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 recent decline in average FICO scores

The top chart on page 27 shows that FICO scores for originations in recent months have dropped considerably. The decline has been broad based and has materialized for Ginnie Mae as well as for GSE-backed mortgages. The GSE average FICO has declined from roughly 760 in Oct 2016 (just before rates increased), to about 750 currently. Ginnie average FICO has declined from 686 to 682 over the same period. The bottom two charts on the same page make it clear that this decline has been driven mainly by refinances, as purchase FICOs have registered very little to no reduction.

Looking more granularly at Ginnie Mae-backed mortgages, FICO scores have declined for both bank and nonbank originations. However, nonbank FICOs have declined more. Page 34 shows that the average FICO for Ginnie's nonbank originations has declined 6 points (from 683 to 677) since October 2016, while bank average FICO, after declining by 3 points (from 699 to 696) between October '16 and March '17, has climbed back. A further analysis (not included in this report) of bank and nonbank FICOs by loan purpose confirms that refinance was the driver of the reduction for both bank and nonbank originations.

One possible explanation for the refinance-driven reduction in FICOs is that lenders, in the wake of rising rates, are approving more applications from slightly less creditworthy borrowers than before to maintain volumes amidst a shrinking pool of in-the-money refinance borrowers. If lenders are indeed refinancing an increasing number of marginal borrowers from this pool, the average FICO for those that remain in the pool should decline over time. An analysis of these borrowers conducted by the Urban Institute confirms this hypothesis. The average FICO for still in-the-money pool of borrowers has declined from 716 in Oct 2016 to 705 in May 2017. That is, as the pool of refinanceable mortgages shrinks, lenders are more likely to approve the marginal applicant.

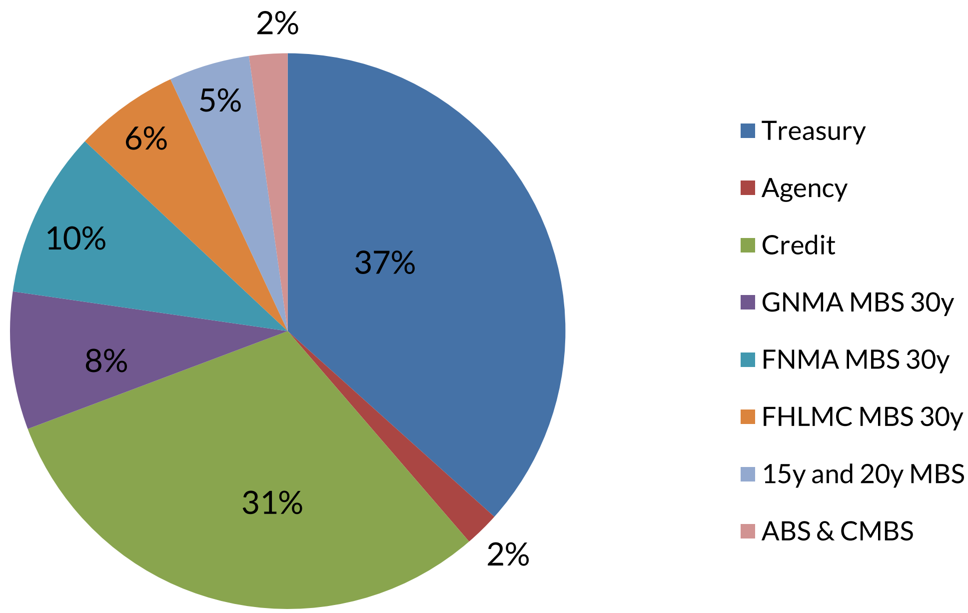
***Highlights this month*:**

- The yield advantage has narrowed between US Treasury notes hedged into other currencies, and the sovereign bonds of those countries. However, US MBS still offers a substantial pick up over Treasuries, explaining the continued attractiveness of these securities (Pages 5-8).
- We have added a new page which allows our users to track agency gross and net issuance on a monthly basis. In April 2017, Ginnie Mae gross issuance reached the highest market share of agency gross issuance since December 2015 (Page 19).
- The non-bank originator share of the Ginnie Mae market edged down to 76 percent in April 2017 after a small uptick in March (Page 30).
- Prepayment speeds went up for all agencies in May 2017, mostly due to the recent decline in rates and a normal seasonal uptick (Pages 35-37).
- In February 2017, China has reversed recent contracting trends and expanded their holdings of agency MBS (Page 46).

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

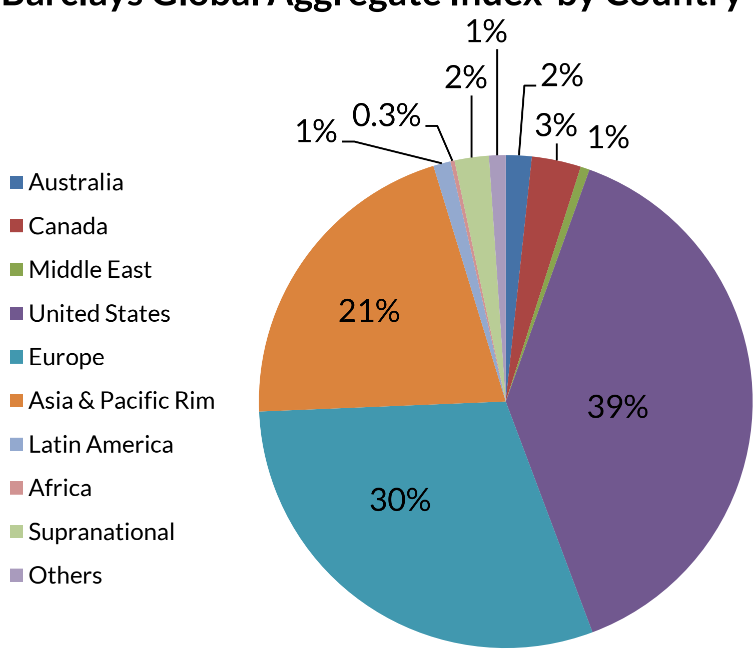
US MBS comprise 29 percent of the Barclays US Aggregate Index-- marginally less than either the US Treasury share (37%) or the US Credit share (31%). Fannie Mae 30-year MBS comprises the largest percent of US MBS (10%), while Ginnie Mae 30-year MBS and Freddie Mac 30-year MBS comprise 8 percent and 6 percent of the market, respectively. Mortgages with terms of 15- and 20- year comprise the balance (5%) 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 12 percent of the global aggregate.

Barclays US Aggregate Index



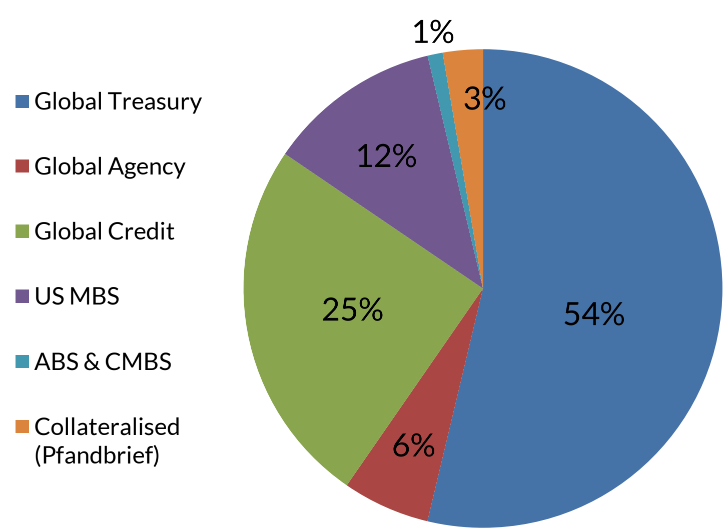
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of March 2017*

Barclays Global Aggregate Index by Country



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

Barclays Global Aggregate Index by Sector

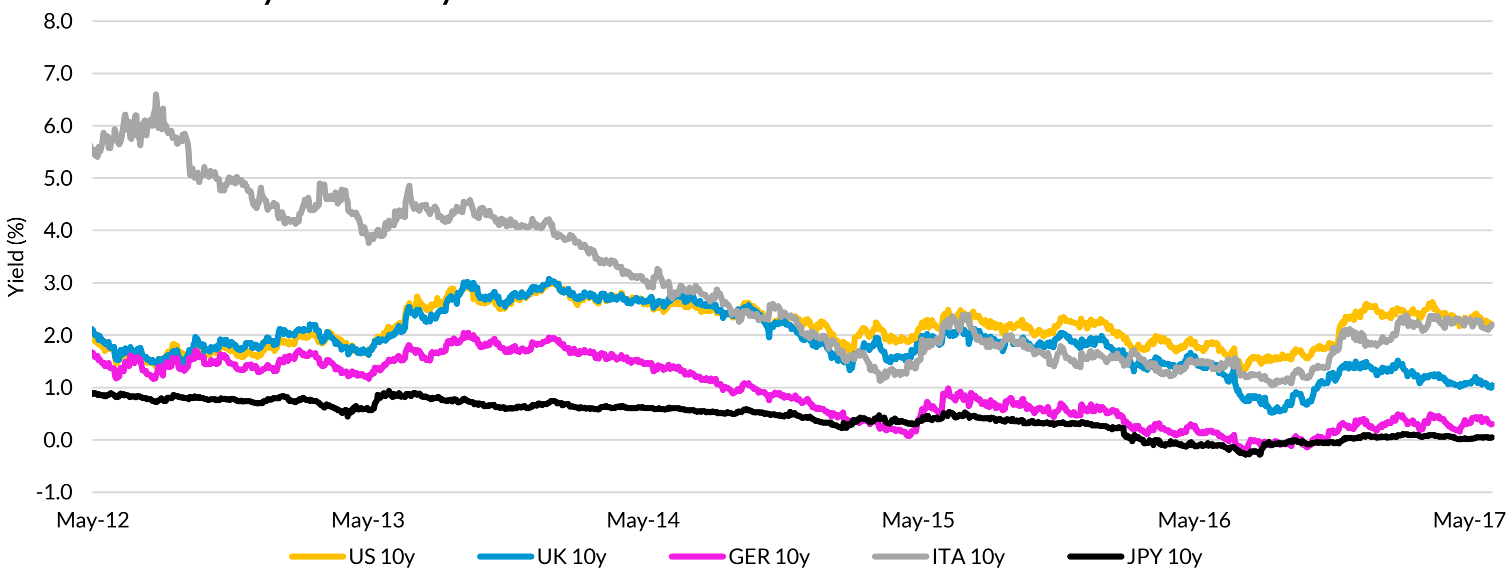


Sources: *Bloomberg and State Street Global Advisors*
Note: *Data as of March 2017*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

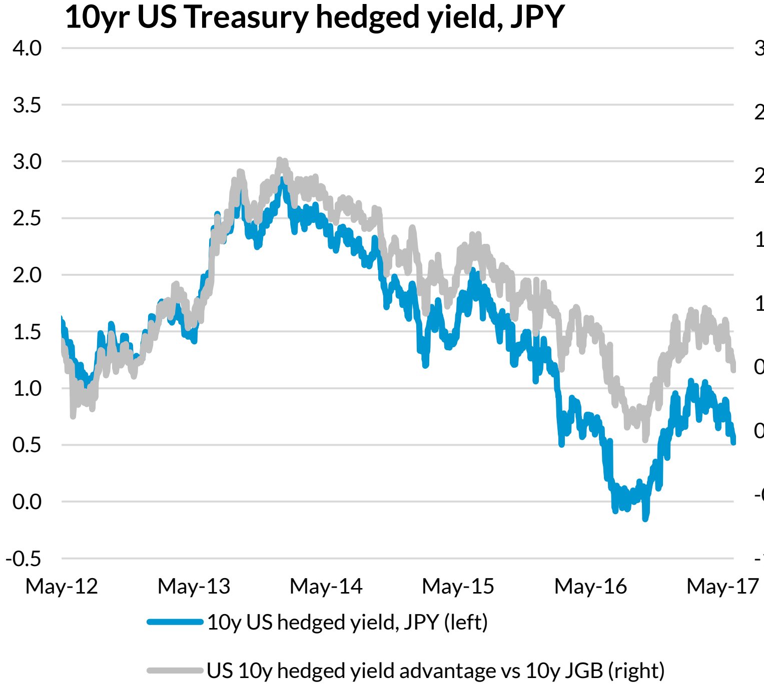
Over the past few years, US Treasury interest rates, as measured by the 10-year note have consistently been the highest in the developed world. But it declined to the level of Italy's 10-year bond yield since April. As of the end of May, both the US 10-year Treasury note and Italy's 10-year bond had the same yield of 2.20 percent, while the yields stood at 1.05 percent for the UK, 0.30 percent for Germany and 0.05 percent for Japan. If the Treasury notes are hedged into foreign currencies, the US yield advantage narrows -- it stands at 47 basis points (bps) this month versus the JGB, and -9 bps versus the 10-year Bund. This month shows a decrease of 27 bps versus the JGB and a decrease of 17 bps versus the Bund.

Global 10-year Treasury Yields



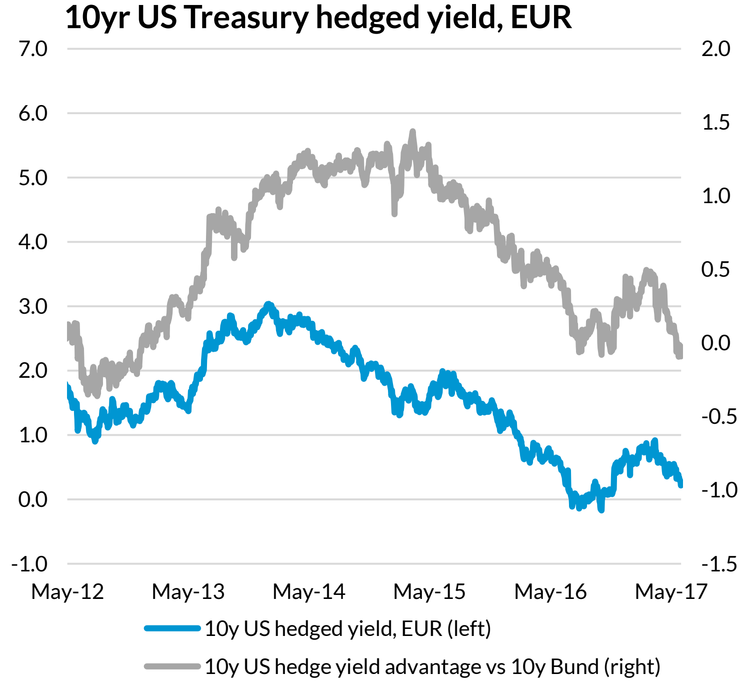
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of May 2017*

10yr US Treasury hedged yield, JPY



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

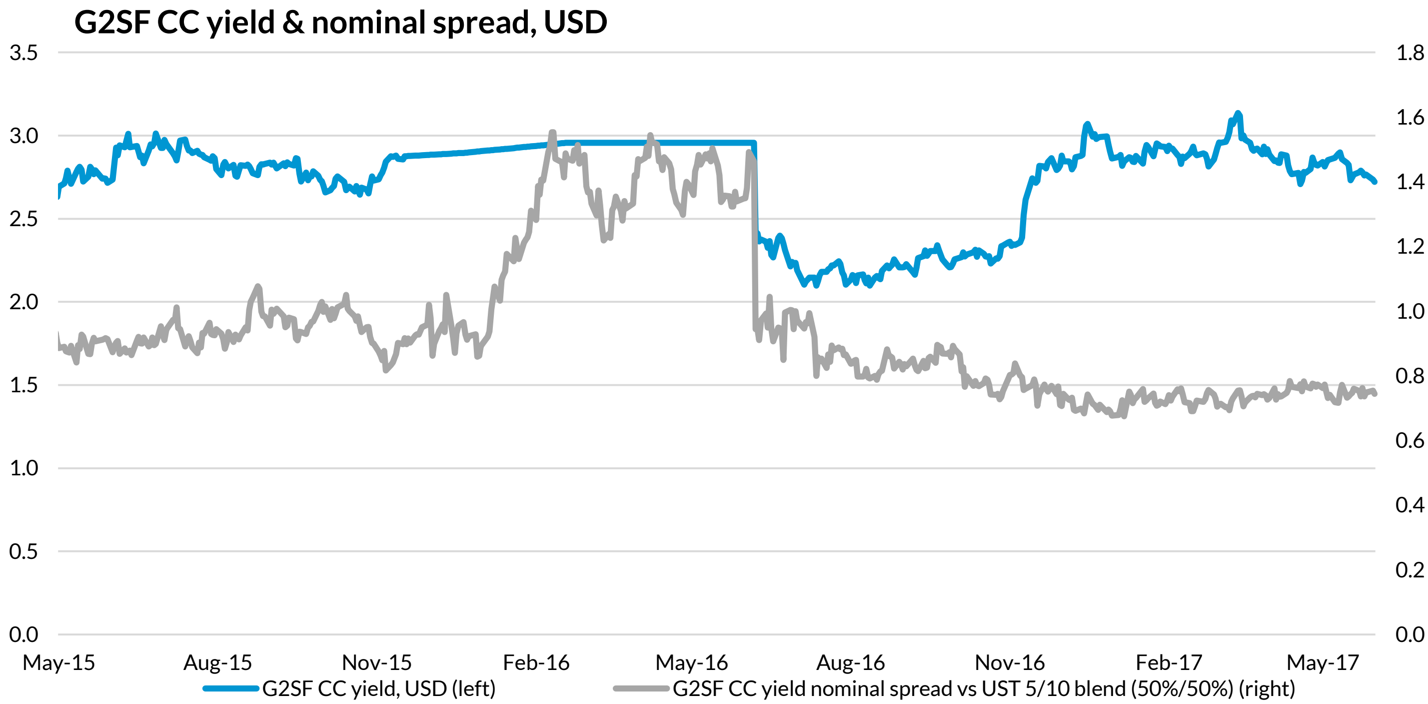
10yr US Treasury hedged yield, EUR



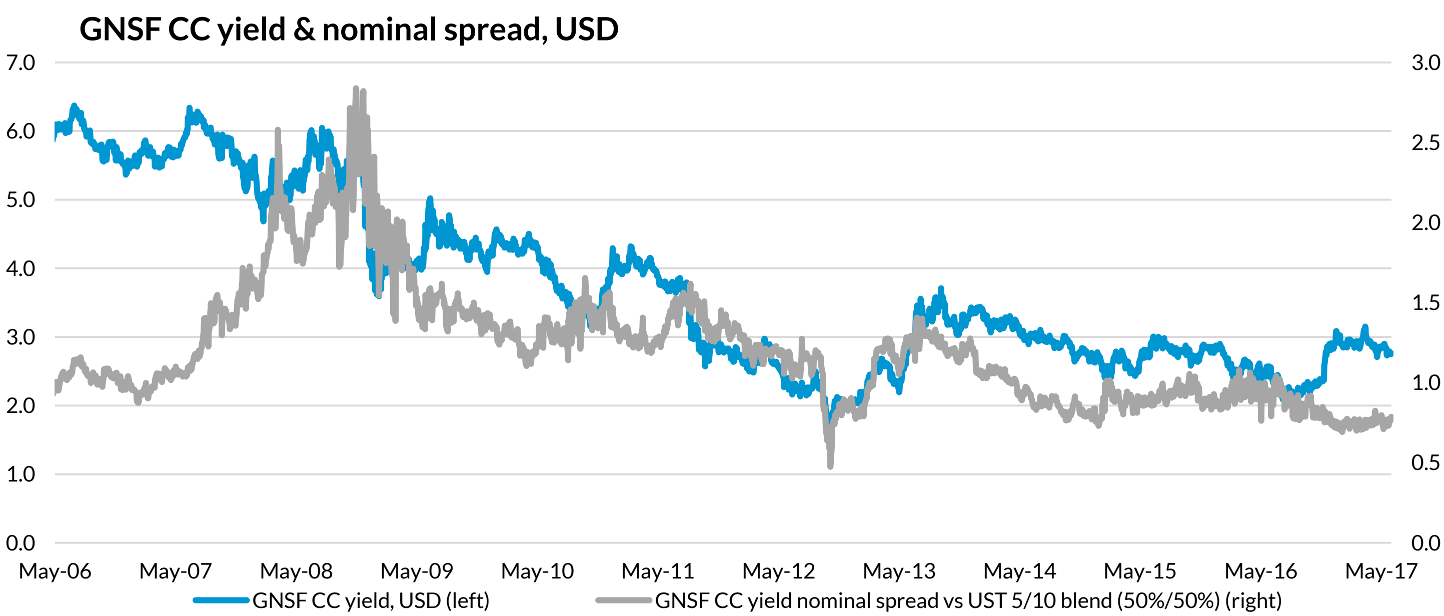
Sources: *Bloomberg and State Street Global Advisors*
Note: *Data as of May 2017*

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

Ginnie securities outyield their Treasury counterparts (as measured by the average of the 5- and 10-year Treasury yields) -- 72 basis points on both G2SF and GNSF.



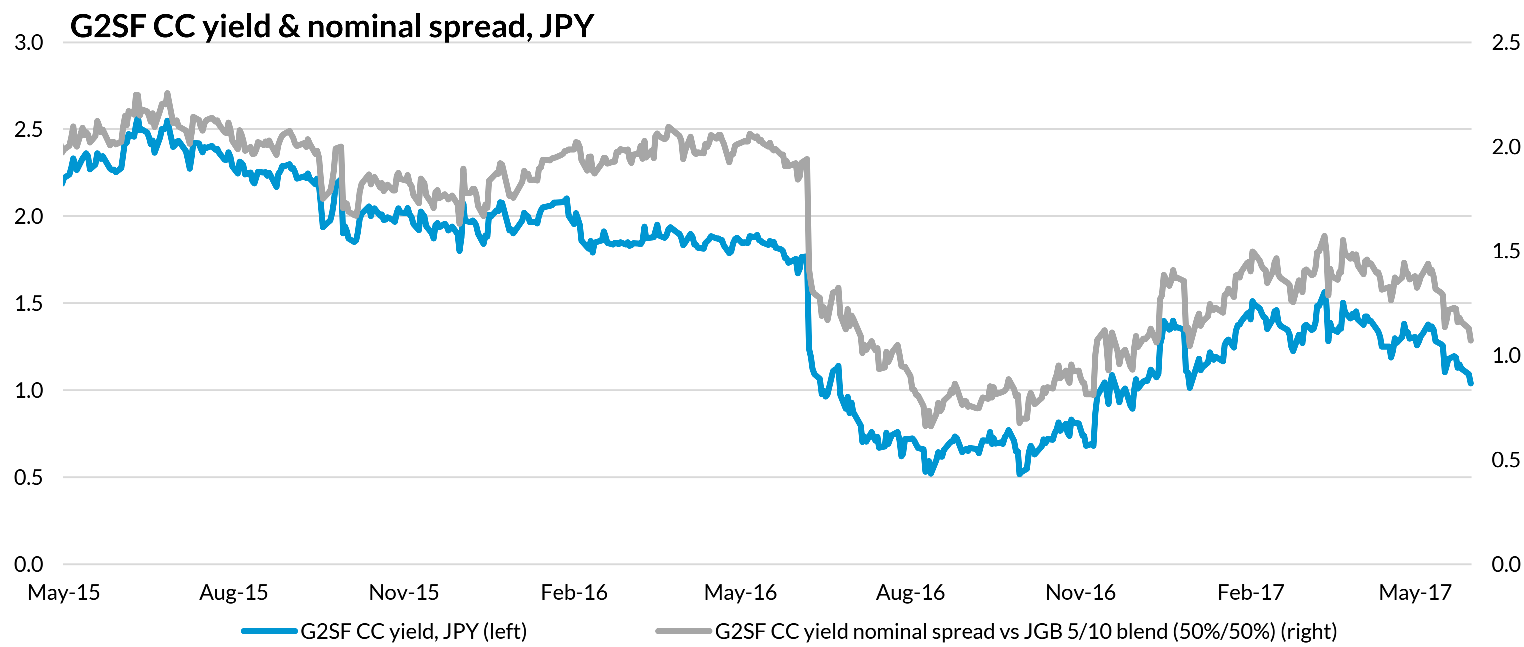
Sources: *Bloomberg and State Street Global Advisors.* ***Note****: Data as of May 2017*



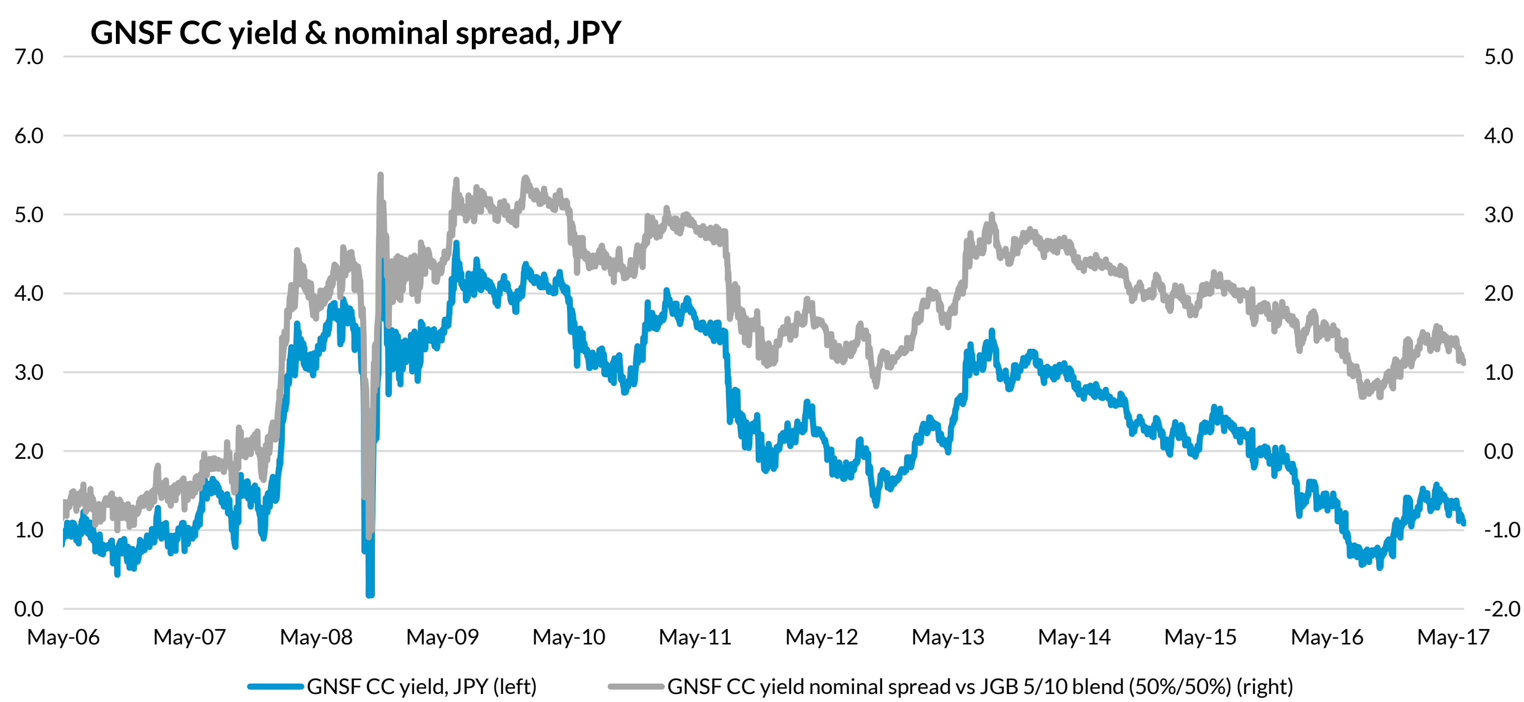
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of May 2017*

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; handily outyielding the sovereign debt of other countries. This figure shows that G2SF and GNSF hedged into Japanese yen yield more than the JGB 5/10 blend by 140 basis points.



