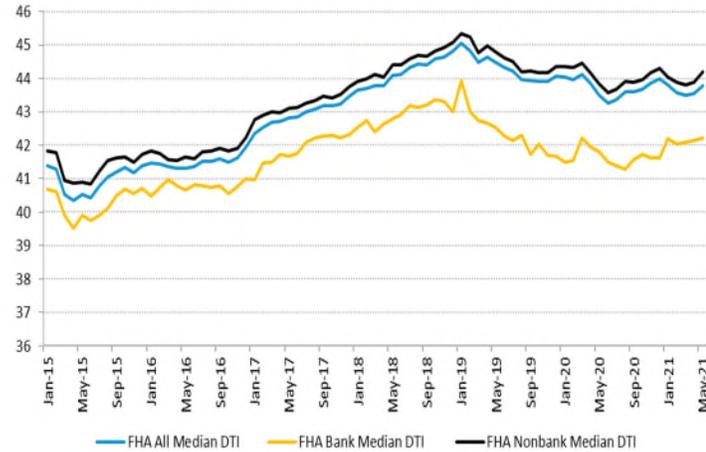
Sources: eMBS and Urban Institute; Beginning January 2021 data sourced from Ginnie Mae loan level disclosure files and IOPP. Notes: "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of May 2021. Credit score data sourced from FHA Single Family Origination Trends; May 2021.

As evidenced in the charts below, median DTI's for Ginnie Mae nonbank originations have been consistently higher than bank DTIs. This is a trend evident for all loans except for the "other" category, where the spread between bank and nonbank DTI is relatively small. The spread between nonbank and bank DTIs has been most prominent in FHA and VA originations.

