Global Markets Analysis Report

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

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Ginnie Mae
Our Guaranty Matters

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

CONTENTS

HIGHLIGHTS

The steady growth of the HECM mortgage-backed securities market

Page 40 of this chartbook tracks the monthly volume of HECM mortgage-backed securities (HMBS) issued by Ginnie Mae as well as the total outstanding. After bottoming in early 2014, monthly HMBS issuance volumes have experienced a moderate and steady increase. For calendar years 2014, 2015, 2016 and 2017, annual issuance volumes were $6.6, $9.4, $9.2, and $10.5 billion respectively. Some of the increase in 2017 volumes was driven by an uptick in endorsements last September, as borrowers rushed to avoid changes to HECM premiums that went into effect October 2017.

As issuance volumes have grown, so has the outstanding – total HMBS outstanding has increased from $47 billion at the beginning of 2014 to $55.6 billion today. Some of this reflects additional draws on older HECMs. This increase in volume has occurred despite significant changes to the HECM program, which have strengthened its financial health, since late 2013. These include reductions to the maximum loan amount a borrower could be approved for and the proportion of this that can generally be withdrawn in the first year (which was reduced from 100 to 60 percent). An additional change was the requirement to conduct financial assessment of the borrower ability to pay property taxes and insurance.

Growth in HMBS volumes is not surprising given the strong increase in nationwide house prices during the last several years. As elderly homeowners accumulate more equity, those with limited incomes and savings, or those facing high debt burdens, can be expected to extract home equity through reverse mortgages to smoothen consumption or pay back debt. In fact, an increasing number of indebted elderly homeowners have tapped reverse mortgages to pay off their first mortgage in recent years. And two factors bode very positively for future volumes. The first is the aging of the population. In 2010, approximately 26 percent of homeowners were 65 and older, this is expected to rise to almost 40 percent by 2030. In addition, the number of these elderly homeowners with a first mortgage is steadily increasing.

The increase in HMBS issuance volumes is also positive for continued development of the capital market for reverse mortgages. This market, which began functioning in 2009 and benefits from Ginnie Mae's explicit full-faith and credit guaranty, helps attract capital from investors around the world. Growing demand for HMBS helps this market mature further while keeping interest rates low for reverse mortgage borrowers.

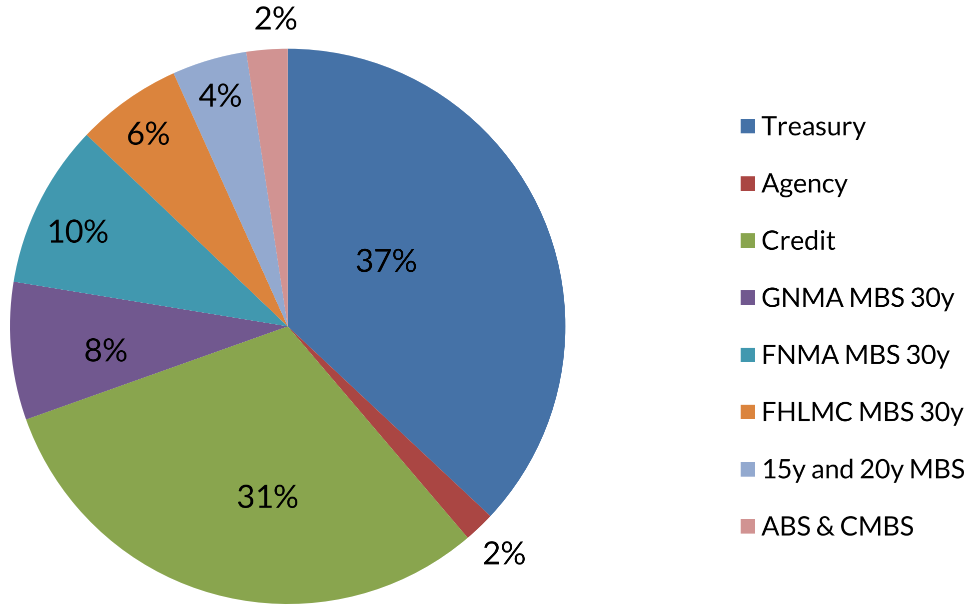
***Highlights this month*:**

- US MBS looks less attractive versus both the JGB and Bund in February 2018 (Pages 7-8).
- The total value of the US Housing Market continued to rise in Q4 2017, driven by a $395 billion increase in household equity (Page 14).
- Median debt-to-income ratios (DTIs) on new originations moved up for all agencies in January 2018 (Page 29).
- Ginnie Mae's nonbank share edged up to a new high, while Freddie Mac and Fannie Mae both moved closer towards historic highs in January 2018 (Page 30).
- With the 30-year mortgage rate rising above 4 percent, MBS prepayment speeds continued to be muted for all agencies in February 2018 (Pages 37-39).

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

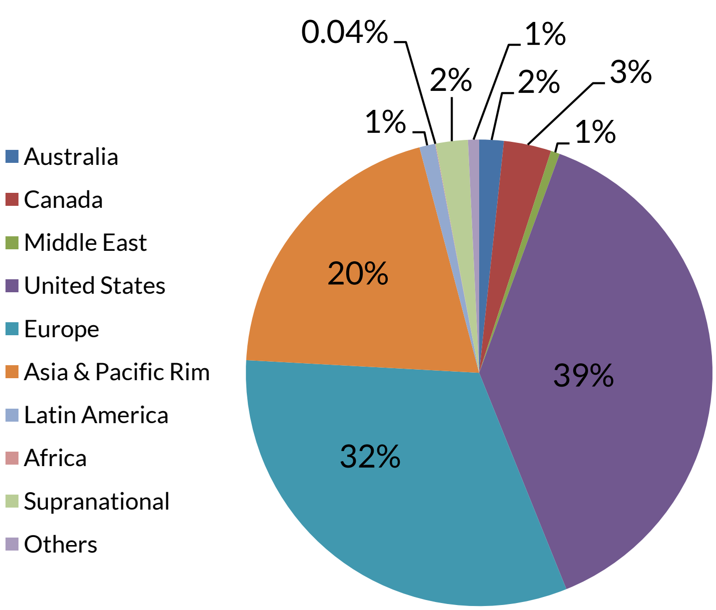
US MBS comprise 28 percent of the Barclays US Aggregate Index-- slightly less than either the US Treasury share (37%) or the US Credit share (31%). Fannie Mae 30-year MBS comprises the largest percent of US MBS (10%), while Ginnie Mae 30-year MBS and Freddie Mac 30-year MBS comprise 8 percent and 6 percent of the market, respectively. Mortgages with terms of 15 and 20 years comprise the balance (4%) of the US MBS share. US securities are the largest single contributor to the Barclays Global Aggregate, accounting for 39 percent of the global total. US MBS comprises 11 percent of the global aggregate.

Barclays US Aggregate Index



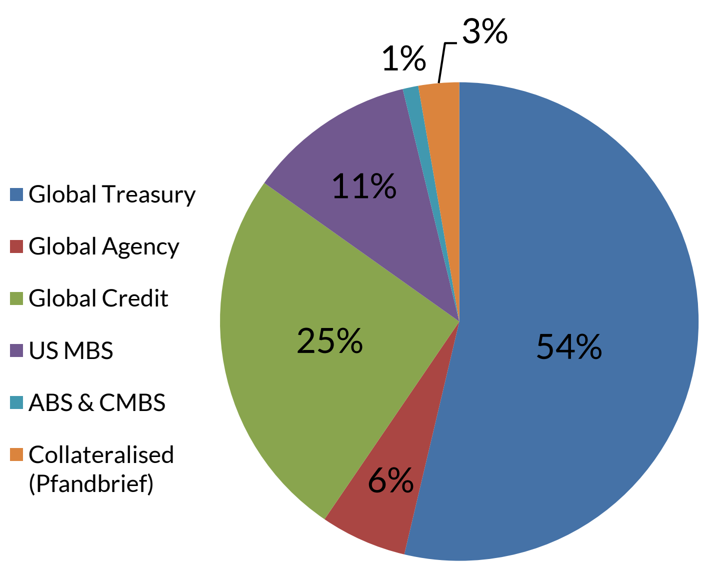
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of December 2017*

Barclays Global Aggregate Index by Country



Sources: *Bloomberg and State Street Global Advisors.*
Note: *Data as of December 2017*

Barclays Global Aggregate Index by Sector

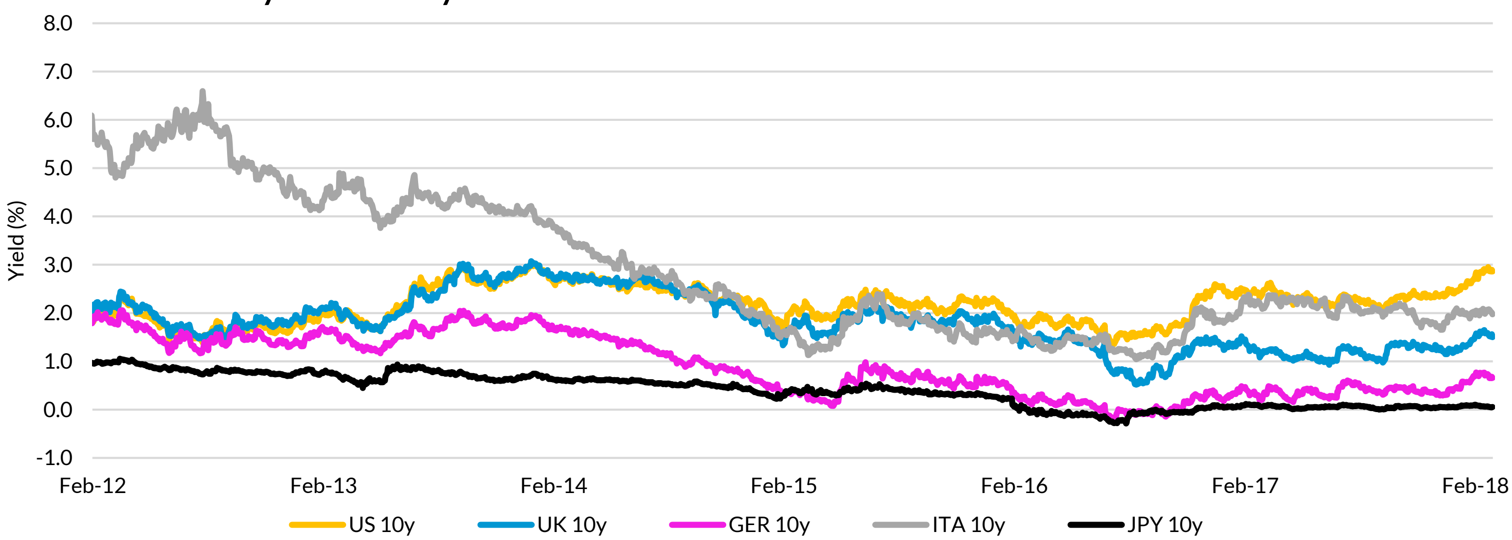


Sources: *Bloomberg and State Street Global Advisors*
Note: *Data as of December 2017*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

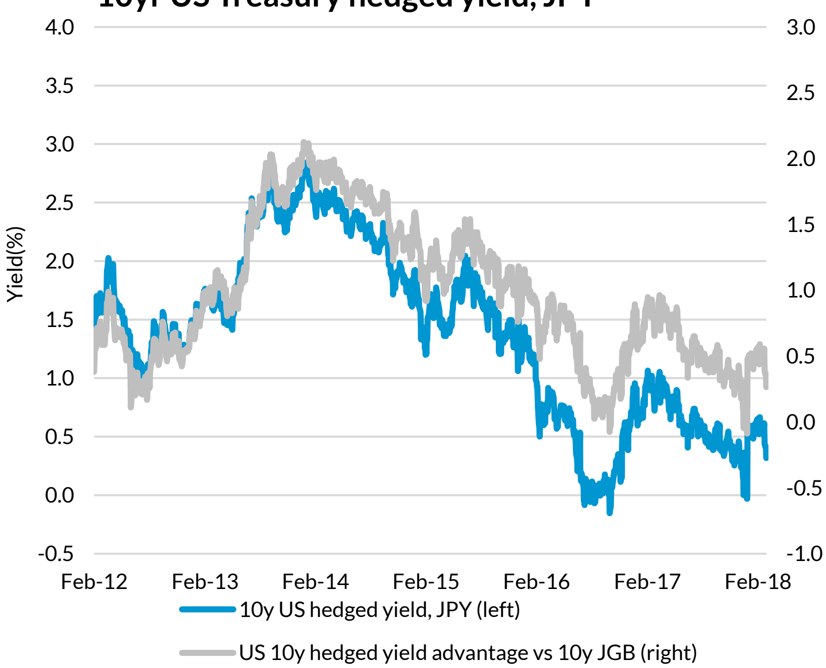
US Treasury interest rates, as measured by the 10-year note, continue to be the highest in the developed world. The US 10-year Treasury note continues to rise, and is at 2.86 percent this month. Interest rates in the UK stayed relatively stable at 1.50 percent. Italy, Japan and Germany, however, experienced a slight drop in interest rate and currently stand at 1.97, 0.05 and 0.66 percent, respectively. If Treasury notes are hedged into foreign currencies, 10-year US Treasury yields are 32 basis points (bps) in JPY, and 6 bps in EUR. The hedged yield difference between the 10-year Treasuries and JGBs is now 27 bps, while the hedged yield difference between the 10-year Treasuries and Bunds widened, currently at -59 bps.

Global 10-year Treasury Yields



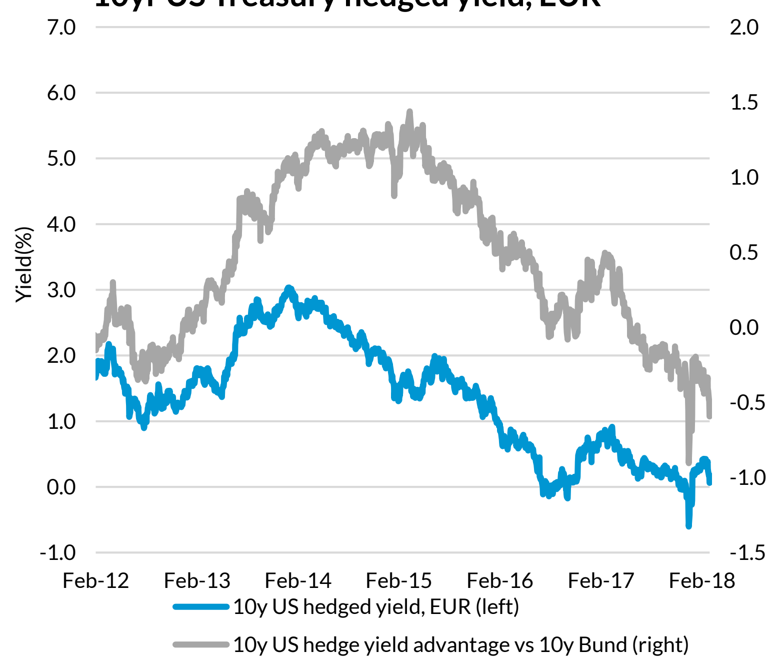
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of February 2018*

10yr US Treasury hedged yield, JPY



Sources: *Bloomberg and State Street Global Advisors.*
Note: *Data as of February 2018*

10yr US Treasury hedged yield, EUR

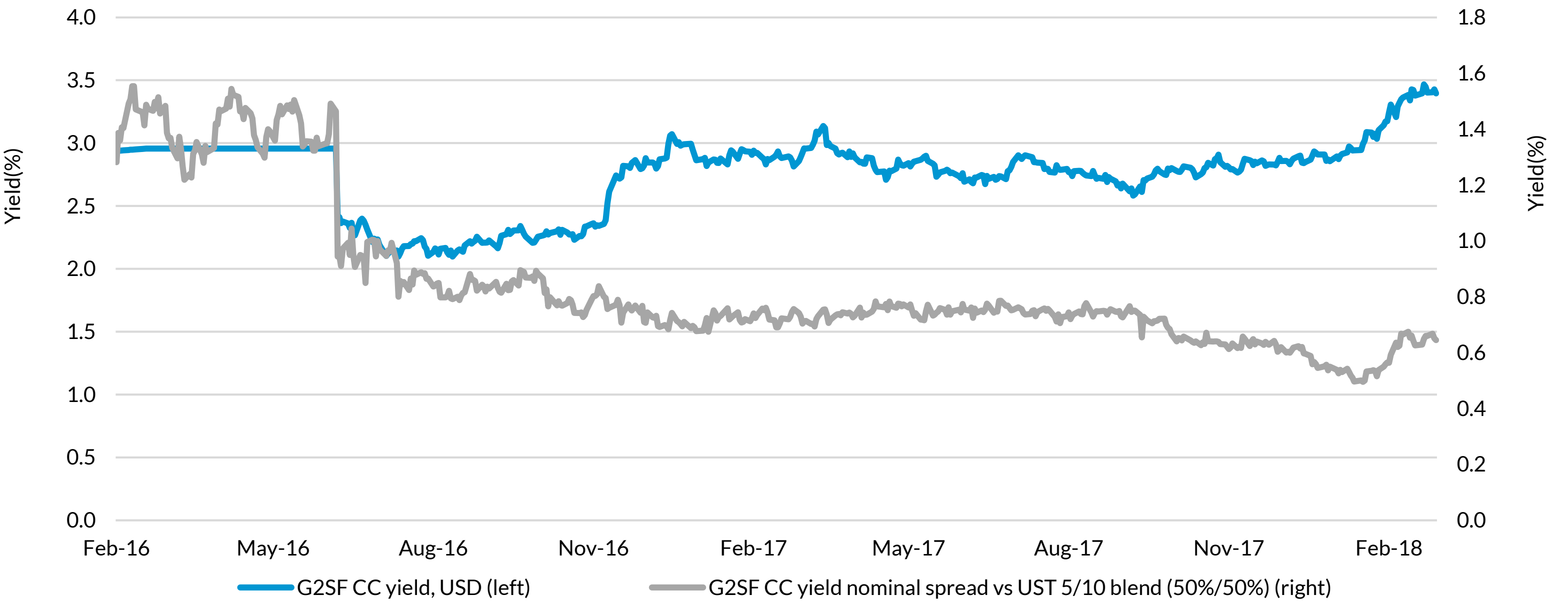


Sources: *Bloomberg and State Street Global Advisors*
Note: *Data as of February 2018*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

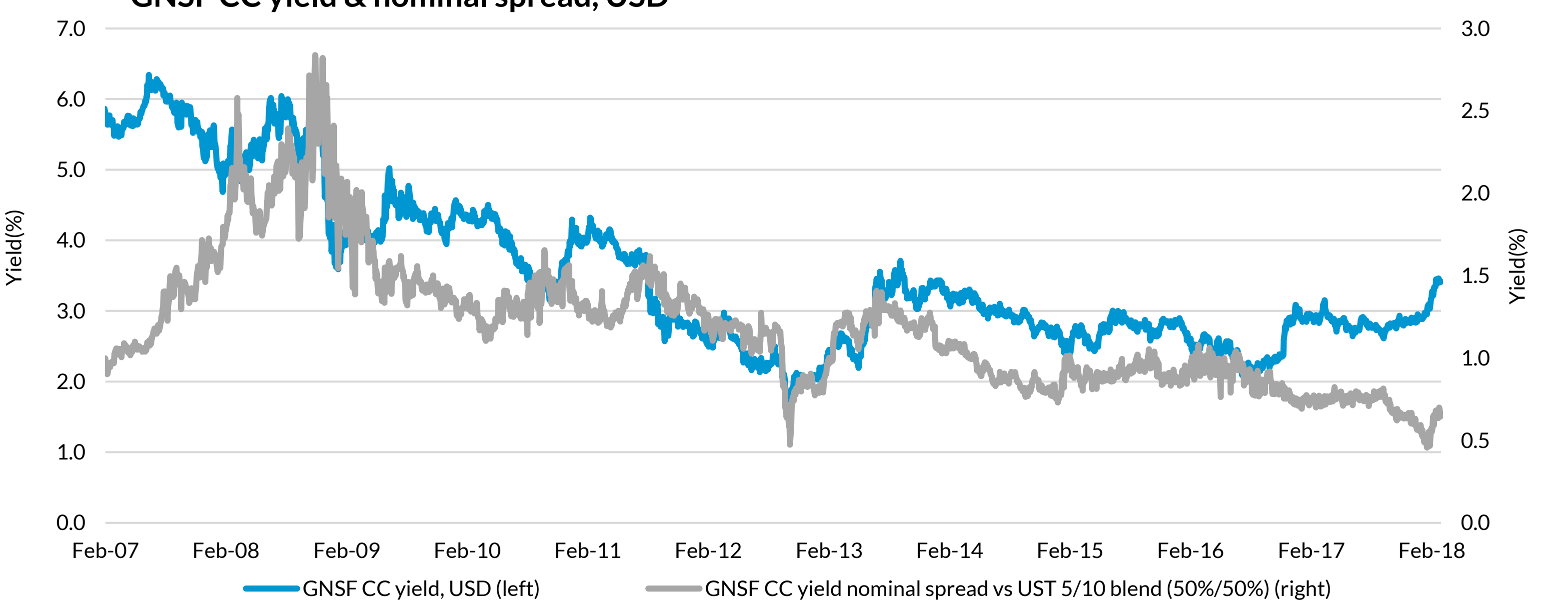
The nominal yield spread on current coupon GNMA II and GNMA I securities continued to increase in February 2018. Current coupon Ginnie Mae securities outyield their Treasury counterparts (relative to the average of 5- and 10-year Treasury yields) by 64 and 66 bps on G2SF and GNSF, respectively, representing a 8-9 basis point widening from January levels.

G2SF CC yield & nominal spread, USD



Sources: *Bloomberg and State Street Global Advisors.* ***Note****: Data as of February 2018*

GNSF CC yield & nominal spread, USD

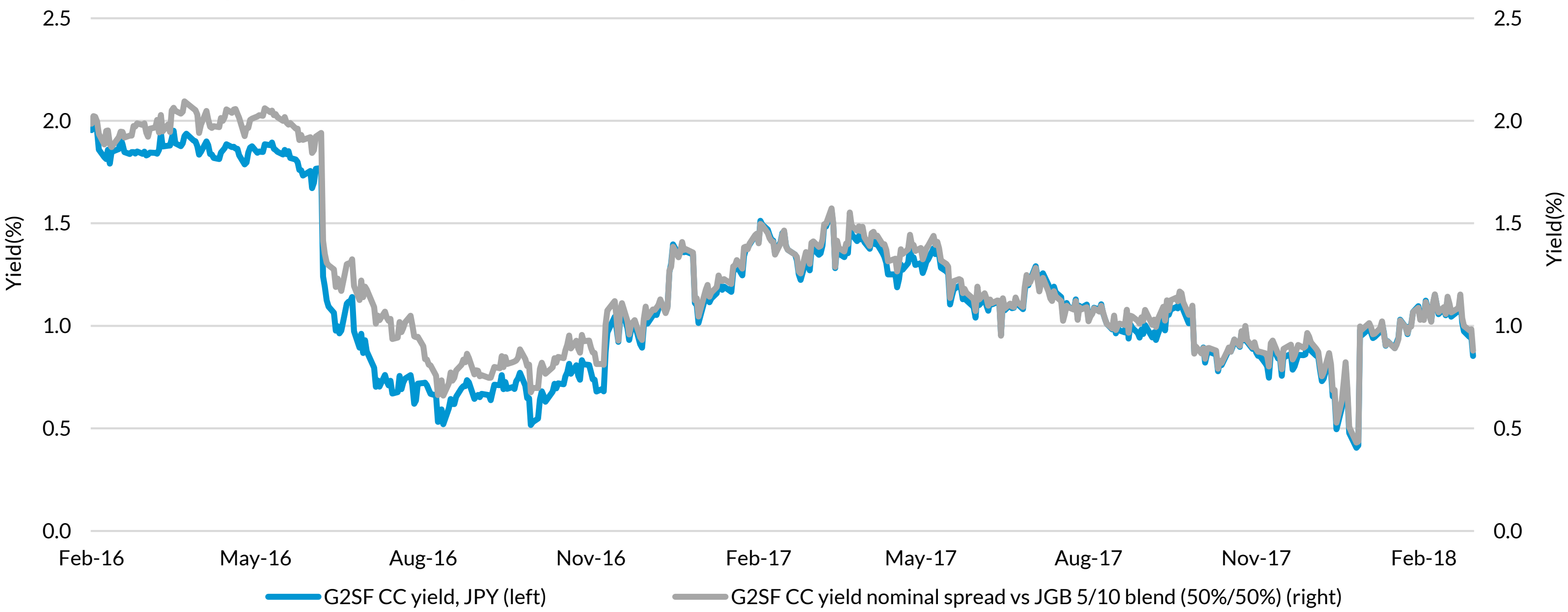


Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of February 2018*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

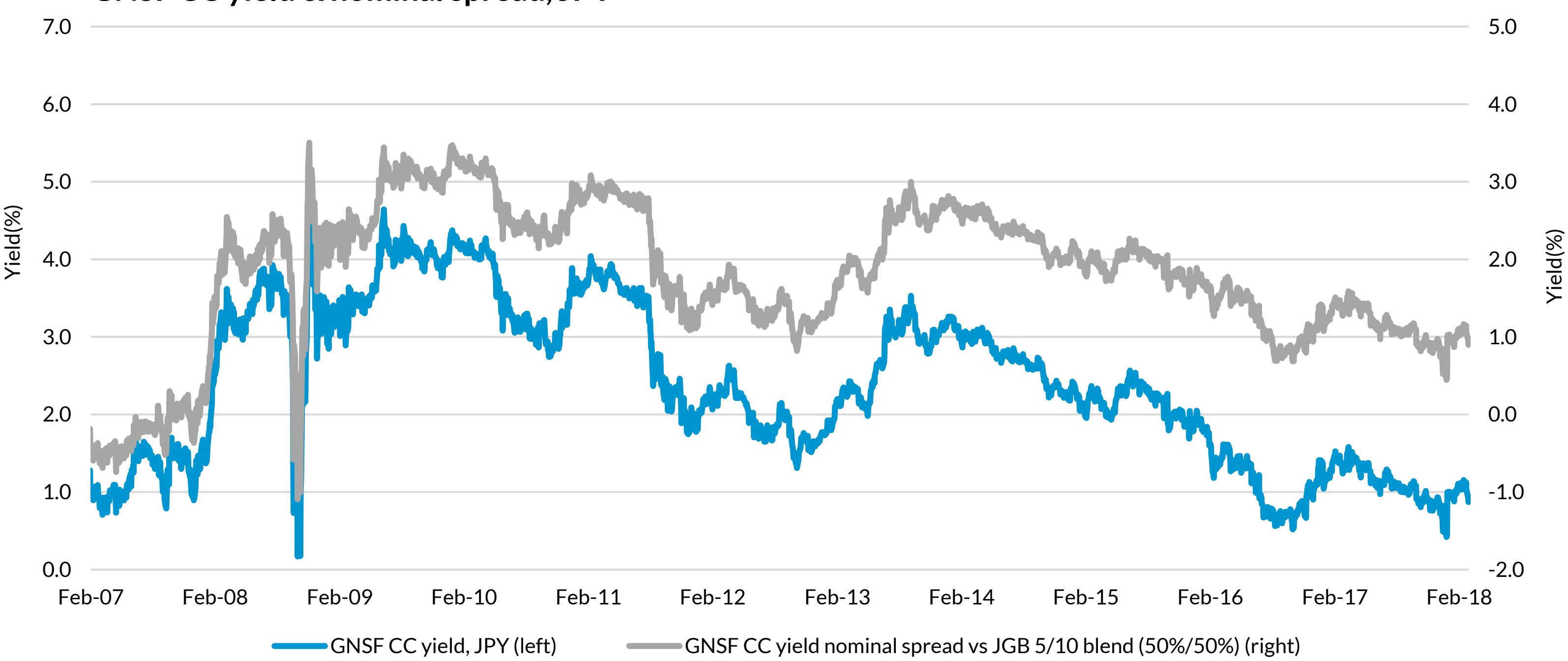
If Ginnie Mae securities are hedged into foreign currencies, they look attractive on a yield basis versus many sovereign alternatives. The figures show that current coupon G2SF and GNSF hedged into Japanese yen yield more than the JGB 5/10 blend by 88 and 90 bps, respectively. However, these latest spreads represent a sizeable 15-16 basis point narrowing from January levels.

G2SF CC yield & nominal spread, JPY



Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of February 2018*

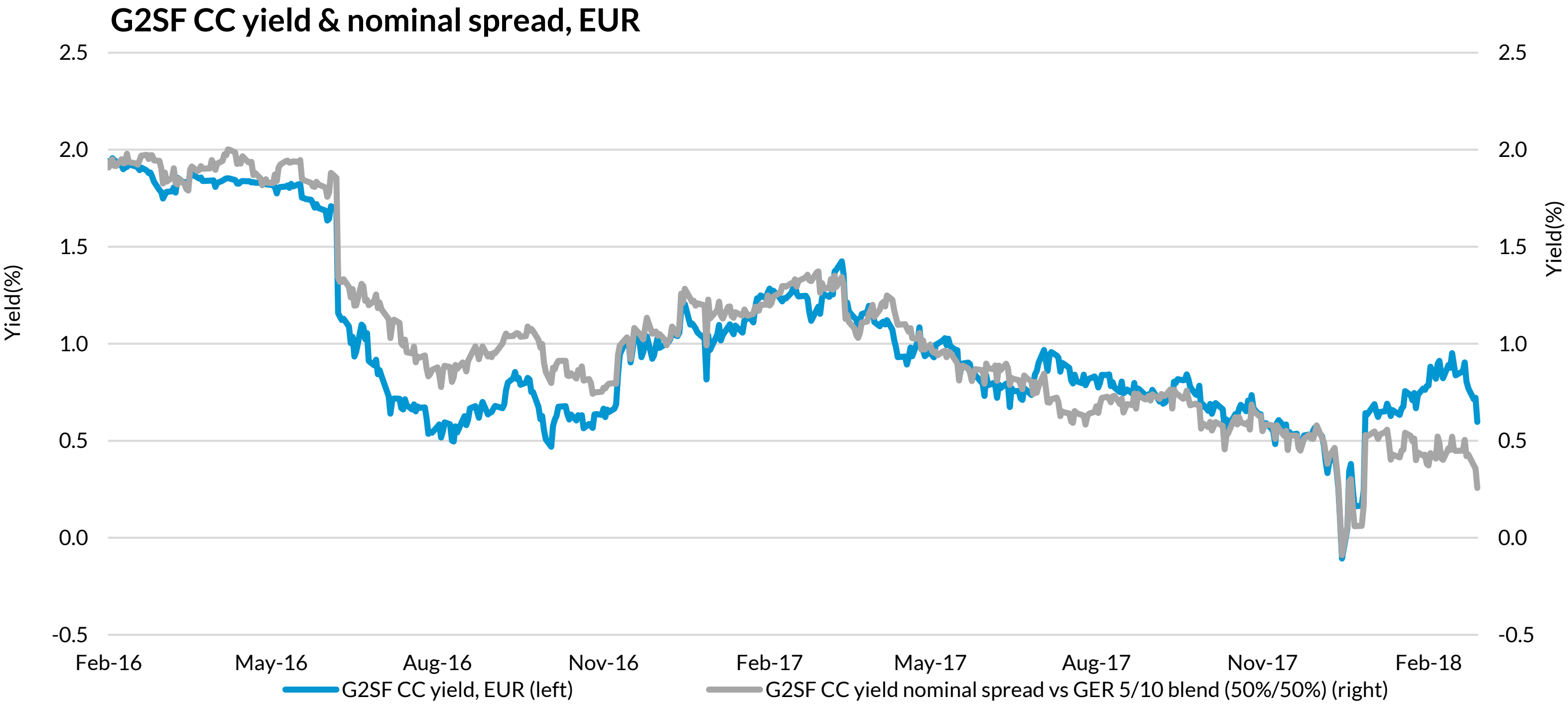
GNSF CC yield & nominal spread, JPY



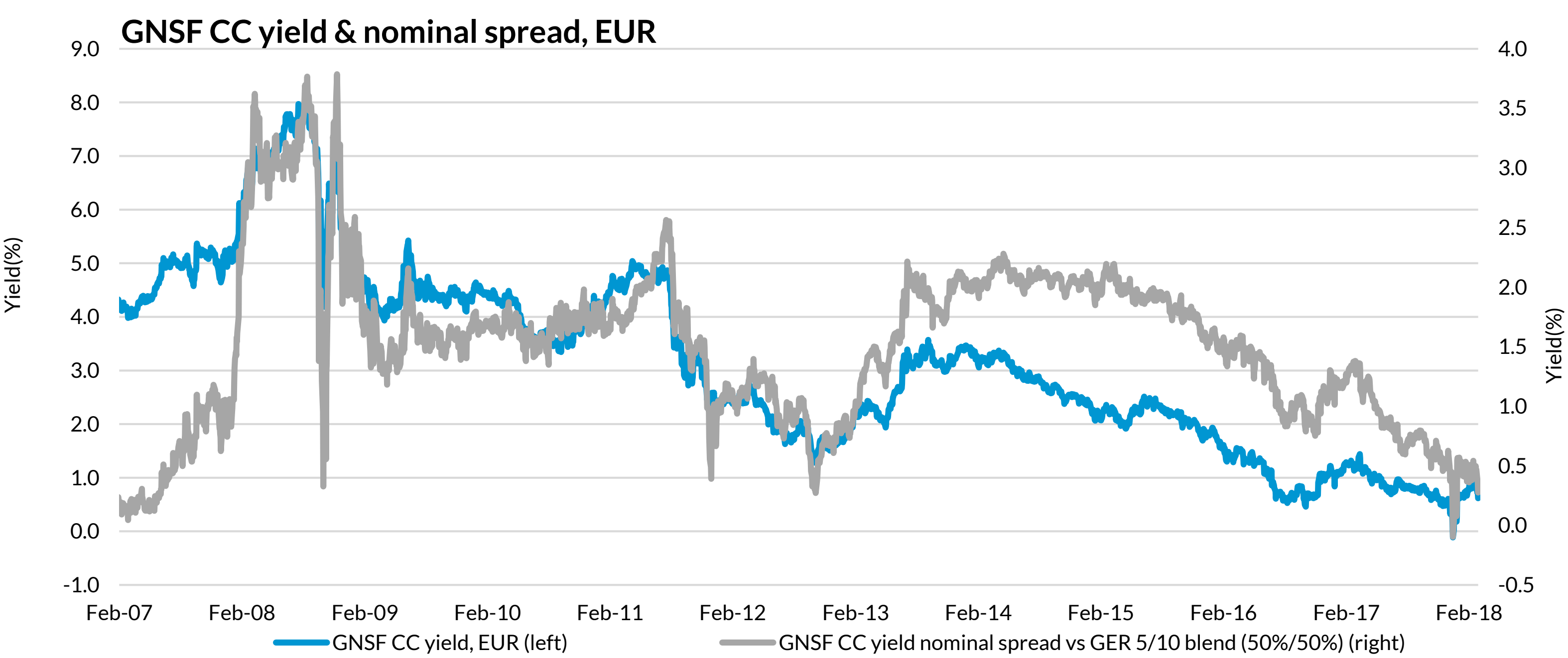
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of February 2018*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

If Ginnie Mae securities are hedged into foreign currencies, they look attractive on a yield basis versus sovereign alternatives. The figures show that current coupon G2SF and GNSF hedged into euros yield more than the average of the German 5/10 blend by 26 and 28 bps, respectively. However, these latest spreads represent a sizeable 11-12 basis point narrowing from January levels.