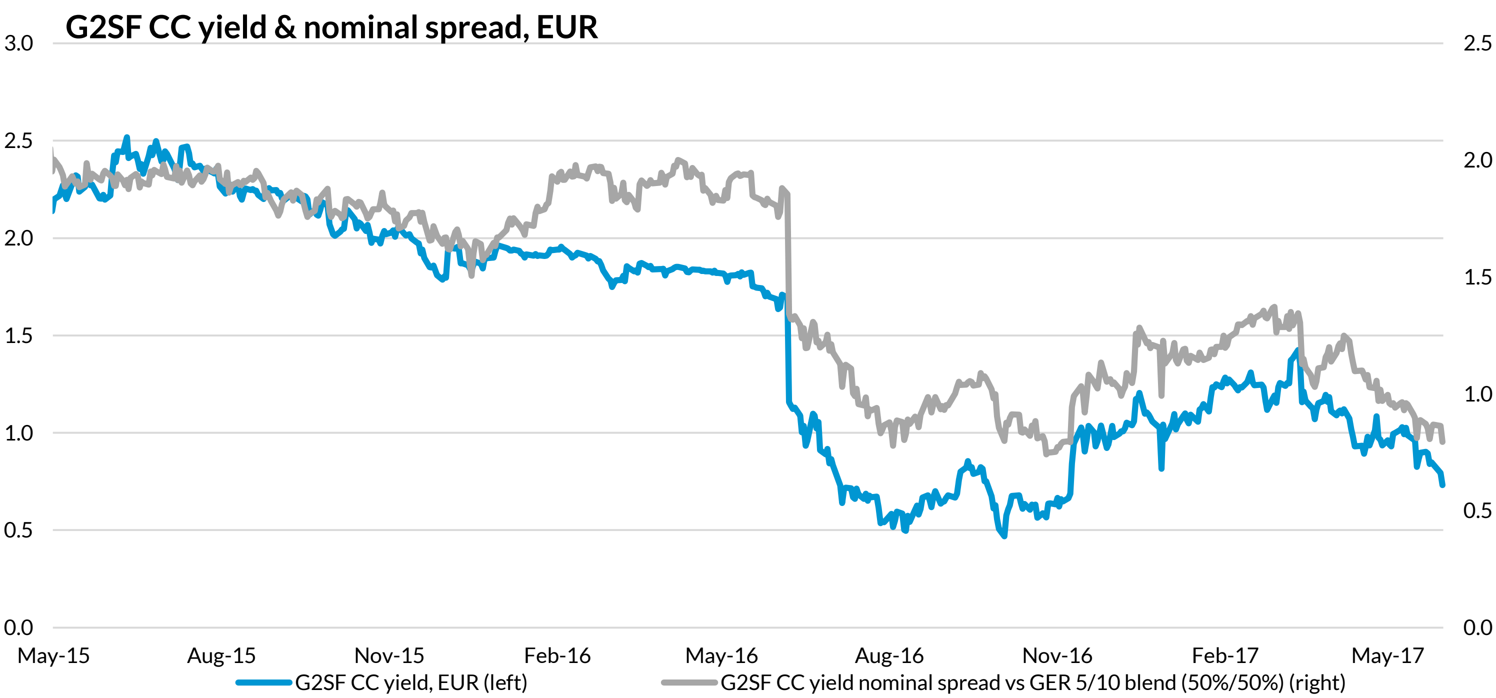
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of May 2017*



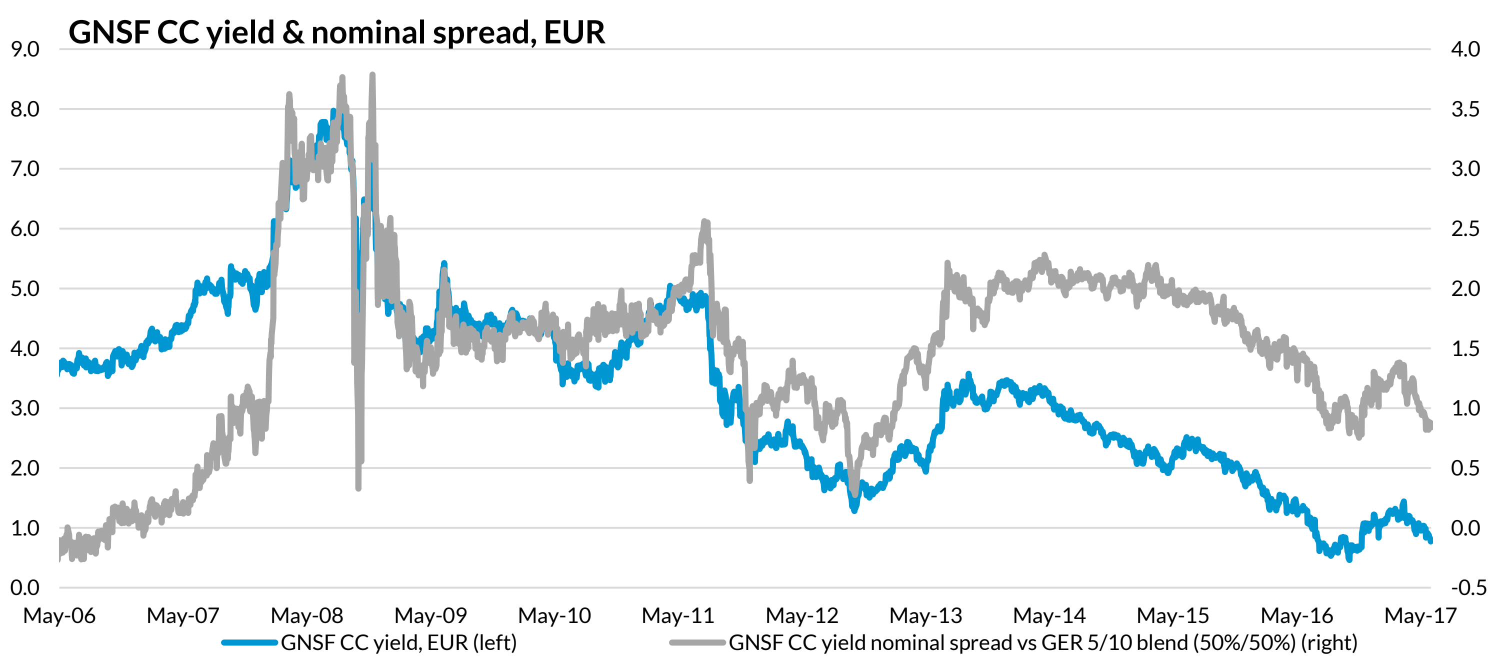
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of May 2017*

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. This figure shows that G2SF and GNSF hedged with euros yield more than the average of the German 5/10 Bund blend by 96 and 97 basis points, respectively.



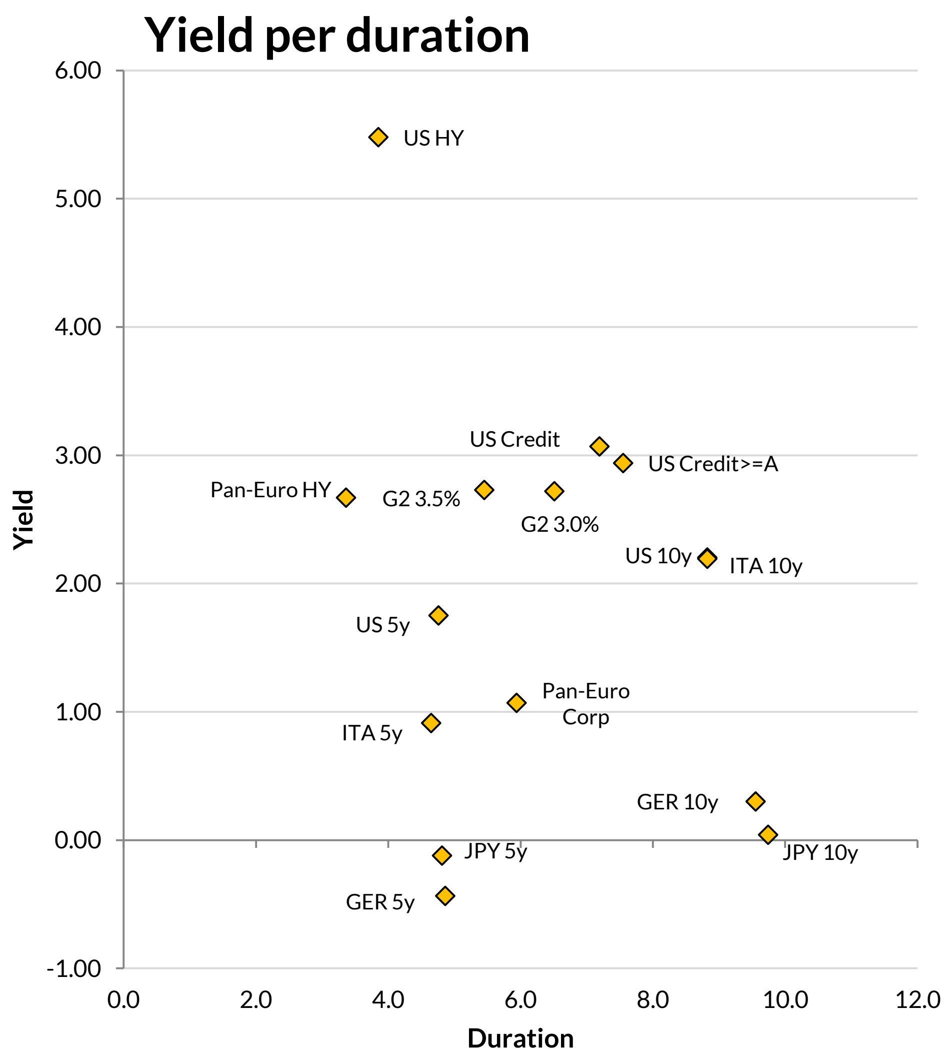
Sources: *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of May 2017*



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

Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

As interest rates have risen, Ginnie Mae durations have extended by more than a year. Even so, US MBS yields are about the same or higher than most securities with the same or shorter durations. The only exception is the 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	4.8	1.75
US 10y	8.8	2.20
GNMA II 3%	6.5	2.72
GNMA II 3.5%	5.5	2.73
JPY 5y	4.8	-0.12
JPY 10y	9.7	0.04
GER 5y	4.9	-0.43
GER 10y	9.6	0.30
ITA 5y	4.6	0.91
ITA 10y	8.8	2.19
US credit	7.2	3.07
US credit >= A	7.6	2.94
US HY	3.9	5.48
Pan-Euro corp	5.9	1.07
Pan-Euro HY	3.4	2.7

***Sources:** Bloomberg and State Street Global Advisors. **Note**: Yields are in base currency of security and unhedged. Data as of May 2017.*

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 duration (interest rate risk). The result: the excess return per unit of risk for the mortgage market is the highest of any market over the past decade.

	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	0.08	0.01	0.36	0.14	1.07	0.58
3 year	0.18	0.17	0.30	0.31	0.40	0.41
5 year	0.15	0.11	0.33	0.41	0.60	0.76
10 year	0.36	0.34	0.48	0.37	0.66	0.72

	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	0.04	-0.03	0.32	0.21	1.03	0.65
3 year	0.16	0.15	0.28	0.35	0.38	0.45
5 year	0.14	0.09	0.32	0.44	0.59	0.78
10 year	0.32	0.30	0.44	0.33	0.62	0.68

	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	0.58	1.16	1.28	1.10	0.93	1.19
3 year	0.49	1.00	1.18	1.15	1.75	1.45
5 year	0.65	0.90	1.20	1.18	1.53	1.38
10 year	0.76	1.22	1.75	1.46	3.08	3.65

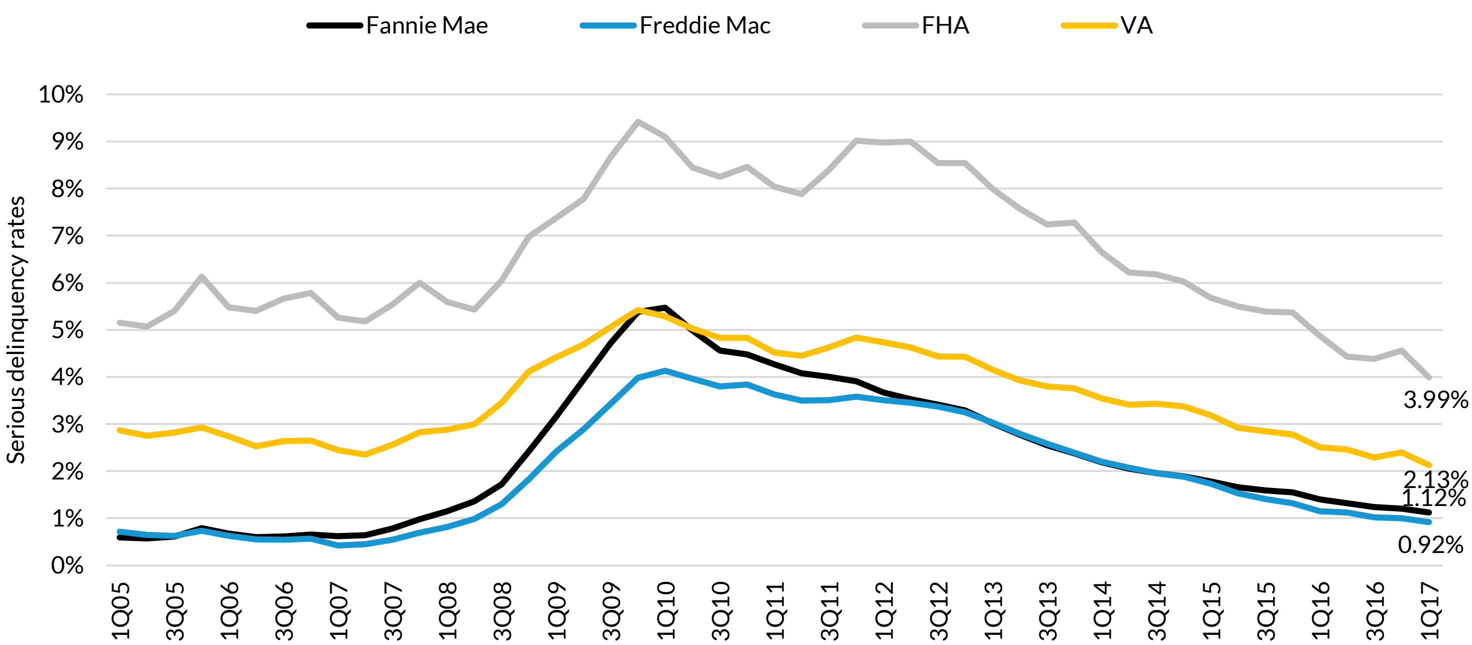
	Sharpe Ratio					
Time Period	US MBS Ginnie Mae	US Treasury	US Credit Corp	Pan Euro Credit Corp	US High Yield	Pan Euro High Yield*
1 year	0.07	-0.03	0.25	0.19	1.11	0.55
3 year	0.33	0.15	0.24	0.31	0.22	0.31
5 year	0.21	0.10	0.27	0.37	0.38	0.57
10 year	0.42	0.25	0.25	0.22	0.20	0.19

**Assumes 2% capitalization max per issuer on high yield indices*
***Sources:** Barclays Indices, Bloomberg and State Street Global Advisors* ***Note:** Data as of May 2017*

State of the US Housing Market

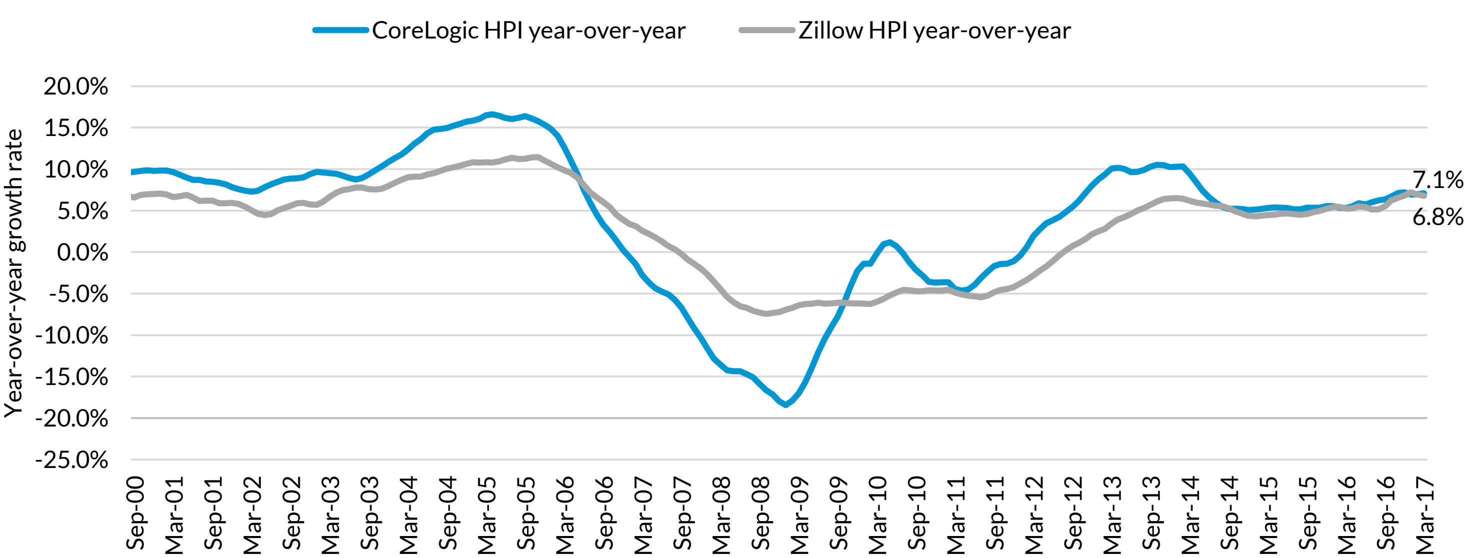
Serious delinquencies for GSE single-family loans continue to decline in Q1 2017. After last quarter's small seasonal upswing, both FHA and VA delinquencies resumed a decline to 3.99 and 2.13 percent in Q1 2017, respectively, falling even lower than levels before last quarter's uptick. GSE delinquencies remain higher 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 at around 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 Q1 2017.*

National Year-Over-Year HPI Growth



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

State of the US Housing Market

Nationally, the housing market has improved by 46.0 percent since the trough, and needs to increase by another 2.9 percent to achieve peak valuation. However, the picture is very different for different states, with many states well in excess of the prior peak, while Nevada is 42.6 percent below peak levels and Connecticut and Florida remain 25 percent or more below peak levels.

	HPI Changes				
State	2000 to Peak	Peak to Trough	Trough to Current	YOY	Current HPI % Below Peak
National	93.7%	-33.4%	46.0%	7.1%	2.9%
Alabama	45.9%	-21.0%	20.8%	6.2%	4.7%
Alaska	69.0%	-9.2%	14.3%	-0.8%	-3.6%
Arizona	121.6%	-50.6%	63.3%	7.3%	24.1%
Arkansas	39.3%	-7.8%	12.5%	4.4%	-3.6%
California	149.1%	-42.6%	67.1%	6.1%	4.2%
Colorado	40.3%	-13.9%	57.8%	8.7%	-26.4%
Connecticut	79.5%	-25.0%	5.4%	0.9%	26.4%
Delaware	90.5%	-24.0%	16.9%	2.4%	12.5%
District of Columbia	150.3%	-10.4%	35.9%	6.0%	-17.9%
Florida	149.2%	-49.7%	58.8%	6.6%	25.3%
Georgia	40.2%	-31.0%	46.4%	5.6%	-1.1%
Hawaii	152.3%	-20.7%	42.8%	6.4%	-11.7%
Idaho	86.0%	-41.1%	62.1%	8.4%	4.7%
Illinois	60.1%	-32.8%	27.4%	6.3%	16.8%
Indiana	24.2%	-16.4%	23.9%	6.0%	-3.4%
Iowa	25.6%	-4.8%	16.0%	3.0%	-9.4%
Kansas	33.1%	-13.9%	19.7%	2.1%	-2.9%
Kentucky	27.0%	-8.9%	16.6%	4.4%	-5.9%
Louisiana	58.3%	-7.8%	20.5%	3.8%	-10.0%
Maine	92.3%	-15.4%	30.8%	1.7%	-9.6%
Maryland	137.8%	-31.3%	16.9%	3.8%	24.4%
Massachusetts	81.8%	-21.4%	33.5%	6.1%	-4.7%
Michigan	26.0%	-43.5%	63.1%	6.9%	8.5%
Minnesota	69.9%	-28.3%	35.4%	5.8%	3.0%
Mississippi	35.7%	-19.0%	14.6%	0.1%	7.8%
Missouri	46.2%	-22.3%	24.7%	5.0%	3.2%
Montana	80.2%	-16.6%	30.8%	4.9%	-8.3%
Nebraska	25.2%	-5.2%	20.7%	4.1%	-12.6%
Nevada	129.0%	-60.1%	75.7%	6.3%	42.6%
New Hampshire	82.9%	-24.0%	26.1%	6.9%	4.4%
New Jersey	109.6%	-26.5%	12.4%	3.1%	21.1%
New Mexico	64.3%	-26.8%	15.9%	1.7%	17.9%
New York	102.4%	-13.7%	31.3%	7.1%	-11.7%
North Carolina	39.4%	-14.7%	24.0%	6.0%	-5.5%
North Dakota	49.3%	-2.0%	47.0%	3.4%	-30.5%
Ohio	22.1%	-20.7%	22.9%	3.6%	2.7%
Oklahoma	35.6%	-3.3%	12.1%	1.1%	-7.7%
Oregon	87.6%	-29.4%	60.1%	9.4%	-11.5%
Pennsylvania	71.6%	-12.8%	11.0%	3.0%	3.3%
Rhode Island	131.0%	-34.6%	26.1%	7.4%	21.4%
South Carolina	61.4%	-22.2%	28.8%	5.7%	-0.2%
South Dakota	37.2%	-3.6%	24.6%	2.7%	-16.7%
Tennessee	41.0%	-13.5%	28.7%	5.5%	-10.2%
Texas	39.2%	-13.2%	43.8%	6.0%	-19.9%
Utah	64.8%	-31.9%	55.9%	9.9%	-5.9%
Vermont	80.8%	-9.0%	9.1%	6.0%	0.8%
Virginia	135.4%	-30.7%	26.8%	2.5%	13.9%
Washington	90.2%	-28.3%	59.3%	12.8%	-12.5%
West Virginia	78.4%	-30.2%	15.7%	-1.2%	23.8%
Wisconsin	48.7%	-17.4%	20.1%	5.7%	0.8%
Wyoming	75.8%	-15.4%	26.1%	2.0%	-6.3%

Sources: *CoreLogic and Urban Institute.* ***Note:*** *HPI data as of March 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 03/2017, the latest HPI data period.*

State of the US Housing Market

Ginnie Mae loans constitute 32.9 percent of outstanding agency issuance by loan balance, 33.2 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 18.3 percent in the District of Columbia and as high as 53.4 percent in Mississippi. In general, the Ginnie Mae share is higher in states with lower home prices.

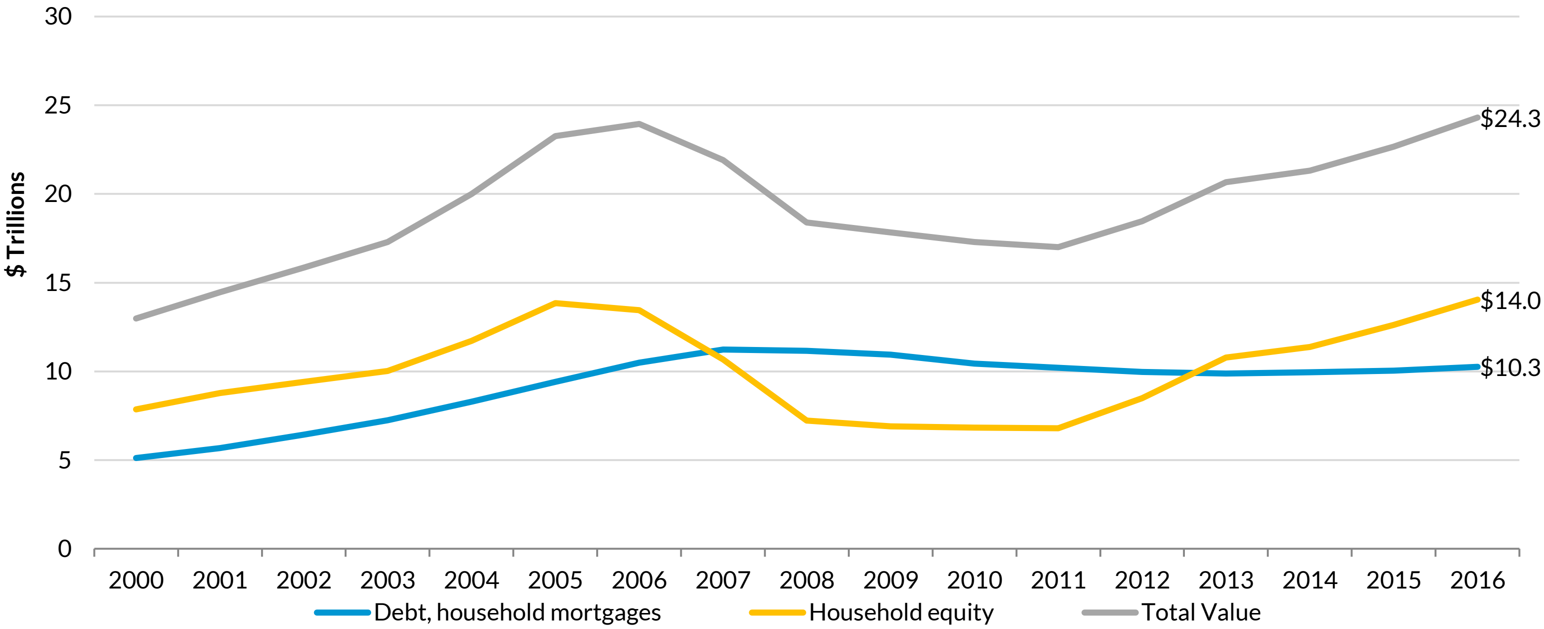
State	Agency Issuance (past 1 year)			Agency Outstanding		
	Ginnie Mae Share	Ginnie Mae Average Loan Size (Thousands)	GSE Average Loan Size (Thousands)	Ginnie Mae Share	Ginnie Mae Average Loan Size (Thousands)	GSE Average Loan Size (Thousands)
National	33.2%	211.0	230.4	32.9%	173.3	204.8
Alabama	46.2%	159.1	180.6	48.1%	139.5	166.3
Alaska	53.1%	279.9	244.8	52.4%	251.6	225.1
Arizona	38.1%	200.8	206.6	35.7%	170.1	186.5
Arkansas	43.1%	139.9	166.3	47.9%	120.3	150.4
California	26.8%	335.5	322.1	22.5%	274.5	287.4
Colorado	32.1%	261.1	255.8	31.7%	216.6	229.5
Connecticut	30.8%	214.4	229.0	30.0%	202.4	217.1
Delaware	40.3%	213.4	220.9	37.9%	196.4	205.6
District of Columbia	17.9%	408.0	361.6	18.3%	316.5	329.1
Florida	39.9%	199.1	198.8	37.2%	165.9	180.7
Georgia	41.5%	177.0	205.4	41.5%	150.2	182.6
Hawaii	41.0%	485.7	373.6	31.7%	405.2	340.3
Idaho	35.6%	183.8	188.7	36.0%	156.7	170.5
Illinois	24.3%	175.6	202.4	25.5%	152.6	181.6
Indiana	39.4%	137.4	156.9	40.5%	119.4	139.3
Iowa	24.2%	141.8	164.9	27.9%	122.7	146.2
Kansas	34.4%	149.9	174.7	37.9%	130.1	154.2
Kentucky	40.3%	146.2	166.3	40.8%	131.0	147.6
Louisiana	41.9%	168.3	190.3	44.6%	148.1	174.9
Maine	35.7%	179.9	196.2	33.1%	164.0	178.1
Maryland	44.6%	282.8	268.2	40.1%	247.9	244.7
Massachusetts	21.1%	276.6	277.7	19.8%	247.2	251.6
Michigan	26.4%	141.6	169.1	27.7%	120.6	148.8
Minnesota	25.3%	189.7	205.4	26.5%	165.7	186.8
Mississippi	49.1%	147.8	169.3	53.4%	129.3	155.7
Missouri	34.5%	148.4	174.4	37.3%	130.2	153.6
Montana	31.5%	206.5	207.5	32.7%	177.8	187.3
Nebraska	31.9%	156.4	168.5	37.1%	131.8	150.3
Nevada	44.3%	221.1	213.6	42.0%	188.2	191.7
New Hampshire	32.6%	223.3	219.3	30.7%	204.9	198.6
New Jersey	29.1%	248.7	268.5	28.6%	230.9	246.7
New Mexico	45.1%	175.0	185.1	44.7%	154.0	170.9
New York	26.7%	237.8	263.6	27.2%	200.8	239.1
North Carolina	35.1%	175.3	200.8	37.0%	151.6	181.7
North Dakota	27.2%	206.8	204.2	27.5%	175.5	181.9
Ohio	36.8%	138.0	157.4	38.8%	123.4	142.2
Oklahoma	46.3%	149.6	169.1	51.3%	128.7	154.6
Oregon	27.5%	235.1	244.4	26.5%	202.0	214.7
Pennsylvania	34.5%	167.0	194.2	34.6%	150.3	178.7
Rhode Island	36.6%	213.3	215.9	34.2%	196.1	200.5
South Carolina	40.3%	177.7	191.1	39.7%	154.3	174.6
South Dakota	35.2%	171.0	181.5	37.9%	151.2	161.1
Tennessee	42.0%	171.7	193.7	44.3%	145.7	174.0
Texas	35.9%	186.1	208.7	40.0%	147.0	186.6
Utah	32.0%	220.8	235.1	33.8%	194.1	212.0
Vermont	23.5%	194.8	195.4	19.9%	179.6	180.7
Virginia	45.6%	278.4	266.5	42.2%	239.1	241.9
Washington	32.0%	263.6	266.8	31.5%	224.2	236.2
West Virginia	47.8%	154.1	155.6	46.1%	136.8	145.7
Wisconsin	21.1%	160.9	175.7	22.1%	144.2	158.7
Wyoming	40.6%	206.8	207.9	42.4%	190.4	192.7

