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

Mortgage rates have increased: What does it mean?

The first six weeks of 2018 have seen a marked increase in the 30-year fixed mortgage rate. According to Freddie Mac's most recent Primary Mortgage Market Survey, the 30 FRM stood at 4.32 percent as of Feb 8. Rates have increased even more since Feb 8th. At the end of 2017, the PMMS rate was 3.99 percent. This rate increase in a relatively short period of time will have several implications for the mortgage market.

The most immediate impact will be on rate refinance volumes, which will plummet as fewer and fewer borrowers will save money by refinancing. This will no doubt slow down prepayment speeds; at the same time, the impact on Ginnie speeds will be lower compared to GSE as Ginnie MBS are less dependent on refinances to begin with (page 20). We don't anticipate cash out refinance to fill the rate refinance void because borrowers with ultra-low rate mortgages would be very reluctant to upgrade to larger homes, and in the process give up their existing rate. Such households are much more likely to opt for a second lien product such as a home equity loan, or a line of credit.

The second potential impact is on affordability. Modest-to-moderate increases in interest rates that are accompanied by corresponding increases in wages generally don't worsen affordability. But rapid increases in rates that outpace wage growth can reduce monthly payment affordability. Together with the decline in refinance volumes, this can result in lower origination and MBS issuance volumes.

Mortgage originators are likely to respond to slowing demand in a couple of different ways. Competition between originators would heat up as they try to maintain volumes. This means lower originator profitability. Originators can also support volumes by making mortgages more widely available through more relaxed underwriting. Some of this is already happening – the Urban Institute's most recent Housing Credit Availability Index showed marked improvement in credit availability in late 2017. We expect this trend to continue in 2018.

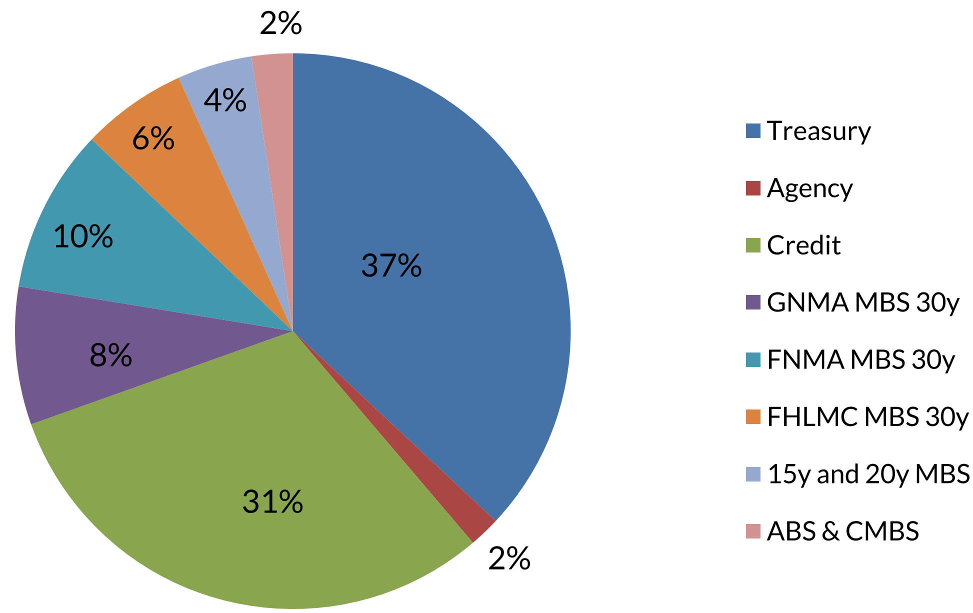
***Highlights this month*:**

- While Treasury and Ginnie Mae MBS yields both rose sharply in January 2018, current coupon Ginnie Mae MBS spreads relative to Treasuries stayed relatively stable (Pages 5 and 6).
- Serious delinquencies for single-family GSE loans, FHA loans and VA loans all edged up in Q4 2017, mostly due to the recent hurricanes (Page 11).
- Total agency gross issuance was down 12 percent, while agency net issuance was up 15 percent in 2017 (Pages 17 and 18).
- Median debt-to-income ratios (DTIs) on Ginnie Mae and Fannie Mae new originations have been moving up in recent months, while Freddie Mac median DTIs remain flat (Page 29).
- Agency MBS trading volumes and turnover have both been higher in January 2018 (Page 40).

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

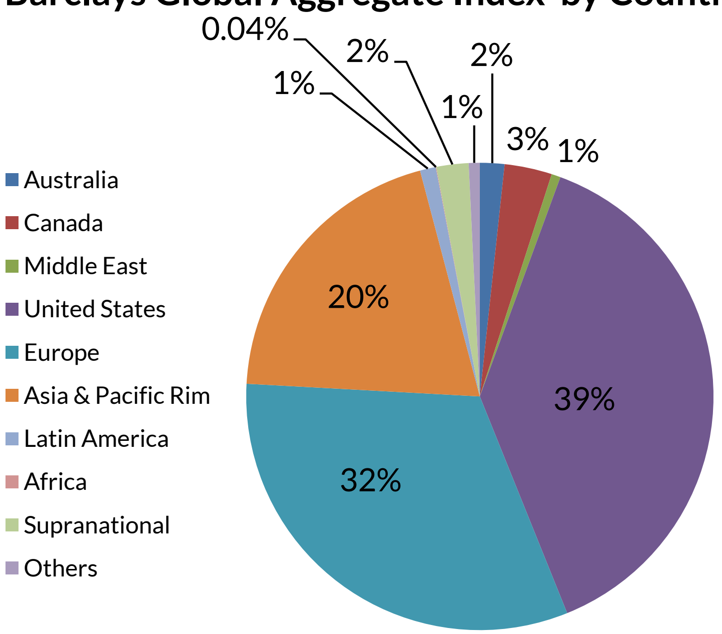
US MBS comprise 28 percent of the Barclays US Aggregate Index-- slightly less than either the US Treasury share (37%) or the US Credit share (31%). Fannie Mae 30-year MBS comprises the largest percent of US MBS (10%), while Ginnie Mae 30-year MBS and Freddie Mac 30-year MBS comprise 8 percent and 6 percent 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



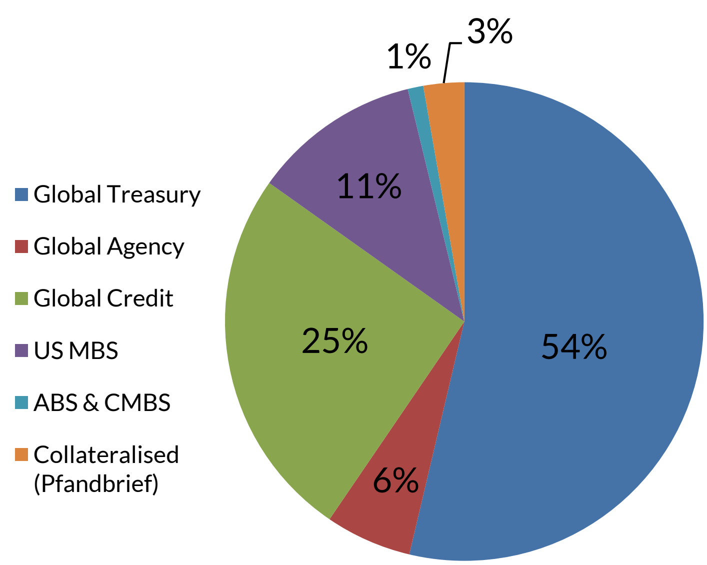
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of December 2017*

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

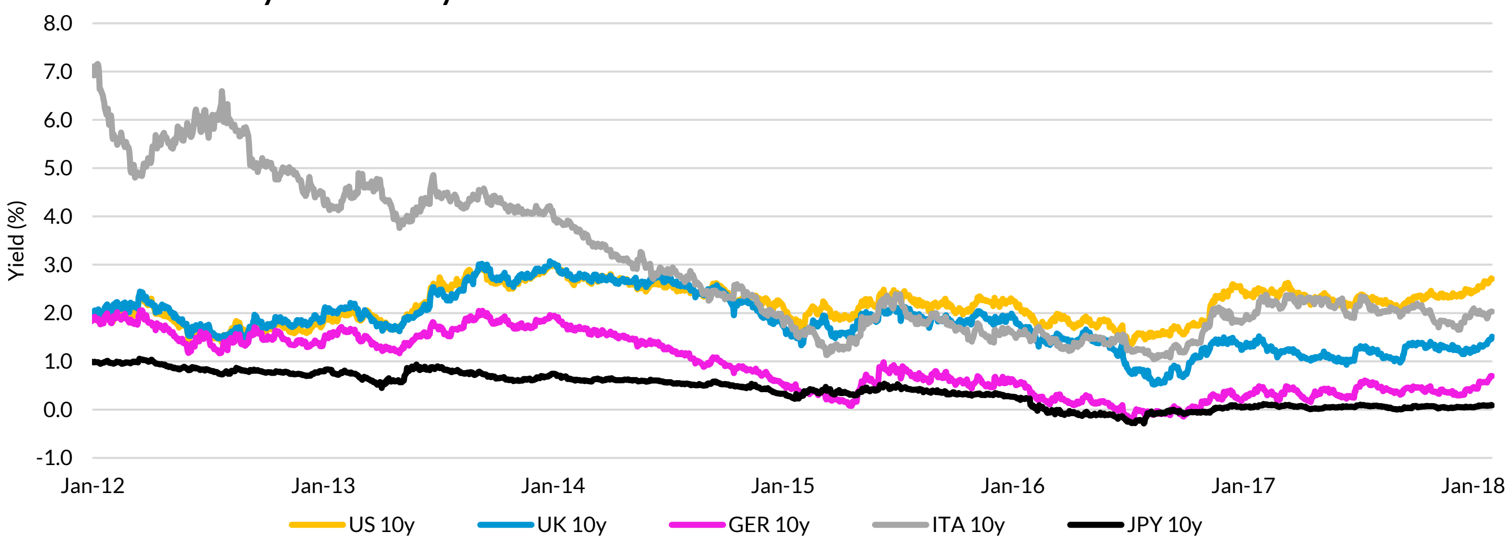


Sources: *Bloomberg and State Street Global Advisors*
Note*: Data as of December 2017*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

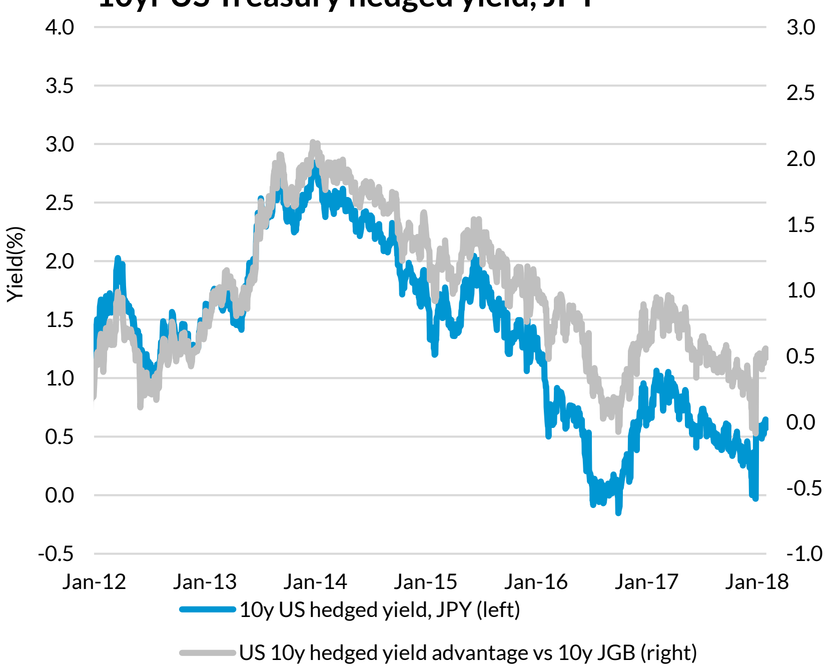
US Treasury interest rates, as measured by the 10-year note, continue to be the highest in the developed world. The US 10-year Treasury note continues to rise, and is at 2.71 percent this month. Interest rates in the UK, Germany and Japan increased as well, and now stand at 1.51, 0.70 and 0.085 percent, respectively, while interest rates in Italy stayed relatively stable at 2.03 percent. If the Treasury notes are hedged into foreign currencies, 10-year US Treasury yields are 57 basis points (bps) in JPY, and 31 bps in EUR. The hedged yield difference between the 10-year Treasuries and JGBs is now 49 bps, while the hedged yield differential between the 10-year Treasuries and Bunds widened, currently at -38 bps.

Global 10-year Treasury Yields



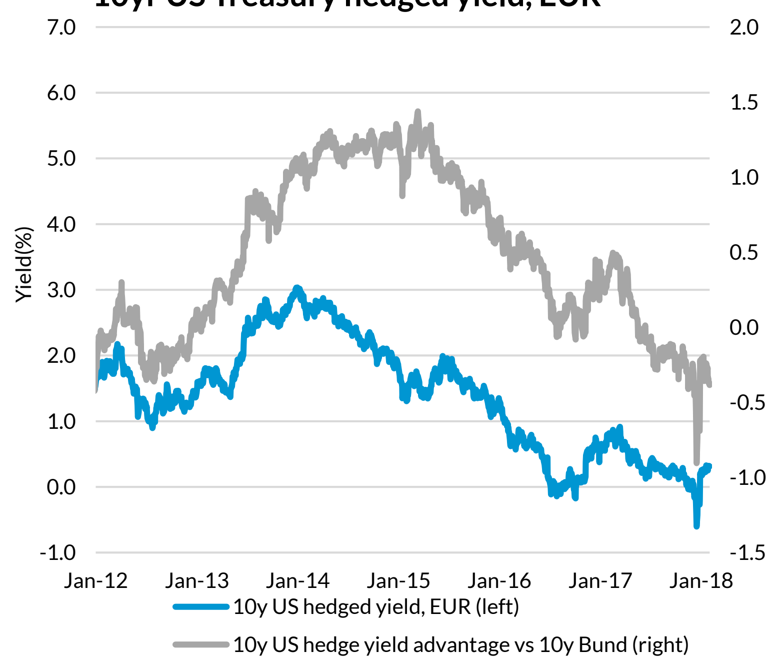
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of January 2018*

10yr US Treasury hedged yield, JPY



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

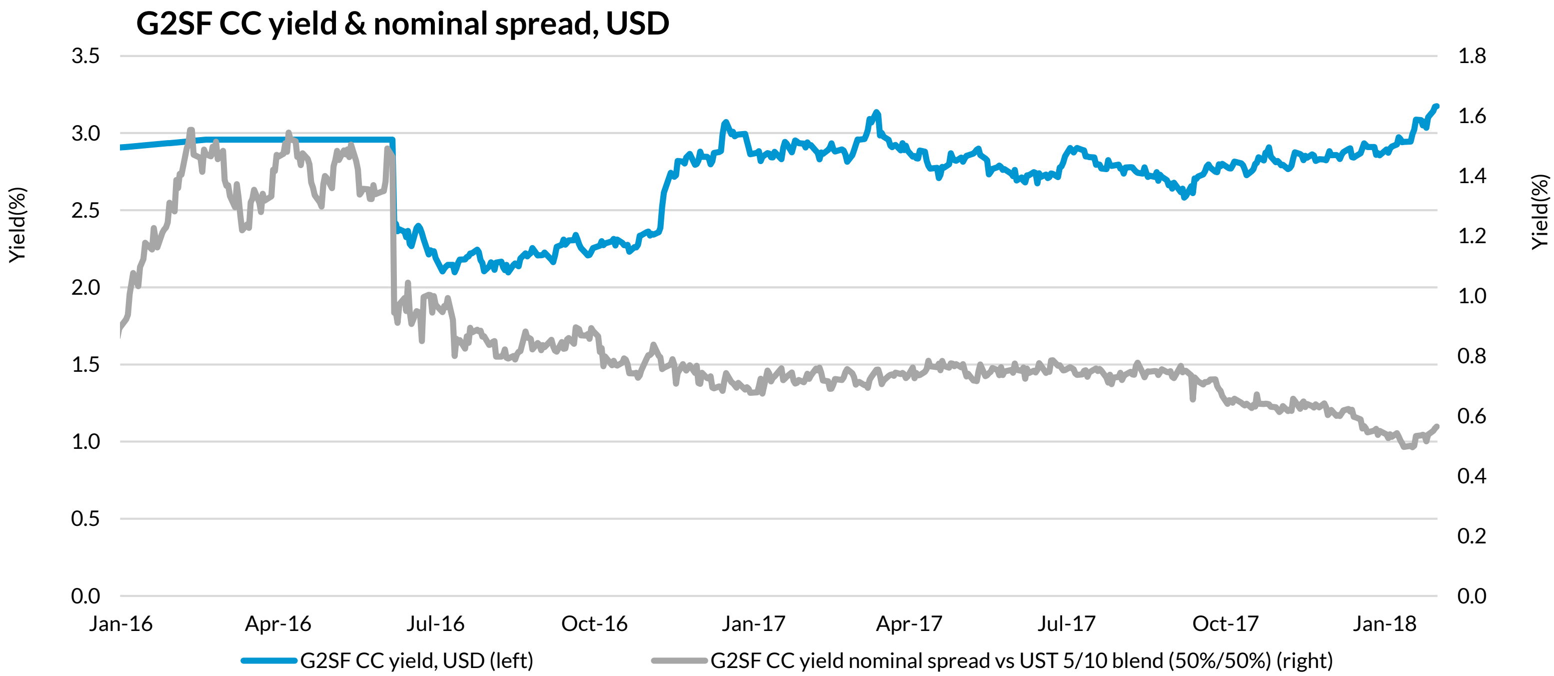
10yr US Treasury hedged yield, EUR



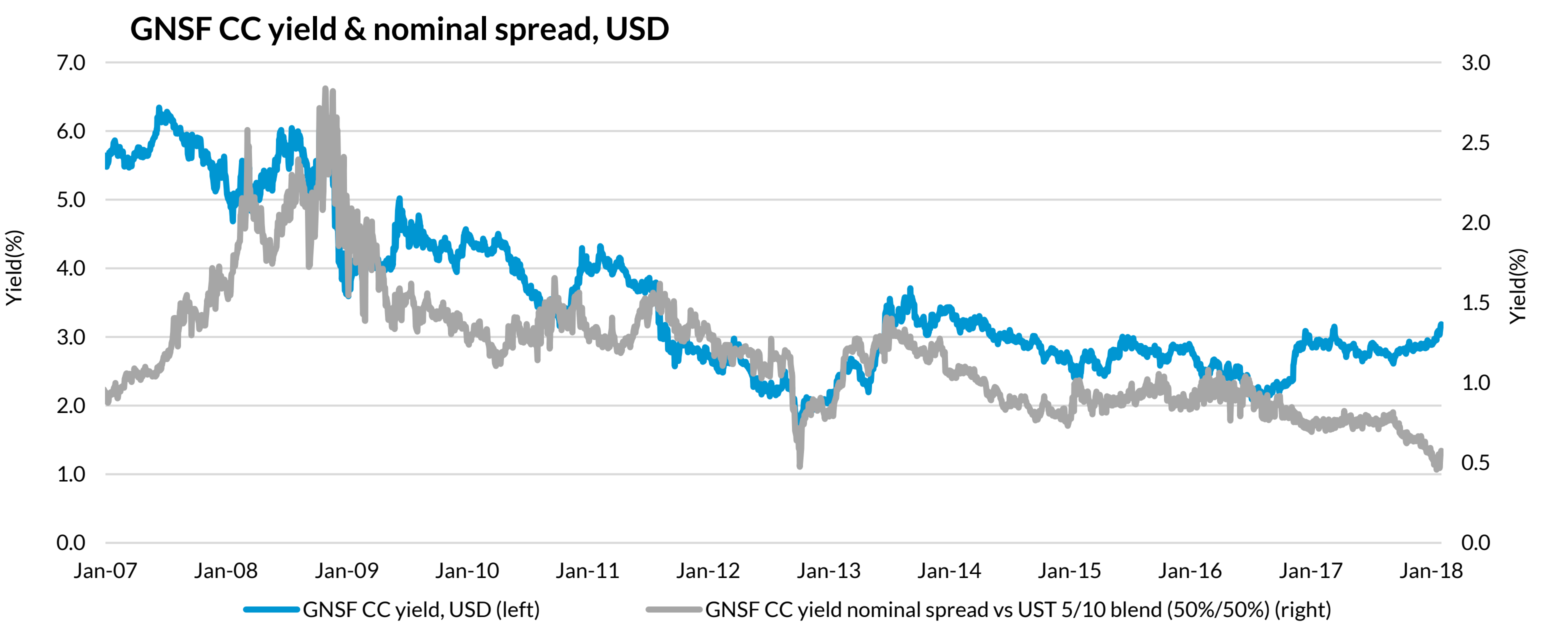
Sources: *Bloomberg and State Street Global Advisors*
Note*: Data as of January 2018*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

With yield hike in both Treasuries and Ginnie Mae MBS this month, the nominal yield spread on current coupon GNMA II and GNMA I securities stays relatively stable in January 2018. Current coupon Ginnie Mae securities currently outyield their Treasury counterparts (relative to the average of 5- and 10-year Treasury yields) by 56 and 57 bps on G2SF and GNSF, respectively.



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

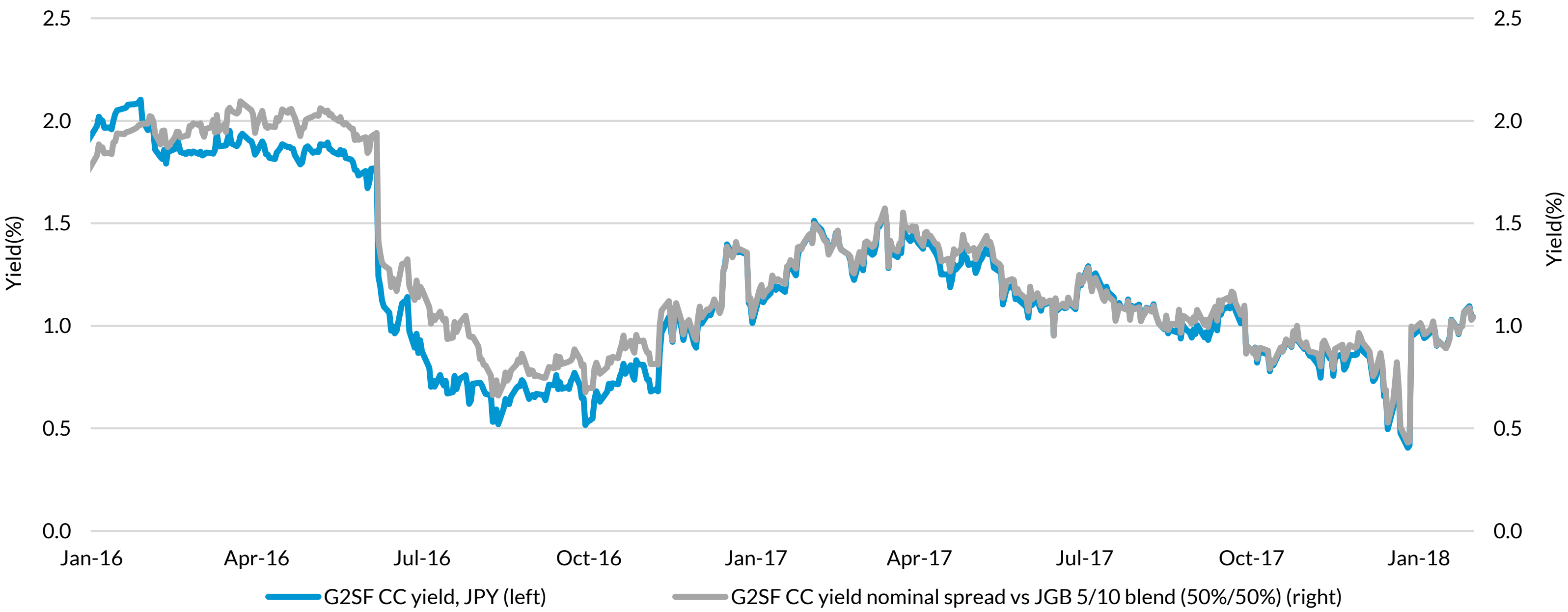


Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of January 2018*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

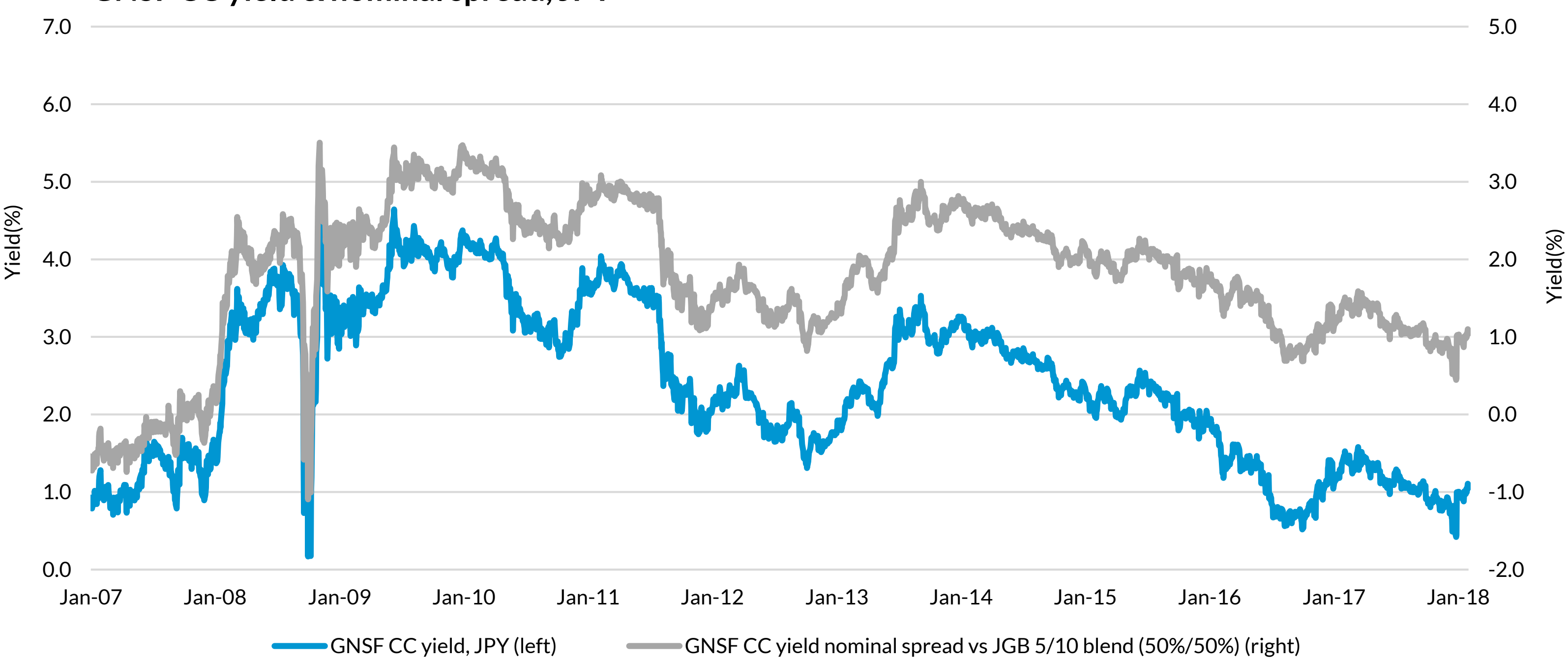
If Ginnie Mae securities are hedged into foreign currencies, they look attractive on a yield basis versus many sovereign alternatives. The figures show that current coupon G2SF and GNSF hedged into Japanese yen yield more than the JGB 5/10 blend by 104 and 105 bps, respectively.