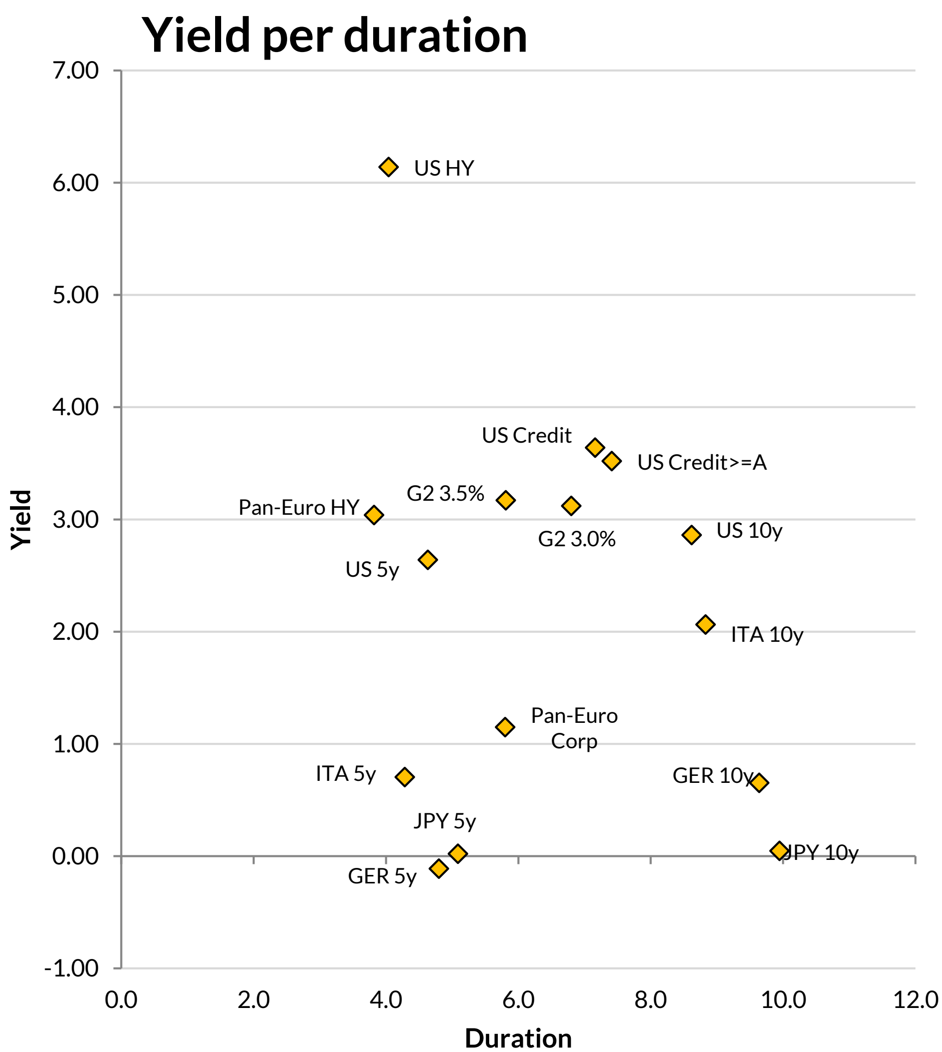
***Sources:** Bloomberg and State Street Global Advisors. **Note:** Data as of February 2018*



***Sources:** Bloomberg and State Street Global Advisors. **Note:** Data as of February 2018*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

US MBS yields are about the same or higher than most securities with the same or longer durations. The only security class with significantly more yield is the US high yield index, where interest rate risk does not fully capture the volatility of the high yield asset class. Investors are unable to match the yield on Ginnie Mae securities, while preserving the full government guarantee, even if they extend their duration significantly.



Security	Duration	Yield
US 5y	4.6	2.64
US 10y	8.6	2.86
GNMA II 3%	6.8	3.12
GNMA II 3.5%	5.8	3.17
JPY 5y	4.8	-0.11
JPY 10y	9.9	0.05
GER 5y	5.1	0.02
GER 10y	9.6	0.65
ITA 5y	4.3	0.70
ITA 10y	8.8	2.06
US credit	7.2	3.64
US credit >= A	7.4	3.52
US HY	4.0	6.14
Pan-Euro Corp	5.8	1.15
Pan-Euro HY	3.8	3.0

***Sources:** Bloomberg and State Street Global Advisors. **Note**: Yields are in base currency of security and unhedged.*
Data as of February 2018.

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

The average return on the Ginnie Mae index over the past decade has been slightly higher than the US Treasury index, but lower than many alternatives, including the US Investment-Grade Corporate and US and European High Yield indices. However, the standard deviation of the Ginnie Mae index is the lowest of any sector, as it has the least price volatility. The result: the excess return per unit of risk for the mortgage market is the highest of any market over the past decade, as measured by the Sharpe Ratio.

	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	-0.03	-0.05	0.19	0.04	0.34	0.34
3 year	0.07	0.03	0.20	0.06	0.44	0.31
5 year	0.12	0.08	0.25	0.32	0.45	0.53
10 year	0.28	0.23	0.44	0.39	0.72	0.85

	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	-0.12	-0.14	0.09	0.11	0.25	0.40
3 year	0.03	-0.01	0.16	0.12	0.39	0.36
5 year	0.09	0.05	0.23	0.35	0.42	0.56
10 year	0.26	0.21	0.42	0.38	0.69	0.83

	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	0.57	0.71	0.86	0.52	0.63	0.68
3 year	0.53	0.90	1.08	1.03	1.61	1.40
5 year	0.68	0.92	1.18	1.05	1.51	1.28
10 year	0.76	1.19	1.76	1.43	3.01	3.54

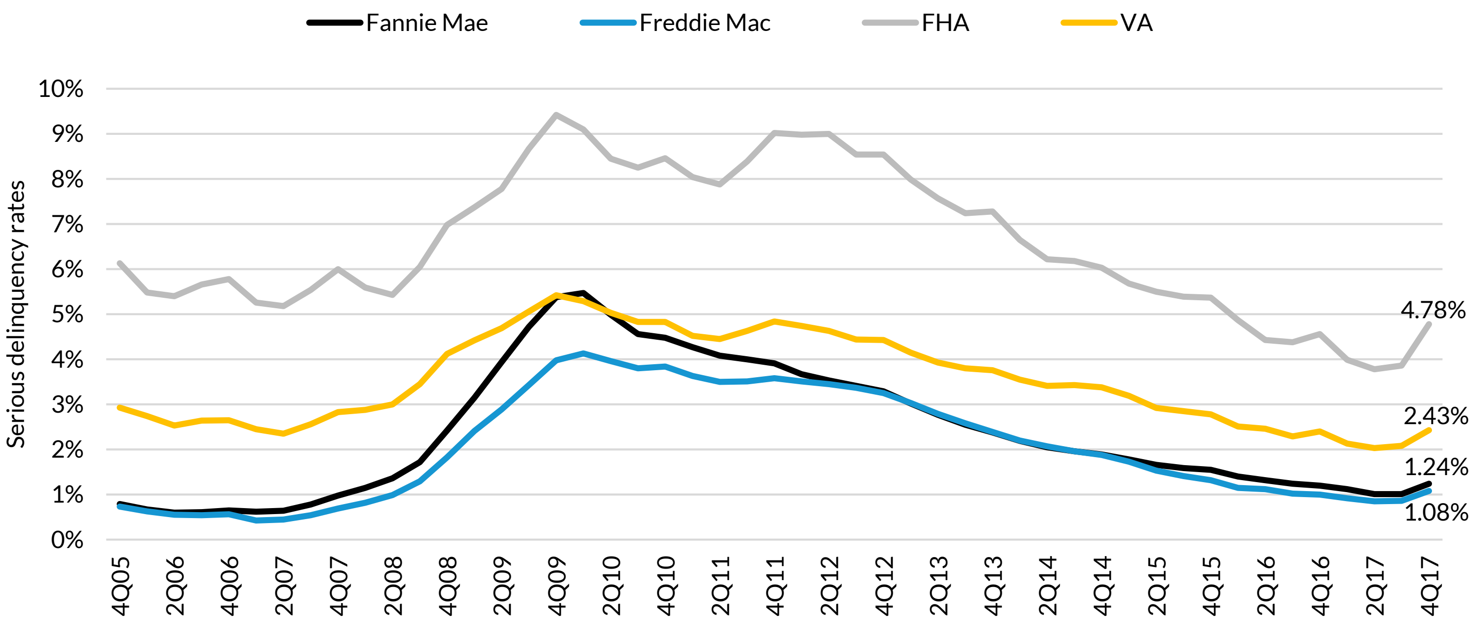
	Sharpe Ratio					
Time Period	US MBS Ginnie Mae	US Treasury	US Credit Corp	Pan Euro Credit Corp	US High Yield	Pan Euro High Yield*
1 year	-0.22	-0.19	0.11	0.21	0.40	0.60
3 year	0.05	-0.01	0.14	0.11	0.24	0.26
5 year	0.13	0.06	0.19	0.33	0.28	0.44
10 year	0.34	0.17	0.24	0.26	0.23	0.24

**Assumes 2% capitalization max per issuer on high yield indices*
***Sources:** Barclays Indices, Bloomberg and State Street Global Advisors* ***Note:** Data as of February 2018.*

State of the US Housing Market

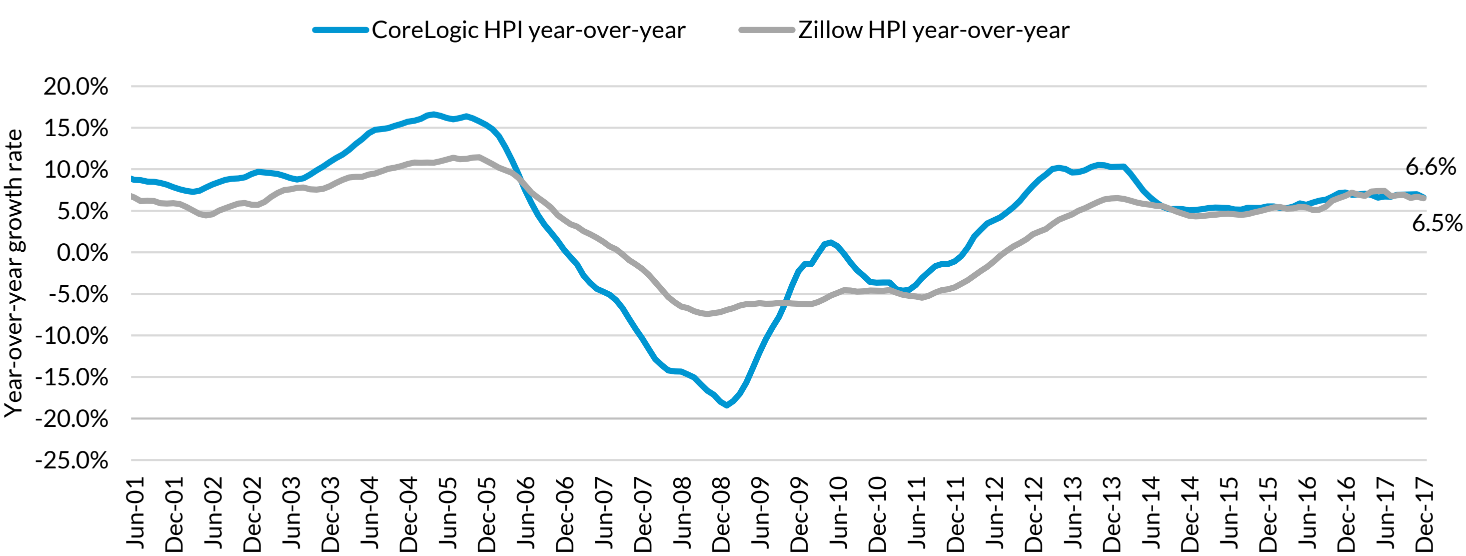
Serious delinquencies for single-family GSE loans, FHA loans, and VA loans edged up in the fourth quarter of 2017, partly due to seasonal factors, but mostly due to the impact of hurricanes Harvey, Irma and Maria. The delinquency rates for FHA and VA went up to 4.78 percent and 2.43 percent, respectively, while delinquency rates for Fannie Mae and Freddie Mac went up to 1.24 and 1.08 percent, respectively. GSE delinquencies remain high relative to 2005-2007, while FHA and VA delinquencies (which are higher than their GSE counterparts) are at levels lower than 2005-2007. Home price changes turned positive in 2012, and continue to increase approximately 6.5 percent per year, as measured by both CoreLogic and Zillow.

Serious Delinquency Rates: Single-Family Loans



Sources: *Fannie Mae, Freddie Mac, MBA Delinquency Survey and Urban Institute.*
Note: *Serious delinquency is defined as 90 days or more past due or in the foreclosure process. Data as of Q4 2017.*

National Year-Over-Year HPI Growth



Sources: *CoreLogic, Zillow, and Urban Institute.* ***Note:*** *Data as of December 2017.*

State of the US Housing Market

Nationally, the nominal home prices have improved by 51.2 percent since the trough, and have exceeded their pre-crisis peak valuation. However, the picture is very different for different states, with many states well in excess of the prior peak, while Nevada is 29.1 percent below peak levels and Florida is 19.7 percent below peak levels.

	HPI Changes				
State	2000 to Peak	Peak to Trough	Trough to Current	YOY	Current HPI % Below Peak
National	93.7%	-33.2%	51.2%	6.6%	-1.0%
Alabama	45.7%	-19.9%	23.0%	4.4%	1.6%
Alaska	68.9%	-9.4%	17.3%	1.6%	-5.9%
Arizona	121.5%	-50.5%	69.8%	6.3%	19.0%
Arkansas	39.6%	-7.6%	15.5%	3.5%	-6.3%
California	149.0%	-42.4%	77.9%	8.2%	-2.4%
Colorado	40.4%	-13.7%	66.6%	8.0%	-30.4%
Connecticut	79.5%	-24.9%	8.4%	1.9%	22.7%
Delaware	90.3%	-23.8%	19.6%	3.5%	9.7%
District of Columbia	150.5%	-10.4%	38.3%	2.5%	-19.3%
Florida	149.2%	-49.6%	65.8%	5.8%	19.7%
Georgia	40.5%	-30.7%	53.8%	5.8%	-6.1%
Hawaii	152.0%	-20.9%	44.8%	3.9%	-12.7%
Idaho	85.4%	-40.8%	74.7%	10.7%	-3.3%
Illinois	59.9%	-32.5%	30.7%	3.5%	13.4%
Indiana	24.4%	-16.4%	29.6%	5.3%	-7.7%
Iowa	25.5%	-4.9%	21.2%	3.8%	-13.3%
Kansas	33.2%	-14.0%	27.3%	3.9%	-8.6%
Kentucky	27.0%	-8.9%	23.7%	5.6%	-11.2%
Louisiana	58.8%	-7.5%	25.2%	5.1%	-13.7%
Maine	92.2%	-19.3%	33.7%	8.1%	-7.4%
Maryland	137.7%	-31.1%	21.1%	3.6%	19.8%
Massachusetts	81.7%	-21.2%	40.2%	6.2%	-9.5%
Michigan	26.2%	-43.2%	75.7%	7.1%	0.2%
Minnesota	69.7%	-28.1%	43.3%	5.7%	-2.9%
Mississippi	34.2%	-18.3%	20.6%	3.8%	1.5%
Missouri	46.2%	-22.3%	31.7%	5.6%	-2.3%
Montana	80.0%	-16.6%	40.0%	6.2%	-14.4%
Nebraska	25.3%	-5.3%	27.1%	5.3%	-17.0%
Nevada	129.0%	-59.9%	93.1%	11.0%	29.1%
New Hampshire	82.6%	-23.8%	31.0%	5.8%	0.2%
New Jersey	109.6%	-26.4%	16.6%	3.5%	16.5%
New Mexico	64.3%	-26.4%	20.5%	3.5%	12.8%
New York	101.9%	-13.9%	30.1%	5.3%	-10.8%
North Carolina	39.8%	-14.6%	28.8%	5.5%	-9.1%
North Dakota	50.5%	-1.9%	50.4%	5.4%	-32.2%
Ohio	22.2%	-20.4%	32.5%	6.2%	-5.2%
Oklahoma	35.8%	-3.1%	15.4%	1.7%	-10.5%
Oregon	87.5%	-29.3%	67.8%	6.9%	-15.7%
Pennsylvania	71.7%	-12.9%	16.3%	3.8%	-1.3%
Rhode Island	131.0%	-34.2%	34.0%	8.2%	13.4%
South Carolina	61.5%	-22.2%	34.0%	5.3%	-4.1%
South Dakota	37.3%	-3.4%	33.5%	4.3%	-22.5%
Tennessee	41.3%	-13.2%	38.1%	6.6%	-16.6%
Texas	39.4%	-13.2%	48.8%	5.7%	-22.6%
Utah	64.8%	-31.7%	65.2%	10.7%	-11.4%
Vermont	81.6%	-9.1%	14.7%	4.1%	-4.0%
Virginia	135.1%	-30.6%	29.9%	2.7%	10.9%
Washington	90.2%	-28.1%	69.2%	12.0%	-17.8%
West Virginia	81.1%	-26.9%	24.9%	5.0%	9.5%
Wisconsin	48.6%	-17.2%	27.0%	5.9%	-4.9%
Wyoming	75.5%	-14.5%	27.7%	3.3%	-8.4%

Sources: *CoreLogic and Urban Institute.* ***Note:*** *HPI data as of December 2017. Negative sign indicates that state is above earlier peak. Peak refers to the month when HPI reached the highest level for each state/US during the housing boom period, ranging from 09/2005 to 09/2008. Trough represents the month when HPI fell to the lowest level for each state/US after the housing bust, ranging from 01/2009 to 03/2012. Current is 12/2017, the latest HPI data period.*

State of the US Housing Market

Ginnie Mae loans constitute 32.5 percent of outstanding agency issuance by loan balance, 34.0 percent of the issuance over the past year. However, the Ginnie Mae share varies widely across states, with the share of outstandings (as measured by loan balance) as low as 17.6 percent in the District of Columbia and as high as 52.7 percent in Mississippi. In general, the Ginnie Mae share is higher in states with lower home prices.

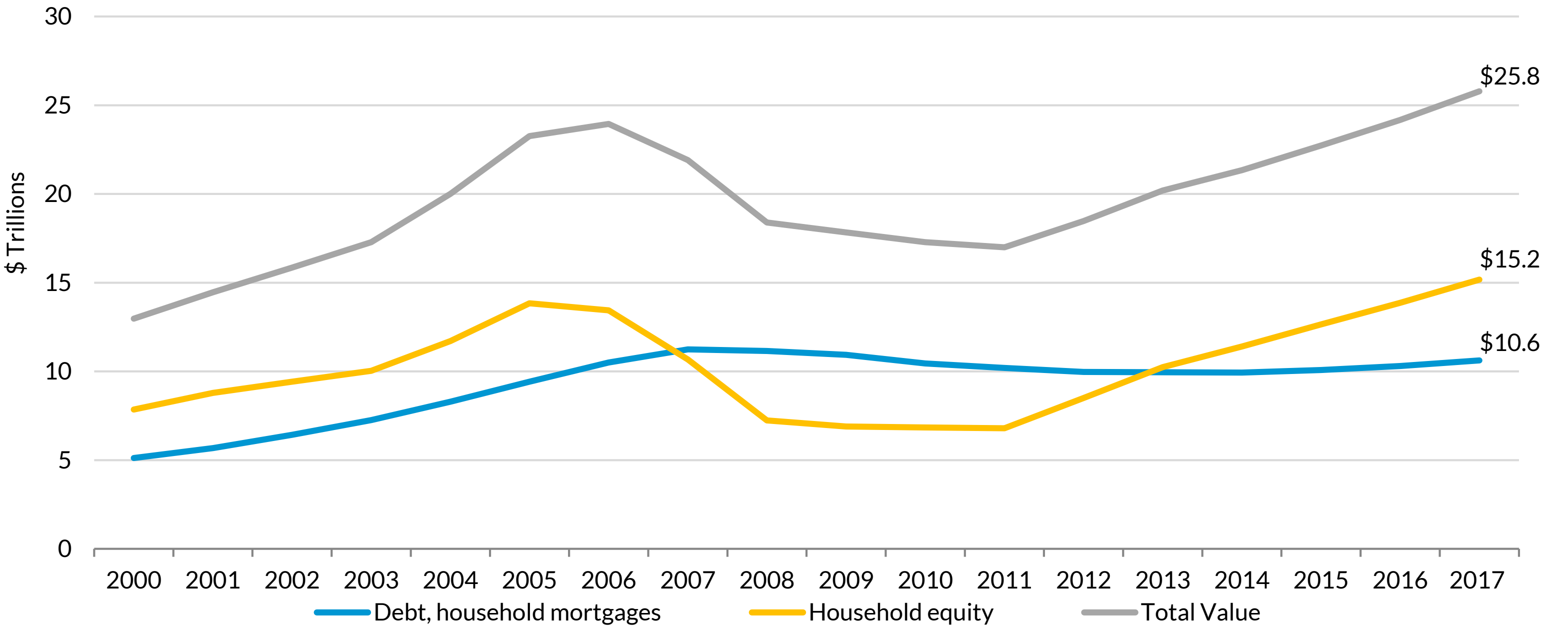
State	Agency Issuance (past 1 year)			Agency Outstanding		
	Ginnie Mae Share	Ginnie Mae Average Loan Size (Thousands)	GSE Average Loan Size (Thousands)	Ginnie Mae Share	Ginnie Mae Average Loan Size (Thousands)	GSE Average Loan Size (Thousands)
National	34.0%	210.6	225.4	32.5%	177.9	208.0
Alabama	45.7%	158.2	178.5	47.3%	141.8	168.5
Alaska	53.2%	278.9	241.3	52.2%	256.0	228.0
Arizona	35.0%	204.1	208.5	34.8%	175.6	190.6
Arkansas	43.8%	140.0	165.2	47.0%	122.5	152.9
California	28.4%	337.6	319.9	22.4%	284.3	291.8
Colorado	33.1%	272.5	261.7	30.6%	227.7	236.3
Connecticut	32.3%	214.0	224.2	30.0%	203.6	218.2
Delaware	39.5%	211.0	219.7	37.6%	198.2	207.8
District of Columbia	17.6%	398.3	352.2	17.6%	325.5	332.7
Florida	39.3%	205.2	200.2	36.8%	172.8	184.4
Georgia	41.6%	179.6	202.2	41.1%	154.4	186.0
Hawaii	39.4%	485.7	372.8	32.0%	417.7	345.1
Idaho	35.2%	189.3	193.2	35.3%	162.3	175.2
Illinois	26.4%	175.5	196.4	25.3%	155.4	183.2
Indiana	39.8%	138.7	153.7	39.8%	121.8	141.5
Iowa	26.6%	143.5	160.9	27.1%	125.2	148.8
Kansas	36.9%	152.7	172.4	37.2%	132.7	157.0
Kentucky	40.9%	146.8	163.8	40.3%	133.0	150.1
Louisiana	43.3%	167.8	189.0	43.9%	150.6	177.2
Maine	36.2%	181.1	195.1	33.2%	166.5	180.7
Maryland	44.7%	279.6	260.3	40.2%	252.3	247.0
Massachusetts	24.1%	285.2	275.3	19.8%	253.0	255.1
Michigan	26.4%	143.0	166.1	26.9%	123.4	151.4
Minnesota	25.9%	193.2	205.1	25.8%	169.9	190.2
Mississippi	50.7%	149.5	167.4	52.7%	132.0	157.8
Missouri	36.6%	149.1	169.3	36.7%	132.5	156.0
Montana	31.8%	209.7	211.6	31.9%	182.6	191.7
Nebraska	31.9%	159.0	167.3	35.7%	135.1	153.6
Nevada	40.2%	230.8	221.4	40.7%	196.1	197.9
New Hampshire	32.5%	226.6	219.4	30.4%	208.6	202.2
New Jersey	30.3%	247.1	261.2	28.4%	232.6	248.7
New Mexico	44.1%	175.5	184.4	44.3%	156.3	172.7
New York	27.0%	240.2	263.2	26.7%	205.0	242.4
North Carolina	35.2%	176.1	197.5	36.2%	154.7	184.3
North Dakota	28.7%	206.6	203.1	27.2%	180.1	185.4
Ohio	36.9%	139.7	154.7	37.9%	125.1	144.1
Oklahoma	47.4%	150.6	167.9	50.3%	131.2	156.8
Oregon	27.8%	245.7	249.5	25.8%	209.3	220.9
Pennsylvania	34.2%	165.9	190.5	34.0%	151.9	180.6
Rhode Island	38.1%	219.9	215.1	34.3%	200.2	203.1
South Carolina	40.4%	179.8	188.9	39.4%	158.0	177.1
South Dakota	37.0%	172.7	181.2	37.2%	154.6	165.0
Tennessee	41.4%	176.4	195.0	43.2%	149.9	177.9
Texas	35.5%	191.4	209.8	38.6%	152.8	191.0
Utah	31.5%	229.3	240.0	32.1%	200.6	218.0
Vermont	23.1%	191.0	193.3	20.1%	181.4	182.3
Virginia	45.3%	269.5	257.0	42.1%	243.0	244.1
Washington	32.2%	272.6	273.3	30.6%	231.9	243.1
West Virginia	48.1%	152.3	153.6	46.1%	138.7	146.6
Wisconsin	23.5%	162.7	173.5	21.8%	146.7	160.9
Wyoming	41.9%	208.6	207.3	41.8%	193.1	195.0

***Sources:** eMBS and Urban Institute. **Note:** Ginnie Mae share are based on loan balance as of December 2017.*

State of the US Housing Market

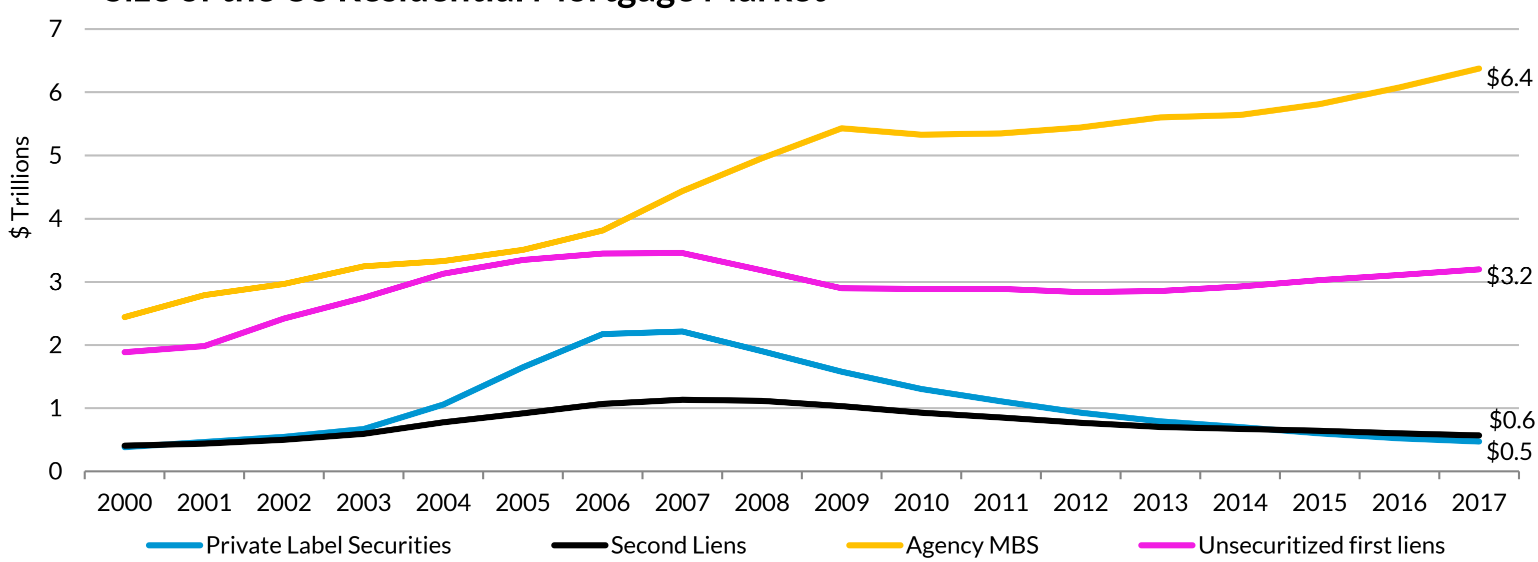
The Federal Reserve's Flow of Funds report has consistently indicated an increasing total value of the housing market driven by growing household equity since 2012, and 2017 Q4 was no different. While total debt and mortgages was stable at $10.6 trillion, household equity reached a new high of $15.2 trillion, bringing the total value of the housing market to $25.8 trillion, after surpassing the pre-crisis peak last quarter. Agency MBS make up 60.1 percent of the total mortgage market, private-label securities make up 4.5 percent, and unsecuritized first liens at the GSEs, commercial banks, savings institutions, and credit unions make up 30.1 percent. Second liens comprise the remaining 5.4 percent of the total.