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

State of the US Housing Market

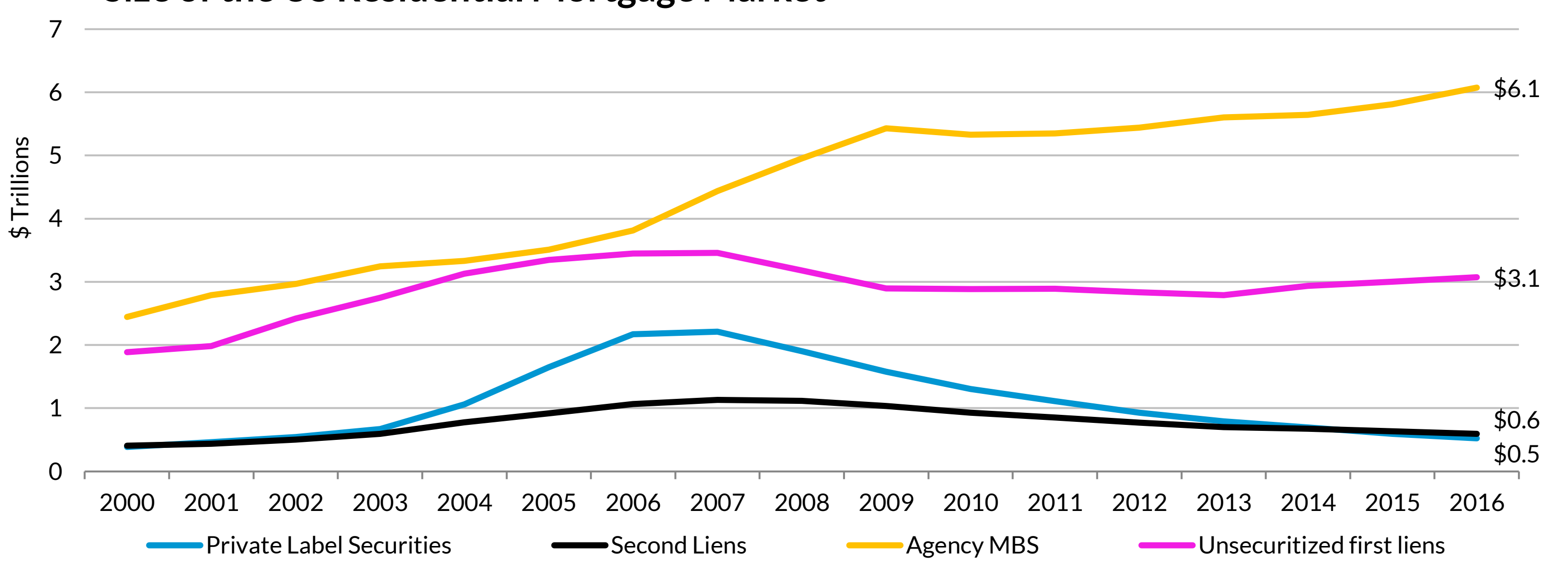
The Federal Reserve's Flow of Funds report has consistently indicated an increasing total value of the housing market driven by growing household equity since 2012, and 2016 was no different. While total debt and mortgages was stable at $10.3 trillion, household equity reached a new high of $14.0 trillion, bringing the total value of the housing market to $24.3 trillion, surpassing the pre-crisis peak of $23.9 trillion in 2006. Agency MBS make up 59.2 percent of the total mortgage market, private-label securities make up 5.1 percent, and unsecuritized first liens at the GSEs, commercial banks, savings institutions, and credit unions make up 29.9 percent of the market. Second liens comprise the remaining 5.8 percent of the total.

Value of the US Housing Market



Sources: *Federal Reserve Flow of Funds and Urban Institute. Data as of Q4 2016.*

Size of the US Residential Mortgage Market

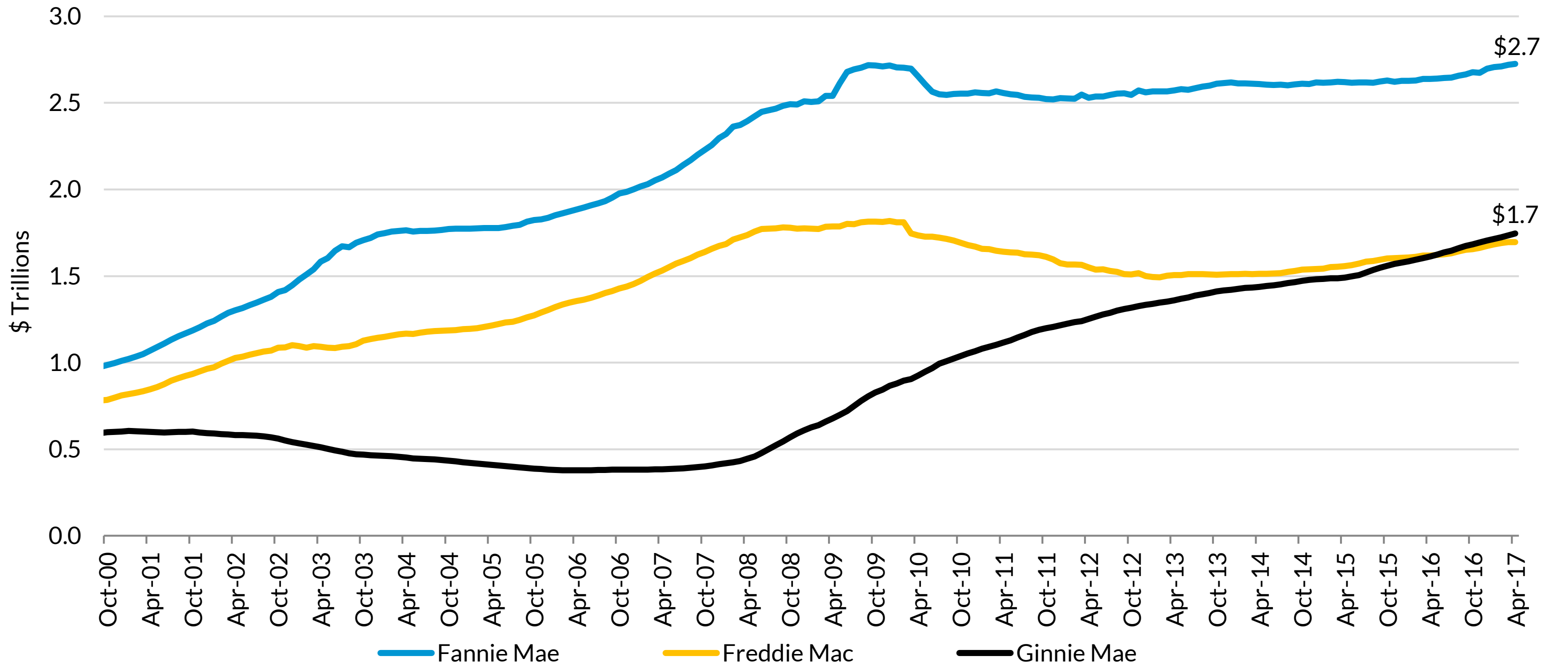


Sources: *Federal Reserve Flow of Funds, Inside Mortgage Finance, Fannie Mae, Freddie Mac, eMBS and Urban Institute.*
Note: *Unsecuritized first liens includes loans held by commercial banks, GSEs, savings institutions, and credit unions. Data as of Q4 2016.*

State of the US Housing Market

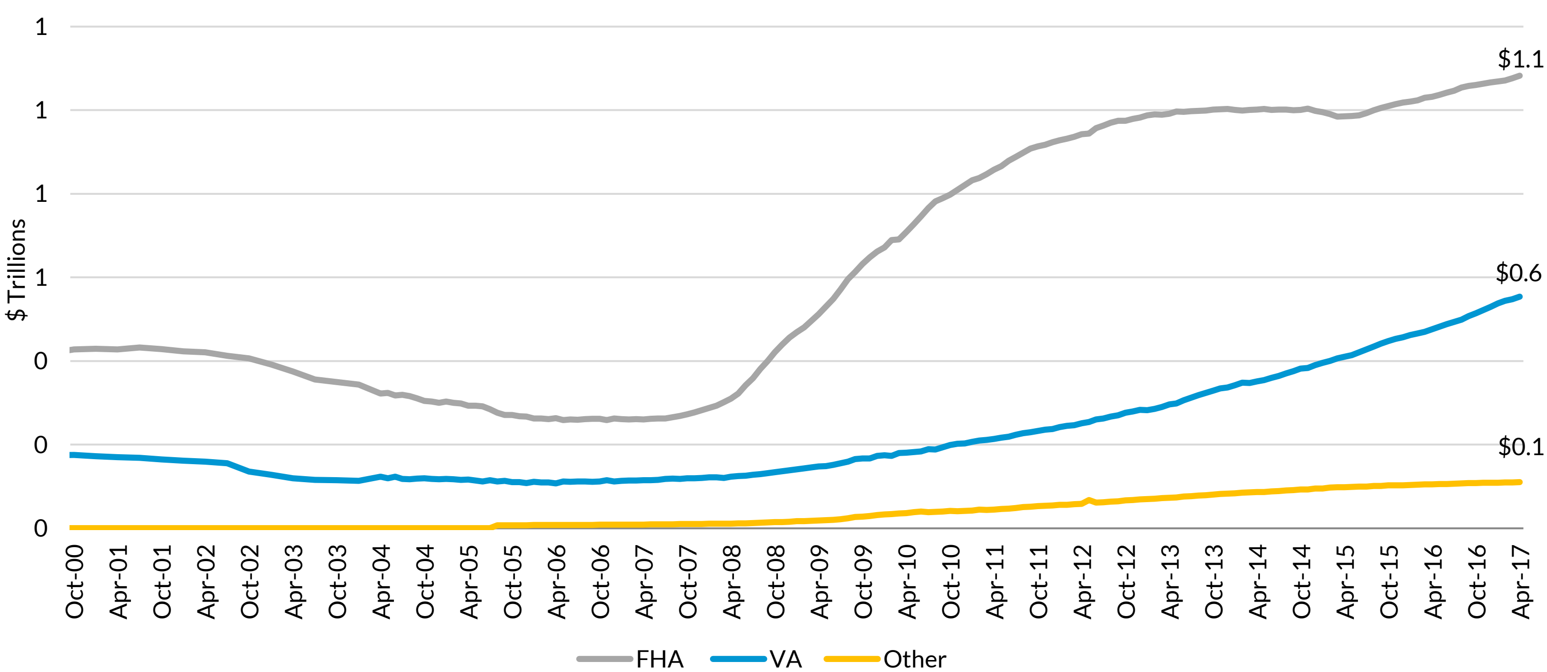
As of March 2017, outstanding securities in the agency mortgage market (forward mortgages only) totaled $6.2 trillion: 44.2 percent Fannie Mae, 27.5 percent Freddie Mac, and 28.3 percent Ginnie Mae. Ginnie Mae now has more outstandings than Freddie Mac. Within the Ginnie Mae market, VA has been growing very rapidly--comprising 31.7 percent of total Ginnie Mae outstandings.

Outstanding Agency Mortgage-Backed Securities



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

Outstanding Ginnie Mae Mortgage-Backed Securities

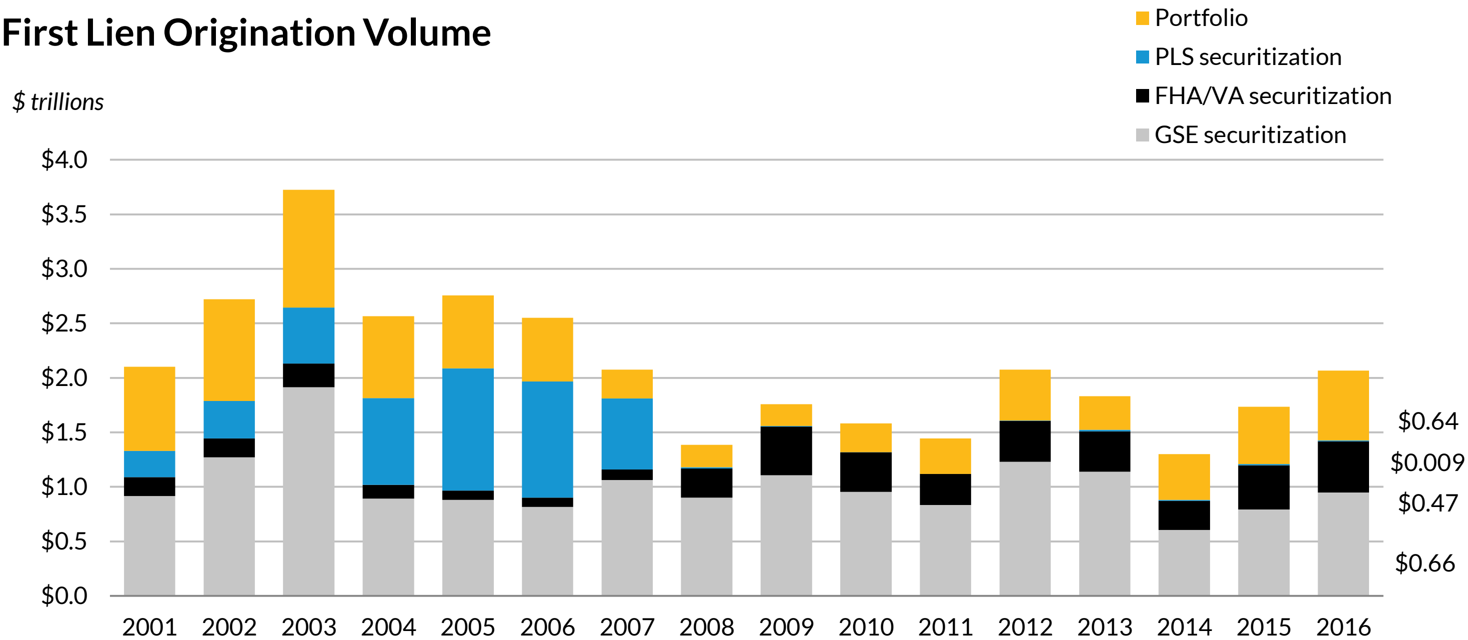


Sources: *eMBS and Urban Institute.* **Note:** *Data as of March 2017*

State of the US Housing Market

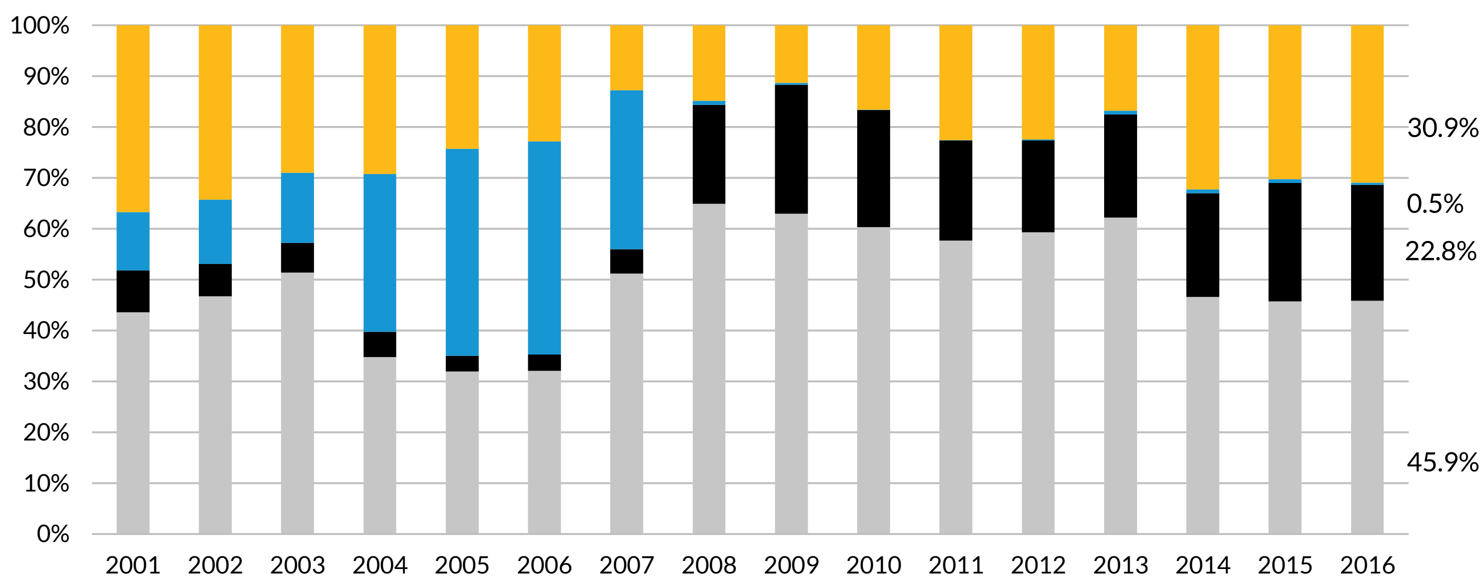
First lien originations in 2016 totaled approximately $2.1 trillion, the most robust origination year since 2012. The share of portfolio originations was 30.9 percent, up from 30.2 percent in 2015. The GSE share went up to 45.9 percent, from 45.7 percent in 2015. The FHA/VA share was slightly down: 22.8 percent in 2016 versus 23.3 percent in 2015. Origination of private-label securities was well under 1 percent in both years.

First Lien Origination Volume



Sources: *Inside Mortgage Finance and Urban Institute.* **Note:** *Data as of Q4 2016.*

First Lien Origination Share



Sources: *Inside Mortgage Finance and Urban Institute.* **Note:** *Data as of Q4 2016.*

US Agency Market, Originations

Agency gross issuance totaled $426.9 billion in the first four months of 2017, a 10.9 percent increase from the same period last year. Ginnie Mae gross issuance is up by 5.5 percent, while GSE gross issuance is up by 13.9 percent. Within the Ginnie Mae market, FHA is up by 5.0 percent while VA origination is up by 4.9 percent. Despite strong early-year numbers, origination in 2017 is expected to be low compared to 2016, courtesy of higher rates.

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 YTD	$172.0	$111.5	$283.5	$143.4	$426.9
2017 %Change YOY	13.5%	14.6%	13.9%	5.5%	10.9%
2017 Ann.	$516.0	$334.4	$850.5	$430.1	$1,280.6

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	$155.7	$19.2	$436.3
2016	$281.8	$206.5	$19.9	$508.2
2017 YTD	$82.4	$54.6	$6.4	$143.4
2017 %Change YOY	5.0%	4.9%	17.0%	5.5%
2017 Ann.	$247.2	$163.8	$19.2	$430.1

Sources: *eMBS and Urban Institute (top and bottom).*
Note : *Dollar amounts are in billions. Annualized figure based on data from April 2017. "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 April 2017.*

US Agency Market, Originations

Agency net issuance totaled $93.1 billion for the first four months of 2017, up 59.6 percent over the same period last year. Ginnie Mae net issuance was $40.9 billion, comprising 43.9 percent of total agency net issuance. Note that Ginnie Mae net issuance is up 14.8 percent versus the same time last year. Ginnie Mae net issuance is comprised of 58.5 percent VA issuance, 38.4 percent FHA issuance and 3.4 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	$216.0	$151.8	$367.8	-$9.9	$357.9
2002	$219.2	$138.3	$357.6	-$51.2	$306.4
2003	$293.9	$41.1	$335.0	-$77.6	$257.4
2004	$33.2	$50.2	$83.3	-$40.1	$43.2
2005	$62.6	$111.7	$174.4	-$42.2	$132.1
2006	$164.3	$149.3	$313.6	$0.3	$313.8
2007	$295.9	$218.8	$514.7	$30.9	$545.5
2008	$212.5	$101.8	$314.3	$196.4	$510.8
2009	$207.0	$42.5	$249.5	$257.4	$506.8
2010	-$158.7	-$146.8	-$305.5	$198.2	-$107.3
2011	-$37.6	-$95.8	-$133.4	$149.4	$16.0
2012	$28.8	-$75.3	-$46.5	$118.4	$71.9
2013	$54.9	$11.6	$66.5	$85.8	$152.3
2014	$0.4	$29.9	$30.3	$59.8	$90.1
2015	$10.1	$64.9	$75.0	$94.5	$169.5
2016	$68.6	$67.0	$135.6	$125.1	$260.7
2017 YTD	$28.4	$23.8	$52.2	$40.9	$93.1
2017 %Change YOY	169.7%	95.7%	130.1%	14.8%	59.6%
2017 Ann.	$85.2	$71.4	$156.6	$122.6	$279.2

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	-$37.7	-$11.8	$0.0	-$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	$20.0	$66.8	$7.9	$94.7
2016	$46.4	$72.7	$6.1	$125.1
2017 YTD	$15.7	$23.9	$1.4	$40.9
2017 %Change YOY	23.7%	16.8%	-46.5%	14.8%
2017 Ann.	$47.10	$71.70	$4.20	$122.63

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

Note : *Dollar amounts are in billions. Annualized figure based on data from April 2017. "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 April 2017.*

US Agency Market, Originations

With the winter season and elevated mortgage rates since the election, monthly agency issuance has been declining in the first four months of 2017. Fannie Mae gross issuance was almost cut in half from 73 billion in December 2016 to 39 billion in April 2017, and Freddie Mac's gross issuance dropped from 41 to 21 billion. Less dependent on refinances, Ginnie Mae gross issuance fell less from 47 to 36 billion in the same period, driving its share up to 38 percent in April 2017, its highest since December 2015. Despite the variability in gross issuance, Ginnie net issuance is relatively constant; 10.2 billion per month for the first four months of 2017, versus 10.5 billion per month in 2016.

Monthly Agency Issuance

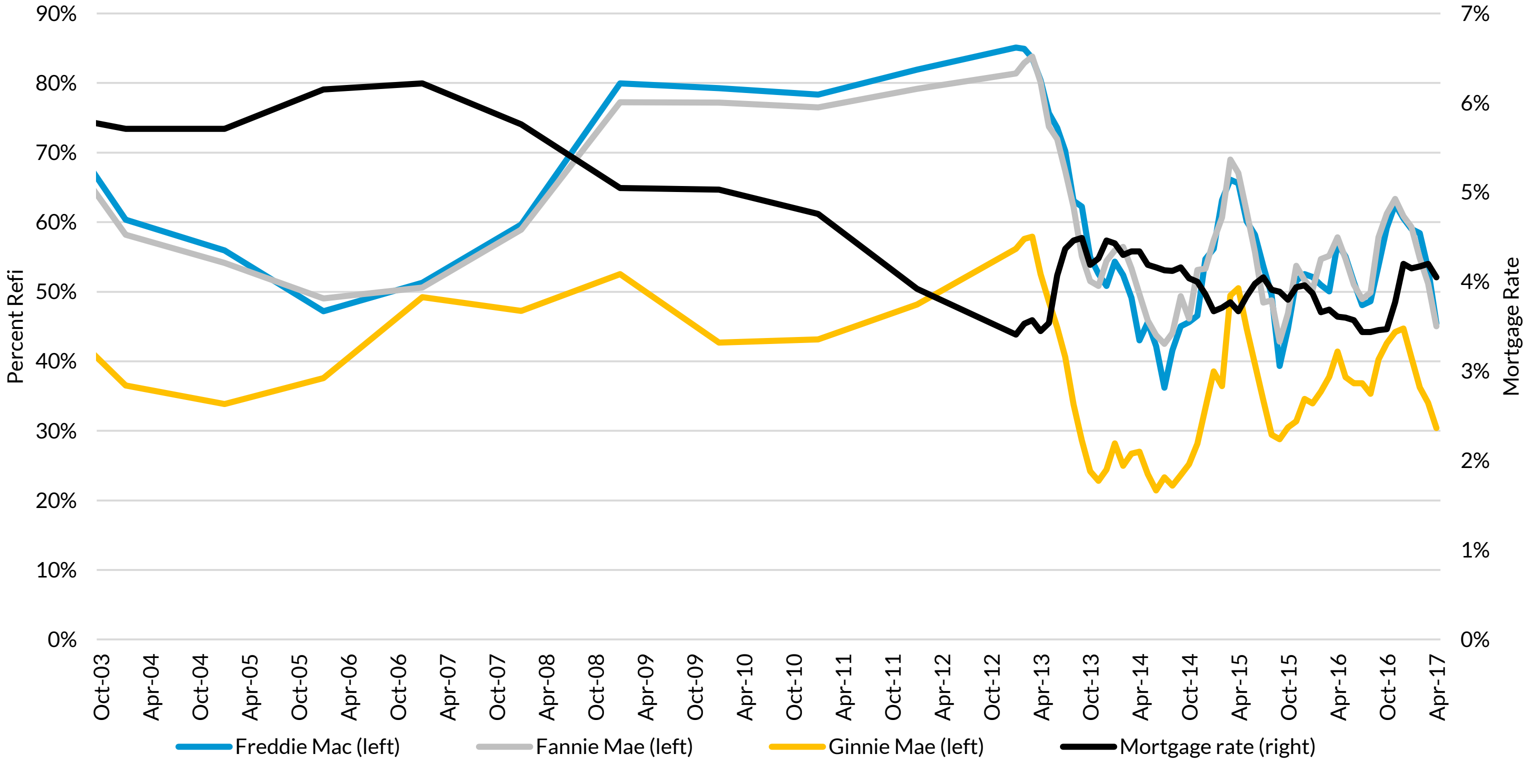
	Gross Issuance			Net Issuance		
Date	Fannie Mae	Freddie Mac	Ginnie Mae	Fannie Mae	Freddie Mac	Ginnie Mae
Jan-14	$28.2	$20.0	$21.6	-$4.9	$0.5	$4.9
Feb-14	$27.9	$17.9	$20.1	-$0.2	$1.2	$5.2
Mar-14	$24.1	$14.7	$16.7	-$2.3	-$0.9	$1.9
Apr-14	$28.0	$18.7	$21.7	-$1.9	$1.2	$5.2
May-14	$27.7	$18.1	$23.9	-$3.7	$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	$2.6	$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	$2.2
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	$0.5
Apr-15	$49.3	$33.8	$40.6	-$1.3	$3.7	$4.1
May-15	$42.4	$33.2	$39.4	-$2.9	$6.6	$5.7
Jun-15	$44.6	$34.4	$40.5	$0.8	$8.3	$9.0
Jul-15	$46.0	$39.2	$45.6	$1.0	$12.3	$13.0
Aug-15	$39.4	$27.6	$43.4	-$2.2	$3.1	$14.7
Sep-15	$45.3	$30.4	$39.4	$7.6	$7.9	$12.5
Oct-15	$41.5	$28.4	$39.2	$4.8	$6.4	$12.1
Nov-15	$28.8	$23.3	$35.8	-$8.1	$1.3	$10.3
Dec-15	$39.7	$22.8	$30.3	$7.1	$3.2	$8.0
Jan-16	$35.6	$22.5	$32.5	-$0.6	$1.0	$9.0
Feb-16	$32.4	$21.2	$30.5	$2.4	$3.1	$8.3
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	$8.7
May-16	$44.2	$29.9	$41.6	$2.4	$4.4	$11.3
Jun-16	$46.7	$30.1	$43.9	$2.7	$3.0	$11.8
Jul-16	$49.8	$35.3	$46.1	$2.3	$6.3	$10.7
Aug-16	$54.9	$37.9	$46.7	$10.4	$11.0	$13.7
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	$10.2
Dec-16	$72.7	$40.5	$46.8	$23.2	$10.4	$10.7
Jan-17	$55.6	$38.5	$42.6	$10.1	$10.7	$10.5
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	$9.5
Apr-17	$39.3	$21.2	$36.4	$4.8	$0.4	$11.7