G2SF CC yield & nominal spread, JPY



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

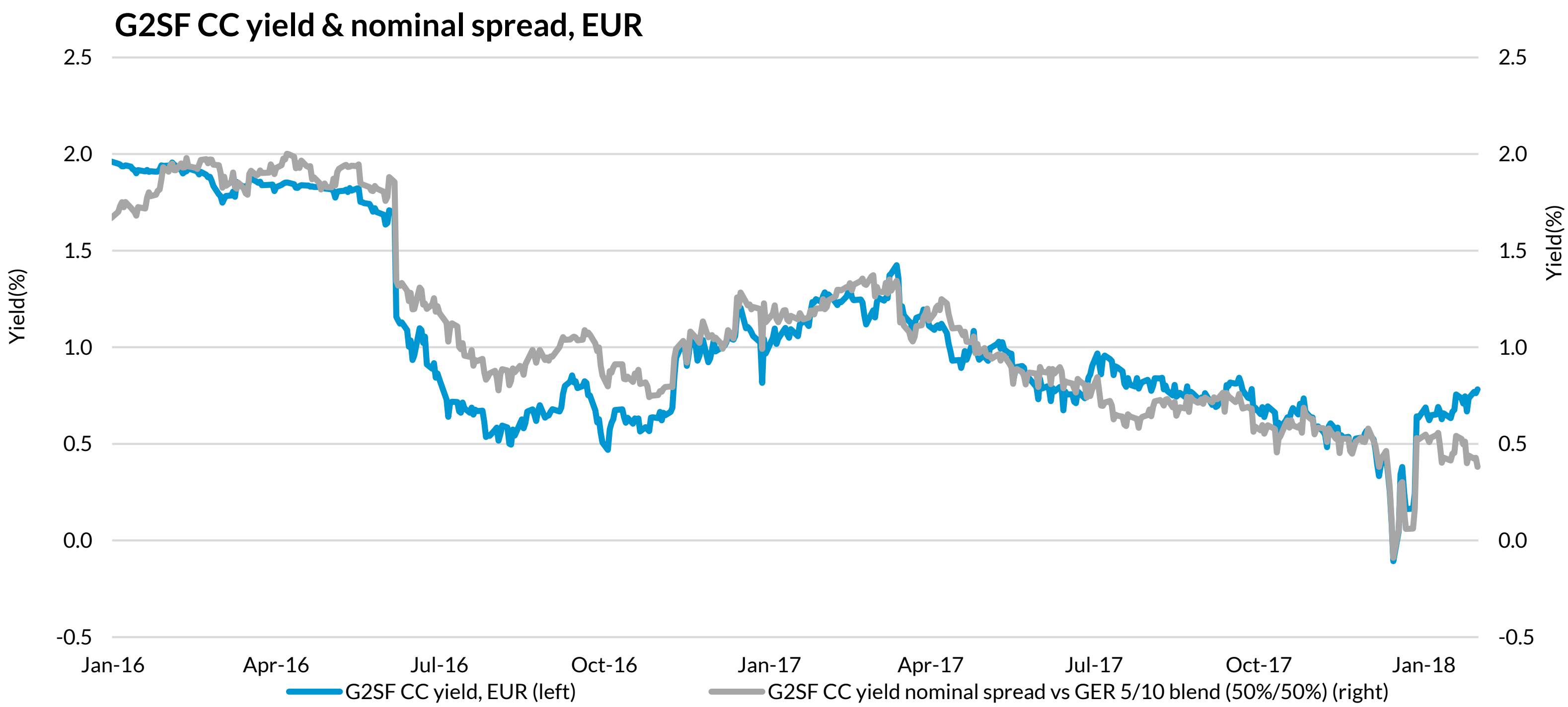
GNSF CC yield & nominal spread, JPY



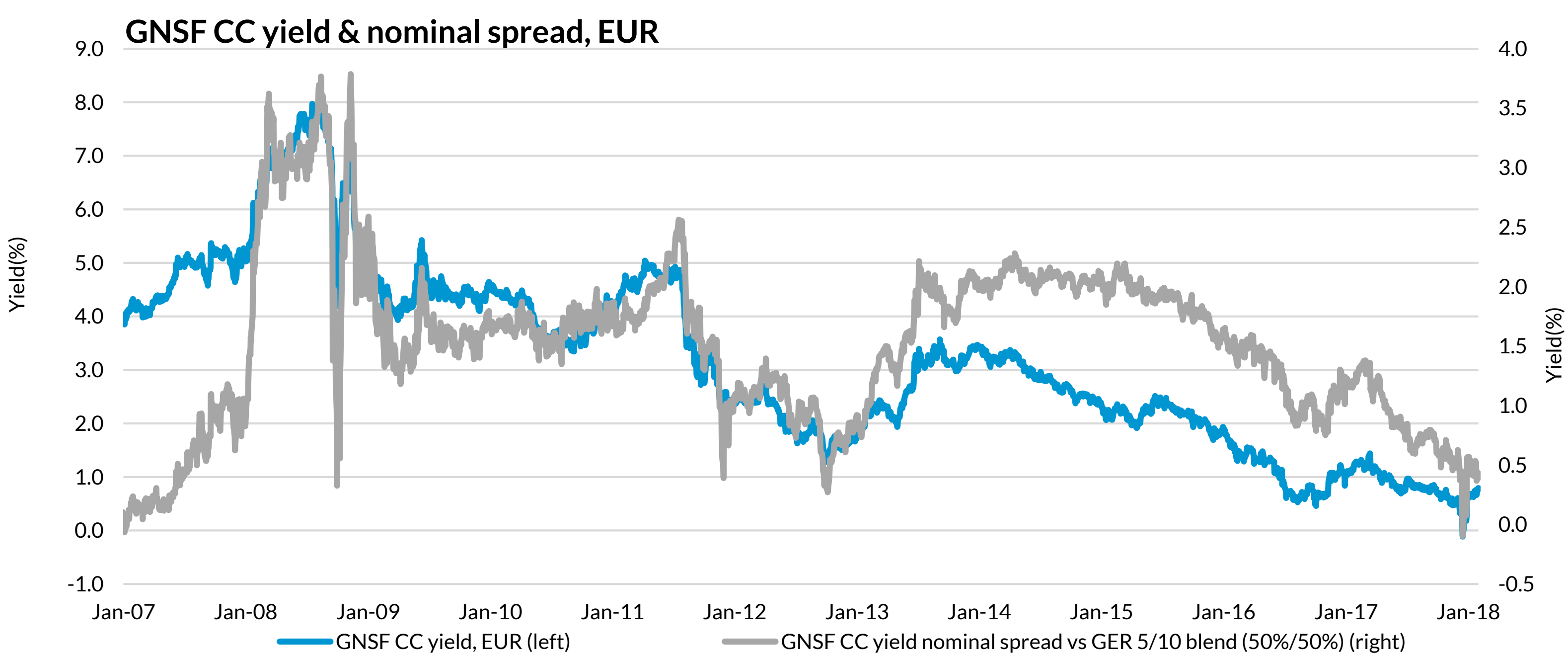
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of January 2018*

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 38 and 39 bps, respectively.



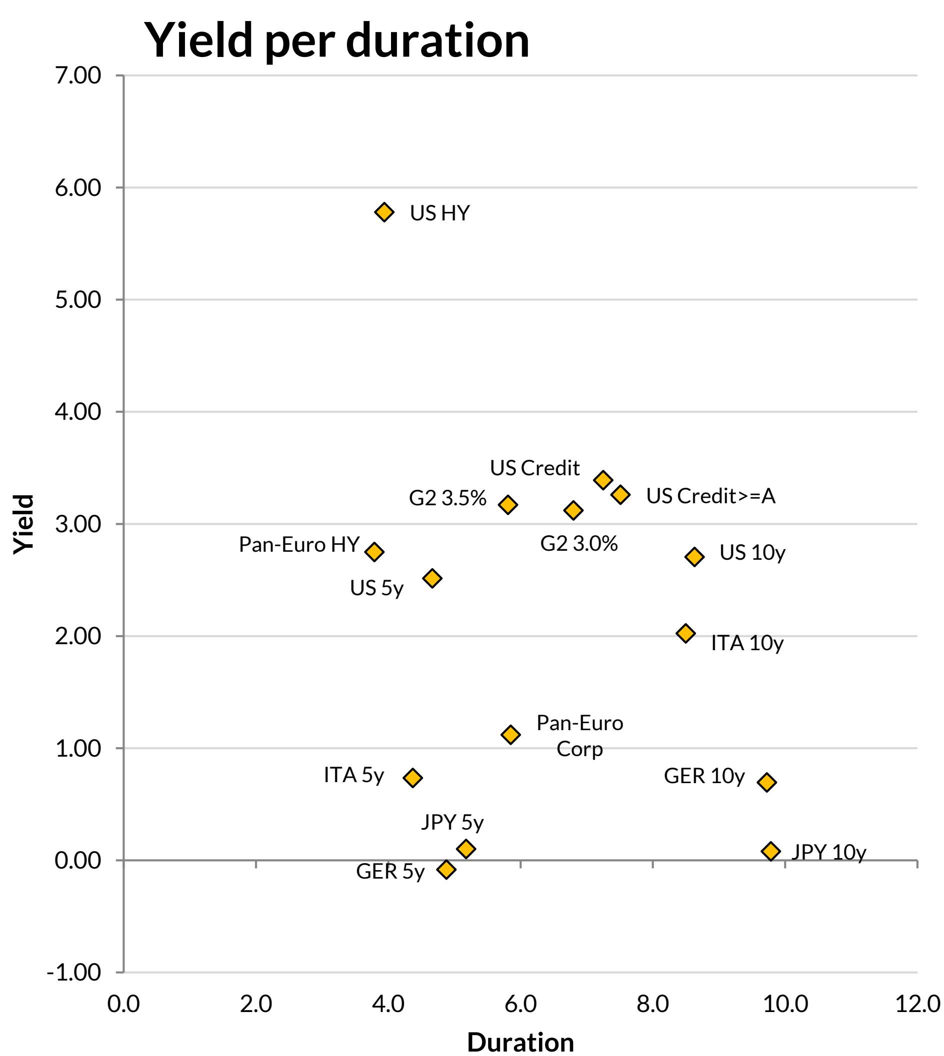
***Sources:** Bloomberg and State Street Global Advisors. **Note:** Data as of January 2018*



***Sources:** Bloomberg and State Street Global Advisors. **Note:** Data as of January 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	4.7	2.51
US 10y	8.6	2.71
GNMA II 3%	6.8	3.12
GNMA II 3.5%	5.8	3.17
JPY 5y	4.9	-0.08
JPY 10y	9.8	0.08
GER 5y	5.2	0.10
GER 10y	9.7	0.69
ITA 5y	4.4	0.73
ITA 10y	8.5	2.02
US credit	7.3	3.39
US credit >= A	7.5	3.26
US HY	3.9	5.78
Pan-Euro corp	5.9	1.12
Pan-Euro HY	3.8	2.8

***Sources:** Bloomberg and State Street Global Advisors. **Note**: Yields are in base currency of security and unhedged. Data as of January 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 in line with 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	0.07	0.06	0.42	0.21	0.54	0.50
3 year	0.09	0.01	0.21	0.09	0.53	0.40
5 year	0.13	0.10	0.29	0.34	0.47	0.55
10 year	0.29	0.25	0.46	0.39	0.71	0.84

	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	-0.01	-0.02	0.33	0.28	0.45	0.57
3 year	0.05	-0.03	0.18	0.14	0.49	0.45
5 year	0.11	0.08	0.27	0.38	0.44	0.58
10 year	0.27	0.22	0.43	0.37	0.69	0.82

	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	0.52	0.69	0.68	0.67	0.57	0.62
3 year	0.50	0.93	1.05	1.03	1.63	1.43
5 year	0.67	0.92	1.16	1.05	1.50	1.27
10 year	0.75	1.19	1.75	1.44	3.02	3.55

	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	-0.02	-0.04	0.49	0.42	0.79	0.93
3 year	0.10	-0.03	0.17	0.14	0.30	0.32
5 year	0.16	0.08	0.23	0.36	0.30	0.46
10 year	0.36	0.19	0.25	0.26	0.23	0.23

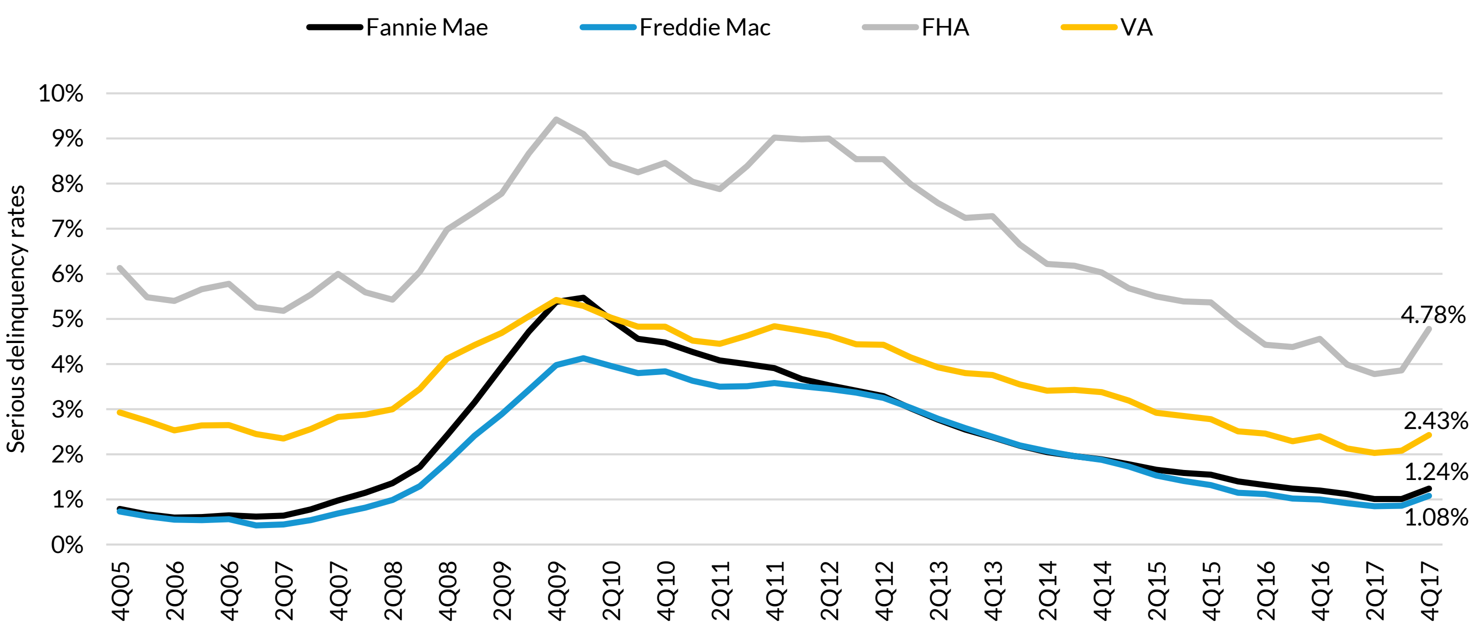
**Assumes 2% capitalization max per issuer on high yield indices*

***Sources:** Barclays Indices, Bloomberg and State Street Global Advisors* ***Note:** Data as of January 2018.*

State of the US Housing Market

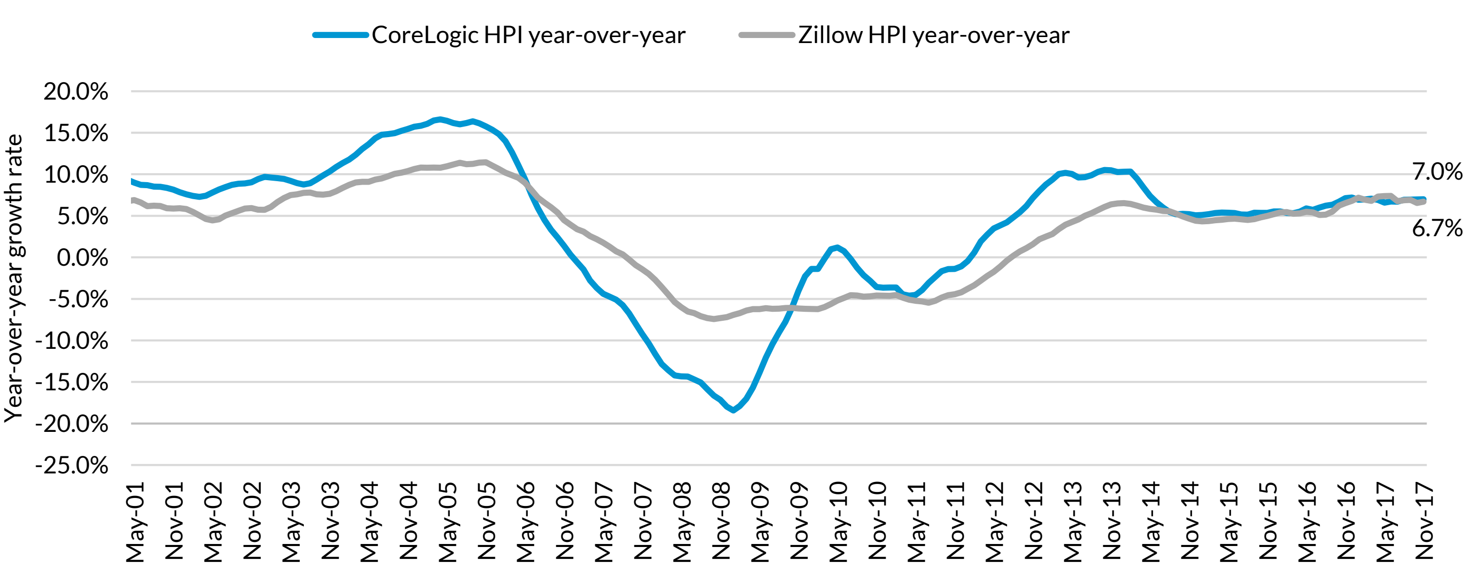
Serious delinquencies for single-family GSE loans, FHA loans, and VA loans edged up in the fourth quarter of 2017, partly due to seasonal factors, but mostly due to the impact of hurricanes Harvey, Irma and Maria. The delinquency rates for FHA and VA went up to 4.78 percent and 2.43 percent, respectively, 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 7 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 November 2017.*

State of the US Housing Market

Nationally, the nominal home prices have improved by 51.6 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 29.9 percent below peak levels and Florida is 20.1 percent below peak levels.

	HPI Changes				
State	2000 to Peak	Peak to Trough	Trough to Current	YOY	Current HPI % Below Peak
National	93.8%	-33.2%	51.6%	7.0%	-1.2%
Alabama	46.3%	-20.7%	23.9%	4.9%	1.8%
Alaska	68.9%	-9.4%	18.2%	2.3%	-6.6%
Arizona	121.5%	-50.5%	69.2%	6.3%	19.4%
Arkansas	39.6%	-7.6%	15.7%	3.6%	-6.4%
California	149.0%	-42.4%	77.3%	8.0%	-2.0%
Colorado	40.4%	-13.7%	66.2%	8.1%	-30.3%
Connecticut	79.6%	-24.8%	9.0%	2.4%	22.1%
Delaware	90.3%	-23.8%	20.9%	4.6%	8.5%
District of Columbia	150.5%	-10.5%	38.0%	2.7%	-19.1%
Florida	149.2%	-49.6%	65.3%	6.0%	20.1%
Georgia	40.4%	-30.7%	53.0%	5.8%	-5.7%
Hawaii	152.7%	-20.6%	49.6%	8.1%	-15.8%
Idaho	85.5%	-40.9%	74.9%	10.4%	-3.3%
Illinois	60.0%	-32.6%	31.1%	3.5%	13.1%
Indiana	24.3%	-16.4%	29.1%	4.8%	-7.3%
Iowa	25.5%	-4.9%	21.7%	4.0%	-13.6%
Kansas	33.3%	-14.0%	25.2%	2.3%	-7.1%
Kentucky	27.0%	-8.9%	23.7%	6.0%	-11.2%
Louisiana	58.7%	-7.5%	24.5%	4.8%	-13.2%
Maine	92.2%	-19.4%	31.4%	4.1%	-5.6%
Maryland	137.7%	-31.1%	21.1%	3.3%	19.9%
Massachusetts	81.8%	-21.2%	40.0%	6.5%	-9.3%
Michigan	26.2%	-43.2%	76.4%	7.7%	-0.2%
Minnesota	69.7%	-28.1%	43.8%	6.0%	-3.3%
Mississippi	34.3%	-18.4%	21.1%	4.7%	1.1%
Missouri	46.2%	-22.3%	32.4%	6.3%	-2.9%
Montana	79.9%	-16.5%	39.0%	5.8%	-13.8%
Nebraska	25.3%	-5.3%	27.2%	5.2%	-17.0%
Nevada	129.1%	-59.9%	92.1%	10.8%	29.9%
New Hampshire	82.5%	-23.8%	31.6%	7.1%	-0.3%
New Jersey	109.5%	-26.4%	16.8%	3.6%	16.3%
New Mexico	64.3%	-26.5%	20.1%	2.0%	13.3%
New York	101.9%	-13.8%	30.0%	5.2%	-10.8%
North Carolina	39.7%	-14.6%	28.7%	5.4%	-9.1%
North Dakota	50.3%	-1.9%	51.9%	6.4%	-32.8%
Ohio	22.2%	-20.4%	33.2%	6.4%	-5.6%
Oklahoma	35.8%	-3.2%	15.8%	2.2%	-10.8%
Oregon	87.5%	-29.3%	68.1%	7.5%	-15.9%
Pennsylvania	71.7%	-12.9%	16.1%	3.4%	-1.1%
Rhode Island	131.0%	-34.2%	33.7%	8.0%	13.7%
South Carolina	61.5%	-22.2%	33.7%	4.9%	-3.8%
South Dakota	37.3%	-3.5%	37.0%	9.1%	-24.4%
Tennessee	41.3%	-13.3%	37.9%	6.8%	-16.4%
Texas	39.4%	-13.2%	48.2%	5.4%	-22.3%
Utah	64.8%	-31.7%	64.9%	10.5%	-11.2%
Vermont	81.5%	-9.1%	15.3%	5.0%	-4.6%
Virginia	135.1%	-30.6%	30.1%	2.9%	10.7%
Washington	90.2%	-28.1%	68.8%	12.2%	-17.6%
West Virginia	81.3%	-26.9%	23.5%	3.5%	10.7%
Wisconsin	48.6%	-17.2%	27.7%	6.4%	-5.4%
Wyoming	75.7%	-14.5%	28.7%	3.5%	-9.1%

Sources: *CoreLogic and Urban Institute.* ***Note:*** *HPI data as of November 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 11/2017, the latest HPI data period.*

State of the US Housing Market

Ginnie Mae loans constitute 32.6 percent of outstanding agency issuance by loan balance, 33.6 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 17.7 percent in the District of Columbia and as high as 52.8 percent in Mississippi. In general, the Ginnie Mae share is higher in states with lower home prices.