Value of the US Housing Market



Sources: *Federal Reserve Flow of Funds and Urban Institute. Data as of Q4 2017.*

Size of the US Residential Mortgage Market

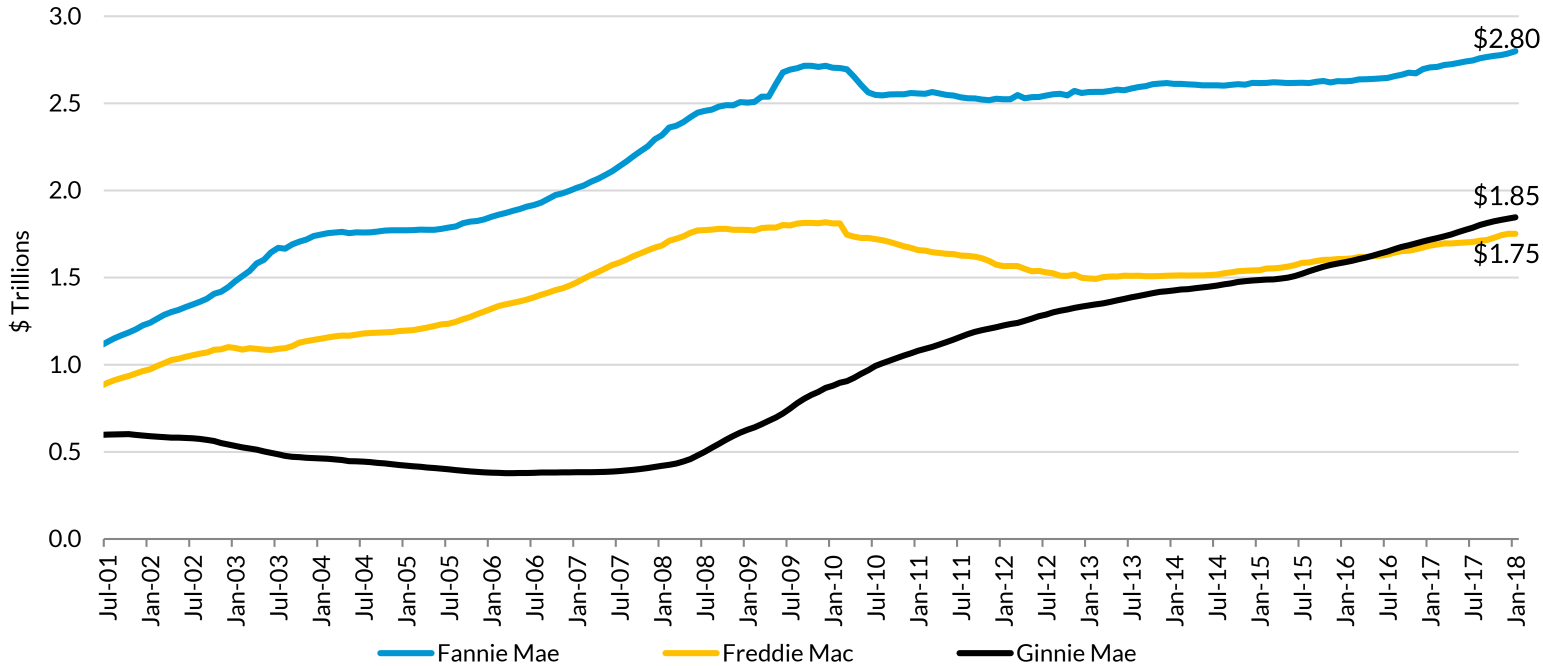


Sources: *Federal Reserve Flow of Funds, Inside Mortgage Finance, Fannie Mae, Freddie Mac, eMBS and Urban Institute.*
Note: *Unsecuritized first liens includes loans held by commercial banks, GSEs, savings institutions, and credit unions. Data as of Q4 2017.*

State of the US Housing Market

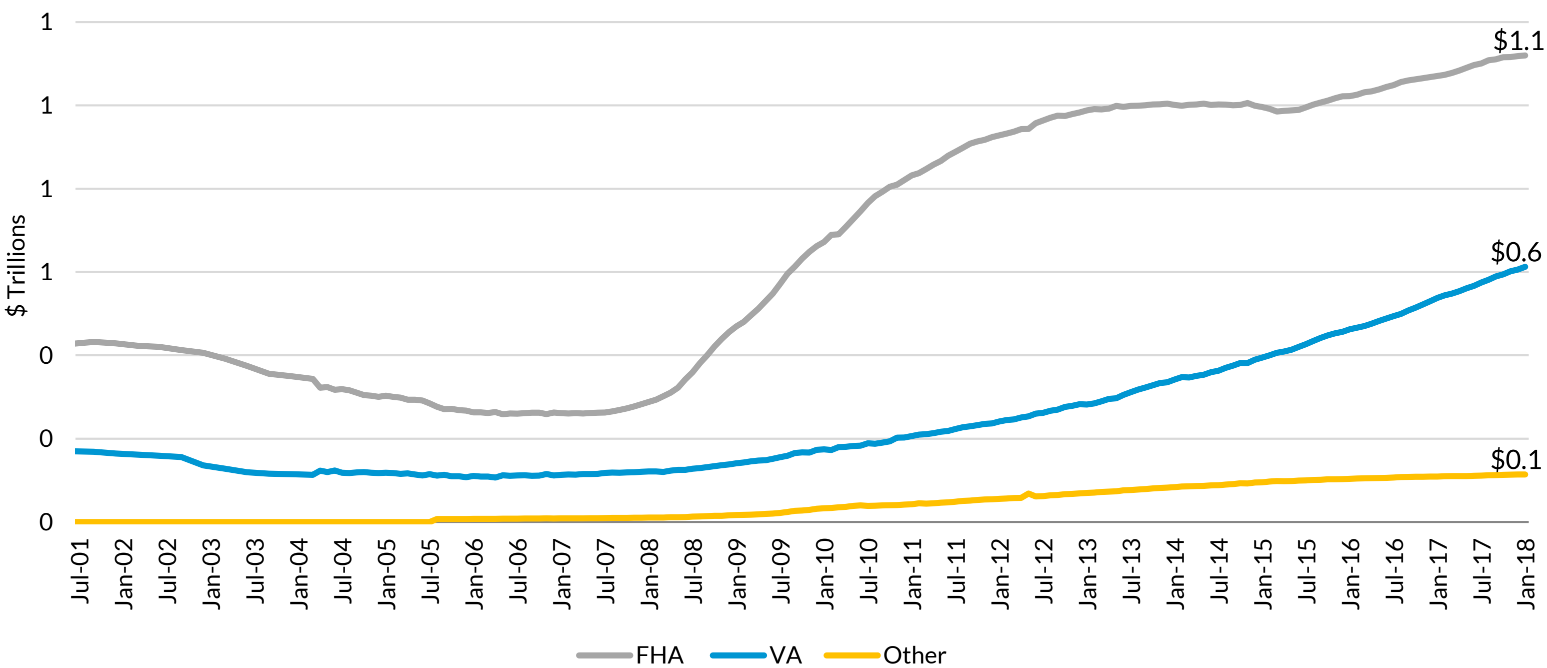
As of January 2018, outstanding securities in the agency market totaled $6.40 trillion and were 43.8 percent Fannie Mae, 27.4 percent Freddie Mac, and 28.9 percent Ginnie Mae. Ginnie Mae has more outstandings than Freddie Mac. Within the Ginnie Mae market, VA has been growing very rapidly--comprising 33.0 percent of total Ginnie Mae outstandings.

Outstanding Agency Mortgage-Backed Securities



Sources: *eMBS and Urban Institute* **Note:** *Data as of January 2018*

Outstanding Ginnie Mae Mortgage-Backed Securities

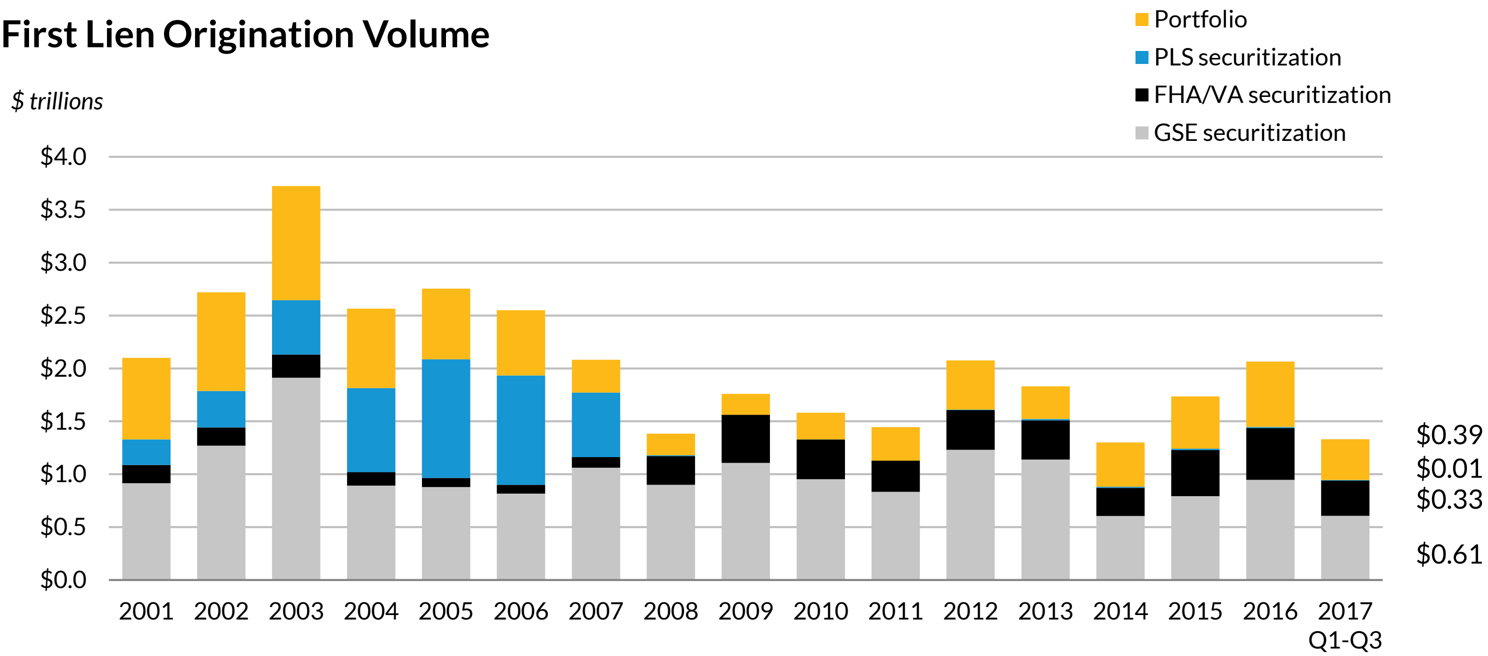


Sources: *eMBS and Urban Institute.* **Note:** *Data as of January 2018*

State of the US Housing Market

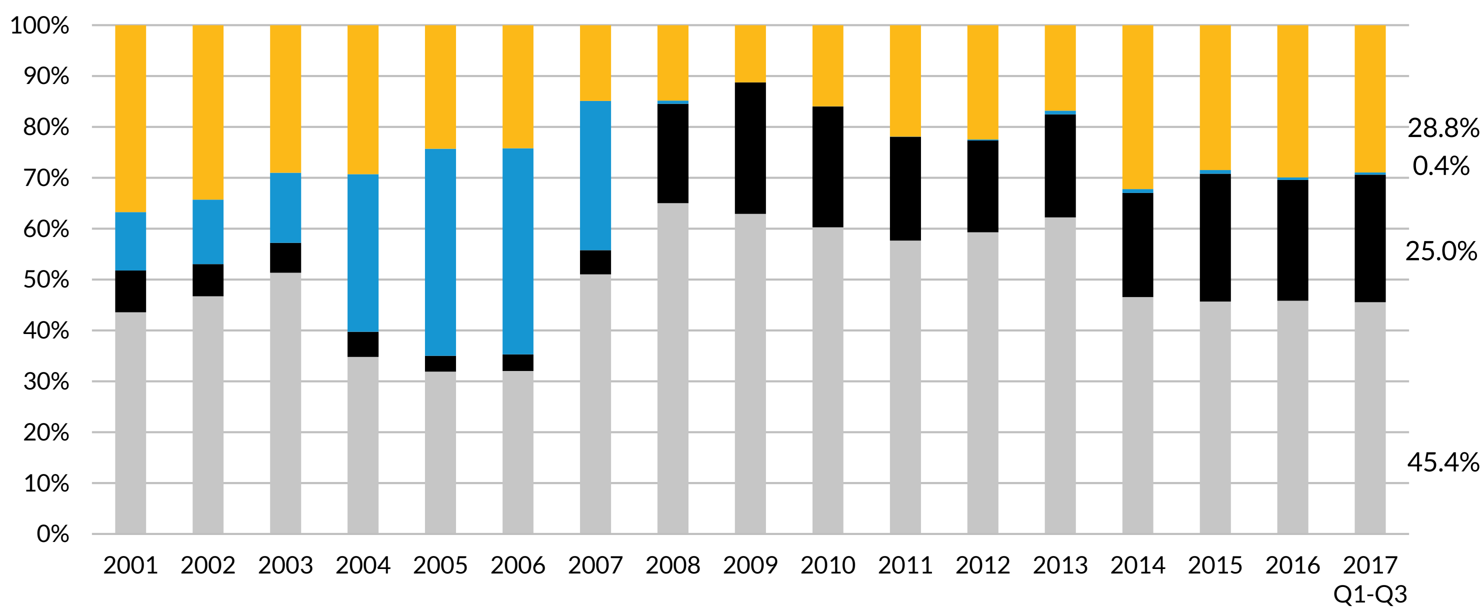
After a record origination year in 2016 ($2.1 trillion), the highest since the great recession, first lien originations totaled $1.3 trillion in the first three quarters of 2017. It was down 9 percent from the same period last year, mostly due to the elevated interest rates. The share of portfolio originations was 29 percent, down slightly from 30 percent in 2016. The GSE share stayed at about 45 percent. The FHA/VA share was slightly up: 25 percent for the first three quarters of 2017 versus 24 percent in 2016. Origination of private-label securities was well under 1 percent in both periods.

First Lien Origination Volume



Sources: *Inside Mortgage Finance and Urban Institute.* **Note:** *Data as of Q3 2017.*

First Lien Origination Share



Sources: *Inside Mortgage Finance and Urban Institute.* **Note:** *Data as of Q3 2017.*

US Agency Market, Originations

Agency gross issuance totaled $104.0 billion in January 2018, down by 23.9 percent compared to January 2017. Ginnie Mae issuance was down by 17.4 percent and GSE gross issuance was down by 26.9 percent. Within the Ginnie Mae market, FHA is down by 21.6 percent and VA origination is down by 11.9 percent. As a result of higher rates, originations continue to stay substantially lower.

Agency Gross Issuance					
Issuance Year	Fannie Mae	Freddie Mac	GSE Total	Ginnie Mae	Total Agency
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 YTD	$47.4	$21.4	$68.8	$35.2	$104.0
2018 %Change YOY	-14.9%	-44.3%	-26.9%	-17.4%	-23.9%
2018 Ann.	$568.2	$257.3	$825.5	$421.9	$1,247.4

Ginnie Mae Breakdown: Agency Gross Issuance				
Issuance Year	FHA	VA	Other	Total Agency
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	$18.3	$15.3	$1.5	$35.2
2018 %Change YOY	-21.6%	-11.9%	-16.7%	-17.4%
2018 Ann.	$220.0	$184.0	$17.9	$421.9

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 January 2018.*

US Agency Market, Originations

Agency net issuance totaled $20.6 billion in January 2018, down 35.6 percent compared to January 2017. Ginnie Mae net issuance was $7.8 billion, comprising 37.9 percent of total agency net issuance. Note that Ginnie Mae net issuance is down 25 percent compared to January 2017. Ginnie Mae net issuance this month is comprised of 83.0 percent VA issuance, 15.6 percent FHA issuance and 1.9 percent other issuance.

Agency Net Issuance

Issuance Year	Fannie Mae	Freddie Mac	GSE Total	Ginnie Mae	Total Agency
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	$57.5	$11.6	$69.1	$87.9	$157.0
2014	$0.5	$30.0	$30.5	$61.6	$92.1
2015	$10.2	$65.0	$75.1	$97.3	$172.5
2016	$68.6	$66.8	$135.5	$125.3	$260.8
2017	$90.2	$78.2	$168.5	$131.3	$299.7
2018	$12.4	$0.3	$12.8	$7.8	$20.6
2018 %Change YOY	20.6%	-97.0%	-40.7%	-25.2%	-35.6%
2018 Ann.	$149.2	$4.0	$153.2	$93.5	$246.6

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	$1.2	$6.4	$0.1	$7.8
2018 %Change YOY	-51.2%	-17.8%	39.8%	-25.2%
2018 Ann.	$14.6	$77.1	$1.8	$93.5

Sources: *eMBS and Urban Institute (top and bottom)*

Note : *Dollar amounts are in billions. "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. All data is as of January 2018.*

US Agency Market, Originations

Agency gross issuance totaled $104.0 billion in January 2018, down slightly from $111.5 billion of issuance in December 2017. Since March 2017, monthly agency gross issuance has been lower than in the same period of the previous year, reflecting higher mortgage rates.

Monthly Agency Issuance

	Gross Issuance			Net Issuance		
Date	Fannie Mae	Freddie Mac	Ginnie Mae	Fannie Mae	Freddie Mac	Ginnie Mae
Jan-14	$28.2	$20.0	$21.6	-$4.9	$0.5	$4.9
Feb-14	$27.9	$17.9	$20.1	-$0.2	$1.2	$5.2
Mar-14	$24.1	$14.7	$16.7	-$2.3	-$0.9	$1.9
Apr-14	$28.0	$18.7	$21.7	-$1.9	$1.2	$5.2
May-14	$27.7	$18.1	$23.9	-$3.7	$0.0	$4.9
Jun-14	$32.1	$20.7	$24.9	-$0.4	$1.8	$4.5
Jul-14	$36.3	$23.2	$27.4	$0.6	$2.6	$5.4
Aug-14	$34.2	$28.4	$30.0	-$2.7	$7.4	$7.9
Sep-14	$39.6	$25.9	$27.0	$4.8	$5.6	$5.2
Oct-14	$39.5	$25.8	$29.9	$4.3	$6.2	$8.4
Nov-14	$32.0	$23.1	$26.4	-$3.0	$2.7	$4.2
Dec-14	$43.3	$21.6	$26.7	$9.9	$1.8	$4.1
Jan-15	$36.8	$22.9	$27.5	-$1.2	$0.8	$2.5
Feb-15	$35.4	$29.9	$23.9	$1.5	$10.1	$2.9
Mar-15	$44.8	$26.0	$30.7	$3.1	$1.1	$0.6
Apr-15	$49.3	$33.8	$40.6	-$1.2	$3.8	$4.3
May-15	$42.4	$33.2	$39.4	-$2.9	$6.6	$5.8
Jun-15	$44.6	$34.4	$40.5	$0.8	$8.3	$9.1
Jul-15	$46.0	$39.2	$45.6	$1.0	$12.3	$13.3
Aug-15	$39.4	$27.6	$43.4	-$2.2	$3.1	$14.9
Sep-15	$45.3	$30.4	$39.4	$7.6	$7.9	$12.7
Oct-15	$41.5	$28.4	$39.2	$4.8	$6.4	$12.4
Nov-15	$28.8	$23.3	$35.8	-$8.1	$1.3	$10.6
Dec-15	$39.7	$22.8	$30.3	$7.1	$3.2	$8.2
Jan-16	$35.6	$22.5	$32.5	-$0.6	$1.0	$7.3
Feb-16	$32.4	$21.2	$30.5	$2.4	$3.1	$8.4
Mar-16	$39.7	$27.5	$32.9	$7.9	$8.2	$9.6
Apr-16	$43.8	$26.2	$40.1	$0.8	-$0.2	$8.8
May-16	$44.2	$29.9	$41.6	$2.4	$4.4	$11.4
Jun-16	$46.7	$30.1	$43.9	$2.7	$3.0	$11.9
Jul-16	$49.8	$35.3	$46.1	$2.3	$6.3	$10.8
Aug-16	$54.9	$37.9	$46.7	$10.4	$11.0	$13.8
Sep-16	$65.8	$44.0	$52.5	$8.7	$9.0	$12.5
Oct-16	$66.0	$35.9	$47.4	$11.8	$2.7	$9.3
Nov-16	$48.8	$40.2	$47.2	-$3.5	$7.9	$10.3
Dec-16	$72.7	$40.5	$46.8	$23.3	$10.4	$10.8
Jan-17	$55.6	$38.5	$42.6	$10.3	$10.7	$10.3
Feb-17	$37.6	$27.4	$33.1	$3.1	$6.5	$9.2
Mar-17	$39.5	$24.4	$31.3	$10.3	$6.2	$9.6
Apr-17	$39.3	$21.2	$36.4	$4.8	$0.4	$11.7
May-17	$40.3	$22.6	$36.4	$7.6	$2.7	$13.1
Jun-17	$45.7	$25.1	$39.9	$8.3	$2.4	$13.2
Jul-17	$45.3	$27.6	$40.6	$5.8	$3.5	$12.1
Aug-17	$49.1	$29.3	$42.8	$12.0	$6.7	$15.6
Sep-17	$47.3	$27.9	$40.2	$7.4	$3.8	$10.5
Oct-17	$42.9	$34.6	$38.4	$6.4	$12.5	$10.7
Nov-17	$43.5	$37.2	$37.8	$4.6	$13.6	$8.2
Dec-17	$45.3	$30.0	$36.2	$9.6	$8.2	$6.8
Jan-18	$47.4	$21.4	$35.2	$12.4	$0.3	$7.8

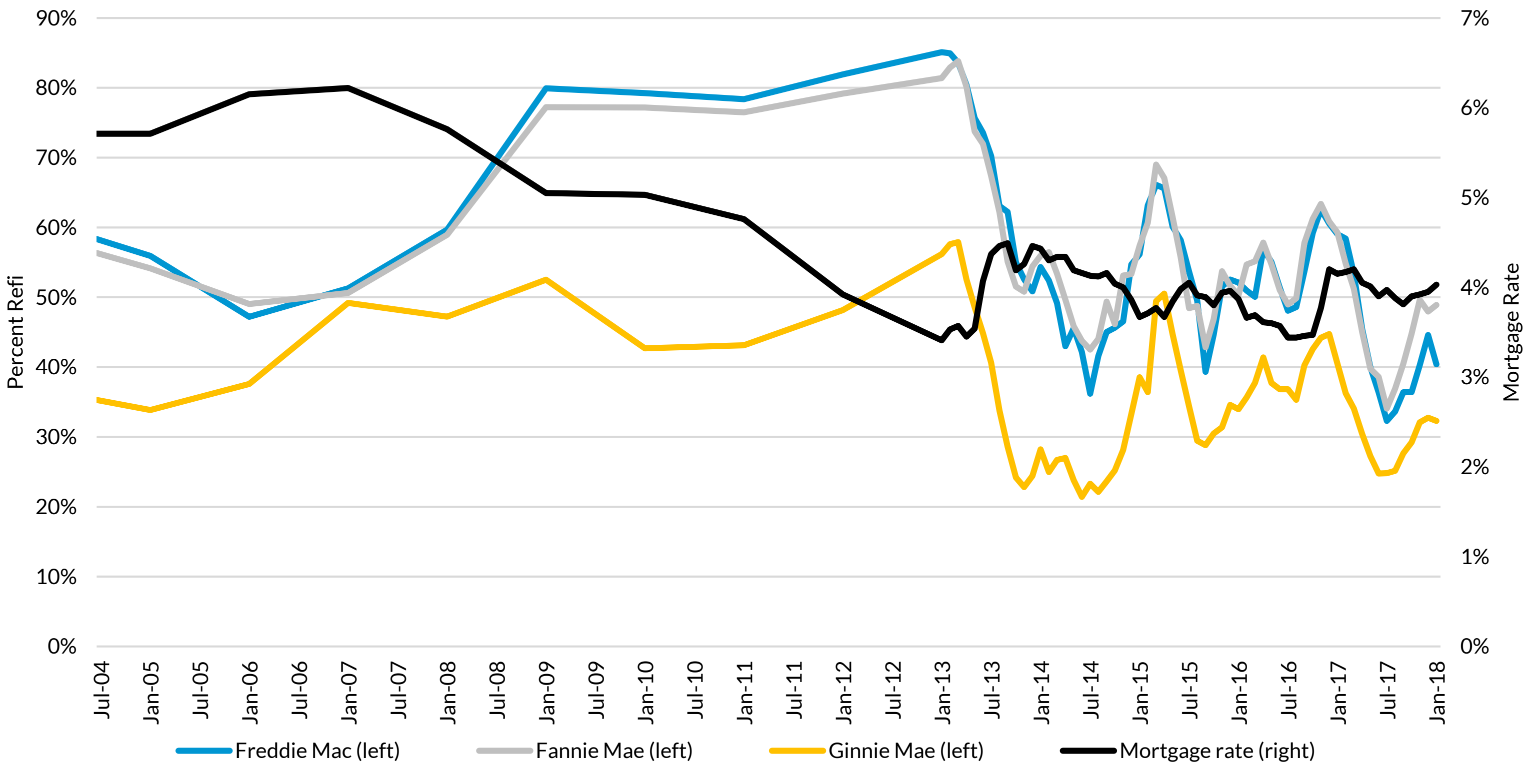
Sources: *eMBS and Urban Institute.*

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 January 2018.*

US Agency Market, Originations

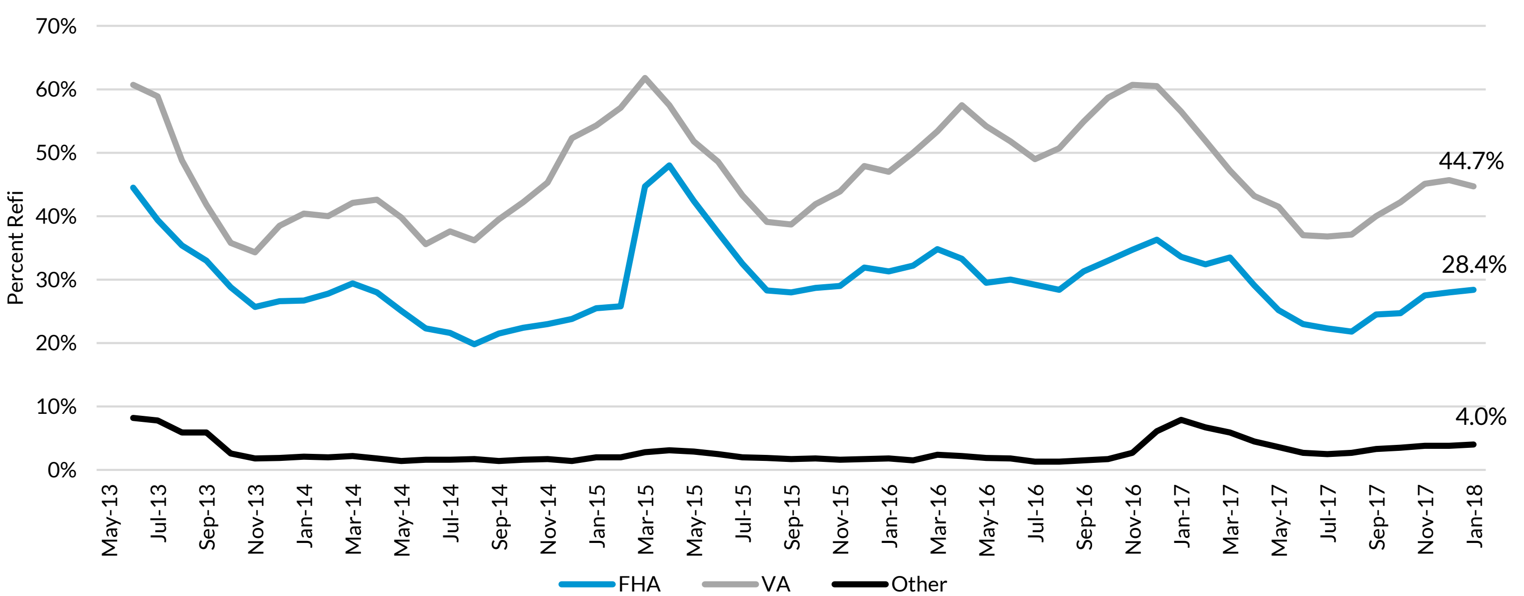
The Ginnie Mae refi share stood at 32 percent in January 2018, below the 49 and 40 percent shares for Fannie Mae and Freddie Mac, respectively. Within Ginnie Mae, VA had the highest refi share at 45 percent in January 2018, followed by FHA's 28 percent refi share.

Percent Refi at Issuance



Sources: *eMBS and Urban Institute.* **Note**: *Based on at-issuance balance. Data as of January 2018.*

Percent Refi at Issuance: Ginnie Mae Breakdown

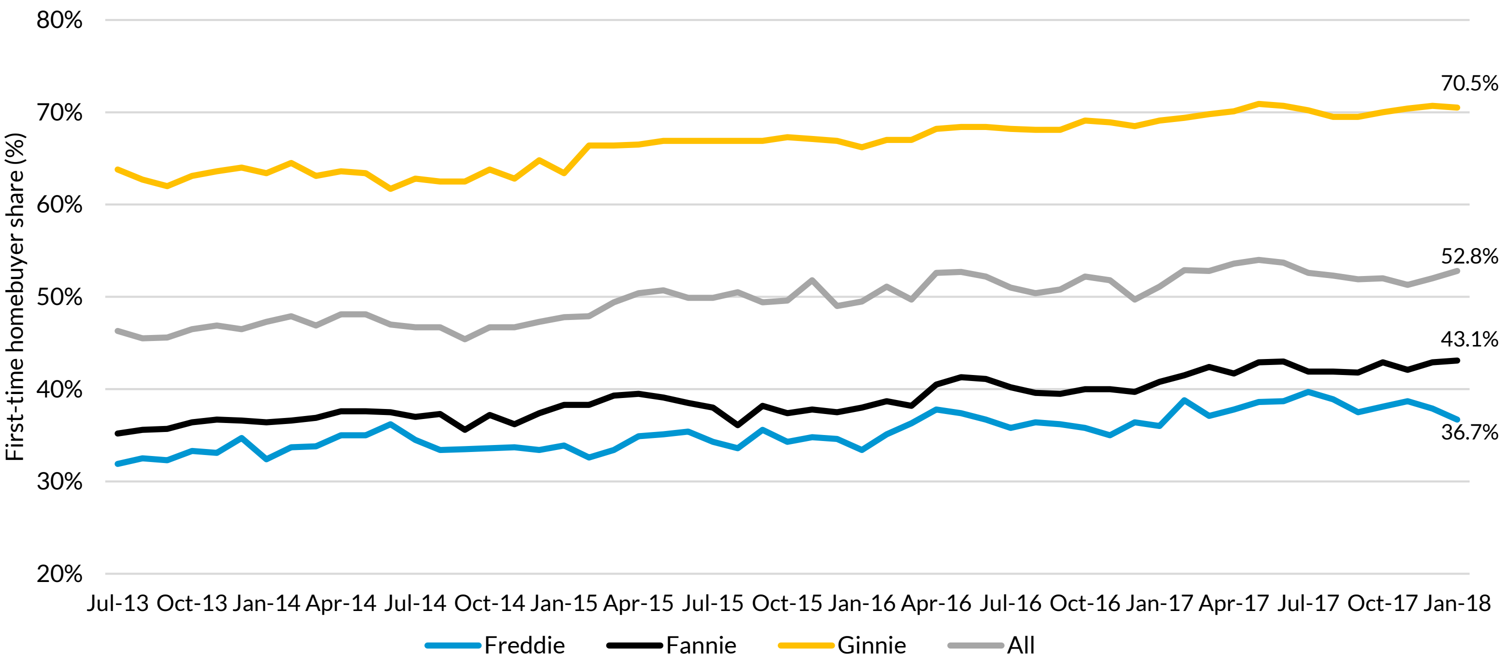


Sources: *eMBS and Urban Institute.*
Note: *Based on at-issuance balance. "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of January 2018.*

Credit Box

First time homebuyers are important to the Ginnie Mae market, comprising 71 percent of purchase originations, compared to Fannie and Freddie's respective 43 percent and 37 percent share of the first-time homebuyer market. The bottom table shows that based on mortgages originated in January 2018, the average first-time homebuyer was more likely than an average repeat buyer to take out a smaller loan and have a lower credit score, a much higher LTV and a similar DTI, thus paying a higher interest rate.