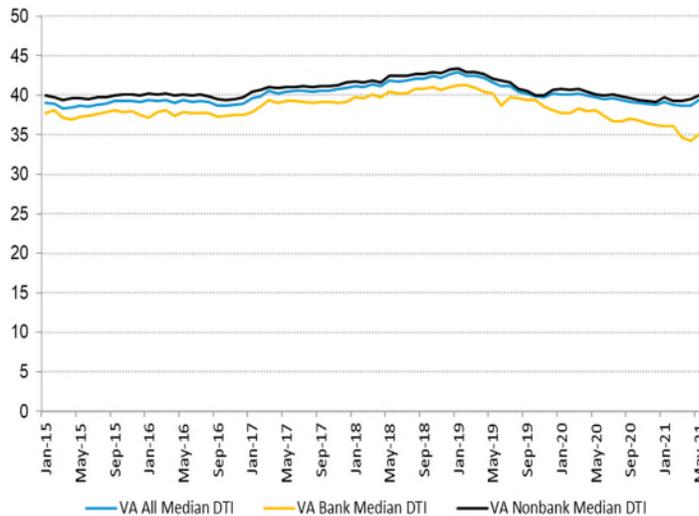
Ginnie Mae DTI: Bank vs. Nonbank



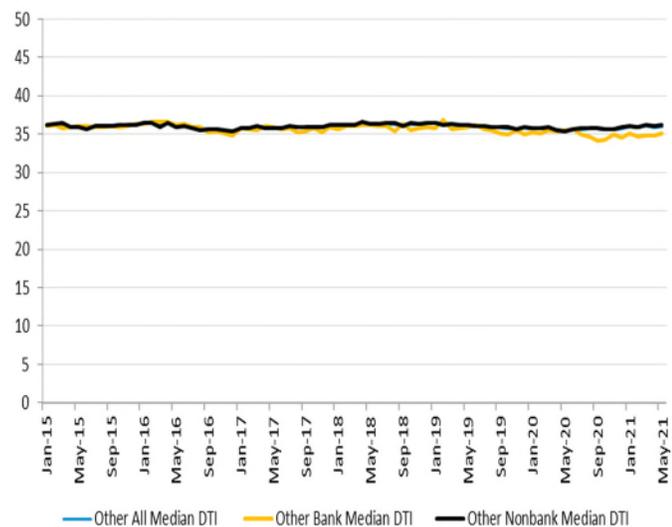
Ginnie Mae FHA DTI: Bank vs. Nonbank



Ginnie Mae VA DTI: Bank vs. Nonbank



Ginnie Mae Other DTI: Bank vs. Nonbank



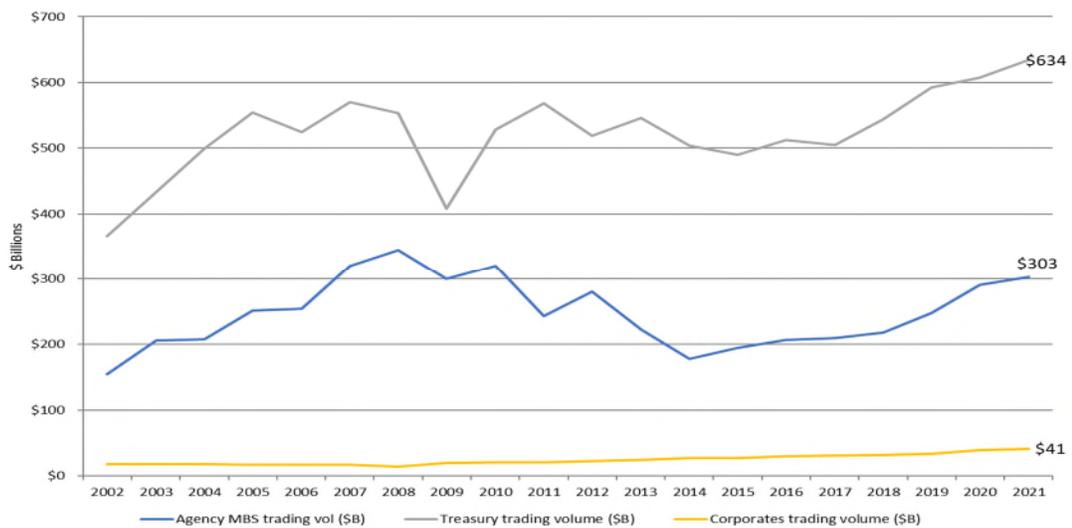
Sources: eMBS and Urban Institute; Beginning January 2021 data sourced from Ginnie Mae loan level disclosure files and IOPP. Notes: "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of May 2021.

5.0 Market Conditions

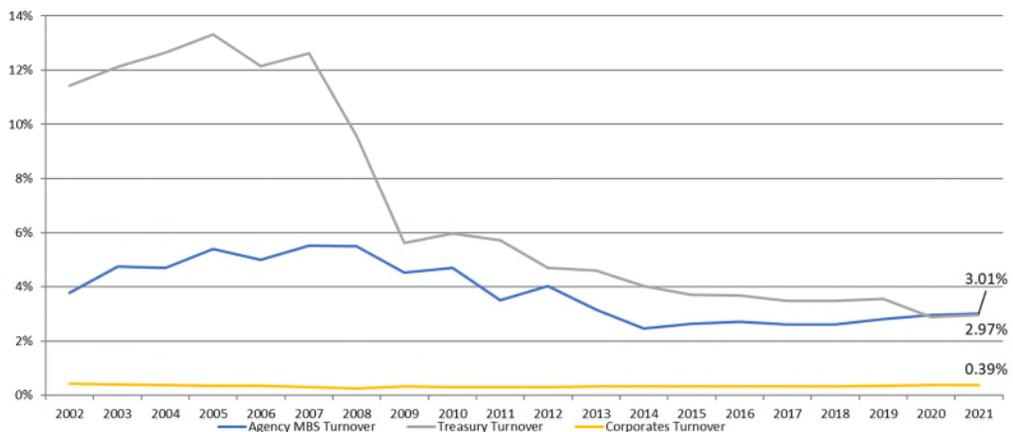
Agency MBS average daily trading volume was \$303 billion from January 2021 to June 2021. Agency MBS turnover is at its highest since 2013 at 3.01%. As of June 2021, year to date Agency MBS average turnover was 5 basis points higher than the 2020 average. In 2020 and thus far in 2021 Agency MBS turnover has been higher than US treasury turnover, which has not occurred since the reporting of this data in 2002. Both average daily mortgage and Treasury turnover are down from their pre-crisis peaks. Corporate turnover remains minimal relative to either Agency MBS or Treasury turnover.