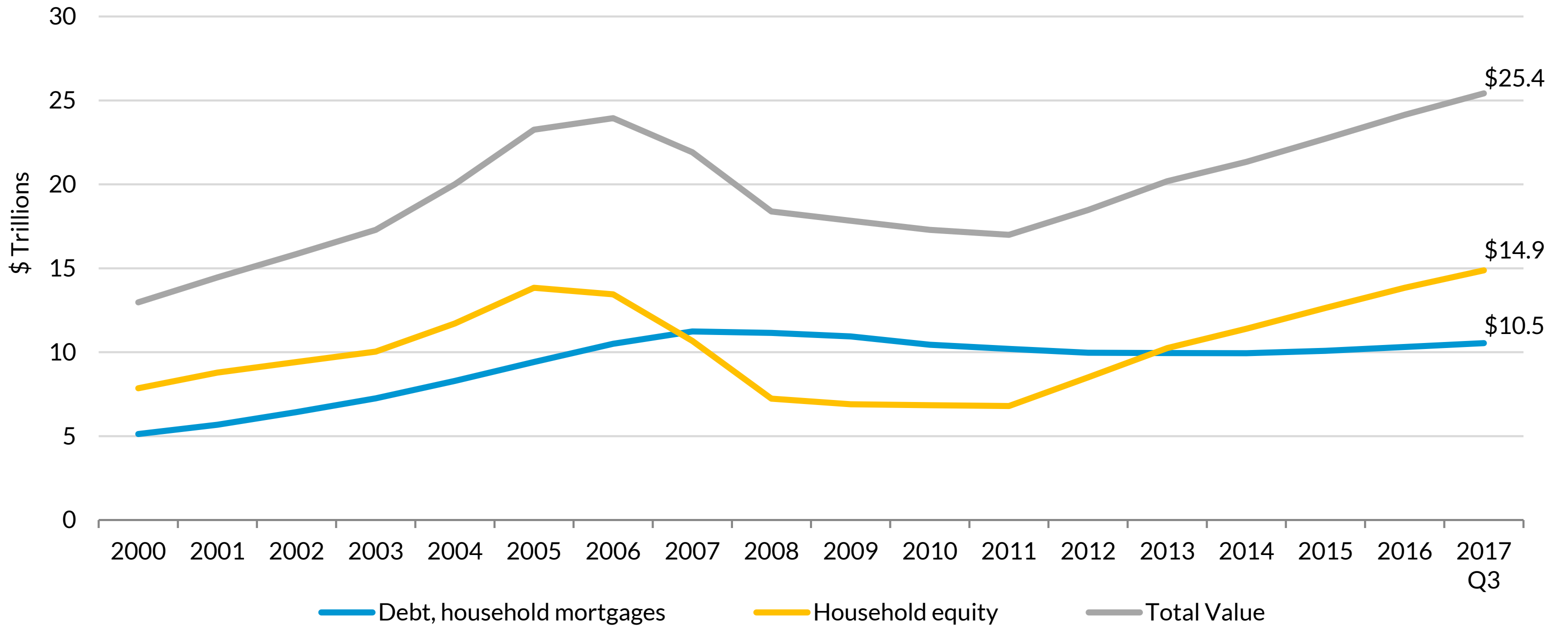
State	Agency Issuance (past 1 year)			Agency Outstanding		
	Ginnie Mae Share	Ginnie Mae Average Loan Size (Thousands)	GSE Average Loan Size (Thousands)	Ginnie Mae Share	Ginnie Mae Average Loan Size (Thousands)	GSE Average Loan Size (Thousands)
National	33.6%	210.7	225.8	32.6%	177.5	207.6
Alabama	45.3%	158.4	178.9	47.4%	141.5	168.2
Alaska	52.5%	279.1	242.0	52.2%	255.5	227.9
Arizona	35.0%	203.4	207.6	35.0%	175.0	190.2
Arkansas	43.1%	139.9	165.3	47.1%	122.3	152.6
California	27.8%	337.0	319.4	22.5%	283.4	291.3
Colorado	32.5%	270.8	260.3	30.8%	226.6	235.6
Connecticut	31.8%	214.1	225.2	30.0%	203.5	218.1
Delaware	39.2%	211.2	219.9	37.7%	197.9	207.4
District of Columbia	17.5%	399.5	353.2	17.7%	324.4	332.4
Florida	39.2%	204.6	199.8	37.0%	172.1	184.0
Georgia	41.3%	179.2	202.7	41.2%	154.0	185.7
Hawaii	38.3%	482.4	372.7	31.9%	415.9	344.6
Idaho	35.0%	188.5	192.1	35.6%	161.7	174.5
Illinois	26.0%	175.8	196.6	25.4%	155.2	183.0
Indiana	39.5%	138.7	153.6	39.9%	121.6	141.3
Iowa	26.0%	142.8	160.8	27.2%	124.8	148.4
Kansas	36.3%	152.2	172.7	37.3%	132.4	156.7
Kentucky	40.5%	146.6	163.8	40.4%	132.8	149.8
Louisiana	42.9%	167.9	189.4	44.0%	150.4	177.0
Maine	35.8%	181.3	194.6	33.3%	166.2	180.2
Maryland	44.5%	280.2	260.8	40.2%	251.9	246.7
Massachusetts	23.4%	284.1	275.5	19.9%	252.5	254.6
Michigan	26.1%	142.9	166.1	27.0%	123.1	151.1
Minnesota	25.4%	192.8	204.6	25.9%	169.5	189.8
Mississippi	50.6%	149.4	167.4	52.8%	131.7	157.5
Missouri	36.1%	149.1	169.1	36.8%	132.3	155.7
Montana	31.2%	209.3	210.3	32.0%	182.0	191.2
Nebraska	31.4%	158.9	167.2	35.8%	134.8	153.2
Nevada	40.4%	229.5	219.7	41.0%	195.3	197.1
New Hampshire	32.3%	225.4	219.0	30.5%	208.1	201.7
New Jersey	29.6%	247.9	261.7	28.4%	232.5	248.5
New Mexico	43.4%	175.1	184.6	44.3%	156.0	172.5
New York	26.9%	240.1	263.7	26.8%	204.5	242.1
North Carolina	34.9%	175.9	197.4	36.3%	154.4	183.9
North Dakota	27.9%	205.7	202.7	27.2%	179.6	185.0
Ohio	36.7%	139.6	154.8	38.1%	124.9	143.9
Oklahoma	46.7%	150.6	168.5	50.5%	130.9	156.6
Oregon	27.4%	244.5	248.6	26.0%	208.5	220.3
Pennsylvania	33.8%	166.0	190.8	34.1%	151.7	180.4
Rhode Island	37.3%	218.6	214.4	34.4%	199.7	202.7
South Carolina	40.2%	179.9	189.1	39.4%	157.6	176.9
South Dakota	36.4%	172.7	180.2	37.3%	154.2	164.5
Tennessee	41.2%	175.7	194.3	43.3%	149.5	177.5
Texas	35.3%	190.8	209.3	38.8%	152.2	190.5
Utah	31.1%	228.2	238.9	32.4%	200.0	217.3
Vermont	23.0%	192.5	193.3	20.1%	181.3	182.2
Virginia	45.1%	270.4	258.1	42.1%	242.6	243.9
Washington	31.8%	271.3	271.9	30.8%	231.2	242.3
West Virginia	48.0%	152.6	154.4	46.2%	138.6	146.6
Wisconsin	22.7%	162.8	173.3	21.9%	146.5	160.6
Wyoming	41.4%	209.2	207.2	42.0%	192.9	194.8

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

State of the US Housing Market

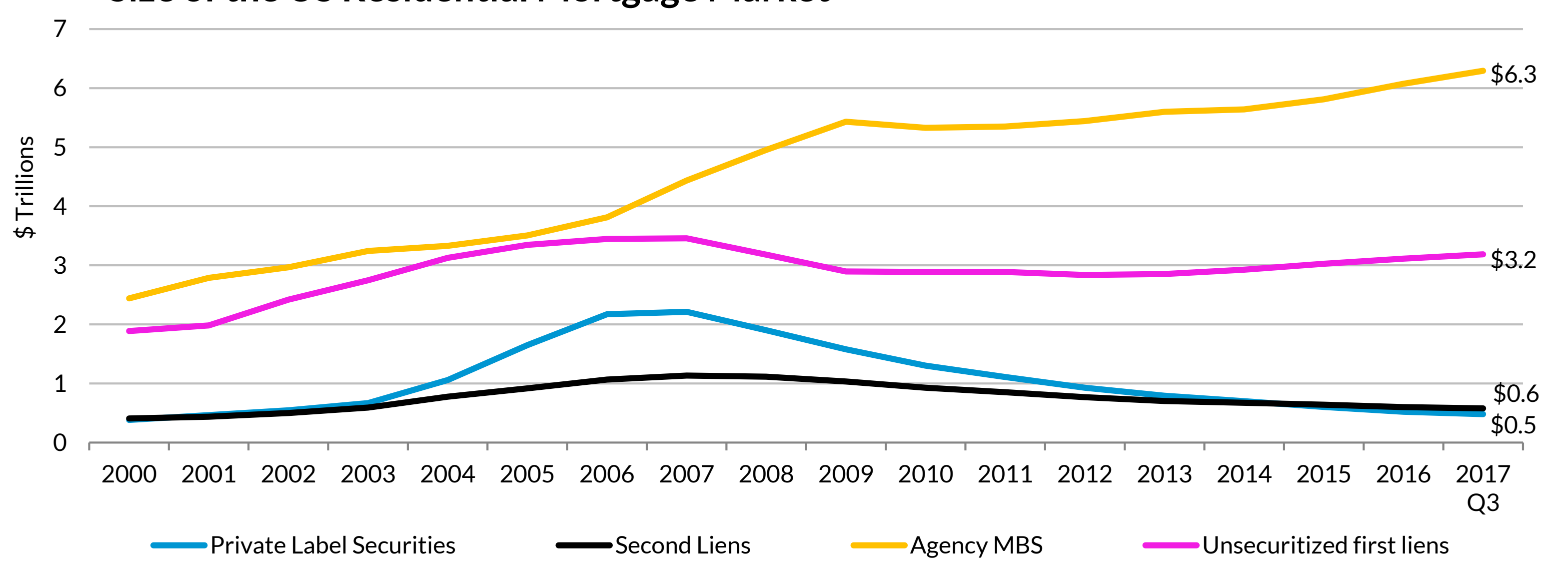
The Federal Reserve's Flow of Funds report has consistently indicated an increasing total value of the housing market driven by growing household equity since 2012, and 2017 Q3 was no different. While total debt and mortgages was stable at $10.5 trillion, household equity reached a new high of $14.9 trillion, bringing the total value of the housing market to $25.4 trillion, surpassing the pre-crisis peak of $23.9 trillion in 2006. Agency MBS make up 59.7 percent of the total mortgage market, private-label securities make up 4.6 percent, and unsecuritized first liens at the GSEs, commercial banks, savings institutions, and credit unions make up 30.2 percent. Second liens comprise the remaining 5.5 percent of the total.

Value of the US Housing Market



Sources: *Federal Reserve Flow of Funds and Urban Institute. Data as of Q3 2017.*

Size of the US Residential Mortgage Market

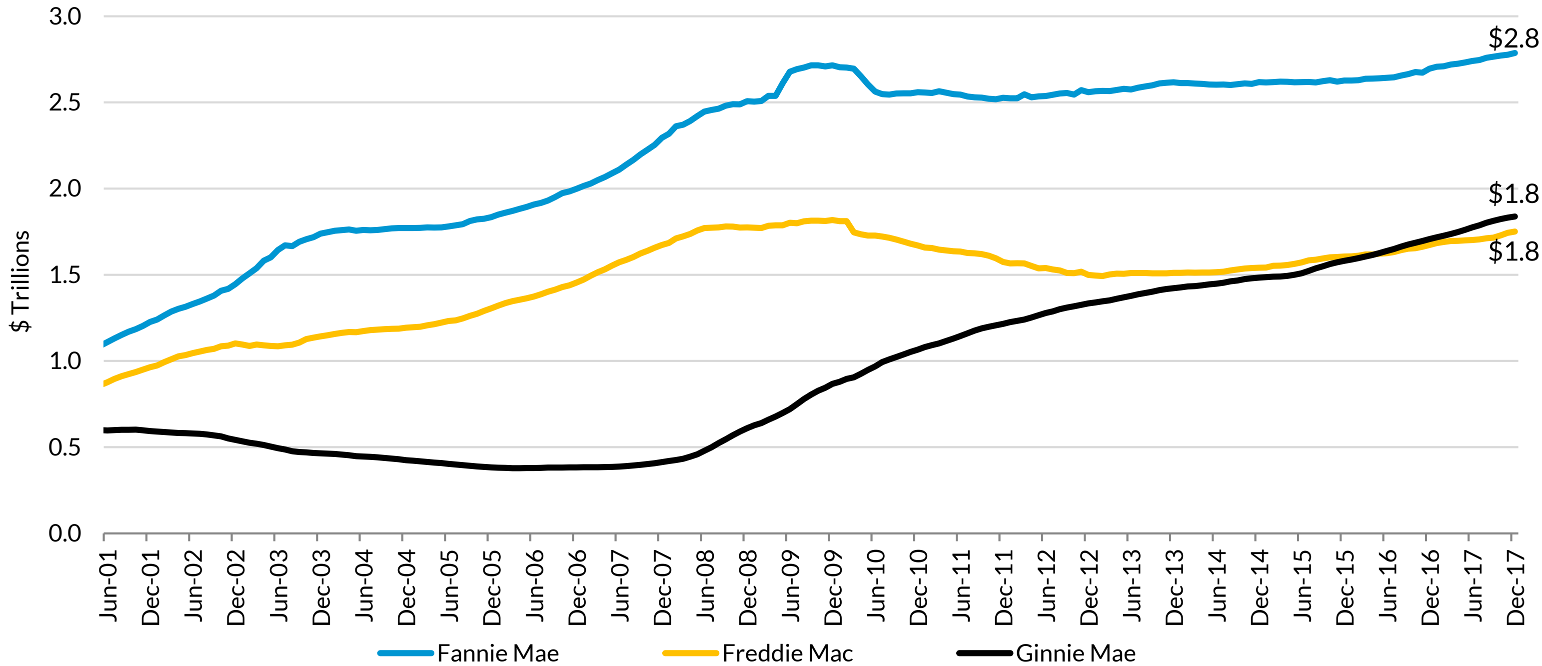


Sources: *Federal Reserve Flow of Funds, Inside Mortgage Finance, Fannie Mae, Freddie Mac, eMBS and Urban Institute.*
Note: *Unsecuritized first liens includes loans held by commercial banks, GSEs, savings institutions, and credit unions. Data as of Q3 2017.*

State of the US Housing Market

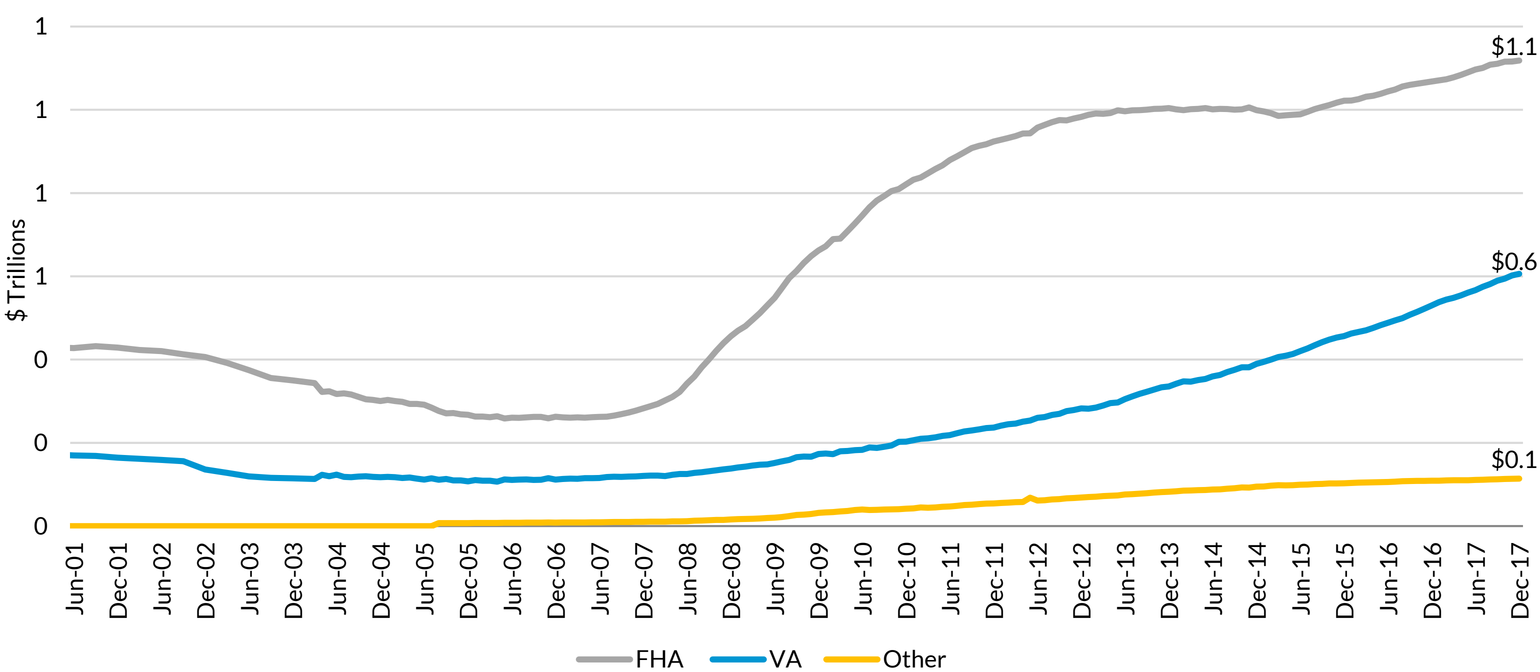
As of December 2017, outstanding securities in the agency market totaled $6.38 trillion and were 43.7 percent Fannie Mae, 27.5 percent Freddie Mac, and 28.8 percent Ginnie Mae. Ginnie Mae has more outstandings than Freddie Mac. Within the Ginnie Mae market, VA has been growing very rapidly--comprising 33.0 percent of total Ginnie Mae outstandings.

Outstanding Agency Mortgage-Backed Securities



Sources: *eMBS and Urban Institute* **Note:** *Data as of December 2017*

Outstanding Ginnie Mae Mortgage-Backed Securities

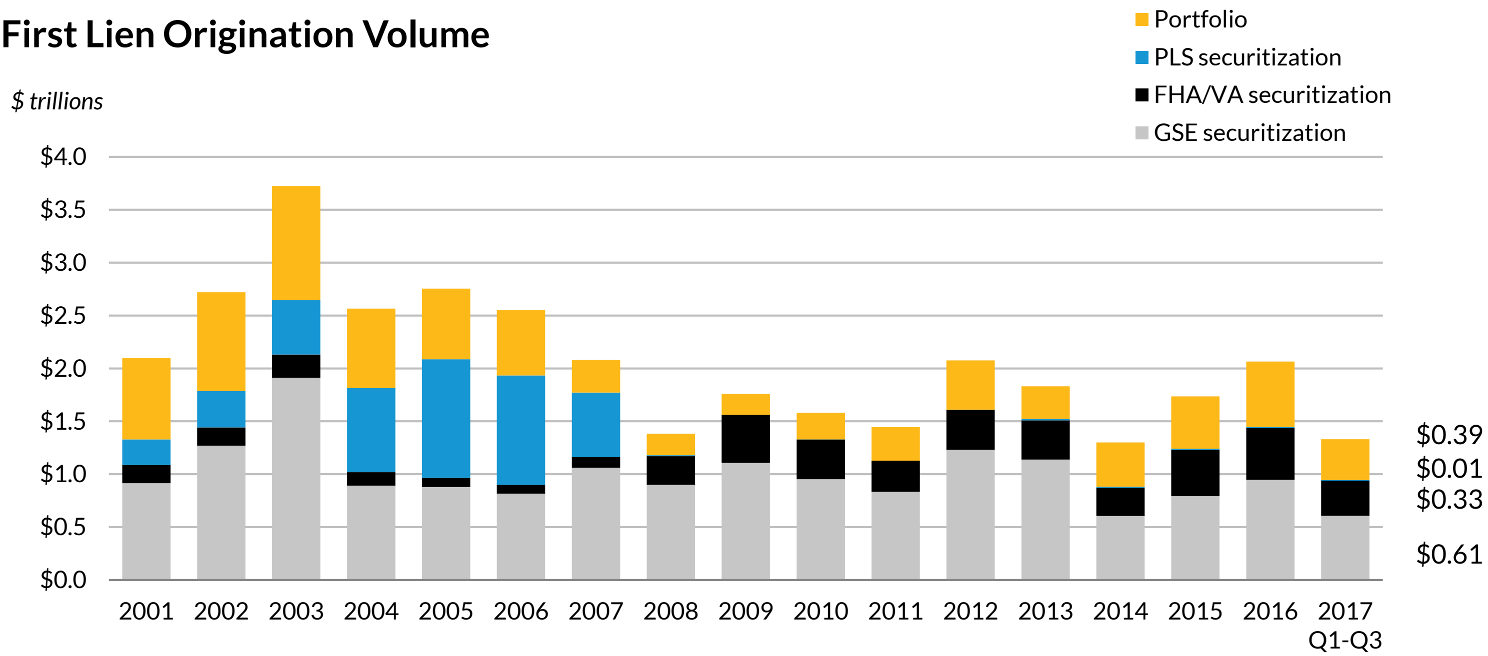


Sources: *eMBS and Urban Institute.* **Note:** *Data as of December 2017*

State of the US Housing Market

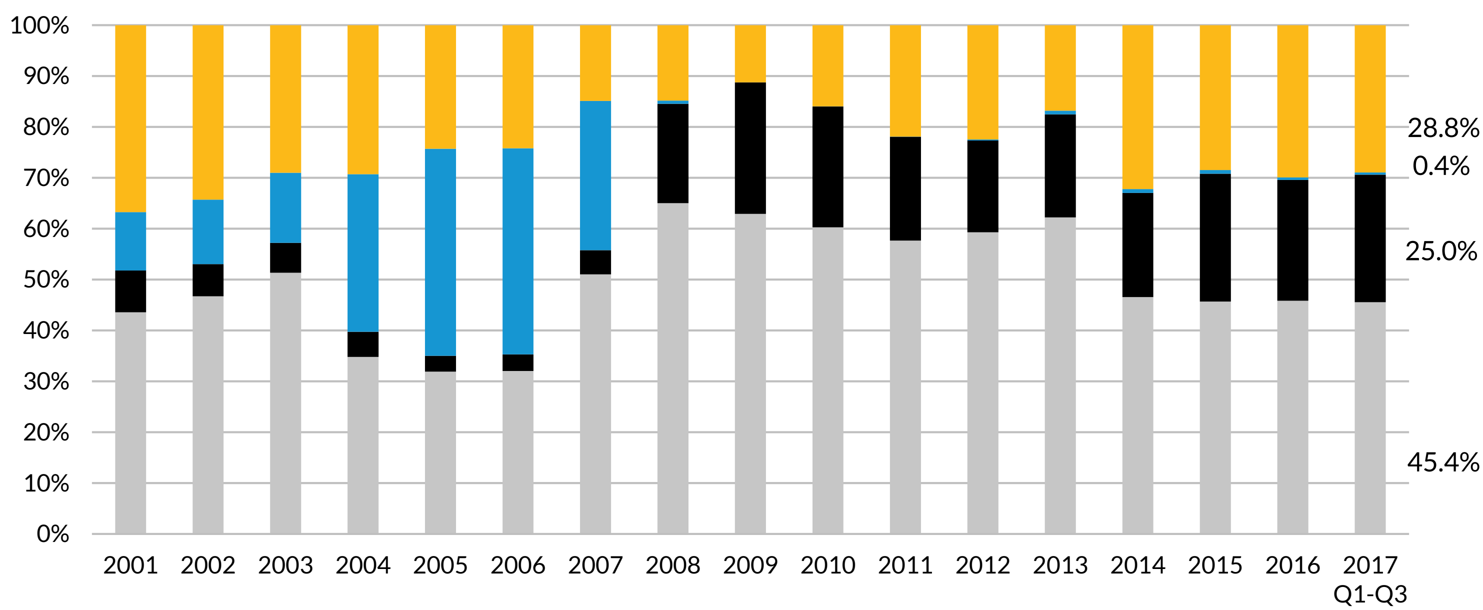
After a record origination year in 2016 ($2.1 trillion), the highest since the great recession, first lien originations totaled $1.3 trillion in the first three quarters of 2017. It was down 9 percent from the same period last year, mostly due to the elevated interest rates. The share of portfolio originations 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 $1,333 billion in 2017, down by 11.1 percent compared to 2016. Ginnie Mae issuance was down by 10.3 percent and GSE gross issuance was down by 11.5 percent. Within the Ginnie Mae market, FHA is down by 8.7 percent and VA origination is down by 13.8 percent. As a result of higher rates, originations for 2017 are down substantially compared to 2016.

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
2017 %Change YOY	-11.5%	-11.6%	-11.5%	-10.3%	-11.1%

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
2017 %Change YOY	-8.7%	-13.8%	2.0%	-10.3%

Sources: *eMBS and Urban Institute (top and bottom).*
Note : *Dollar amounts are in billions. "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. All data is as of December 2017.*

US Agency Market, Originations

Agency net issuance totaled $299.7 billion in 2017, up 14.6 percent compared to 2016. Ginnie Mae net issuance was $131.3 billion, comprising 44 percent of total agency net issuance. Note that Ginnie Mae net issuance is up 4.1 compared to 2016. Ginnie Mae net issuance is comprised of 58.0 percent VA issuance, 38.2 percent FHA issuance and 3.8 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
2017 %Change YOY	31.5%	17.0%	24.3%	4.1%	14.6%

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
2017 %Change YOY	8.1%	3.4%	-18.5%	4.1%

Sources*: eMBS and Urban Institute (top and bottom)*
Note : *Dollar amounts are in billions. "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. All data is as of December 2017.*

US Agency Market, Originations

Agency gross issuance totaled $111.5 billion in December 2017, down slightly from $118.5 billion of issuance in November 2017. Since March 2017, monthly agency gross issuance has been lower than in the same period in 2016, reflecting higher mortgage rates.

