# Global Markets Analysis Report

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

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

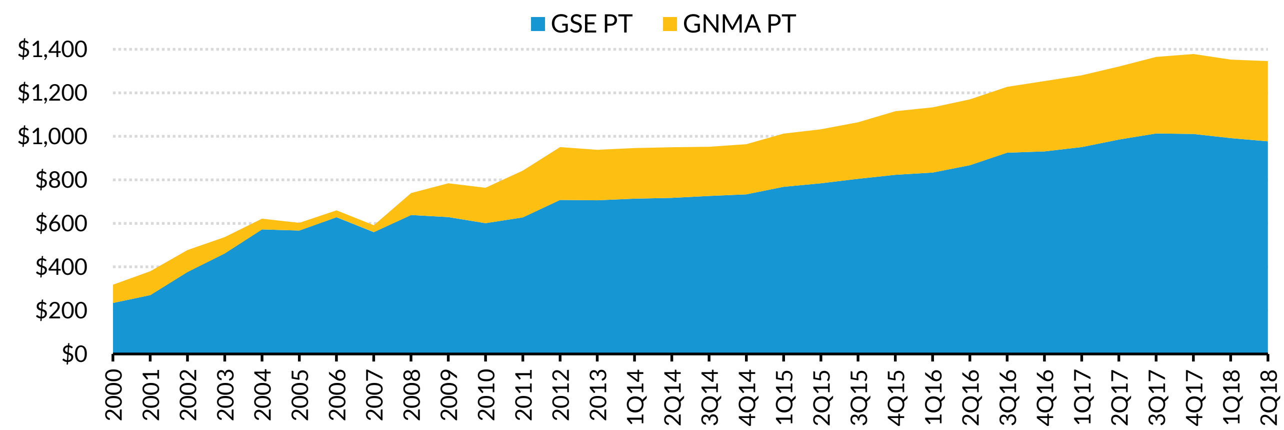
# CONTENTS

# HIGHLIGHTS

**Rare decline in bank and thrift holdings of agency MBS**

Page 46 shows the total volume of MBS owned by US banks and thrifts since the year 2000. This data is broken down by agency vs non-agency, pass-through versus CMO; agency pass-throughs, which constitute the bulk of the holdings, are further broken down by type, GSE or Ginnie Mae. During this period, banks and thrifts have significantly increased their ownership of agency MBS pass-throughs, from about $318 billion at year end of 2000 to over $1.35 trillion at the end of Q2 2018. Except for a few isolated periods of year over year decline (mostly during the bubble), holdings increased every single quarter from Q3 2014 to year-end 2017.

**Bank and Residential Thrift Holdings ($ billions)**




**Source**: Inside Mortgage Finance and Urban Institute.

After 14 consecutive quarters of increase, bank and thrift holdings of agency MBS pass-throughs fell for the first time in Q1 2018, then again in Q2. All of the nearly $33 billion drop came from conventional MBS; ownership of Ginnie MBS by banks and thrifts is largely unchanged from year-end 2017.

While the decline is a small portion of the total $1.35 trillion agency MBS pass-throughs held by banks and thrifts, it is noteworthy because it could be an early indicator of a long-term trend. Banks increased their ownership of federally-backed agency MBS during the crisis in part due to low demand for loans from consumers and businesses during the recession. But this demand may now be coming back against the backdrop of a stronger economy. Commercial and industrial loans held by banks jumped by nearly $100 billion while overall bank credit grew by $135 billion in the first half of 2018, according to Federal Reserve data.

Additionally, dramatic steepening of the yield curve over the last year has reduced the spread between short term borrowing rates and MBS yields, making agency MBS less attractive relative to before. The spread between 3-month LIBOR and current coupon MBS tightened from about 215 bps at the beginning to 2017 to approximately 125 bps at the end of Q2 2018. Collectively, less attractive returns on agency MBS and increased loan demand may be leading banks to reduce their agency MBS holdings.

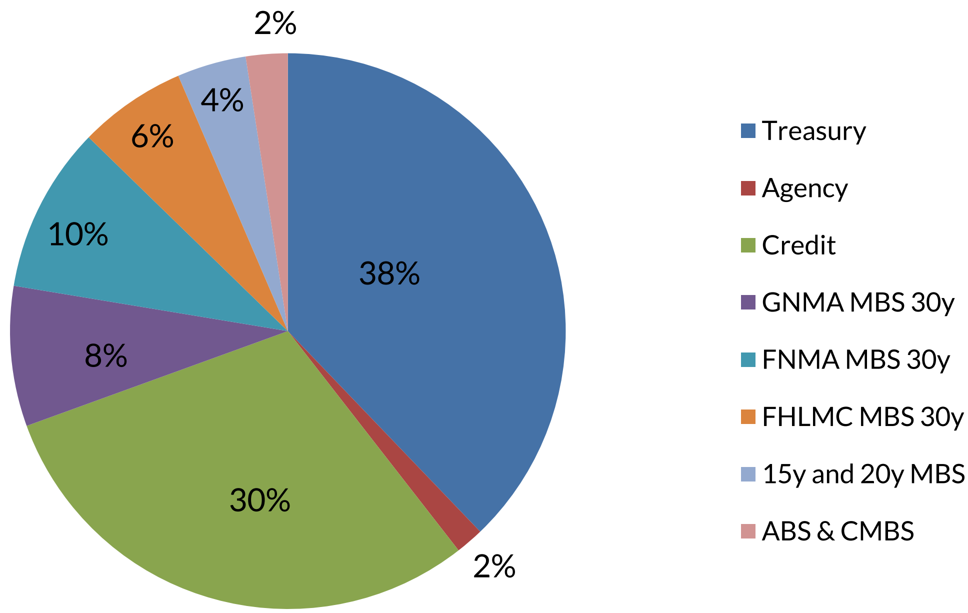
***Highlights this month*:**

- US MBS hedged into yen and euros looks less attractive versus JGB and Bund securities in September 2018, due to sizeable increases in the cost of hedging the US securities (pages 7-8).
- The total value of the US housing market continued to rise in Q2 2018, driven by a $252 billion increase in household equity over the quarter (page 14).
- First lien originations totaled $820 billion in H1 2018, with the origination shares of portfolio and private-label securities up slightly from 2017 (page 16).
- The FHA nonbank originator share hit a historical high in August 2018 (page 31).
- The FICO scores for Ginnie Mae bank originators increased in August 2018, while FICO scores for nonbank originators stayed flat (page 34).

# Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

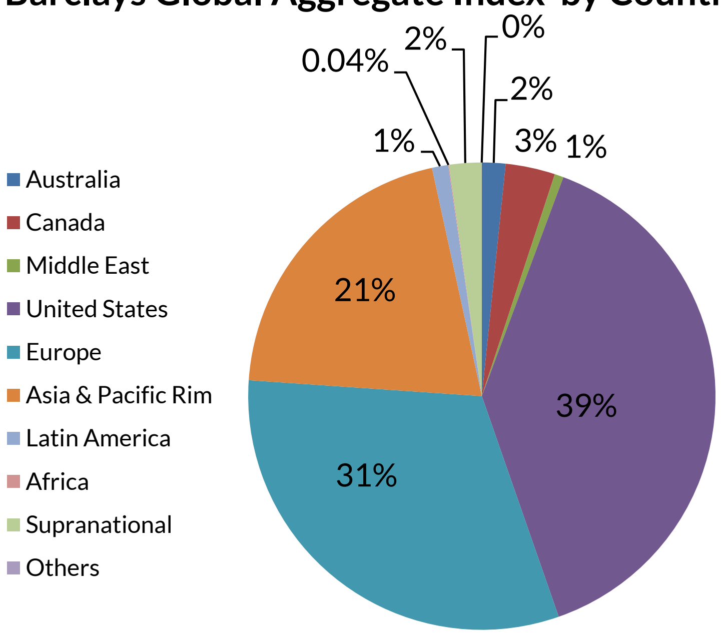
US MBS comprise 28 percent of the Barclays US Aggregate Index- less than either the US Treasury share (38%) or the US Credit share (30%). Fannie Mae 30-year MBS comprises the largest percent of US MBS (10%), while Ginnie Mae 30-year MBS and Freddie Mac 30-year MBS comprise 8 percent and 6 percent of the market, respectively. Mortgages with terms of 15 and 20 years comprise the remaining 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



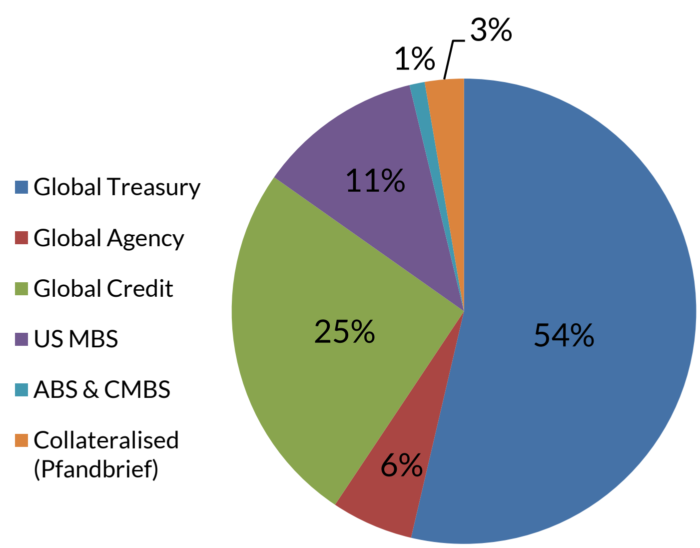

***Sources:*** *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of September 2018.*

## Barclays Global Aggregate Index by Country




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

## Barclays Global Aggregate Index by Sector

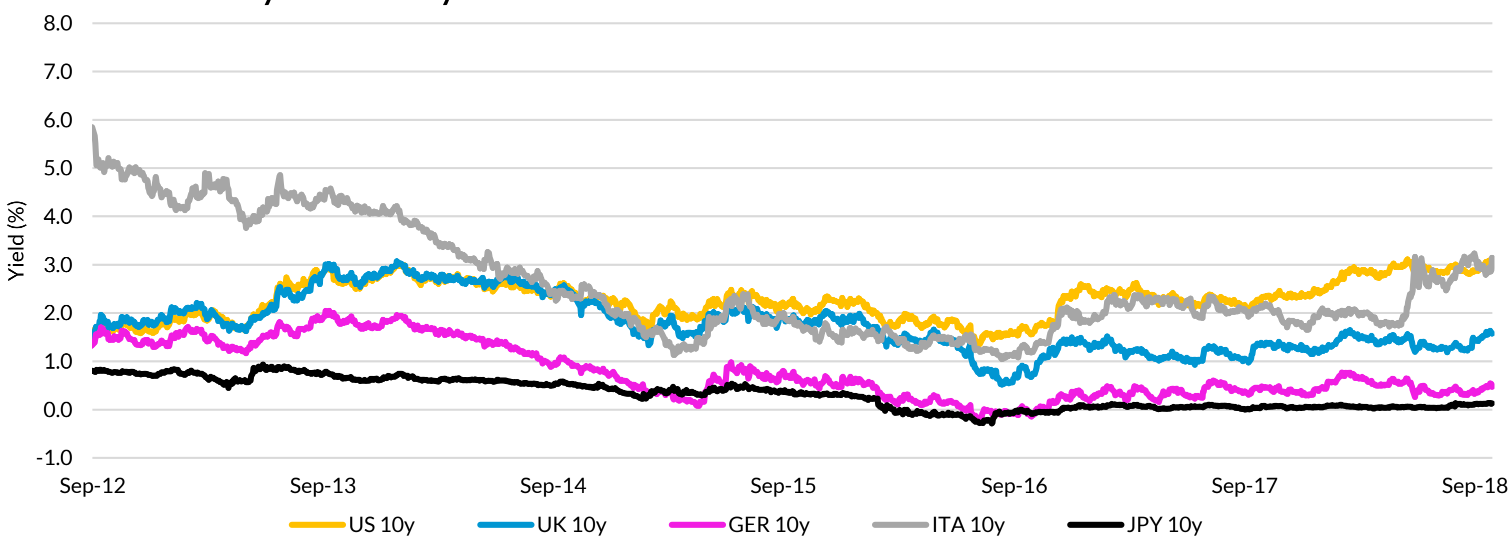



***Sources:*** *Bloomberg and State Street Global Advisors*
***Note:*** *Data as of September 2018.*

# Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

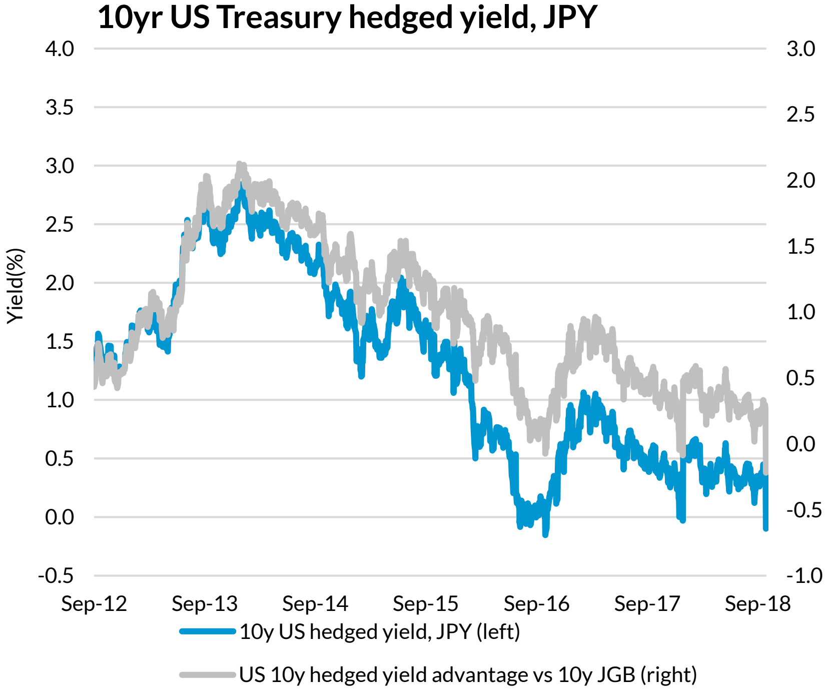
US Treasury interest rates, as measured by the 10-year note, have consistently been the highest in the developed world over the past few years, but was surpassed by Italy in August 2018. In September 2018, the US 10-year note increased to 3.06, but remained below the Italian 10-year note, which stood at 3.15. Interest rates in the UK, Germany, and Japan all increased, to 1.57, 0.47, and 0.13 percent, respectively. Due to a large increase in the cost of currency hedging at the end of Q3, 10-year US Treasury yields, hedged into JPY dropped sharply to -8 bps, -15bps if hedged into EUR. Consequently, the hedged yield difference between the 10-year Treasuries and JGBs fell sharply to -21 bps, and the hedged yield difference between the 10-year Treasuries and Bunds fell to -62 bps.