5.1 Average Daily Trading Volume and Turnover by Sector

Average Daily Fixed Income Trading Volume by Sector



Average Daily Turnover by Sector



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

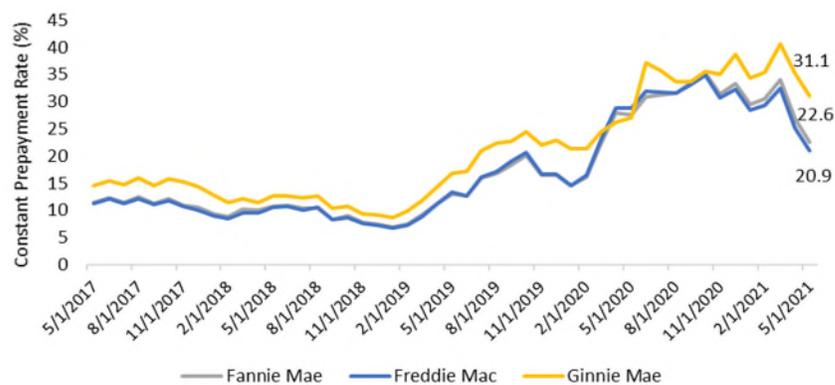
6.0 Prepayments

Prepayment speeds for fixed rate Ginnie Mae and GSE MBS have increased significantly from early 2020 due to lower interest rates and an increase in voluntary and involuntary prepaids due to refinances and loan buyouts. However, in May 2021, Ginnie Mae and GSE fixed-rate 30- and 15-year prepayments decreased significantly for the second month in a row, though not as sharply as in April 2021. Fannie Mae and Freddie Mac 30-year prepayment speeds decreased 16-17% (vs 20-22% decreases in April), while Ginnie Mae 30-year prepayments decreased 12%, compared to a 15% decrease in April.

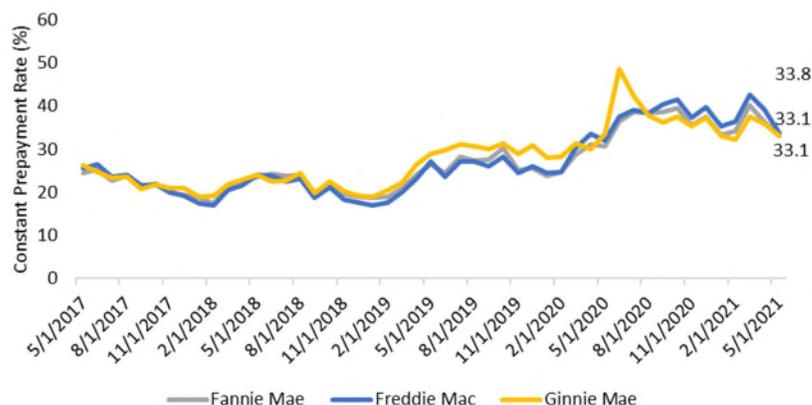
ARM MBS prepayments for both Ginnie Mae and the GSEs continued to decrease in May 2021 for all products except for Fannie Treasury indexed IOs. Prepayments on Freddie Mac ARM MBS saw the largest dip in May 2021, down 14% MoM, to 33.8CPR from 39.3CPR in the prior month. Fannie Mae prepayment speeds in May 2021 decreased by 9% MoM and Ginnie Mae prepayments were down by 8% MoM in the same period.

6.1 Aggregate Prepayments

Fixed Prepayments



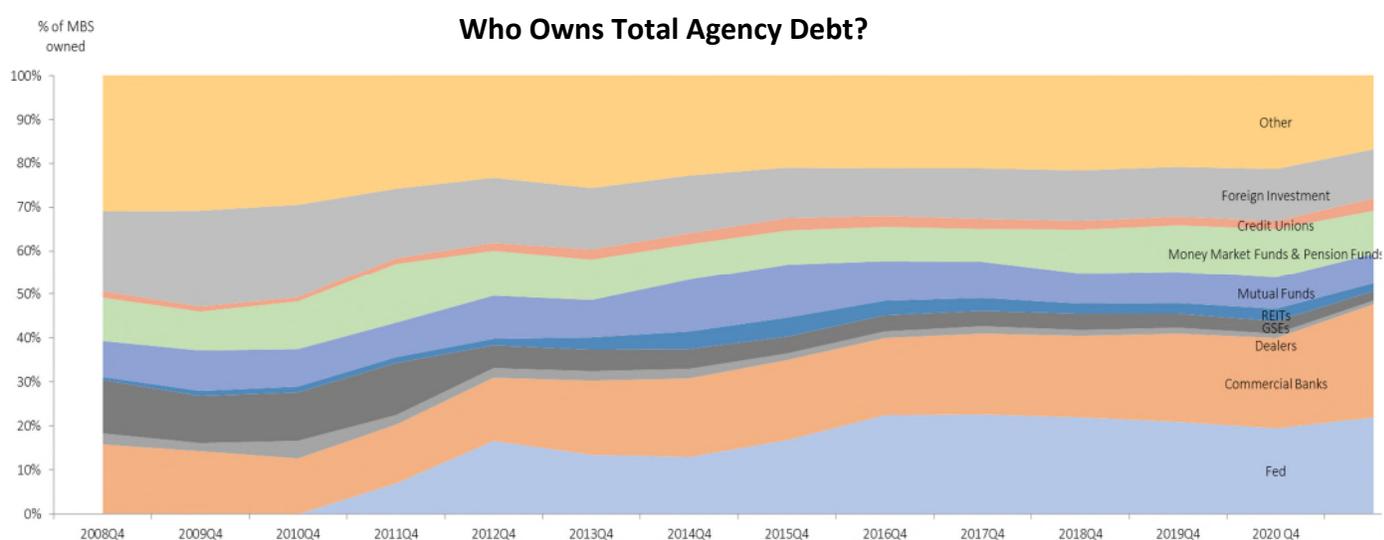
ARM Prepayments



Source: eMBS. Note: Data as of May 2021.