First Time Homebuyer Share: Purchase Only Loans



Sources: *eMBS and Urban Institute.* **Note**: *Data as of January 2018.*

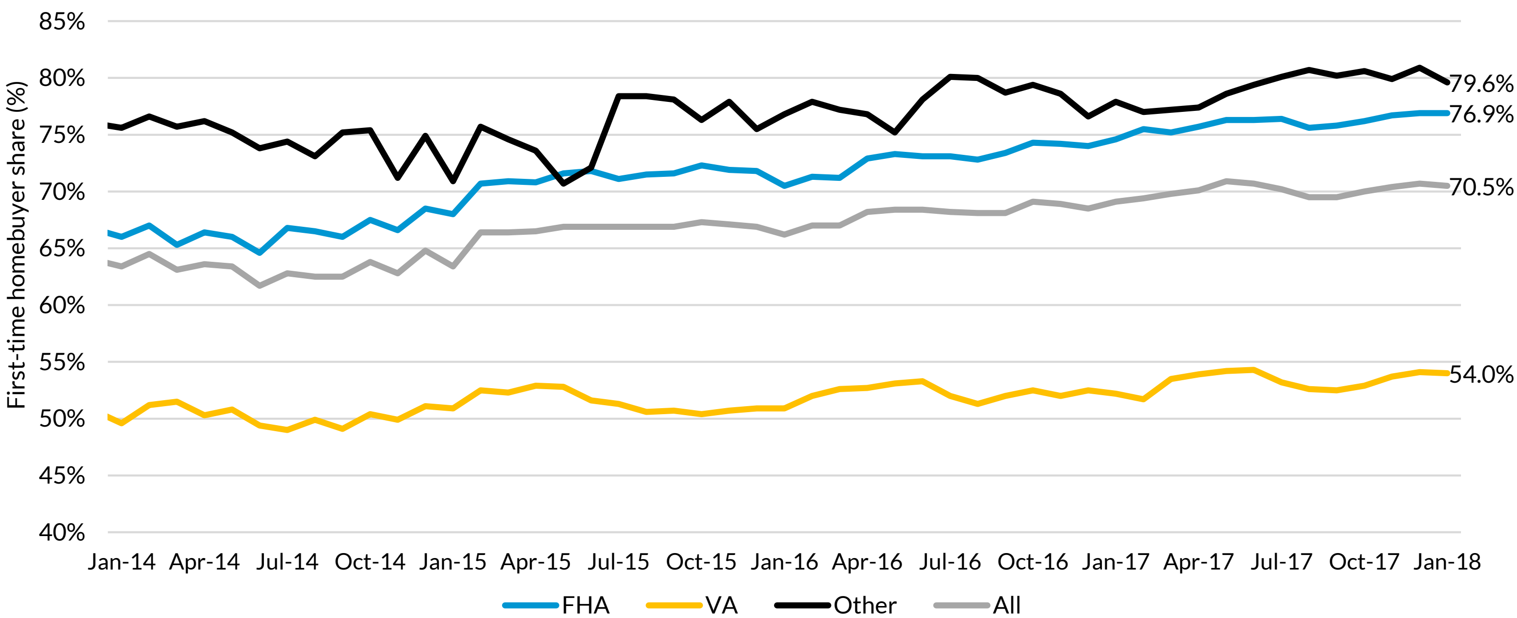
	Fannie Mae		Freddie Mac		Ginnie Mae		All	
	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat
Loan Amount ($)	230.9	258.2	234.3	253.3	205.1	248.9	217.5	254.0
Credit Score	735.8	753.2	740.1	753.8	681.0	701.5	706.9	737.5
LTV (%)	87.5	78.8	86.5	79.5	96.8	95.7	92.4	84.1
DTI (%)	36.3	36.5	35.1	35.9	41.3	42.2	38.8	38.1
Loan Rate (%)	4.24	3.94	4.16	4.07	4.20	4.05	4.20	4.01

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 January 2018.*

Credit Box

Within the Ginnie Mae purchase market, 77 percent of FHA loans, 54 percent of VA loans and 80 percent of other loans represent financing for first time home buyers. The bottom table shows that based on mortgages originated in January 2018, the average first-time homebuyer was more likely than an average repeat buyer to take out a smaller loan and have a lower credit score, and similar LTVs and DTIs, thus paying a higher interest rate.

First Time Homebuyer Share: Ginnie Mae Purchase Only Loans Breakdown by Source



Sources: *eMBS and Urban Institute.* **Note**: *Data as of January 2018.*

	FHA		VA		Other		Ginnie Mae Total	
	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat
Loan Amount ($)	203.3	221.1	241.0	292.2	143.0	156.6	205.1	248.9
Credit Score	673.0	678.8	697.8	725.9	696.2	700.2	681.0	701.5
LTV (%)	95.5	94.1	99.8	96.8	99.2	99.5	96.8	95.7
DTI (%)	42.6	43.5	40.4	41.6	35.1	35.8	41.3	42.2
Loan Rate (%)	4.27	4.19	4.03	3.90	4.08	4.12	4.20	4.05

Sources: *eMBS and Urban Institute.* **Note:** *Data as of January 2018. "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.*

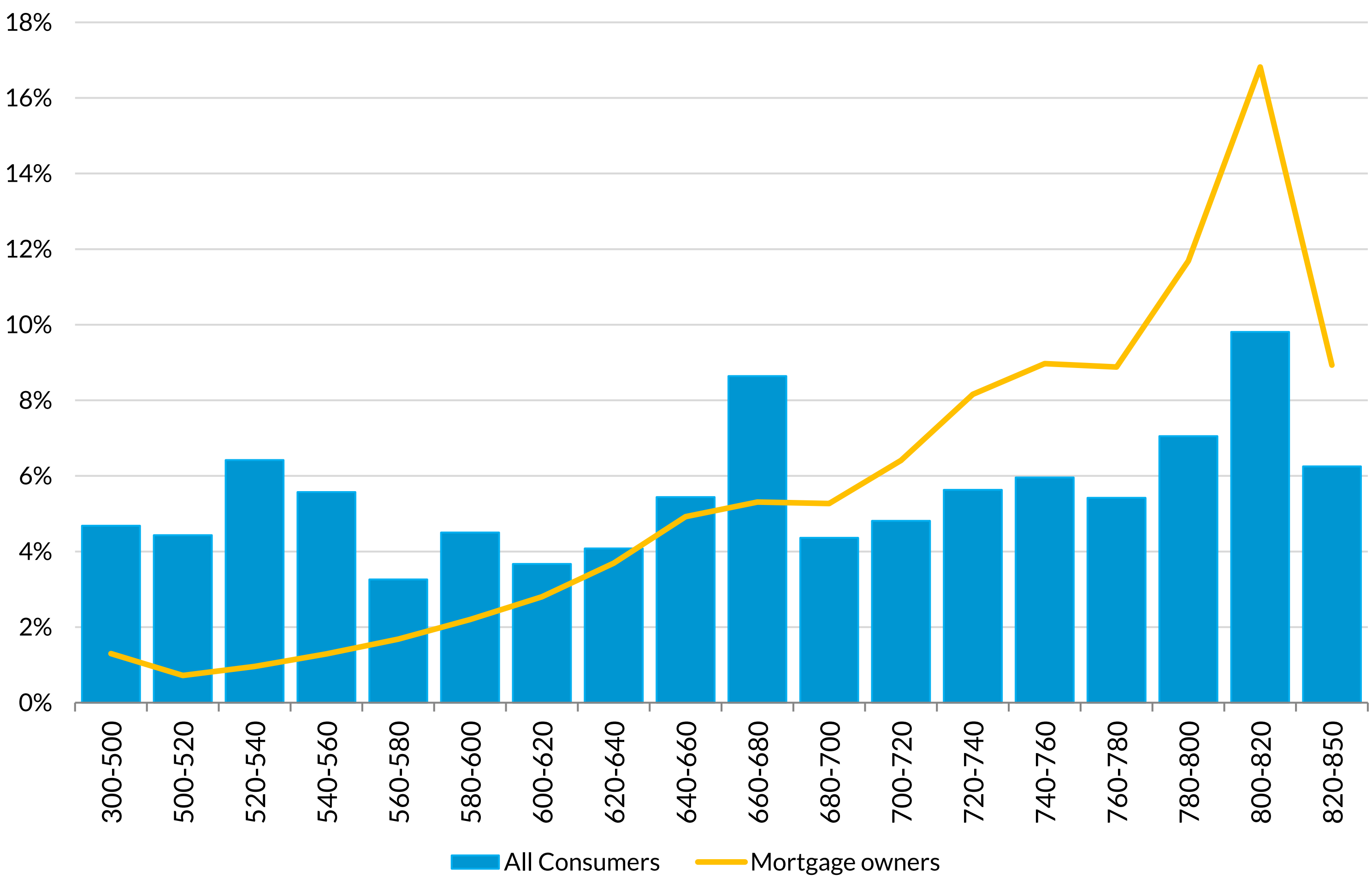
Credit Box

Consumers who have a mortgage are concentrated at the high end of the general credit score spectrum. The top table shows that the median FICO score for all consumers (676) is lower than the 25th percentile of those with a mortgage (680).

FICO Score Distribution: Mortgage Owners vs All Consumers

All Consumers- Percentiles								
Minimum	P5	P10	P25	P50	P75	P90	P95	Maximum
300	502	524	583	676	772	813	822	839

Mortgage Owners- Percentiles								
Minimum	P5	P10	P25	P50	P75	P90	P95	Maximum
308	569	613	680	751	801	818	824	839



Sources: *Credit Bureau Data and Urban Institute.*
Note: *Data as of August 2016.*

January 2018 Credit Box at a Glance

In January 2018, the median Ginnie Mae FICO score was 679 versus 748 for Fannie and 751 for Freddie. Note that the FICO score for the 10th percentile was 622 for Ginnie Mae, versus 670 for Fannie and 679 for Freddie. Within the Ginnie Mae market, FHA loans have a median FICO score of 667, VA loans have a median FICO score of 703 and other loans have a median FICO score of 694.

Purchase FICO							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	248,390	643	679	728	774	797	723
Fannie	94,569	680	714	755	786	801	747
Freddie	53,556	687	719	758	787	802	750
Ginnie	100,265	624	647	680	724	769	687
Refi FICO							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	165,103	644	680	724	770	795	721
Fannie	82,419	661	696	739	777	798	734
Freddie	39,580	667	701	742	778	799	736
Ginnie	43,104	613	644	679	721	765	682
All FICO							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	413,493	643	679	726	772	796	722
Fannie	176,988	670	705	748	782	800	741
Freddie	93,136	679	710	751	784	801	744
Ginnie	143,369	622	646	679	723	768	686

Purchase FICO: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	100,265	624	647	680	724	769	687
FHA	61,641	620	641	668	704	742	674
VA	28,998	632	663	709	762	792	711
Other	9,626	642	660	694	731	766	697
Refi FICO: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	43,104	613	644	679	721	765	682
FHA	22,060	602	633	664	698	737	666
VA	20,747	628	660	698	744	780	700
Other	297	604	651	695	740	763	688
All FICO: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	143,369	622	646	679	723	768	686
FHA	83,701	615	640	667	702	741	672
VA	49,745	631	661	703	755	788	706
Other	9,923	641	660	694	731	766	697

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 January 2018.*

January 2018 Credit Box at a Glance

In January 2018, the median loan-to-value ratio (LTV) was 96.5 percent for Ginnie Mae, and 80 percent for Fannie Mae and Freddie Mac. The 10th percentile was 81.9 percent for Ginnie Mae and 50 percent for the GSEs. Within the Ginnie Mae market, the median LTV was 96.5 for FHA, 100.0 for VA and 101.0 for other programs.

Purchase LTV							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	248,612	72.0	80.0	95.0	96.5	100.0	87.7
Fannie	94,551	63.0	79.0	80.0	95.0	97.0	82.1
Freddie	53,617	63.0	77.0	80.0	95.0	95.0	81.3
Ginnie	100,444	92.9	96.5	96.5	100.0	102.0	96.5
Refi LTV							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	167,871	46.0	61.0	75.0	83.4	94.9	71.9
Fannie	82,428	43.0	57.0	70.0	79.0	80.0	66.1
Freddie	39,588	42.0	57.0	71.0	79.0	80.0	66.5
Ginnie	45,855	69.5	81.9	86.7	97.8	100.0	86.7
All LTV							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	416,483	56.0	74.0	83.3	96.5	98.6	81.3
Fannie	176,979	50.0	66.0	80.0	89.0	95.0	74.7
Freddie	93,205	50.0	67.0	80.0	87.0	95.0	75.0
Ginnie	146,299	81.9	91.4	96.5	100.0	101.0	93.4

Purchase LTV: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	100,444	92.9	96.5	96.5	100.0	102.0	96.5
FHA	61,752	93.0	96.5	96.5	96.5	96.5	95.1
VA	29,037	91.1	100.0	100.0	102.2	103.3	98.4
Other	9,655	95.1	99.1	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	45,855	69.5	81.9	86.7	97.8	100.0	86.7
FHA	22,756	68.8	80.5	86.5	89.6	98.1	83.7
VA	22,704	70.2	84.0	93.6	100.0	102.2	89.7
Other	395	77.0	87.3	97.1	101.7	103.2	92.2
All LTV: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	146,299	81.9	91.4	96.5	100.0	101.0	93.4
FHA	84,508	82.3	89.9	96.5	96.5	96.5	92.1
VA	51,741	79.7	91.2	100.0	100.4	102.9	94.6
Other	10,050	94.4	98.9	101.0	101.0	101.3	99.0

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 January 2018.*

January 2018 Credit Box at a Glance

In January 2018, the median Ginnie Mae debt-to-income ratio (DTI) was 42.1 percent, considerably higher than the 37-38 percent median DTIs for Fannie Mae and Freddie Mac. The 90th percentile for Ginnie Mae was 53.7 percent, also much higher than the 47-48 percent DTIs for the GSEs. Within the Ginnie Mae market, the median FHA DTI ratio was 43.6 percent, versus 41.2 percent for VA and 36.1 percent for other lending programs.

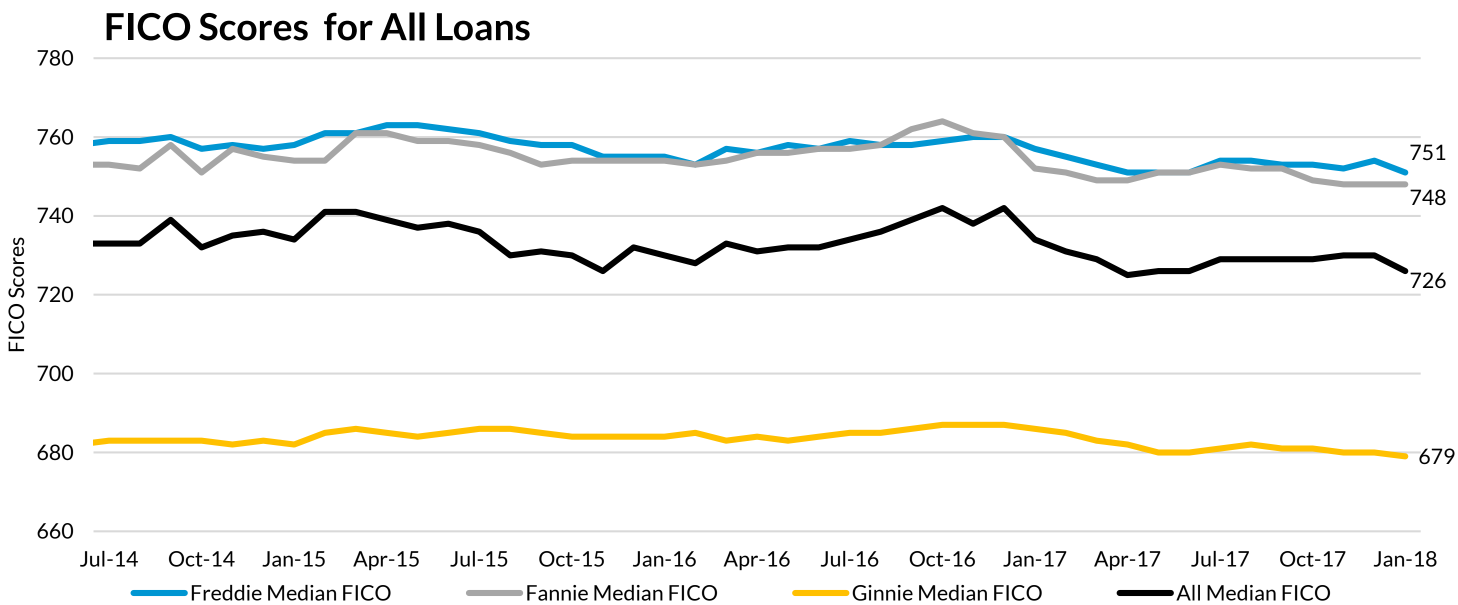
Purchase DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	248,196	24.0	31.6	39.3	45.4	50.0	38.2
Fannie	94,664	23.0	30.0	38.0	44.0	48.0	36.2
Freddie	53,613	22.0	29.0	37.0	43.0	47.0	35.4
Ginnie	99,919	28.7	35.3	42.3	48.8	53.9	41.6
Refi DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	153,253	23.0	30.0	38.0	45.0	49.0	36.9
Fannie	81,365	22.0	29.0	37.0	44.0	48.0	36.1
Freddie	38,876	22.0	29.0	37.0	43.0	47.0	35.4
Ginnie	33,012	26.0	33.4	41.5	48.2	53.2	40.4
All DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	401,449	24.0	31.0	39.0	45.0	49.2	37.7
Fannie	176,029	22.0	29.0	38.0	44.0	48.0	36.2
Freddie	92,489	22.0	29.0	37.0	43.0	47.0	35.4
Ginnie	132,931	28.0	34.9	42.1	48.6	53.7	41.3

Purchase DTI: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	99,919	28.7	35.3	42.3	48.8	53.9	41.6
FHA	61,716	30.1	37.0	43.9	49.9	54.4	42.8
VA	28,756	27.4	34.4	41.6	48.2	53.5	41.0
Other	9,447	25.8	31.0	36.2	40.4	43.3	35.2
Refi DTI: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	33,012	26.0	33.4	41.5	48.2	53.2	40.4
FHA	17,514	27.5	34.8	42.6	48.9	53.6	41.3
VA	15,227	24.7	32.3	40.3	47.3	52.6	39.5
Other	271	18.3	23.4	31.7	39.3	46.5	32.2
All DTI: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	132,931	28.0	34.9	42.1	48.6	53.7	41.3
FHA	79,230	29.5	36.5	43.6	49.6	54.3	42.5
VA	43,983	26.5	33.7	41.2	47.9	53.2	40.5
Other	9,718	25.4	30.8	36.1	40.4	43.4	35.2

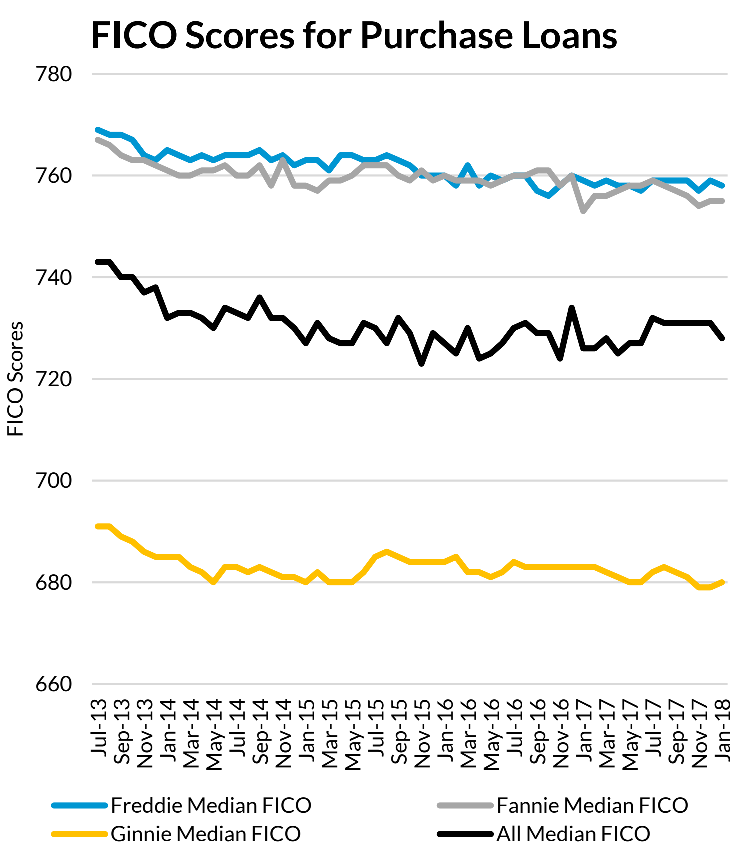
Sources: *eMBS and Urban Institute.* **Note**: *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of January 2018.*

Credit Box: Historical

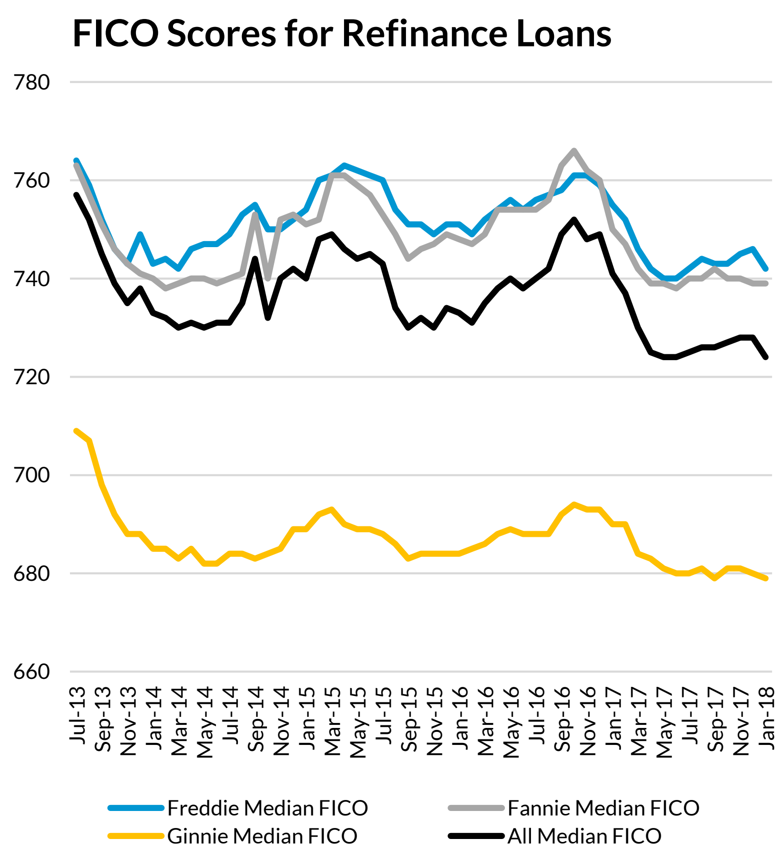
The median FICO score for all agency MBS originated in January now stands at 726, slightly lower than last month. The figures clearly show that the median FICO score for Ginnie Mae borrowers has always been considerably lower than for GSE borrowers. The difference between Ginnie Mae and GSE borrowers is wider in purchase loans than in refi loans.



Sources: *eMBS and Urban Institute.* **Note**: *Data as of January 2018.*



Sources: *eMBS and Urban Institute.* **Note:** *Data as of January 2018.*

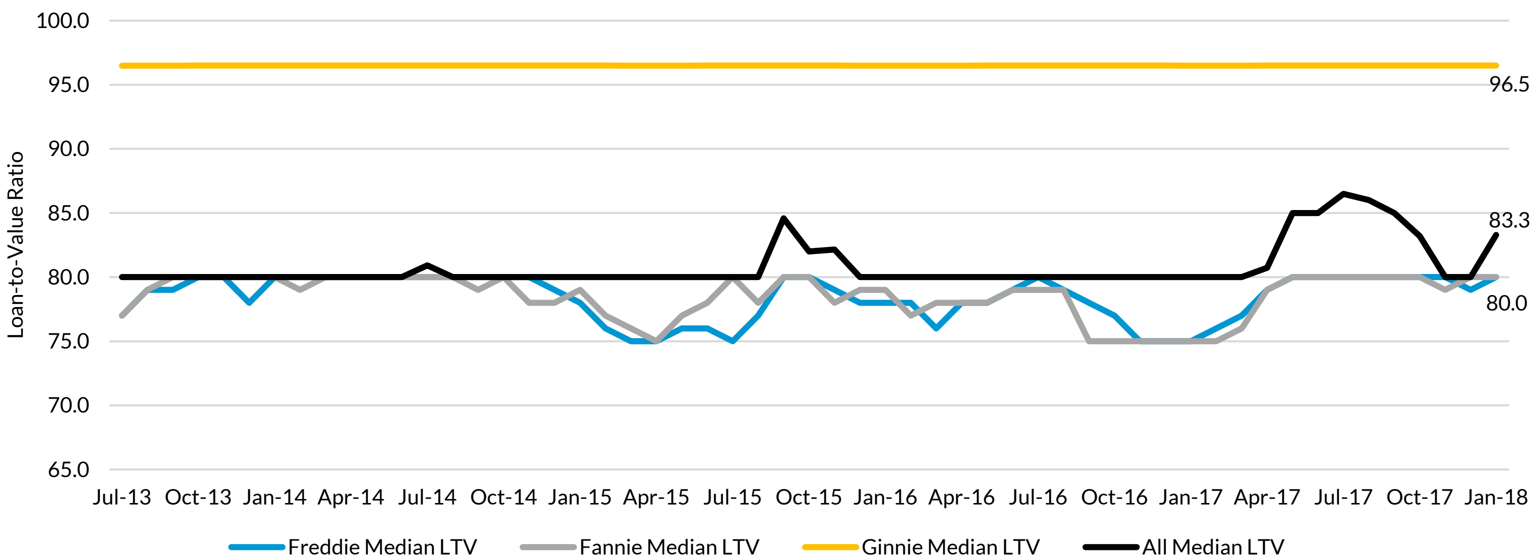


Sources: *eMBS and Urban Institute.* **Note:** *Data as of January 2018.*

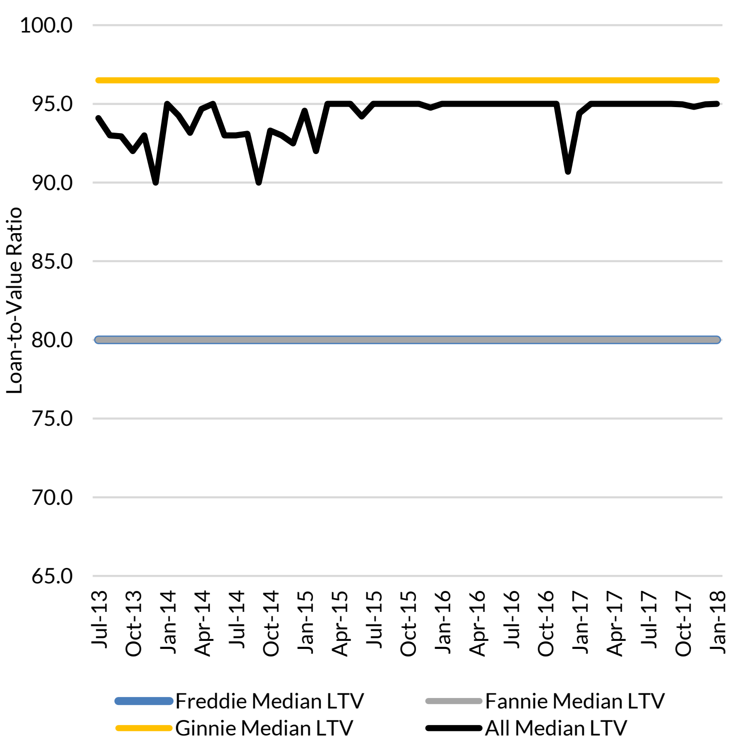
Credit Box: Historical

Median LTVs for Ginnie Mae loans have historically been at 96.5 percent, much higher than the 75-80 percent for the GSEs. Through time, both Ginnie Mae and GSE refinances have LTVs about 10 points lower than their purchase counterparts.

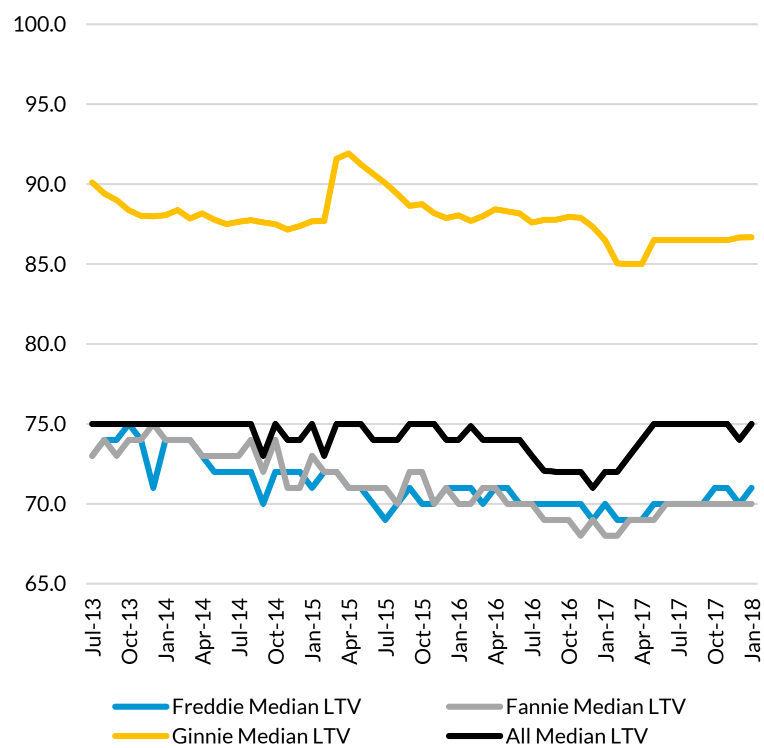
LTV Ratio for All Loans



LTV Ratio for Purchase Loans



LTV Ratio for Refinance Loans

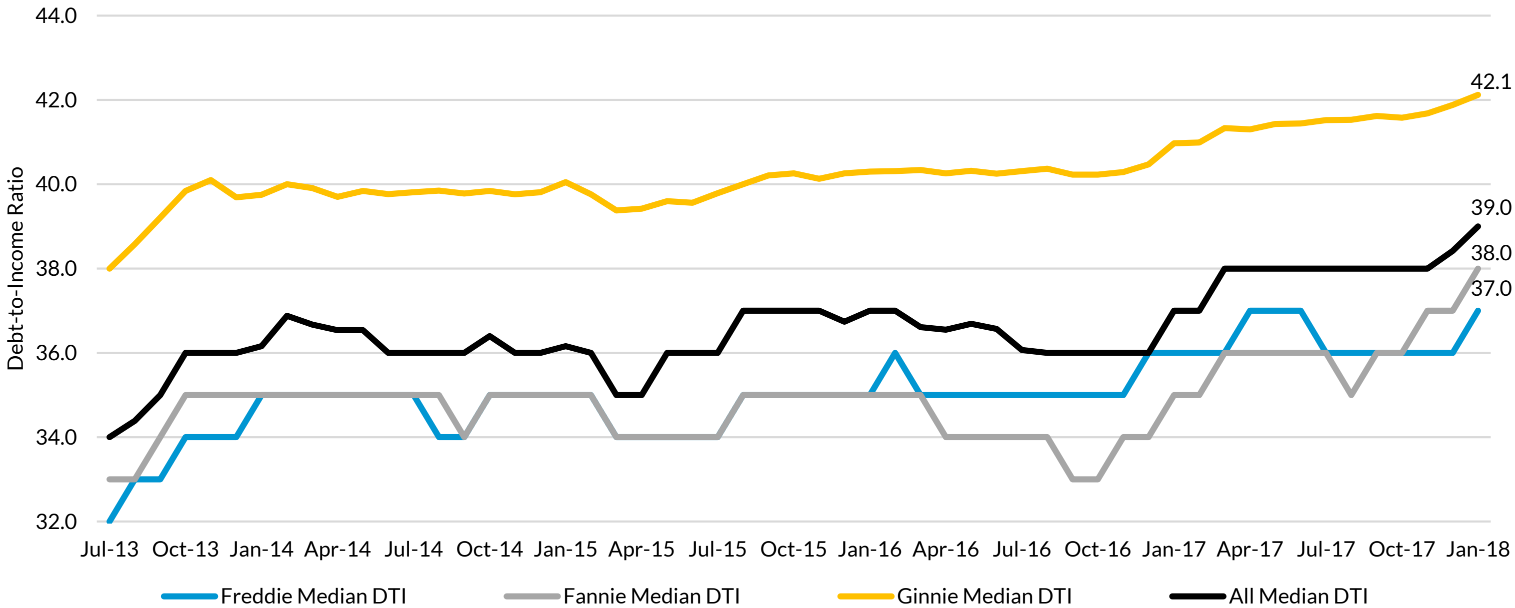


Sources: *eMBS and Urban Institute.* **Note:** *In May 2017 Ginnie Mae began disclosing issuer-reported LTV for FHA loans, which includes the financed upfront mortgage insurance premium. To make it consistent with the previously reported LTV, we removed the financed upfront mortgage insurance premium by subtracting 169 bps from this new issuer-reported LTV. Sources and note apply to all three graphs. Data as of January 2018.*

Credit Box: Historical

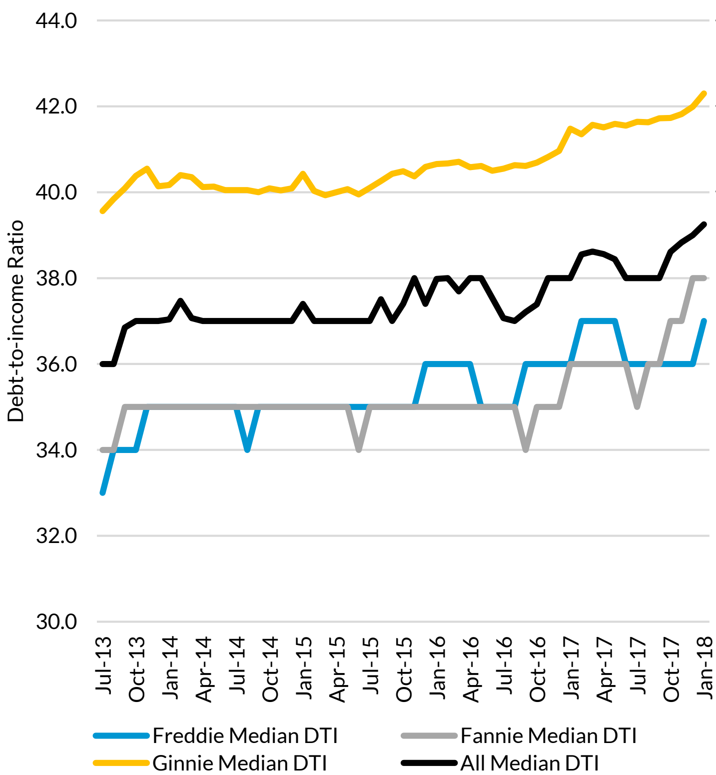
Median debt-to-income ratios on Ginnie Mae loans have historically been in the low 40s, considerably higher than the GSEs. DTIs have been inching up this past year for both Ginnie Mae and GSE loans, with the movement more pronounced for Ginnie Mae loans.