### Global 10-year Treasury Yields



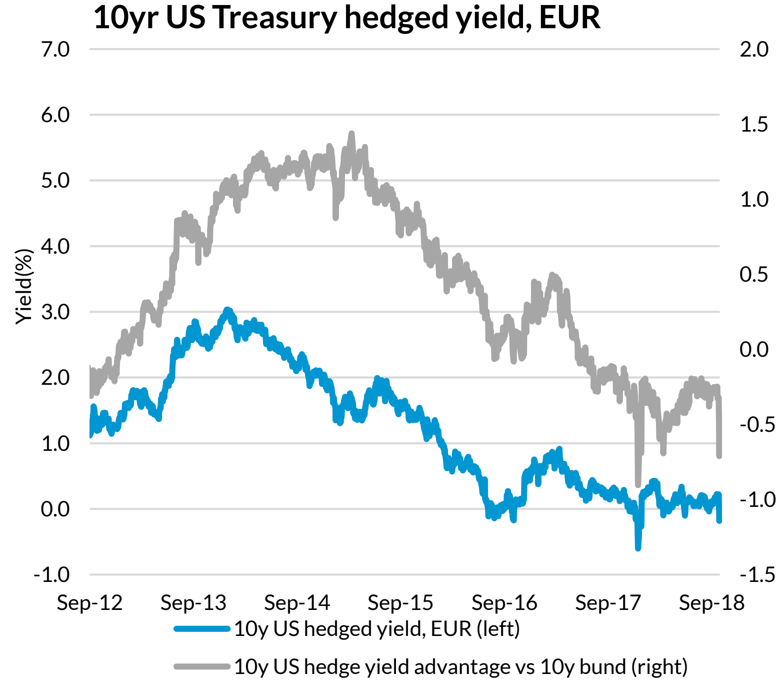

***Sources:*** *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of September 2018.*

### 10yr US Treasury hedged yield, JPY




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

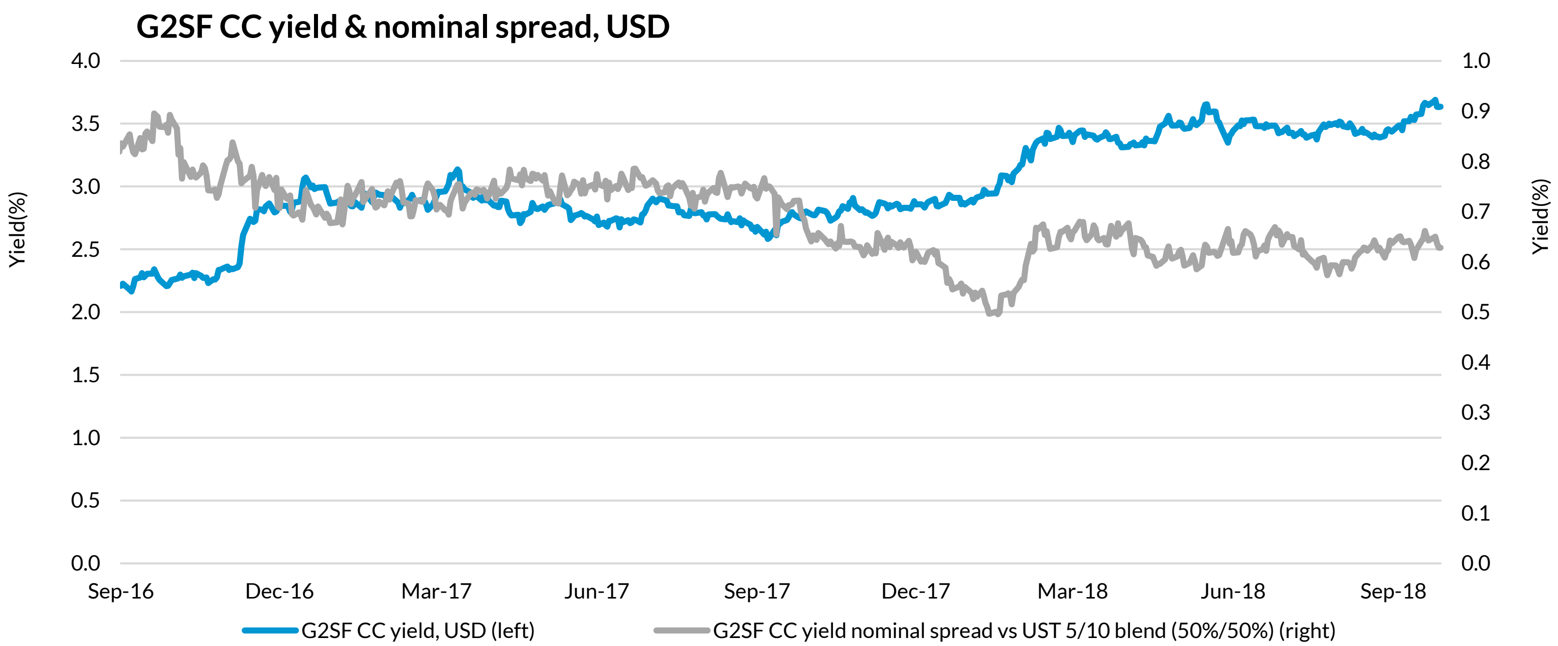
### 10yr US Treasury hedged yield, EUR



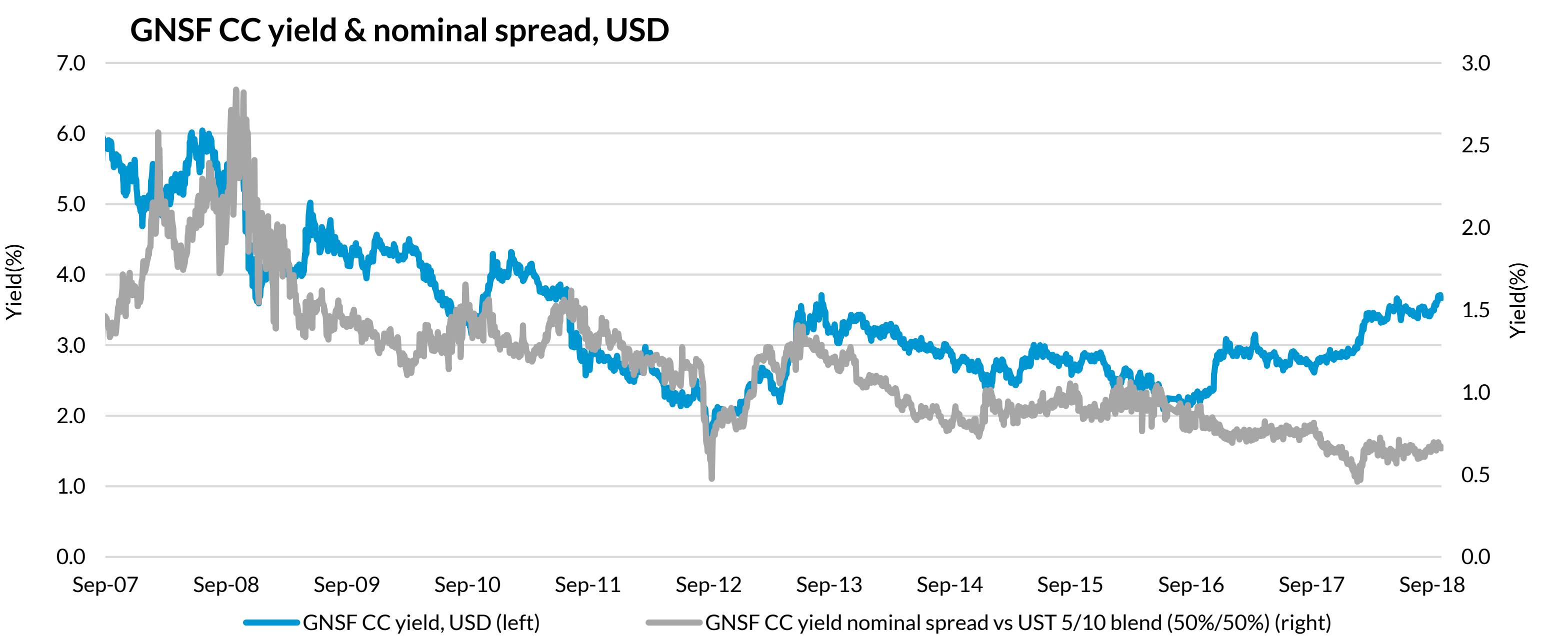

***Sources:*** *Bloomberg and State Street Global Advisors*
***Note****: Data as of September 2018.*

# Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

The nominal yield on both the current coupon GNMA II and GNMA I securities increased in September 2018. Current coupon Ginnie Mae securities outyield their Treasury counterparts (relative to the average of 5- and 10-year Treasury yields) by 63 and 66 bps on G2SF and GNSF, respectively, relatively consistent with August 2018.




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

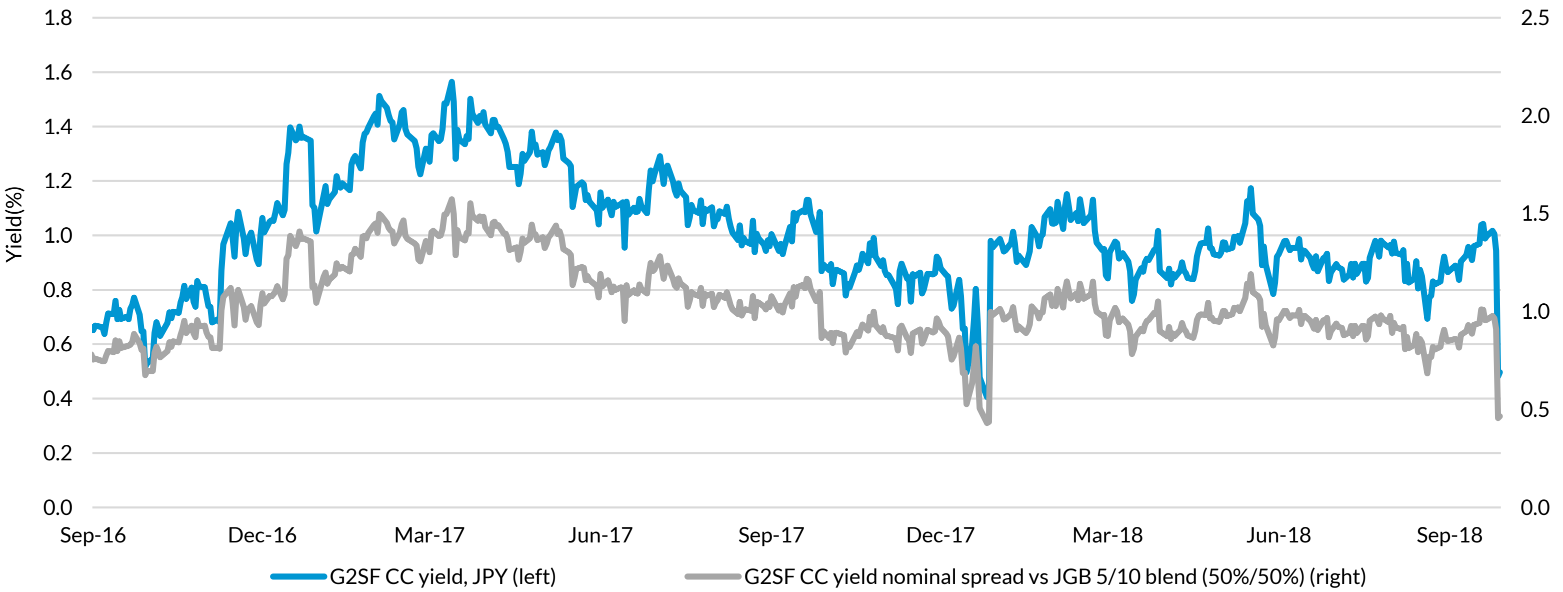



***Sources:** Bloomberg and State Street Global Advisors. **Note:** Data as of September 2018.*

# Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

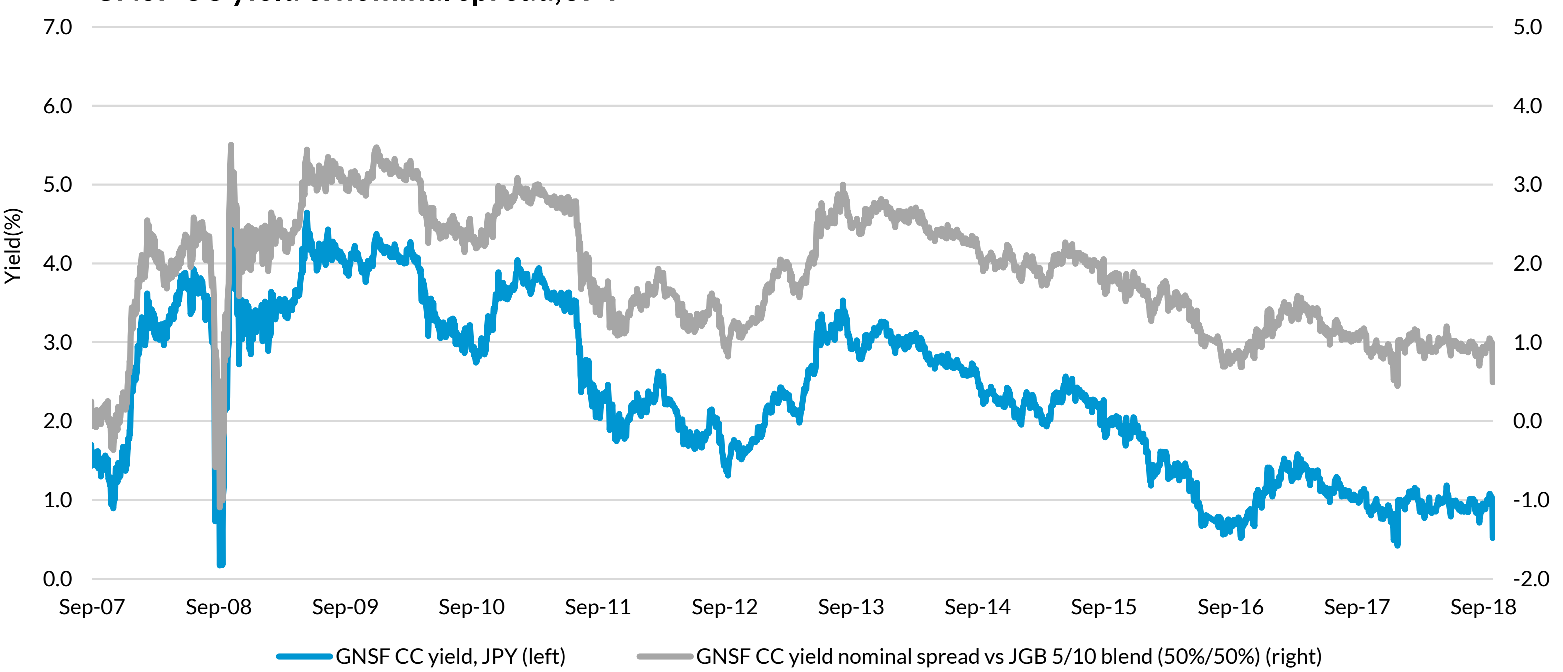
If Ginnie Mae securities are hedged into foreign currencies, they look attractive on a yield basis versus many sovereign alternatives. The figures show that in September, current coupon G2SF and GNSF hedged into Japanese yen yield more than the JGB 5/10 blend by 47 and 50 bps, respectively. These latest spreads represent a sizable 37-39 basis point narrowing from August levels, driven by large increases in the cost of currency hedging US securities at the end of Q3.