Monthly Agency Issuance

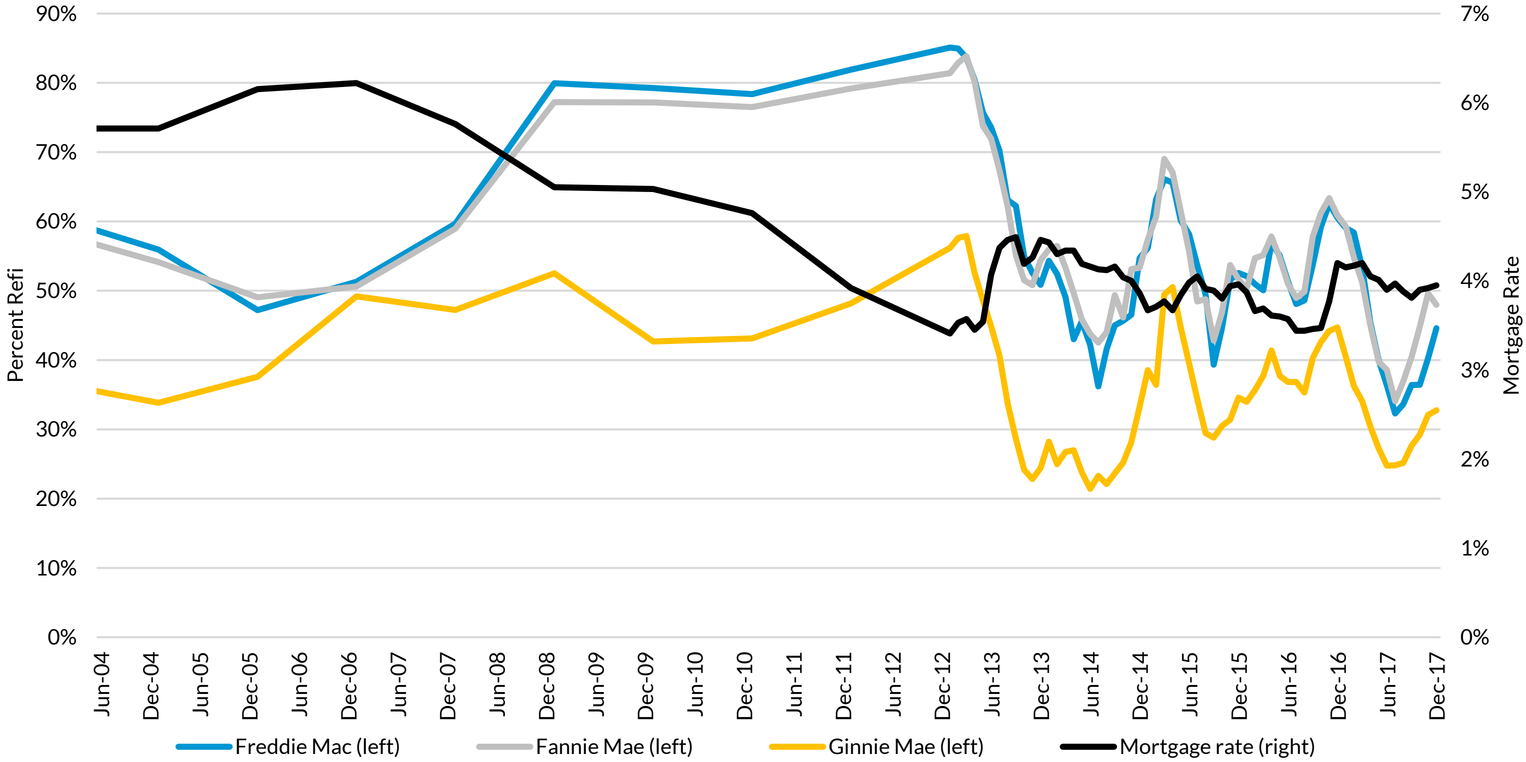
	Gross Issuance			Net Issuance		
Date	Fannie Mae	Freddie Mac	Ginnie Mae	Fannie Mae	Freddie Mac	Ginnie Mae
Jan-14	$28.2	$20.0	$21.6	-$4.9	$0.5	$4.9
Feb-14	$27.9	$17.9	$20.1	-$0.2	$1.2	$5.2
Mar-14	$24.1	$14.7	$16.7	-$2.3	-$0.9	$1.9
Apr-14	$28.0	$18.7	$21.7	-$1.9	$1.2	$5.2
May-14	$27.7	$18.1	$23.9	-$3.7	$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

***Sources**: eMBS and Urban Institute.*
***Note :** Dollar amounts are in billions. "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. All data is as of December 2017.*

US Agency Market, Originations

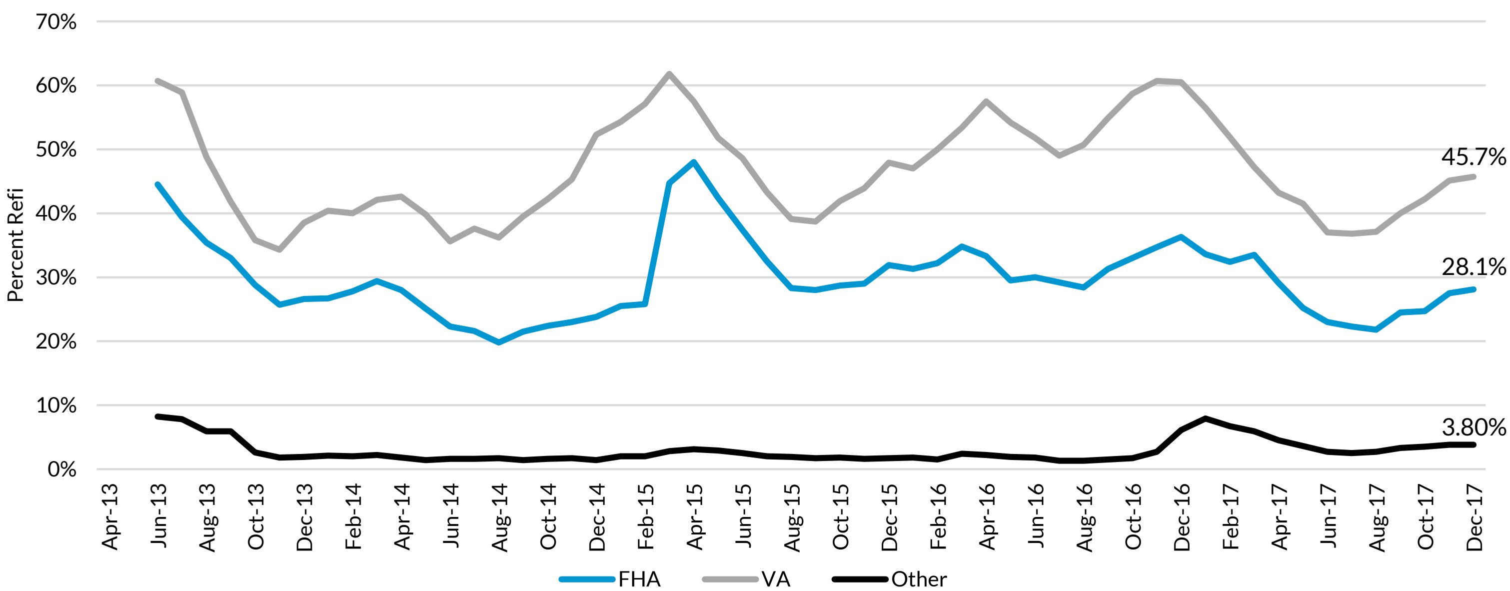
The Ginnie Mae refi share stood at 33 percent in December 2017, below the 45 and 48 percent shares for Fannie Mae and Freddie Mac, respectively. Within Ginnie Mae, VA had the highest refi share at 46 percent in December 2017, followed by FHA's 28 percent refi share.

Percent Refi at Issuance



Sources: *eMBS and Urban Institute.* **Note**: *Based on at-issuance balance. Data as of December 2017.*

Percent Refi at Issuance: Ginnie Mae Breakdown

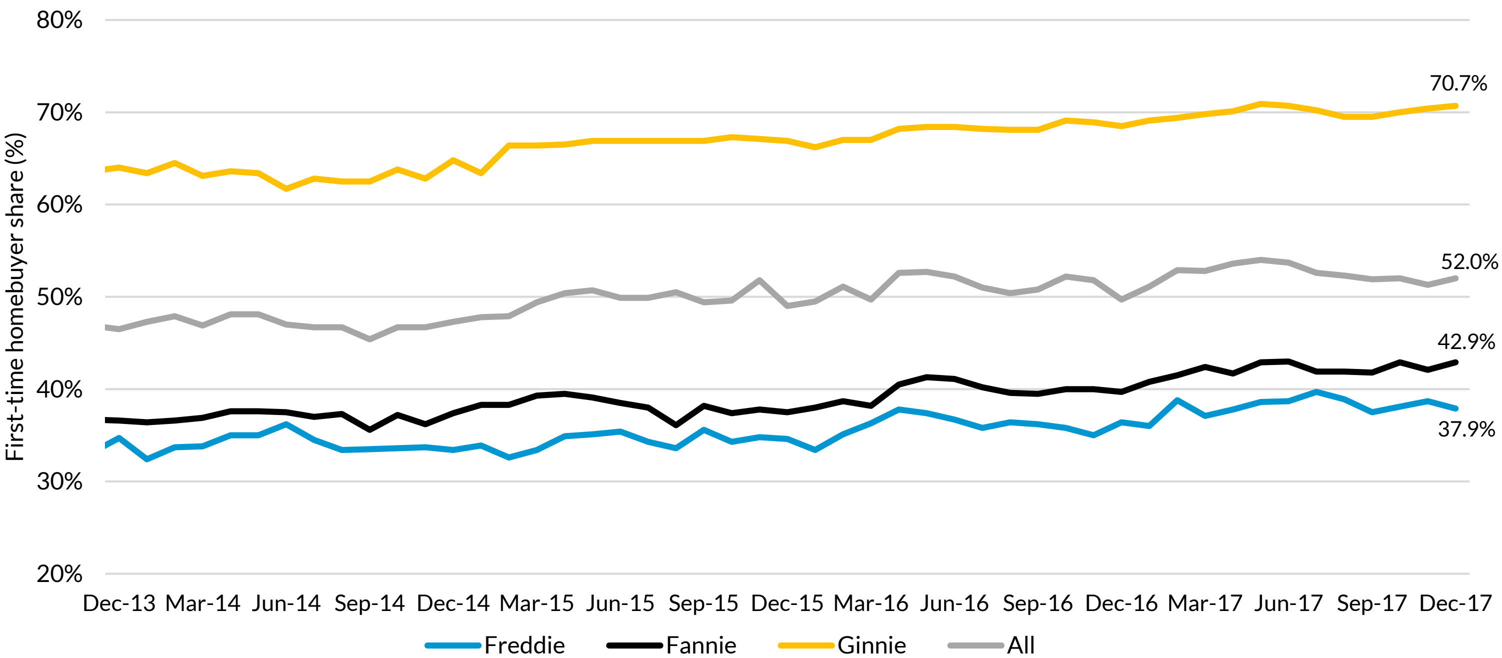


Sources: *eMBS and Urban Institute.*
Note: *Based on at-issuance balance. "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of December 2017.*

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 38 percent share of the first-time homebuyer market. The bottom table shows that based on mortgages originated in December 2017, 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 December 2017.*

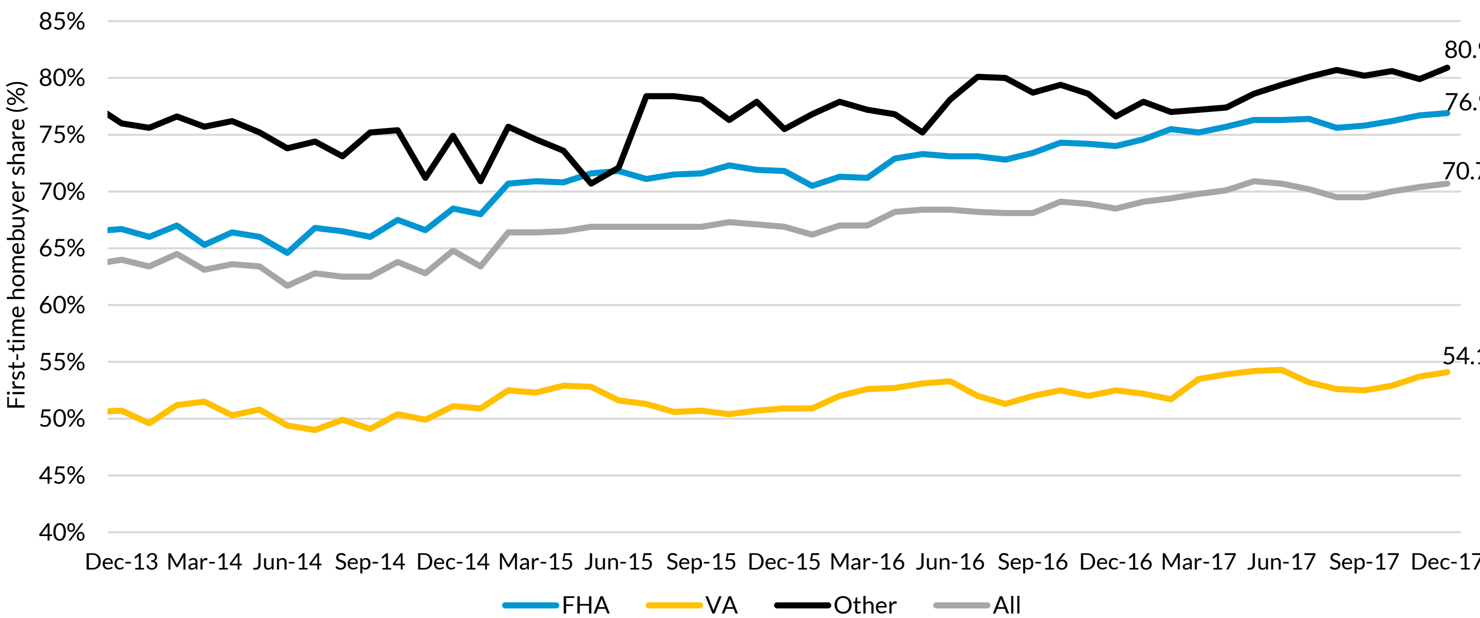
	Fannie Mae		Freddie Mac		Ginnie Mae		All	
	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat
Loan Amount ($)	230,486	257,220	226,954	246,519	201,359	246,099	214,955	250,716
Credit Score	737.3	753.4	742.0	754.8	681.2	701.8	709.6	739.4
LTV (%)	87.7	79.1	85.6	78.5	96.9	95.5	92.0	83.5
DTI (%)	36.2	36.5	35.1	35.7	41.0	42.0	38.4	37.7
Loan Rate (%)	4.20	4.04	4.12	4.02	4.15	4.01	4.16	4.03

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

Credit Box

Within the Ginnie Mae purchase market, 77 percent of FHA loans, 54 percent of VA loans and 81 percent of other loans represent financing for first time home buyers. The bottom table shows that based on mortgages originated in December 2017, 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 December 2017.*

	FHA		VA		Other		Ginnie Mae Total	
	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat
Loan Amount ($)	199,308	220,880	237,528	285,649	142,141	156,343	201,359	246,099
Credit Score	673.3	678.9	697.9	726.6	695.6	699.1	681.2	701.8
LTV (%)	95.5	94.1	99.8	96.5	99.3	99.6	96.9	95.5
DTI (%)	42.3	43.4	40.2	41.3	35.0	36.0	41.0	42.0
Loan Rate (%)	4.22	4.14	3.99	3.87	4.04	4.11	4.15	4.01

Sources: *eMBS and Urban Institute.* **Note**: *Data as of December 2017. "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.*

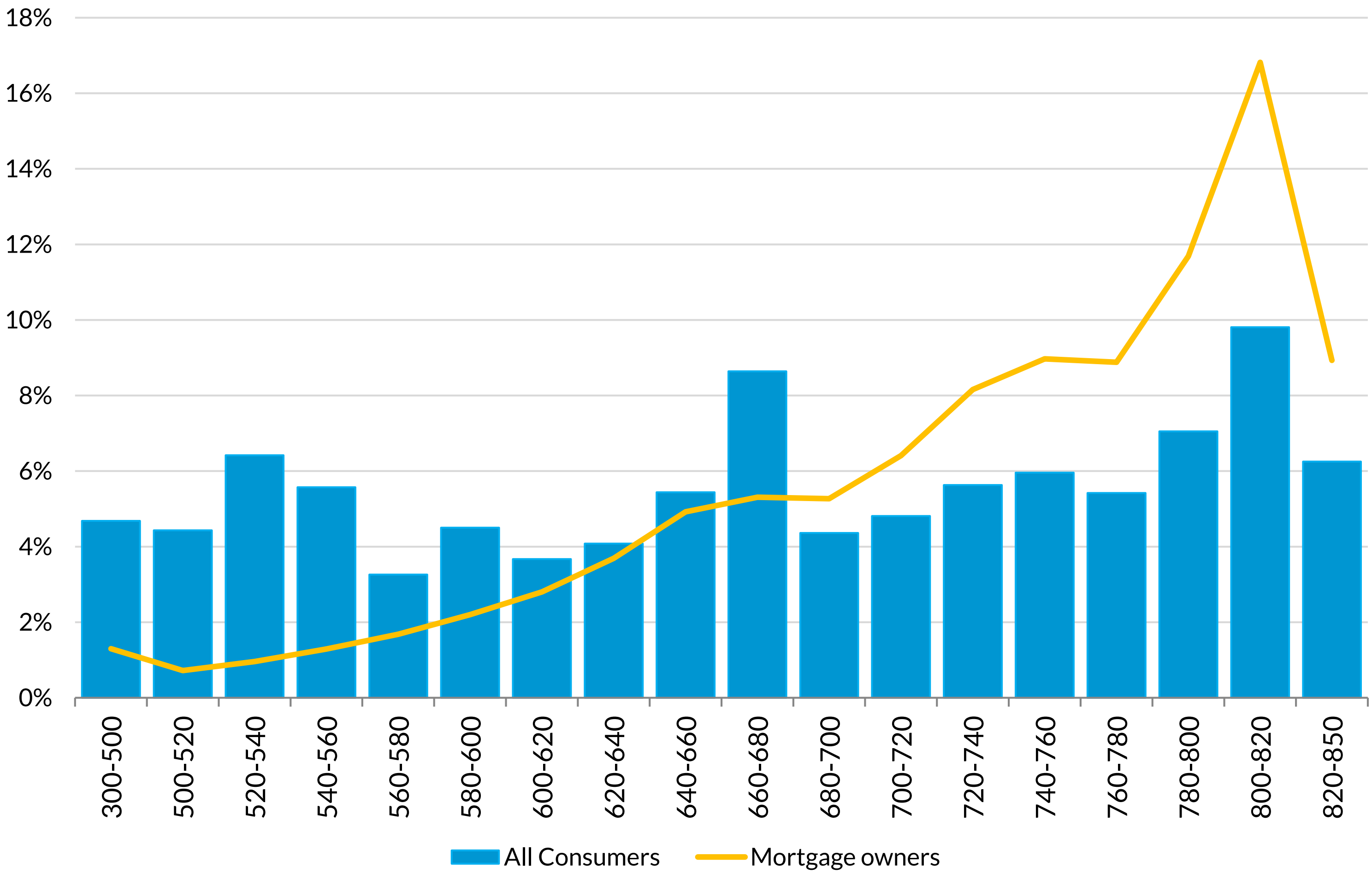
Credit Box

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.*

December 2017 Credit Box at a Glance

In December 2017, the median Ginnie Mae FICO score was 680 versus 748 for Fannie and 754 for Freddie. Note that the FICO score for the 10th percentile was 622 for Ginnie Mae, versus 670 for Fannie and 681 for Freddie. Within the Ginnie Mae market, FHA loans have a median FICO score of 668, VA loans have a median FICO score of 704 and other loans have a median FICO score of 693.

Purchase FICO							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	273,386	645	682	731	776	798	726
Fannie	99,099	681	715	755	786	801	747
Freddie	71,678	688	720	759	788	802	751
Ginnie	102,609	624	647	679	724	769	687
Refi FICO							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	196,631	647	684	728	772	797	724
Fannie	89,371	661	695	739	778	799	734
Freddie	62,599	673	706	746	781	800	740
Ginnie	44,661	614	644	680	723	767	684
All FICO							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	470,017	645	682	730	774	797	725
Fannie	188,470	670	705	748	782	800	741
Freddie	134,277	681	713	754	785	801	746
Ginnie	147,270	622	646	680	724	769	686

Purchase FICO: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	102,609	624	647	679	724	769	687
FHA	62,985	621	641	669	704	743	675
VA	29,640	632	662	710	763	793	711
Other	9,984	641	660	692	730	766	696
Refi FICO: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	44,661	614	644	680	723	767	684
FHA	22,291	603	633	664	699	739	667
VA	22,058	628	659	698	745	781	700
Other	312	624	665	701	742	781	700
All FICO: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	147,270	622	646	680	724	769	686
FHA	85,276	616	640	668	702	742	673
VA	51,698	631	660	704	756	789	706
Other	10,296	641	660	693	731	766	696

Sources: *eMBS and Urban Institute.* **Note:** *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of December 2017.*

December 2017 Credit Box at a Glance

In December 2017, the median loan-to-value ratio (LTV) was 96.5 percent for Ginnie Mae, and 79-80 percent for Fannie Mae and Freddie Mac. The 10th percentile was 81.7 percent for Ginnie Mae and 49-50 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	273,886	70.0	80.0	95.0	96.5	100.0	87.2
Fannie	99,162	64.0	80.0	80.0	95.0	97.0	82.4
Freddie	71,888	61.0	75.0	80.0	94.0	95.0	80.5
Ginnie	102,836	93.0	96.5	96.5	100.0	102.0	96.5

Refi LTV

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	199,407	45.0	60.0	74.0	80.0	93.0	70.9
Fannie	89,377	43.0	57.0	70.0	79.0	80.0	66.1
Freddie	62,783	41.0	56.0	70.0	79.0	80.0	65.8
Ginnie	47,247	69.8	81.7	86.7	97.5	100.0	86.7

All LTV

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	473,293	55.0	72.0	80.0	95.0	97.3	80.3
Fannie	188,539	50.0	66.0	80.0	89.0	95.0	74.7
Freddie	134,671	49.0	65.0	79.0	83.0	95.0	73.7
Ginnie	150,083	81.7	91.2	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	102,836	93.0	96.5	96.5	100.0	102.0	96.5
FHA	63,084	93.0	96.5	96.5	96.5	96.5	95.2
VA	29,707	91.1	100.0	100.0	102.2	103.3	98.3
Other	10,045	95.4	99.2	101.0	101.0	101.5	99.3

Refi LTV: Ginnie Mae Breakdown By Source

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	47,247	69.8	81.7	86.7	97.5	100.0	86.7
FHA	22,841	68.9	80.5	86.5	88.4	97.8	83.6
VA	24,021	70.7	83.4	93.4	100.0	102.2	89.5
Other	385	76.1	88.2	96.1	100.8	102.0	92.1

All LTV: Ginnie Mae Breakdown By Source

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	150,083	81.7	91.2	96.5	100.0	101.0	93.4
FHA	85,925	82.4	89.9	96.5	96.5	96.5	92.1
VA	53,728	78.8	91.0	100.0	100.0	103.0	94.4
Other	10,430	94.7	99.0	101.0	101.0	101.6	99.1

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

December 2017 Credit Box at a Glance

In December 2017, the median Ginnie Mae debt-to-income ratio (DTI) was 41.9 percent, considerably higher than the 36-37 percent median DTIs for Fannie Mae and Freddie Mac. The 90th percentile for Ginnie Mae was 53.5 percent, also much higher than the 47-48 percent DTIs for the GSEs. Within the Ginnie Mae market, the median FHA DTI ratio was 43.5 percent, versus 41.0 percent for VA and 36.1 percent for other lending programs.

Purchase DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	273,487	24.0	31.0	39.0	45.0	49.3	37.8
Fannie	99,159	23.0	30.0	38.0	44.0	48.0	36.2
Freddie	71,882	22.0	29.0	36.0	43.0	47.0	35.2
Ginnie	102,446	28.4	35.0	42.0	48.4	53.6	41.3
Refi DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	183,483	22.0	29.0	38.0	44.1	49.0	36.6
Fannie	87,974	22.0	29.0	37.0	44.0	48.0	36.1
Freddie	61,722	22.0	28.0	36.0	43.0	47.0	35.0
Ginnie	33,787	25.9	33.5	41.5	48.3	53.4	40.4
All DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	456,970	23.0	30.3	38.4	45.0	49.0	37.3
Fannie	187,133	22.0	29.0	37.0	44.0	48.0	36.2
Freddie	133,604	22.0	28.0	36.0	43.0	47.0	35.1
Ginnie	136,233	27.8	34.6	41.9	48.4	53.5	41.1

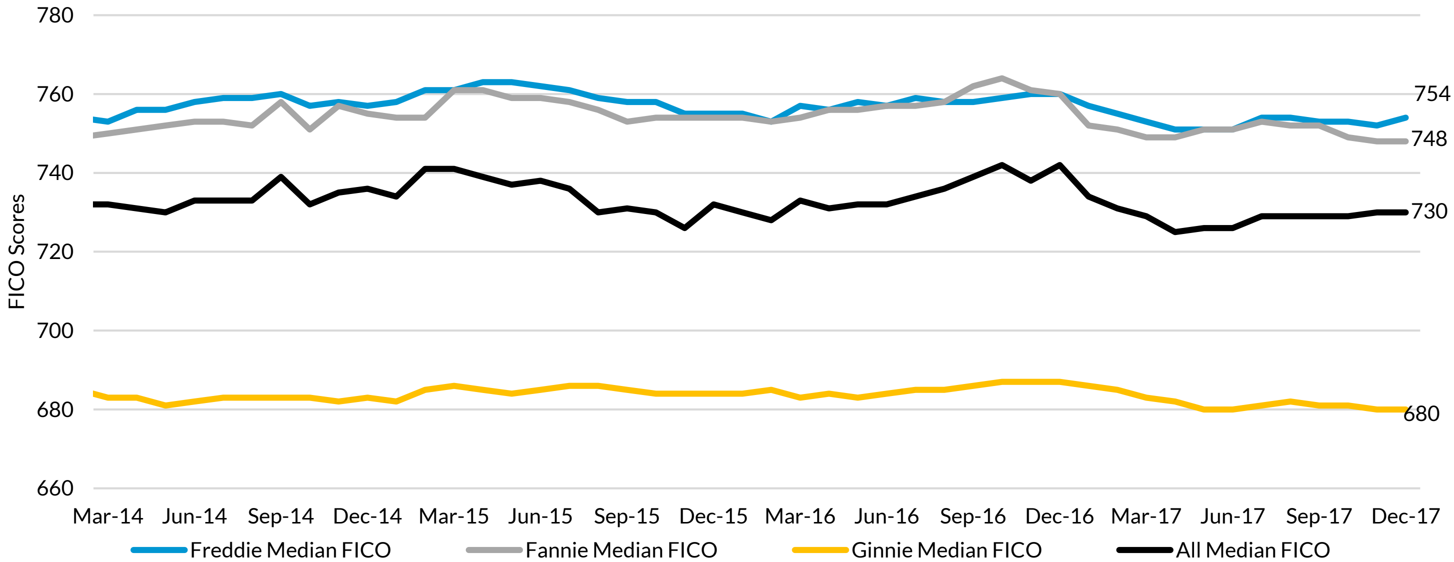
Purchase DTI: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	102,446	28.4	35.0	42.0	48.4	53.6	41.3
FHA	63,058	29.7	36.6	43.6	49.7	54.2	42.5
VA	29,467	27.2	34.0	41.3	47.9	53.2	40.7
Other	9,921	25.7	30.7	36.2	40.4	43.3	35.2
Refi DTI: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	33,787	25.9	33.5	41.5	48.3	53.4	40.4
FHA	17,542	27.2	34.8	42.8	48.9	53.6	41.4
VA	15,975	24.9	32.3	40.3	47.6	53.0	39.6
Other	270	16.3	22.3	31.4	39.4	44.8	31.0
All DTI: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	136,233	27.8	34.6	41.9	48.4	53.5	41.1
FHA	80,600	29.2	36.2	43.5	49.5	54.1	42.3
VA	45,442	26.3	33.4	41.0	47.8	53.1	40.3
Other	10,191	25.4	30.5	36.1	40.4	43.3	35.1

Sources: *eMBS and Urban Institute.* **Note**: *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of December 2017.*

Credit Box: Historical

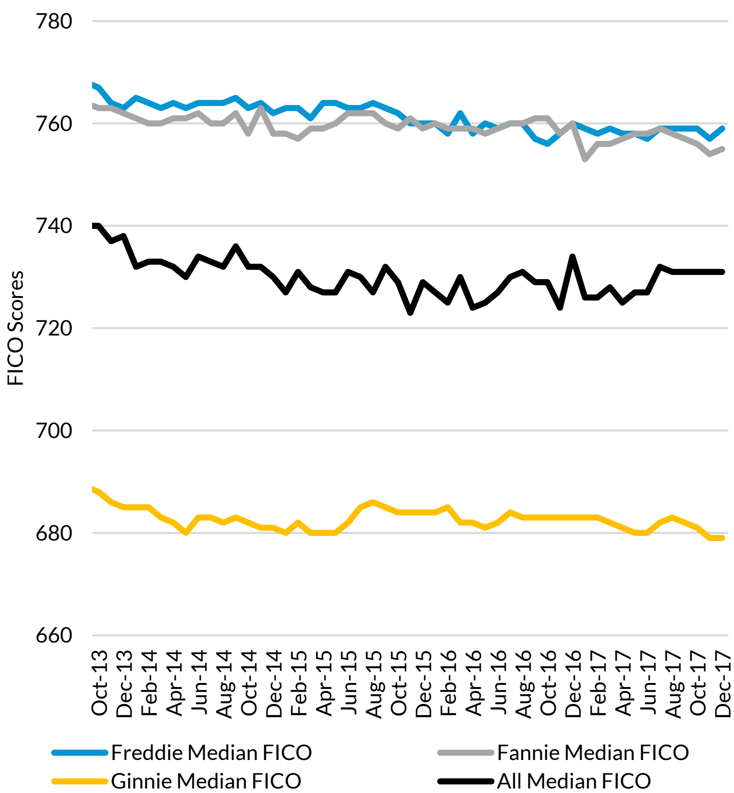
The median FICO score for all agency MBS originated in December now stands at 730, stable since last month. The figures clearly show that the median FICO score for Ginnie Mae borrowers has always been considerably lower than for GSE borrowers. The difference between Ginnie Mae and GSE borrowers is wider in purchase loans than in refi loans.