7.0 MBS Ownership

The largest holders of Agency debt (Agency MBS + Agency notes and bonds) include commercial banks (26%), the Federal Reserve (22%), and foreign investors (11%). The Federal Reserve’s share increased from 15% in the first quarter of 2020 to 22% in the first quarter of 2021 due to substantial purchases of MBS in response to the COVID-19 crisis (\$1.8 trillion in Fed purchases during this time period). Despite large Federal Reserve purchases, commercial banks continue to be the largest holders of Agency MBS. Out of their \$2.8 trillion in holdings as of the end of June 2021, \$2.1 trillion was held by the top 25 domestic banks.



Source: Federal Reserve Flow of Funds. Note: The “other” category includes primarily life insurance companies, state and local governments, households and nonprofits. Data as of Q1 2021.

7.1 Commercial Bank Holdings of Agency MBS

	Commercial Bank Holdings (\$Billions)								Week Ending			
	Jun-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	June 09	June 16	June 23	June 30
Largest 25												
Domestic Banks	1,655.1	1,886.2	1,929.2	1,970.1	1,999.5	2,022.5	2,053.0	2,059.5	2,054.0	2,053.3	2,059.6	2,069.9
Small Domestic Banks	520.7	595.0	609.7	621.7	640.4	656.6	675.0	683.3	681.7	681.3	683.8	687.5
Foreign Related Banks	43.9	47.7	49.0	52.3	50.6	51.0	49.3	46.4	45.5	44.9	47.0	48.0
Total, Seasonally Adjusted	2,219.7	2,528.9	2,587.9	2,644.1	2,690.5	2,730.1	2,777.3	2,789.2	2,781.2	2,779.5	2,790.4	2,805.4

Source: Federal Reserve Bank. Note: Small domestic banks include all domestically chartered commercial banks not included in the top 25. Data as of June 2021.

7.2 Bank and Thrift Residential MBS Holdings

Out of the \$2.7 trillion in MBS holdings at banks and thrifts as of Q1 2021, \$2.1 trillion were Agency pass-throughs, \$1.7 trillion were GSE pass-throughs and \$374 billion were Ginnie Mae pass-throughs. Another \$555 billion were Agency CMOs, while non-Agency holdings totaled \$47 billion. In Q1 2021, MBS holdings at banks and thrifts increased for the tenth 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. Total bank and thrift MBS holdings increased by 7% from Q4 2020.