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 April 2017.*

US Agency Market, Originations

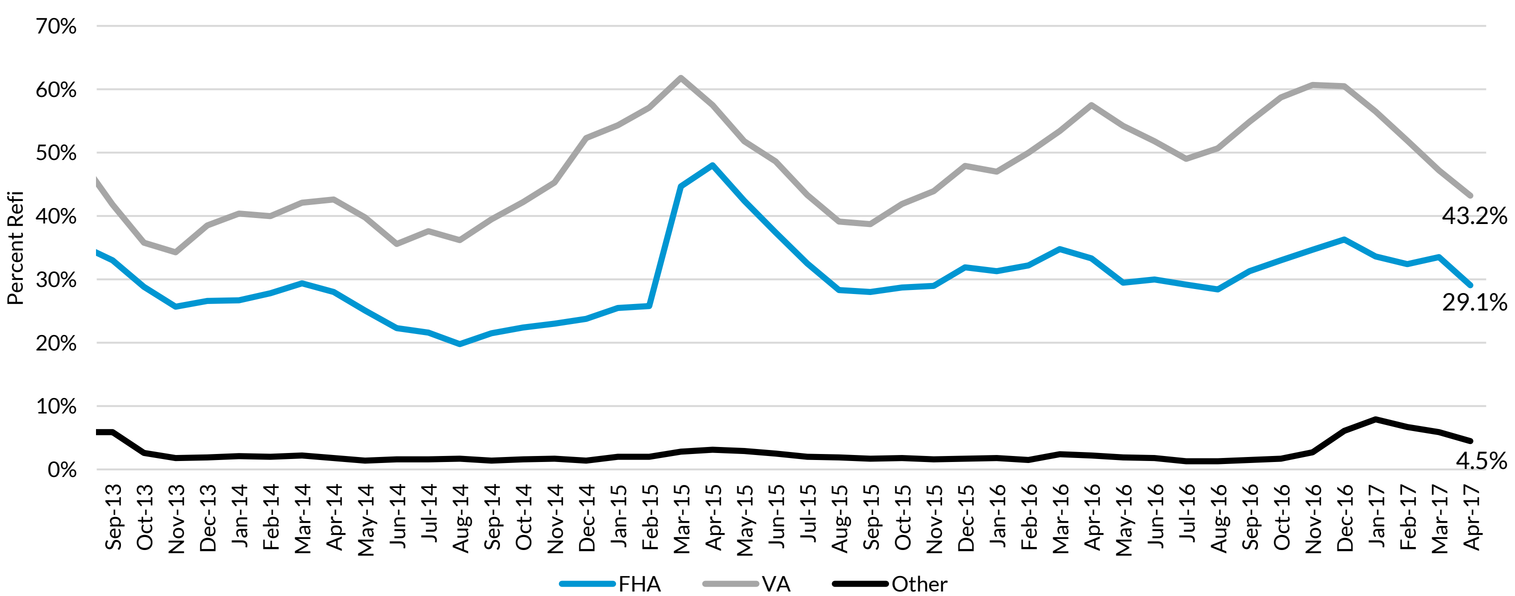
The Ginnie Mae refi share stood at 30 percent in April 2017, below the 45 percent shares for Fannie Mae and Freddie Mac. Within Ginnie Mae, VA had the highest refi share of 43 percent in April 2017, followed by FHA's 29 percent refi share.

Percent Refi at Issuance



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

Percent Refi at Issuance: Ginnie Mae Breakdown

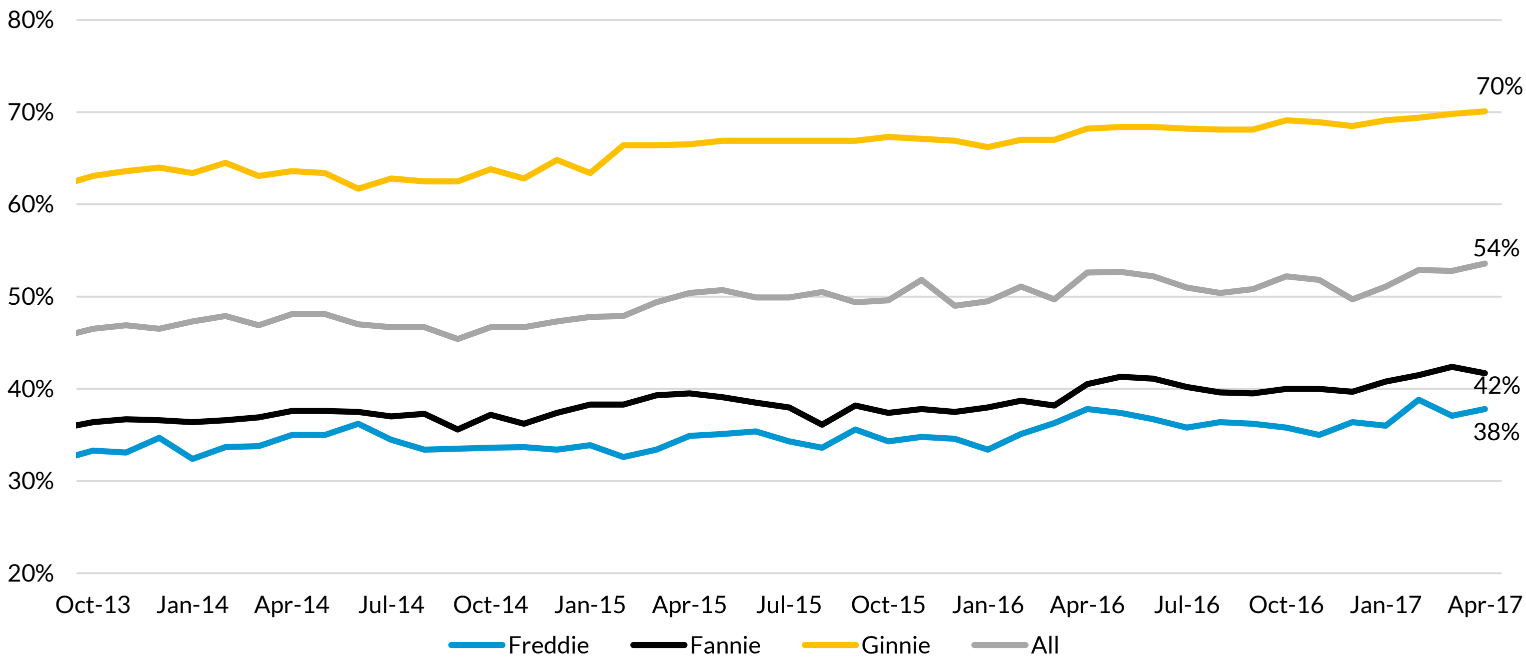


Sources: *eMBS and Urban Institute.*
Note: *Based on at-issuance balance. "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of April 2017.*

Credit Box

First time homebuyers are important to the Ginnie Mae market, comprising 70 percent of purchase originations, compared to Fannie and Freddie's 42 percent and 38 percent share of the first-time homebuyer market. The bottom table shows that based on mortgages originated in April 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 higher DTI, thus requiring a higher interest rate.

First Time Homebuyer Share: Purchase Only Loans



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

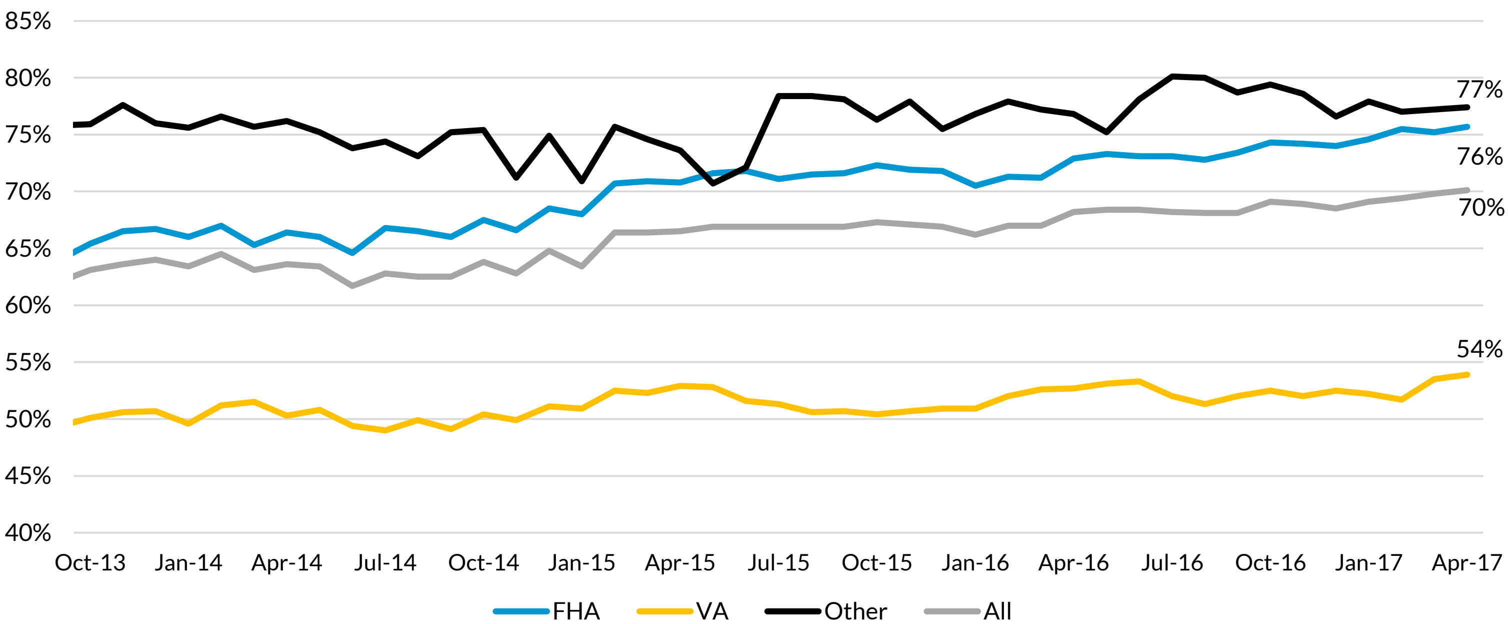
	Fannie Mae		Freddie Mac		Ginnie Mae		All	
	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat
Loan Amount ($Thousands)	231.1	253.0	218.9	248.7	196.8	237.6	207.8	245.9
Credit Score	740.7	753.9	737.1	753.4	683.0	700.9	706.1	735.3
LTV (%)	86.5	80.0	86.1	78.4	96.5	95.3	92.0	84.4
DTI (%)	34.8	35.9	34.1	35.0	40.6	41.5	38.0	37.5
Loan Rate (%)	4.35	4.24	4.38	4.26	4.21	4.11	4.28	4.20

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

Credit Box

Within the Ginnie Mae purchase market, 76 percent of FHA loans, 54 percent of VA loans and 77 percent of other loans represent financing for first time home buyers. The bottom table shows that based on mortgages originated in April 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 higher LTV and slightly lower DTI, thus requiring 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 April 2017.*

	FHA		VA		Other		Ginnie Mae Total	
	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat
Loan Amount ($ Thousands)	194.4	213.9	232.3	282.5	140.2	148.9	196.8	237.6
Credit Score	677.1	683.0	697.6	725.6	694.4	690.3	683.0	700.9
LTV (%)	95.5	94.3	98.7	95.7	99.3	99.4	96.5	95.3
DTI (%)	41.7	42.7	39.6	40.8	34.9	35.6	40.6	41.5
Loan Rate (%)	4.27	4.22	4.05	3.96	4.15	4.25	4.21	4.11

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

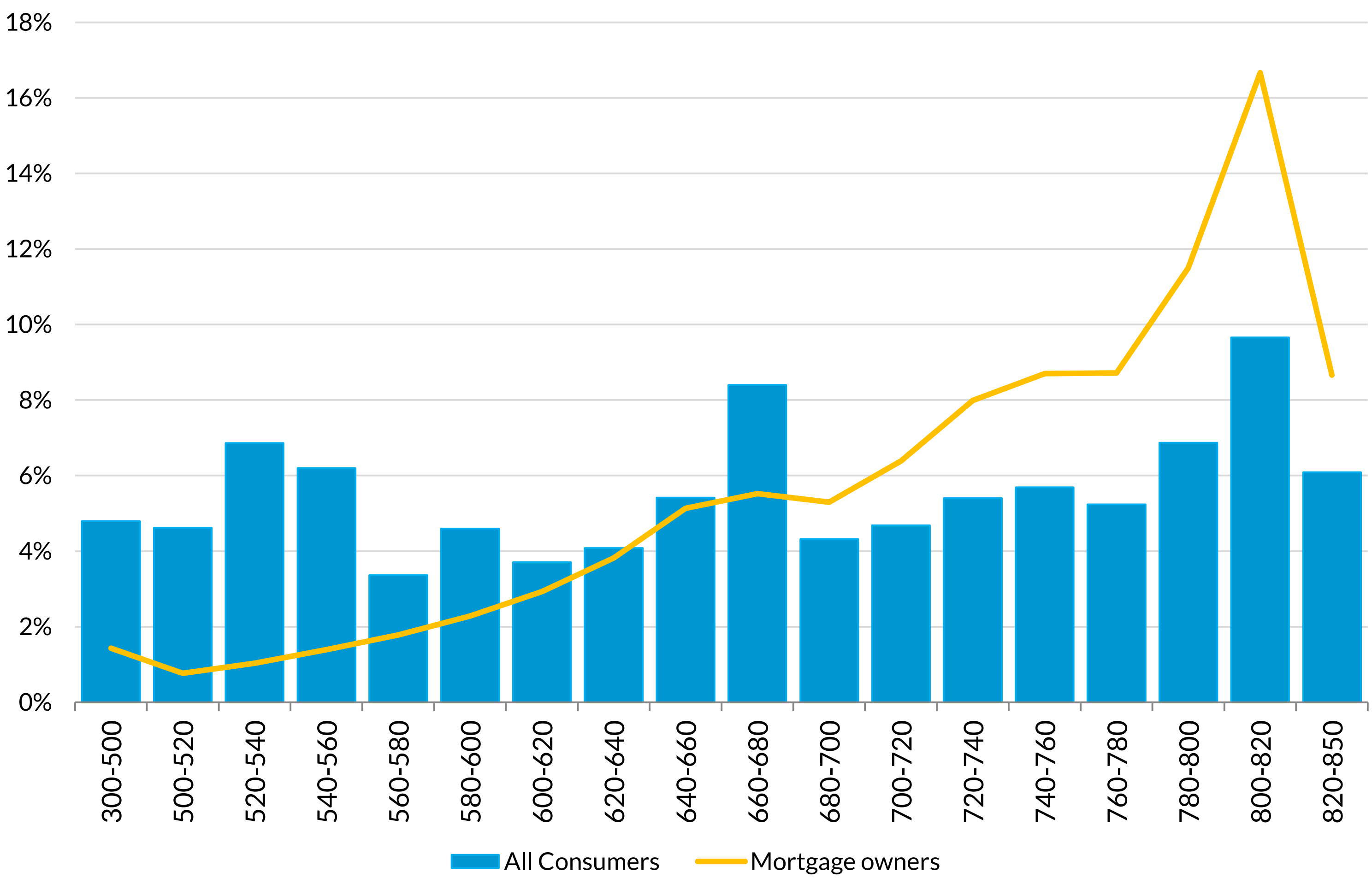
Credit Box

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 (675) is lower than the 25th percentile of those with a mortgage (676).

FICO Score Distribution: Mortgage Owners vs All Consumers

All Consumers- Percentiles								
Minimum	P5	P10	P25	P50	P75	P90	P95	Maximum
300	501	523	575	675	770	812	821	839

Mortgage Owners- Percentiles								
Minimum	P5	P10	P25	P50	P75	P90	P95	Maximum
306	564	609	676	749	800	818	824	839



Sources: *Credit Bureau Data and Urban Institute.*
Note: *Data as of August 2015.*

April 2017 Credit Box at a Glance

In April 2017, the median Ginnie Mae FICO score was 682 versus 749 for Fannie and 751 for Freddie. Note that the FICO score for the 10th percentile was 624 for Ginnie Mae, versus 668 for Fannie and 677 for Freddie. Within the Ginnie Mae market, FHA loans have a median FICO score of 672, VA loans have a median FICO score of 705 and other loans have a median FICO score of 689.

Purchase FICO

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	247,995	643	676	725	773	796	722
Fannie	88,090	681	715	757	787	802	748
Freddie	49,715	688	720	758	787	801	750
Ginnie	110,190	626	649	681	725	769	688

Refi FICO

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	168,307	643	679	725	771	796	721
Fannie	76,448	658	695	739	778	799	733
Freddie	46,027	667	700	742	779	799	736
Ginnie	45,832	618	647	683	727	771	687

All FICO

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	416,302	643	678	725	772	796	722
Fannie	164,538	668	705	749	783	801	741
Freddie	95,742	677	710	751	783	801	743
Ginnie	156,022	624	648	682	725	770	688

Purchase FICO: Ginnie Mae Breakdown By Source

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	110,190	626	649	681	725	769	688
FHA	71,160	623	645	673	709	748	679
VA	29,295	633	662	708	761	633	662
Other	9,735	640	658	689	730	765	693

Refi FICO: Ginnie Mae Breakdown By Source

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	45,832	618	647	683	727	771	687
FHA	25,493	608	638	669	706	749	672
VA	19,906	631	663	702	750	786	704
Other	433	623	657	692	731	767	693

All FICO: Ginnie Mae Breakdown By Source

	Number of Loans	P10	P25	Median	P75	P90	Mean
All	156,022	624	648	682	725	770	688
FHA	96,653	621	643	672	708	748	677
VA	49,201	632	662	705	757	790	708
Other	10,168	640	658	689	730	765	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 April 2017.*

April 2017 Credit Box at a Glance

In April 2017, the median loan-to-value ratio (LTV) was 96.5 percent for Ginnie Mae, and 79.0 percent for Fannie Mae and Freddie Mac. The 10th percentile was 80.9 percent for Ginnie Mae and 48 percent for the GSEs. Within the Ginnie Mae market, the median LTV was 96.5 for FHA, 99.3 for VA and 101.0 for other lending programs.

Purchase LTV							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	240,038	72.0	80.0	95.0	96.5	99.4	87.6
Fannie	87,962	62.0	75.0	80.0	95.0	95.0	81.1
Freddie	49,726	64.0	78.0	80.0	95.0	95.0	81.6
Ginnie	102,350	92.0	96.5	96.5	98.9	101.3	96.2
Refi LTV							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	161,277	43.0	59.0	74.0	80.8	91.9	69.9
Fannie	76,454	40.0	55.0	69.0	78.0	80.0	65.3
Freddie	46,021	40.0	55.0	69.0	79.0	82.0	65.4
Ginnie	38,802	66.7	79.5	85.0	94.4	99.9	84.3
All LTV							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	401,315	54.0	72.0	80.7	96.5	97.0	80.5
Fannie	164,416	48.0	64.0	79.0	85.0	95.0	73.8
Freddie	95,747	48.0	65.0	79.0	85.0	95.0	73.9
Ginnie	141,152	80.9	91.1	96.5	97.1	101.0	92.9

Purchase LTV: Ginnie Mae Breakdown By Source							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	102,350	92.0	96.5	96.5	98.9	101.3	96.2
FHA	65,003	93.0	96.5	96.5	96.5	96.5	95.2
VA	27,568	89.3	96.9	100.0	102.0	102.4	97.3
Other	9,779	95.3	99.2	101.0	101.0	102.0	99.4
Refi LTV: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	38,802	66.7	79.5	85.0	94.4	99.9	84.3
FHA	24,962	66.8	79.0	85.0	89.7	95.8	82.4
VA	13,393	66.3	80.6	91.9	100.0	102.2	87.5
Other	447	77.0	88.2	96.5	100.2	102.0	92.7
All LTV: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	141,152	80.9	91.1	96.5	97.1	101.0	92.9
FHA	89,965	80.7	89.6	96.5	96.5	96.5	91.6
VA	40,961	78.8	91.7	99.3	101.5	102.3	94.1
Other	10,226	94.4	99.0	101.0	101.0	102.0	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.* ***.*** *Data as of April 2017.*

April 2017 Credit Box at a Glance

In April 2017, the median Ginnie Mae debt-to-income ratio (DTI) was 41.3 percent, considerably higher than the 36 and 37 percent median DTIs for Fannie Mae and Freddie Mac, respectively. The 90th percentile for Ginnie Mae was 52.9 percent, also much higher than the 45-46 percent DTIs for the GSEs. Fannie Mae has recently announced they will raise their DTI limit from 45 to 50. Within the Ginnie Mae market, the median FHA DTI ratio was 42.7 percent, versus 40.3 percent for VA and 35.8 percent for other lending programs.

Purchase DTI							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	247,715	24.0	31.0	38.6	44.0	49.1	37.5
Fannie	88,078	22.0	28.0	36.0	42.0	45.0	34.5
Freddie	49,680	22.0	29.0	37.0	43.0	46.0	35.3
Ginnie	109,957	28.1	34.6	41.5	47.8	53.0	40.9
Refi DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	153,323	22.0	29.0	37.0	43.0	48.0	35.8
Fannie	74,422	21.0	28.0	36.0	42.0	45.0	34.4
Freddie	44,552	21.0	28.0	37.0	43.0	46.0	35.2
Ginnie	34,349	24.8	32.4	40.6	47.4	52.5	39.5
All DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	401,038	23.0	30.0	38.0	44.0	48.9	36.8
Fannie	162,500	21.0	28.0	36.0	42.0	45.0	34.5
Freddie	94,232	22.0	29.0	37.0	43.0	46.0	35.3
Ginnie	144,306	27.3	34.1	41.3	47.7	52.9	40.5

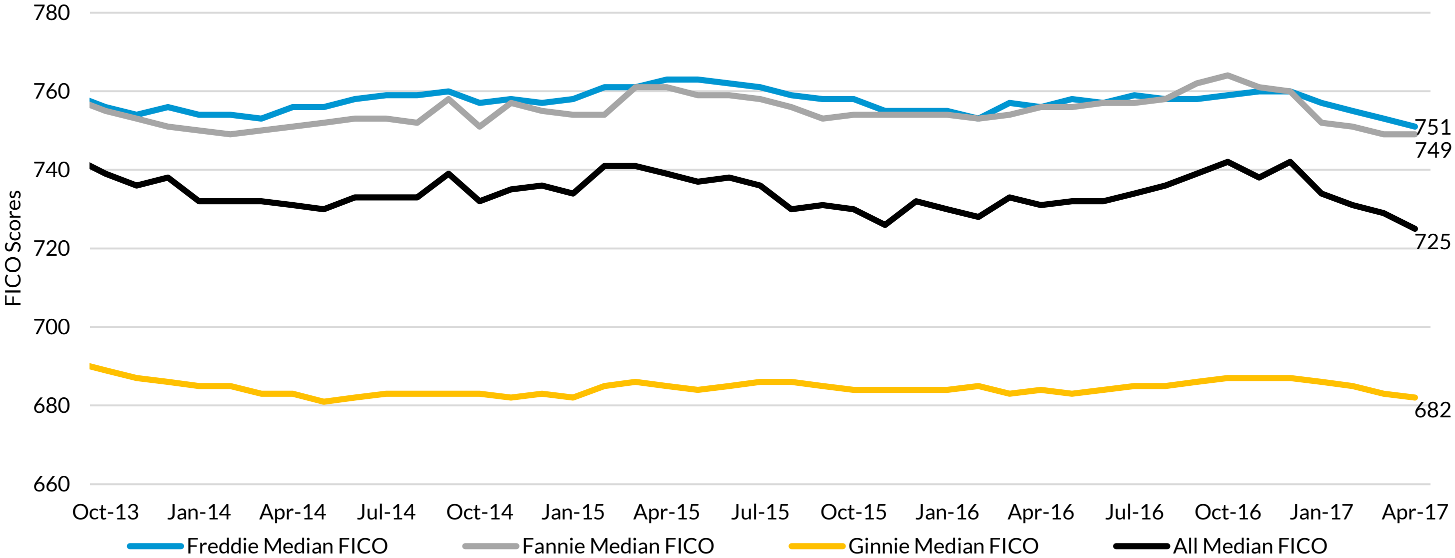
Purchase DTI: Ginnie Mae Breakdown By Source							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	109,957	28.1	34.6	41.5	47.8	53.0	40.9
FHA	71,258	29.4	35.9	42.9	48.8	53.7	41.9
VA	29,083	26.7	33.4	40.8	47.4	52.7	40.2
Other	9,616	25.7	30.6	35.9	40.2	43.1	35.1
Refi DTI: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	34,349	24.8	32.4	40.6	47.4	52.5	39.5
FHA	18,509	26.4	33.8	41.8	48.2	52.8	40.5
VA	15,484	23.5	31.0	39.2	46.3	52.1	38.5
Other	356	17.0	23.8	31.1	38.7	44.8	31.6
All DTI: Ginnie Mae Breakdown By Source							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	144,306	27.3	34.1	41.3	47.7	52.9	40.5
FHA	89,767	28.8	35.5	42.7	48.7	53.5	41.6
VA	44,567	25.5	32.6	40.3	47.0	52.5	39.6
Other	9,972	25.3	30.4	35.8	40.1	43.1	34.9

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

Credit Box: Historical

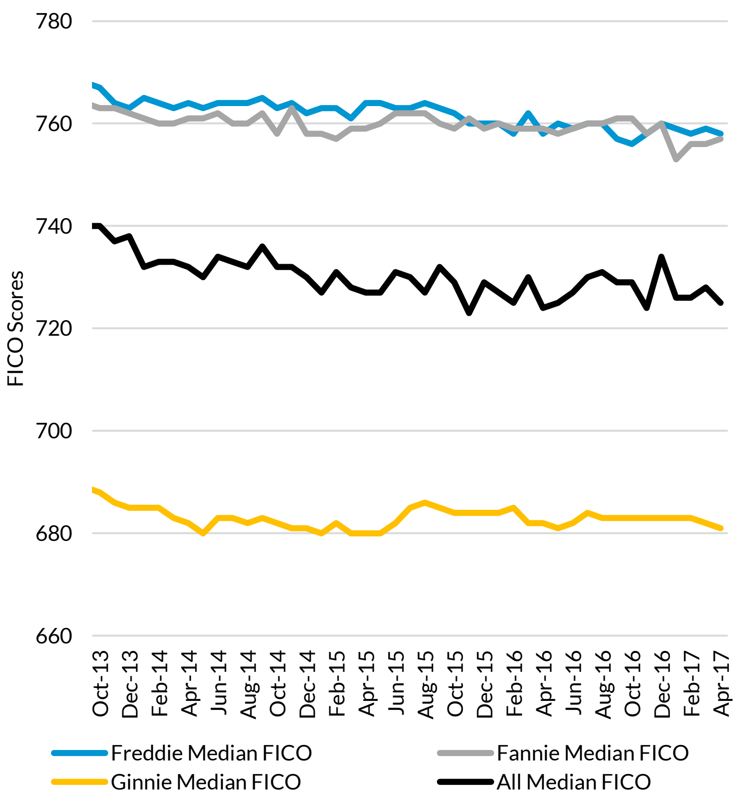
This figure, showing median FICO scores since October 2013, demonstrates that the median FICO score for Ginnie Mae has always been considerably lower than for the GSEs. The difference between Ginnie Mae and GSE FICO scores is wider in purchase loans than in refi loans. The recent drop in FICO scores reflects two factors: (1) the composition of the market has shifted more heavily toward purchase borrowers who have lower FICO scores and (2) FICO scores have dropped sharply for refinance borrowers, indicating that lenders are willing to spend the time to refinance more marginal borrowers, as overall volumes slip.