FICO Scores for All Loans



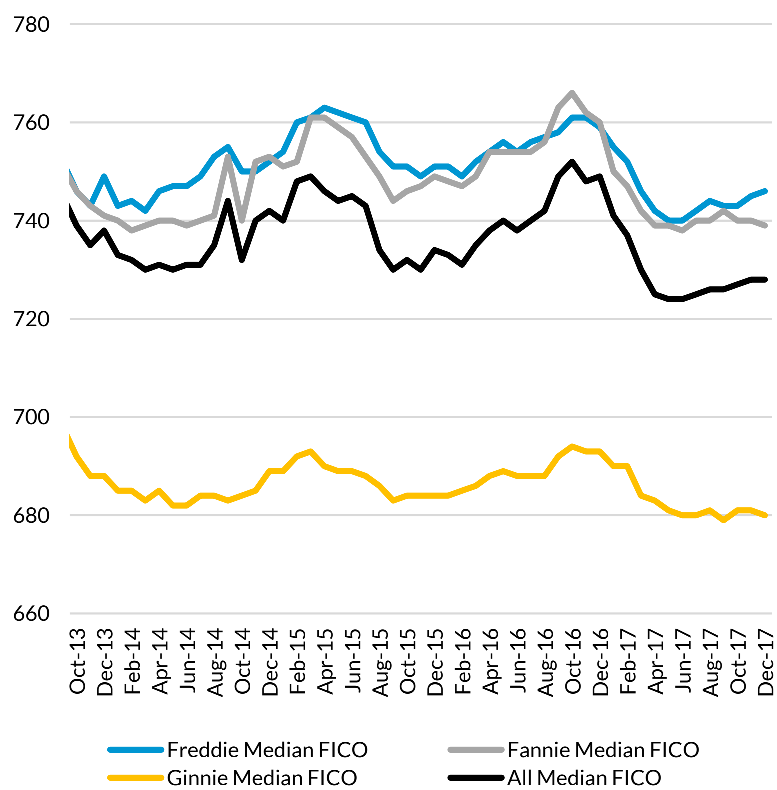
Sources: *eMBS and Urban Institute.* **Note**: *Data as of December 2017.*

FICO Scores for Purchase Loans



Sources: *eMBS and Urban Institute.* **Note:** *Data as of December 2017.*

FICO Scores for Refinance Loans

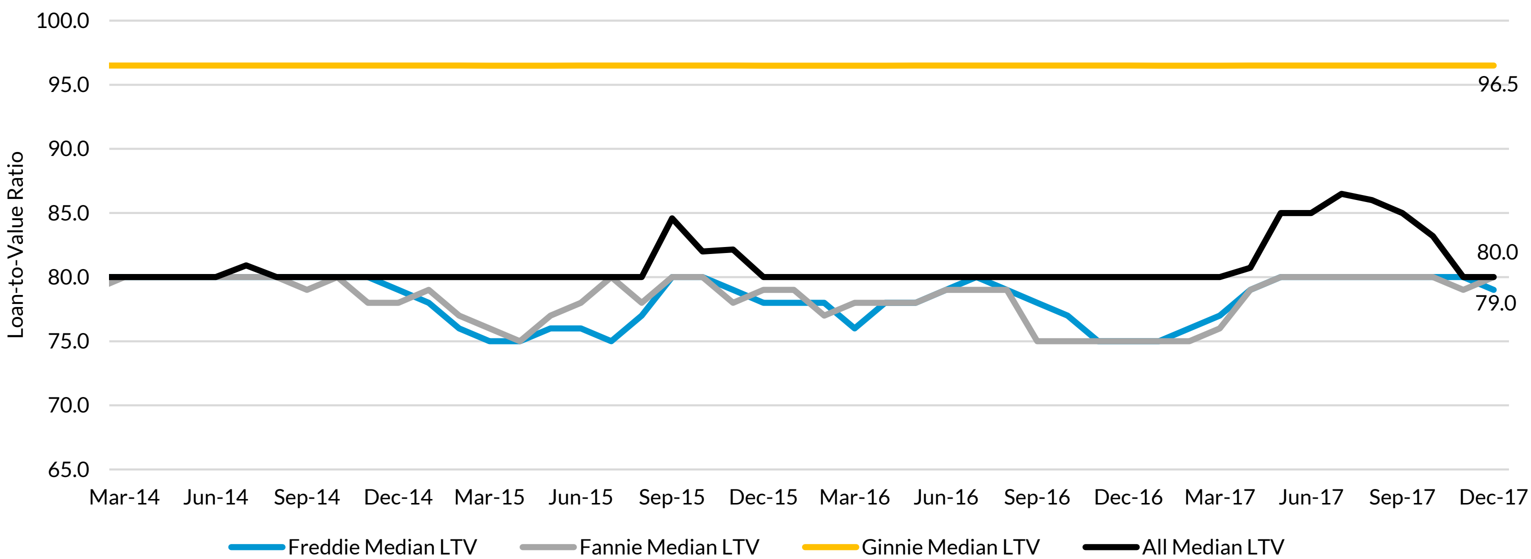


Sources: *eMBS and Urban Institute.* **Note:** *Data as of December 2017.*

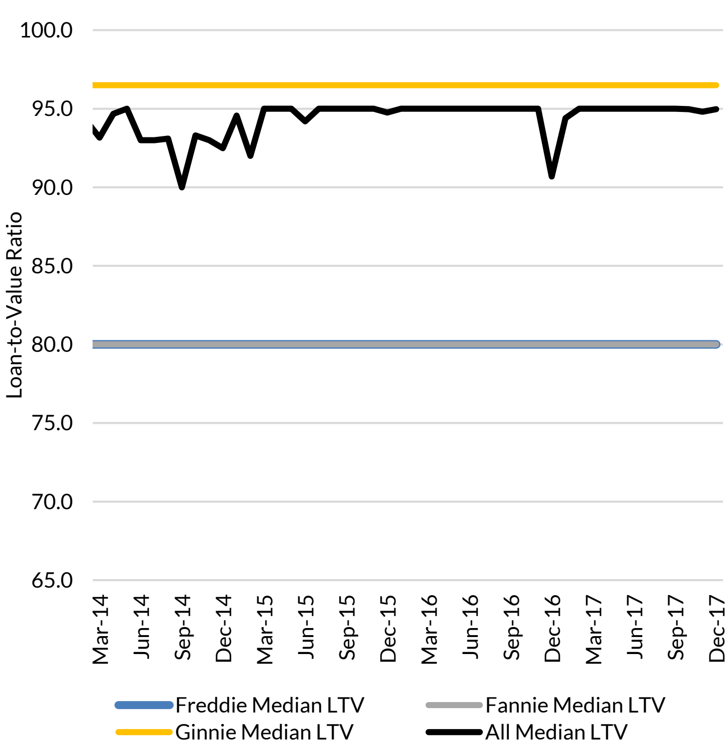
Credit Box: Historical

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.

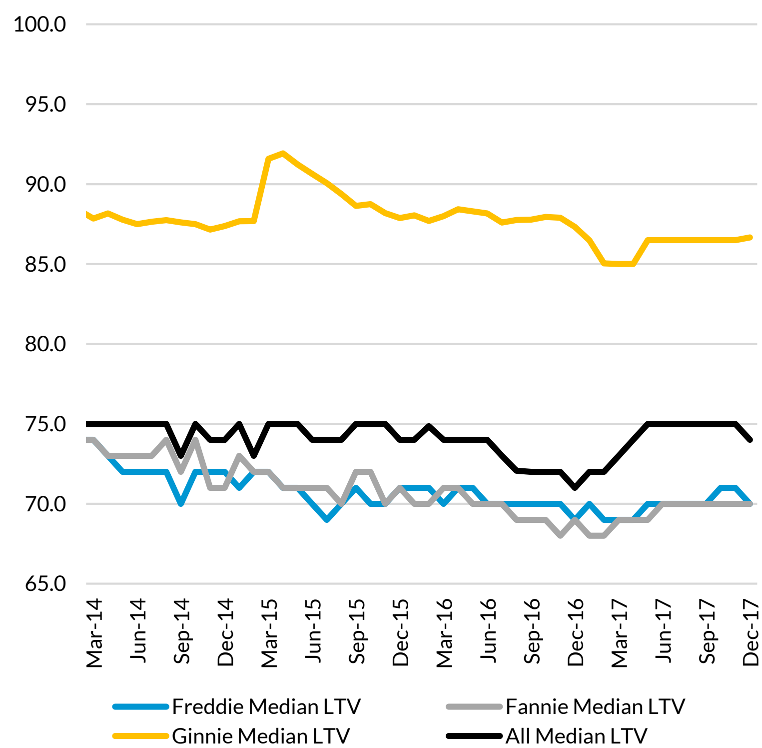
LTV Ratio for All Loans



LTV Ratio for Purchase Loans



LTV Ratio for Refinance Loans

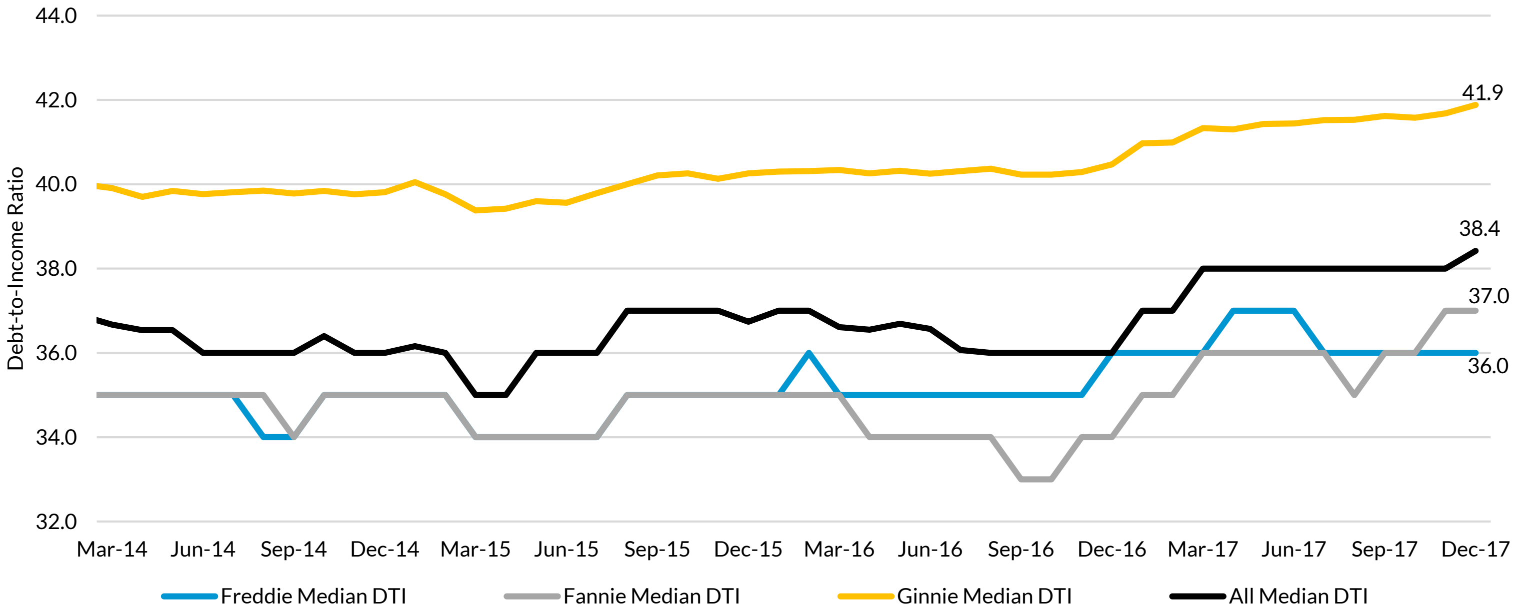


Sources: *eMBS and Urban Institute.* **Note:** *In May 2017 Ginnie Mae began disclosing issuer-reported LTV for FHA loans, which includes the financed upfront mortgage insurance premium. To make it consistent with the previously reported LTV, we removed the financed upfront mortgage insurance premium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

Credit Box: Historical

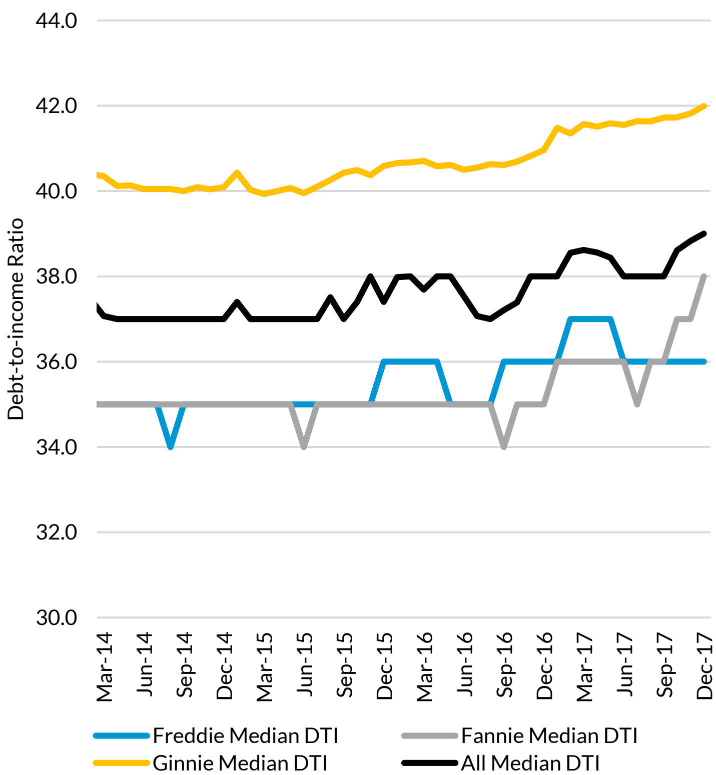
Median debt-to-income ratios on Ginnie Mae loans have historically been in the low 40s, considerably higher than the GSEs. DTIs have been inching up this past year for both Ginnie Mae and GSE loans, with the movement more pronounced for Ginnie Mae loans.

DTI Ratio for All Loans



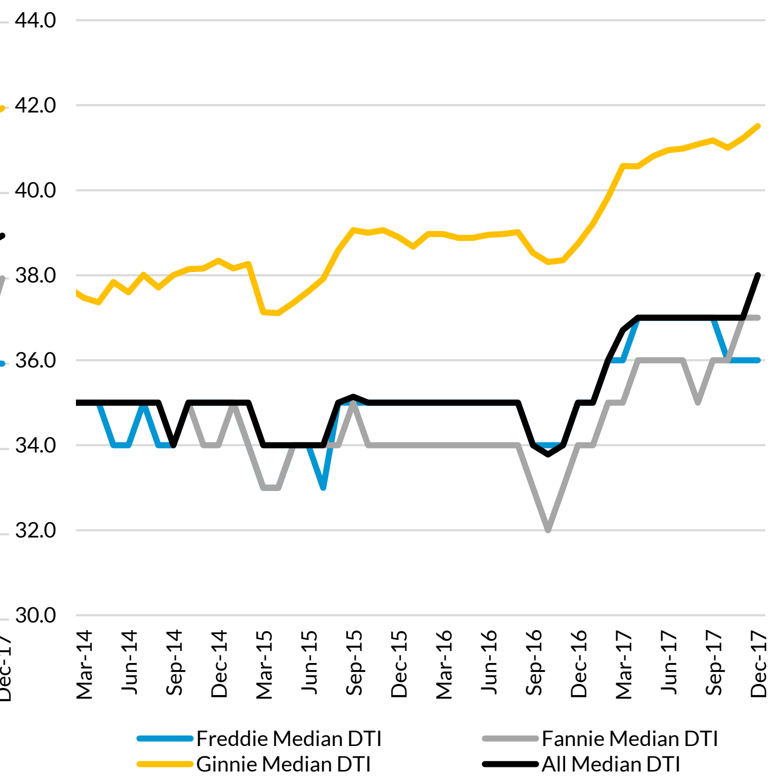
Sources: *eMBS and Urban Institute.* **Note:** *Data as of December 2017*

DTI Ratio for Purchase Loans



Sources: *eMBS and Urban Institute.*
Note: *Data as of December 2017*

DTI Ratio for Refinance Loans

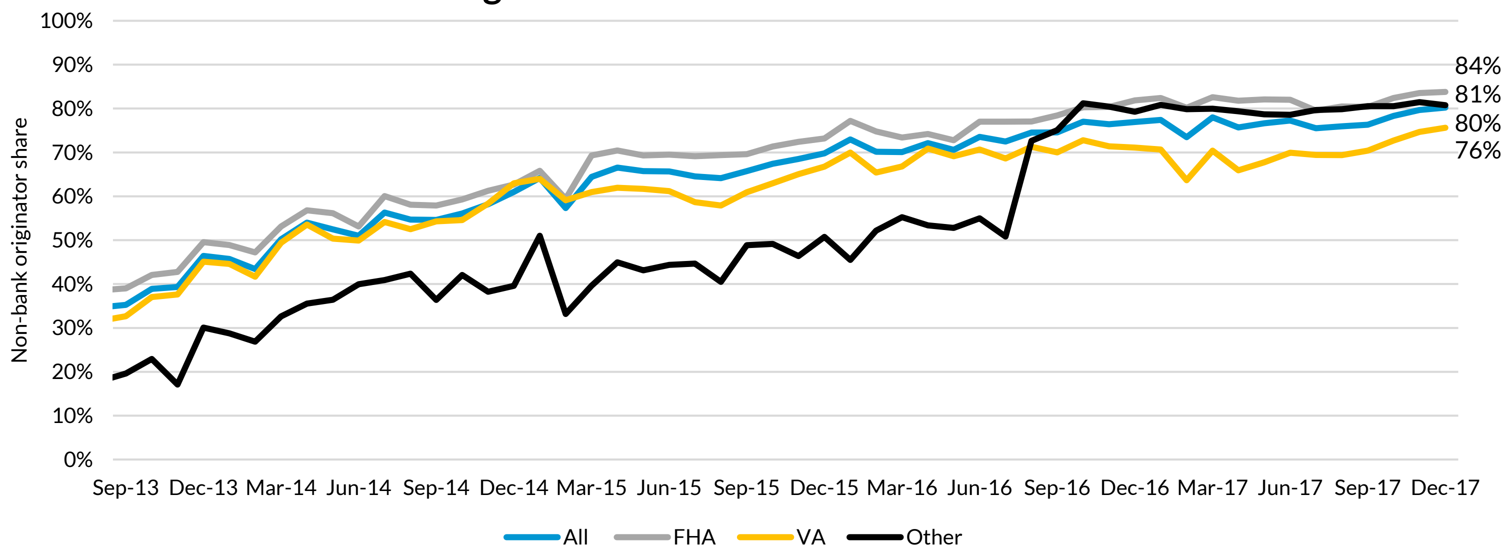


Sources: *eMBS and Urban Institute.*
Note: *Data as of December 2017*

Ginnie Mae Non-bank Originators

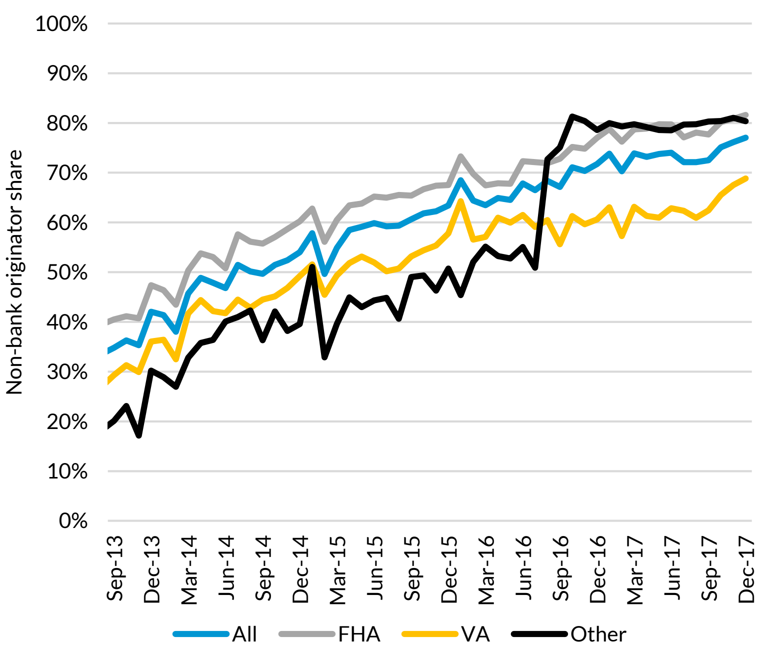
The non-bank originator share of Ginnie Mae originations remained constant at 80 percent in December 2017, the highest level in recent history. The non-bank share of VA issuance stayed at 76 percent in December, while the non-bank share of FHA issuance edged up to 84 percent and Other issuance was flat at 81 percent.

Ginnie Mae Non-bank Originator Share: All Loans



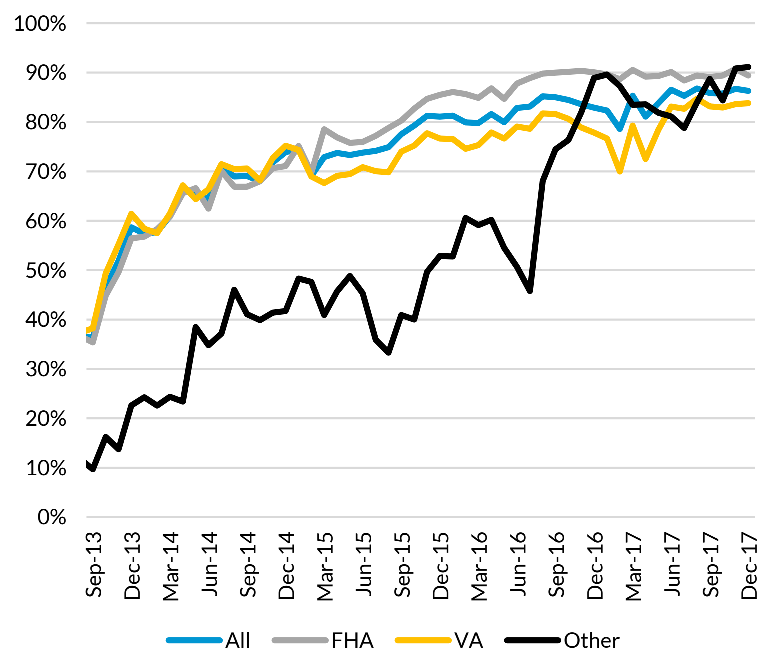
Sources: *eMBS and Urban Institute.* **Note:** *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of December 2017.*

Ginnie Mae Non-bank Share: Purchase Loans



Sources: *eMBS and Urban Institute*
Note: *Data as of December 2017.*

Ginnie Mae Non-bank Share: Refi Loans



Sources: *eMBS and Urban Institute*
Note: *Data as of December 2017.*

Ginnie Mae Non-bank Originators: December 2017 Credit Box

An analysis of recent origination suggests that non-bank originators have considerably lower median borrower FICO scores than do bank originators. Overall, the median Ginnie Mae FICO score is 680-- it is 702 for bank borrowers versus 675 for non-bank borrowers. For FHA borrowers, the median FICO score for bank originators is 683 versus 664 for non-banks. For VA borrowers, the median FICO score for bank originators is 729 versus 697 for non-banks. For “Other” loans, the median FICO score for bank originators is 713 versus 689 for non-banks.

All Ginnie Mae FICO							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	146,295	622	646	680	724	769	686
Bank	30,142	641	664	702	752	788	707
Non-Bank	116,153	620	643	675	716	760	681
FHA Ginnie Mae FICO							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	84,632	616	640	668	703	742	673
Bank	14,924	636	656	683	721	759	690
Non-Bank	69,708	613	636	664	698	736	669
VA Ginnie Mae FICO							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	51,433	631	660	704	756	789	706
Bank	13,130	647	680	729	777	798	726
Non-Bank	38,303	627	655	697	747	782	700
Other Ginnie Mae FICO							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	10,230	641	660	693	731	767	696
Bank	2,088	645	670	713	755	784	710
Non-Bank	8,142	640	658	689	724	759	693

Sources: *eMBS and Urban Institute.* ***Note:*** *“Other“ refers to loans insured by HUD’s Office of Public and Indian Housing and the Department of Agriculture’s Rural Development. Data as of December 2017.*

Ginnie Mae Non-bank Originators: December 2017 Credit Box

An analysis of the loans backing Ginnie Mae origination indicates that there are virtually no differences in median LTV ratios between bank originated loans and non-bank originated loans. Mean LTVs for banks are actually marginally higher than their non-bank counterparts.

All Ginnie Mae LTV							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	149,104	81.6	91.1	96.5	100.0	101.0	93.4
Bank	30,226	83.9	94.1	96.5	100.0	101.0	94.2
Non-Bank	118,878	81.3	90.2	96.5	99.3	101.0	93.2
FHA Ginnie Mae LTV							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	85,279	82.3	89.9	96.5	96.5	96.5	92.1
Bank	14,993	85.5	94.6	96.5	96.5	97.3	93.3
Non-Bank	70,286	81.4	88.3	96.5	96.5	96.5	91.8
VA Ginnie Mae LTV							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	53,462	78.8	91.0	100.0	100.0	103.0	94.4
Bank	13,123	78.4	91.1	100.0	100.0	102.4	94.1
Non-Bank	40,339	78.9	90.9	100.0	101.2	103.2	94.4
Other Ginnie Mae LTV							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	10,363	94.8	99.0	101.0	101.0	101.6	99.1
Bank	2,110	97.3	100.9	101.0	102.0	102.0	100.4
Non-Bank	8,253	94.2	98.7	100.9	101.0	101.0	98.8

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

Ginnie Mae Non-bank Originators: December 2017 Credit Box

An analysis of the borrowers' DTI ratios for bank versus non-bank originators indicates the former are more conservative. That is, the median DTI ratio for bank originators is 40.5, versus 42.3 for non-banks.