DTI Ratio for All Loans



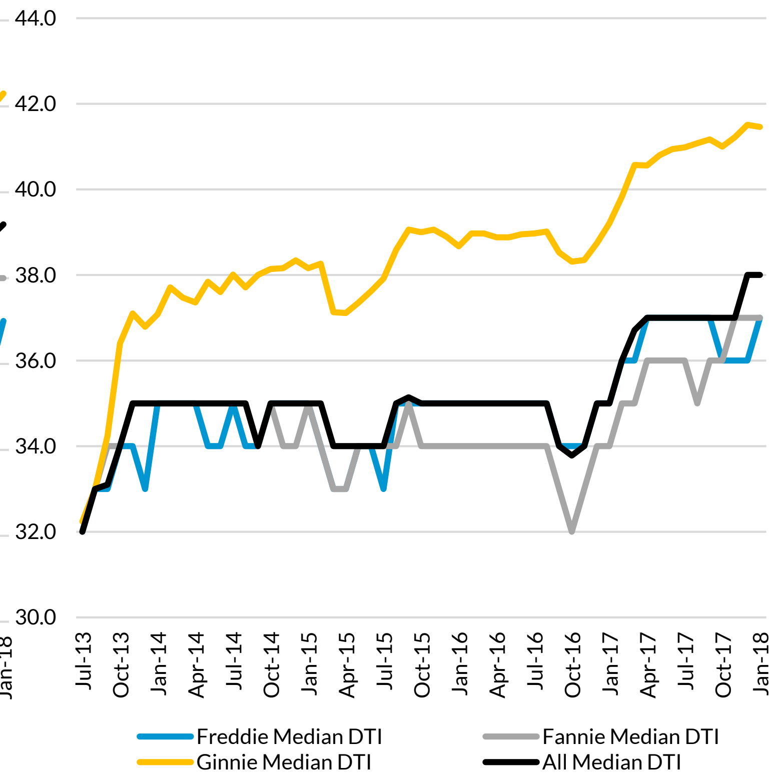
Sources: *eMBS and Urban Institute.* **Note:** *Data as of January 2018.*

DTI Ratio for Purchase Loans



Sources: *eMBS and Urban Institute.*
Note: *Data as of January 2018.*

DTI Ratio for Refinance Loans

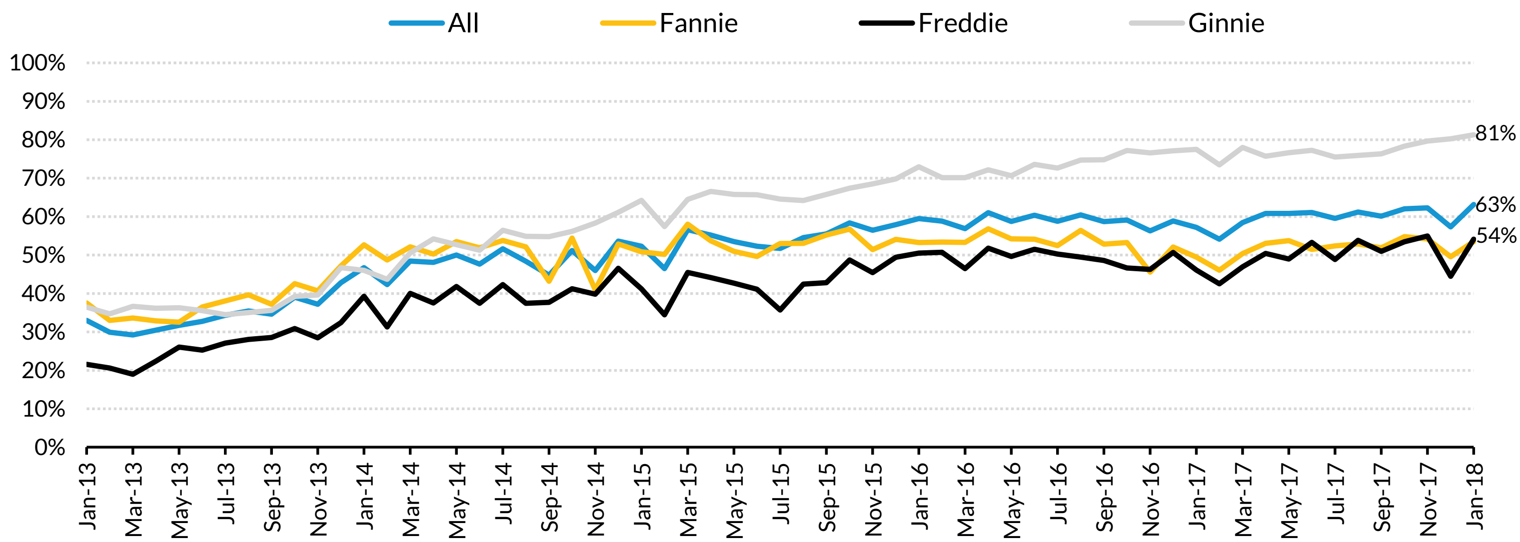


Sources: *eMBS and Urban Institute.*
Note: *Data as of January 2018.*

Non-bank Originators

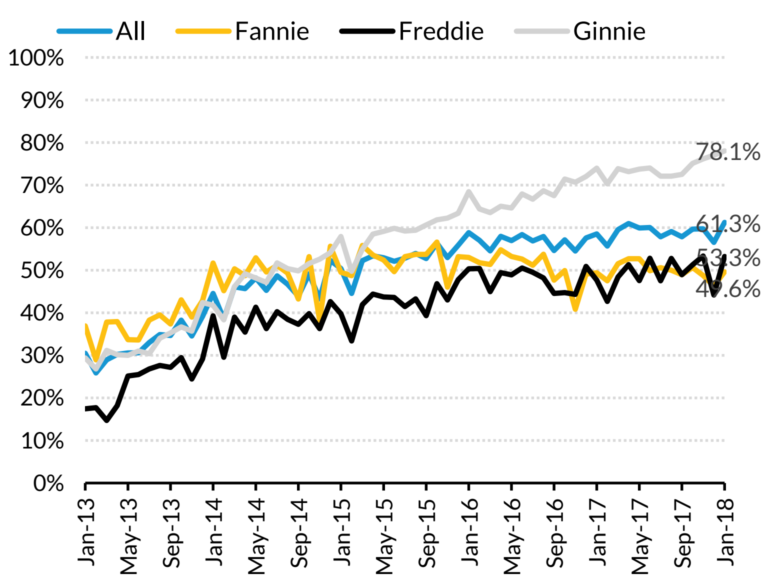
The nonbank origination share has increased for all three agencies since 2013. In January 2018, Ginnie Mae's nonbank share edged up to new high of 81 percent. Nonbank originator shares for Freddie Mac and Fannie Mae both moved back towards the historic highs reached in November 2017, after the dip in December. For Ginnie Mae, the non-bank refi share was considerably higher than the non-bank purchase share. The differences were more modest for the GSEs.

Nonbank Origination Share: All Loans

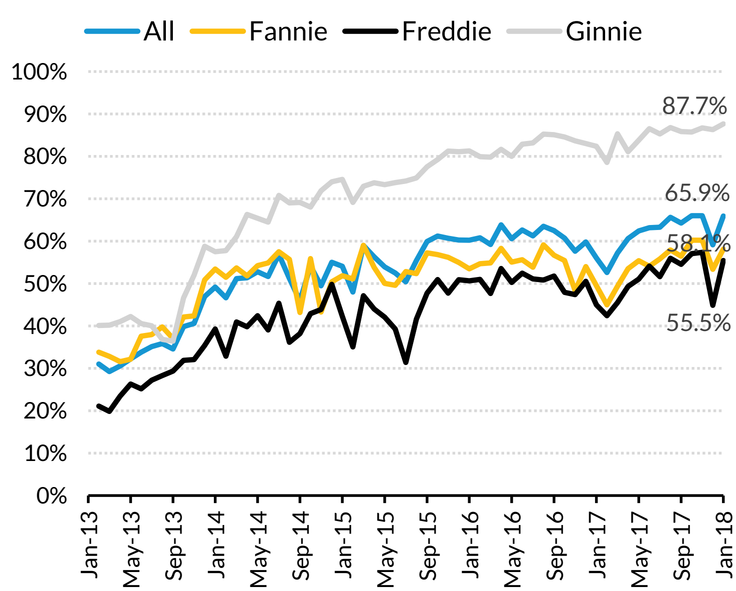


Sources: *eMBS and Urban Institute*
Note: *Data as of January 2018.*

Nonbank Origination Share: Purchase Loans



Nonbank Origination Share: Refinance Loans

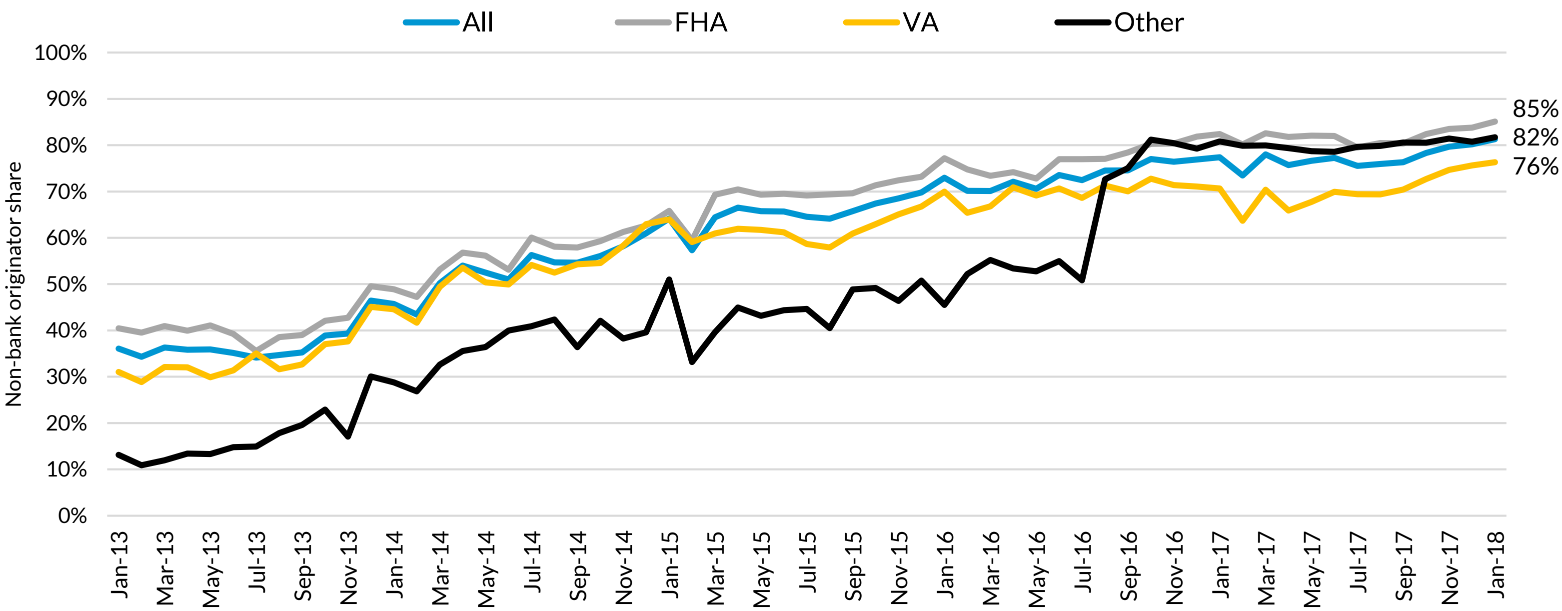


Sources: *eMBS and Urban Institute.* **Note:** *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of January 2018.*

Ginnie Mae Non-bank Originators

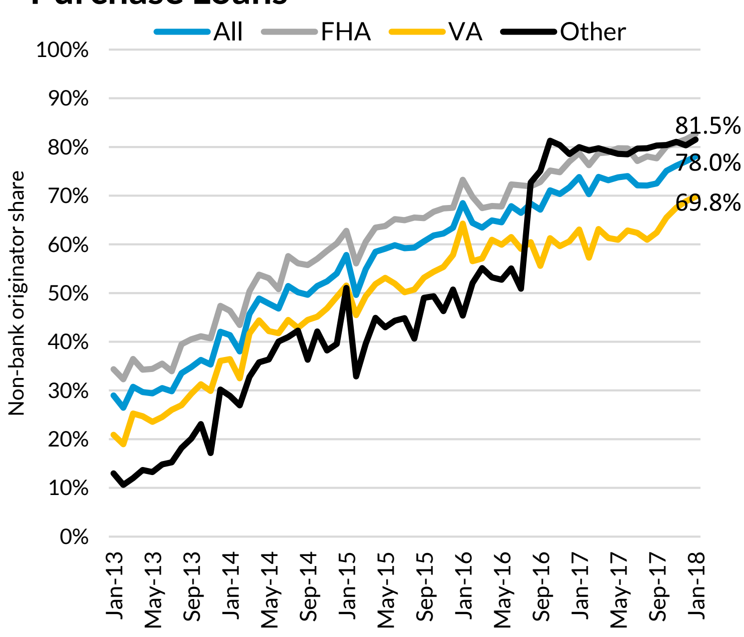
In January 2018, Ginnie Mae's nonbank share edged up to new high of 81 percent. Nonbank originator shares for FHA and Other issuance edged up to 85 and 82 percent, respectively, while the non-bank share of VA issuance was flat at 76 percent. The nonbank originator share is higher for refinance loans than for purchase loans across all channels.

Ginnie Mae Non-bank Originator Share: All Loans

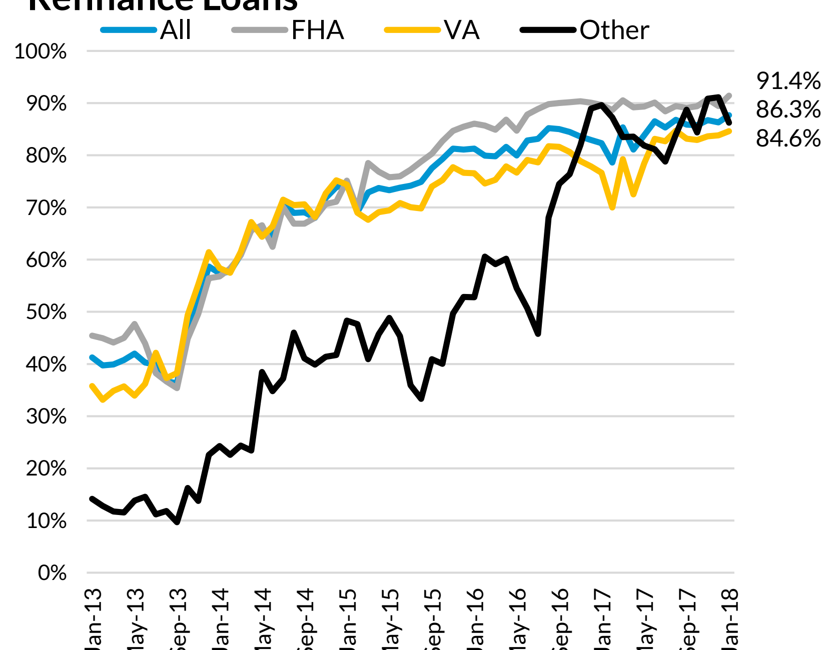


Sources: *eMBS and Urban Institute*
Note: *Data as of January 2018.*

Ginnie Mae Non-bank Share: Purchase Loans



Ginnie Mae Non-bank Share: Refinance Loans

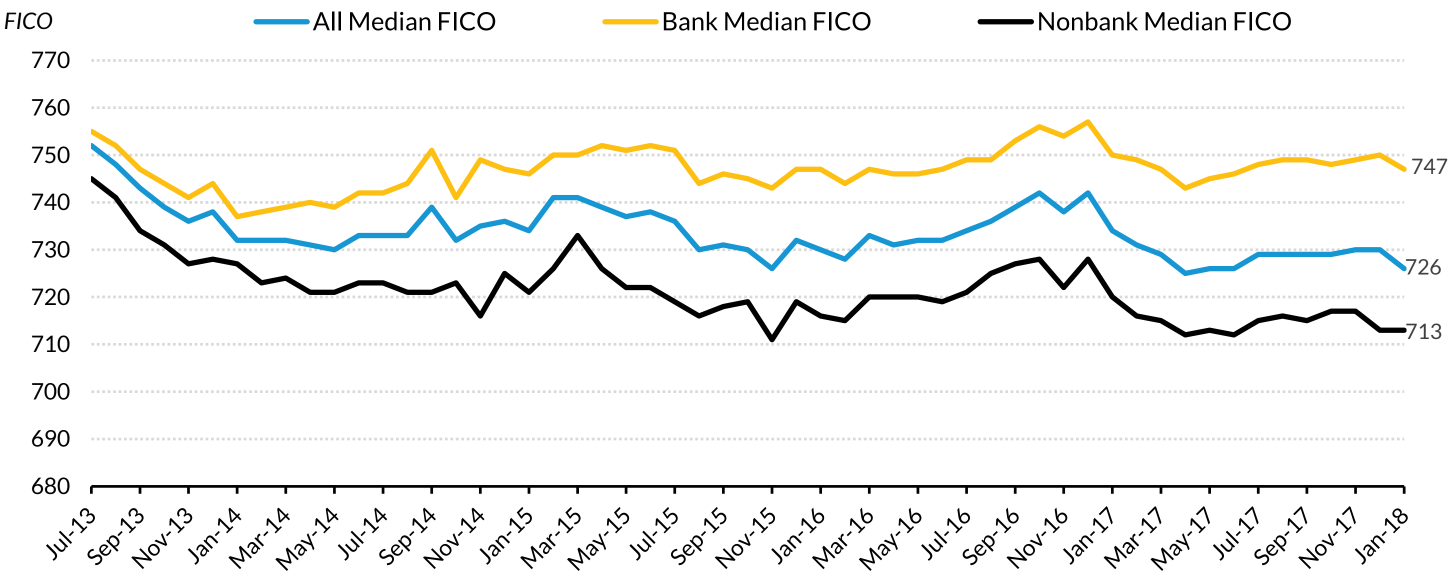


Sources: *eMBS and Urban Institute.* **Note: "***Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of January 2018.*

Nonbank Credit Box

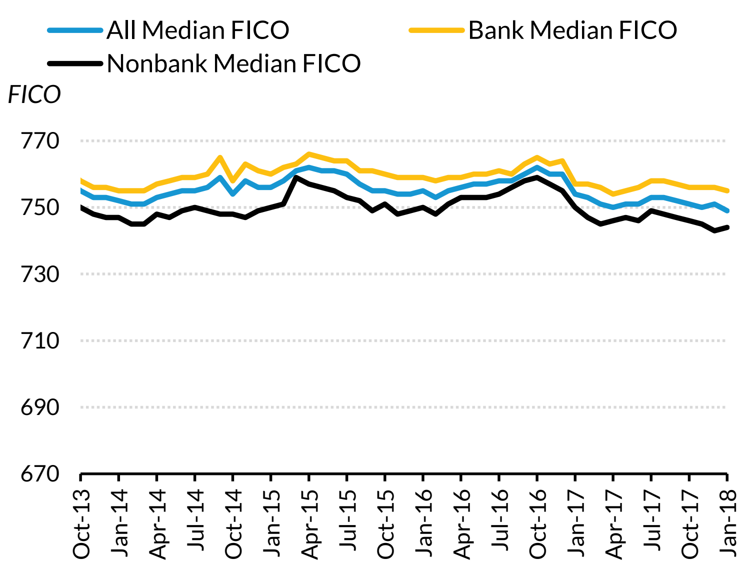
Nonbank originators have played a key role in opening up access to credit. The median GSE and the median Ginnie Mae FICO scores for loans originated by nonbanks are lower than their bank counterparts. Within the GSE space, both bank and nonbank FICOs have declined since 2014 with further relaxation in FICOs in 2017. In contrast, within the Ginnie Mae space, FICO scores for bank originations have increased since 2014 while nonbank FICOs have declined. This largely reflects the sharp cut-back in FHA lending by many banks.

Agency FICO: Bank vs. Nonbank



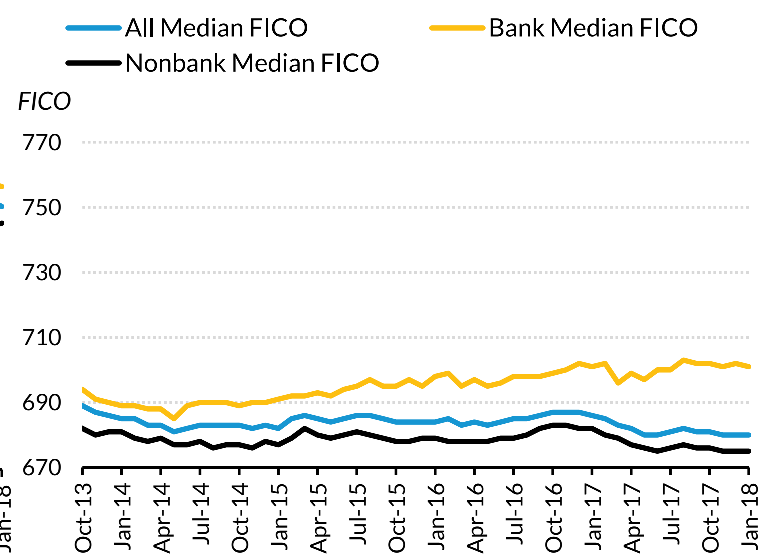
Sources: *eMBS and Urban Institute. Note: Data as of January 2018.*

GSE FICO: Bank vs. Nonbank



Sources: *eMBS and Urban Institute. Note: Data as of January 2018.*

Ginnie Mae FICO: Bank vs. Nonbank

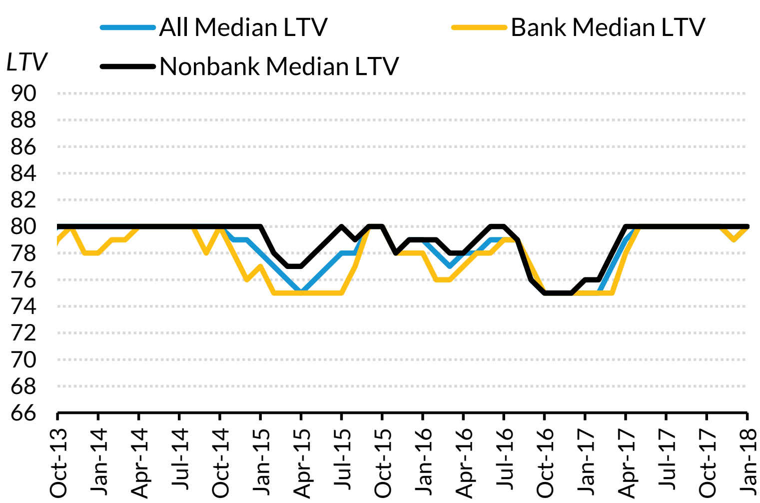


Sources: *eMBS and Urban Institute. Note: Data as of January 2018.*

Nonbank Credit Box

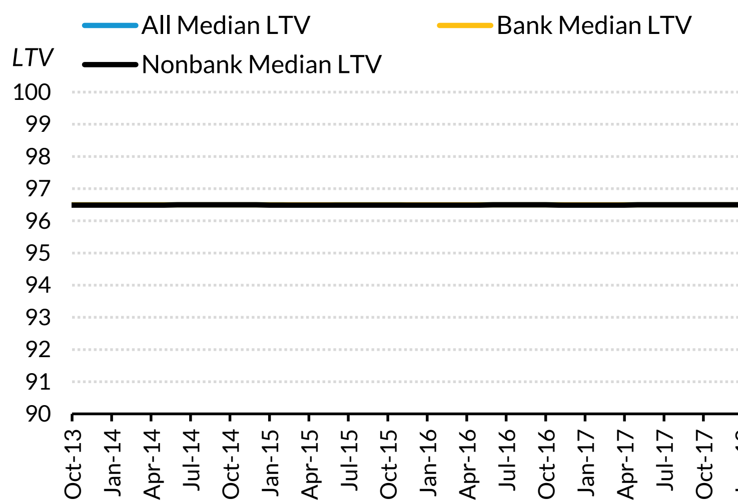
The median LTV ratios for loans originated by nonbanks are similar to their bank counterparts, while the median DTIs for nonbank loans are higher, indicating that nonbanks are more accommodating in this as well as in the FICO dimension. Note that in 2017 there has been a measurable increase in DTIs. This is true for both Ginnie Mae and GSE loans, banks and nonbank originators. This rising DTI trend continued for Ginnie Mae in the first month of 2018.

GSE LTV: Bank vs. Nonbank



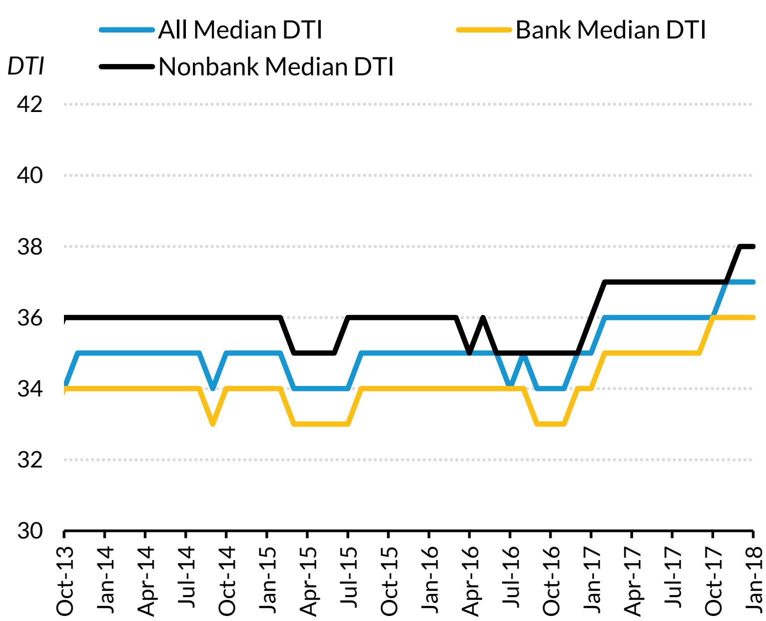
Sources: *eMBS and Urban Institute. Note: Data as of January 2018.*

Ginnie Mae LTV: Bank vs. Nonbank



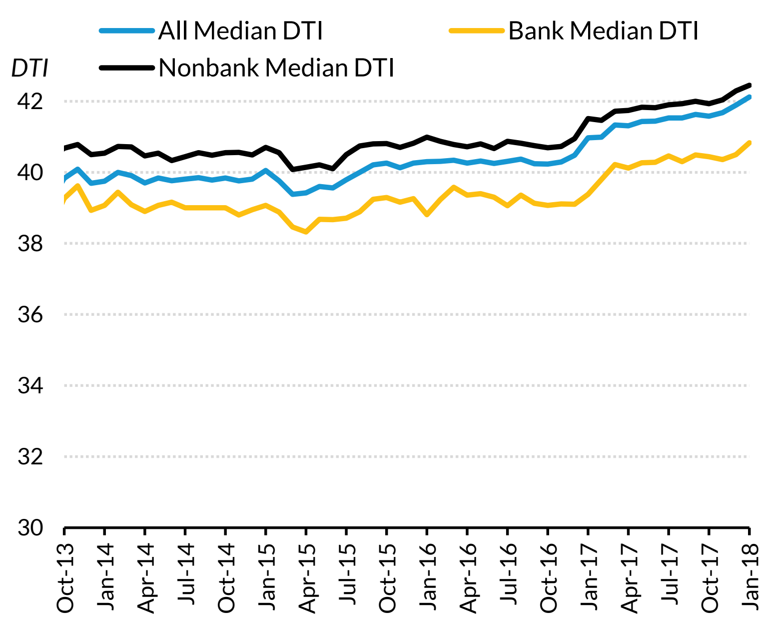
Sources: *eMBS and Urban Institute. Note: Data as of January 2018.*

GSE DTI: Bank vs. Nonbank



Sources: *eMBS and Urban Institute. Note: Data as of January 2018.*

Ginnie Mae DTI: Bank vs. Nonbank

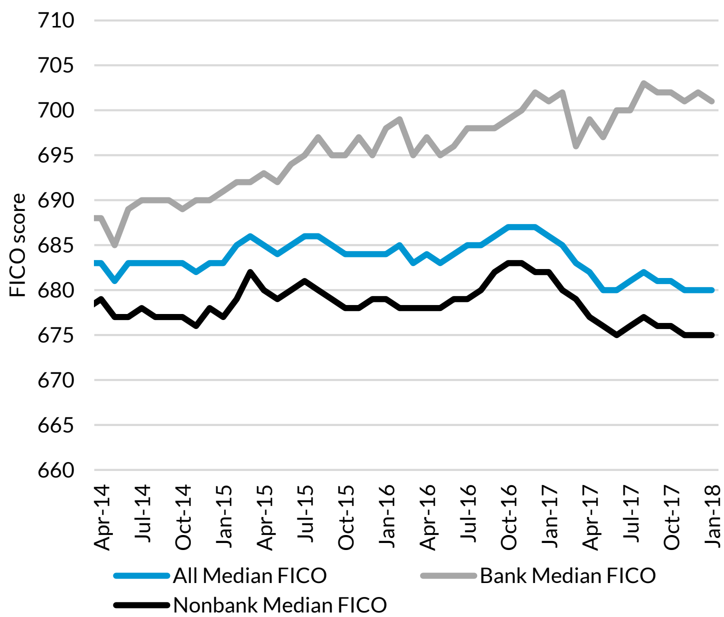


Sources: *eMBS and Urban Institute. Note: Data as of January 2018.*

Ginnie Mae Nonbank Originators: Credit Box

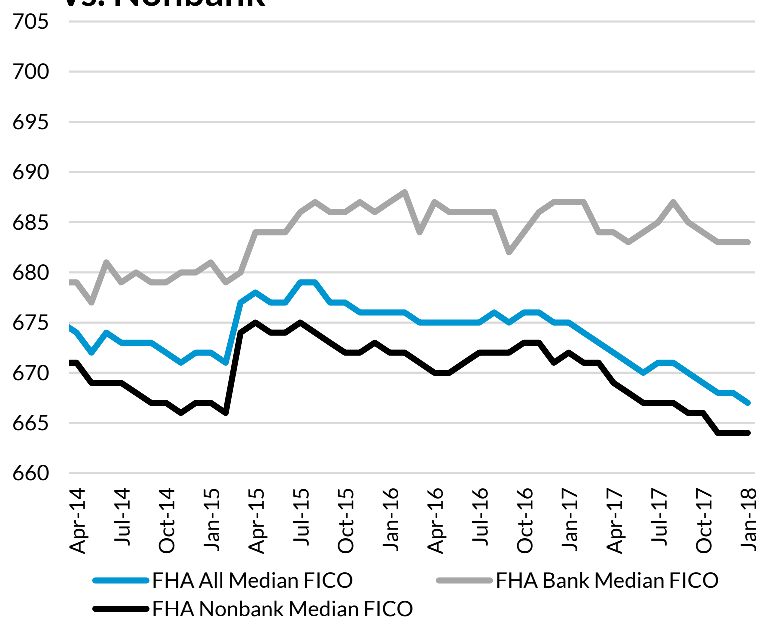
The FICO scores for both Ginnie Mae bank and nonbank originators remained relatively stable in January. The spread in the FICO scores between banks and non-banks remains at their widest level since the data became available in 2013. The gap between banks and non-banks is very apparent in all programs backing Ginnie Mae securities: FHA, VA, and Other.