**G2SF CC yield & nominal spread, JPY**




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

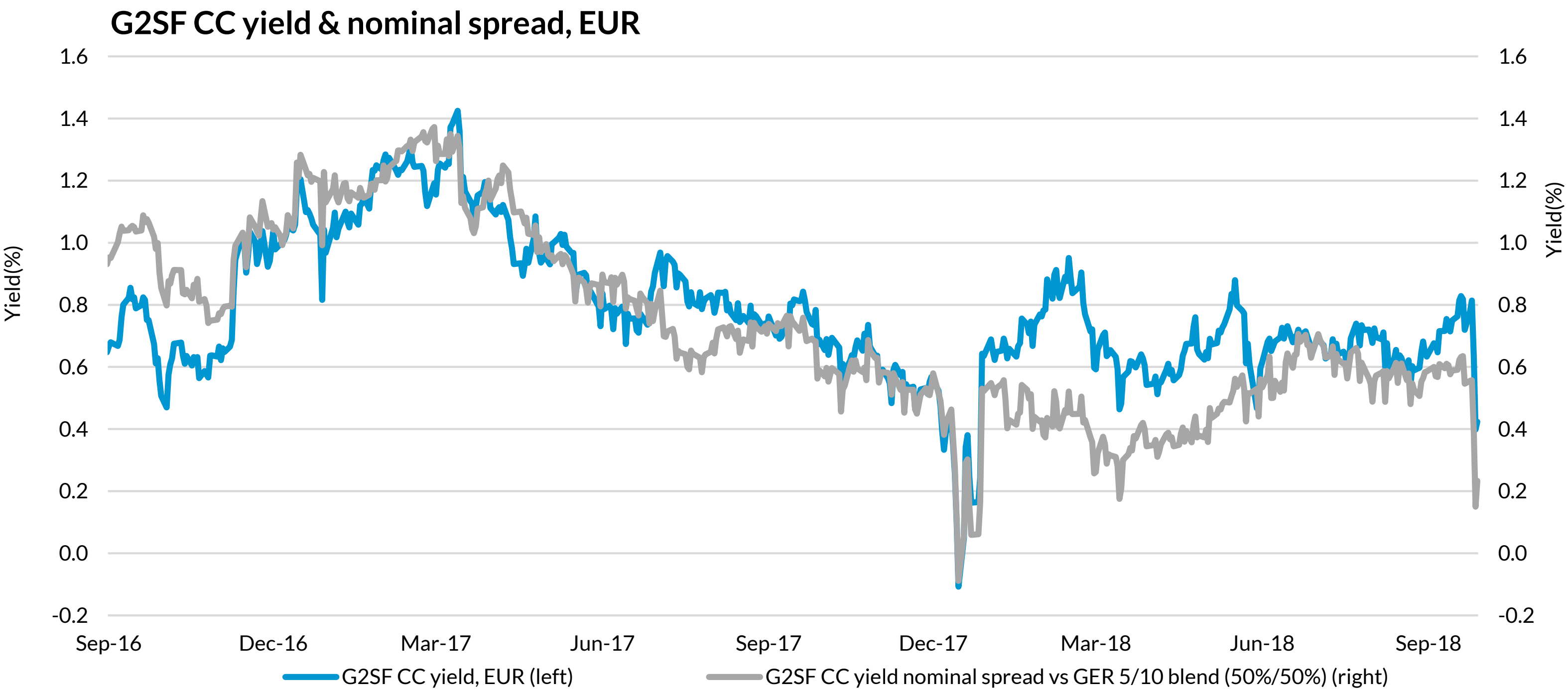
**GNSF CC yield & nominal spread, JPY**



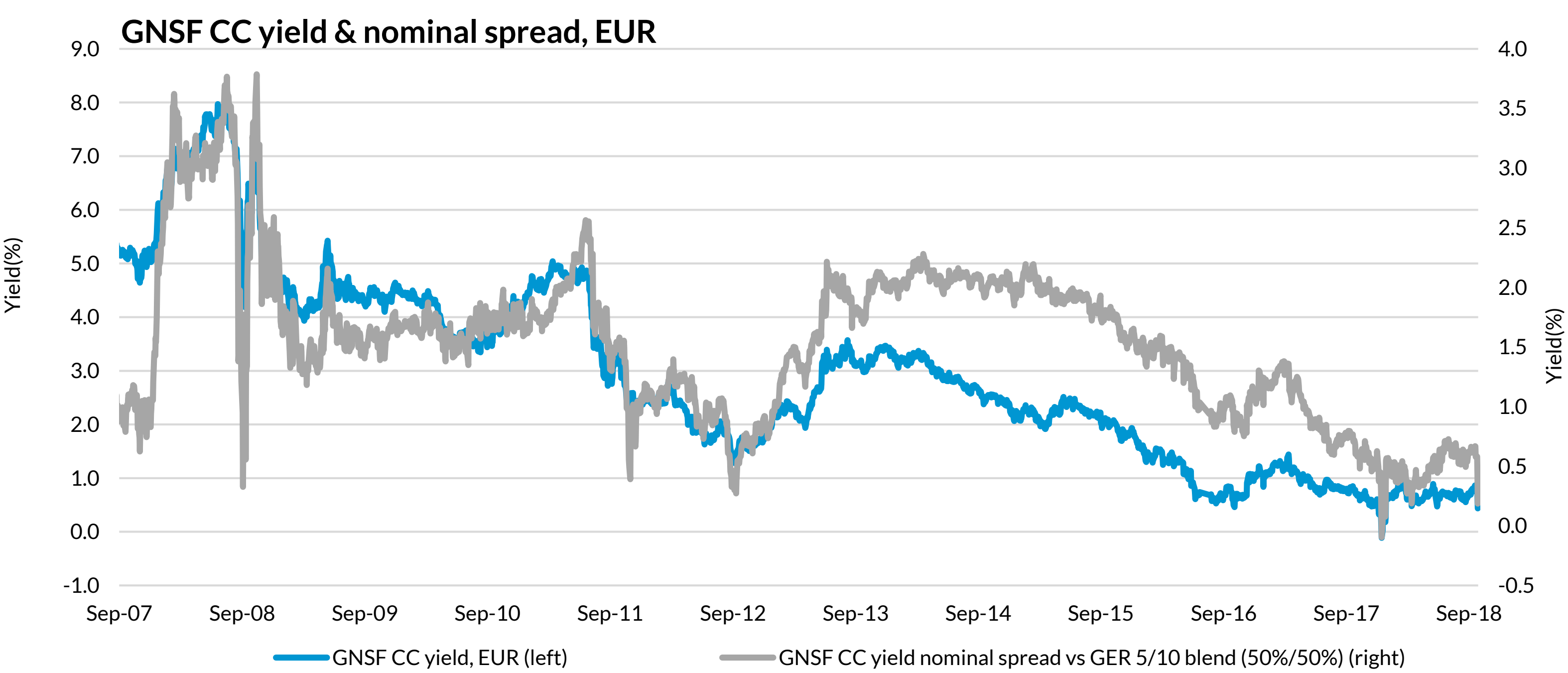

***Sources:*** *Bloomberg and State Street Global Advisors.* ***Note:*** *Data as of September 2018.*

# 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 in September, current coupon G2SF and GNSF hedged into euros yield more than the average of the German 5/10 blend by 23 and 26 bps, respectively. These latest spreads represent a sizable 27 basis point narrowing from August levels, driven by large increases in the cost of currency hedging US securities at the end of Q3.



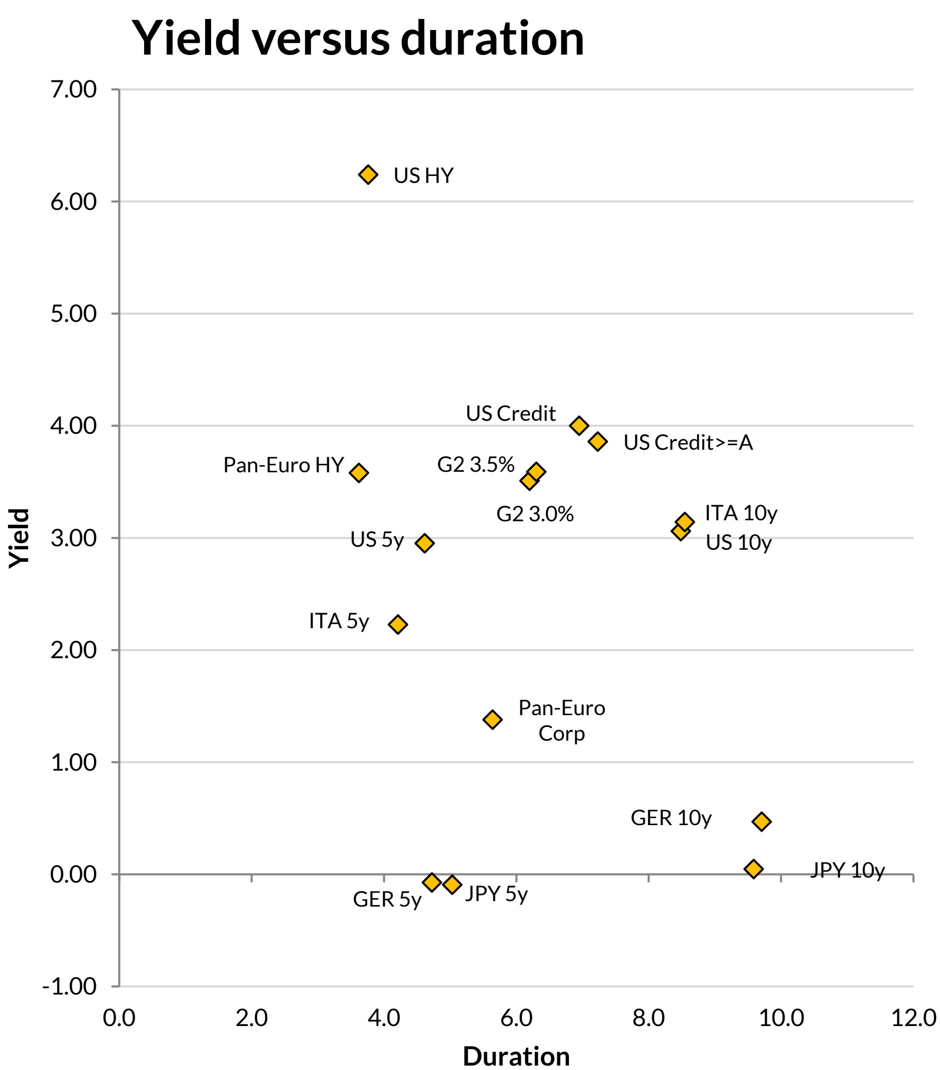

***Sources:** Bloomberg and State Street Global Advisors. **Note:** Data as of September 2018.*




***Sources:** Bloomberg and State Street Global Advisors. **Note:** Data as of September 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 duration, a measure of sensitivity to interest rate changes, does not fully capture the volatility of the high yield asset class. Investors are unable to match the yield on Ginnie Mae securities, while preserving the full government guarantee, even if they extend their duration significantly.




| Security | Duration | Yield |
|---|---|---|
| US 5y | 4.6 | 2.95 |
| US 10y | 8.5 | 3.06 |
| GNMA II 3% | 6.2 | 3.51 |
| GNMA II 3.5% | 6.3 | 3.59 |
| JPY 5y | 4.7 | -0.07 |
| JPY 10y | 9.6 | 0.05 |
| GER 5y | 5.0 | -0.09 |
| GER 10y | 9.7 | 0.47 |
| ITA 5y | 4.2 | 2.23 |
| ITA 10y | 8.5 | 3.14 |
| US credit | 7.0 | 4.00 |
| US credit >= A | 7.2 | 3.86 |
| US HY | 3.8 | 6.24 |
| Pan-Euro Corp | 5.6 | 1.38 |
| Pan-Euro HY | 3.6 | 3.58 |

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

# Relative Attractiveness of US Fixed Income and Ginnie Mae MBS

The average return on the Ginnie Mae index over the past decade has been slightly higher than the US Treasury index, but lower than many alternatives, including the US Investment-Grade Corporate and US and European High Yield indices. However, the standard deviation of the Ginnie Mae index is the lowest of any sector, as it has the least price volatility. The result: the excess return per unit of risk for the US mortgage market is comparable to US and European investment grade credit; it is higher than US Treasuries or US or European high yield.

| | 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 | -0.13 | -0.10 | -0.02 | 0.25 | 0.07 |
| 3 year | 0.07 | 0.02 | 0.26 | 0.14 | 0.67 | 0.40 |
| 5 year | 0.15 | 0.11 | 0.30 | 0.28 | 0.46 | 0.44 |
| 10 year | 0.28 | 0.23 | 0.53 | 0.44 | 0.80 | 0.90 |

| | 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 | -0.21 | -0.27 | -0.24 | 0.04 | 0.11 | 0.13 |
| 3 year | 0.00 | -0.05 | 0.19 | 0.20 | 0.59 | 0.46 |
| 5 year | 0.11 | 0.07 | 0.25 | 0.32 | 0.42 | 0.48 |
| 10 year | 0.25 | 0.20 | 0.50 | 0.45 | 0.77 | 0.91 |

| | 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 | 0.75 | 0.80 | 0.38 | 0.57 | 0.77 |
| 3 year | 0.54 | 0.92 | 1.04 | 0.89 | 1.43 | 1.31 |
| 5 year | 0.59 | 0.91 | 1.06 | 0.97 | 1.43 | 1.22 |
| 10 year | 0.76 | 1.18 | 1.58 | 1.30 | 2.88 | 3.40 |

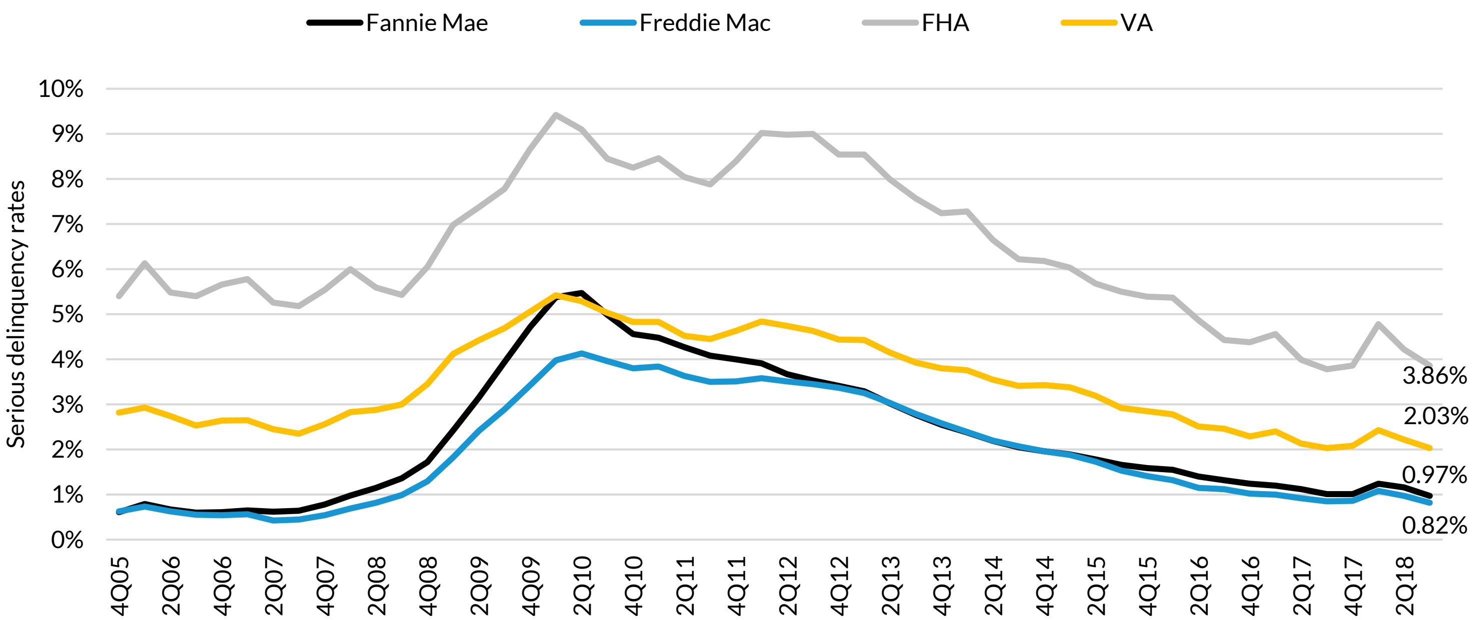
| | Sharpe Ratio | | | | | |
|---|---|---|---|---|---|---|
| Time Period | US MBS Ginnie Mae | US Treasury | US Credit Corp | Pan Euro Credit Corp | US High Yield | Pan Euro High Yield* |
| 1 year | -0.37 | -0.36 | -0.30 | 0.11 | 0.20 | 0.17 |
| 3 year | 0.00 | -0.05 | 0.18 | 0.23 | 0.41 | 0.35 |
| 5 year | 0.19 | 0.08 | 0.24 | 0.33 | 0.29 | 0.40 |
| 10 year | 0.33 | 0.17 | 0.32 | 0.34 | 0.27 | 0.27 |

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

# State of the US Housing Market

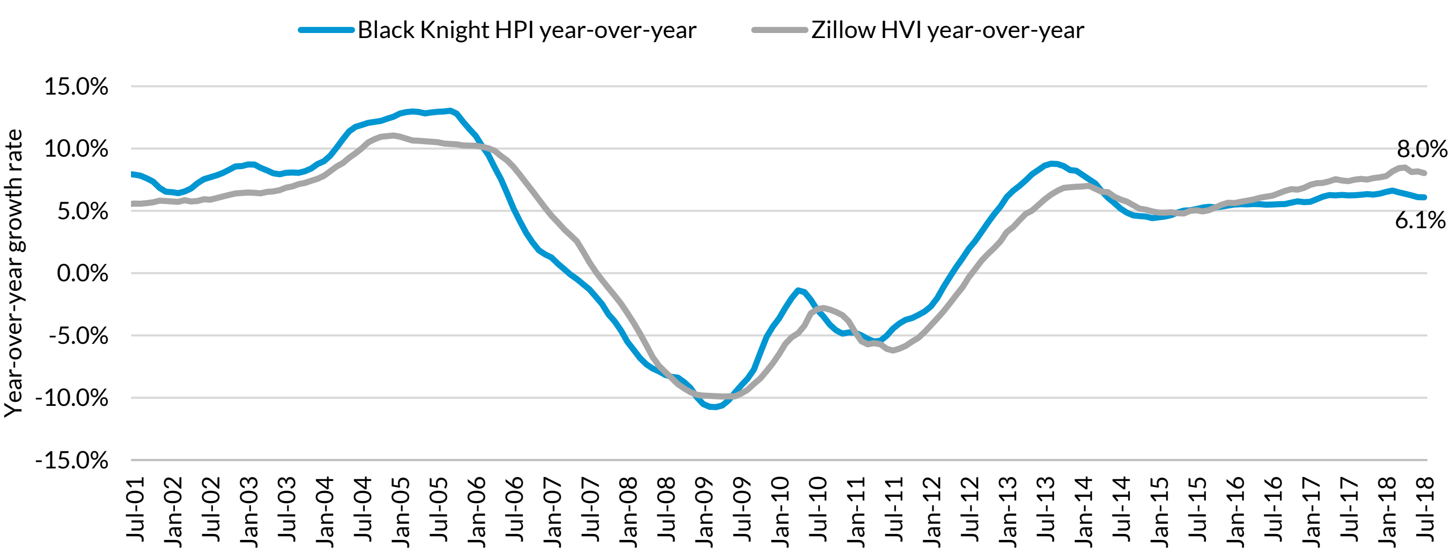
Serious delinquencies for single-family GSE loans, FHA loans, and VA loans continued to decline in Q2 2018 to levels equal to or lower than before the hurricane related uptick in Q4 2017. The delinquency rates for FHA and VA went down to 3.86 percent and 2.03 percent, respectively, and delinquency rates for Fannie Mae and Freddie Mac went down to 0.97 and 0.82 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 continues to increase approximately 6-8 percent per year, as measured by both Black Knight 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 Q2 2018.*