Bank and Thrift Residential MBS Holdings

Year	All Banks & Thrifts (\$ in billions)						All MBS (\$ in billions)	
	Total	GSE PT	GNMA PT	Private MBS	Agency CMO	Private CMO	Banks	Thrifts
2000	683.90	234.01	84.26	21.57	198.04	71.43	470.47	212.65
2001	810.50	270.59	109.53	37.62	236.91	76.18	606.91	203.37
2002	912.36	376.11	101.46	20.08	244.98	89.88	702.44	209.66
2003	982.08	461.72	75.11	19.40	236.81	106.86	775.66	206.45
2004	1,113.89	572.40	49.33	20.55	208.18	160.55	879.75	234.31
2005	1,033.77	566.81	35.92	29.09	190.70	211.25	897.06	242.69
2006	1,124.46	628.52	31.13	42.32	179.21	243.28	983.49	223.42
2007	1,149.10	559.75	31.58	26.26	174.27	357.24	971.42	264.59
2008	1,218.77	638.78	100.36	12.93	207.66	259.04	1,088.00	211.73
2009	1,275.52	629.19	155.00	7.53	271.17	212.64	1,161.67	184.07
2010	1,433.38	600.80	163.13	7.34	397.30	181.61	1,233.28	200.09
2011	1,566.88	627.37	214.81	3.28	478.82	167.70	1,359.24	207.64
2012	1,578.86	707.87	242.54	17.16	469.27	138.67	1,430.63	148.22
2013	1,506.60	705.97	231.93	26.11	432.60	114.15	1,363.65	142.94
2014	1,539.32	733.71	230.45	20.33	449.90	104.94	1,409.84	129.48
2015	1,643.56	823.10	292.30	11.14	445.39	71.63	1,512.67	130.89
2016	1,736.93	930.67	323.46	7.40	419.80	55.60	1,576.07	160.86
2017	1,844.15	1,010.83	367.70	4.63	413.97	47.01	1,672.93	171.22
1Q18	1,809.98	991.57	360.71	3.92	412.41	41.37	1,635.52	174.46
2Q18	1,806.58	976.92	368.88	7.45	414.41	38.92	1,631.65	174.93
3Q18	1,794.39	966.52	373.21	2.42	416.20	36.04	1,618.29	176.10
4Q18	1,814.97	980.56	380.43	2.69	416.59	34.69	1,634.99	179.98
1Q19	1,844.99	1,001.61	383.49	3.06	422.18	34.65	1,673.40	171.59
2Q19	1,907.13	1,037.93	407.97	2.90	421.56	36.76	1,727.65	179.47
3Q19	1,975.78	1,079.82	427.10	4.74	428.69	35.44	1,786.74	189.04
4Q19	1,985.38	1,089.41	426.85	4.62	428.99	35.52	1,796.29	189.09
1Q20	2,107.66	1,173.36	448.34	4.65	443.73	37.57	1,907.02	200.64
2Q20	2,195.19	1,228.87	441.06	5.00	478.11	42.14	1,946.36	248.83
3Q20	2,310.42	1,349.48	415.24	4.43	499.50	41.78	2,040.61	269.81
4Q20	2,520.90	1,537.54	390.66	3.94	548.65	40.10	2,210.22	310.68
1Q21	2,690.92	1,713.78	374.63	4.88	555.35	42.28	2,350.94	339.98
Change:								
4Q20-1Q21	7%	11%	-4%	24%	1%	5%	6%	9%
1Q20-1Q21	28%	46%	-16%	5%	25%	13%	23%	69%

Source: Inside Mortgage Finance. Notes: Data as of Q1 2021.

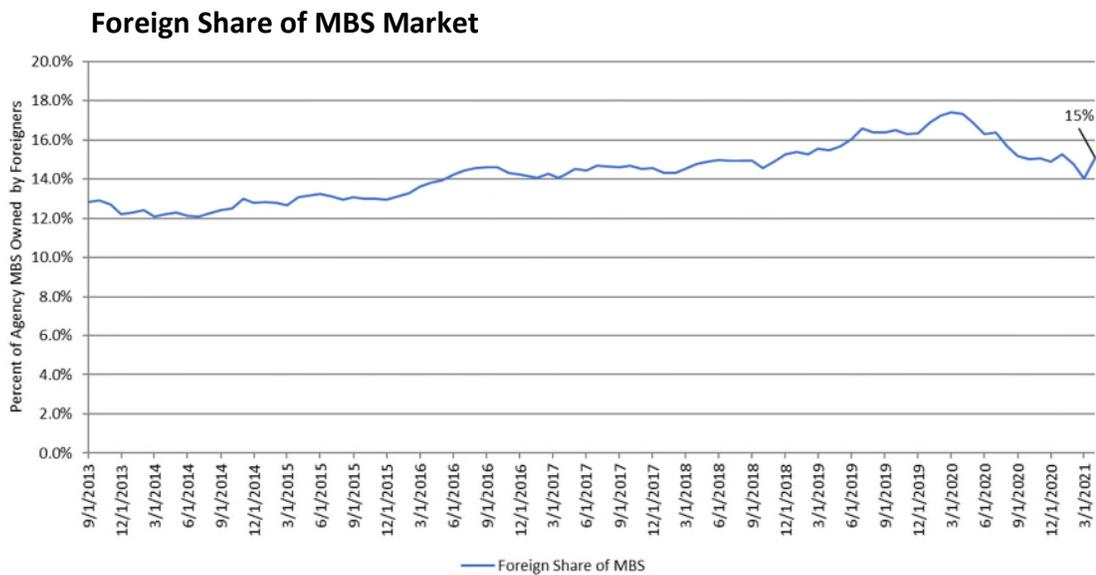
Bank and Thrift Residential MBS Holdings