Ginnie Mae FICO Scores: Bank vs. Nonbank



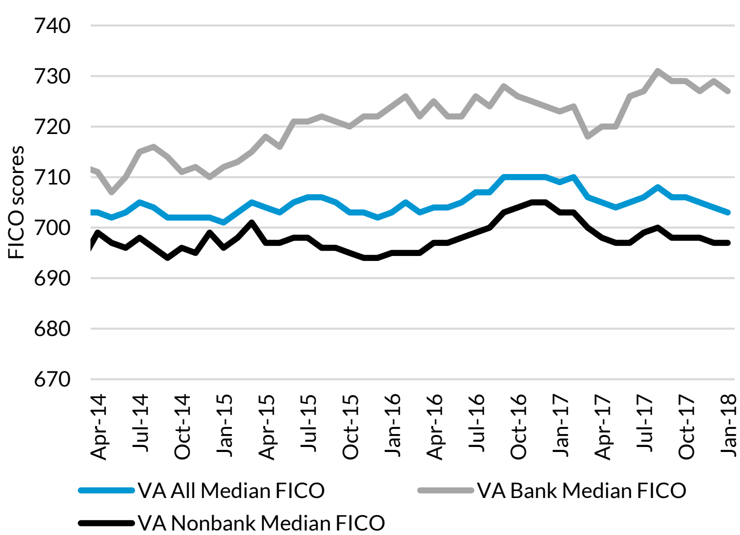
Sources: *eMBS and Urban Institute* **Note:** *Data as of January 2018*

Ginnie Mae FHA FICO Scores: Bank vs. Nonbank



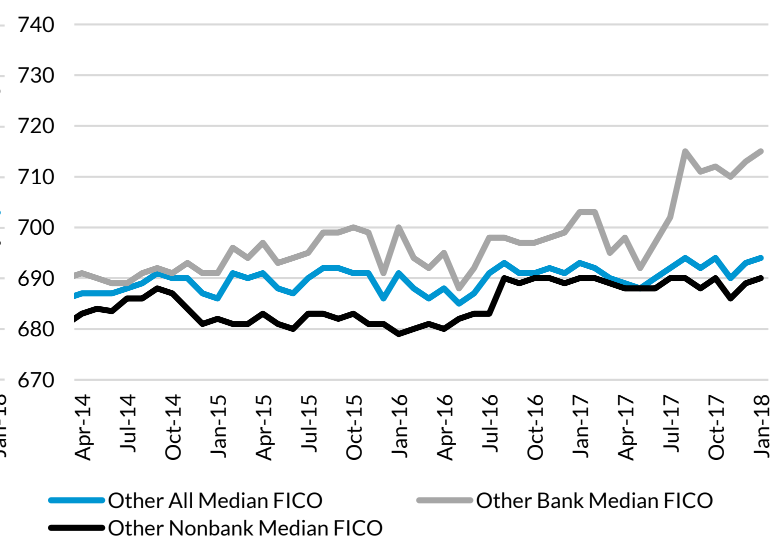
Sources: *eMBS and Urban Institute* **Note:** *Data as of January 2018*

Ginnie Mae VA FICO Scores: Bank vs. Nonbank



Sources: *eMBS and Urban Institute*
Note: *Data as of January 2018*

Ginnie Mae Other FICO Scores: Bank vs. Nonbank

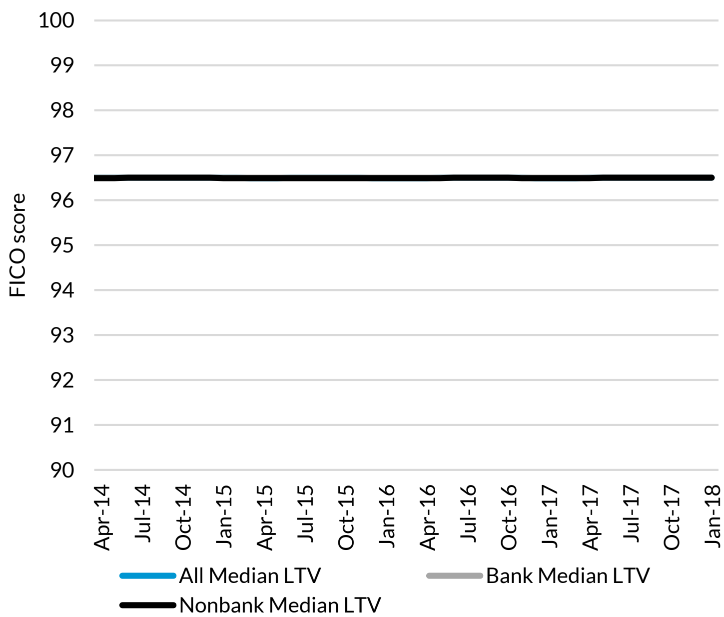


Sources: *eMBS and Urban Institute*
Note: *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of January 2018*

Ginnie Mae Nonbank Originators: Credit Box

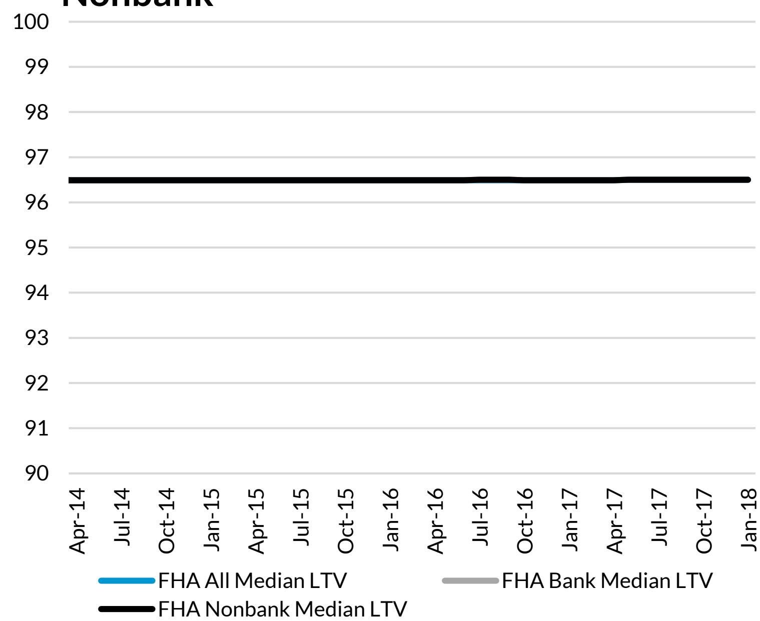
An analysis of the loans backing Ginnie Mae origination indicates that there are virtually no difference in median LTV ratios between bank originated loans and non-bank originated loans.

Ginnie Mae LTV: Bank vs. Nonbank



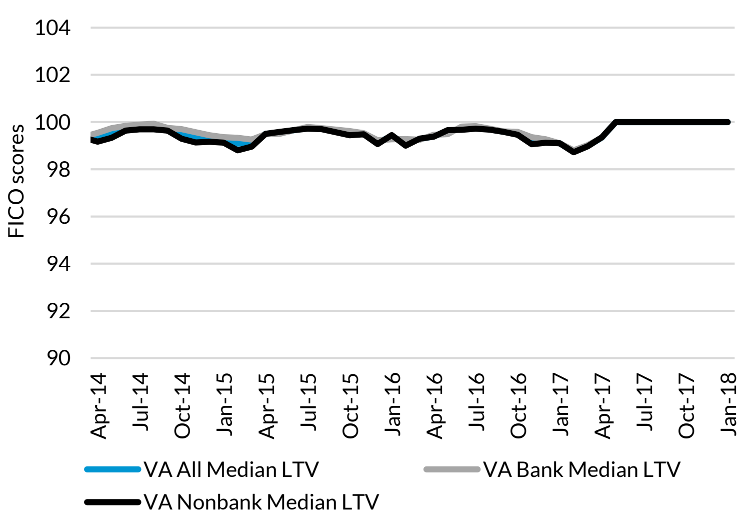
Sources: *eMBS and Urban Institute* **Note:** *Data as of January 2018*

Ginnie Mae FHA LTV: Bank vs. Nonbank



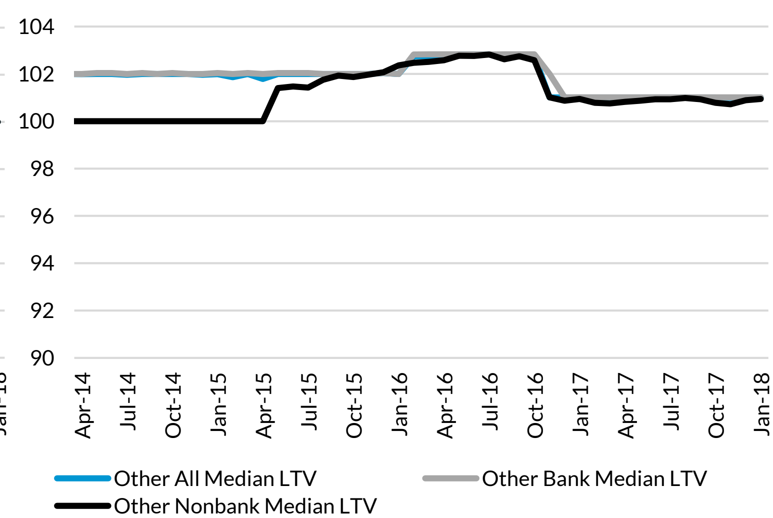
Sources: *eMBS and Urban Institute* **Note:** *Data as of January 2018*

Ginnie Mae VA LTV: Bank vs. Nonbank



Sources: *eMBS and Urban Institute*
Note: *Data as of January 2018*

Ginnie Mae Other LTV: Bank vs. Nonbank

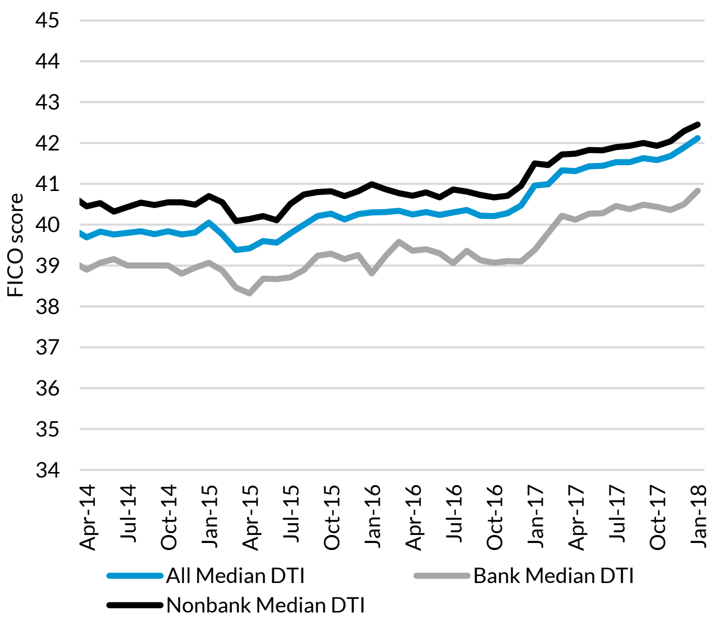


Sources: *eMBS and Urban Institute*
Note: *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of January 2018.*

Ginnie Mae Nonbank Originators: Credit Box

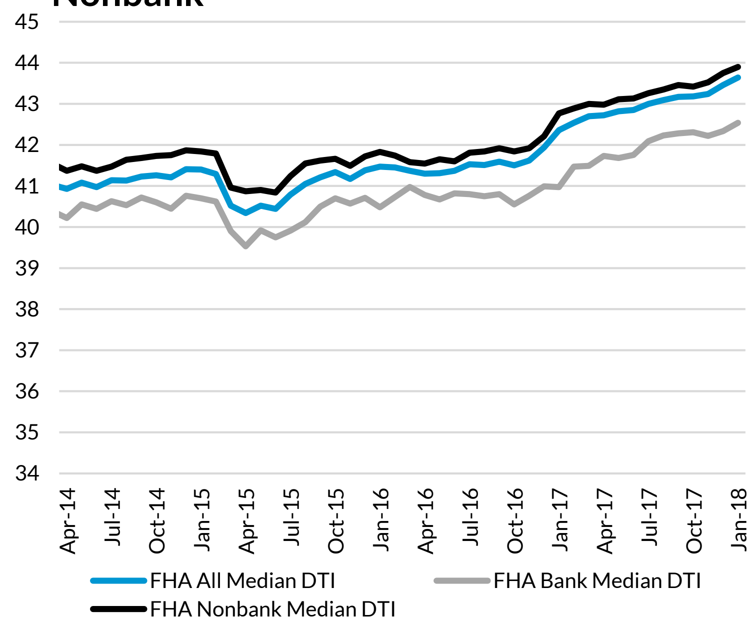
An analysis of the borrowers' DTI ratios for bank versus non-bank originators indicates that the former are more conservative. The DTIs for FHA and VA loans experienced notable increases since early 2017 for both bank and nonbank originations, while the Other originations' DTIs stayed relatively flat.

Ginnie Mae DTI: Bank vs. Nonbank



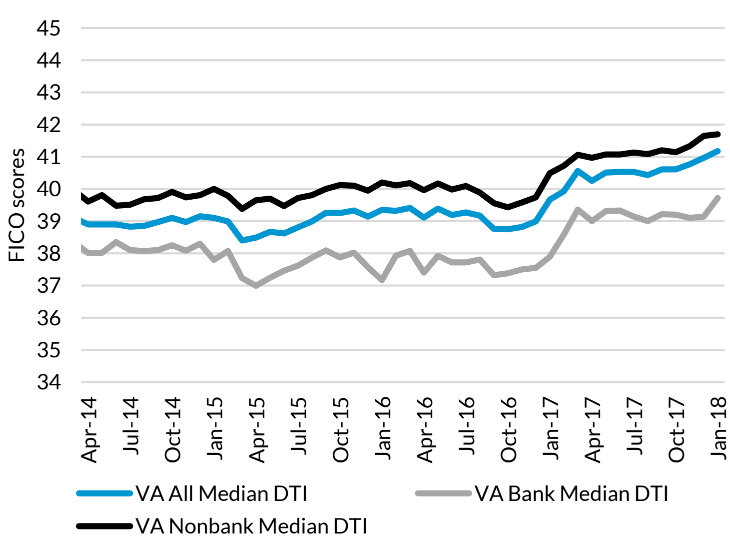
Sources: *eMBS and Urban Institute* **Note:** *Data as of January 2018*

Ginnie Mae FHA DTI: Bank vs. Nonbank



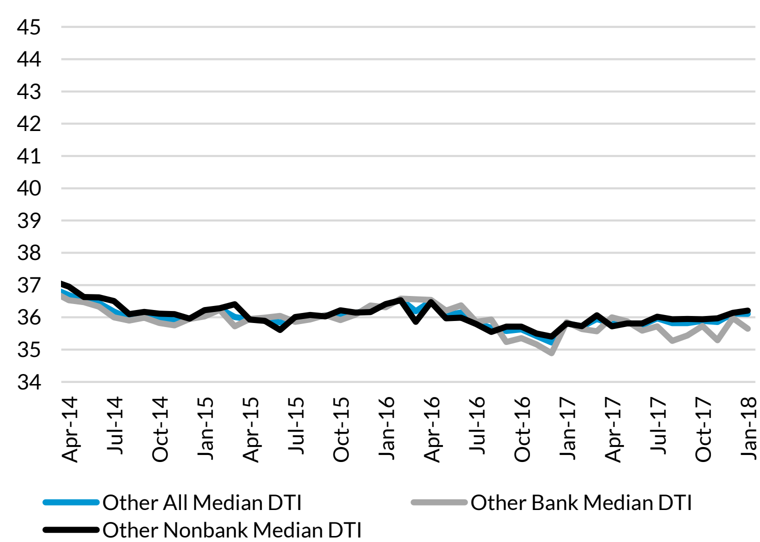
Sources: *eMBS and Urban Institute* **Note:** *Data as of January 2018*

Ginnie Mae VA DTI: Bank vs. Nonbank



Sources: *eMBS and Urban Institute*
Note: *Data as of January 2018*

Ginnie Mae Other DTI: Bank vs. Nonbank

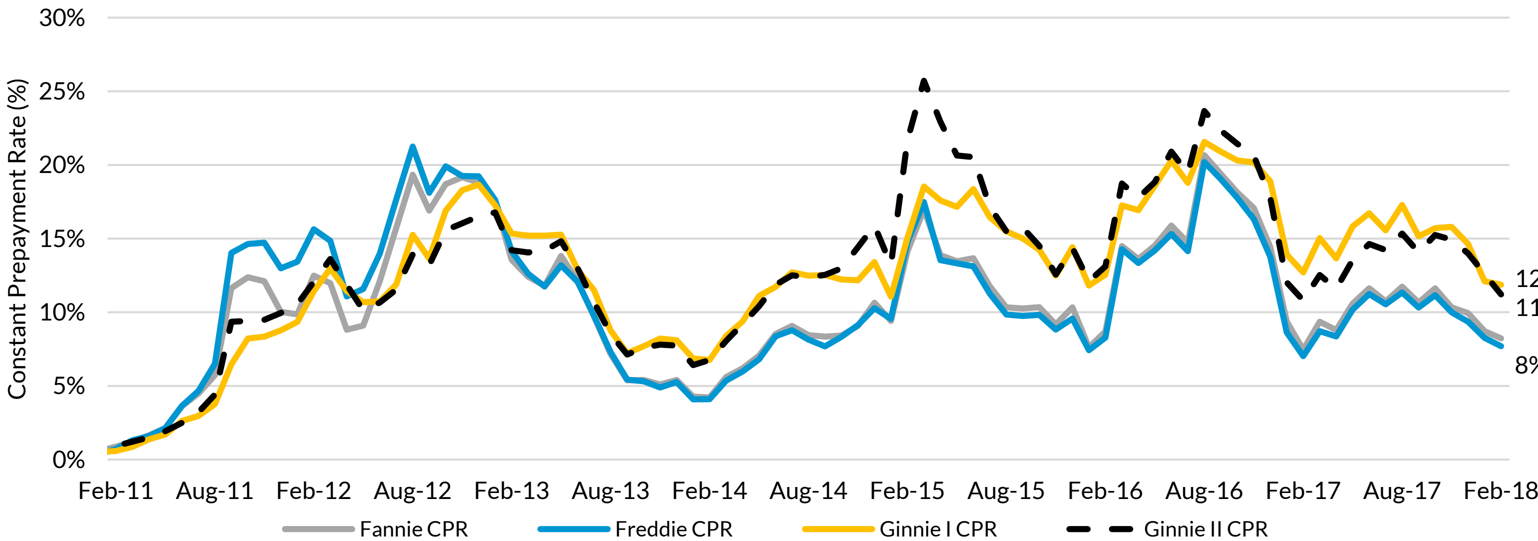


Sources: *eMBS and Urban Institute*
Note: *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of January 2018*

Prepayments

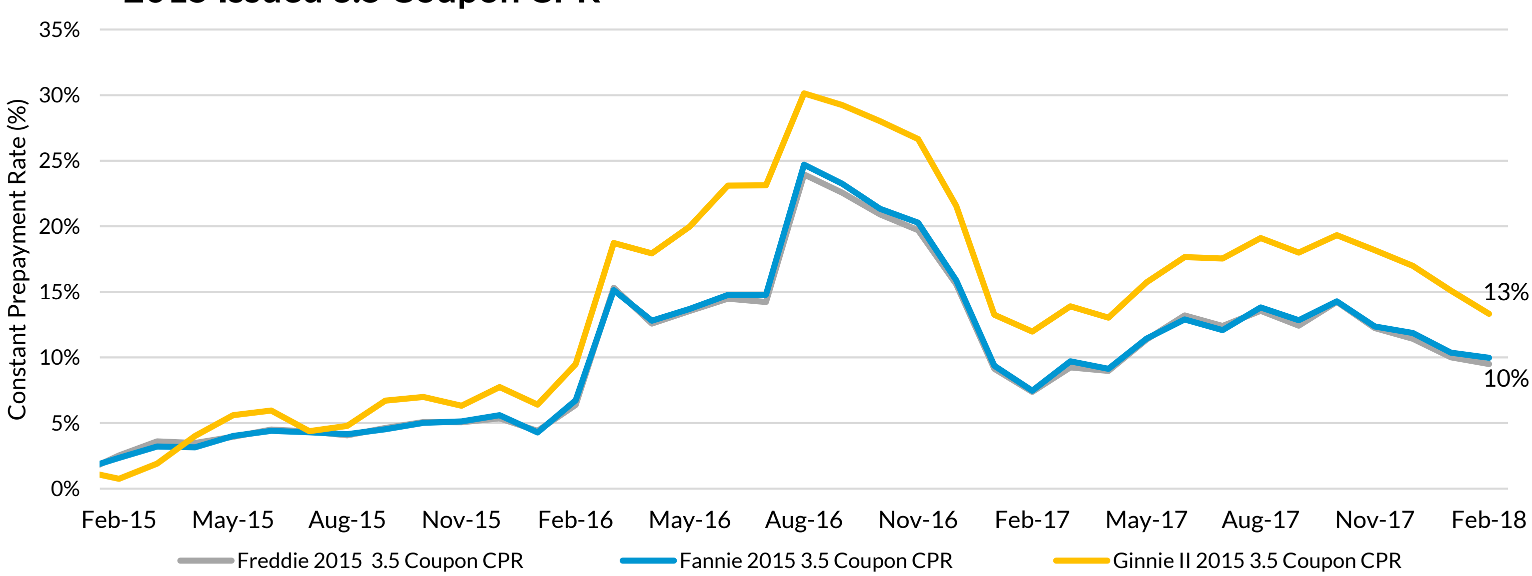
Prepayments on Ginnie Mae securities were lower than on GSE securities from 2011 through mid-2013, but have been higher since. These differences hold across all coupon buckets. The differences are especially pronounced on more recent production. These increased Ginnie speeds reflect the growing share of VA loans, which prepay at faster speeds than either FHA or GSE loans. This also reflects the fact that FHA streamlined refinances apply to a wide range of borrowers and unlike GSE streamlined refinances, requires no credit report and no appraisal. Some of the upfront mortgage insurance premium can also be applied to the refinanced loan. Moreover, both FHA and VA permit refinancing of existing mortgages after 6 months, while the GSEs do not allow refinancing for a year. With the increase in interest rates since November 2016, the prepayment speeds for all agencies have slowed down considerably. In 2017, with the bulk of the mortgage universe finding it non-economic to refinance, the muted month to month variations in speeds reflect seasonality, changes in day count and changes in mortgage rates. With mortgage rates substantially above 4%, we would expect prepayment speeds in the coming months to be more muted than the same month in 2017.

Aggregate Prepayments



Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of February 2018.*

2015 Issued 3.5 Coupon CPR

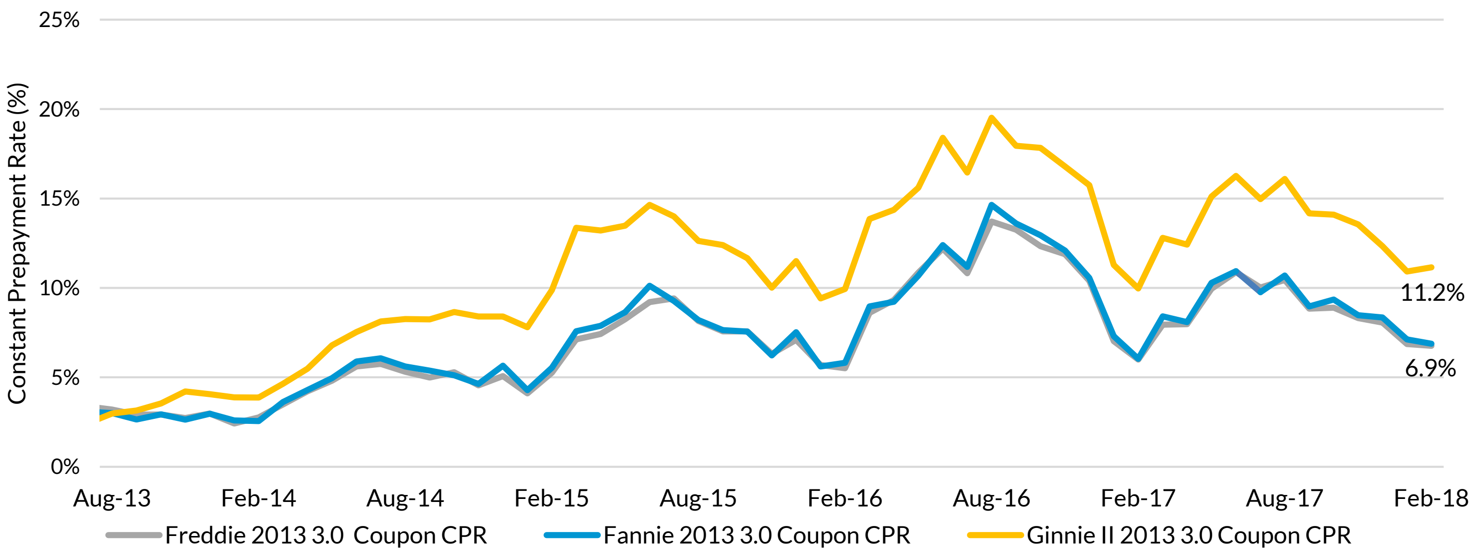


Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of February 2018.*

Prepayments

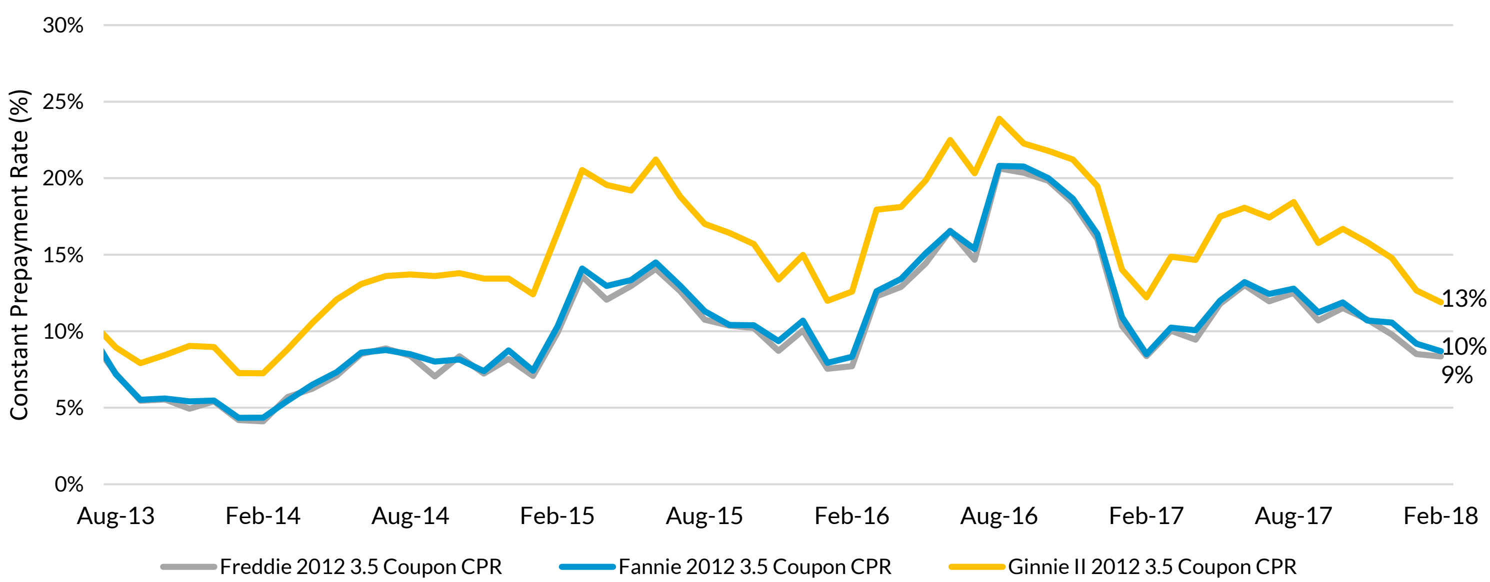
The 2013 Ginnie II 3.0s are prepaying faster than their conventional counterparts. 2012 Ginnie II 3.5s have been faster since mid-2013. The differences accelerated in 2015—potentially due to the FHA mortgage insurance premium (MIP) cut. In January 2015 FHA lowered its MIPs from 135 basis points per annum to 85 basis points per annum; this gives 2012 and 2013 FHA mortgages taken out with MIPs of 125-135 bps a 40-50 basis point rate incentive that conventional mortgages do not have. GSE guarantee fees have gone up over that same period, creating a disincentive for conventional loans. Moreover, recent originations are more heavily VA loans, which are more prepayment responsive than either FHA or Conventional loans. After a sharp mortgage rate rise in November 2016, the prepayment speeds of Ginnie and Conventional loans both fell dramatically. In 2017, with the bulk of the mortgage universe finding it non-economic to refinance, the muted month to month variations in speeds reflect seasonality, changes in day count and changes in mortgage interest rates. With mortgage rates substantially above 4%, we would expect prepayment speeds in the coming months to be more muted than the same month in 2017.