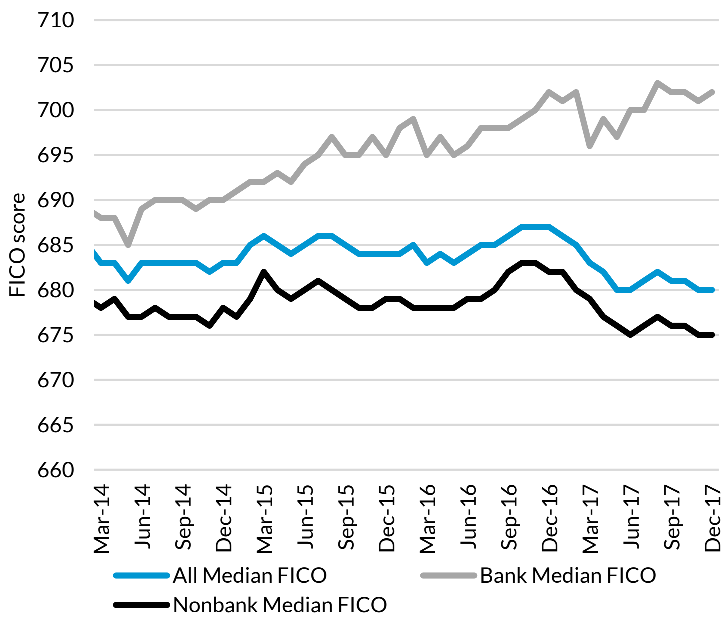
All Ginnie Mae DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	135,269	27.8	34.7	41.9	48.4	53.5	41.1
Bank	28,859	26.3	33.2	40.5	46.8	52.3	39.7
Non-Bank	106,410	28.2	35.0	42.3	48.8	53.8	41.5
FHA Ginnie Mae DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	79,955	29.2	36.2	43.5	49.5	54.1	42.3
Bank	14,354	28.6	35.5	42.3	48.1	53.3	41.4
Non-Bank	65,601	29.3	36.4	43.8	49.7	54.2	42.5
VA Ginnie Mae DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	45,190	26.3	33.4	41.0	47.8	53.1	40.3
Bank	12,468	24.4	31.4	39.1	46.0	51.6	38.6
Non-Bank	32,722	27.2	34.2	41.7	48.3	53.5	41.0
Other Ginnie Mae DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	10,124	25.4	30.5	36.1	40.4	43.3	35.1
Bank	2,037	24.8	30.0	36.0	40.7	43.7	35.0
Non-Bank	8,087	25.6	30.7	36.1	40.3	43.2	35.1

Sources: *eMBS and Urban Institute.* **Note:** *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of December 2017.*

Ginnie Mae Nonbank Originators: Historical Credit Box

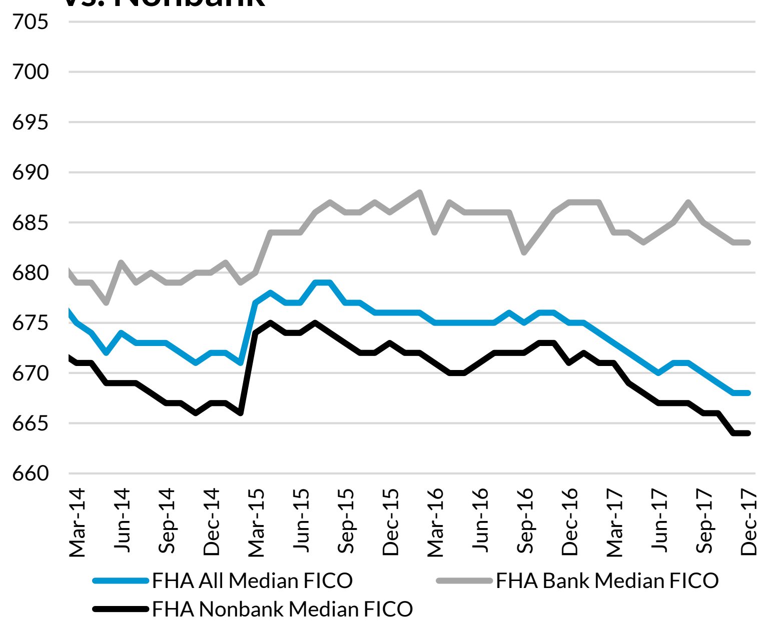
The FICO scores for both Ginnie Mae bank and nonbank originators remained relatively stable in December. The spread in the FICO scores between banks and non-banks remains at their widest level since the data became available in 2013.

Ginnie Mae FICO Scores: Bank vs. Nonbank



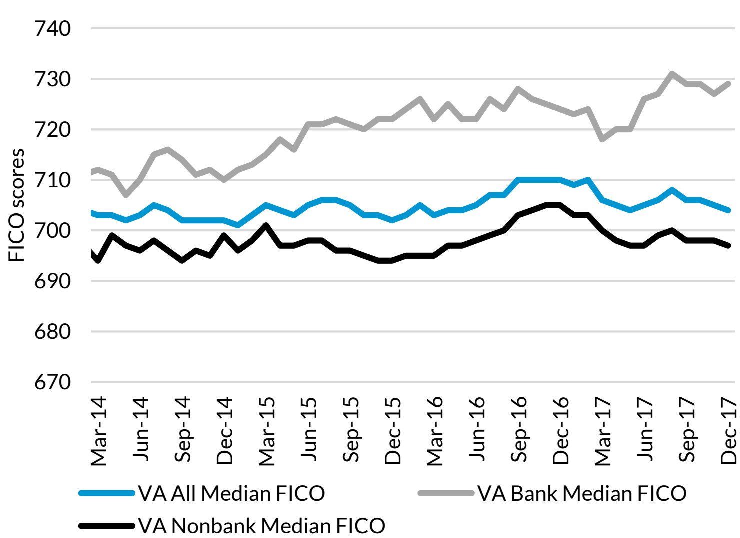
Sources: *eMBS and Urban Institute* **Note:** *Data as of December 2017*

Ginnie Mae FHA FICO Scores: Bank vs. Nonbank



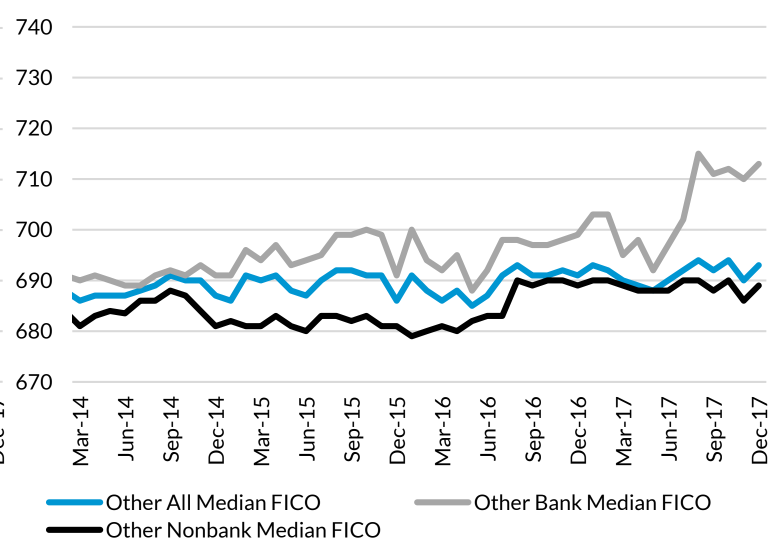
Sources: *eMBS and Urban Institute* **Note:** *Data as of December 2017*

Ginnie Mae VA FICO Scores: Bank vs. Nonbank



Sources: *eMBS and Urban Institute*
Note: *Data as of December 2017*

Ginnie Mae Other FICO Scores: Bank vs. Nonbank

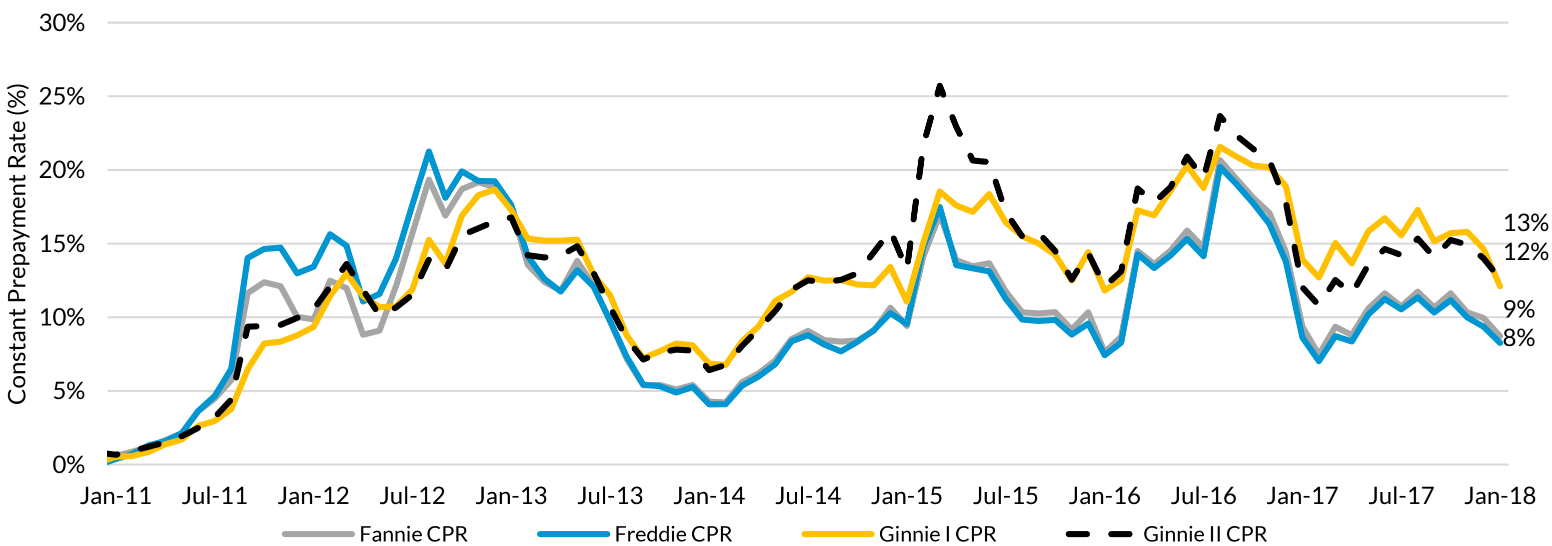


Sources: *eMBS and Urban Institute*
Note: *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of December 2017.*

Prepayments

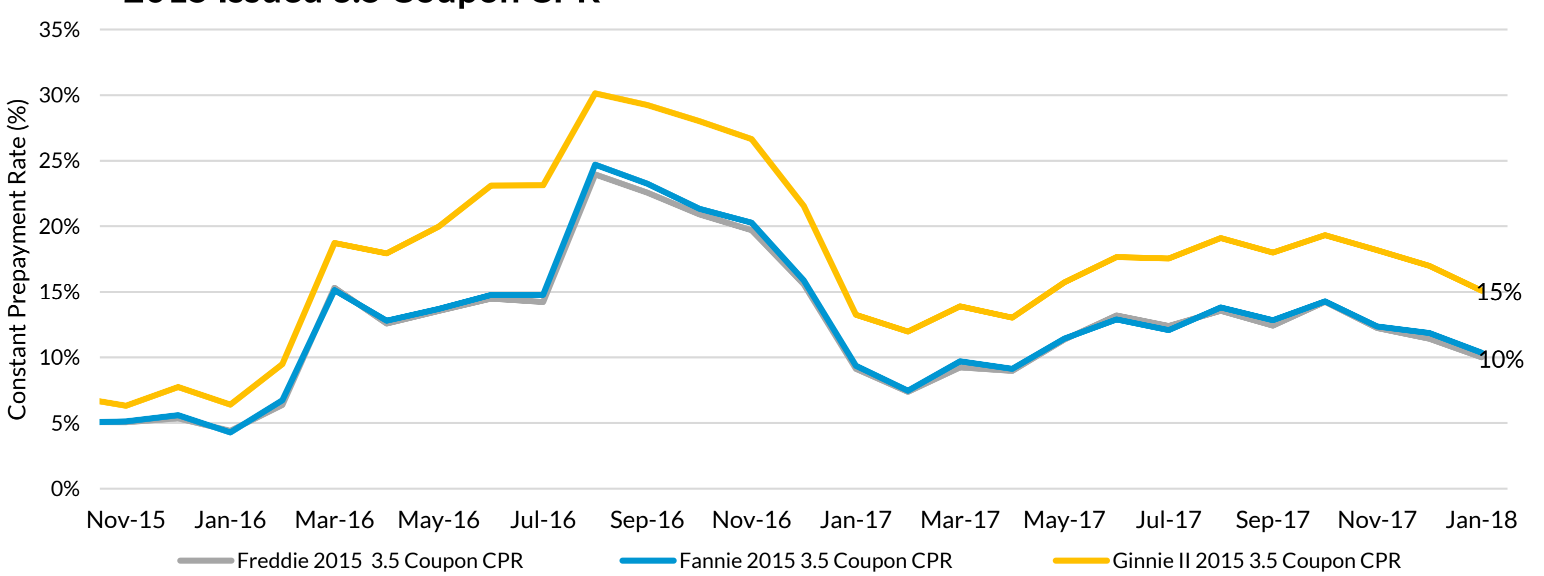
Prepayments on Ginnie Mae securities were lower than on GSE securities from 2011 through mid-2013, but have been higher since. These differences hold across all coupon buckets. The differences are especially pronounced on more recent production. These increased Ginnie speeds reflect the growing share 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 January 2018.*

2015 Issued 3.5 Coupon CPR

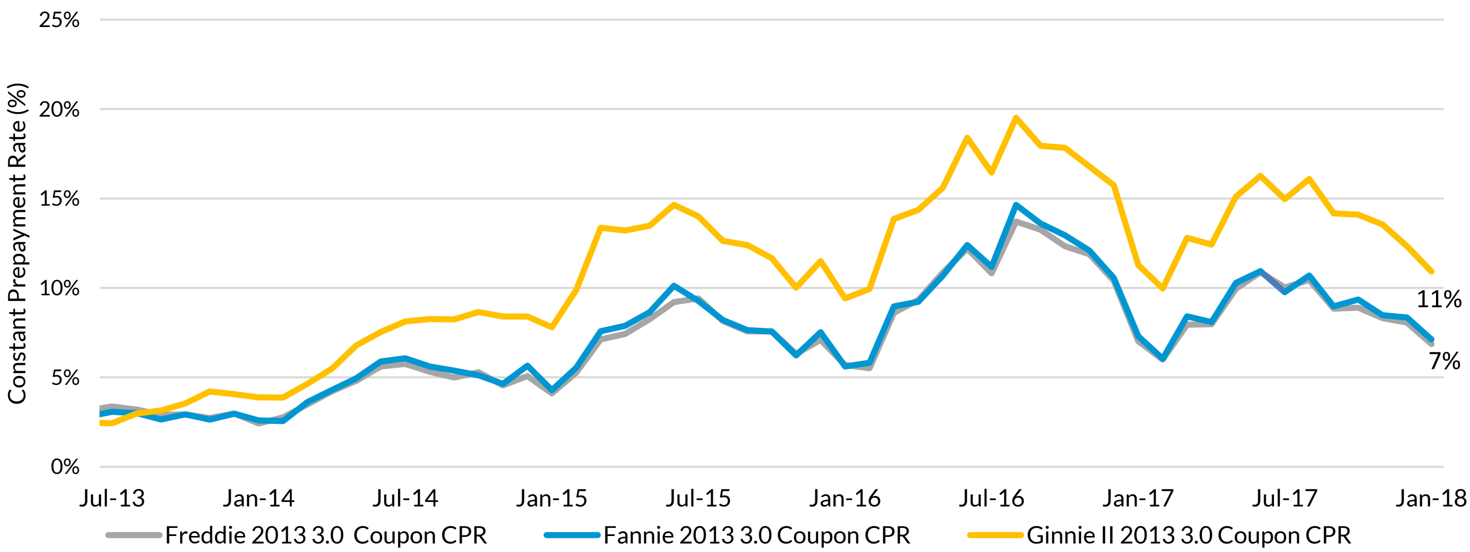


Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of January 2018.*

Prepayments

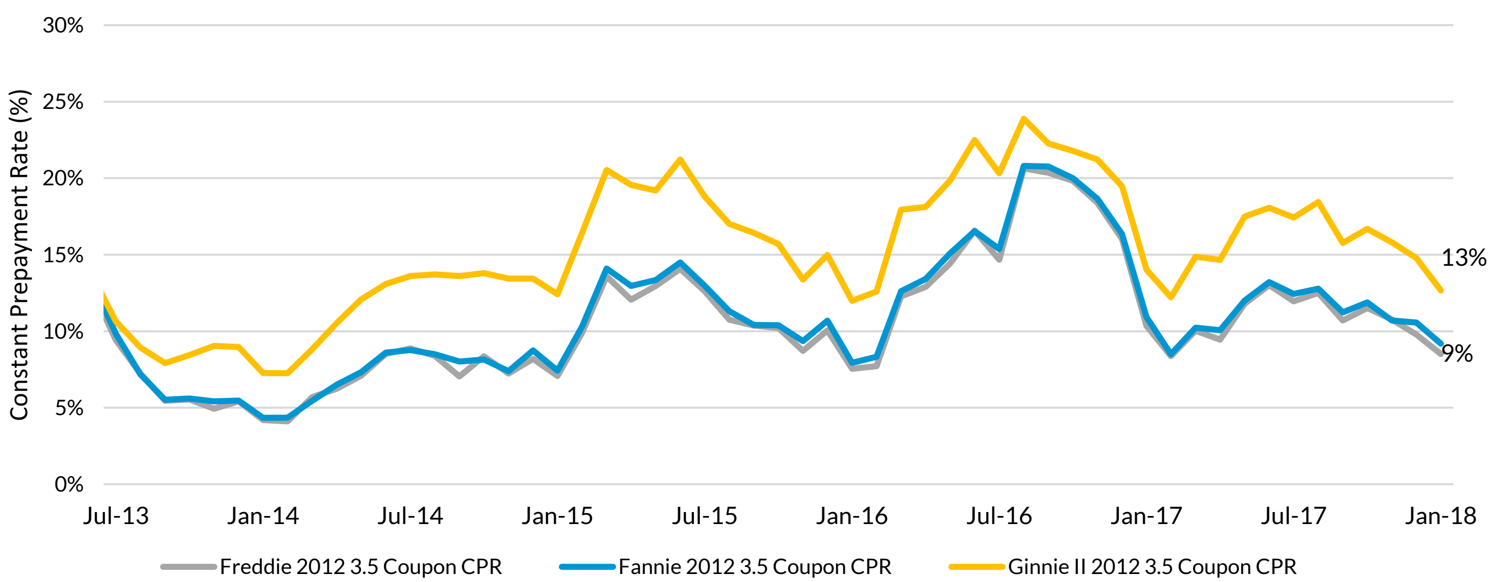
The 2013 Ginnie II 3.0s are prepaying faster than their conventional counterparts. 2012 Ginnie II 3.5s have been faster since mid-2013. The differences accelerated in 2015—potentially due to the FHA mortgage insurance premium (MIP) cut. In January 2015 FHA lowered its MIPs from 135 basis points per annum 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 January 2018.*

2012 Issued 3.5 Coupon CPR

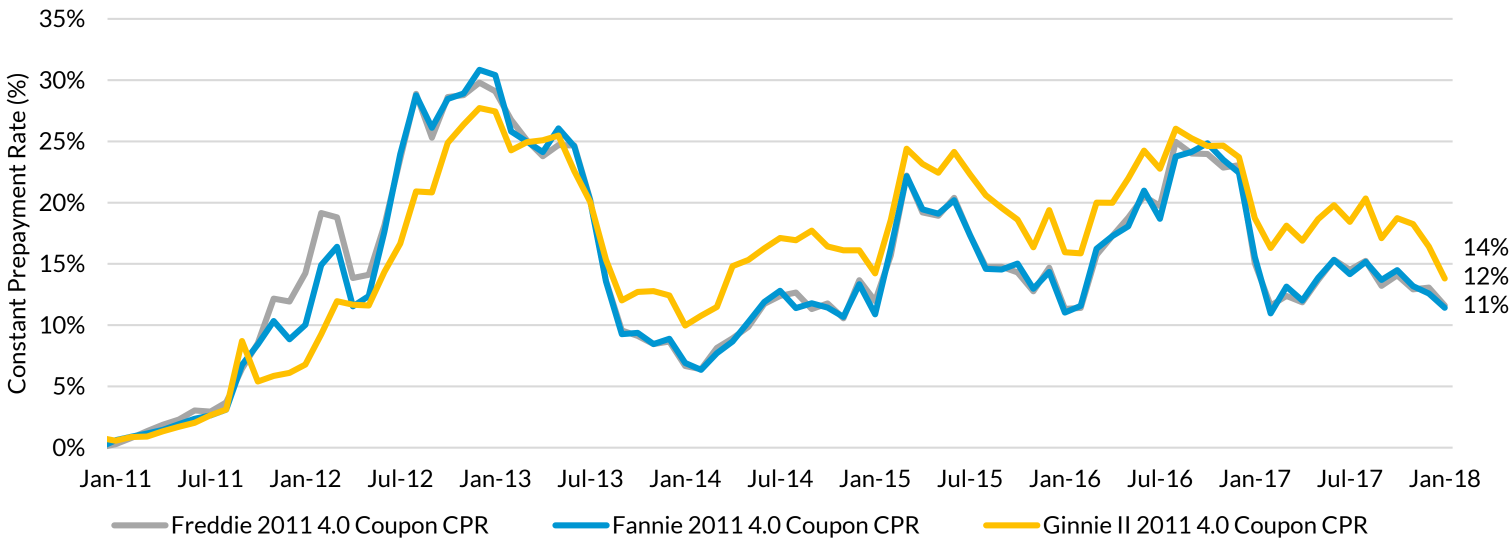


Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of January 2018.*

Prepayments

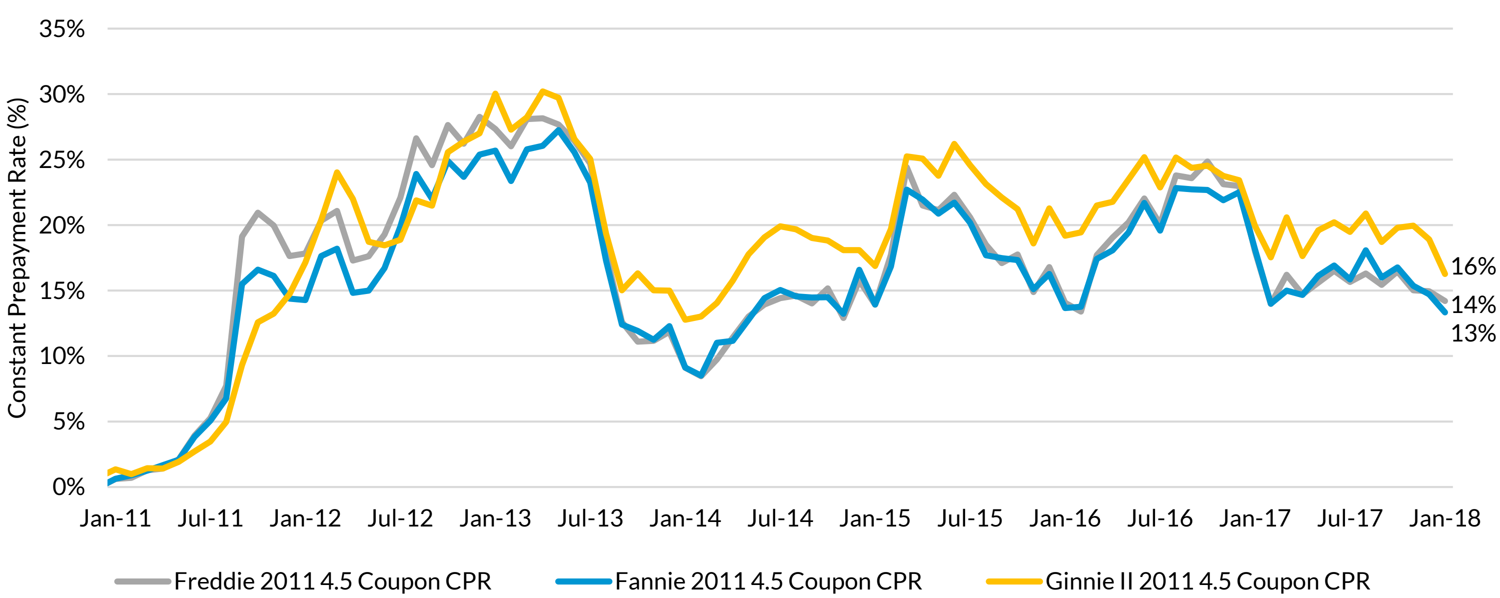
The 2011 Ginnie II 4.0s and 4.5s have been prepaying faster than their conventional counterparts since late 2013. Faster VA mortgage prepays plus simplifications to the FHA streamlined programs in 2013 are likely contributors to the faster speeds. However, as mortgage rates rose sharply since November 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 January 2018.*