FICO Scores for All Loans



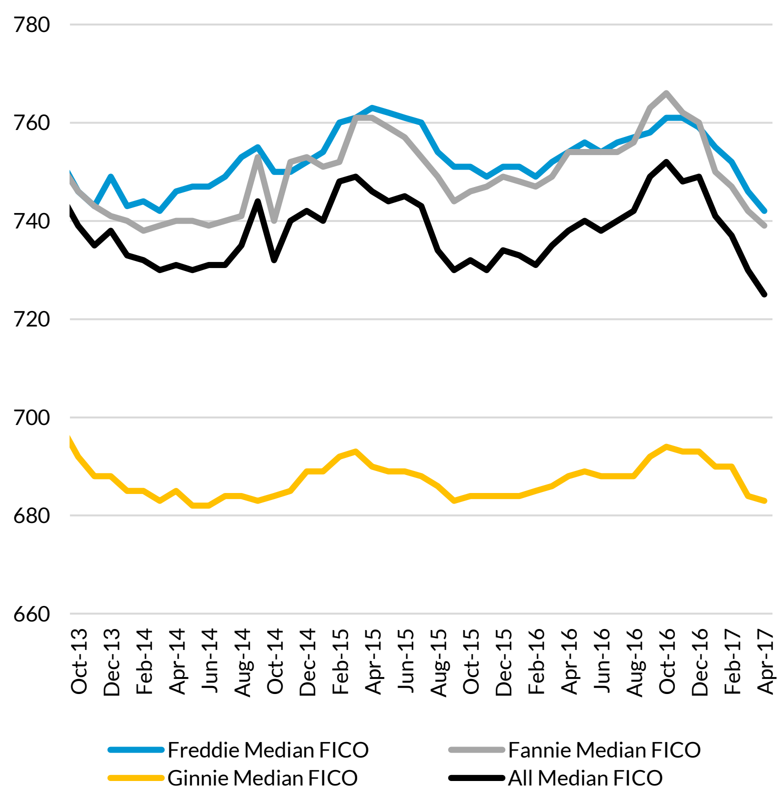
Sources: *eMBS and Urban Institute.* **Note**: *Data as of April 2017*

FICO Scores for Purchase Loans



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

FICO Scores for Refinance Loans

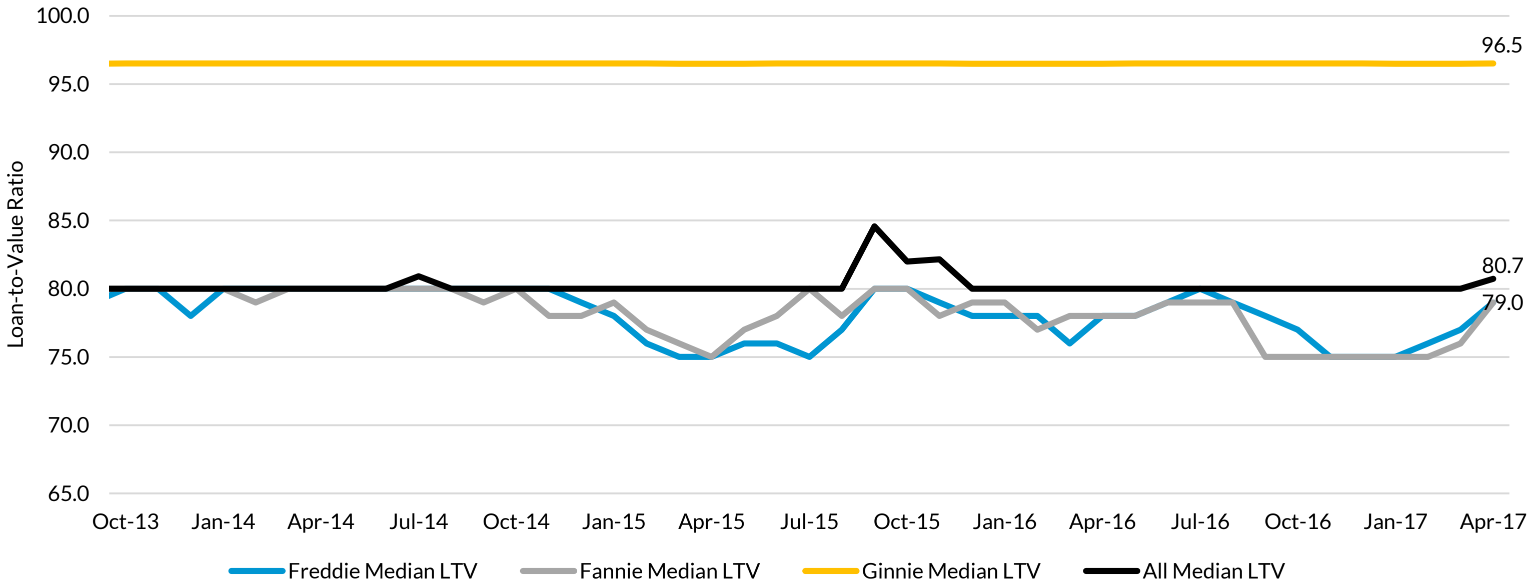


Sources: *eMBS and Urban Institute.* **Note:** *Data as of April 2017*

Credit Box: Historical

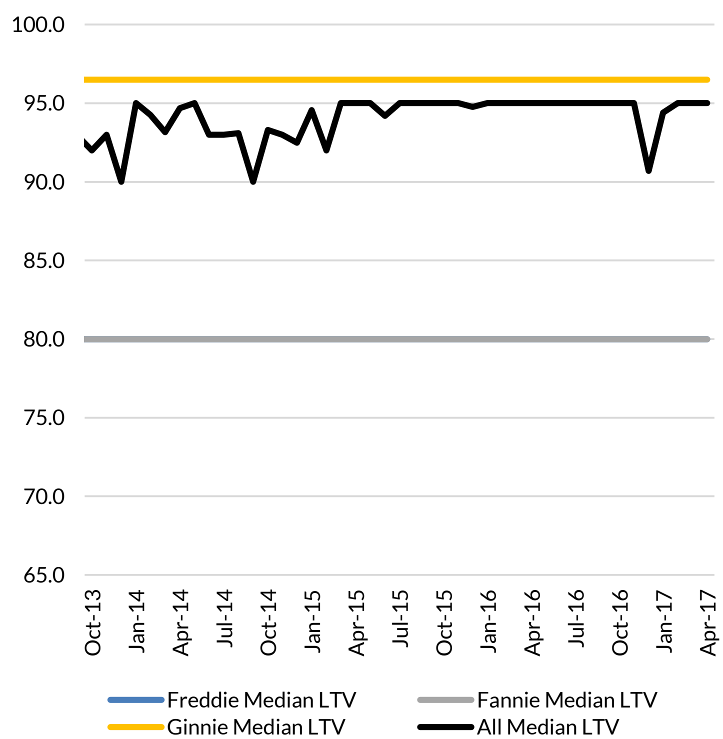
Median LTVs for Ginnie Mae loans have historically been at 96.5, much higher than the 75-80 average for the GSEs. Through time, refinances have LTVs about 10 points lower than their purchase counterparts.

LTV Ratio for All Loans



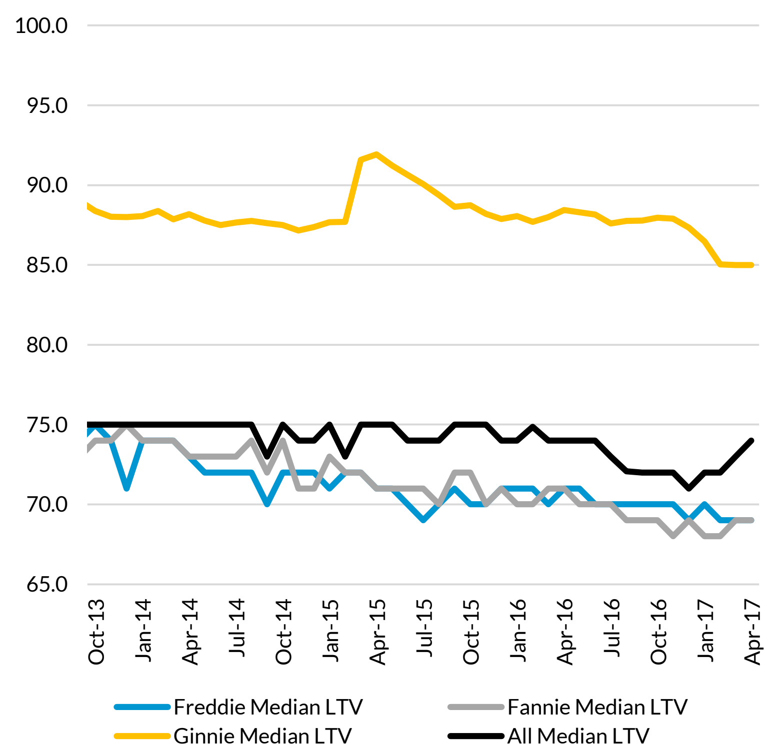
Sources: *eMBS and Urban Institute.* **Note:** *Data as of April 2017.*

LTV Ratio for Purchase Loans



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

LTV Ratio for Refinance Loans

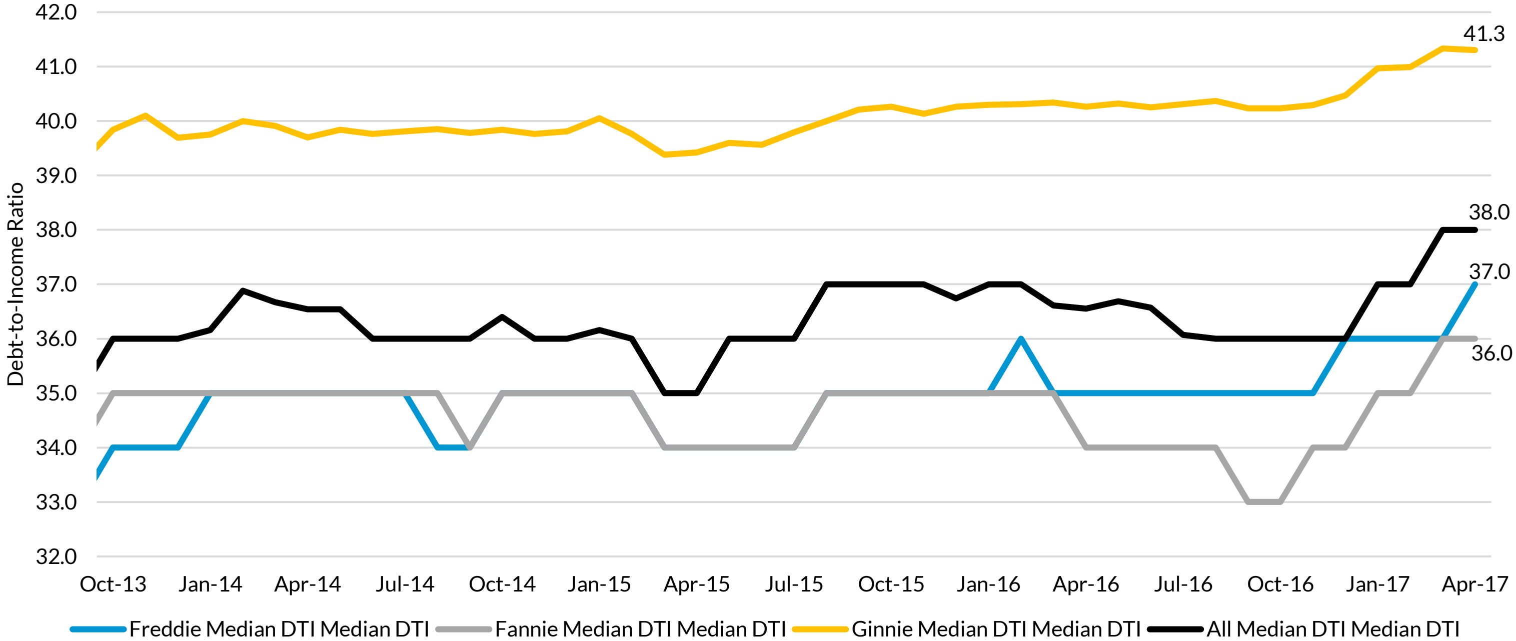


Sources: *eMBS and Urban Institute*
Note: *Data as of April 2017.*

Credit Box: Historical

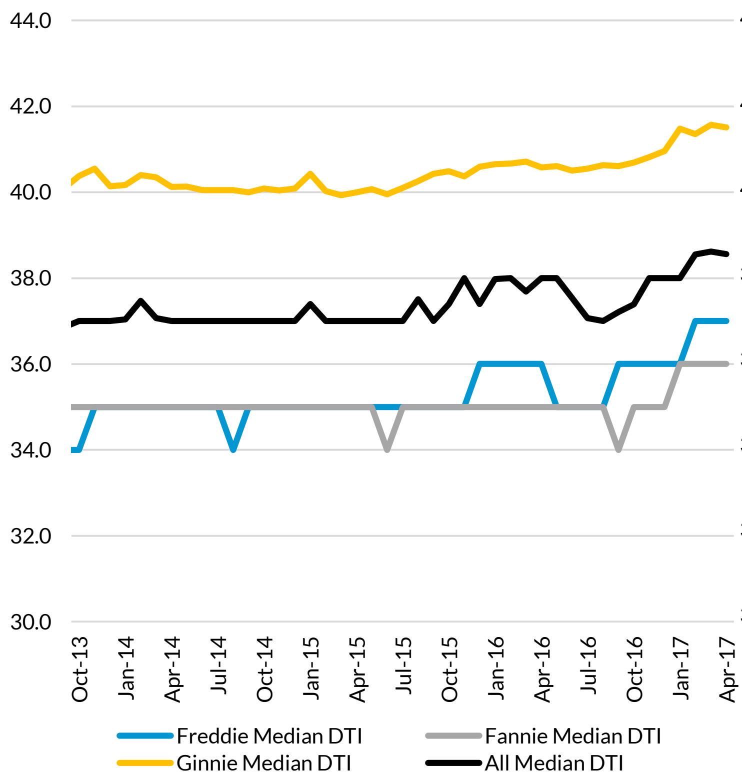
Median debt-to-income ratios on Ginnie Mae loans have historically been in the low 40s, considerably higher than the 36-37 percent DTIs for the GSEs. The DTIs for refinance loans have historically been much lower than for purchase loans, but the DTIs for refinance loans have been creeping up sharply in recent months.

DTI Ratio for All Loans



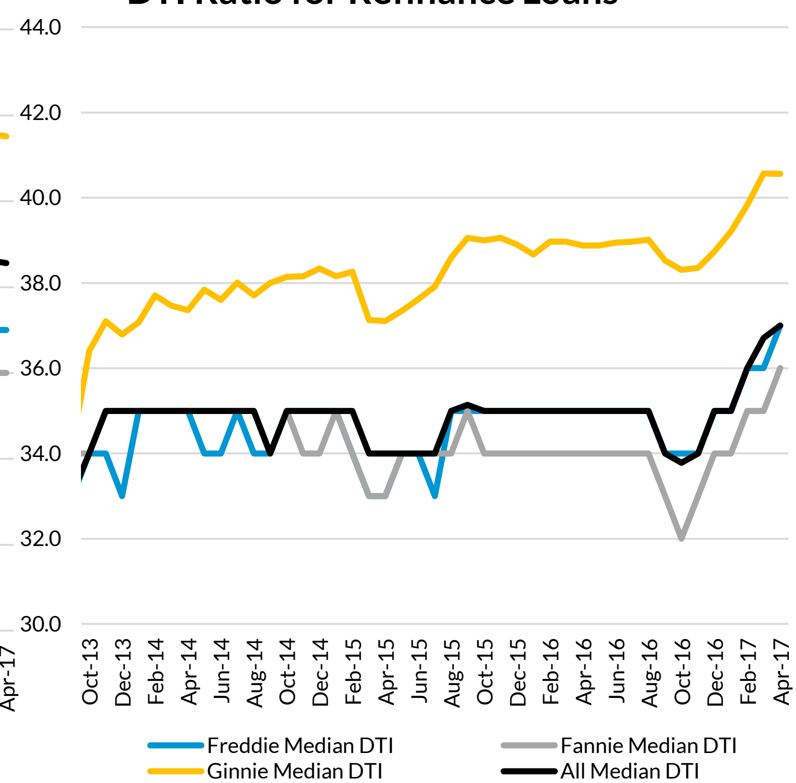
Sources: *eMBS and Urban Institute.* **Note:** *Data as of April 2017*

DTI Ratio for Purchase Loans



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

DTI Ratio for Refinance Loans

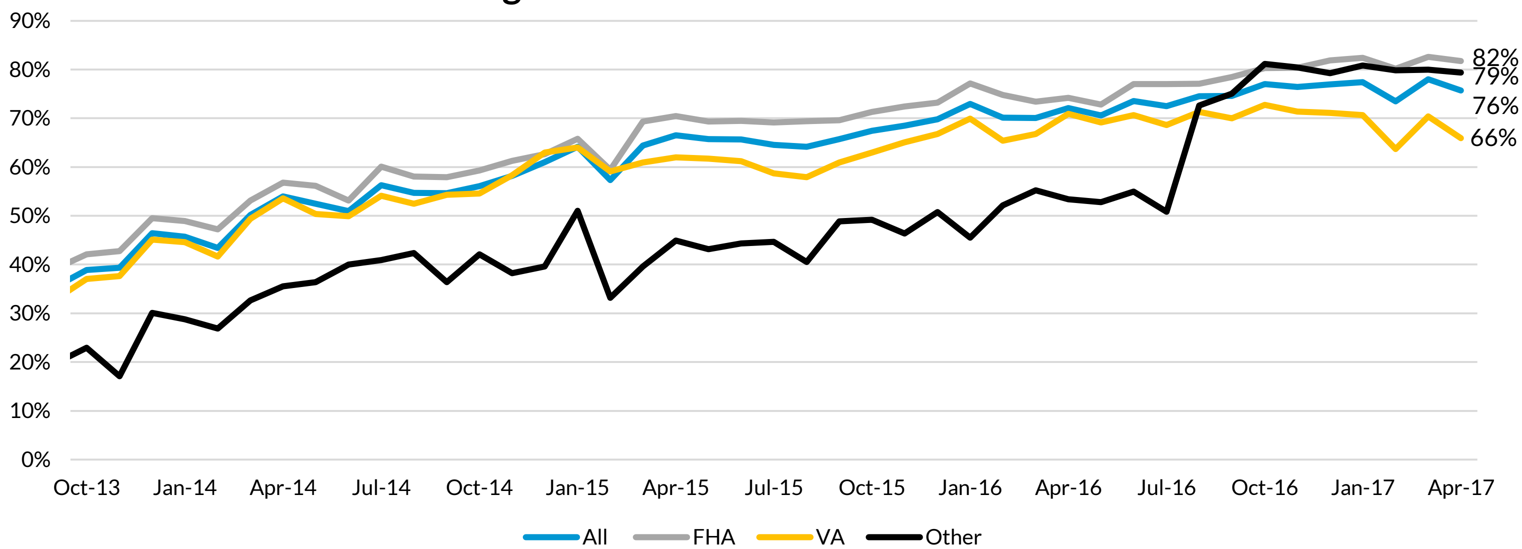


Sources: *eMBS and Urban Institute.*
Note: *Data as of April 2017*

Ginnie Mae Non-bank Originators

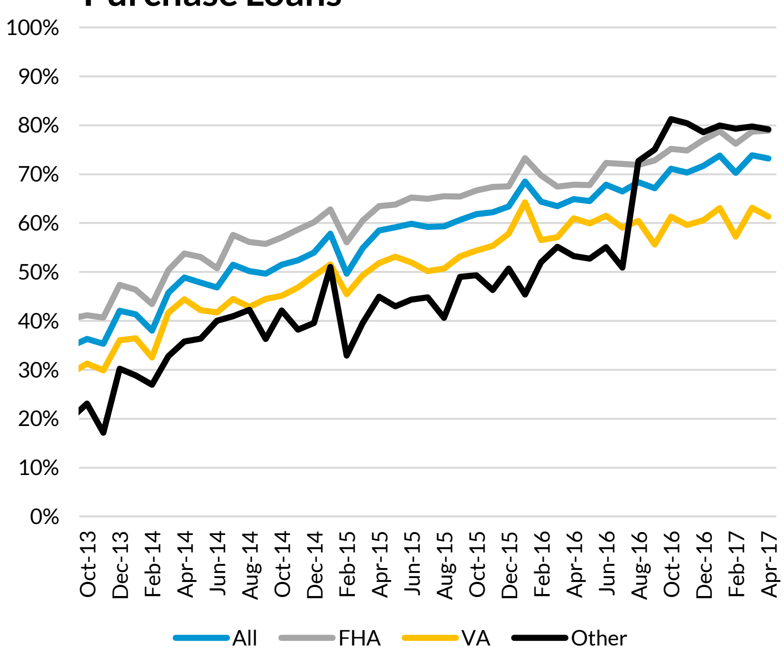
The non-bank originator share of the Ginnie Mae market fell to 76 percent in April 2017, after an uptick in March. The non-bank share of VA issuance stood at 66% in March, while the non-bank share of FHA issuance stood at 82 percent, and the non-bank share of Other issuance stood at 79 percent.

Ginnie Mae Non-bank Originator Share: All Loans



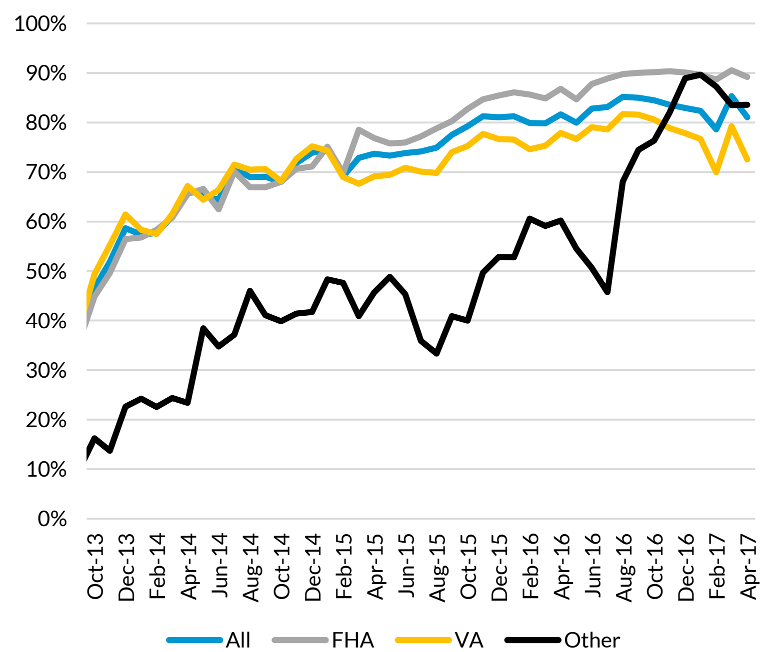
Sources: *eMBS and Urban Institute.* **Note:** *Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of April 2017.*

Ginnie Mae Non-bank Share: Purchase Loans



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

Ginnie Mae Non-bank Share: Refi Loans



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

Ginnie Mae Non-bank Originators: April 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 682-- it is 699 for bank borrowers versus 677 for non-bank borrowers. For FHA borrowers, the median FICO score for bank originators is 684 versus 669 for non-banks. For VA borrowers, the median FICO score for bank originators is 720 versus 698 for non-banks. For "Other" loans, the median FICO score for bank originators is 698 versus 688 for non-banks.

All Ginnie Mae FICO							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	155,409	624	648	682	725	770	688
Bank	37,617	639	662	699	746	784	704
Non-Bank	117,792	622	645	677	718	762	683
FHA Ginnie Mae FICO							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	96,191	621	643	672	708	748	677
Bank	18,389	636	656	684	720	759	690
Non-Bank	77,802	618	640	669	705	745	674
VA Ginnie Mae FICO							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	49,104	632	662	705	757	790	708
Bank	17,071	644	674	720	769	795	720
Non-Bank	32,033	628	656	698	749	787	702
Other Ginnie Mae FICO							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	10,114	640	658	689	730	765	694
Bank	2,157	622	656	698	745	776	694
Non-Bank	7,957	641	658	688	726	761	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 April 2017.*

Ginnie Mae Non-bank Originators: April 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	140,554	80.9	91.1	96.5	97.1	101.0	92.9
Bank	34,356	83.5	94.4	96.5	99.8	102.0	94.1
Non-Bank	106,198	80.1	90.0	96.5	96.5	101.0	92.5
FHA Ginnie Mae LTV							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	89,511	80.7	89.5	96.5	96.5	96.5	91.6
Bank	17,574	85.0	95.0	96.5	96.5	96.5	93.4
Non-Bank	71,937	80.0	87.3	96.5	96.5	96.5	91.2
VA Ginnie Mae LTV							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	40,871	78.8	91.6	99.3	101.5	102.3	94.1
Bank	14,593	79.0	91.9	99.3	101.4	102.2	94.2
Non-Bank	26,278	78.6	91.5	99.4	101.5	102.4	94.1
Other Ginnie Mae LTV							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	10,172	94.5	99.0	101.0	101.0	102.0	99.1
Bank	2,189	96.7	100.8	101.0	102.0	103.3	100.1
Non-Bank	7,983	94.0	98.6	100.8	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. Data as of April 2017.*

Ginnie Mae Non-bank Originators: April 2017 Credit Box

An analysis of the borrowers' DTI ratios for bank versus non-bank originators indicates the former are very slightly more conservative. That is, the median DTI ratio for bank originators is 40.1, versus 41.7 for non-banks. The only exception is for "Other" loans, for which the median DTI ratio for banks is marginally higher than for non-banks.