## National Year-Over-Year HPI Growth




***Sources:*** *Black Knight, Zillow, and Urban Institute.* ***Note:*** *Data as of July 2018.*

# State of the US Housing Market

Nationally, nominal home prices have improved by 49.6 percent since the trough, and have exceeded their pre-crisis peak valuation on a nominal basis by 11.3 percent. However, the picture is very different for different states, with many states well in excess of the prior peak, while a number of states remain more than 10% below peak levels: Arizona is 11.1% below, Nevada is 11.6% below, Florida is 12.8% below and Connecticut is 13.7% below.

| | HPI Changes | | | | |
|---|---|---|---|---|---|
| **State** | **2000 to Peak** | **Peak to Trough** | **Trough to Current** | **YOY** | **Current HPI % Above Peak** |
| **National** | 76.2% | -25.6% | 49.6% | 6.1% | 11.3% |
| Alabama | 44.0% | -16.6% | 21.1% | 2.7% | 1.0% |
| Alaska | 69.7% | -3.1% | 21.1% | 2.9% | 17.3% |
| Arizona | 110.4% | -48.0% | 71.1% | 7.4% | -11.1% |
| Arkansas | 41.7% | -10.1% | 21.2% | 3.8% | 9.0% |
| California | 156.3% | -43.4% | 87.6% | 7.7% | 6.2% |
| Colorado | 40.2% | -12.7% | 74.0% | 8.3% | 52.0% |
| Connecticut | 92.6% | -24.5% | 14.4% | 2.3% | -13.7% |
| Delaware | 94.0% | -23.9% | 27.7% | 7.2% | -2.8% |
| District of Columbia | 178.3% | -13.3% | 53.7% | 4.6% | 33.2% |
| Florida | 129.7% | -46.9% | 64.1% | 5.3% | -12.8% |
| Georgia | 38.4% | -32.8% | 61.6% | 7.2% | 8.6% |
| Hawaii | 162.9% | -21.9% | 53.0% | 7.7% | 19.5% |
| Idaho | 71.3% | -28.4% | 66.9% | 12.7% | 19.6% |
| Illinois | 61.7% | -34.5% | 38.7% | 3.5% | -9.2% |
| Indiana | 21.3% | -7.4% | 28.9% | 4.9% | 19.3% |
| Iowa | 28.3% | -5.0% | 23.7% | 3.7% | 17.6% |
| Kansas | 34.7% | -9.4% | 33.8% | 3.8% | 21.2% |
| Kentucky | 29.6% | -7.4% | 31.4% | 5.2% | 21.6% |
| Louisiana | 48.4% | -5.4% | 22.6% | 1.9% | 16.0% |
| Maine | 82.5% | -12.3% | 25.2% | 1.2% | 9.8% |
| Maryland | 129.3% | -28.1% | 25.6% | 3.3% | -9.7% |
| Massachusetts | 93.0% | -22.7% | 50.5% | 6.6% | 16.3% |
| Michigan | 24.4% | -39.6% | 72.0% | 7.2% | 3.9% |
| Minnesota | 66.1% | -27.4% | 50.3% | 6.2% | 9.0% |
| Mississippi | 41.2% | -13.7% | 21.1% | 2.2% | 4.5% |
| Missouri | 42.7% | -14.4% | 26.8% | 5.4% | 8.5% |
| Montana | 81.9% | -10.2% | 46.6% | 7.2% | 31.6% |
| Nebraska | 26.7% | -6.6% | 37.1% | 6.1% | 28.1% |
| Nevada | 127.2% | -59.4% | 117.6% | 15.8% | -11.6% |
| New Hampshire | 90.9% | -23.2% | 35.1% | 6.5% | 3.7% |
| New Jersey | 118.2% | -27.7% | 25.5% | 4.2% | -9.2% |
| New Mexico | 66.8% | -16.1% | 20.4% | 5.2% | 1.0% |
| New York | 99.0% | -15.1% | 36.7% | 5.1% | 16.1% |
| North Carolina | 40.5% | -15.3% | 31.3% | 6.3% | 11.2% |
| North Dakota | 53.6% | -4.1% | 55.7% | 2.3% | 49.3% |
| Ohio | 21.2% | -18.2% | 31.5% | 5.5% | 7.6% |
| Oklahoma | 37.6% | -2.3% | 18.4% | 2.1% | 15.7% |
| Oregon | 82.5% | -27.7% | 74.1% | 6.7% | 25.8% |
| Pennsylvania | 70.2% | -11.4% | 21.3% | 4.0% | 7.4% |
| Rhode Island | 131.8% | -34.2% | 44.7% | 6.8% | -4.8% |
| South Carolina | 45.0% | -19.2% | 30.2% | 5.4% | 5.2% |
| South Dakota | 45.2% | -4.1% | 35.0% | 2.1% | 29.4% |
| Tennessee | 35.2% | -11.7% | 38.4% | 7.4% | 22.3% |
| Texas | 33.3% | -5.8% | 48.6% | 5.5% | 40.0% |
| Utah | 55.1% | -21.5% | 63.3% | 10.3% | 28.2% |
| Vermont | 83.1% | -8.2% | 24.8% | 5.4% | 14.5% |
| Virginia | 99.8% | -22.6% | 23.7% | 3.7% | -4.2% |
| Washington | 85.7% | -28.5% | 81.3% | 10.3% | 29.6% |
| West Virginia | 43.0% | -6.7% | 15.9% | -1.4% | 8.2% |
| Wisconsin | 45.1% | -16.4% | 32.9% | 6.7% | 11.1% |
| Wyoming | 77.8% | -6.8% | 24.3% | 3.2% | 15.8% |

***Sources:*** *Black Knight and Urban Institute.* ***Note:*** *HPI data as of July 2018. 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 07/2018, the latest HPI data period.*

# State of the US Housing Market

Ginnie Mae loans constitute 32.1 percent of outstanding agency issuance by loan balance, 33.5 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 17.3 percent in the District of Columbia and as high as 52.3 percent in Mississippi. In general, the Ginnie Mae share is higher in states with lower home prices.

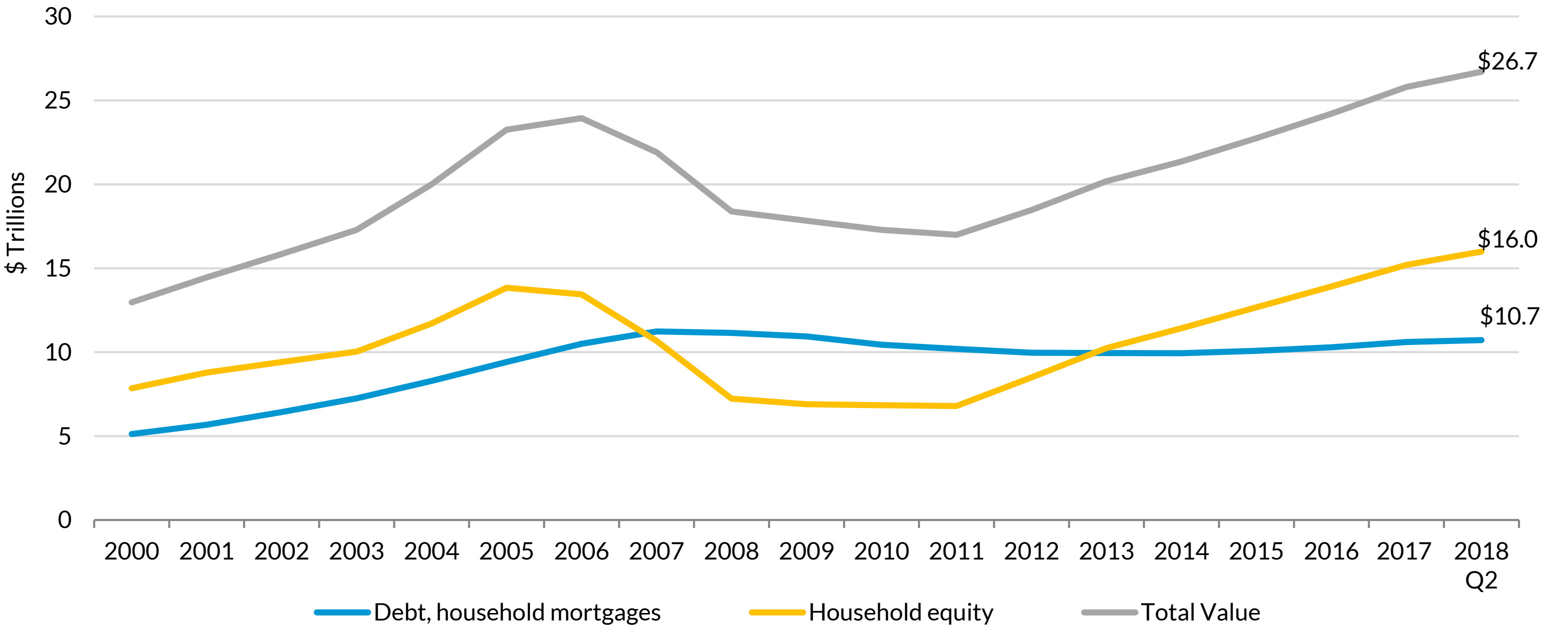
| State | Agency Issuance (past 1 year) | | | Agency Outstanding | | |
|---|---|---|---|---|---|---|
| | Ginnie Mae Share | Ginnie Mae Average Loan Size (Thousands) | GSE Average Loan Size (Thousands) | Ginnie Mae Share | Ginnie Mae Average Loan Size (Thousands) | GSE Average Loan Size (Thousands) |
| **National** | 33.5% | 215.2 | 231.0 | 32.1% | 181.1 | 210.7 |
| Alabama | 44.8% | 162.2 | 184.0 | 46.9% | 143.6 | 170.5 |
| Alaska | 51.9% | 284.1 | 246.8 | 52.0% | 258.6 | 230.2 |
| Arizona | 33.5% | 211.3 | 215.8 | 34.1% | 179.6 | 194.2 |
| Arkansas | 44.0% | 143.0 | 167.9 | 46.5% | 124.2 | 154.6 |
| California | 27.4% | 347.6 | 330.6 | 22.2% | 290.5 | 295.9 |
| Colorado | 32.3% | 285.3 | 274.5 | 29.8% | 235.4 | 241.7 |
| Connecticut | 32.6% | 215.7 | 227.6 | 30.0% | 204.3 | 218.9 |
| Delaware | 38.8% | 214.9 | 224.9 | 37.4% | 199.8 | 209.7 |
| District of Columbia | 17.7% | 415.8 | 357.8 | 17.3% | 333.1 | 335.4 |
| Florida | 40.0% | 210.3 | 207.6 | 37.0% | 177.8 | 187.5 |
| Georgia | 40.7% | 185.8 | 209.1 | 40.7% | 157.5 | 189.0 |
| Hawaii | 39.4% | 496.8 | 389.7 | 31.9% | 424.6 | 349.7 |
| Idaho | 33.6% | 199.3 | 202.6 | 34.6% | 166.4 | 179.3 |
| Illinois | 26.9% | 178.1 | 198.9 | 25.3% | 157.2 | 184.5 |
| Indiana | 39.2% | 142.2 | 157.9 | 39.4% | 123.5 | 143.3 |
| Iowa | 26.8% | 146.1 | 163.2 | 26.8% | 126.9 | 150.4 |
| Kansas | 36.9% | 155.5 | 176.4 | 36.9% | 134.4 | 158.8 |
| Kentucky | 39.8% | 151.0 | 166.7 | 40.0% | 134.6 | 151.8 |
| Louisiana | 42.5% | 170.3 | 194.3 | 43.5% | 152.4 | 179.2 |
| Maine | 35.8% | 185.1 | 200.4 | 33.2% | 168.3 | 182.5 |
| Maryland | 44.0% | 284.6 | 264.9 | 40.1% | 255.4 | 248.9 |
| Massachusetts | 24.0% | 292.0 | 283.2 | 19.9% | 256.7 | 257.4 |
| Michigan | 25.9% | 146.5 | 169.2 | 26.4% | 125.1 | 153.2 |
| Minnesota | 25.1% | 197.2 | 210.4 | 25.3% | 172.3 | 192.6 |
| Mississippi | 50.5% | 153.0 | 172.9 | 52.3% | 133.9 | 159.7 |
| Missouri | 35.7% | 152.0 | 173.1 | 36.3% | 134.2 | 157.9 |
| Montana | 31.5% | 216.7 | 219.0 | 31.3% | 185.9 | 194.9 |
| Nebraska | 32.1% | 163.2 | 171.2 | 34.9% | 137.3 | 155.8 |
| Nevada | 36.2% | 244.5 | 231.6 | 39.2% | 201.9 | 203.3 |
| New Hampshire | 32.3% | 233.9 | 225.2 | 30.3% | 211.1 | 204.4 |
| New Jersey | 29.9% | 250.4 | 265.6 | 28.2% | 234.0 | 250.3 |
| New Mexico | 42.9% | 179.2 | 188.0 | 44.0% | 158.2 | 174.1 |
| New York | 27.0% | 244.3 | 268.1 | 26.4% | 208.0 | 245.0 |
| North Carolina | 34.5% | 181.8 | 202.2 | 35.7% | 157.2 | 186.5 |
| North Dakota | 28.8% | 211.2 | 208.4 | 26.9% | 183.2 | 188.3 |
| Ohio | 36.2% | 143.0 | 156.9 | 37.5% | 126.3 | 145.3 |
| Oklahoma | 46.4% | 152.9 | 172.0 | 49.8% | 133.1 | 158.5 |
| Oregon | 27.4% | 255.7 | 258.2 | 25.3% | 214.6 | 225.4 |
| Pennsylvania | 33.4% | 168.0 | 193.7 | 33.7% | 153.0 | 181.9 |
| Rhode Island | 38.1% | 227.7 | 222.1 | 34.4% | 203.7 | 205.0 |
| South Carolina | 39.7% | 184.6 | 193.4 | 39.1% | 160.8 | 179.3 |
| South Dakota | 36.5% | 176.6 | 185.5 | 36.9% | 157.0 | 167.8 |
| Tennessee | 40.4% | 183.4 | 201.4 | 42.4% | 153.0 | 181.0 |
| Texas | 35.4% | 197.5 | 215.2 | 38.1% | 157.2 | 194.2 |
| Utah | 29.4% | 240.8 | 249.5 | 30.9% | 205.9 | 223.0 |
| Vermont | 23.1% | 193.5 | 198.2 | 20.2% | 182.4 | 183.7 |
| Virginia | 45.1% | 271.8 | 259.6 | 42.1% | 245.6 | 245.6 |
| Washington | 30.4% | 285.7 | 288.3 | 29.8% | 237.6 | 248.9 |
| West Virginia | 48.5% | 155.4 | 154.1 | 46.3% | 140.1 | 147.3 |
| Wisconsin | 23.1% | 166.2 | 176.1 | 21.6% | 148.3 | 162.3 |
| Wyoming | 41.8% | 213.2 | 211.1 | 41.5% | 195.4 | 196.9 |