2011 Issued 4.5 Coupon CPR

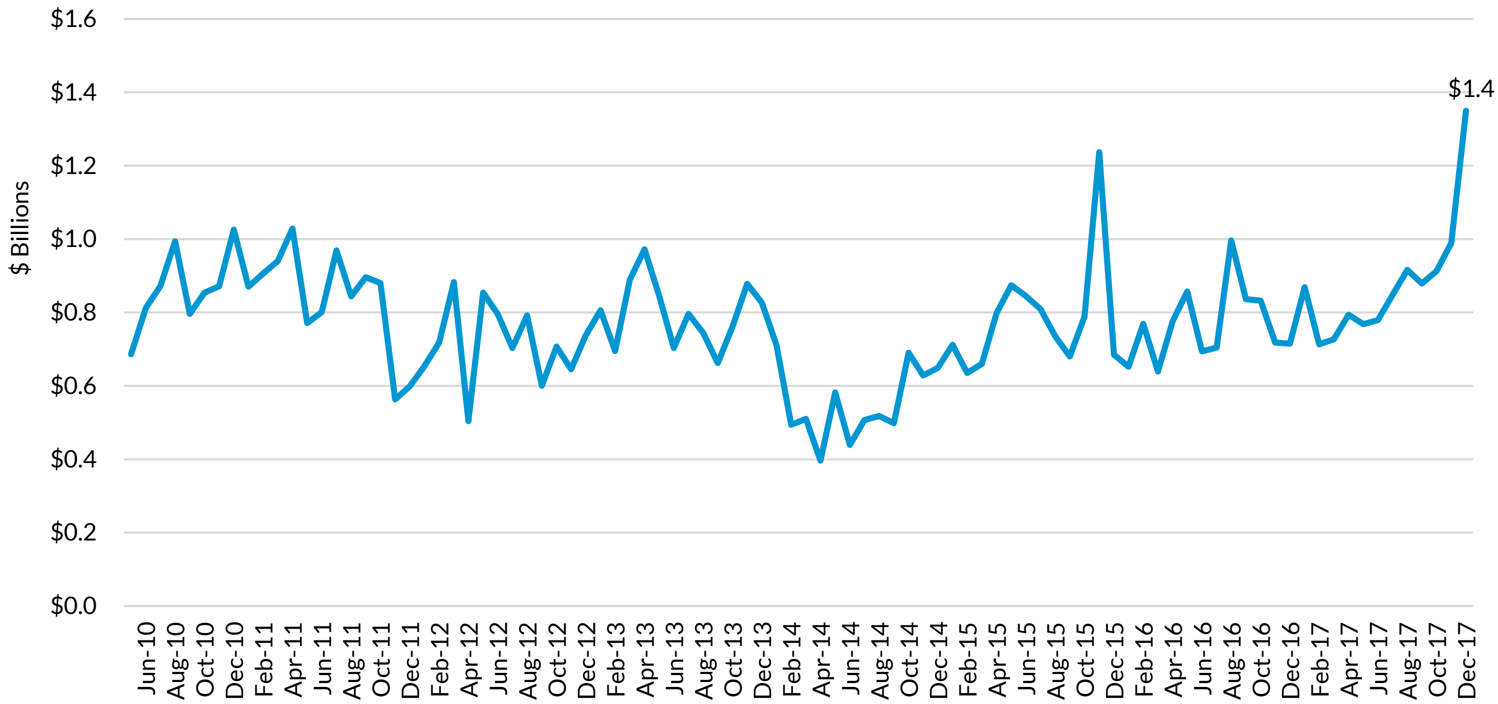


Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of January 2018.*

Other Ginnie Mae Programs Reverse Mortgage Volumes

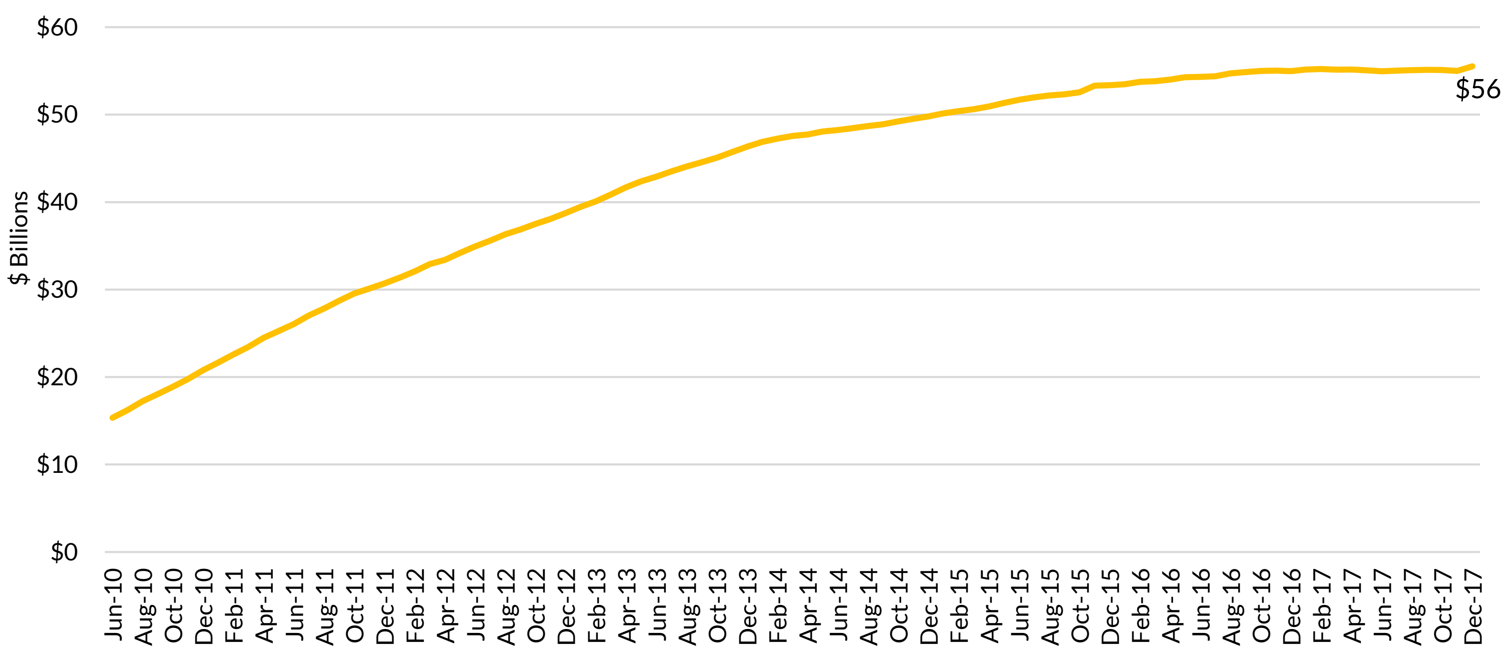
Ginnie Mae reverse mortgage volumes remain steady, with issuance of $1.4 billion in December. Outstanding securities totaled $56.0 billion in December.

HMBS Issuance Volume



Sources: *Ginnie Mae and Urban Institute.* **Note**: *Data as of December 2017.*

HMBS Outstanding

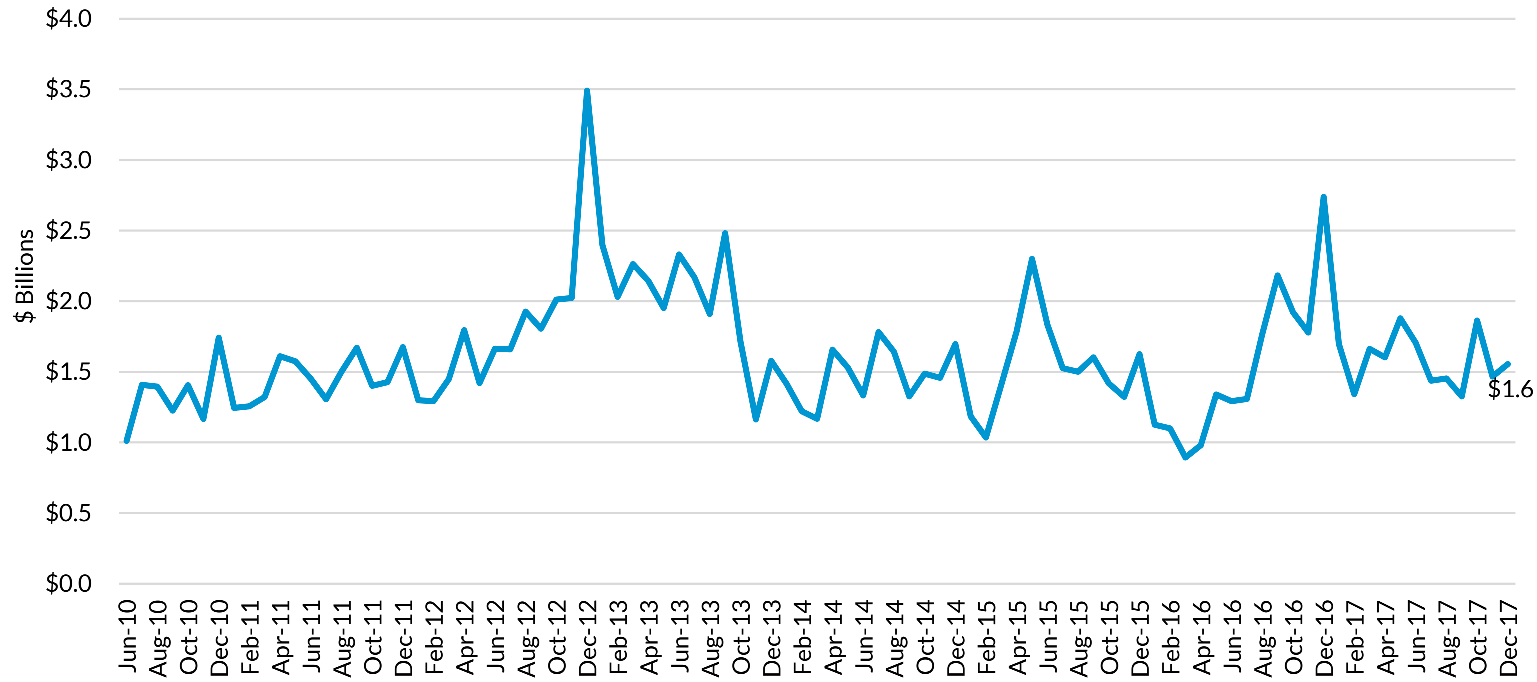


Sources: *Ginnie Mae and Urban Institute.* **Note**: *Data as of December 2017.*

Other Ginnie Mae Programs Multifamily Market

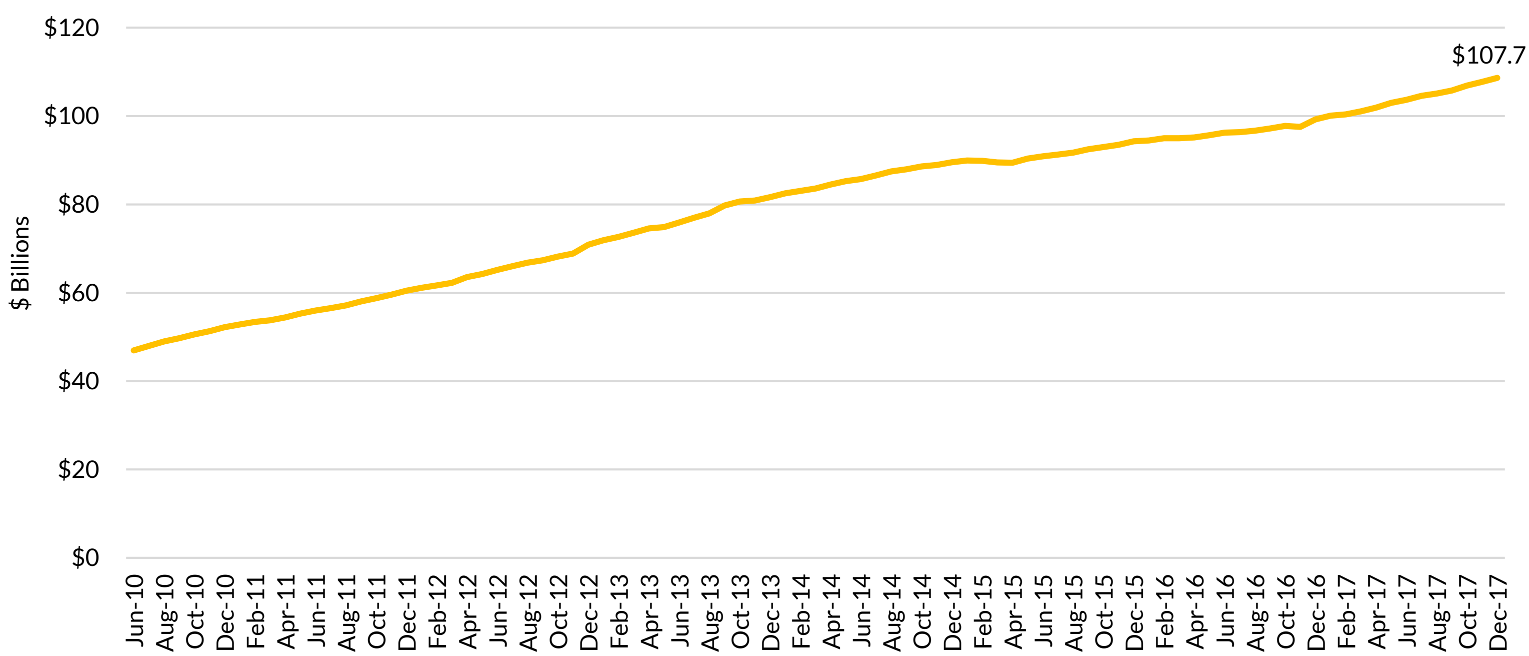
Ginnie Mae multifamily issuance volumes in December totaled $1.6 billion. Outstanding multifamily securities totaled $107.7 billion in December.

Ginnie Mae Multifamily MBS Issuance



Sources: *Ginnie Mae and Urban Institute.* **Note**: *Data as of December 2017.*

Ginnie Mae Multifamily MBS Outstanding

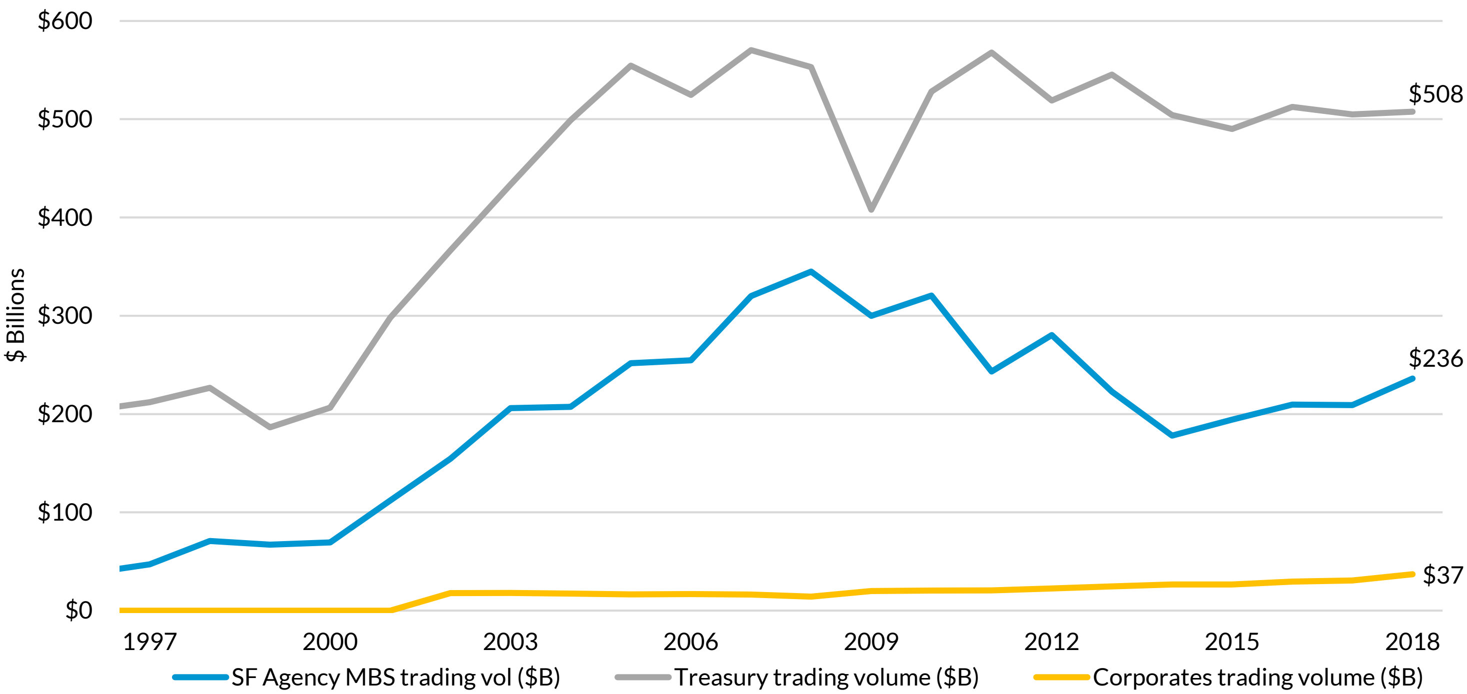


Sources: *Ginnie Mae and Urban Institute.* **Note**: *Data as of December 2017.*

Market Conditions

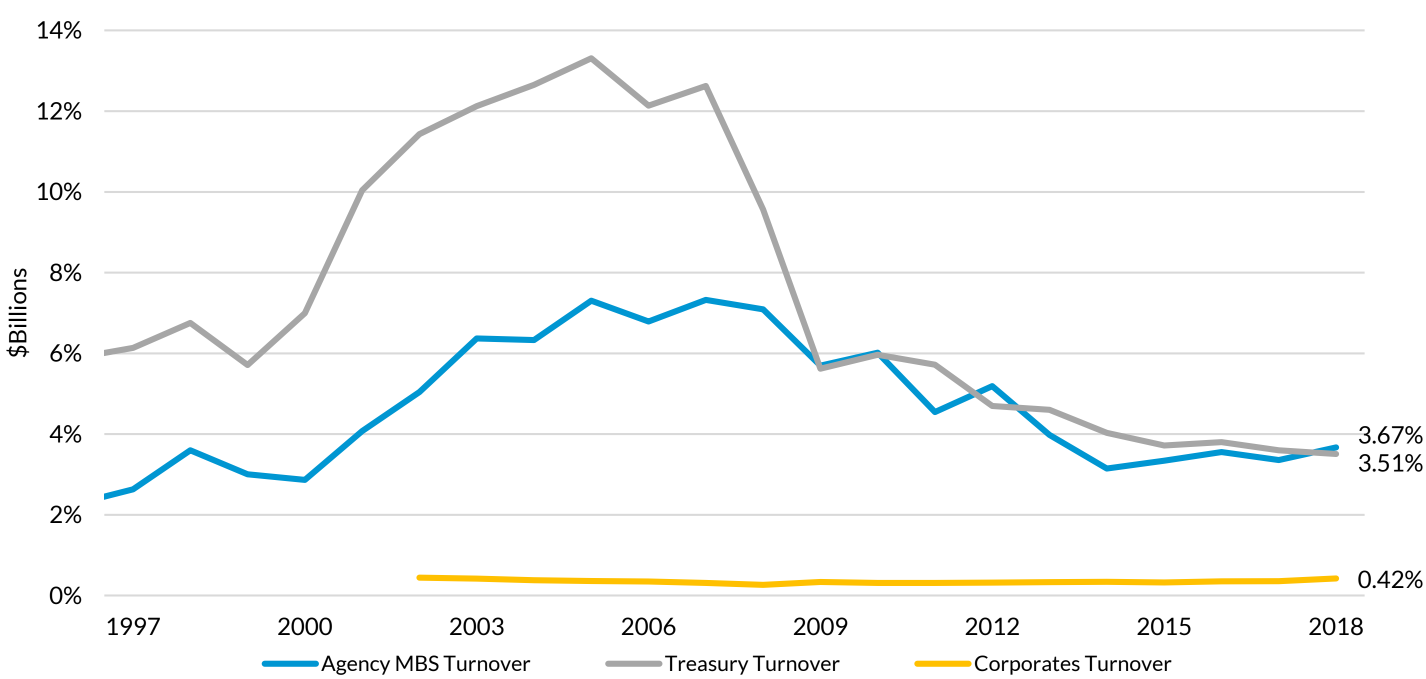
Agency MBS trading volume in January 2018 has been slightly more robust than in the 2014-2017 period. Agency MBS turnover has been higher in 2018 than in 2017; in January 2018, daily MBS turnover was 3.67 percent versus 3.36 percent in 2017. Note that average daily Treasury turnover is also down dramatically 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 January 2018.*

Average Daily Turnover by Sector

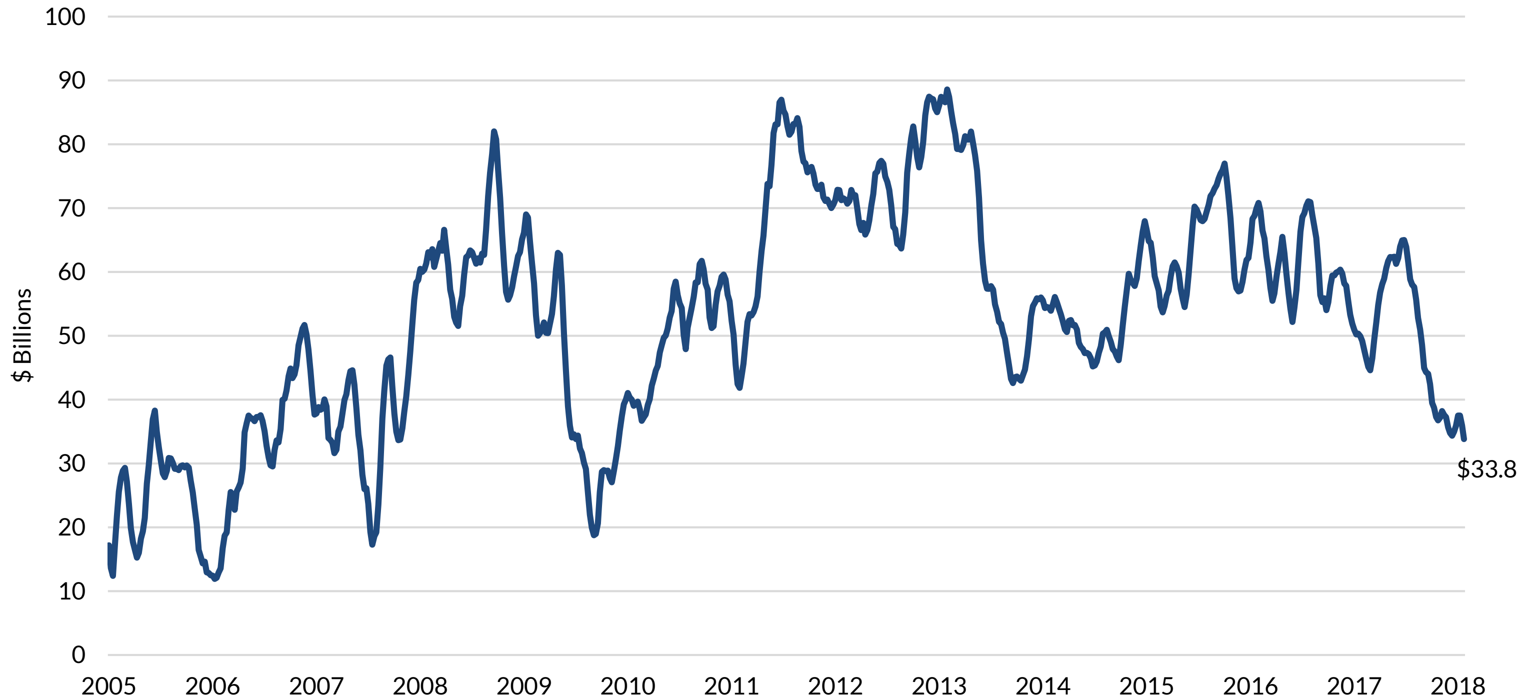


Sources: *SIFMA and Urban Institute.* ***Note:*** *Data as of January 2018.*

Market Conditions

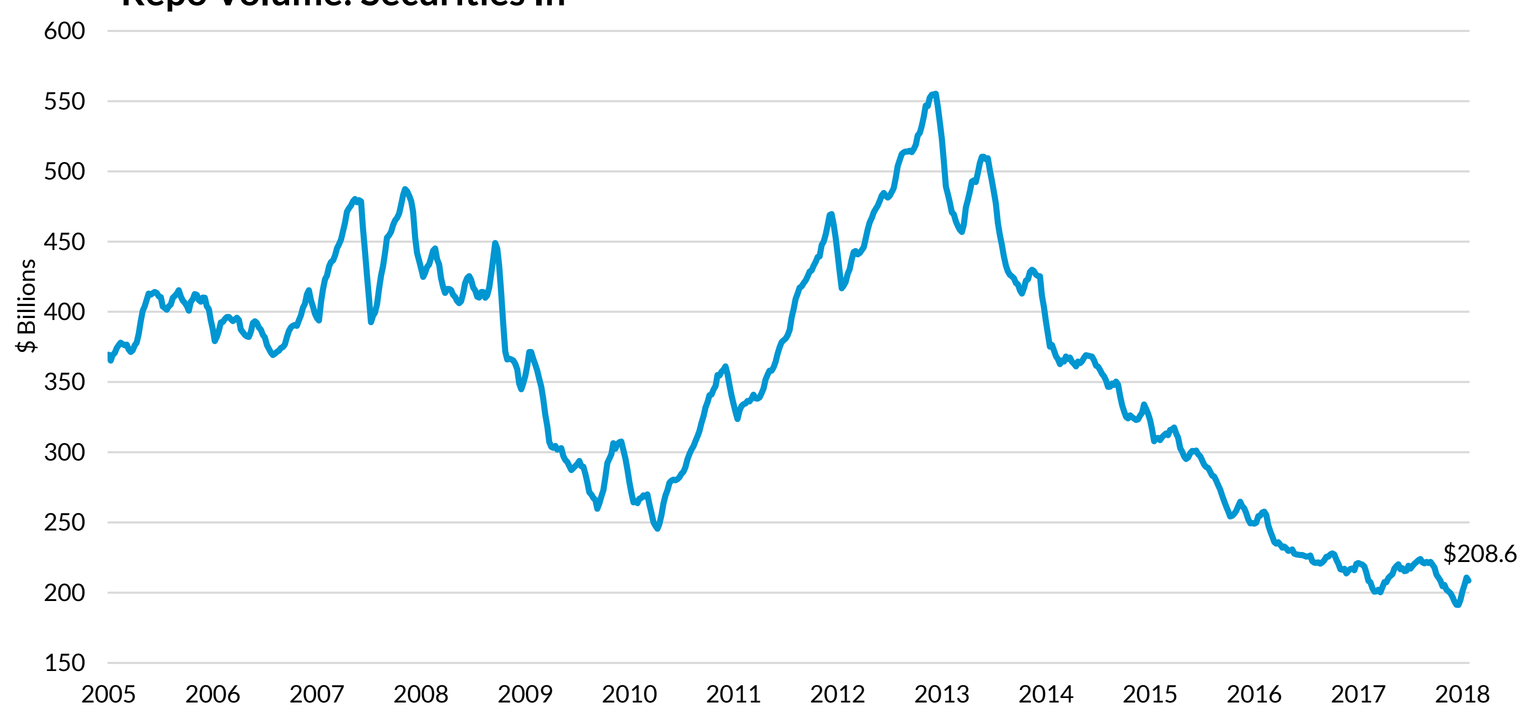
Dealer net positions in Agency MBS are now at the very lower end of the recent range, although gross positions are likely down more. The volume of repurchase activity is down sharply. This reflects banks cutting back on lower margin businesses.