2013 Issued 3.0 Coupon CPR



Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of February 2018.*

2012 Issued 3.5 Coupon CPR

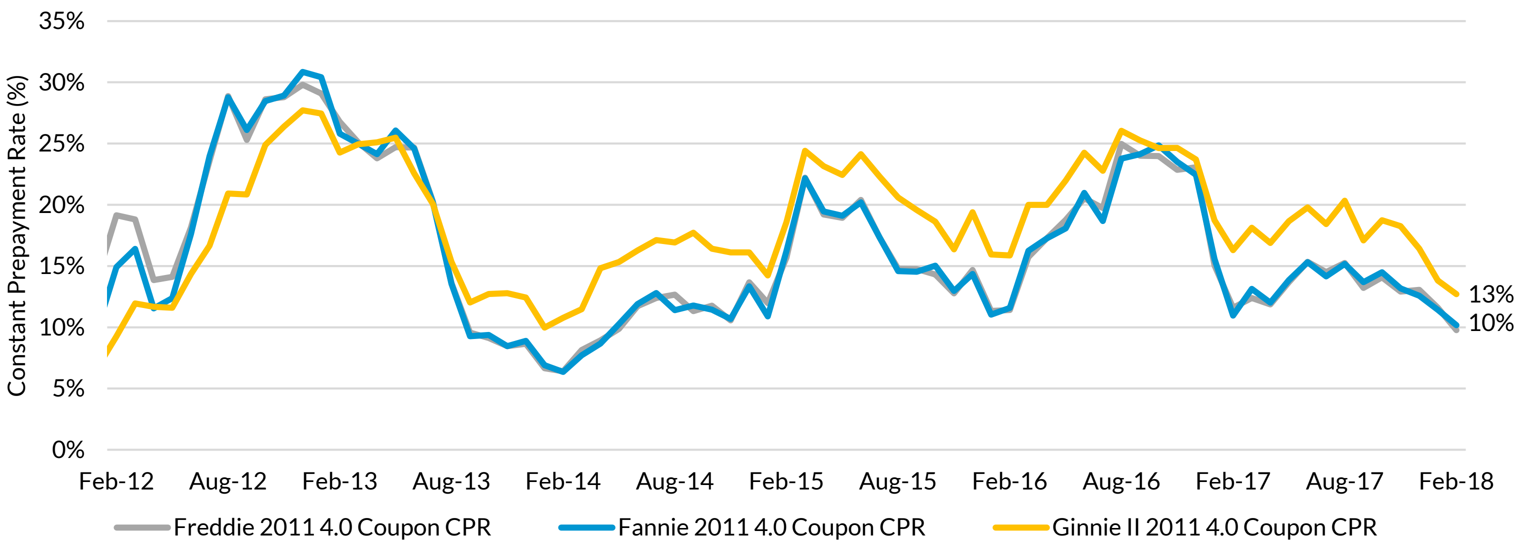


Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of February 2018.*

Prepayments

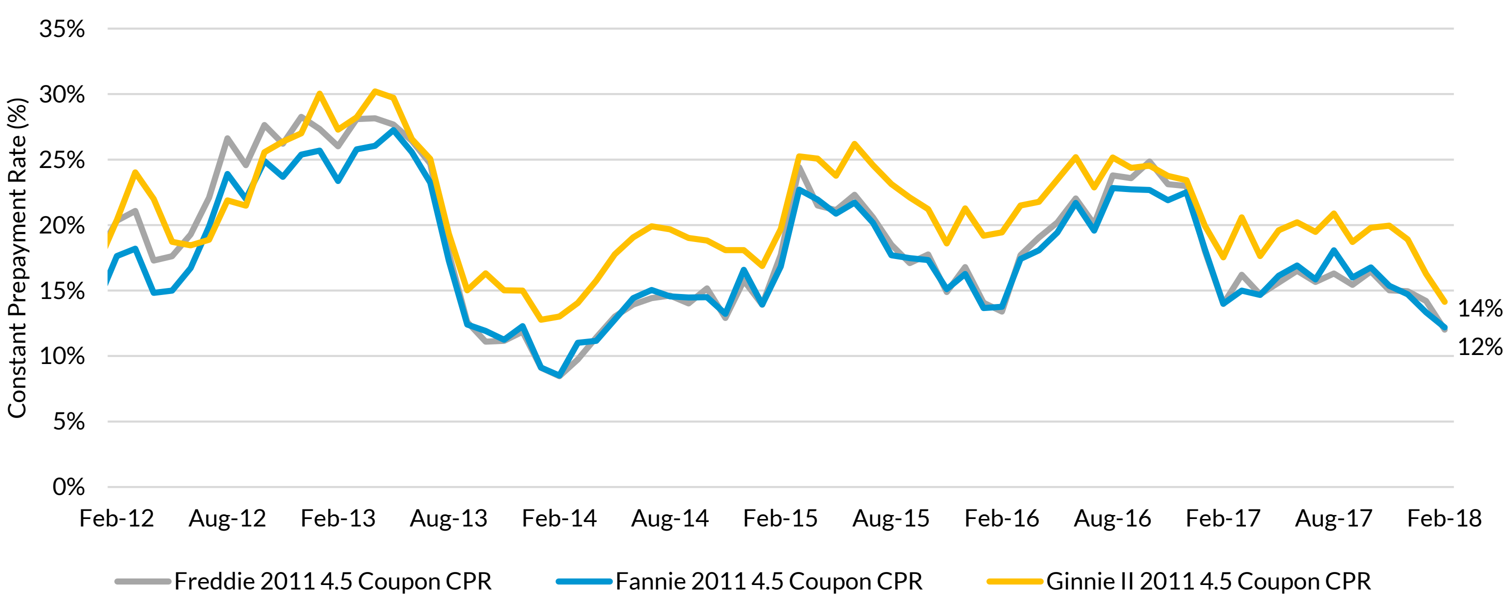
The 2011 Ginnie II 4.0s and 4.5s have been prepaying faster than their conventional counterparts since late 2013. Faster VA mortgage prepays plus simplifications to the FHA streamlined programs in 2013 are likely contributors to the faster speeds. However, as mortgage rates rose sharply since November 2016, the speeds for all agencies have slowed down considerably. In 2017, with the bulk of the mortgage universe finding it non-economic to refinance, the muted month to month variations in speeds reflect seasonality, changes in day count and changes in mortgage interest rates. With mortgage rates substantially above 4%, we would expect prepayment speeds in the coming months to be more muted than the same month in 2017.

2011 Issued 4.0 Coupon CPR



Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of February 2018.*

2011 Issued 4.5 Coupon CPR

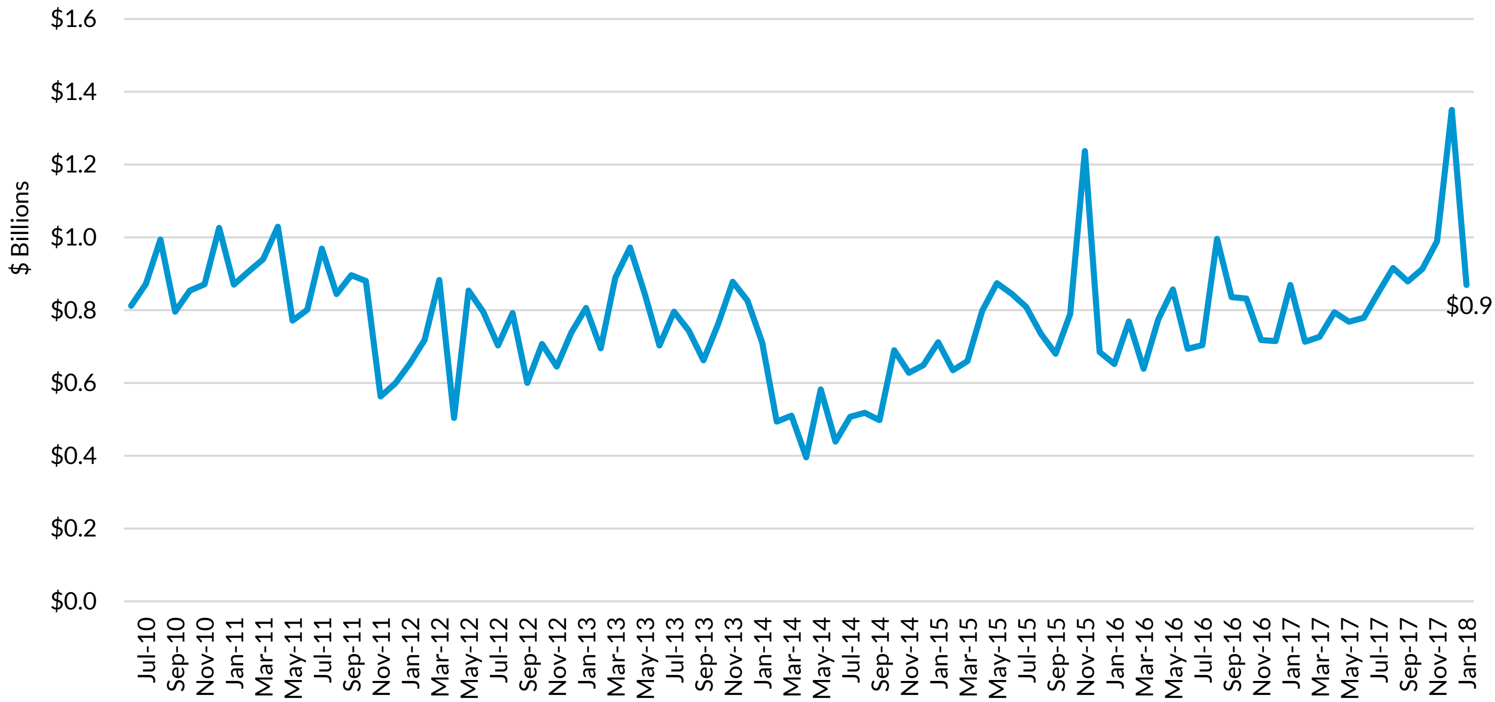


Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of February 2018.*

Other Ginnie Mae Programs Reverse Mortgage Volumes

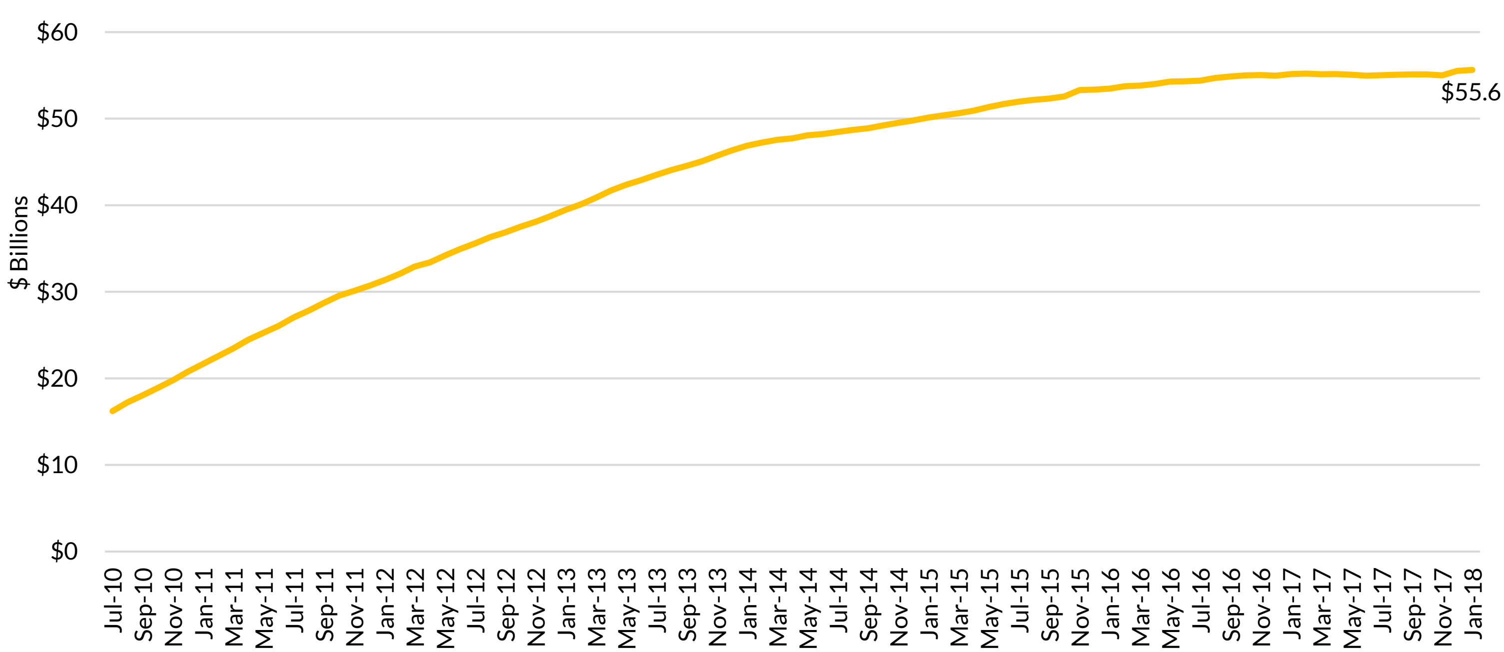
Ginnie Mae reverse mortgage issuance volume went down slightly, with issuance of $0.9 billion in January. Outstanding securities totaled $55.6 billion in January.

HMBS Issuance Volume



Sources: *Ginnie Mae and Urban Institute.* **Note**: *Data as of January 2018.*

HMBS Outstanding

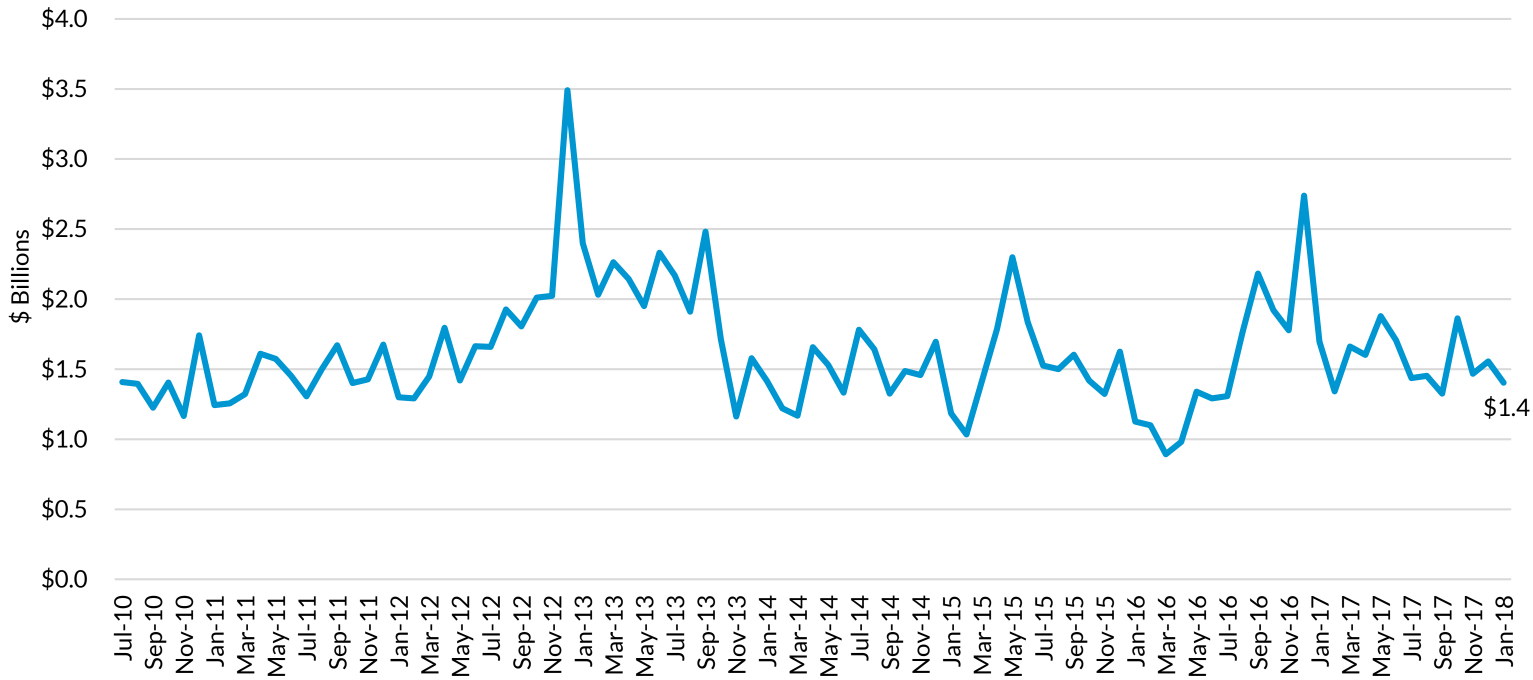


Sources: *Ginnie Mae and Urban Institute.* **Note:** *Data as of January 2018.*

Other Ginnie Mae Programs Multifamily Market

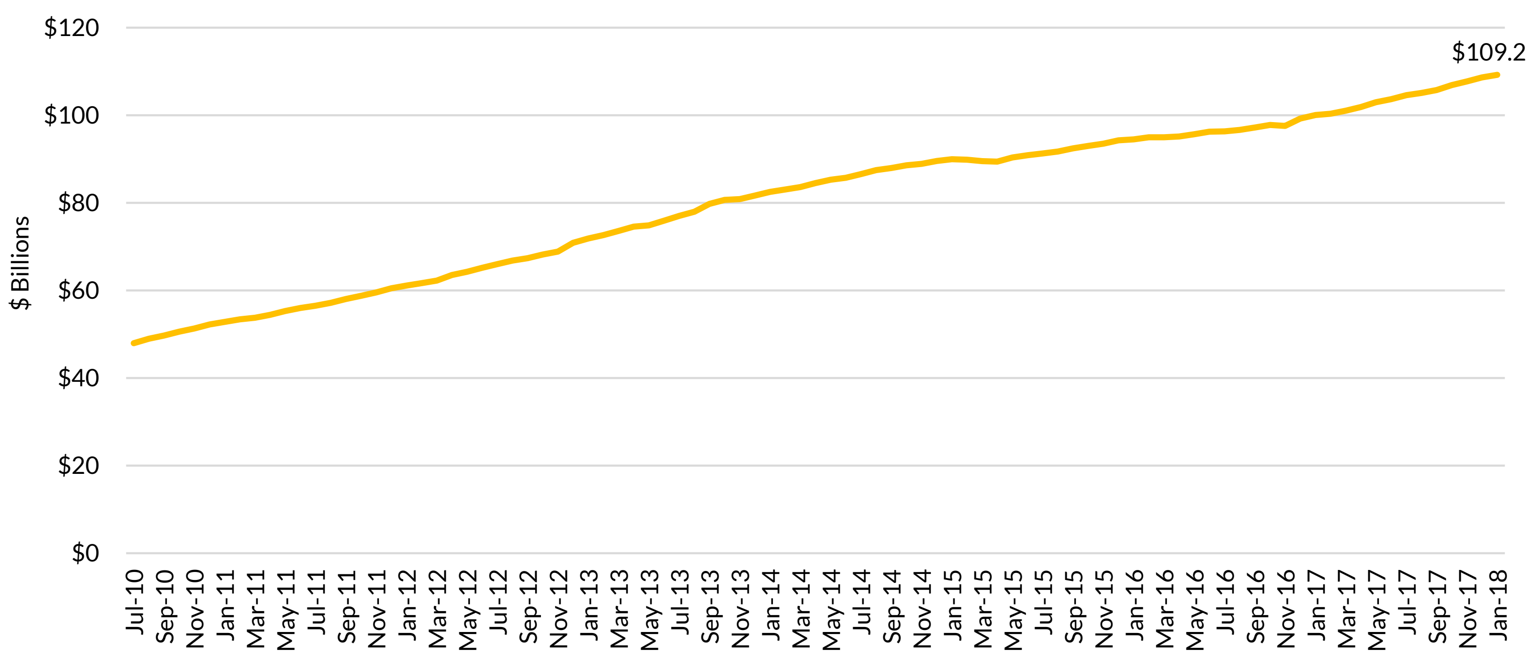
Ginnie Mae multifamily issuance volumes in January totaled $1.4 billion. Outstanding multifamily securities totaled $109.2 billion in January.

Ginnie Mae Multifamily MBS Issuance



Sources: *Ginnie Mae and Urban Institute.* **Note**: *Data as of January 2018.*

Ginnie Mae Multifamily MBS Outstanding

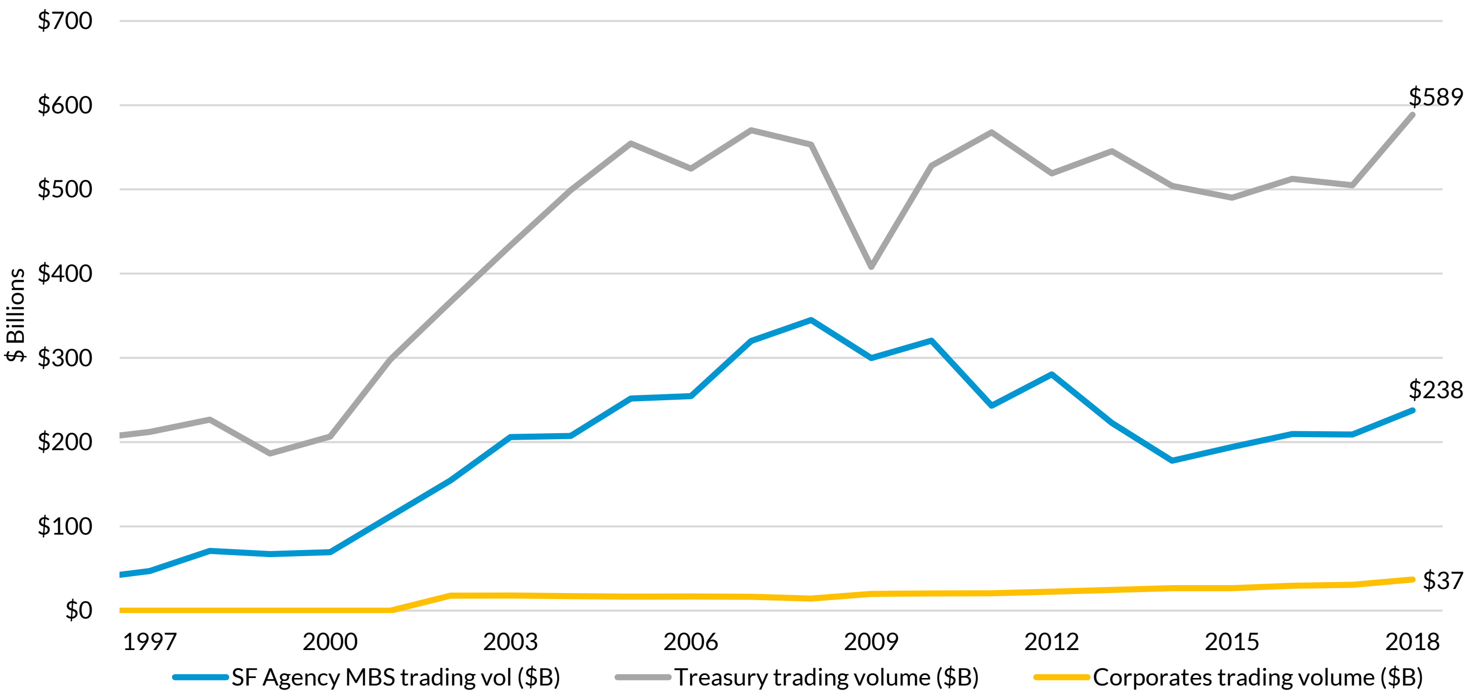


Sources: *Ginnie Mae and Urban Institute.* **Note**: *Data as of January 2018.*

Market Conditions

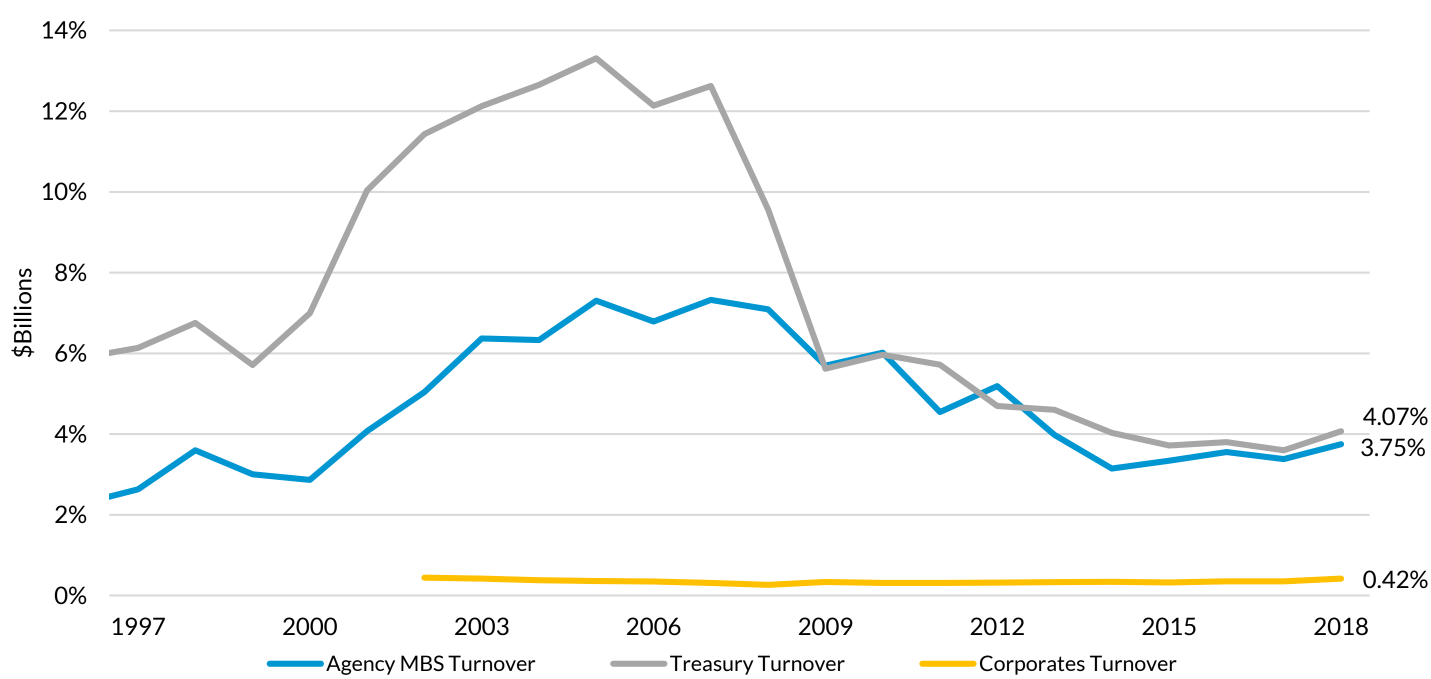
Agency MBS trading volume in February 2018 has been slightly more robust than in the 2014-2017 period. Agency MBS turnover has been higher in 2018 than in 2017; in the first two months of 2018, average daily MBS turnover was 3.75 percent versus 3.36 percent in 2017. Note that average daily Treasury turnover is also down dramatically from its 2005 peak. 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:*** *Data as of February 2018.*

Average Daily Turnover by Sector

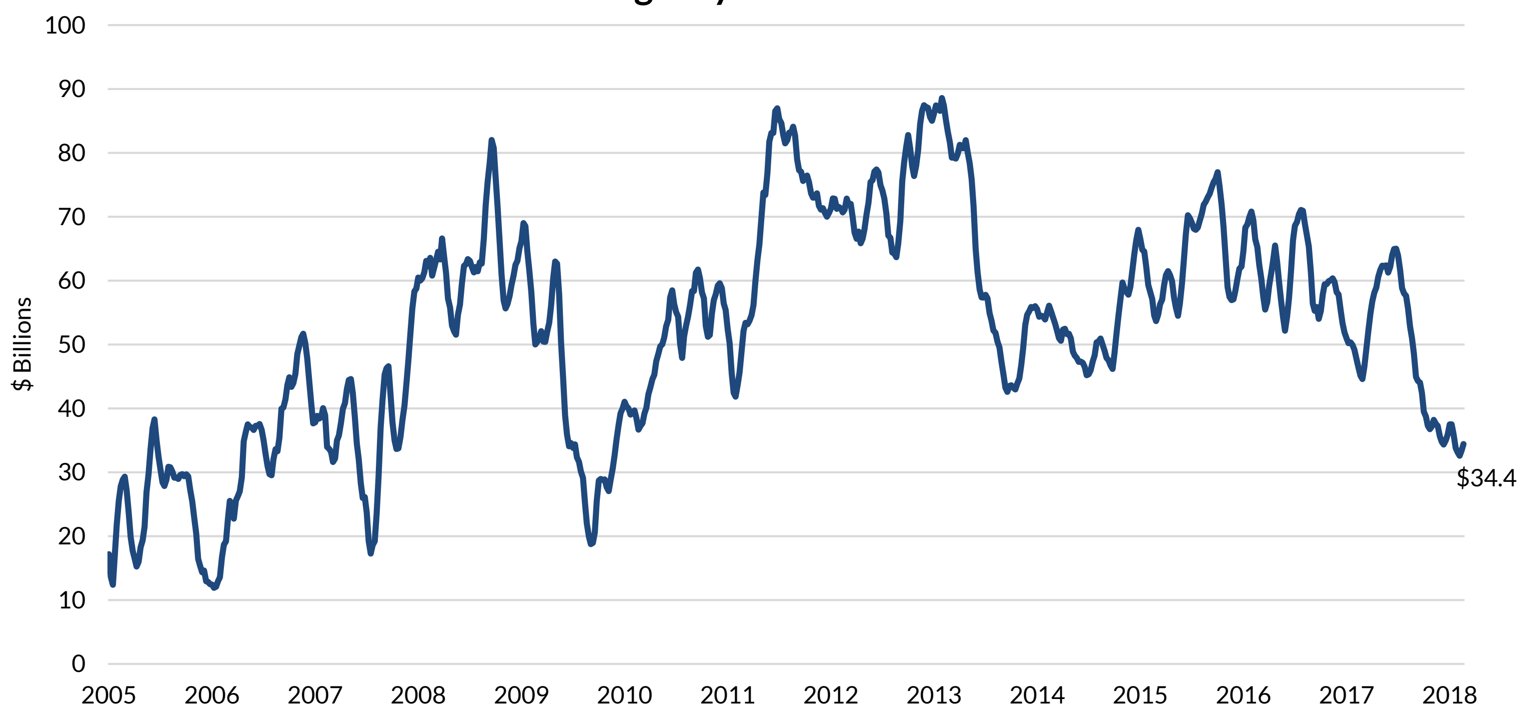


Sources: *SIFMA and Urban Institute.* ***Note:*** *Data as of February 2018.*

Market Conditions

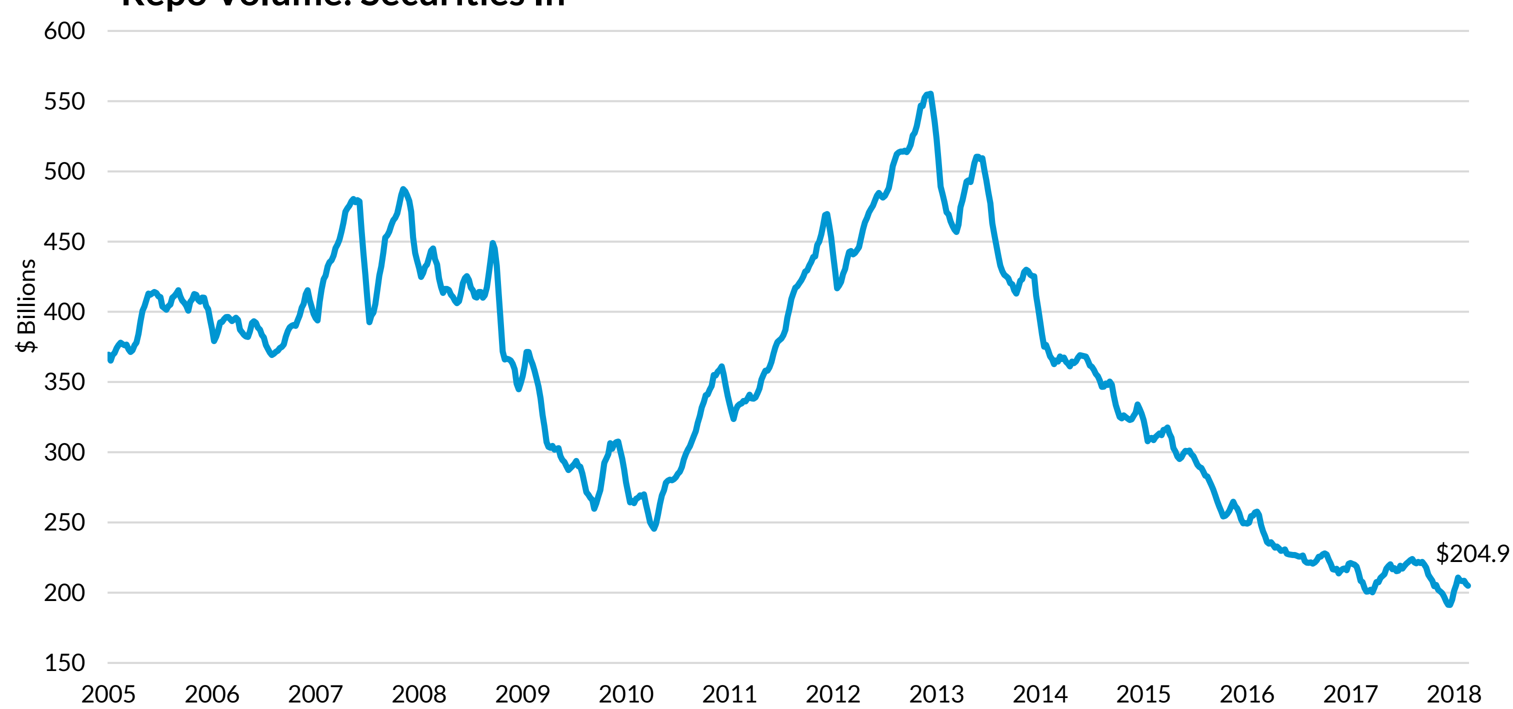
Dealer net positions in Agency MBS are now at the very lower end of the recent range, although gross positions are likely down more. The volume of repurchase activity is near its lowest level in 13 years.This reflects banks cutting back on lower margin businesses.