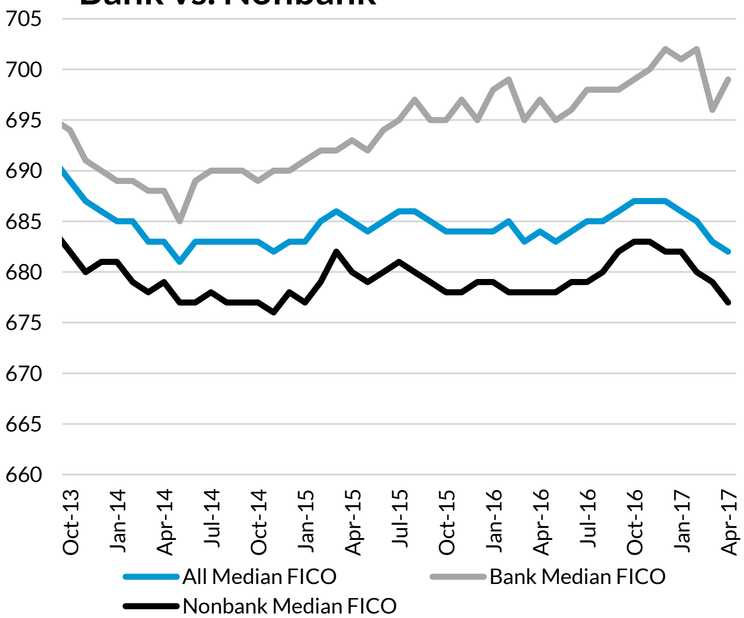
All Ginnie Mae DTI							
	Number of Loans	**P10**	**P25**	**Median**	**P75**	**P90**	**Mean**
All	143,698	27.3	34.1	41.3	47.7	52.9	40.5
Bank	36,308	25.8	32.9	40.1	46.1	51.7	39.3
Non-Bank	107,390	27.9	34.6	41.7	48.2	53.2	41.0
FHA Ginnie Mae DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	89,308	28.8	35.5	42.7	48.7	53.5	41.7
Bank	18,035	28.0	34.8	41.7	47.0	52.3	40.6
Non-Bank	71,273	28.9	35.7	43.0	49.1	53.7	41.9
VA Ginnie Mae DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	44,472	25.6	32.6	40.3	47.0	52.5	39.6
Bank	16,246	24.0	31.1	39.0	45.8	51.6	38.3
Non-Bank	28,226	26.5	33.5	41.0	47.8	52.9	40.3
Other Ginnie Mae DTI							
	Number of Loans	P10	P25	Median	P75	P90	Mean
All	9,918	25.3	30.4	35.8	40.1	43.1	34.9
Bank	2,027	24.6	30.3	36.0	40.4	43.6	34.9
Non-Bank	7,891	25.5	30.4	35.7	40.1	43.0	34.9

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

Ginnie Mae Nonbank Originators: Historical Credit Box

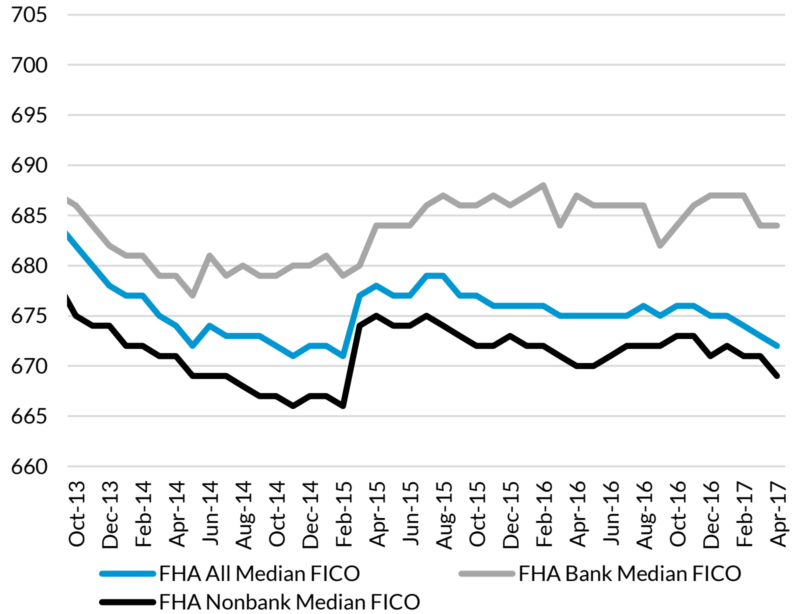
The difference in FICO scores between loans originated by banks and non-banks has widened for Ginnie Mae loans in April 2017, as the median FICO scores for bank originators stabilized while the median FICO scores for non-bank originators continued to decline for the FHA and VA channels.

Ginnie Mae FICO Scores Bank vs. Nonbank



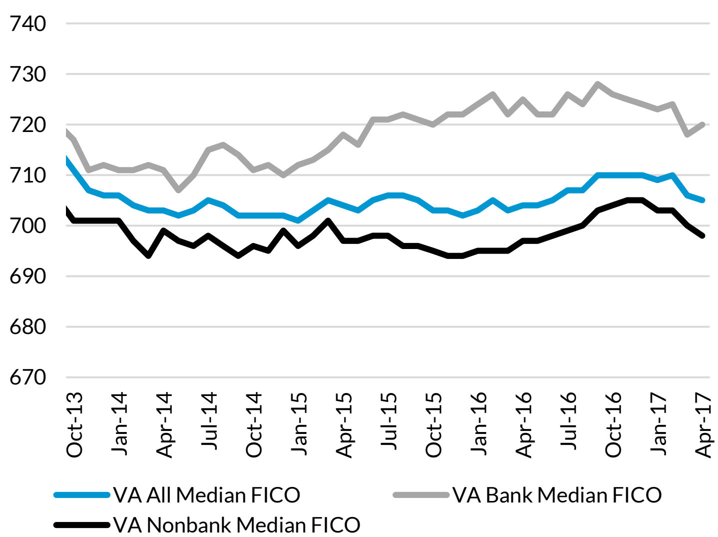
Sources: *eMBS and Urban Institute* **Note:** *Data as of April 2017*

Ginnie Mae FHA FICO Scores Bank vs. Nonbank



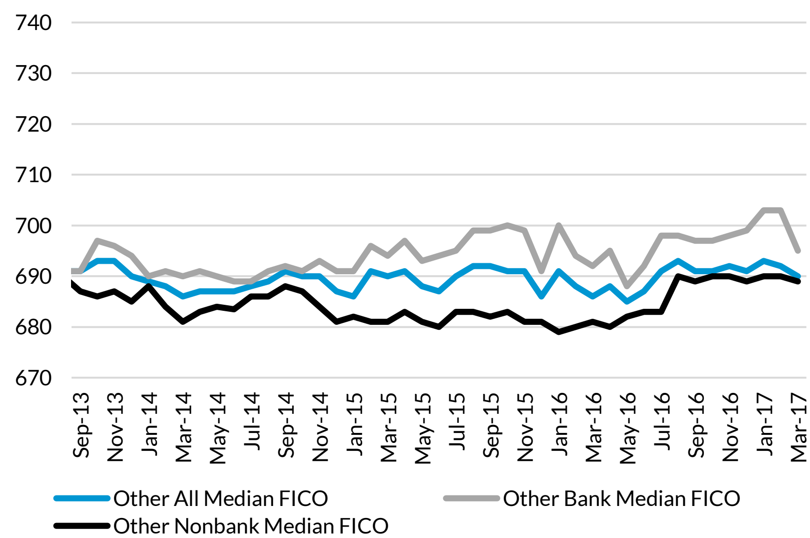
Sources: *eMBS and Urban Institute* **Note:** *Data as of April 2017*

Ginnie Mae VA FICO Scores Bank vs. Nonbank



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

Ginnie Mae Other FICO Scores Bank vs. Nonbank

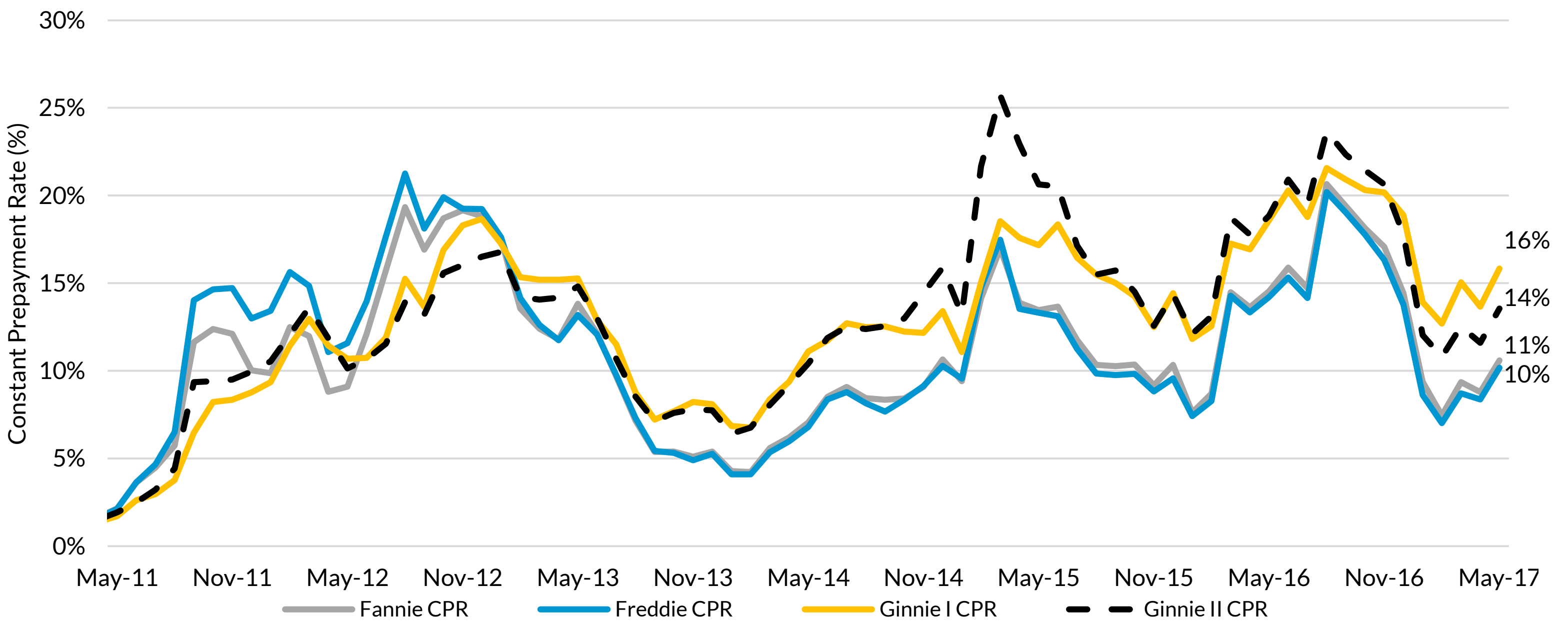


Sources: *eMBS and Urban Institute*
Note: *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development.*
Data as of April 2017.

Prepayments

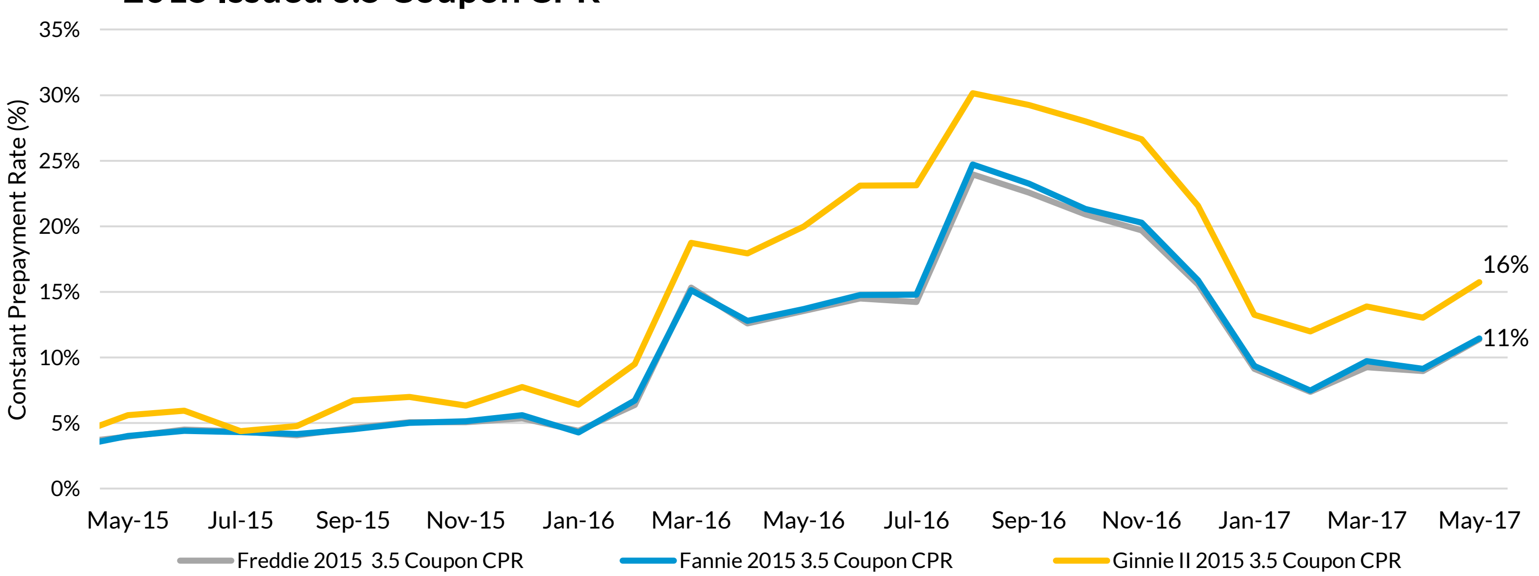
Prepayments on Ginnie Mae securities were lower than on GSE securities from 2011 through mid-2013, but have been higher since. These differences hold across all coupon buckets. The differences are especially pronounced on more recent production. These increased Ginnie speeds reflect the growing share of VA loans, which prepay at faster speeds than FHA 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, FHA permits refinancing of existing mortgages after 6 months, while the GSEs do not allow refinancing for a year. With the increases in interest rates since November 2016, the prepayment speeds for all agencies have slowed down considerably. The rates have stabilized and started to decline slowly since March, and the speeds resumed their increase in May, reflecting both this decline in rates and a normal seasonal uptick.

Aggregate Prepayments



Sources: *Credit Suisse and Urban Institute*. **Note:** *Data as of May 2017*

2015 Issued 3.5 Coupon CPR

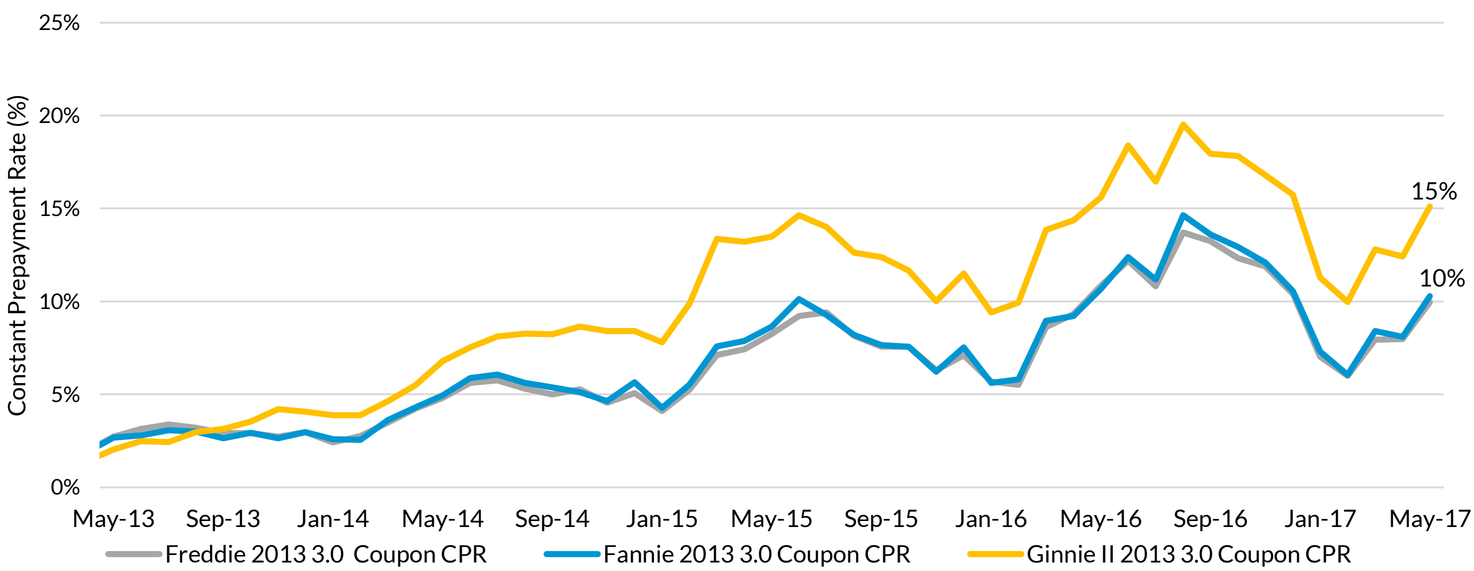


Sources: *Credit Suisse and Urban Institute*. **Note:** *Data as of May 2017*

Prepayments

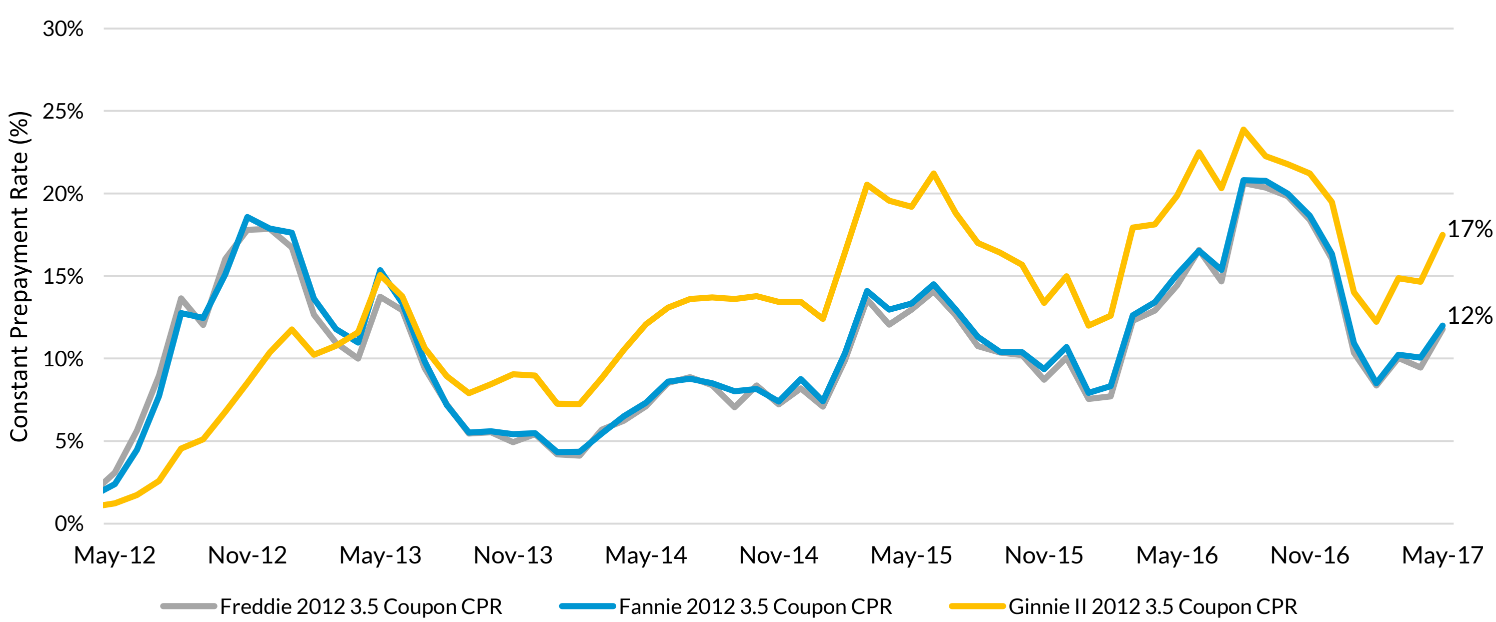
The 2013 Ginnie II 3.0s are prepaying faster than their conventional counterparts. 2012 Ginnie II 3.5s have been faster since mid-2013. The differences accelerated in 2015—potentially due to the FHA mortgage insurance premium (MIP) cut. In January 2015 FHA lowered its MIPs from 135 basis points per annum 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 ris in November, the prepayment speeds of Ginnie and Conventional loans both fell sharply. The speeds ticked up for all agencies in May 2017, mostly due to the recent decline in rates and a normal seasonal uptick.

2013 Issued 3.0 Coupon CPR



Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of May 2017*

2012 Issued 3.5 Coupon CPR

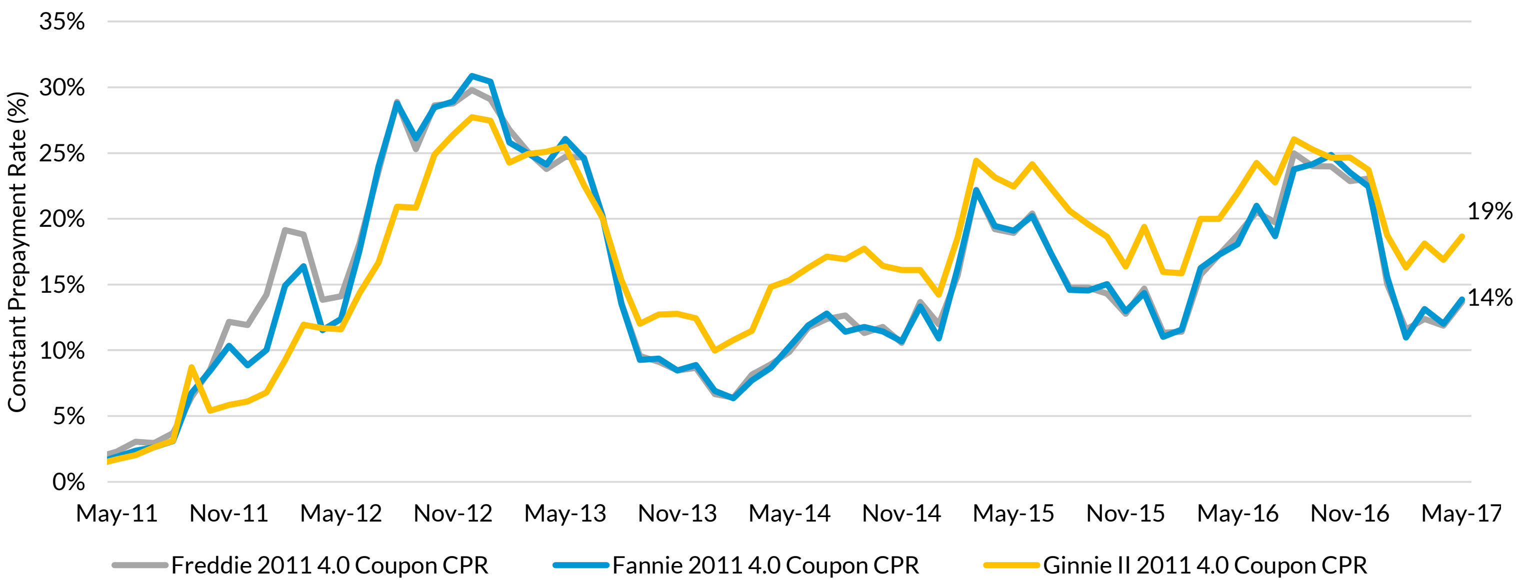


Sources: *Credit Suisse and Urban Institute.* **Note:** *Data as of May 2017*

Prepayments

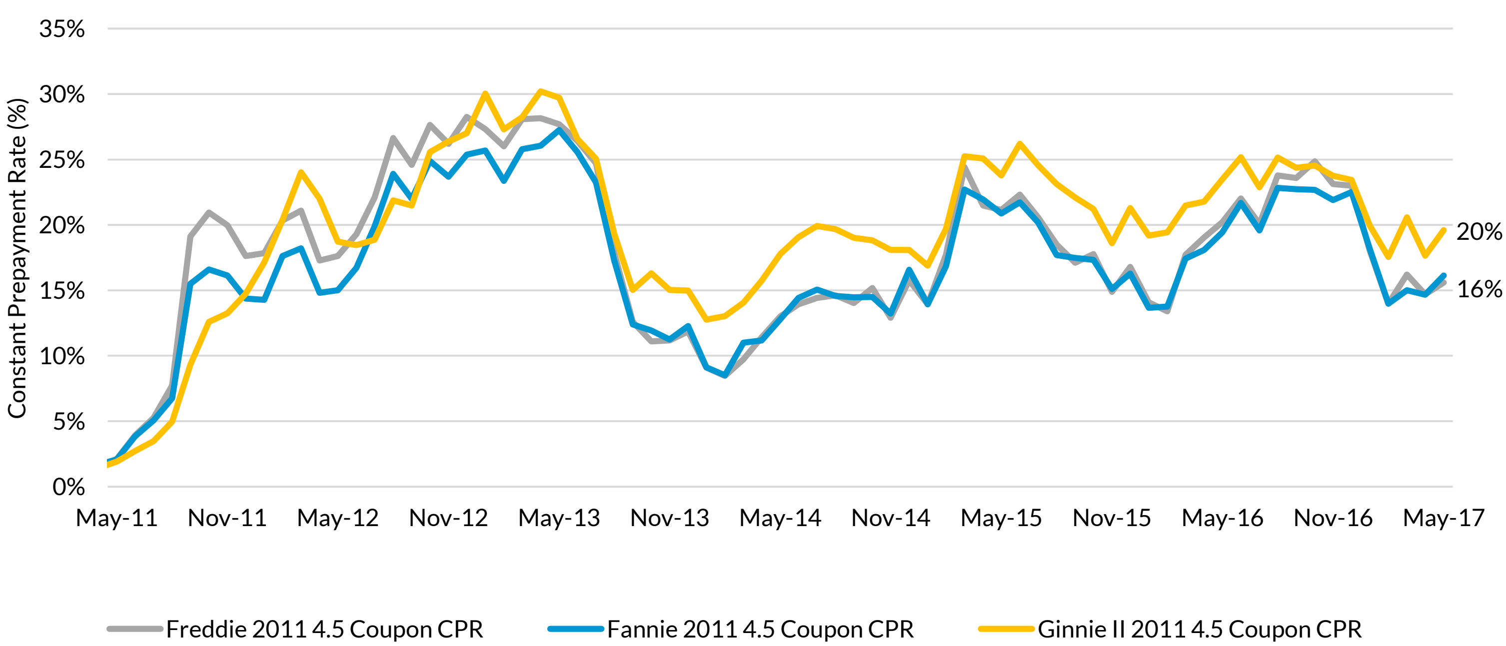
The 2011 Ginnie II 4.0s and 4.5s have been prepaying faster than their conventional counterparts since late 2013. Faster VA mortgage prepays plus simplifications to the FHA streamlined programs in 2013 are likely contributors to the faster speeds. However, as mortgage rates rose sharply since November 2016, the speeds for all agencies have slowed down considerably. The speeds trended up for all agencies in May 2017, mostly due to the recent decline in rates and a normal seasonal uptick.