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 January 2018.*

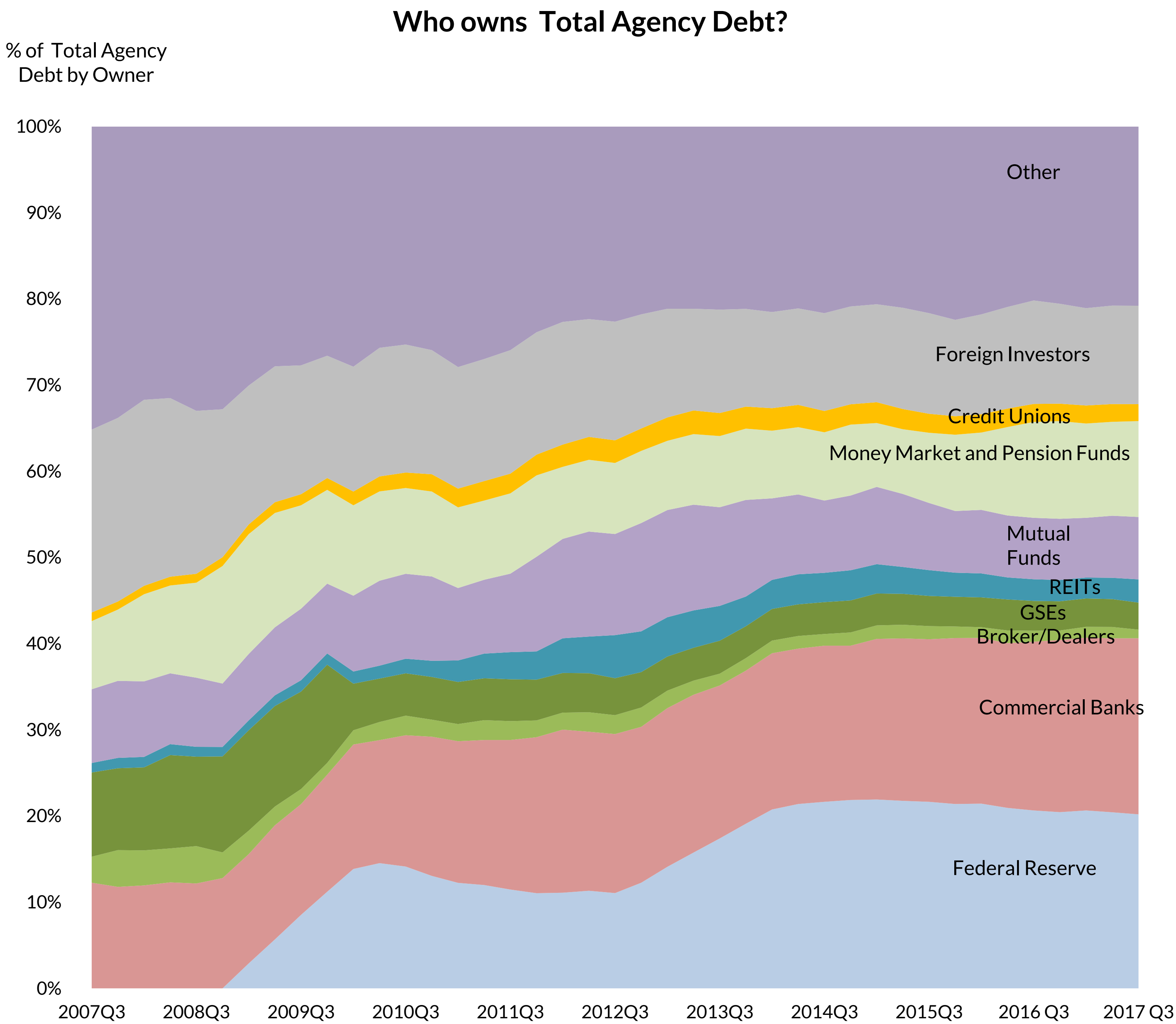
Repo Volume: Securities In



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

MBS Ownership

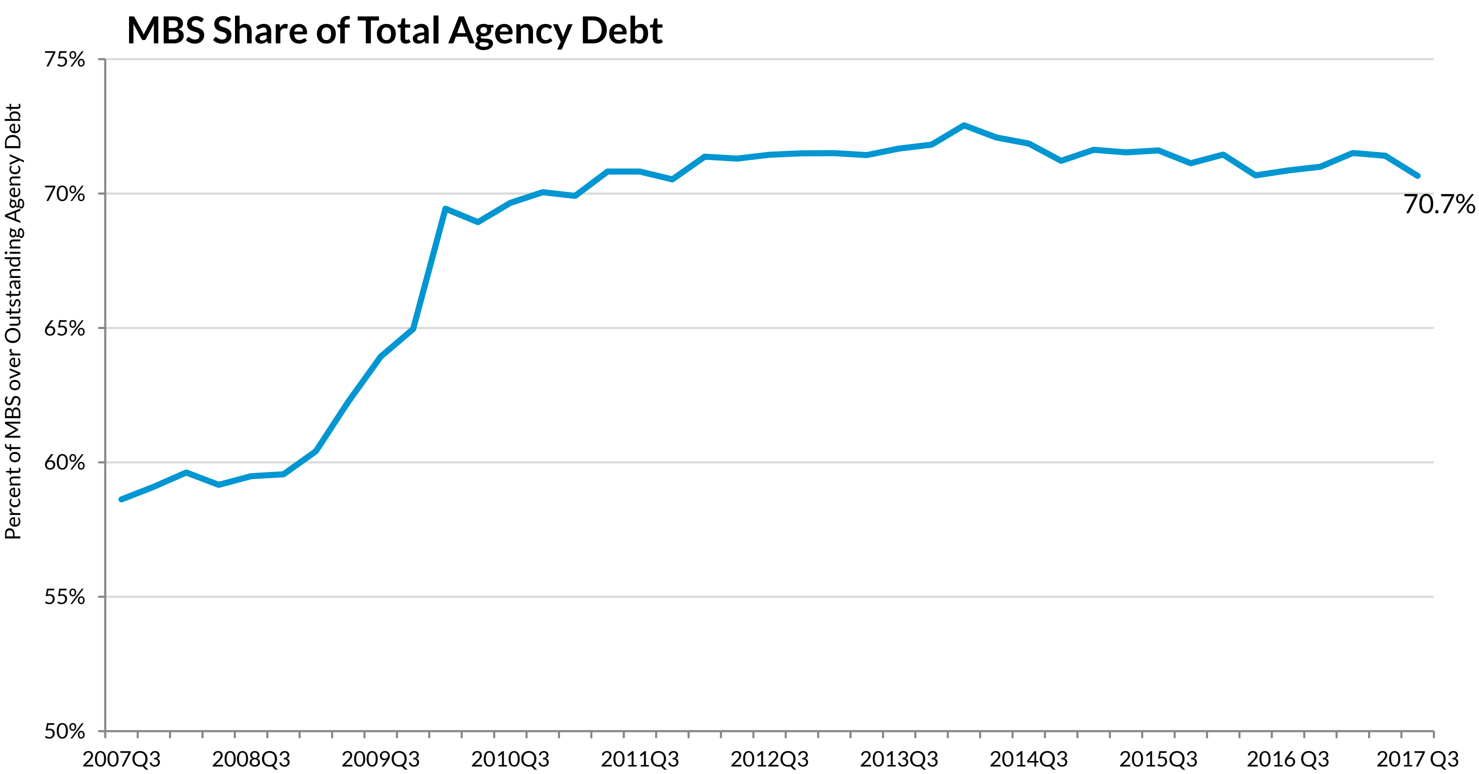
The largest holders of agency debt (Agency MBS + Agency notes and bonds) include the Federal Reserve (20 percent), commercial banks (20 percent) and foreign investors (11 percent). The broker/dealer and GSE shares are a fraction of what they once were.



Sources: *Federal Reserve Flow of Funds and Urban Institute.* **Note**: *Data as of Q3 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 Q3 2017, the MBS share of total agency debt stood at 70.7 percent. Commercial banks are now the largest holders of Agency MBS. Out of their $1.8 trillion in holdings as of the end of January 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 Q3 2017.*

	Commercial Bank Holdings ($Billions)								Week Ending			
	Jan-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Jan 10	Jan 17	Jan 24	Jan 31
Largest Domestic Banks	1226.2	1286.7	1290.8	1299.3	1309.2	1312.7	1318.6	1311.1	1311	1313.3	1303.8	1303.4
Small Domestic Banks	458.1	471.6	474.5	477.2	478.2	477.4	476.4	477.3	475.1	475.9	478.1	475.4
Foreign Related Banks	12.8	12.4	12.8	12.1	12.3	19.4	38.8	19.4	37.3	36.5	37	35.8
Total, Seasonally Adjusted	1697.1	1770.7	1778.1	1788.6	1799.7	1809.5	1833.8	1807.8	1823.4	1825.7	1818.9	1814.6

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

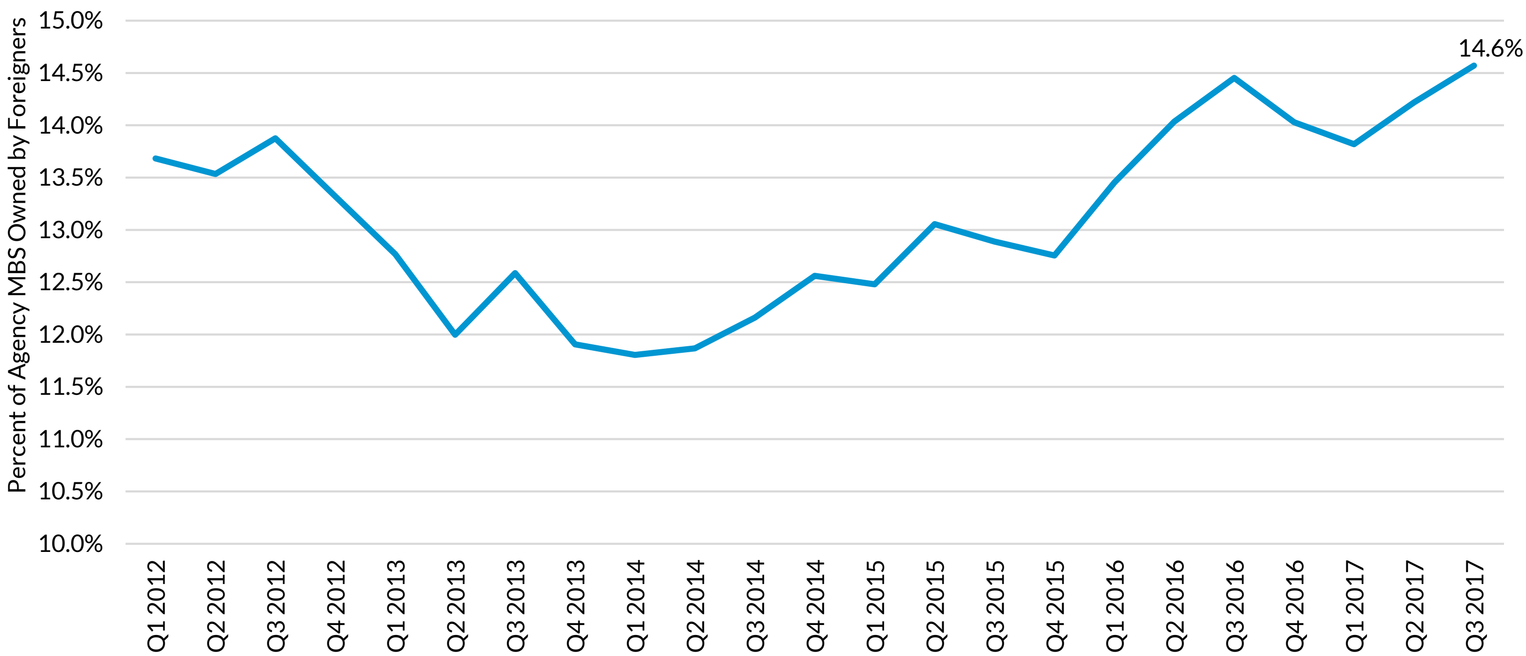
	Top Bank & Thrift Residential MBS Investors	Total ($MM)	GSE PT ($MM)	GNMA PT ($MM)	Agency REMIC ($MM)	Non-Agency ($MM)	Market Share
1	Bank of America Corporation	$323,833	$189,098	$120,870	$13,317	$548	17.60%
2	Wells Fargo & Company	$236,485	$189,928	$35,691	$4,683	$6,184	12.90%
3	JP Morgan Chase & Co.	$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

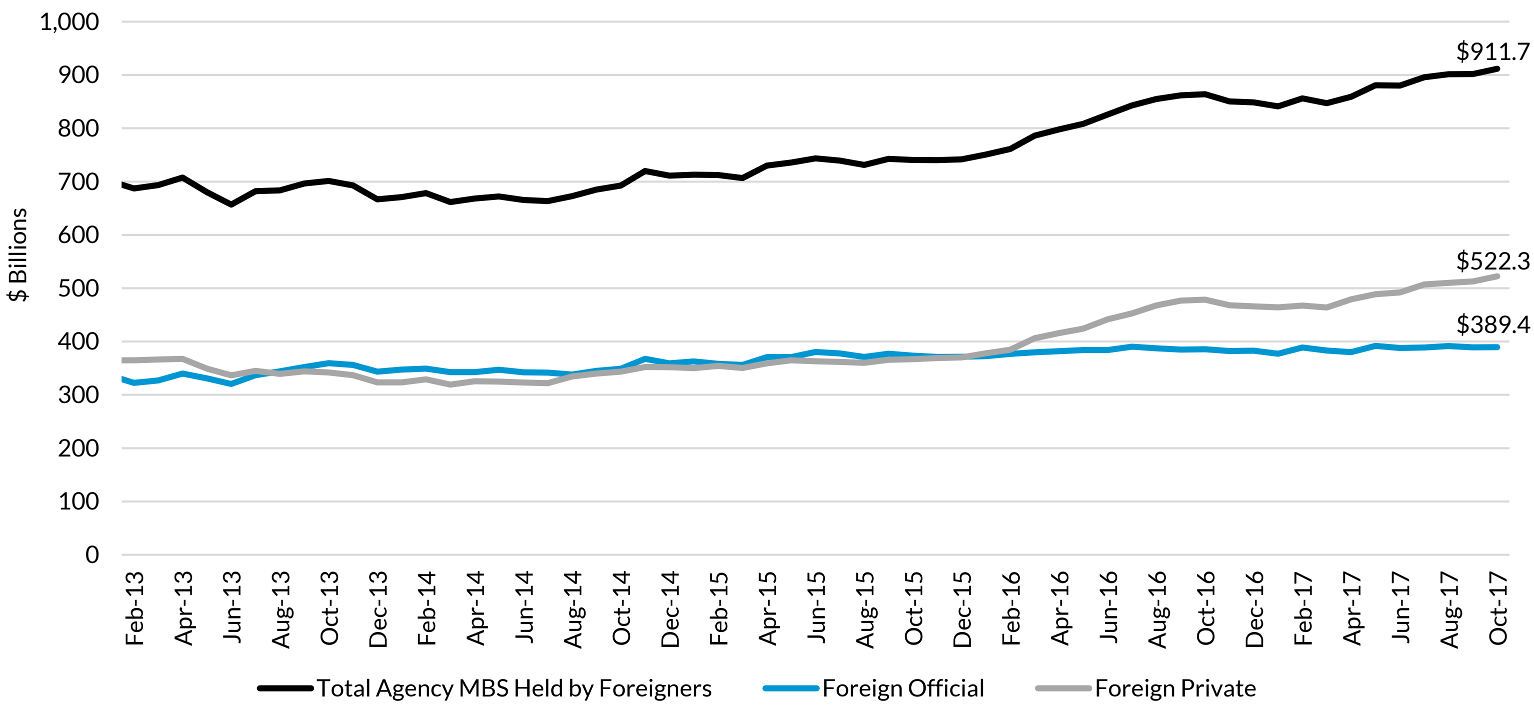
Foreign investors hold 14.6 percent of agency MBS, up from the lows in 2013. For the month of October, this represents $911.7 billion in Agency MBS, $389.4 billion held by foreign official institutions and $522.3 billion held by foreign private investors.

Foreign Share of Agency MBS



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

Monthly Agency MBS Holdings by Foreigners



***Sources**: Treasury International Capital (TIC) and Urban Institute. **Note**: Data as of October 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	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Oct-17
Taiwan	207,164	208,352	204,005	212,707	227,236	229,030	233,069	1,188	-4,347	8,702	14,529	1,794	4,039
China	195,933	191,743	184,151	187,664	183,396	177,580	174,815	-4,190	-7,592	3,513	-4,268	-5,816	-2,765
Japan	197,101	222,116	220,644	214,838	227,721	244,163	245,078	25,015	-1,472	-5,806	12,883	16,442	915
Ireland	47,635	48,307	47,065	46,178	45,353	46,393	47,429	672	-1,242	-887	-825	1,040	1,036
South Korea	50,323	50,072	49,000	44,349	46,577	47,581	48,073	-251	-1,072	-4,651	2,228	1,004	492
Luxembourg	32,164	32,549	35,352	29,014	29,229	29,788	29,985	385	2,803	-6,338	215	559	197
Bermuda	28,402	28,714	27,624	26,960	26,793	27,088	27,422	312	-1,090	-664	-167	295	334
Cayman Islands	31,076	30,686	30,186	29,014	28,763	29,014	29,303	-390	-500	-1,172	-251	251	289
Switzerland	16,240	20,638	15,626	16,244	17,591	18,667	20,121	4,398	-5,012	618	1,347	1,076	1,454
Netherlands	12,459	10,536	10,326	11,018	12,039	12,576	12,266	-1,923	-210	692	1,021	537	-310
Rest of World	148,288	140,716	140,625	126,439	128,428	124,664	127,526	-7,572	-91	-14,186	1,989	-3,764	2,862
Total	954,326	984,429	964,604	944,425	973,126	986,544	995,087	30,103	-19,825	-20,179	28,701	13,418	8,543

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	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Oct-17
Taiwan	206,954	208,142	203,807	212,540	227,077	228,885	232,926	1,188	-4,335	8,734	14,536	1,808	4,041
China	186,993	185,881	178,556	183,103	178,934	173,422	170,683	-1,112	-7,325	4,547	-4,169	-5,512	-2,739
Japan	185,034	213,615	212,661	208,162	221,447	238,602	239,603	28,581	-954	-4,499	13,285	17,155	1,001
Ireland	37,695	39,142	38,405	38,910	38,381	40,054	41,203	1,447	-737	505	-530	1,673	1,149
South Korea	34,173	34,726	34,505	32,126	34,905	36,966	37,636	553	-221	-2,379	2,779	2,061	670
Luxembourg	27,187	28,094	31,198	25,455	25,821	26,689	26,937	907	3,104	-5,744	366	868	248
Bermuda	23,994	24,767	23,888	23,825	23,786	24,351	24,732	773	-879	-63	-39	565	381
Cayman Islands	22,815	22,918	22,851	22,847	22,855	23,637	24,017	103	-67	-3	8	782	379
Switzerland	11,717	16,446	11,596	12,873	14,380	15,755	17,272	4,729	-4,850	1,277	1,507	1,375	1,517
Netherlands	11,471	9,717	9,553	10,383	11,442	12,036	11,731	-1,754	-165	830	1,059	595	-305
Rest of World	83,560	78,246	81,668	76,757	80,909	81,369	84,971	-5,314	3,422	-4,910	4,152	460	3,602
Total	831,593	861,694	848,688	846,981	879,935	901,766	911,711	30,101	-13,006	-1,707	32,954	21,831	9,945

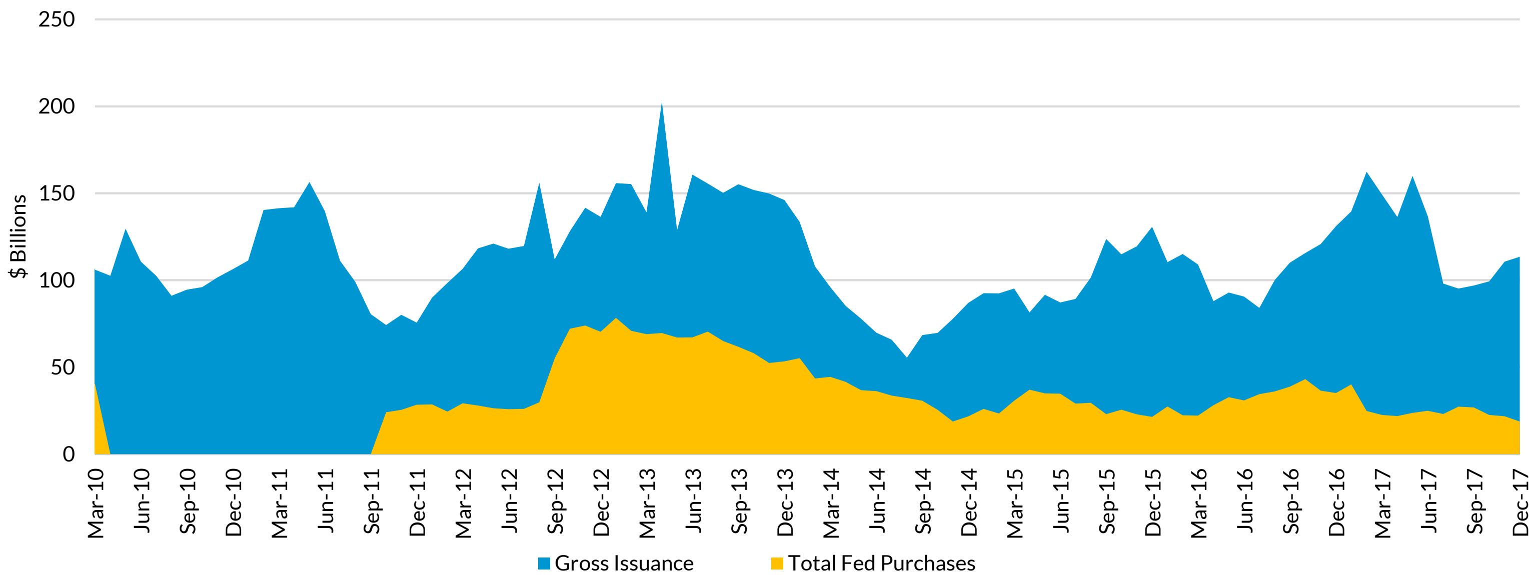
***Sources** :Treasury International Capital (TIC) and Urban Institute.*

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 October 2017.

MBS Ownership

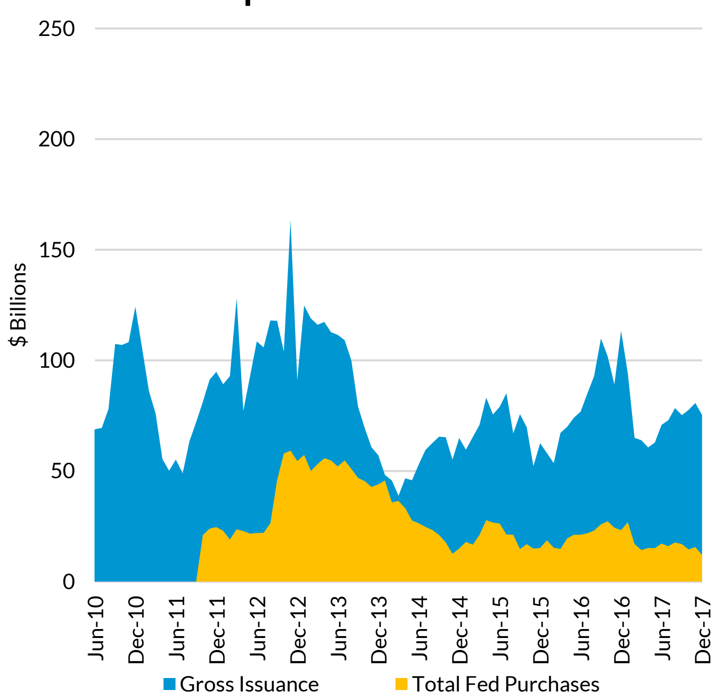
The Fed has begun to wind down their portfolio, and we are beginning to see the effects in slower absorption rates. During the period October 2014-September 2017, the Fed had ended its purchase program, but was reinvesting funds from mortgages and agency debt into the mortgage market, absorbing 20-30 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 December, total Fed purchases decreased to $18.7 billion, yielding a Fed absorption rate of 16.8 percent, the lowest in the past 5 years. The Fed absorbed 18.7 percent of Ginnie Mae issuance and 15.9 percent of GSE issuance, respectively.

Total Fed Absorption



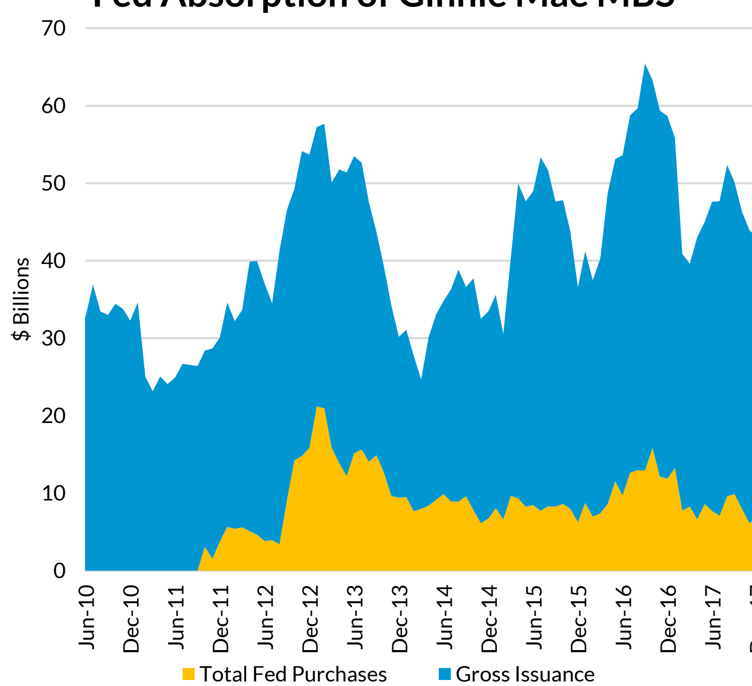
Sources: *eMBS, Federal Reserve Bank of New York and Urban Institute.* ***Note:*** *Data as of December 2017.*

Fed Absorption of GSE MBS



Sources: *eMBS, Federal Reserve Bank of New York and Urban Institute.* ***Note:*** *Data as of December 2017.*

Fed Absorption of Ginnie Mae MBS



Sources: *eMBS, Federal Reserve Bank of New York and Urban Institute.* ***Note:*** *Data as of December 2017.*

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