Dealer Net Positions: Federal Agency and GSE MBS



Sources: *Federal Reserve Bank of New York Primary Dealer Statistics and Urban Institute.* **Note:** *Data as of February 2018.*

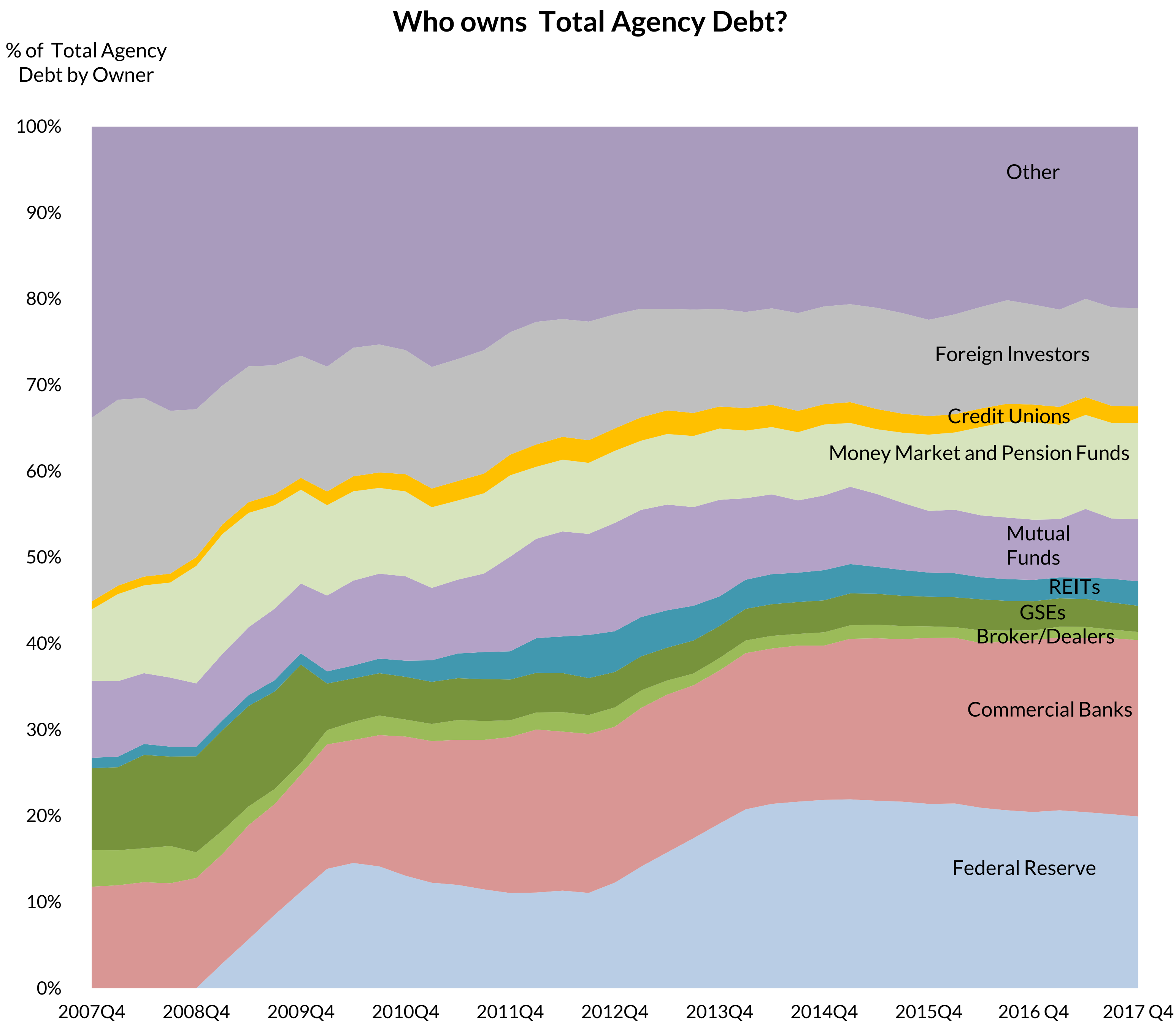
Repo Volume: Securities In



Sources: *Federal Reserve Bank of New York Primary Dealer Statistics and Urban Institute.* **Note:** *Data as of February 2018.*

MBS Ownership

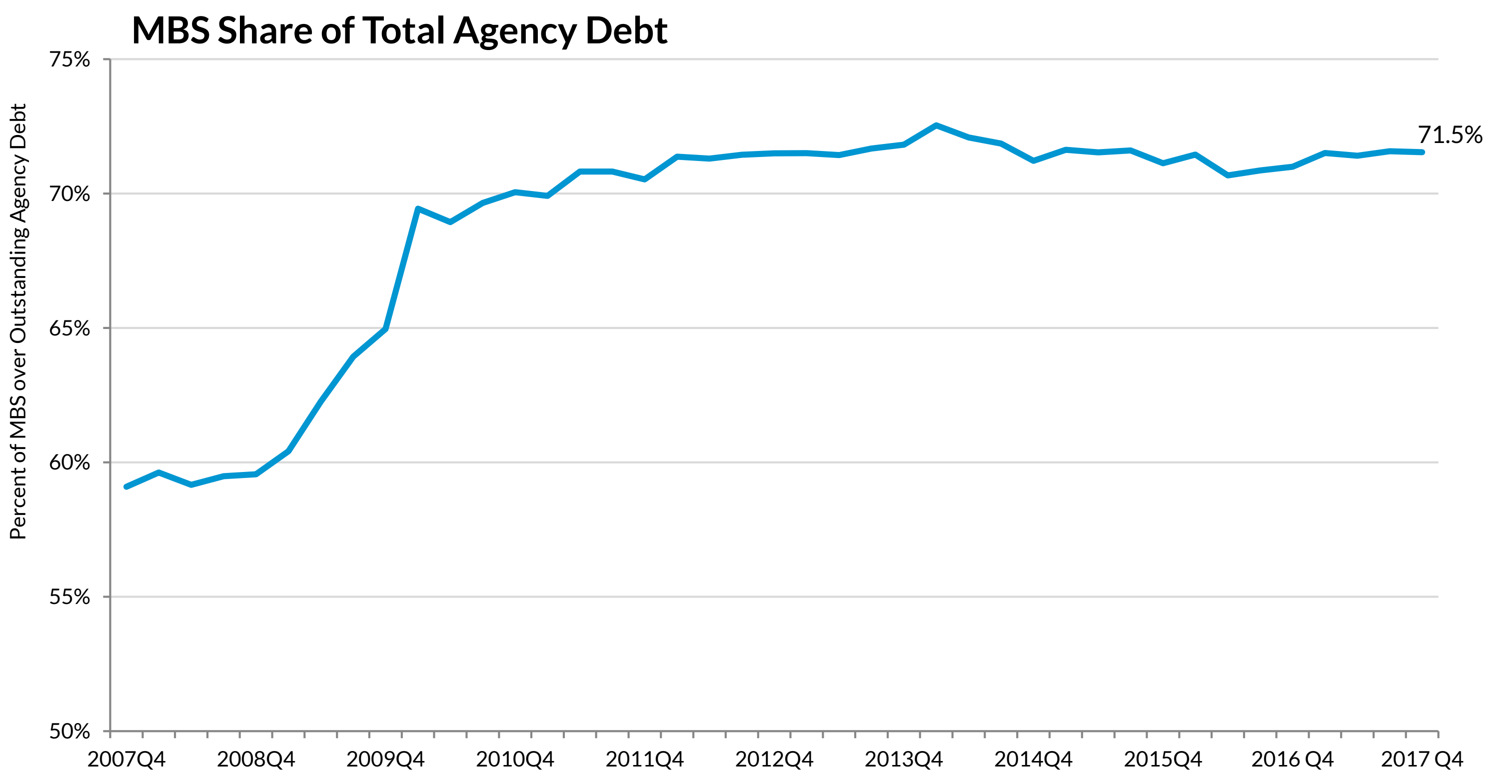
The largest holders of agency debt (Agency MBS + Agency notes and bonds) include the Federal Reserve (20 percent), commercial banks (20 percent) and foreign investors (11 percent). The broker/dealer and GSE shares are a fraction of what they once were.



Sources: *Federal Reserve Flow of Funds and Urban Institute.* **Note**: *Data as of Q4 2017.*

MBS Ownership

As Fannie and Freddie reduce the size of their retained portfolio, fewer agency notes and bonds are required to fund that activity, hence the MBS share of total agency debt increases. For Q4 2017, the MBS share of total agency debt stood at 71.5 percent. Commercial banks are now the largest holders of Agency MBS. Out of their $1.8 trillion in holdings as of the end of February 2018, $1.3 trillion of it was held by the top 25 domestic banks.



***Sources**: Federal Reserve Flow of Funds and Urban Institute. **Note**: Data as of Q4 2017.*

	Commercial Bank Holdings ($Billions)								Week Ending			
	Feb-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Feb 7	Feb 14	Feb 21	Feb 28
Largest Domestic Banks	1232.0	1290.8	1299.3	1309.2	1312.6	1318.6	1308.8	1293.1	1291.9	1292.6	1292.4	1295.7
Small Domestic Banks	459.4	474.5	477.2	478.1	477.4	476.3	476.1	474.4	473.1	475.3	474.9	474.2
Foreign Related Banks	13.1	12.8	12.1	12.3	19.4	38.8	37.0	35.0	33.6	34.2	36.1	36.1
Total, Seasonally Adjusted	1704.5	1778.1	1788.6	1799.6	1809.4	1833.7	1821.9	1802.5	1798.6	1802.1	1803.4	1806.0

***Sources**: Federal Reserve Bank and Urban Institute. **Note**: Data as of February 2018.*

MBS Ownership

Out of the $1.8 trillion in MBS holdings at banks and thrifts, $1.4 trillion is in agency pass-through form: $1.0 trillion in GSE pass-throughs and $351.9 billion in Ginnie Mae pass-throughs. There are another $418.1 billion in Agency CMOs. Non-agency holdings total $56.1 billion. Ginnie Mae pass-throughs have been the fastest growing sector in the past 2 years. Bank and thrift holdings of MBS are concentrated, with the top 20 holders accounting for 70 percent of the total, and the top 5 holders accounting for 44 percent of the total.

Bank and Thrift Residential MBS Holdings

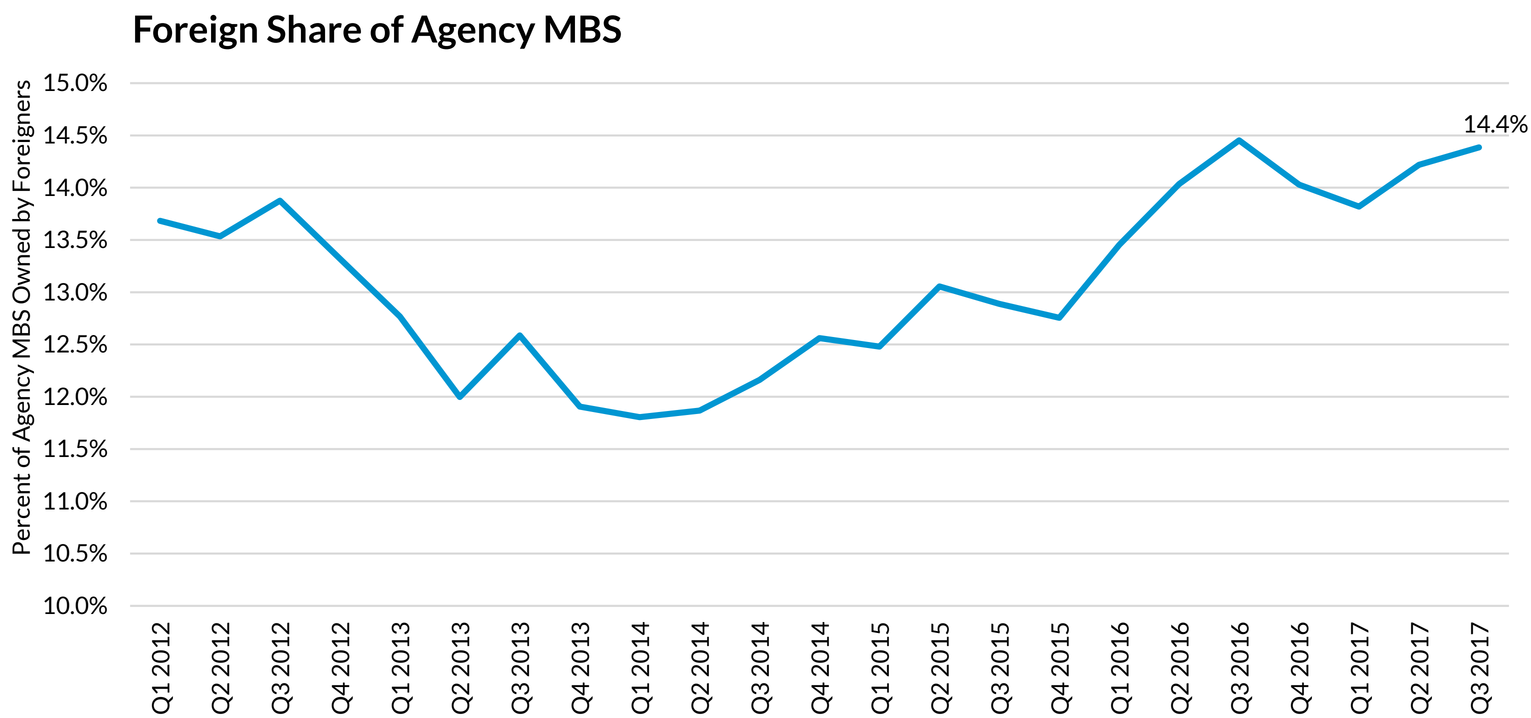
	All Banks & Thrifts ($Billions)						
	Total	Agency MBS	GSE PT	GNMA PT	Agency CMO	Private MBS	Private CMO
2000	$683.90	$392.85	$234.01	$84.26	$198.04	$21.57	$71.43
2001	$810.50	$459.78	$270.59	$109.53	$236.91	$37.62	$76.18
2002	$912.36	$557.43	$376.11	$101.46	$244.98	$20.08	$89.88
2003	$982.08	$619.02	$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
1Q14	$1,574.44	$1,029.68	$713.50	$232.44	$500.09	$27.08	$104.97
2Q14	$1,526.12	$951.82	$717.27	$232.75	$445.17	$24.72	$104.41
3Q14	$1,534.59	$951.99	$725.96	$226.03	$447.46	$21.89	$113.24
4Q14	$1,539.32	$964.16	$733.71	$230.45	$449.90	$20.33	$104.94
1Q15	$1,579.21	$1,012.26	$767.71	$244.55	$455.47	$17.70	$93.78
2Q15	$1,583.22	$1,032.26	$784.22	$248.05	$445.91	$16.47	$88.57
3Q15	$1,608.44	$1,064.67	$805.05	$259.62	$447.01	$13.60	$83.16
4Q15	$1,643.56	$1,115.40	$823.10	$292.30	$445.39	$11.14	$71.63
1Q16	$1,660.58	$1,133.29	$833.25	$300.04	$448.63	$10.27	$68.39
2Q 16	$1,684.33	$1,169.67	$867.64	$302.03	$440.25	$9.11	$65.29
3Q16	$1,732.36	$1,227.52	$924.81	$302.71	$435.77	$7.90	$61.17
4Q16	$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

	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	$323,833	$189,098	$120,870	$13,317	$548	17.60%
2	Wells Fargo & Company	$236,485	$189,928	$35,691	$4,683	$6,184	12.90%
3	JP Morgan Chase & Co.	$107,090	$71,767	$23,434	$497	$11,392	5.80%
4	U S. Bancorp.	$77,867	$33,491	$10,859	$33,516	$1	4.20%
5	Charles Schwab Bank	$68,072	$40,328	$12,454	$15,290	$0	3.70%
6	Citigroup Inc.	$67,005	$50,868	$1,693	$9,508	$4,936	3.60%
7	Capital One Financial Corporation	$52,701	$17,613	$11,747	$22,075	$1,265	2.90%
8	Bank of New York Mellon Corp.	$52,005	$31,031	$2,146	$16,722	$2,106	2.80%
9	PNC Bank, National Association	$42,494	$31,655	$4,557	$3,156	$3,125	2.30%
10	Branch Banking and Trust Company	$36,678	$11,847	$5,850	$20,373	$608	2.10%
11	State Street Bank and Trust Company	$30,004	$4,141	$6,432	$10,336	$9,096	1.60%
12	Morgan Stanley	$25,382	$9,996	$7,793	$7,593	$0	1.40%
13	KeyBank National Association	$25,189	$944	$1,197	$23,048	$0	1.40%
14	E*TRADE Bank	$23,235	$13,673	$3,703	$5,854	$0	1.30%
15	SunTrust Bank	$23,089	$11,976	$11,050	$0	$62	1.30%
16	HSBC Banks USA, National Association	$21,865	$5,525	$7,982	$8,354	$5	1.20%
17	MUFG Union Bank, National Association	$18,848	$6,175	$5,447	$6,675	$551	1.00%
18	Regions Bank	$18,550	$11,258	$5,154	$2,135	$3	1.00%
19	Ally Bank	$16,252	$8,871	$2,816	$2,440	$2,125	0.90%
20	Fifth Third Bank	$15,933	$3,539	$3,879	$8,515	$0	0.90%
	Total Top 20	**$1,282,576**	**$743,723**	**$284,753**	**$214,088**	**$42,008**	**69.90%**

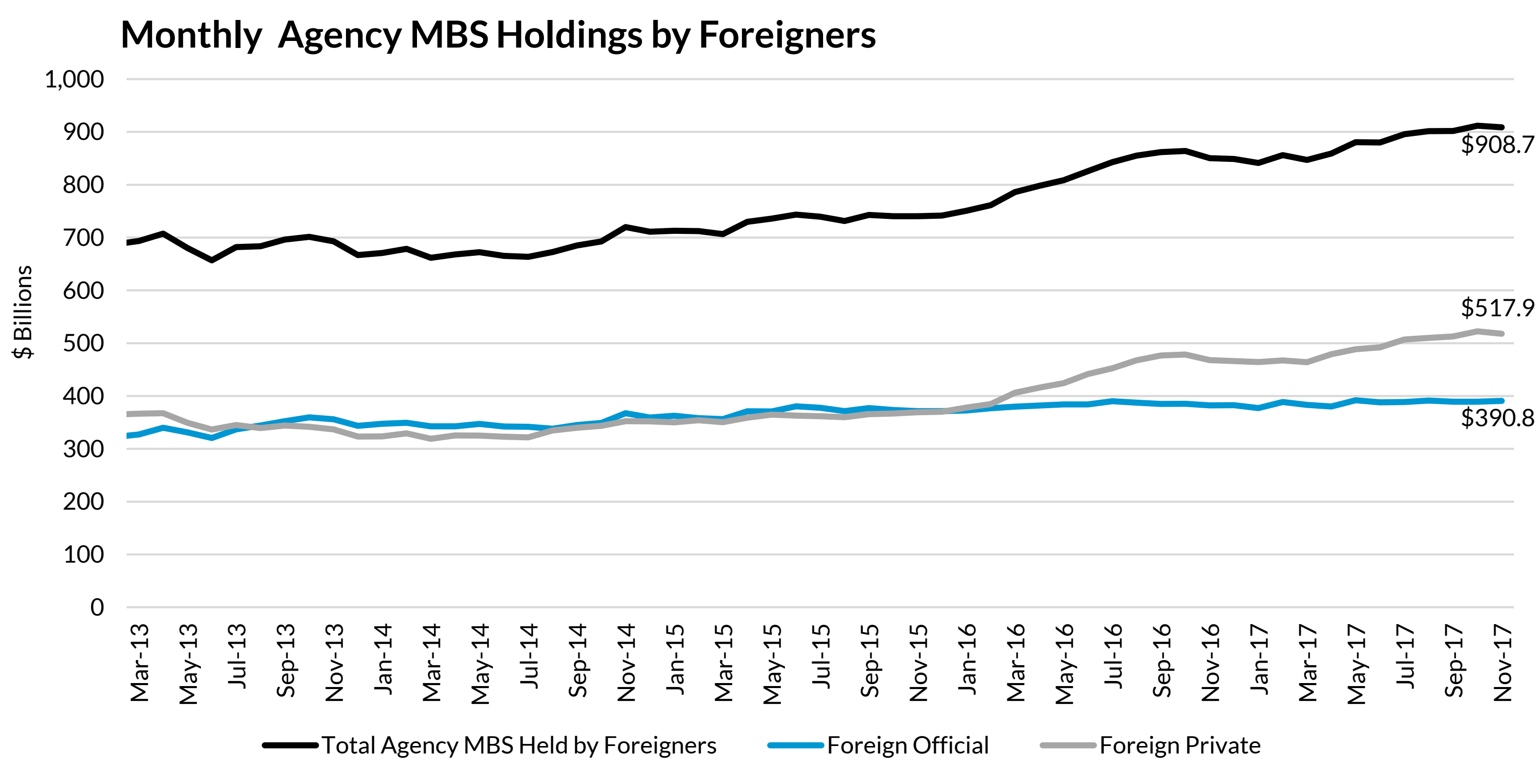
Sources: *Inside Mortgage Finance and Urban Institute.* ***Note:*** *Data as of Q3 2017*

MBS Ownership

Foreign investors hold 14.4 percent of agency MBS, up from the lows in 2013. For the month of November, this represents $908.7 billion in Agency MBS, $390.8 billion held by foreign official institutions and $517.9 billion held by foreign private investors.



Sources: *SIFMA and Treasury International Capital (TIC).* ***Note***: *Data as of Q3 2017.*



Sources: *Treasury International Capital (TIC) and Urban Institute.* ***Note***: *Data as of November 2017.*

MBS Ownership

The largest foreign holders of Agency MBS are Taiwan, China and Japan; these three regions comprise around 70 percent of all foreign holdings. Since June of 2016, we estimate Taiwan and Japan have expanded their holdings while China has contracted. For the first ten months of 2017, we estimate Japan and Taiwan have each added more than $25 billion in agency MBS.

Agency MBS+ Agency Debt

Country	Level of Holdings ($Millions)*								Change in Holdings ($Millions)*						
	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17	Oct-17	Nov-17	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Oct-17	Nov-17
Taiwan	207,164	208,352	204,005	212,707	227,236	229,030	233,069	229,062	1,188	-4,347	8,702	14,529	1,794	4,039	-4,007
China	195,933	191,743	184,151	187,664	183,396	177,580	174,815	174,288	-4,190	-7,592	3,513	-4,268	-5,816	-2,765	-527
Japan	197,101	222,116	220,644	214,838	227,721	244,163	245,078	247,614	25,015	-1,472	-5,806	12,883	16,442	915	2,536
Ireland	47,635	48,307	47,065	46,178	45,353	46,393	47,429	49,890	672	-1,242	-887	-825	1,040	1,036	2,461
South Korea	50,323	50,072	49,000	44,349	46,577	47,581	48,073	45,381	-251	-1,072	-4,651	2,228	1,004	492	-2,692
Luxembourg	31,592	33,631	38,545	33,700	32,680	32,997	33,194	35,182	2,039	4,914	-4,845	-1,020	317	197	1,988
Bermuda	28,402	28,714	27,624	26,960	26,793	27,088	27,422	27,501	312	-1,090	-664	-167	295	334	79
Cayman Islands	31,076	30,686	30,186	29,014	28,763	29,014	29,303	27,860	-390	-500	-1,172	-251	251	289	-1,443
Switzerland	16,240	20,638	15,626	16,244	17,591	18,667	20,121	17,729	4,398	-5,012	618	1,347	1,076	1,454	-2,392
Netherlands	12,459	10,536	10,326	11,018	12,039	12,576	12,266	12,292	-1,923	-210	692	1,021	537	-310	26
Rest of World	148,860	139,634	137,432	121,753	124,977	121,455	124,317	125,785	-9,226	-2,202	-15,679	3,224	-3,522	2,862	1,468
Total	954,326	984,429	964,604	944,425	973,126	986,544	995,087	992,584	30,103	-19,825	-20,179	28,701	13,418	8,543	-2,503

Agency MBS Only (Estimates)

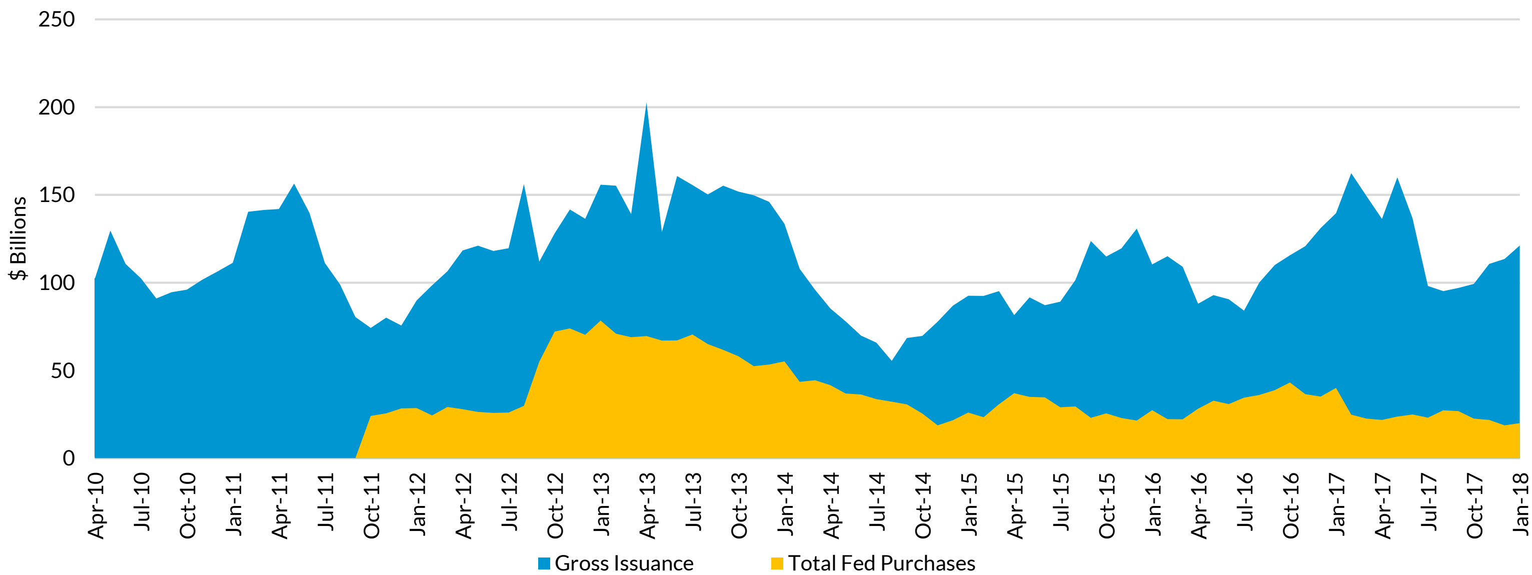
Country	Level of Holdings ($Millions)*								Change in Holdings ($Millions)*						
	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17	Oct-17	Nov-17	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Oct-17	Nov-17
Taiwan	206,954	208,142	203,807	212,540	227,077	228,885	232,926	228,918	1,188	-4,335	8,734	14,536	1,808	4,041	-4,008
China	186,993	185,881	178,556	183,103	178,934	173,422	170,683	170,120	-1,112	-7,325	4,547	-4,169	-5,512	-2,739	-563
Japan	185,034	213,615	212,661	208,162	221,447	238,602	239,603	242,126	28,581	-954	-4,499	13,285	17,155	1,001	2,523
Ireland	37,695	39,142	38,405	38,910	38,381	40,054	41,203	43,650	1,447	-737	505	-530	1,673	1,149	2,447
South Korea	34,173	34,726	34,505	32,126	34,905	36,966	37,636	34,845	553	-221	-2,379	2,779	2,061	670	-2,791
Luxembourg	27,187	29,766	34,981	30,658	29,750	30,329	30,570	32,563	2,579	5,215	-4,323	-908	579	241	1,992
Bermuda	23,994	24,767	23,888	23,825	23,786	24,351	24,732	24,794	773	-879	-63	-39	565	381	62
Cayman Islands	22,815	22,918	22,851	22,847	22,855	23,637	24,017	22,523	103	-67	-3	8	782	379	-1,494
Switzerland	11,717	16,446	11,596	12,873	14,380	15,755	17,272	14,834	4,729	-4,850	1,277	1,507	1,375	1,517	-2,438
Netherlands	11,471	9,717	9,553	10,383	11,442	12,036	11,731	11,754	-1,754	-165	830	1,059	595	-305	23
Rest of World	83,560	76,575	77,885	71,554	76,980	77,729	81,338	82,541	-6,985	1,311	-6,331	5,426	749	3,609	1,203
Total	831,593	861,694	848,688	846,981	879,935	901,766	911,711	908,668	30,101	-13,006	-1,707	32,954	21,831	9,945	-3,043

Sources *:Treasury International Capital (TIC) and Urban Institute.*
Note: *calculated based on June 2016 report with amount asset backed per country. Revised to include Top 10 holders of MBS listed as of June 2016. Monthly data as of November 2017.

MBS Ownership

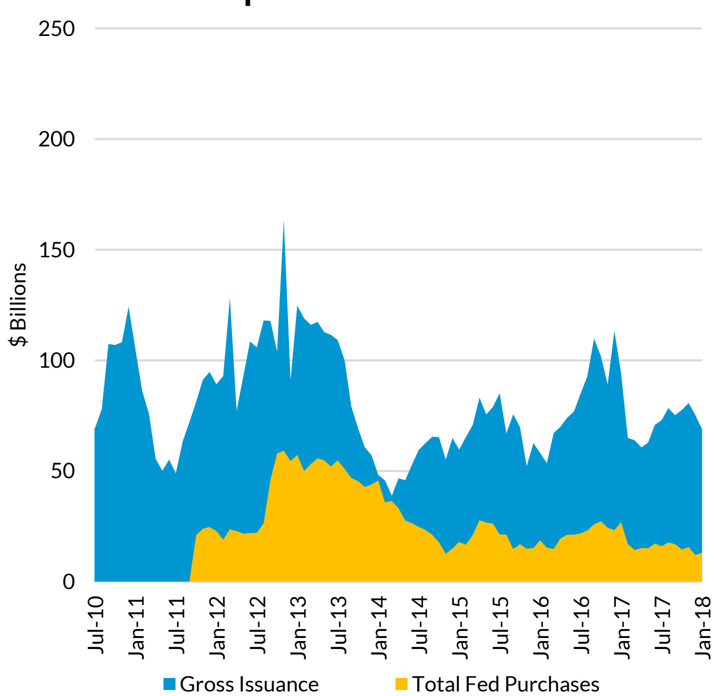
The Fed has begun to wind down their portfolio, and we are beginning to see the effects in slower absorption rates. During the period October 2014-September 2017, the Fed had ended its purchase program, but was reinvesting funds from mortgages and agency debt into the mortgage market, absorbing 20-30 percent of agency gross issuance. With the wind down, which started in October 2017, the Fed will continue to reinvest, but by less than their run off. In January 2018, total Fed purchases increased slightly to $19.9 billion, yielding Fed absorption of gross issuance of 19.2 percent, up from last month's historical low of 16.8 percent. The Fed absorbed 19.7 percent of Ginnie Mae issuance and 18.9 percent of GSE issuance, respectively.

Total Fed Absorption



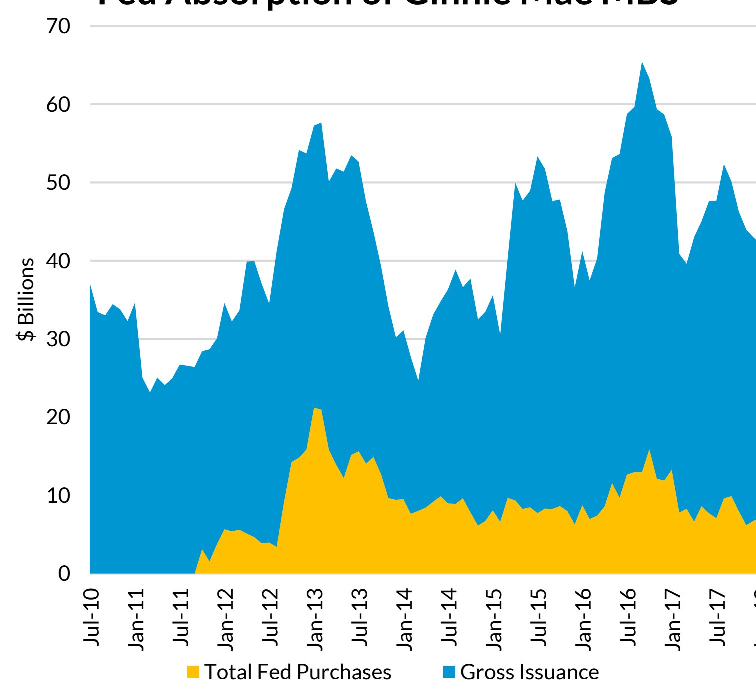
***Sources**: eMBS, Federal Reserve Bank of New York and Urban Institute. **Note:** Data as of January 2018.*

Fed Absorption of GSE MBS



***Sources**: eMBS, Federal Reserve Bank of New York and Urban Institute. **Note:** Data as of January 2018.*

Fed Absorption of Ginnie Mae MBS



***Sources**: eMBS, Federal Reserve Bank of New York and Urban Institute.*
***Note**: Data as of January 2018.*