2011 Issued 4.0 Coupon CPR



Sources: *Credit Suisse and Urban Institute*. **Note:** *Data as of May 2017*

2011 Issued 4.5 Coupon CPR

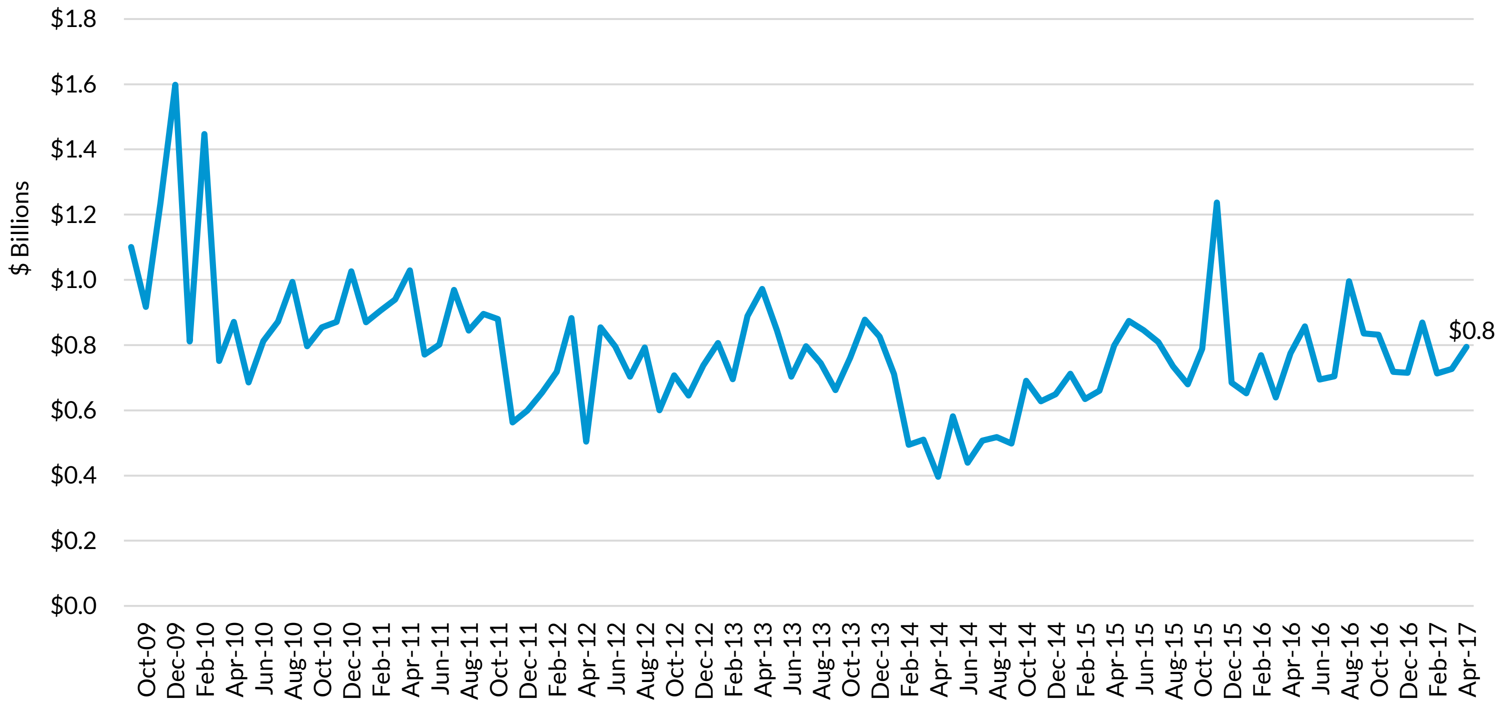


Sources: *Credit Suisse and Urban Institute*. **Note:** *Data as of May 2017*

Other Ginnie Mae Programs Reverse Mortgage Volumes

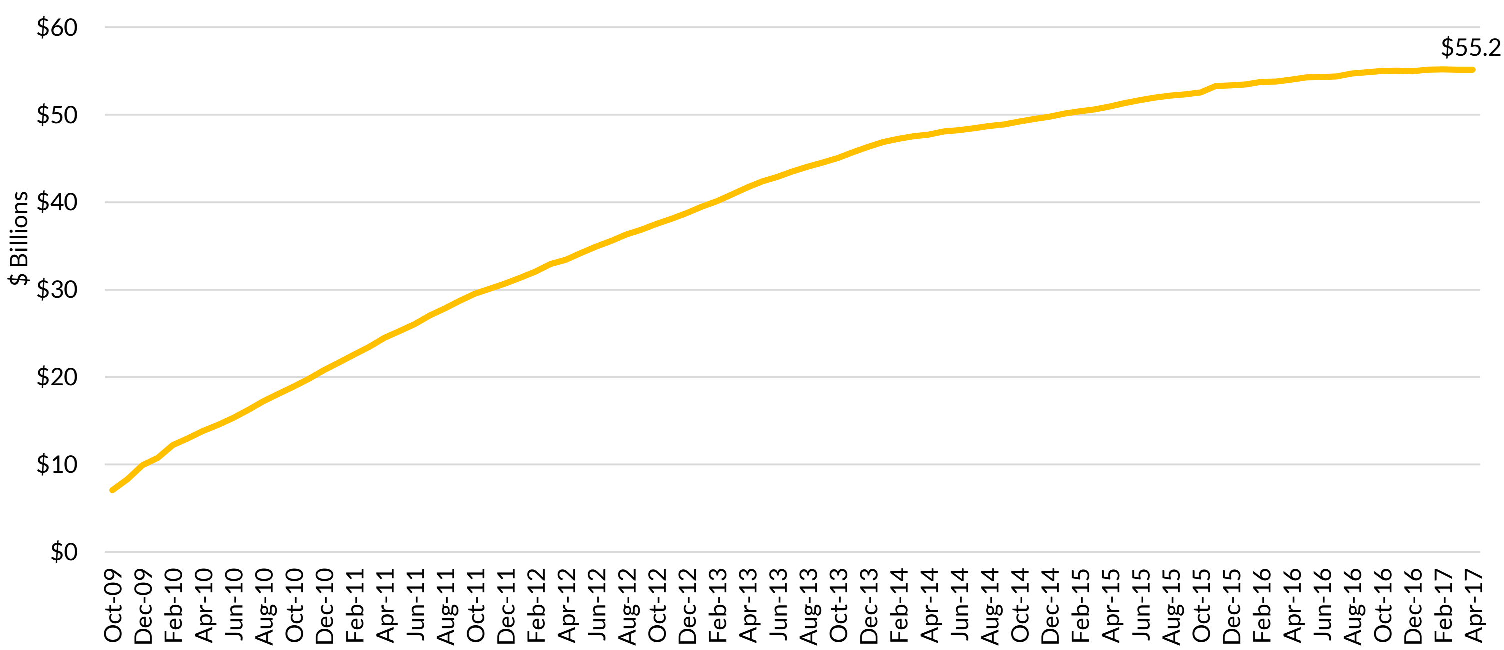
Ginnie Mae reverse mortgage volumes remain steady, with issuance of $0.8 billion in April. Outstanding securities totaled $55.2 billion in April.

HMBS Issuance Volume



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

HMBS Outstanding

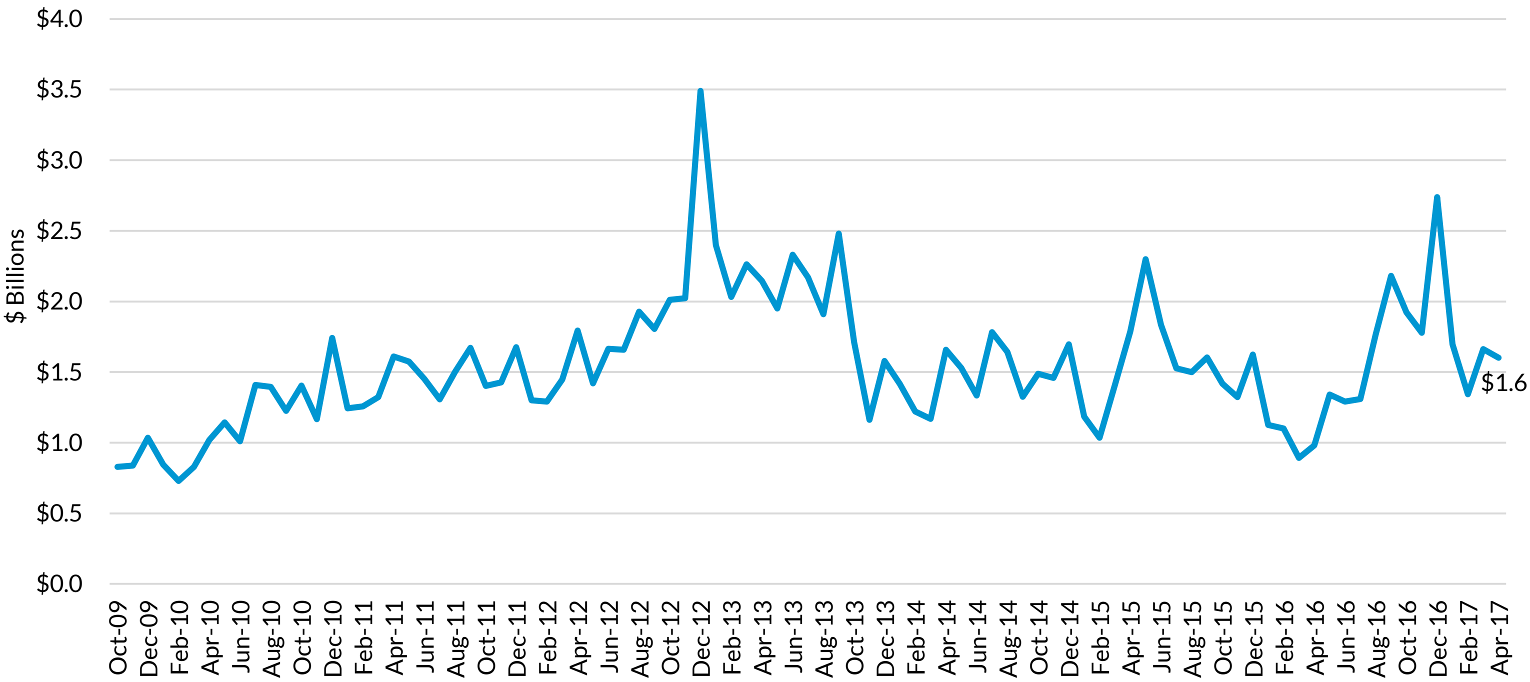


Sources: *Ginnie Mae and Urban Institute.* **Note**: *Data as of April 2017*

Other Ginnie Mae Programs Multifamily Market

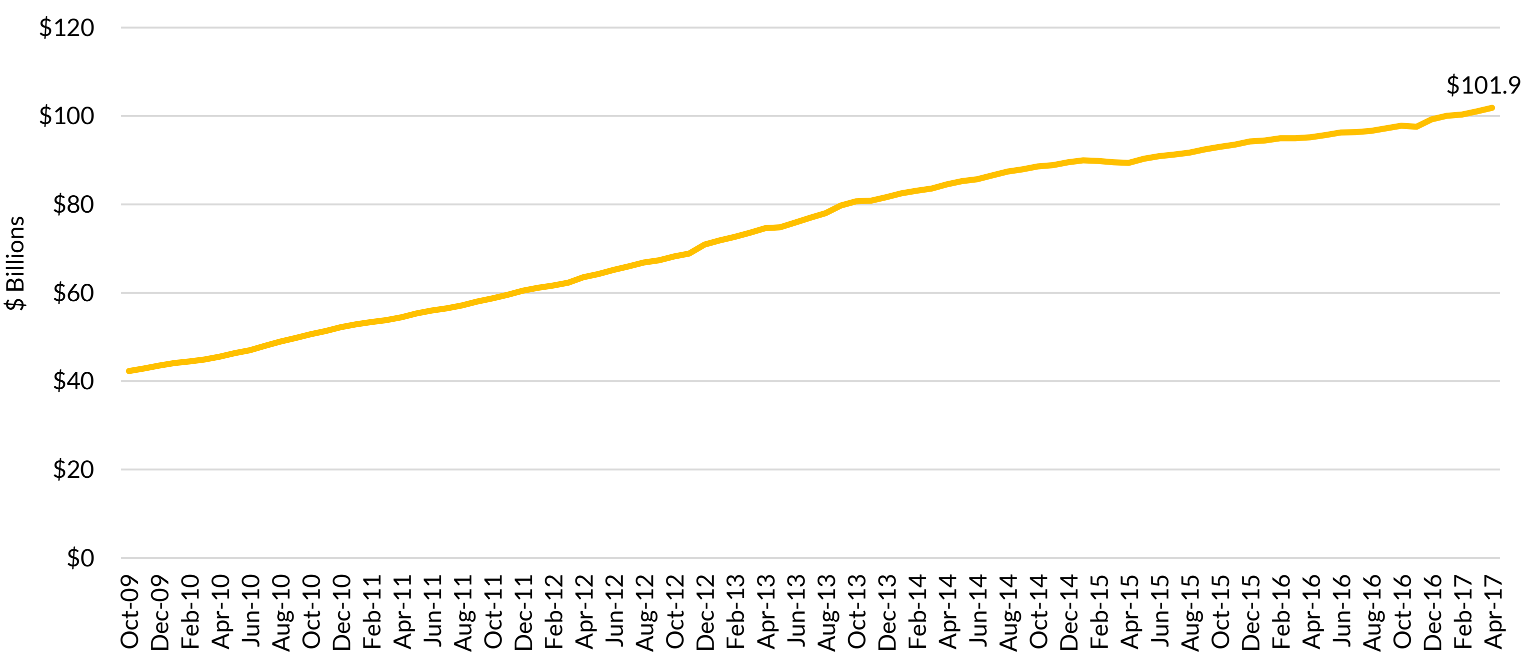
Ginnie Mae multifamily issuance volumes in April totaled $1.6 billion. Outstanding multifamily securities totaled $101.9 billion in April.

Ginnie Mae Multifamily MBS Issuance



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

Ginnie Mae Multifamily MBS Outstanding

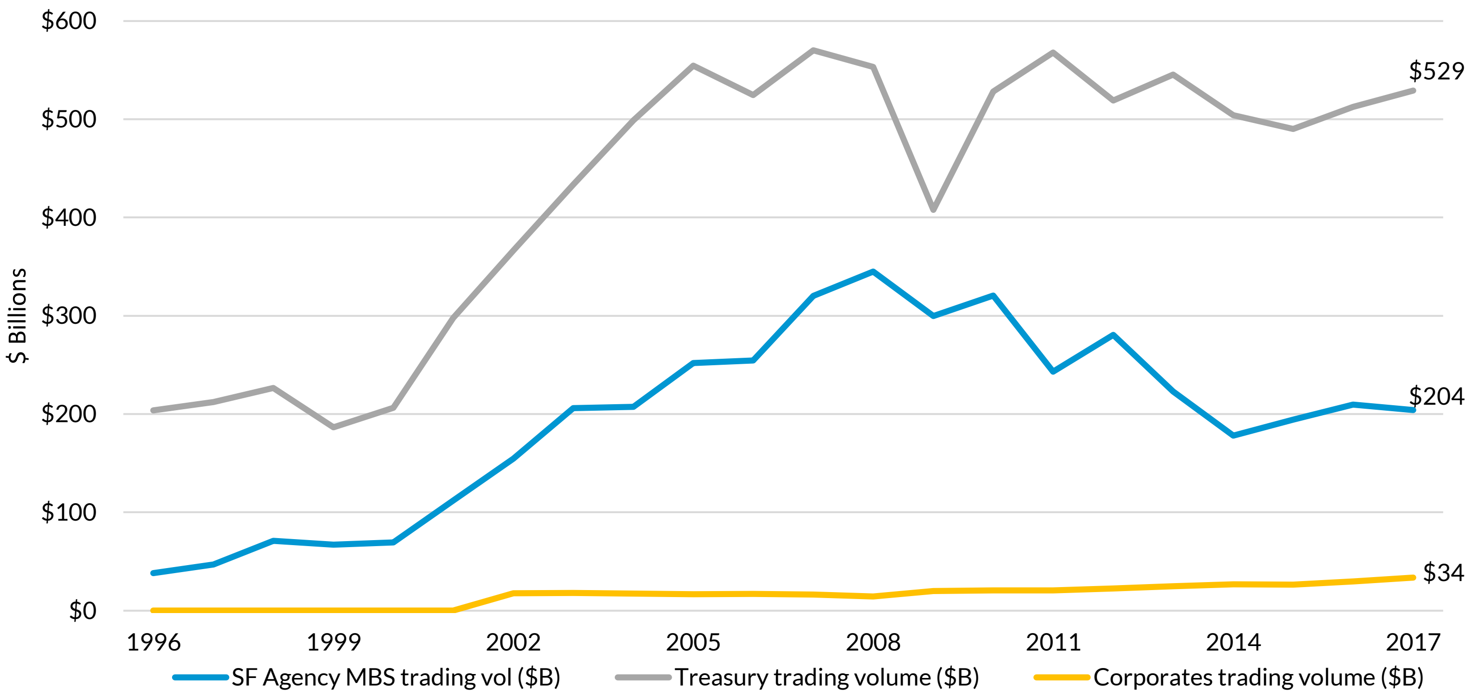


Sources: *Ginnie Mae and Urban Institute.* **Note**: *Data as of April 2017*

Market Conditions

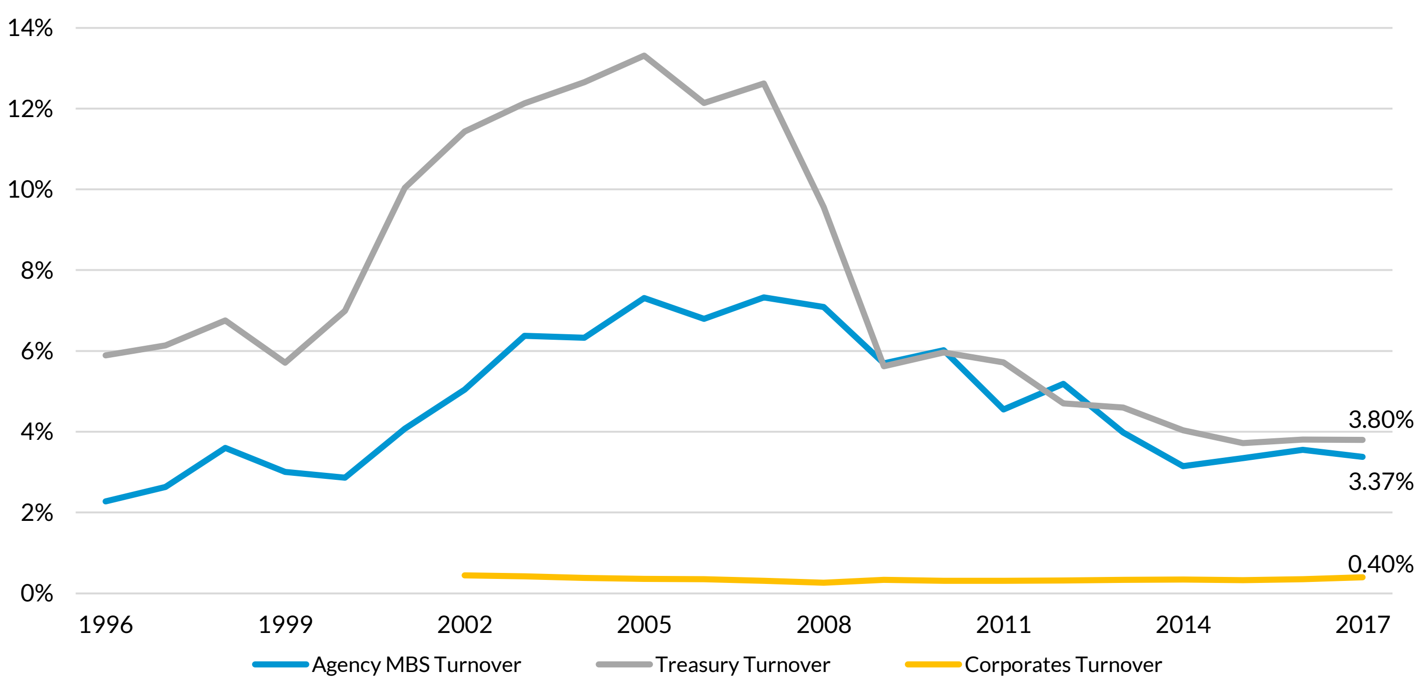
Agency MBS trading volume and turnover in 2017, while well lower than in 2005-2013, has been more robust than in the 2014-2015 period, and largely unchanged from 2016. In the first five months of 2017, daily turnover was 3.37 percent versus 3.55 percent in 2016 and 3.34 percent in 2015. Note that average 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 May 2017*

Average Daily Turnover by Sector

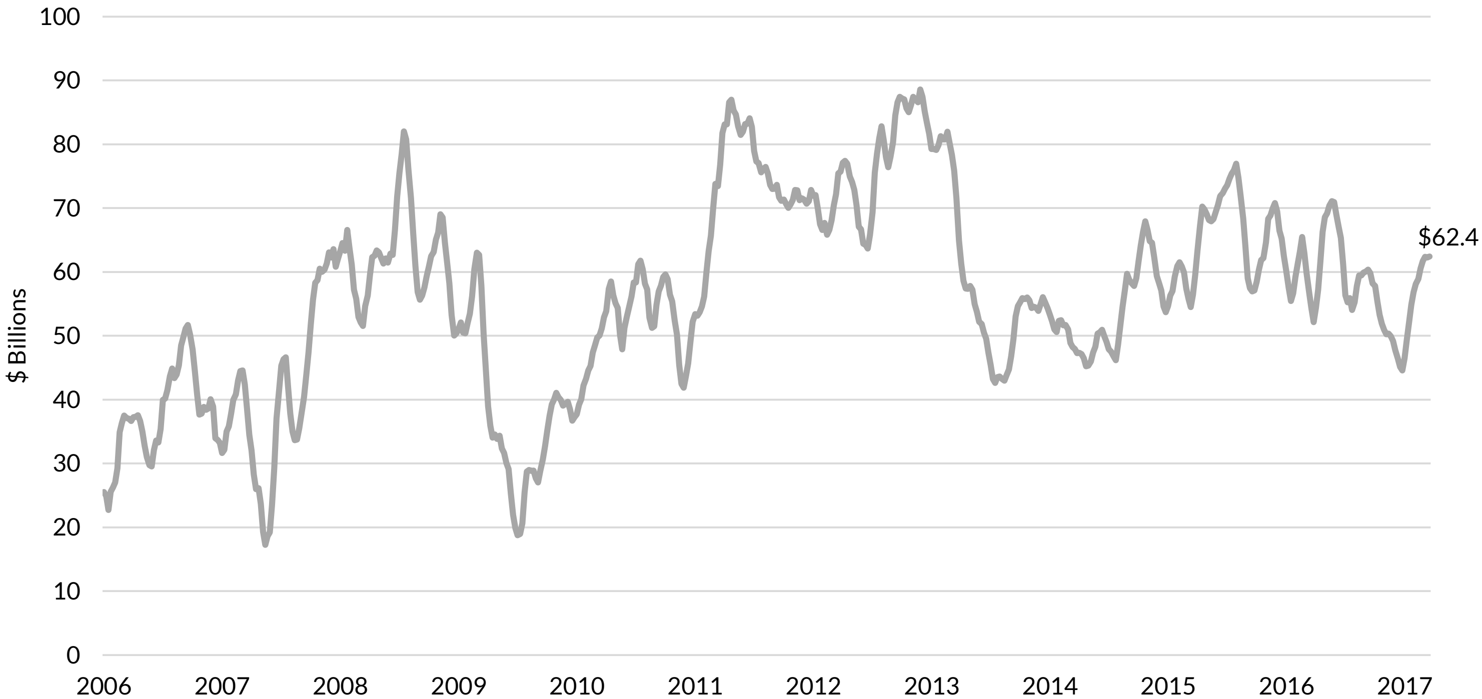


Sources: *SIFMA and Urban Institute.* ***Note:*** *Data as of May 2017*

Market Conditions

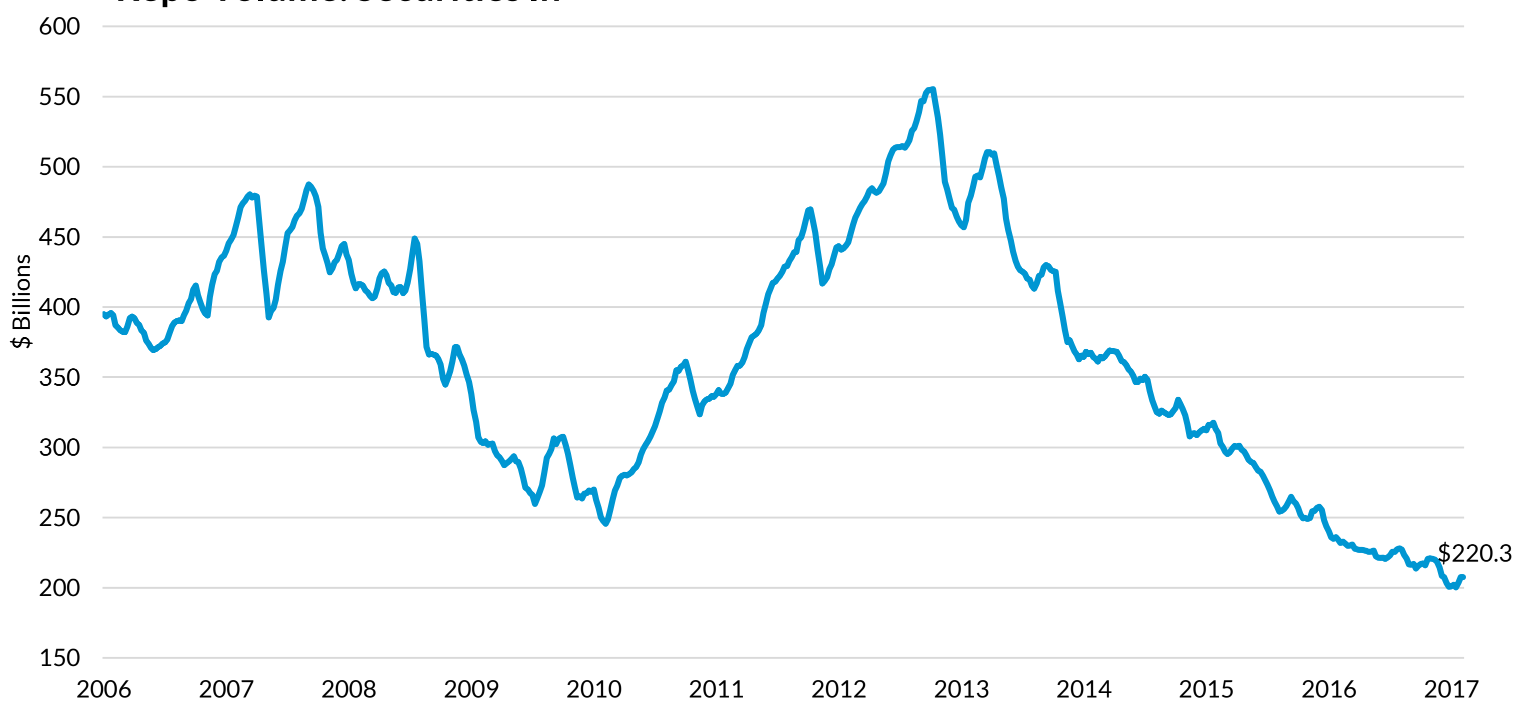
Dealer net positions in Agency MBS are currently within the recent range, although gross positions may well be down more. The volume of repurchase activity is down sharply. This reflects banks cutting back on lower margin businesses.