***Sources:*** *eMBS and Urban Institute.* ***Note:*** *Ginnie Mae share are based on loan balance as of August 2018.*

# State of the US Housing Market

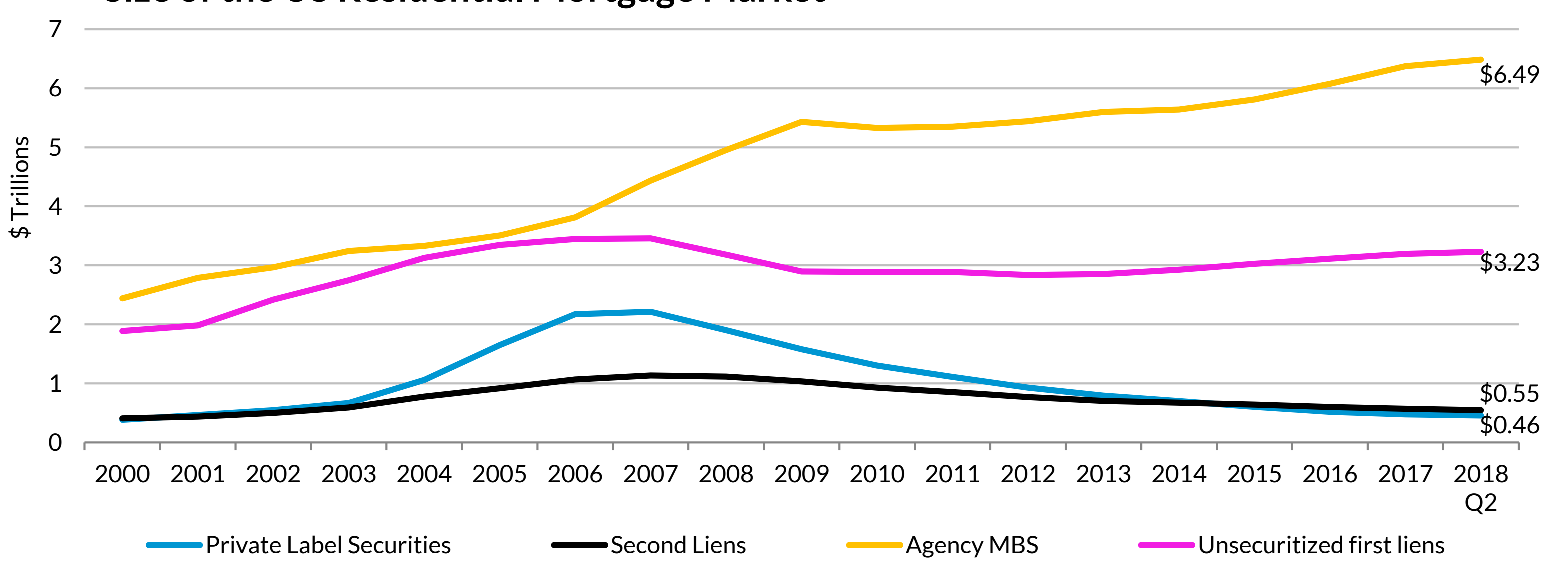
The Federal Reserve's Flow of Funds report has consistently indicated an increasing total value of the housing market driven by growing household equity since 2012, and 2018 Q2 was no different.  While total debt and mortgages was stable at $10.7 trillion, household equity reached a new high of $16.0 trillion, bringing the total value of the housing market to $26.7 trillion, 10 percent higher than the pre-crisis peak in 2006. Agency MBS make up 61.0 percent of the total mortgage market, private-label securities make up 4.3 percent, and unsecuritized first liens at the GSEs, commercial banks, savings institutions, and credit unions make up 30.1 percent. Second liens comprise the remaining 5.1 percent of the total.

## Value of the US Housing Market




**Sources**: *Federal Reserve Flow of Funds and Urban Institute. Data as of Q2 2018.*

## Size of the US Residential Mortgage Market

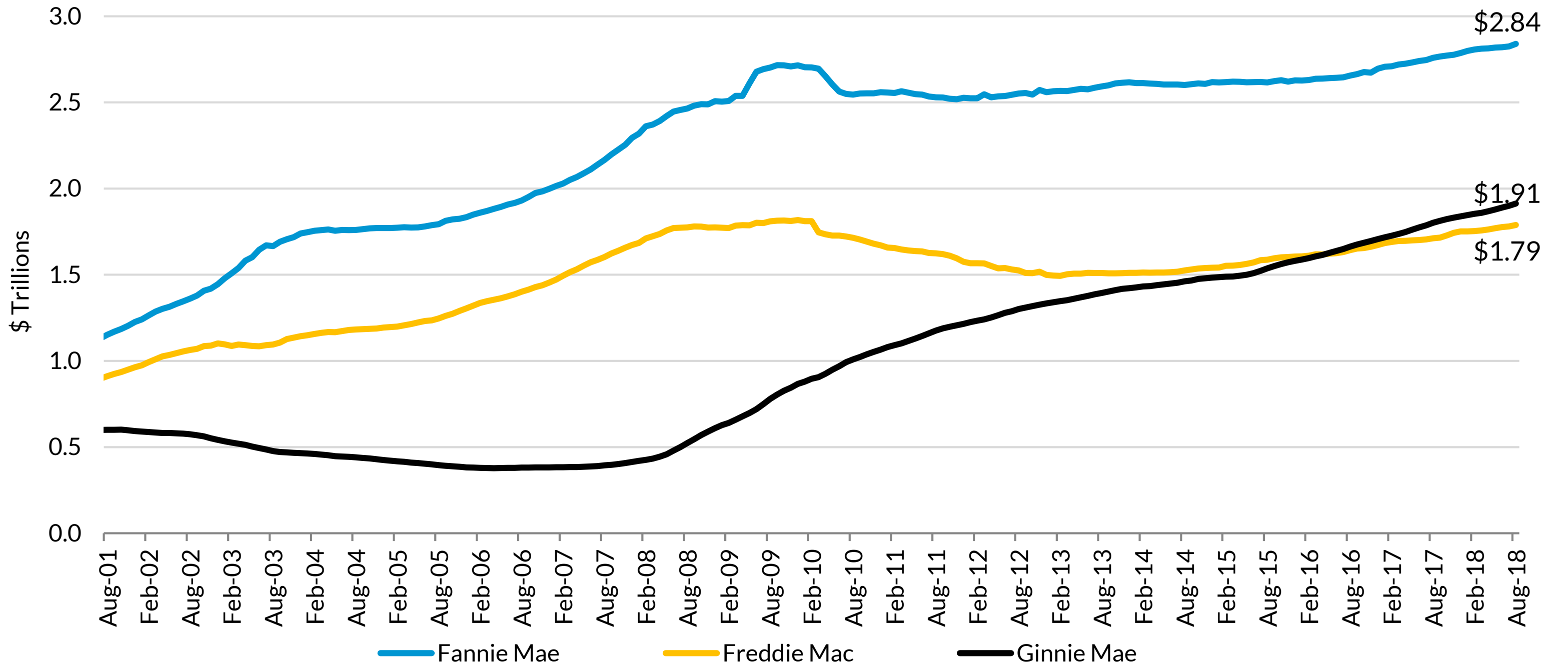



**Sources:** *Federal Reserve Flow of Funds, Inside Mortgage Finance, Fannie Mae, Freddie Mac, eMBS and Urban Institute.*
**Note:** *Unsecuritized first liens includes loans held by commercial banks, GSEs, savings institutions, and credit unions. Data as of Q2 2018.*

# State of the US Housing Market

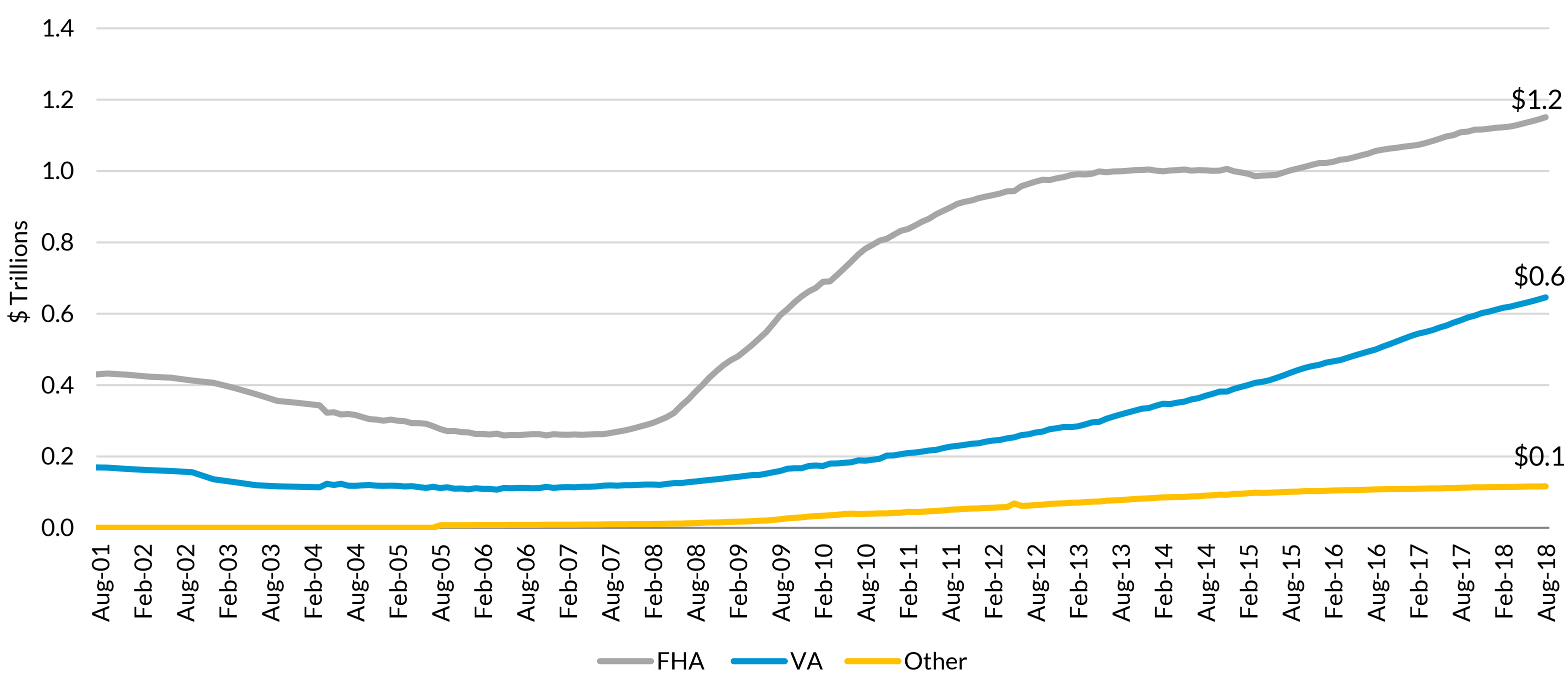
As of August 2018, outstanding securities in the agency market totaled $6.54 trillion and were 43.4 percent Fannie Mae, 27.3 percent Freddie Mac, and 29.2 percent Ginnie Mae. Ginnie Mae has more outstandings than Freddie Mac. Within the Ginnie Mae market, VA has been growing very rapidly, and now comprises 33.8 percent of total Ginnie Mae outstandings.

## Outstanding Agency Mortgage-Backed Securities




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

## Outstanding Ginnie Mae Mortgage-Backed Securities

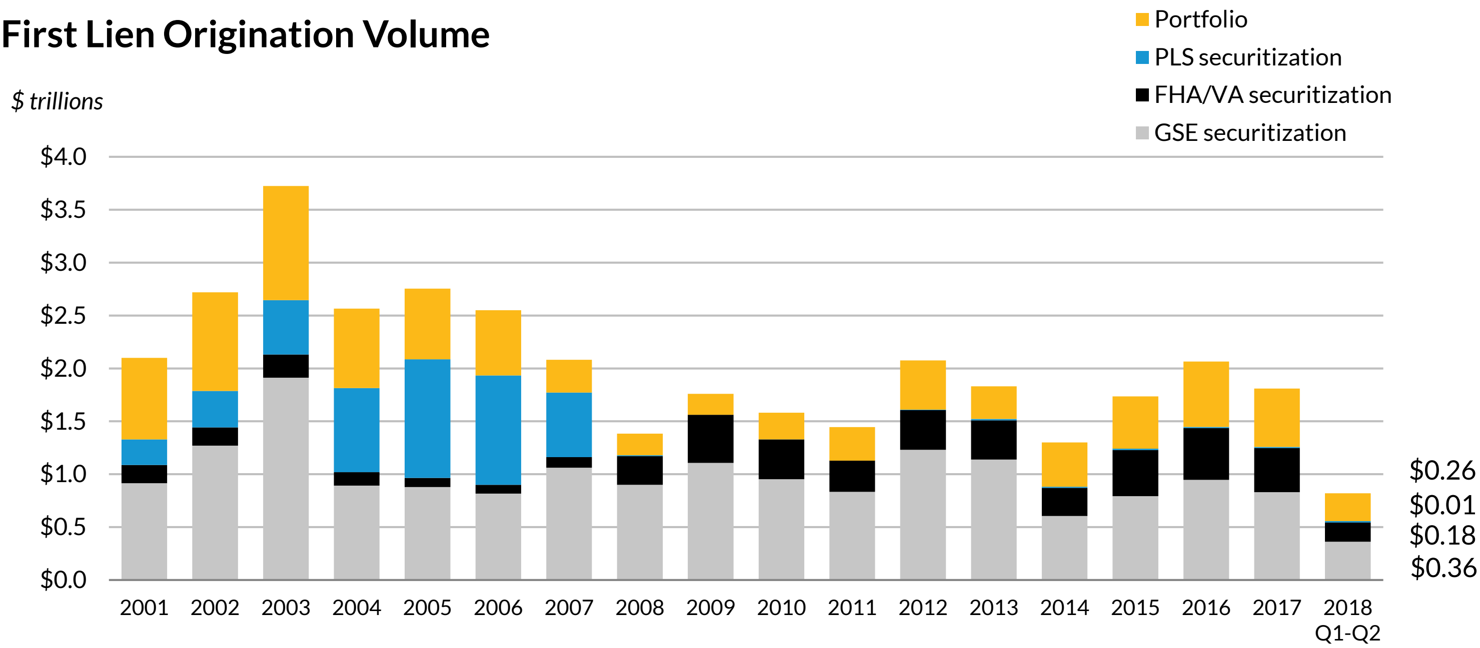



**Sources**: *eMBS and Urban Institute.* **Note:** *Data as of August 2018.*

# State of the US Housing Market

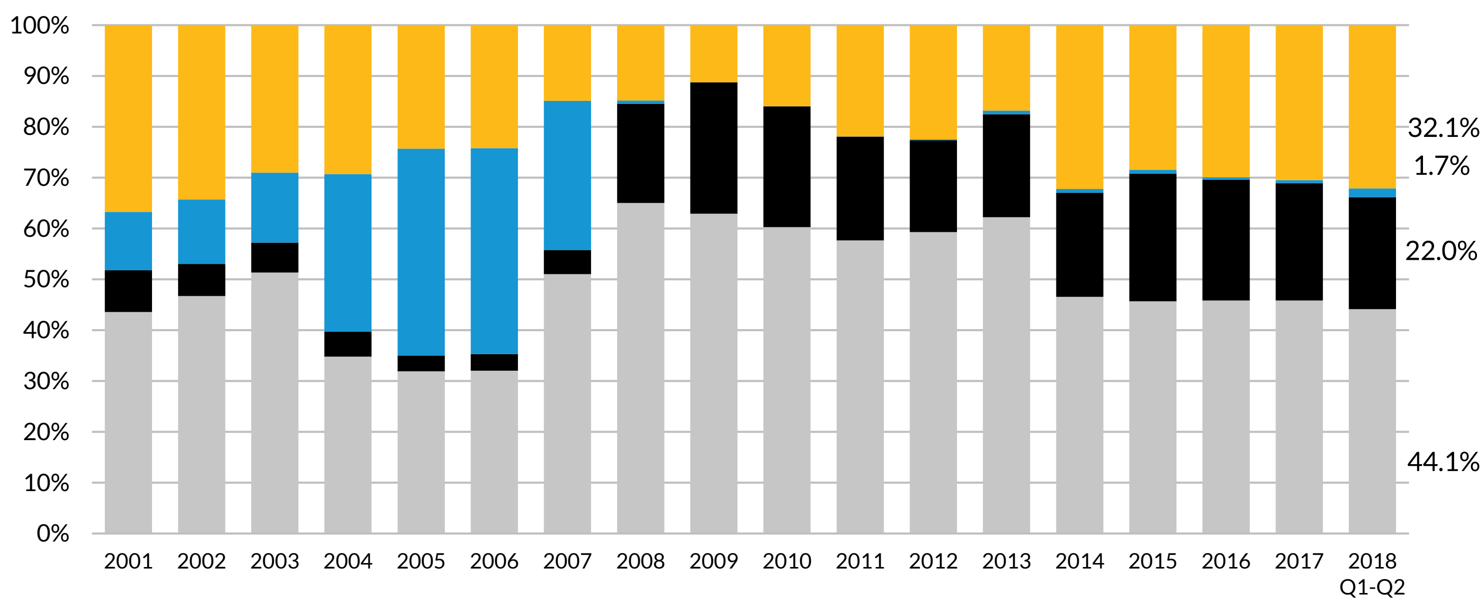
First lien originations totaled $820 billion in the first half of 2018, down slightly from the first half of 2017, mostly due to higher interest rates. The share of portfolio originations was 32 percent in the first half of 2018, up from 30 percent in 2017. The GSE share was around 44 percent, down from 46 percent in 2017. The FHA/VA share was slightly down: 22 percent for H1 2018 versus 23 percent in 2017. Origination of private-label securities increased from 0.6 percent to 1.7 percent from 2017 to H1 2018.