Top Bank & Thrift Residential MBS Investors (\$ in millions)	Institution	Total	GSE PT	GNMA PT	Agency CMO	Non-Agency	Share
1	Bank Of America Corporation	562,474.00	449,150.00	101,103.00	11,969.00	252.00	21%
2	Wells Fargo & Company	259,187.00	188,326.00	64,441.00	5,994.00	426.00	10%
3	Jpmorgan Chase & Co.	204,088.00	118,246.00	70,487.00	154.00	15,201.00	8%
4	Charles Schwab Bank	171,739.00	84,782.00	13,336.00	73,621.00	-	6%
5	Truist Bank	116,435.00	46,913.00	13,485.00	56,037.00	-	4%
6	U.S. Bancorp	116,049.72	82,567.06	17,779.43	15,702.78	0.45	4%
7	Citigroup Inc.	98,691.00	90,354.00	2,390.00	4,402.00	1,545.00	4%
8	Capital One Financial Corporation	75,021.92	42,658.39	9,173.50	22,612.89	577.14	3%
9	Bank Of New York Mellon Corp	61,338.00	45,554.00	2,891.00	10,384.00	2,509.00	2%
10	Pnc Bank, National Association	52,989.33	44,323.35	5,950.69	1,292.15	1,423.13	2%
11	Silicon Valley Bank	44,909.40	35,394.54	534.68	8,980.18	-	2%
12	Usaa Federal Savings Bank	44,529.10	39,219.05	2,064.33	3,245.72	-	2%
13	State Street Bank And Trust Company	43,141.84	17,869.00	5,849.00	16,928.84	2,495.00	2%
14	E*Trade Bank	38,091.08	28,463.36	6,156.67	3,471.05	-	1%
15	Morgan Stanley	33,957.00	21,722.00	3,981.00	8,254.00	-	1%
16	Td Bank Usa/Td Bank Na	26,046.00	1,526.53	133.02	24,290.02	96.42	1%
17	Ally Bank	24,197.00	18,367.00	961.00	2,594.00	2,275.00	1%
18	Bmo Harris Bank National Association	23,317.94	4,777.27	431.34	18,107.47	1.85	1%
19	Hsbc Bank Usa, National Association	23,285.77	7,790.54	7,486.95	8,006.48	1.80	1%
20	Keybank National Association	22,140.05	3,852.79	419.30	17,867.96	-	1%
Total Top 20		2,041,628.14	1,371,855.89	329,053.91	313,914.54	26,803.80	76%

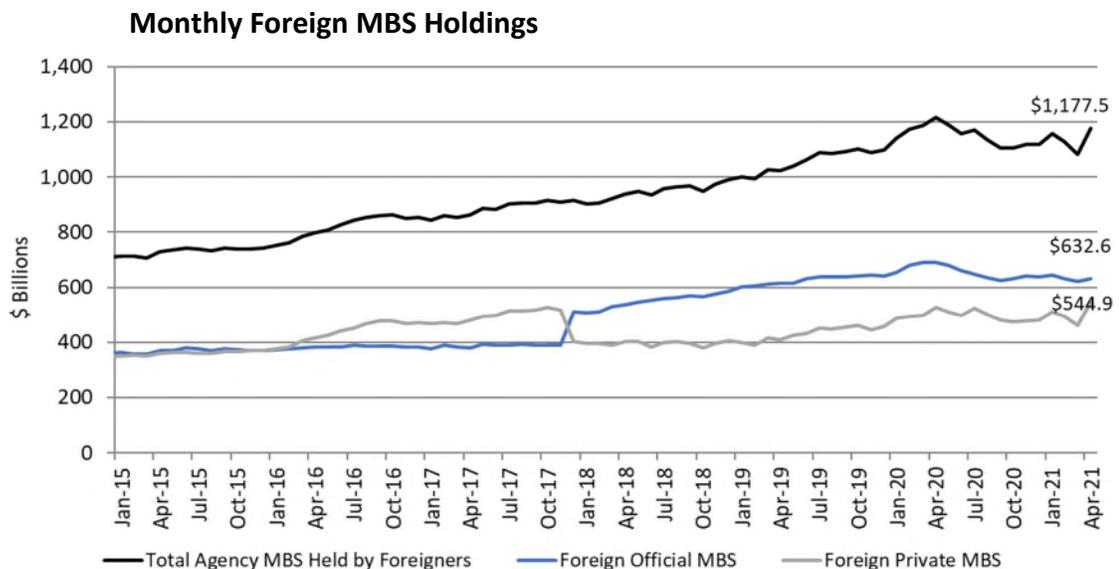
Source: Inside Mortgage Finance. Notes: Data as of Q1 2021.

7.3 Foreign Ownership of MBS

Foreign investors held 15% of Agency MBS in April 2021, up from a low of 12% in July 2014, but down from 17% in spring 2020. For the month of April 2021, this represents \$1.18 trillion in Agency MBS, \$545 billion held by foreign private institutions and \$633 billion held by foreign official institutions. This represents an overall decline of \$39 billion in foreign holdings of Agency MBS from the peak in spring 2020.