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 May 2017*

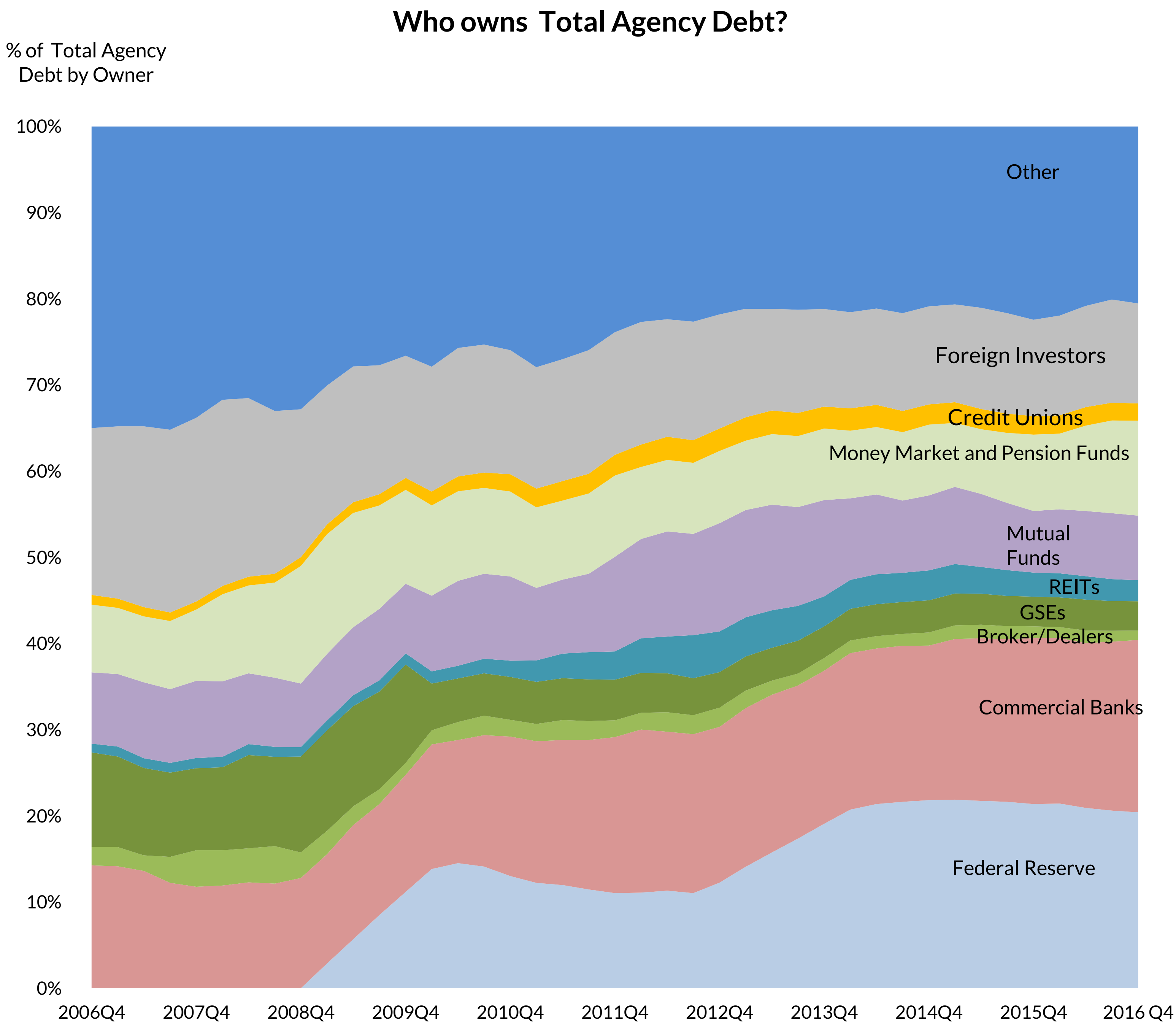
Repo Volume: Securities In



Sources: *Federal Reserve Bank of New York Primary Dealer Statistics and Urban Institute.* **Note:** *Data as of May 2017*

MBS Ownership

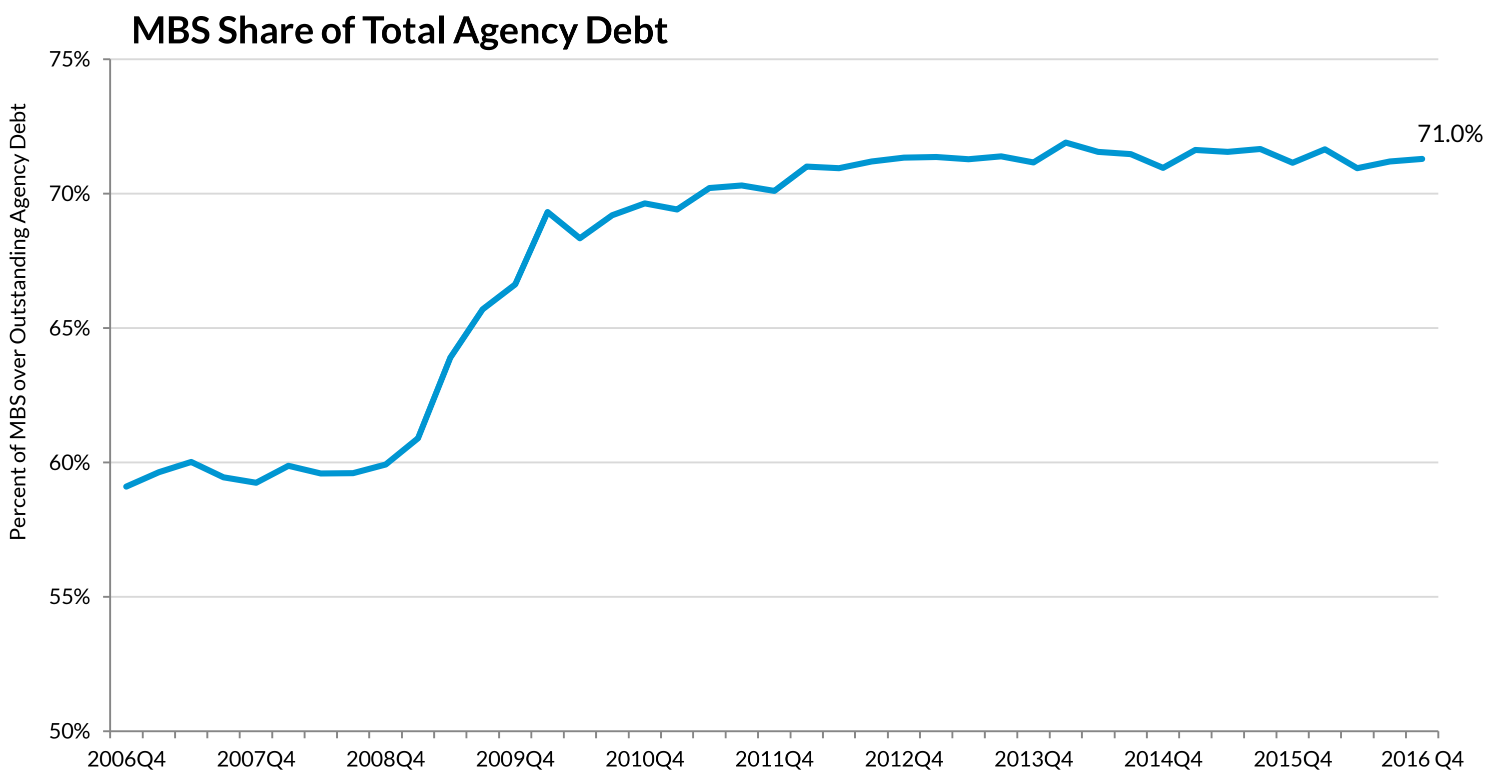
The largest holders of agency debt (Agency MBS + agency debt) include the Federal Reserve (20 percent), commercial banks (20 percent) and foreign investors (12 percent). The broker/dealer and GSE shares are a fraction of what they once were.



Sources: *Federal Reserve Flow of Funds and Urban Institute.* **Note:** *Data as of Q4 2016.*

MBS Ownership

As Fannie and Freddie reduce the size of their retained portfolio, less agency debt is required to fund that activity, hence the MBS share of total agency debt increases. For Q4 2016, the MBS share of total agency debt stood at 71.0 percent. Commercial banks are the second largest holders of Agency MBS behind the Federal Reserve. Out of their $1.7 trillion in holdings as of the end of May, $1.3 trillion of it was held by the top 25 domestic banks.



***Sources**: eMBS, Federal Reserve Flow of Funds, and Urban Institute. **Note**: Data as of Q4 2016.*

	Commercial Bank Holdings ($Billions)								Week Ending			
	Apr-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May3	May 10	May 17	May 24
Largest Domestic Banks	1147.0	1217.7	1217.2	1218.0	1224.8	1230.0	1230.2	1238.5	1240.5	1247.2	1263.0	1265.3
Small Domestic Banks	432.1	444.8	449.8	451.9	456.4	456.0	458.0	460.0	461.6	462.8	462.9	464.4
Foreign Related Banks	14.2	14.3	14.1	12.6	12.7	12.9	12.9	12.5	11.3	11.4	11.7	11.8
Total, Seasonally Adjusted	1593.3	1676.8	1681.1	1682.5	1693.9	1698.9	1701.1	1711	1713.4	1721.4	1737.6	1741.5

***Sources**: Federal Reserve Bank and Urban Institute. **Note**: Data as of May 2017*

MBS Ownership

Out of the $1.8 trillion in MBS holdings at banks and thrifts, $1.3 trillion is in agency pass-through form: $950.7 billion in GSE pass-throughs and $329.9 billion in Ginnie Mae pass-throughs. There are another $419.3 billion in Agency CMOs. Non-agency holdings total $62.4 billion. Ginnie Mae pass-throughs have been the fastest growing sector in the past 2 years. Bank and thrift holdings of MBS are very concentrated, with the top 20 holders accounting for 69 percent of the total, and the top 5 holders accounting for 43 percent of the total.

Bank and Thrift Residential MBS Holdings

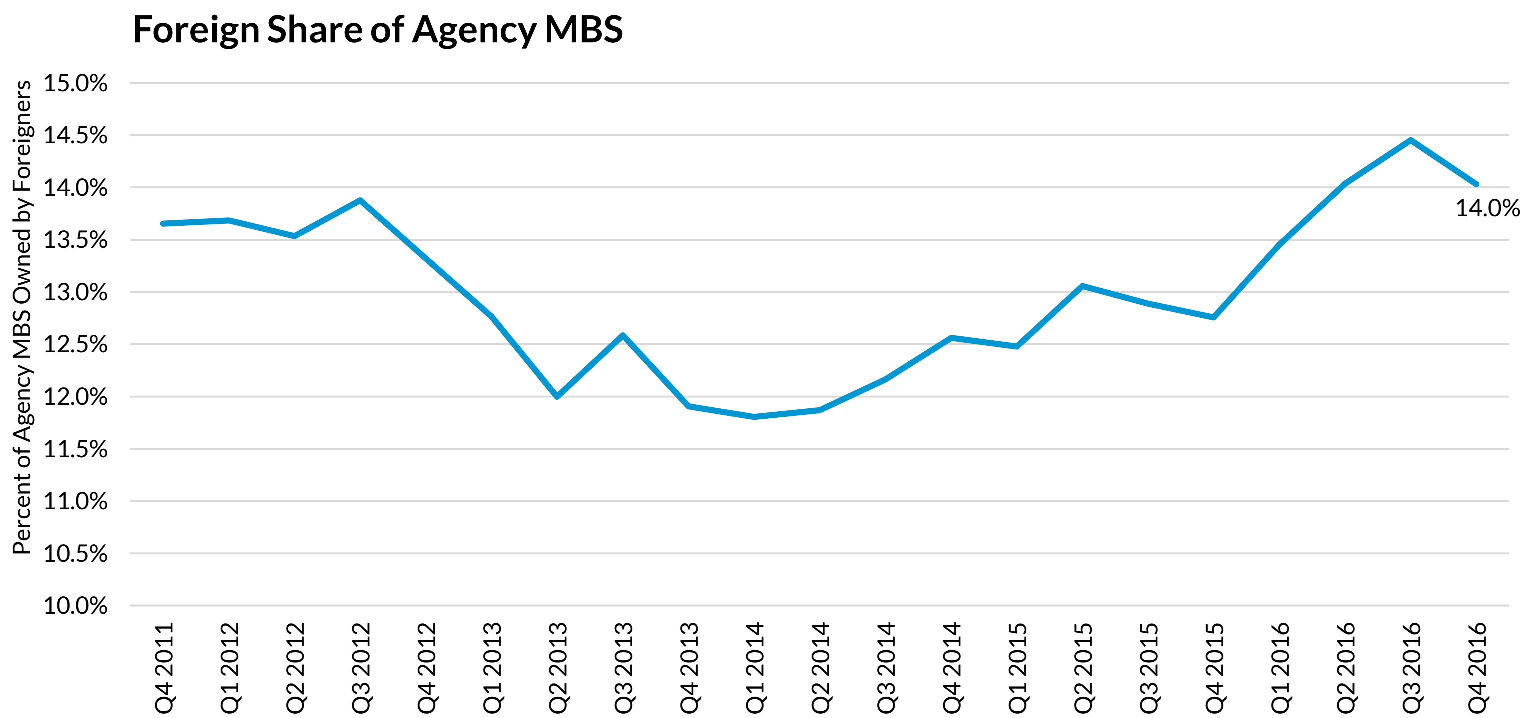
	All Banks & Thrifts ($Billions)						
	Total	Agency MBS	GSE PT	GNMA PT	Agency CMO	Private MBS	Private CMO
2000	$683.90	$392.85	$234.01	$84.26	$198.04	$21.57	$71.43
2001	$810.50	$459.78	$270.59	$109.53	$236.91	$37.62	$76.18
2002	$912.36	$557.43	$376.11	$101.46	$244.98	$20.08	$89.88
2003	$982.08	$619.02	$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

	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	$310,551	$177,393	$118,070	$14,440	$648	17.6%
2	Wells Fargo & Company	$207,152	$163,855	$30,559	$5,378	$7,360	11.8%
3	JP Morgan Chase & Co.	$104,125	$69,311	$21,024	$628	$13,162	5.9%
4	U S. Bancorp.	$79,237	$29,118	$10,521	$39,597	$2	4.5%
5	Charles Schwab Bank	$63,351	$38,097	$9,533	$15,721	$0	3.6%
6	Citi Group Inc.	$60,717	$45,874	$331	$9,241	$5,271	3.4%
7	Capital One Financial Corporation	$51,675	$17,844	$9,995	$22,124	$1,751	2.9%
8	Bank of New York Mellon Corp.	$50,209	$30,533	$2,066	$15,060	$2,550	2.8%
9	PNC Bank, National Association	$41,956	$29,782	$5,180	$3,601	$3,393	2.4%
10	Branch Banking and Trust Company	$34,897	$9,732	$3,563	$20,959	$643	2.0%
11	State Street Bank and Trust Company	$29,920	$3,852	$6,777	$10,253	$9,038	1.7%
	Morgan Stanley	$25,059	$10,084	$6,669	$8,306	$0	1.4%
12	KeyBank National Association	$24,692	$1,003	$1,339	$22,350	$0	1.4%
	SunTrust Bank	$22,399	$12,125	$10,201	$0.4	$71	1.3%
13	HSBC Bank USA, National Association	$20,843	$7,468	$5,338	$8,022	$6	1.2%
16	E*TRADE Bank	$20,581	$11,650	$3,966	$4,966	$0	1.2%
17	Regions Bank	$18,641	$11,112	$5,495	$2,030	$4	1.1%
18	Fifth Third Bank	$16,244	$3,735	$3,951	$8,558	$0	0.9%
19	MUFG Union Bank, National Association	$16,044	$5,340	$4,963	$5,314	$427	0.9%
20	Santander Bank, N.A.	$15,671	$3,718	$3,413	$8,541	$0	0.9%
	Total Top 20	**$1,213,964**	**$681,626**	**$262,954**	**$225,089**	**$44,326**	**68.90%**

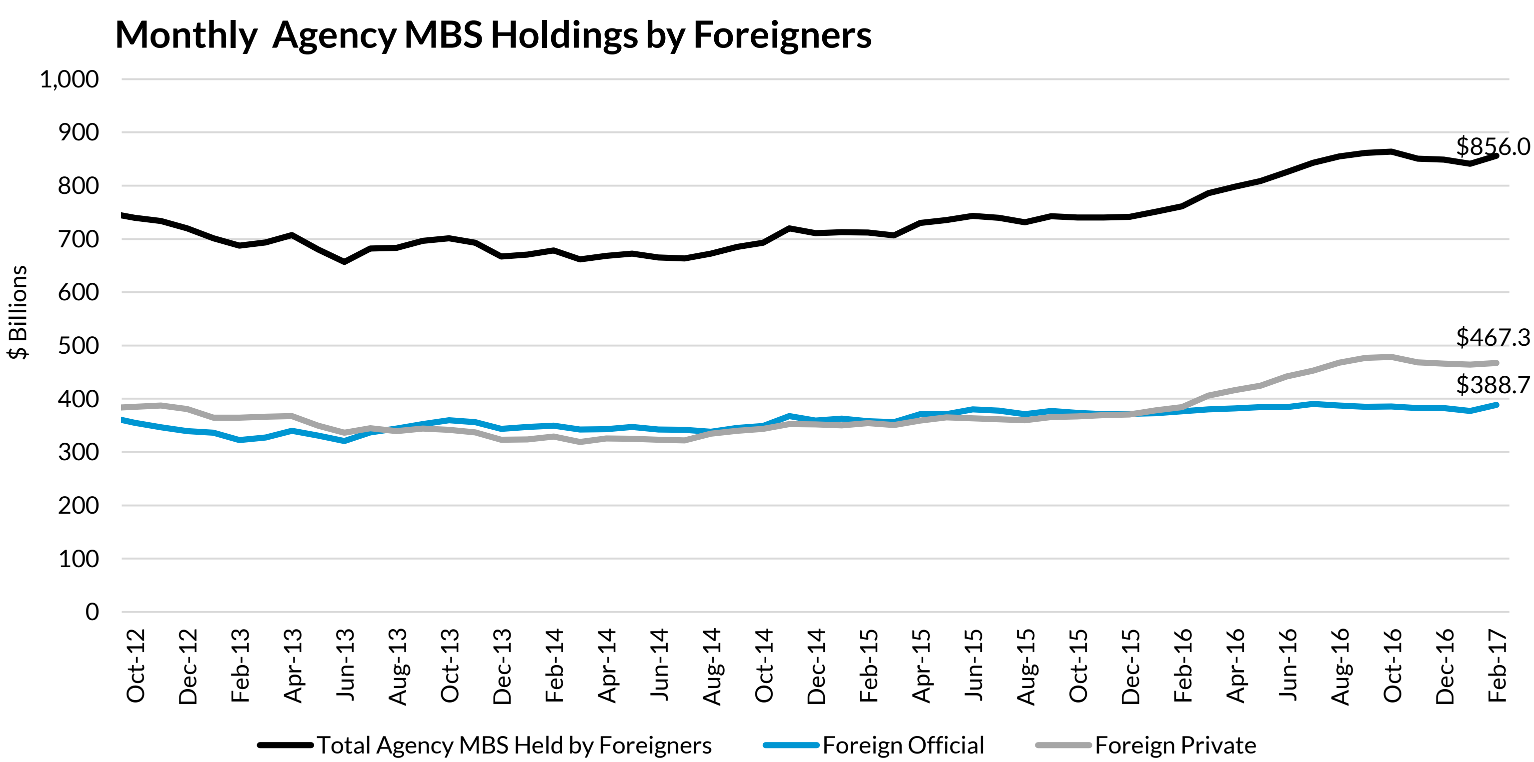
Sources: *Inside Mortgage Finance and Urban Institute.* ***Note:*** *Data as of Q1 2017*

MBS Ownership

Foreign investors hold 14.0 percent of agency MBS, up considerably from the lows in 2013. For the month of February, this represents $856.0 billion in agency MBS, $388.7 billion held by official institutions and $467.3 billion held by private investors.



***Sources**: SIFMA and Treasury International Capital (TIC). **Note**: Data as of Q4 2016.*



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

MBS Ownership

The single largest foreign holders of agency MBS are Taiwan, China and Japan; these three countries 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. Our estimates indicate that Japan has been the single largest buyer of MBS between June 2016 and January 2017, adding $31 billion over the 7-month period.

Agency MBS+ Agency Debt

	Level of Holdings ($ Millions)					Change in Holdings ($ Millions)			
Country	Jun-16	Sep-16	Dec-16	Jan-17	Feb-17	Q3 2016	Q4 2016	Jan-17	Feb-17
Taiwan	207,000	208,352	204,005	207,344	209,651	1,352	-4,347	3,339	2,307
China	196,000	191,743	184,151	181,798	193,452	-4,257	-7,592	-2,353	11,654
Japan	197,000	222,116	220,644	218,038	220,013	25,116	-1,472	-2,606	1,975
Ireland	48,000	48,307	47,065	47,175	45,973	307	-1,242	110	-1,202
Luxembourg	32,000	32,549	35,352	33,665	30,412	549	2,803	-1,687	-3,253
Cayman Islands	31,000	30,686	30,186	29,844	29,281	-314	-500	-342	-563
Switzerland	17,000	20,638	15,626	15,262	15,708	3,638	-5,012	-364	446
United Kingdom	10,000	10,520	9,578	9,306	9,474	520	-942	-272	168
Canada	6,000	6,578	5,047	5,116	5,204	578	-1,531	69	88
Belgium	5,000	4,336	4,597	4,484	4,825	-664	261	-113	341
Rest of World	206,000	208,604	208,353	198,799	193,265	2,604	-251	-9,554	-5,534
Total	955,000	984,429	964,604	950,831	957,258	29,429	-19,825	-13,773	6,427

Agency MBS Only (Estimates)

	Level of Holdings ($Millions)*					Change in Holdings ($Millions)*			
Country	Jun-16	Sep-16	Dec-16	Jan-17	Feb-17	Q3 2016	Q4 2016	Jan-17	Feb-17
Taiwan	207,000	208,337	204,005	207,344	209,457	1,337	-4,332	3,339	2,113
China	187,000	183,274	176,575	177,999	191,862	-3,726	-6,699	1,424	13,862
Japan	185,000	209,835	212,729	206,655	206,326	24,835	2,894	-6,074	-329
Ireland	38,000	38,304	37,177	38,102	38,026	304	-1,126	925	-76
Luxembourg	27,000	27,543	30,931	28,994	26,821	543	3,388	-1,937	-2,173
Cayman Islands	23,000	22,725	22,284	22,524	22,677	-275	-441	240	152
Switzerland	12,000	15,597	10,791	10,779	11,533	3,597	-4,806	-12	754
United Kingdom	8,000	8,514	7,629	7,567	7,919	514	-885	-61	352
Canada	4,000	4,572	3,162	3,334	3,553	572	-1,410	172	219
Belgium	2,000	1,419	1,645	1,637	2,033	-581	227	-9	396
Rest of World	139,000	141,575	141,760	136,257	135,763	2,575	185	-5,503	-494
Total	832,000	861,694	848,688	841,193	855,970	29,694	-13,006	-7,495	14,777

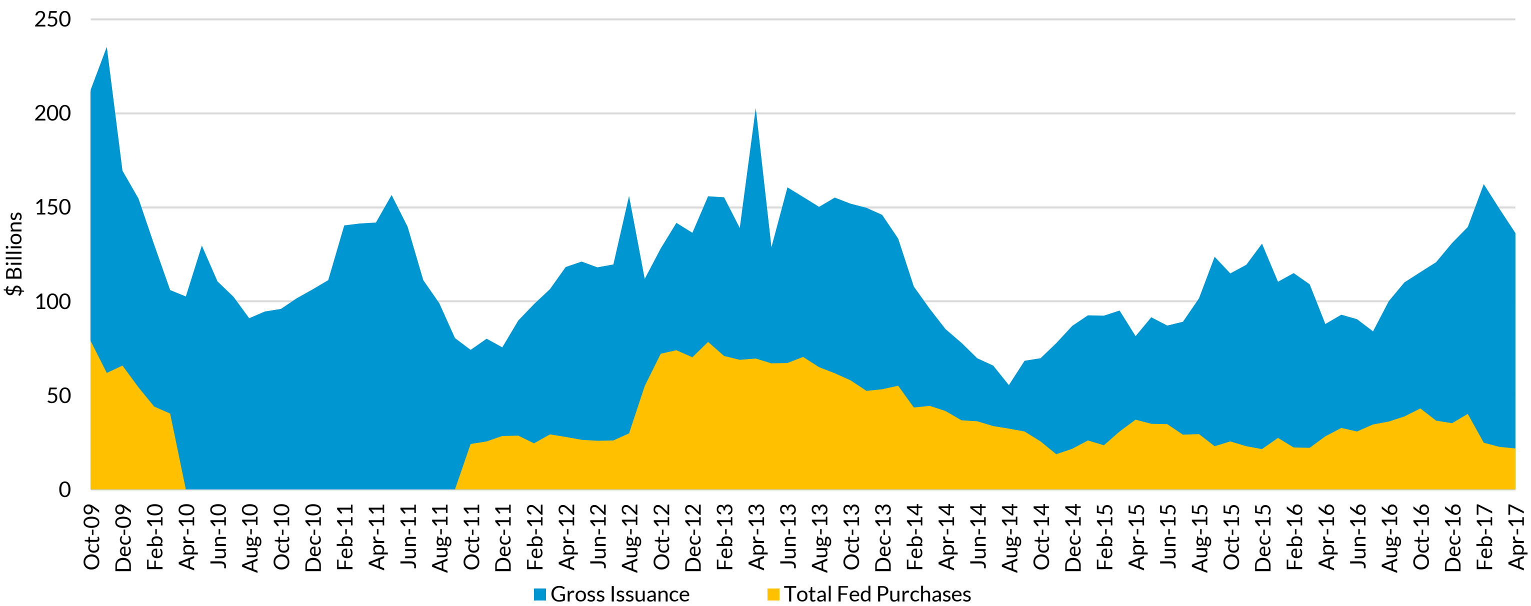
***Sources** :Treasury International Capital (TIC) and Urban Institute.*
***Note:** Data as of February 2017.*

*calculated based on June 2016 report with amount asset backed per country

MBS Ownership

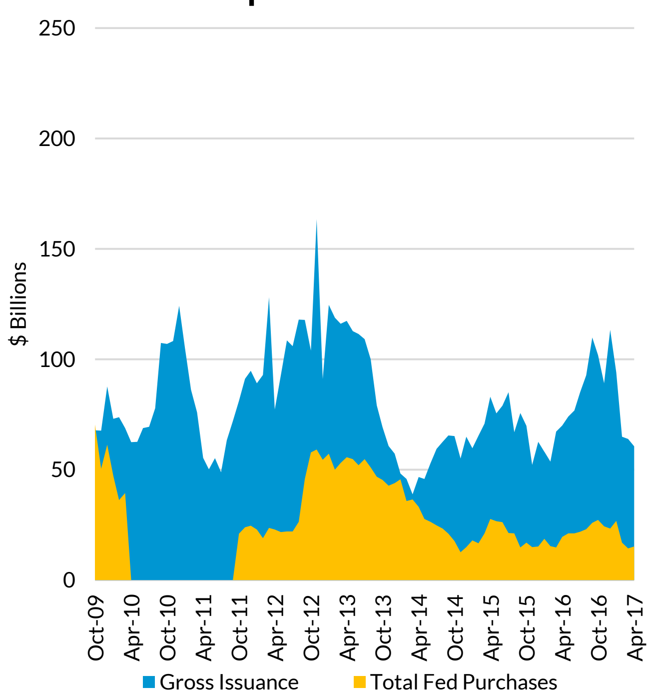
In October 2014, the Fed ended its purchase program, but continued buying at a significantly reduced level, reinvesting funds from pay downs on mortgages and agency debt into the mortgage market. Since then, the Fed's absorption of gross issuance has been between 20 and 30 percent; it was 22.5 percent for April 2017. During this month, the Fed has been buying Ginnie Mae securities and GSE securities at similar rates. Over the past year, the Fed has absorbed an average of 25.9 percent of GSE issuance and 26.1 percent of Ginnie Mae issuance. The Fed announced at their June 2017 meeting that they will cut back on MBS monthly purchase volume.

Total Fed Absorption



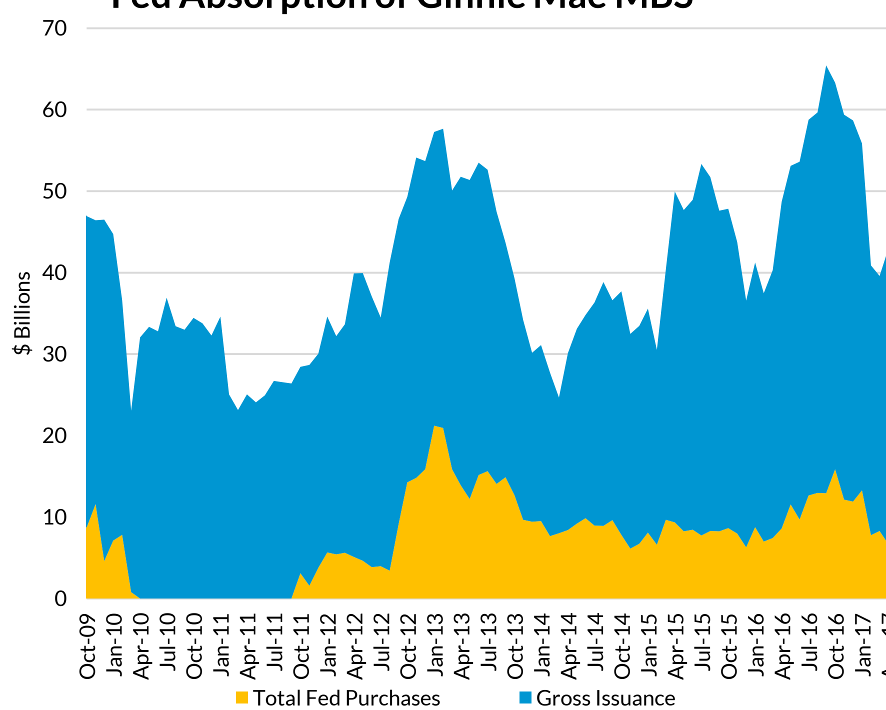
Sources: *eMBS, Federal Reserve Bank of New York and Urban Institute.* ***Note:*** *Data as of April 2017.*

Fed Absorption of GSE MBS



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

Fed Absorption of Ginnie Mae MBS



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