## First Lien Origination Volume




**Sources**: *Inside Mortgage Finance and Urban Institute.* ***Note:*** *Data as of Q2 2018.*

## First Lien Origination Share




**Sources**: *Inside Mortgage Finance and Urban Institute.* ***Note:*** *Data as of Q2 2018.*

# US Agency Market, Originations

Agency gross issuance totaled $801.0 billion in the first eight months of 2018, down by 8.0 percent compared to the same time period in 2017. Ginnie Mae gross issuance was down by 10.5 percent and GSE gross issuance was down by 6.8 percent. Within the Ginnie Mae market, FHA is down by 14.1 percent and VA origination is down by 4.7 percent. The decline in origination volume is the result of higher interest 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 | $531.3 | $345.9 | $877.3 | $455.6 | $1,332.9 |
| 2018 YTD | $327.6 | $202.4 | $529.9 | $271.1 | $801.0 |
| 2018 % Change YOY | -7.0% | -6.3% | -6.8% | -10.5% | -8.1% |
| 2018 Ann. | $491.3 | $303.6 | $794.9 | $406.6 | $1,201.5 |

| Ginnie Mae Breakdown: Agency Gross Issuance | | | | |
|---|---|---|---|---|
| Issuance Year | FHA | VA | Other | Total Agency |
| 2000 | $80.2 | $18.8 | $3.2 | $102.2 |
| 2001 | $133.8 | $34.7 | $3.1 | $171.5 |
| 2002 | $128.6 | $37.9 | $2.5 | $169.0 |
| 2003 | $147.9 | $62.7 | $2.5 | $213.1 |
| 2004 | $85.0 | $31.8 | $2.5 | $119.2 |
| 2005 | $55.7 | $23.5 | $2.1 | $81.4 |
| 2006 | $51.2 | $23.2 | $2.3 | $76.7 |
| 2007 | $67.7 | $24.2 | $3.0 | $94.9 |
| 2008 | $221.7 | $39.0 | $6.9 | $267.6 |
| 2009 | $359.9 | $74.6 | $16.8 | $451.3 |
| 2010 | $304.9 | $70.6 | $15.3 | $390.7 |
| 2011 | $216.1 | $82.3 | $16.9 | $315.3 |
| 2012 | $253.4 | $131.3 | $20.3 | $405.0 |
| 2013 | $239.2 | $132.2 | $22.2 | $393.6 |
| 2014 | $163.9 | $111.4 | $21.0 | $296.3 |
| 2015 | $261.5 | $155.6 | $19.2 | $436.3 |
| 2016 | $281.8 | $206.5 | $19.9 | $508.2 |
| 2017 | $257.6 | $177.8 | $20.2 | $455.6 |
| 2018 YTD | $150.6 | $109.0 | $11.5 | $271.1 |
| 2018 % Change YOY | -14.1% | -4.7% | -13.6% | -10.5% |
| 2018 Ann. | $225.9 | $163.5 | $17.3 | $406.6 |

**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 August 2018.*

# US Agency Market, Originations

Agency net issuance totaled $164.9 billion in the first eight months of 2018, down 16.5 percent compared to the same period in 2017. Ginnie Mae net issuance was $74.7 billion, comprising 45.2 percent of total agency net issuance. Note that Ginnie Mae net issuance in the first eight months of 2018 is down 21.4 percent year over year. Ginnie Mae net issuance YTD in 2018 is comprised of 53.9 percent VA, 42.7 percent FHA 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 | $216.6 | $151.8 | $368.4 | -$9.9 | $358.5 |
| 2002 | $218.9 | $138.3 | $357.2 | -$51.2 | $306.1 |
| 2003 | $293.7 | $41.1 | $334.9 | -$77.6 | $257.3 |
| 2004 | $32.3 | $50.2 | $82.5 | -$40.1 | $42.4 |
| 2005 | $62.5 | $111.7 | $174.2 | -$42.2 | $132.0 |
| 2006 | $164.3 | $149.3 | $313.6 | $0.2 | $313.8 |
| 2007 | $296.1 | $218.8 | $514.9 | $30.9 | $545.7 |
| 2008 | $213.0 | $101.8 | $314.8 | $196.4 | $511.3 |
| 2009 | $208.1 | $42.5 | $250.6 | $257.4 | $508.0 |
| 2010 | -$156.4 | -$146.8 | -$303.2 | $198.3 | -$105.0 |
| 2011 | -$32.6 | -$95.8 | -$128.4 | $149.6 | $21.2 |
| 2012 | $32.9 | -$75.3 | -$42.4 | $119.1 | $76.8 |
| 2013 | $57.5 | $11.6 | $69.1 | $87.9 | $157.0 |
| 2014 | $0.5 | $30.0 | $30.5 | $61.6 | $92.1 |
| 2015 | $10.2 | $65.0 | $75.1 | $97.3 | $172.5 |
| 2016 | $68.6 | $66.8 | $135.5 | $125.3 | $260.8 |
| 2017 | $90.2 | $78.2 | $168.5 | $131.3 | $299.7 |
| 2018 YTD | $52.9 | $37.4 | $90.3 | $74.7 | $164.9 |
| 2018 %Change YOY | -15.1% | -7.0% | -11.9% | -21.4% | -16.5% |
| 2018 Ann. | $79.3 | $56.1 | $135.4 | $112.0 | $247.4 |

| Ginnie Mae Breakdown: Net Issuance | | | | |
|---|---|---|---|---|
| Issuance Year | FHA | VA | Other | Total |
| 2000 | $29.0 | $0.3 | $0.0 | $29.3 |
| 2001 | $0.7 | -$10.6 | $0.0 | -$9.9 |
| 2002 | -$22.5 | -$28.7 | $0.0 | -$51.2 |
| 2003 | -$56.5 | -$21.1 | $0.0 | -$77.6 |
| 2004 | -$45.2 | $5.1 | $0.0 | -$40.1 |
| 2005 | -$37.3 | -$12.1 | $7.2 | -$42.2 |
| 2006 | -$4.7 | $3.8 | $1.2 | $0.2 |
| 2007 | $20.2 | $8.7 | $2.0 | $30.9 |
| 2008 | $173.3 | $17.7 | $5.4 | $196.4 |
| 2009 | $206.4 | $35.1 | $15.8 | $257.4 |
| 2010 | $158.6 | $29.6 | $10.0 | $198.3 |
| 2011 | $102.8 | $34.0 | $12.8 | $149.6 |
| 2012 | $58.9 | $45.9 | $14.3 | $119.1 |
| 2013 | $20.7 | $53.3 | $13.9 | $87.9 |
| 2014 | -$4.8 | $53.9 | $12.5 | $61.6 |
| 2015 | $22.5 | $66.9 | $7.9 | $97.3 |
| 2016 | $45.6 | $73.2 | $6.0 | $124.9 |
| 2017 | $50.1 | $76.1 | $5.0 | $131.3 |
| 2018 YTD | $31.9 | $40.2 | $2.6 | $74.7 |
| 2018 %Change YOY | -22.2% | -20.9% | -18.7% | -21.4% |
| 2018 Ann. | $47.8 | $60.4 | $3.8 | $112.0 |

**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 August 2018.*

# US Agency Market, Originations

Agency gross issuance has been generally declining, but the seasonal trend is very strong. This table allows for a comparison with the same month in previous years. August 2018 levels of $117.6 billion are below the August 2017 level of $121.1 billion.

## Monthly Agency Issuance

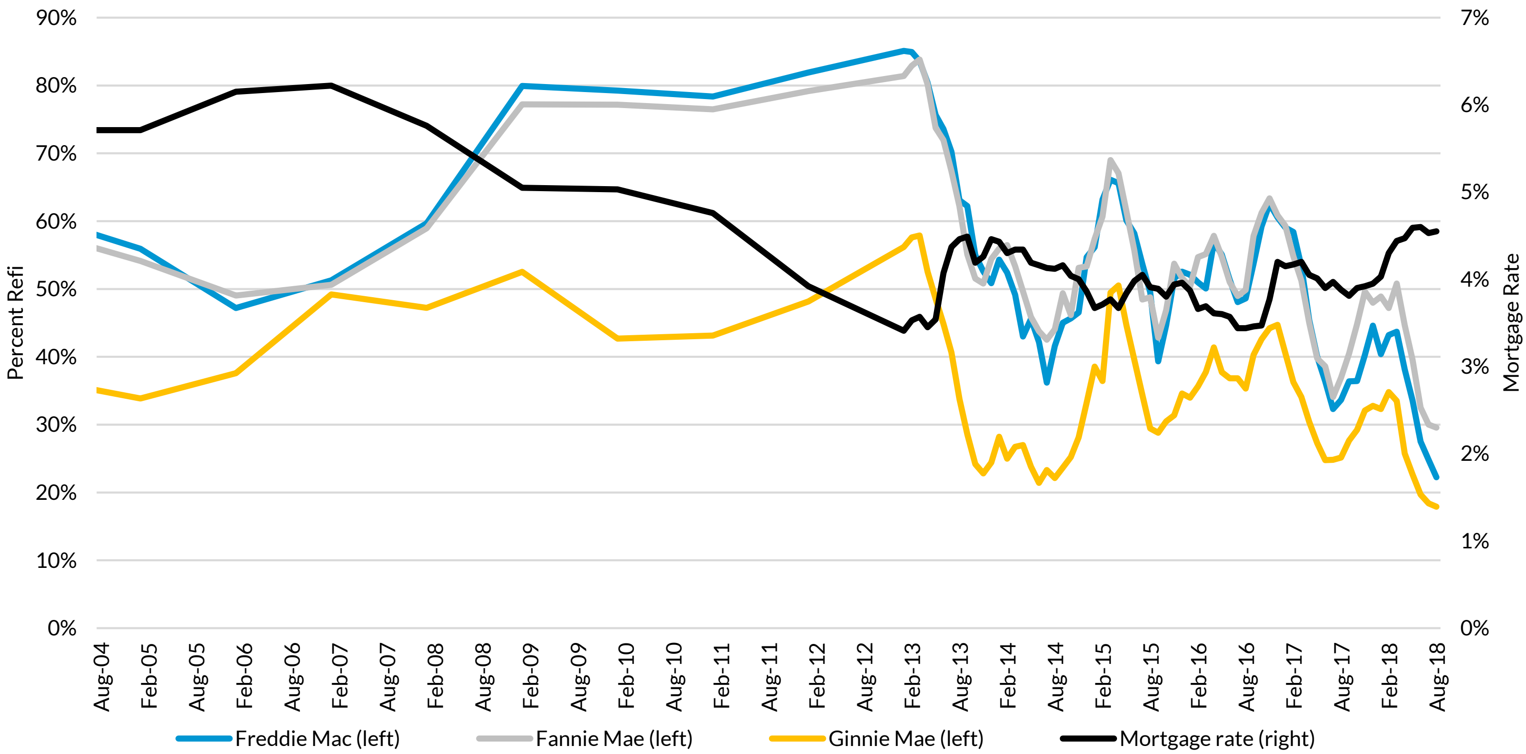
| | Gross Issuance | | | | Net Issuance | | | |
|---|---|---|---|---|---|---|---|---|
| Date | Fannie Mae | Freddie Mac | Ginnie Mae | Total | Fannie Mae | Freddie Mac | Ginnie Mae | Total |
| Jan-15 | $36.8 | $22.9 | $27.5 | $87.2 | -$1.2 | $0.8 | $2.5 | $2.2 |
| Feb-15 | $35.4 | $29.9 | $23.9 | $89.2 | $1.5 | $10.1 | $2.9 | $14.5 |
| Mar-15 | $44.8 | $26.0 | $30.7 | $101.5 | $3.1 | $1.1 | $0.6 | $4.8 |
| Apr-15 | $49.3 | $33.8 | $40.6 | $123.7 | -$1.2 | $3.8 | $4.3 | $6.8 |
| May-15 | $42.4 | $33.2 | $39.4 | $114.9 | -$2.9 | $6.6 | $5.8 | $9.5 |
| Jun-15 | $44.6 | $34.4 | $40.5 | $119.5 | $0.8 | $8.3 | $9.1 | $18.2 |
| Jul-15 | $46.0 | $39.2 | $45.6 | $130.7 | $1.0 | $12.3 | $13.3 | $26.6 |
| Aug-15 | $39.4 | $27.6 | $43.4 | $110.4 | -$2.2 | $3.1 | $14.9 | $15.8 |
| Sep-15 | $45.3 | $30.4 | $39.4 | $115.0 | $7.6 | $7.9 | $12.7 | $28.2 |
| Oct-15 | $41.5 | $28.4 | $39.2 | $109.0 | $4.8 | $6.4 | $12.4 | $23.5 |
| Nov-15 | $28.8 | $23.3 | $35.8 | $87.9 | -$8.1 | $1.3 | $10.6 | $3.8 |
| Dec-15 | $39.7 | $22.8 | $30.3 | $92.9 | $7.1 | $3.2 | $8.2 | $18.5 |
| Jan-16 | $35.6 | $22.5 | $32.5 | $90.6 | -$0.6 | $1.0 | $7.3 | $7.8 |
| Feb-16 | $32.4 | $21.2 | $30.5 | $84.1 | $2.4 | $3.1 | $8.4 | $13.9 |
| Mar-16 | $39.7 | $27.5 | $32.9 | $100.1 | $7.9 | $8.2 | $9.6 | $25.8 |
| Apr-16 | $43.8 | $26.2 | $40.1 | $110.1 | $0.8 | -$0.2 | $8.8 | $9.4 |
| May-16 | $44.2 | $29.9 | $41.6 | $115.6 | $2.4 | $4.4 | $11.4 | $18.3 |
| Jun-16 | $46.7 | $30.1 | $43.9 | $120.8 | $2.7 | $3.0 | $11.9 | $17.7 |
| Jul-16 | $49.8 | $35.3 | $46.1 | $131.1 | $2.3 | $6.3 | $10.8 | $19.4 |
| Aug-16 | $54.9 | $37.9 | $46.7 | $139.5 | $10.4 | $11.0 | $13.8 | $35.2 |
| Sep-16 | $65.8 | $44.0 | $52.5 | $162.4 | $8.7 | $9.0 | $12.5 | $30.2 |
| Oct-16 | $66.0 | $35.9 | $47.4 | $149.3 | $11.8 | $2.7 | $9.3 | $24.5 |
| Nov-16 | $48.8 | $40.2 | $47.2 | $136.3 | -$3.5 | $7.9 | $10.3 | $14.8 |
| Dec-16 | $72.7 | $40.5 | $46.8 | $160.0 | $23.3 | $10.4 | $10.8 | $44.6 |
| Jan-17 | $55.6 | $38.5 | $42.6 | $136.6 | $10.3 | $10.7 | $10.3 | $31.9 |
| Feb-17 | $37.6 | $27.4 | $33.1 | $98.1 | $3.1 | $6.5 | $9.2 | $18.9 |
| Mar-17 | $39.5 | $24.4 | $31.3 | $95.2 | $10.3 | $6.2 | $9.6 | $26.3 |
| Apr-17 | $39.3 | $21.2 | $36.4 | $97.0 | $4.8 | $0.4 | $11.7 | $17.3 |
| May-17 | $40.3 | $22.6 | $36.4 | $99.3 | $7.6 | $2.7 | $13.1 | $23.6 |
| Jun-17 | $45.7 | $25.1 | $39.9 | $110.7 | $8.3 | $2.4 | $13.2 | $24.1 |
| Jul-17 | $45.3 | $27.6 | $40.6 | $113.5 | $5.8 | $3.5 | $12.1 | $21.5 |
| Aug-17 | $49.1 | $29.3 | $42.8 | $121.1 | $12.0 | $6.7 | $15.6 | $33.9 |
| Sep-17 | $47.3 | $27.9 | $40.2 | $115.5 | $7.4 | $3.8 | $10.5 | $21.7 |
| Oct-17 | $42.9 | $34.6 | $38.4 | $115.9 | $6.4 | $12.5 | $10.7 | $29.6 |
| Nov-17 | $43.5 | $37.2 | $37.8 | $118.5 | $4.6 | $13.6 | $8.2 | $26.4 |
| Dec-17 | $45.3 | $30.0 | $36.2 | $111.5 | $9.6 | $8.2 | $6.8 | $24.6 |
| Jan-18 | $47.4 | $21.4 | $35.2 | $104.0 | $12.4 | $0.3 | $7.8 | $20.6 |
| Feb-18 | $40.3 | $21.5 | $31.9 | $93.7 | $8.0 | $2.3 | $7.1 | $17.4 |
| Mar-18 | $35.6 | $21.3 | $29.0 | $85.9 | $4.9 | $3.0 | $6.1 | $14.0 |
| Apr-18 | $36.3 | $26.2 | $32.7 | $95.2 | $1.71 | $6.1 | $9.1 | $16.8 |
| May-18 | $38.9 | $27.5 | $33.7 | $100.1 | $4.5 | $7.2 | $10.6 | $22.4 |
| Jun-18 | $38.2 | $28.8 | $35.6 | $102.5 | $2.2 | $6.8 | $10.5 | $19.5 |
| Jul-18 | $40.3 | $26.2 | $35.6 | $102.1 | $4.2 | $3.7 | $10.7 | $18.6 |
| Aug-18 | $50.6 | $29.6 | $37.5 | $117.6 | $14.9 | $7.9 | $12.8 | $35.6 |