Sources: SIFMA and Treasury International Capital (TIC) and eMBS. Beginning April 2021 MBS outstanding sourced from eMBS. Note: Data as of April 2021.



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

7.4 Agency MBS + Agency Debt

The largest foreign holders of Agency MBS are Japan, Taiwan, and China; these three comprise 70% of all foreign MBS holdings. Between September 2019 and March 2021, we estimate that these top three have increased their Agency MBS holdings by \$6 billion, Japan has decreased their holdings by \$2.2 billion, Taiwan has increased their holdings by \$4.8 billion and China has increased their holdings by \$3.8 billion. China has increased Agency MBS holdings in Q1 2021 by approximately \$23.6 billion over Q4 2020; the largest increase in holdings for China since Q1 2020.

All Agency Debt

Country	Level of Holdings (\$ Millions)							Change in Holdings (\$ Millions)					
	9/1/2019	12/1/2019	3/1/2020	6/1/2020	9/1/2020	12/1/2020	3/1/2021	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
Japan	311,047	305,332	322,155	310,268	305,064	308,033	319,771	-5,715	16,823	-11,887	-5,204	2,969	11,738
Taiwan	263,018	261,740	269,133	267,918	264,270	262,453	253,036	-1,278	7,393	-1,215	-3,648	-1,817	-9,417
China	233,783	231,753	260,479	239,045	206,861	212,317	200,972	-2,030	28,726	-21,434	-32,184	5,456	-11,345
Luxembourg	46,641	39,015	36,789	42,389	35,626	36,223	34,371	-7,626	-2,226	5,600	-6,763	597	-1,852
Ireland	41,367	38,731	26,131	29,399	28,286	31,064	26,965	-2,636	-12,600	3,268	-1,113	2,778	-4,099
South Korea	41,485	40,810	40,964	38,891	40,303	42,628	43,032	-675	154	-2,073	1,412	2,325	404
Cayman Islands	29,540	31,827	27,154	34,564	34,495	34,264	37,111	2,287	-4,673	7,410	-69	-231	2,847
Bermuda	29,184	33,897	27,790	27,790	35,751	27,988	26,443	4,713	-6,107	0	7,961	-7,763	-1,545
Netherlands	10,549	10,902	10,886	13,255	10,964	12,344	13,049	353	-16	2,369	-2,291	1,380	705
Malaysia	15,585	16,600	21,399	20,390	19,808	19,147	19,047	1,015	4,799	-1,009	-582	-661	-100
Other	135,515	152,489	202,143	201,165	196,246	197,462	173,905	16,974	49,654	-978	-4,919	1,216	-23,557
Total	1,157,714	1,163,096	1,245,023	1,225,074	1,171,603	1,183,923	1,147,702	5,382	81,927	-19,949	-53,471	12,320	-36,221