**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 August 2018.*

# US Agency Market, Originations

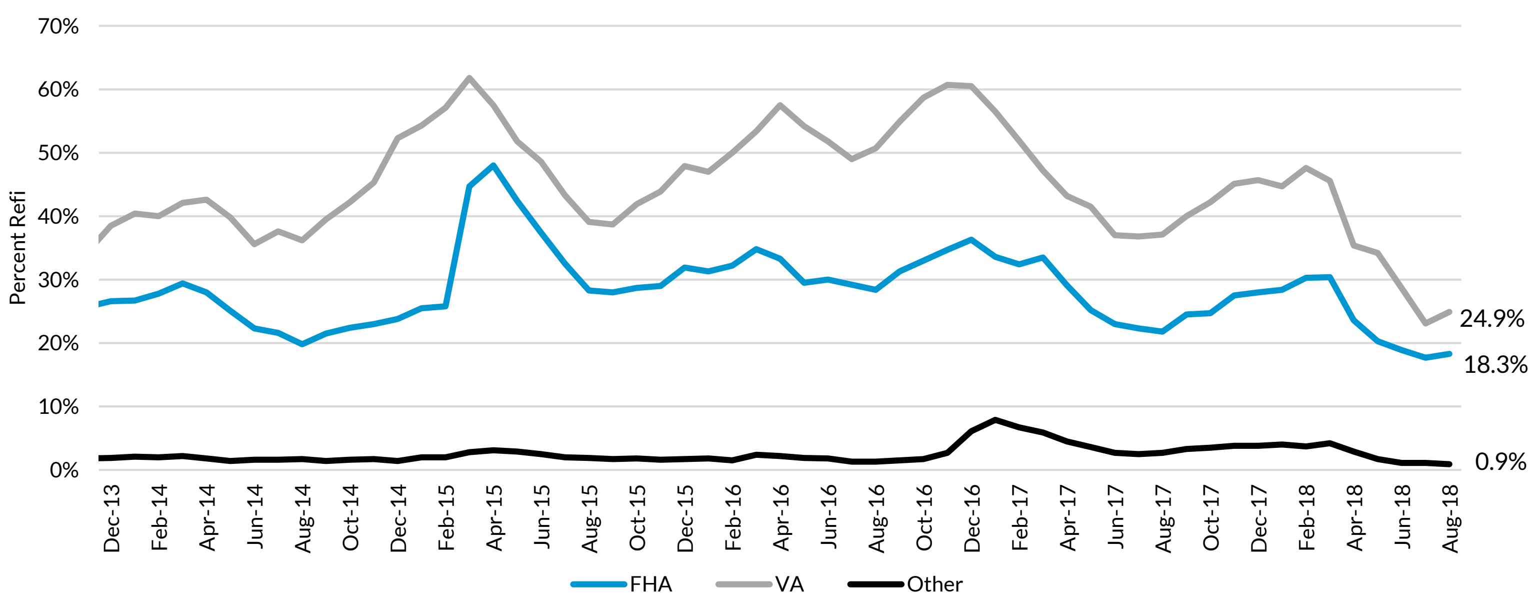
The Ginnie Mae refi share stood at 18 percent in August 2018, below the 30 and 22 percent shares for Fannie Mae and Freddie Mac, respectively. Within Ginnie Mae, VA had the highest refi share at 25 percent in August 2018, followed by FHA's 18 percent refi share. In August, the refinance share continued to decline for all agencies, reaching the lowest levels in recent years. This is a result of increasing interest rates and the seasonal uptick in purchase activity over the past few months.

## Percent Refi at Issuance




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

## Percent Refi at Issuance: Ginnie Mae Breakdown

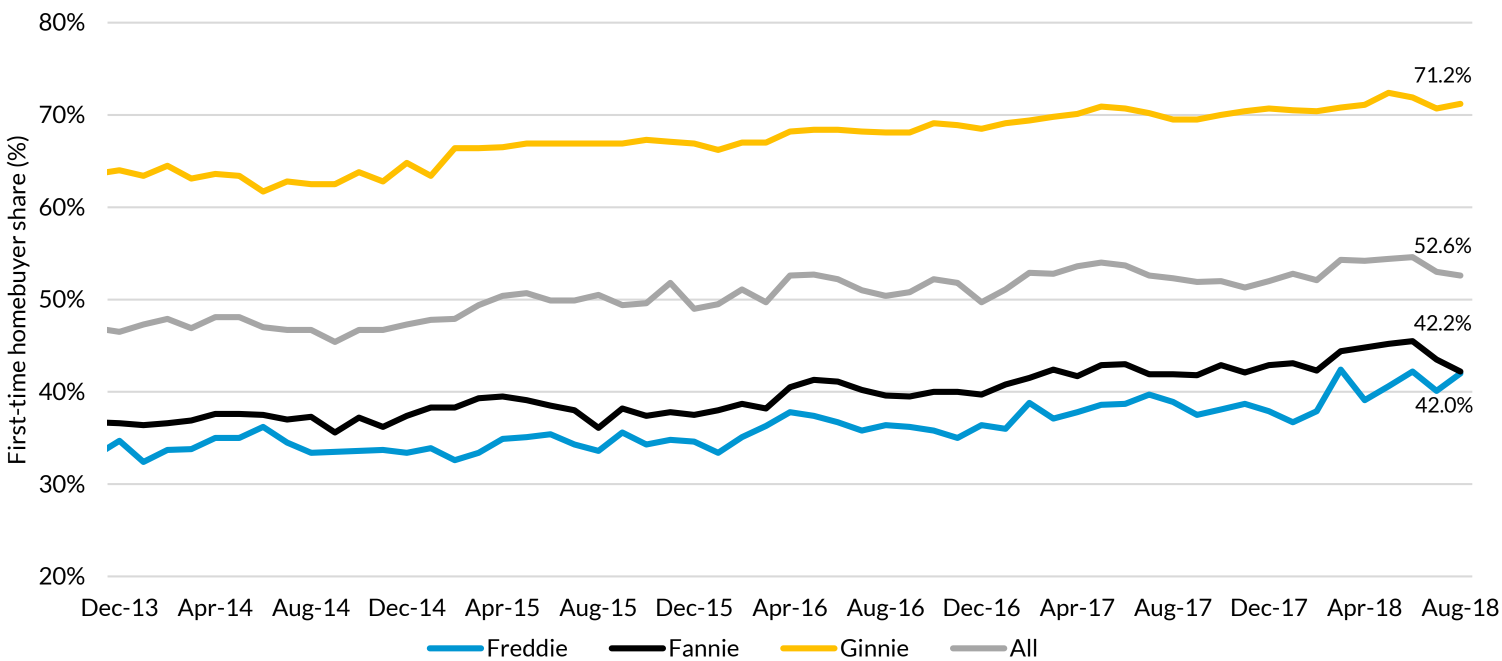



**Sources**: *eMBS and Urban Institute.*
**Note**: *Based on at-issuance balance. "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of August 2018.*

# Credit Box

The first time homebuyer share of Ginnie Mae purchase loans increased to 71.2 percent in August 2018, but remained below the historical high reached in May 2018. First time homebuyers comprise a significantly higher share of the Ginnie Mae purchase market than of the GSE purchase market, with first time homebuyers accounting for 42.2 percent and 42.0 percent of Fannie and Freddie purchase originations, respectively. The bottom table shows that based on mortgages originated in August 2018, the average first-time homebuyer was more likely than an average repeat buyer to take out a smaller loan and have a lower credit score, a much higher LTV and a similar DTI, thus requiring a higher interest rate.

## First Time Homebuyer Share: Purchase Only Loans




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

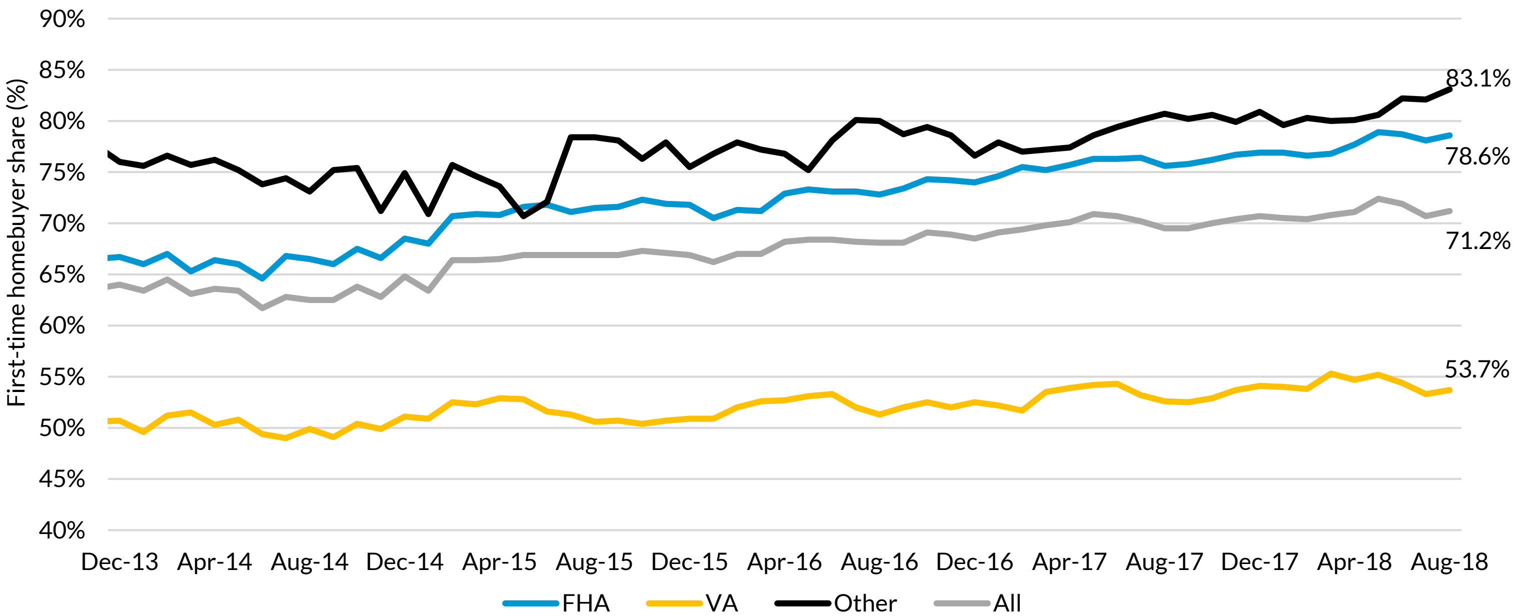
| | Fannie Mae | | Freddie Mac | | Ginnie Mae | | All | |
|---|---|---|---|---|---|---|---|---|
| | First-Time | Repeat | First-Time | Repeat | First-Time | Repeat | First-Time | Repeat |
| Loan Amount ($ ) | 233,744 | 264,203 | 237,447 | 260,148 | 207,245 | 259,533 | 221,678 | 261,683 |
| Credit Score | 737.5 | 754.5 | 742.5 | 755.9 | 680.3 | 704.4 | 710.8 | 742.0 |
| LTV (%) | 87.1 | 78.2 | 87.3 | 79.4 | 96.9 | 95.4 | 91.9 | 83.0 |
| DTI (%) | 36.5 | 36.7 | 35.9 | 36.4 | 41.9 | 42.7 | 39.0 | 38.1 |
| Loan Rate (%) | 4.9 | 4.7 | 4.8 | 4.7 | 4.9 | 4.7 | 4.8 | 4.7 |

**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 August 2018.*

# Credit Box

Within the Ginnie Mae purchase market, 78.6 percent of FHA loans, 53.7 percent of VA loans and 83.1 percent of other loans represent financing for first time home buyers in August 2018. The bottom table shows that based on mortgages originated in August 2018, the average first-time homebuyer was more likely than an average repeat buyer to take out a smaller loan and have a lower credit score, and similar LTVs and DTIs, thus 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 August 2018.*

| | FHA | | VA | | Other | | Ginnie Mae Total | |
|---|---|---|---|---|---|---|---|---|
| | First-Time | Repeat | First-Time | Repeat | First-Time | Repeat | First-Time | Repeat |
| Loan Amount ($) | 202,372 | 223,796 | 248,131 | 301,166 | 143,303 | 160,898 | 207,245 | 259,533 |
| Credit Score | 670.3 | 675.7 | 701.3 | 730.1 | 697.0 | 701.7 | 680.3 | 704.4 |
| LTV (%) | 95.6 | 94.0 | 99.7 | 96.2 | 99.2 | 99.2 | 96.9 | 95.4 |
| DTI (%) | 43.3 | 44.2 | 41.0 | 42.1 | 35.2 | 36.0 | 41.9 | 42.7 |
| Loan Rate (%) | 4.9 | 4.9 | 4.7 | 4.6 | 4.8 | 4.8 | 4.9 | 4.7 |

**Sources**: *eMBS and Urban Institute.* **Note**: *Data as of August 2018. "Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. In May 2017 Ginnie Mae began disclosing issuer-reported LTV for FHA loans, which includes the financed upfront mortgage insurance premium. To make it consistent with the previously reported LTV, we removed the financed upfront mortgage insurance premium by subtracting 169 bps from this new issuer-reported LTV.*

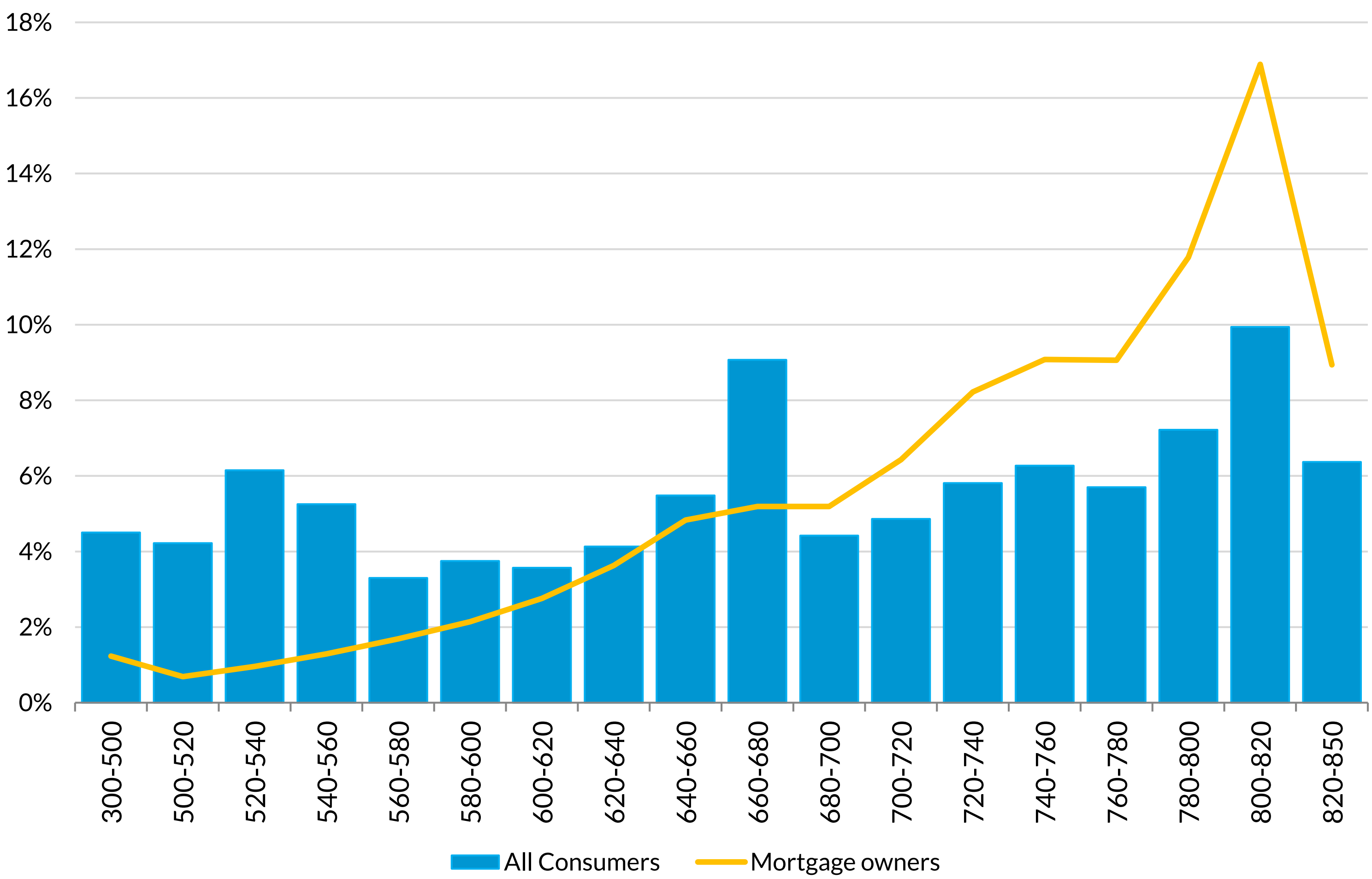
# Credit Box

Consumers who have a mortgage are concentrated at the high end of the general credit score spectrum. The top table shows that the median FICO score for all consumers (682) is equal to the 25th percentile of those with a mortgage (682).