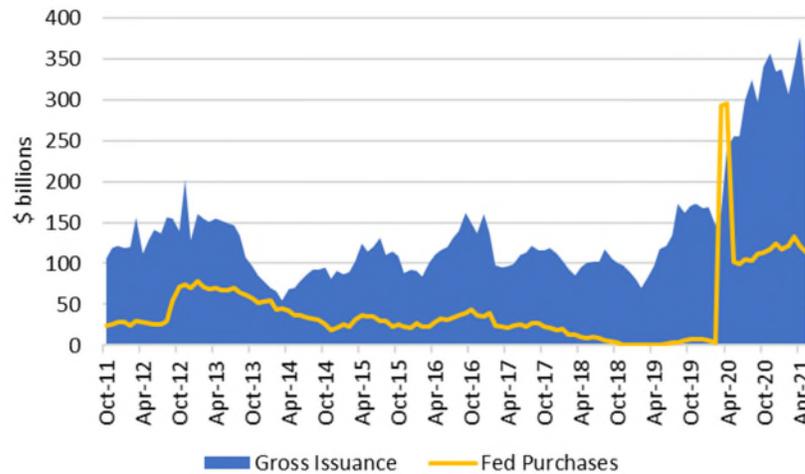
Agency MBS

Country	Level of Holdings (\$ Millions)							Change in Holdings (\$ Millions)					
	9/1/2019	12/1/2019	3/1/2020	6/1/2020	9/1/2020	12/1/2020	3/1/2021	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Mar-21
Japan	307,738	302,212	319,241	306,963	301,622	304,865	305,580	-5,526	17,029	-12,278	-5,341	3,243	715
Taiwan	262,732	261,470	268,881	267,700	264,043	262,244	267,492	-1,262	7,411	-1,181	-3,657	-1,799	5,248
China	228,240	226,526	255,596	235,078	202,730	208,516	232,076	-1,714	29,070	-20,518	-32,348	5,786	23,560
Luxembourg	43,023	35,603	33,602	40,207	33,354	34,133	34,255	-7,420	-2,001	6,605	-6,853	779	122
Ireland	33,322	31,145	19,045	21,091	19,635	23,102	25,336	-2,177	-12,100	2,047	-1,457	3,467	2,234
South Korea	33,682	33,452	34,091	28,743	29,736	32,903	34,313	-230	639	-5,347	992	3,167	1,410
Cayman Islands	24,538	27,110	22,748	28,431	29,364	28,386	29,682	2,572	-4,362	5,684	933	-978	1,296
Bermuda	26,253	31,133	25,208	25,111	25,635	25,422	24,245	4,880	-5,925	-97	523	-213	-1,177
Netherlands	10,381	10,744	10,738	12,739	10,427	11,850	13,351	363	-6	2,001	-2,312	1,423	1,501
Malaysia	15,303	16,334	21,150	20,028	19,432	18,801	19,949	1,031	4,817	-1,122	-597	-631	1,148
Other	105,371	124,063	175,591	173,716	167,661	189,631	190,011	18,692	51,527	-1,874	-6,055	21,970	380
Total	1,090,579	1,099,788	1,185,887	1,159,808	1,103,636	1,121,052	1,156,341	9,209	86,099	-26,079	-56,172	17,416	35,289

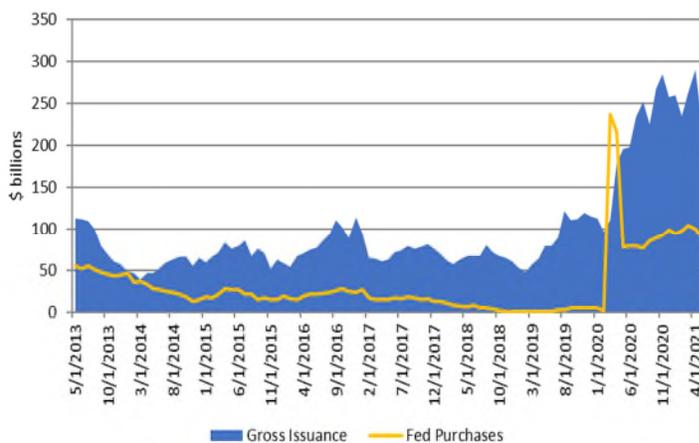
Sources: Treasury International Capital (TIC). Notes: Level of Holding by month data as of Q1 2021. Top 10 Holders of MBS list as of June 2018.

In March 2020, in response to COVID-19, the Fed announced they would purchase unlimited amounts of Treasuries and Agency MBS to support the flow of credit to households. In March 2020, the Fed bought \$292.2 billion in Agency MBS, and April 2020 clocked in at \$295.1 billion, the largest two months of mortgage purchases by the Fed ever; which is approximately 78% and 23% over gross issuance for those two months, respectively. The Fed slowed its purchases to around \$100 billion per month in May through August of 2020. More recently, Fed purchases have ramped up again slightly; purchases totaled \$113.2 billion in May 2021 (38% of monthly gross issuance). As of March 2021, total Agency MBS owned by the Fed equaled \$2.22 trillion. Prior to the COVID-19 intervention, the Fed was winding down its MBS portfolio from its 2014 prior peak.

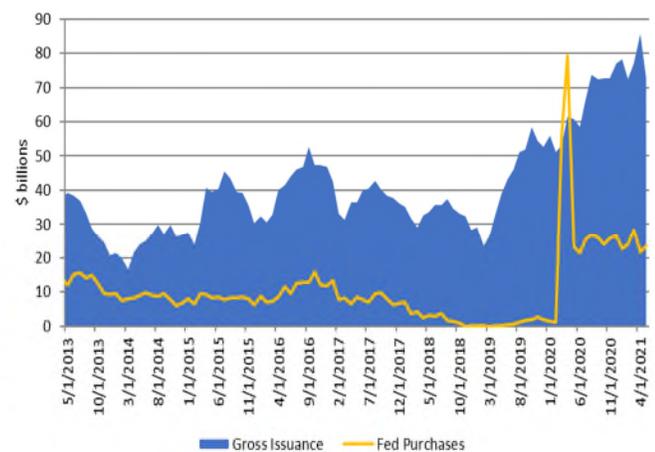
Total Fed Absorption



Fed Absorption of GSE MBS



Fed Absorption of Ginnie Mae MBS



Sources: eMBS and Federal Reserve Bank of New York. Notes: Data as of May 2021.



Disclosure:

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