## FICO Score Distribution: Mortgage Owners vs All Consumers

| All Consumers- Percentiles | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Minimum** | **P5** | **P10** | **P25** | **P50** | **P75** | **P90** | **P95** | **Maximum** |
| 300 | 503 | 524 | 587 | 682 | 774 | 813 | 822 | 839 |

| Mortgage Owners- Percentiles | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Minimum** | **P5** | **P10** | **P25** | **P50** | **P75** | **P90** | **P95** | **Maximum** |
| 300 | 570 | 615 | 682 | 752 | 801 | 818 | 824 | 839 |




**Sources**: *Credit Bureau Data and Urban Institute.*
**Note:** *Data as of August 2017.*

# August 2018 Credit Box at a Glance

In August 2018, the median Ginnie Mae FICO score was 677 versus 749 for Fannie and 754 for Freddie. Note that the FICO score for the 10th percentile was 621 for Ginnie Mae, versus 669 for Fannie and 683 for Freddie. Within the Ginnie Mae market, FHA loans have a median FICO score of 664, VA loans have a median FICO score of 709 and other loans have a median FICO score of 695.

| Purchase FICO | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 348,759 | 644 | 683 | 734 | 777 | 798 | 727 |
| Fannie | 130,656 | 682 | 717 | 757 | 786 | 801 | 748 |
| Freddie | 93,374 | 689 | 721 | 758 | 787 | 802 | 751 |
| Ginnie | 124,729 | 623 | 646 | 679 | 725 | 772 | 687 |
| **Refi FICO** | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 119,410 | 638 | 674 | 718 | 764 | 792 | 716 |
| Fannie | 59,233 | 651 | 686 | 728 | 770 | 795 | 725 |
| Freddie | 31,216 | 665 | 701 | 741 | 776 | 798 | 736 |
| Ginnie | 28,961 | 608 | 638 | 672 | 712 | 756 | 676 |
| **All FICO** | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 468,169 | 643 | 681 | 730 | 774 | 797 | 724 |
| Fannie | 189,889 | 669 | 706 | 749 | 783 | 800 | 741 |
| Freddie | 124,590 | 683 | 716 | 754 | 785 | 801 | 747 |
| Ginnie | 153,690 | 621 | 644 | 677 | 723 | 769 | 685 |

| Purchase FICO: Ginnie Mae Breakdown By Source | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 124,729 | 623 | 646 | 679 | 725 | 772 | 687 |
| FHA | 75,035 | 618 | 639 | 665 | 700 | 738 | 671 |
| VA | 39,006 | 632 | 665 | 716 | 768 | 795 | 715 |
| Other | 10,688 | 640 | 660 | 695 | 733 | 766 | 698 |
| **Refi FICO: Ginnie Mae Breakdown By Source** | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 28,961 | 608 | 638 | 672 | 712 | 756 | 676 |
| FHA | 16,293 | 598 | 628 | 658 | 691 | 727 | 661 |
| VA | 12,587 | 626 | 656 | 694 | 737 | 775 | 696 |
| Other | 81 | 598 | 635 | 679 | 726 | 763 | 679 |
| **All FICO: Ginnie Mae Breakdown By Source** | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 153,690 | 621 | 644 | 677 | 723 | 769 | 685 |
| FHA | 91,328 | 614 | 637 | 664 | 698 | 736 | 670 |
| VA | 51,593 | 631 | 662 | 709 | 761 | 792 | 710 |
| Other | 10,769 | 640 | 660 | 695 | 733 | 766 | 698 |

**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 August 2018.*

# August 2018 Credit Box at a Glance

In August 2018, the median loan-to-value ratio (LTV) was 96.5 percent for Ginnie Mae, and 80 percent for both Fannie Mae and Freddie Mac. The 10th percentile was 84.3 percent for Ginnie Mae, and 50-53 percent for Fannie Mae and Freddie Mac. 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 | 349,224 | 70.0 | 80.0 | 95.0 | 96.5 | 100.0 | 87.1 |
| Fannie | 130,772 | 60.0 | 76.0 | 80.0 | 95.0 | 97.0 | 81.6 |
| Freddie | 93,460 | 63.0 | 80.0 | 80.0 | 95.0 | 95.0 | 82.2 |
| Ginnie | 124,992 | 92.8 | 96.5 | 96.5 | 100.0 | 102.0 | 96.4 |
| **Refi LTV** | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 119,856 | 43.0 | 59.0 | 73.0 | 80.0 | 89.7 | 69.3 |
| Fannie | 59,252 | 39.0 | 54.0 | 68.0 | 77.0 | 80.0 | 63.8 |
| Freddie | 31,247 | 40.0 | 55.0 | 70.0 | 79.0 | 80.0 | 65.3 |
| Ginnie | 29,357 | 66.1 | 79.6 | 86.5 | 94.7 | 100.0 | 84.5 |
| **All LTV** | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 469,080 | 58.0 | 75.0 | 86.5 | 96.5 | 98.2 | 82.5 |
| Fannie | 190,024 | 50.0 | 68.0 | 80.0 | 90.0 | 95.0 | 76.1 |
| Freddie | 124,707 | 53.0 | 71.0 | 80.0 | 93.0 | 95.0 | 77.9 |
| Ginnie | 154,349 | 84.3 | 94.8 | 96.5 | 100.0 | 101.0 | 94.2 |

| Purchase LTV: Ginnie Mae Breakdown By Source | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 124,992 | 92.8 | 96.5 | 96.5 | 100.0 | 102.0 | 96.4 |
| FHA | 75,186 | 93.3 | 96.5 | 96.5 | 96.5 | 96.5 | 95.2 |
| VA | 39,081 | 90.4 | 100.0 | 100.0 | 102.2 | 103.3 | 98.1 |
| Other | 10,725 | 95.1 | 99.1 | 101.0 | 101.0 | 101.5 | 99.2 |
| **Refi LTV: Ginnie Mae Breakdown By Source** | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 29,357 | 66.1 | 79.6 | 86.5 | 94.7 | 100.0 | 84.5 |
| FHA | 16,405 | 64.8 | 77.8 | 86.1 | 86.5 | 91.8 | 81.0 |
| VA | 12,861 | 68.0 | 82.6 | 93.2 | 100.0 | 101.0 | 88.8 |
| Other | 91 | 76.1 | 81.6 | 88.9 | 98.0 | 101.4 | 88.3 |
| **All LTV: Ginnie Mae Breakdown By Source** | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 154,349 | 84.3 | 94.8 | 96.5 | 100.0 | 101.0 | 94.2 |
| FHA | 91,591 | 84.3 | 93.8 | 96.5 | 96.5 | 96.5 | 92.7 |
| VA | 51,942 | 82.2 | 95.0 | 100.0 | 101.6 | 103.3 | 95.8 |
| Other | 10,816 | 94.9 | 99.0 | 101.0 | 101.0 | 101.5 | 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 August 2018.*

# August 2018 Credit Box at a Glance

In August 2018, the median Ginnie Mae debt-to-income ratio (DTI) was 42.9 percent, considerably higher than the 37-38 percent median DTIs for Fannie Mae and Freddie Mac. The 90th percentile for Ginnie Mae was 54.2 percent, also much higher than the 48 .0 percent DTI for the GSEs. Within the Ginnie Mae market, the median FHA DTI ratio was 44.3 percent, versus 41.8 percent for VA and 36.3 percent for other lending programs.

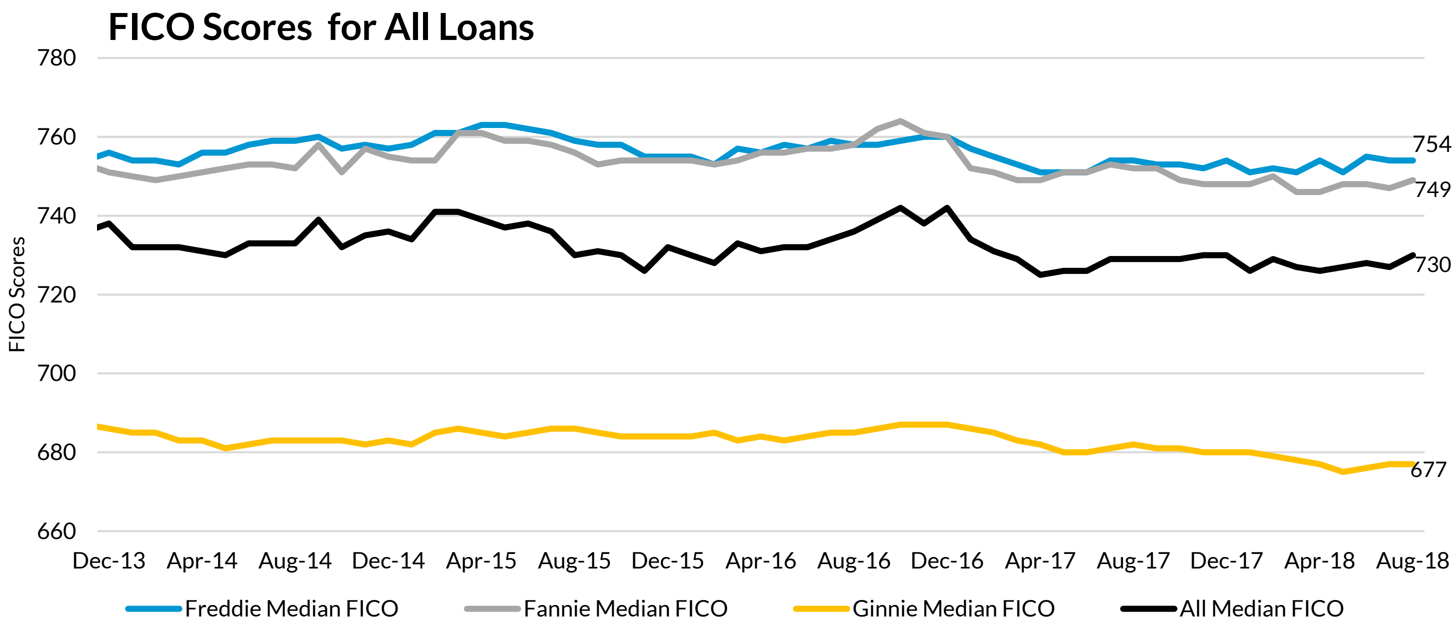
| Purchase DTI | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 348,650 | 25.0 | 32.0 | 39.7 | 46.0 | 50.0 | 38.4 |
| Fannie | 130,641 | 23.0 | 30.0 | 38.0 | 44.0 | 48.0 | 36.5 |
| Freddie | 93,457 | 23.0 | 30.0 | 37.0 | 44.0 | 48.0 | 36.0 |
| Ginnie | 124,552 | 29.2 | 35.9 | 42.9 | 49.4 | 54.3 | 42.2 |
| **Refi DTI** | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 116,815 | 24.0 | 31.0 | 39.3 | 46.0 | 49.0 | 38.0 |
| Fannie | 58,603 | 23.0 | 30.0 | 39.0 | 46.0 | 49.0 | 37.3 |
| Freddie | 30,942 | 22.0 | 29.0 | 37.0 | 43.0 | 47.0 | 35.9 |
| Ginnie | 27,270 | 27.5 | 35.2 | 43.0 | 49.3 | 54.2 | 41.8 |
| **All DTI** | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 465,465 | 24.0 | 31.9 | 39.6 | 46.0 | 49.9 | 38.3 |
| Fannie | 189,244 | 23.0 | 30.0 | 38.0 | 45.0 | 48.0 | 36.7 |
| Freddie | 124,399 | 23.0 | 29.0 | 37.0 | 44.0 | 48.0 | 36.0 |
| Ginnie | 151,822 | 28.9 | 35.8 | 42.9 | 49.4 | 54.2 | 42.1 |

| Purchase DTI: Ginnie Mae Breakdown By Source | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 124,552 | 29.2 | 35.9 | 42.9 | 49.4 | 54.3 | 42.2 |
| FHA | 75,177 | 30.9 | 37.7 | 44.5 | 50.5 | 54.6 | 43.5 |
| VA | 38,740 | 27.7 | 34.7 | 42.0 | 48.8 | 54.3 | 41.5 |
| Other | 10,635 | 26.2 | 31.1 | 36.3 | 40.2 | 43.0 | 35.3 |
| **Refi DTI: Ginnie Mae Breakdown By Source** | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 27,270 | 27.5 | 35.2 | 43.0 | 49.3 | 54.2 | 41.8 |
| FHA | 15,446 | 28.2 | 36.0 | 43.9 | 49.6 | 54.2 | 42.3 |
| VA | 11,760 | 26.9 | 34.2 | 42.0 | 48.8 | 54.1 | 41.2 |
| Other | 64 | 13.4 | 18.2 | 26.7 | 37.2 | 40.7 | 27.5 |
| **All DTI: Ginnie Mae Breakdown By Source** | | | | | | | |
| | Number of Loans | P10 | P25 | Median | P75 | P90 | Mean |
| All | 145,918 | 28.8 | 35.6 | 42.8 | 49.3 | 54.2 | 42.0 |
| FHA | 88,000 | 30.3 | 37.2 | 44.3 | 50.1 | 54.5 | 43.2 |
| VA | 47,922 | 27.5 | 34.5 | 41.8 | 48.7 | 54.2 | 41.3 |
| Other | 9,996 | 26.1 | 31.1 | 36.3 | 40.2 | 43.0 | 35.3 |

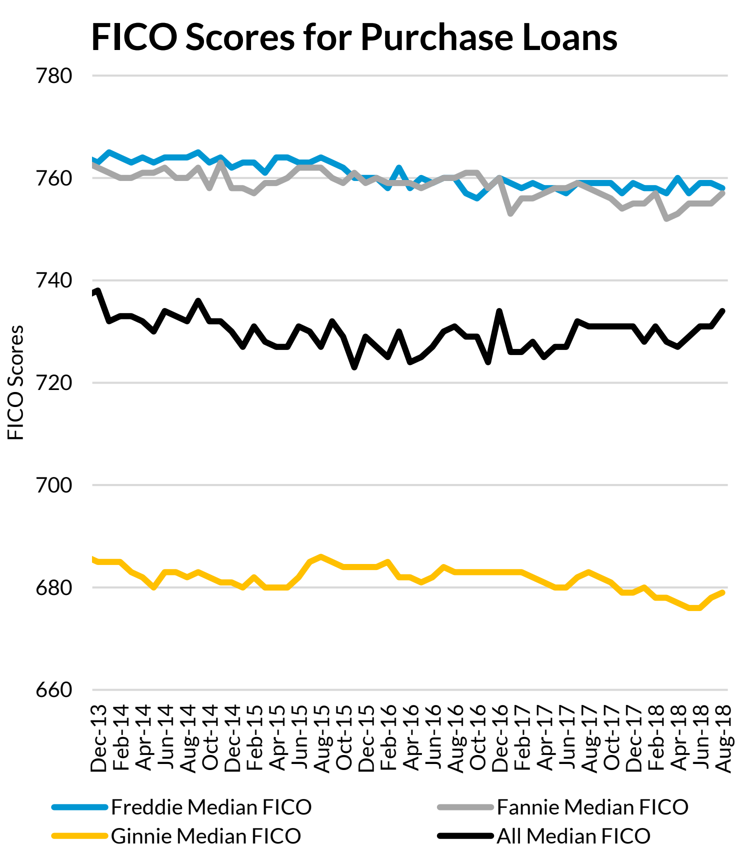
**Sources**: *eMBS and Urban Institute.* **Note**: *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of August 2018.*

# Credit Box: Historical

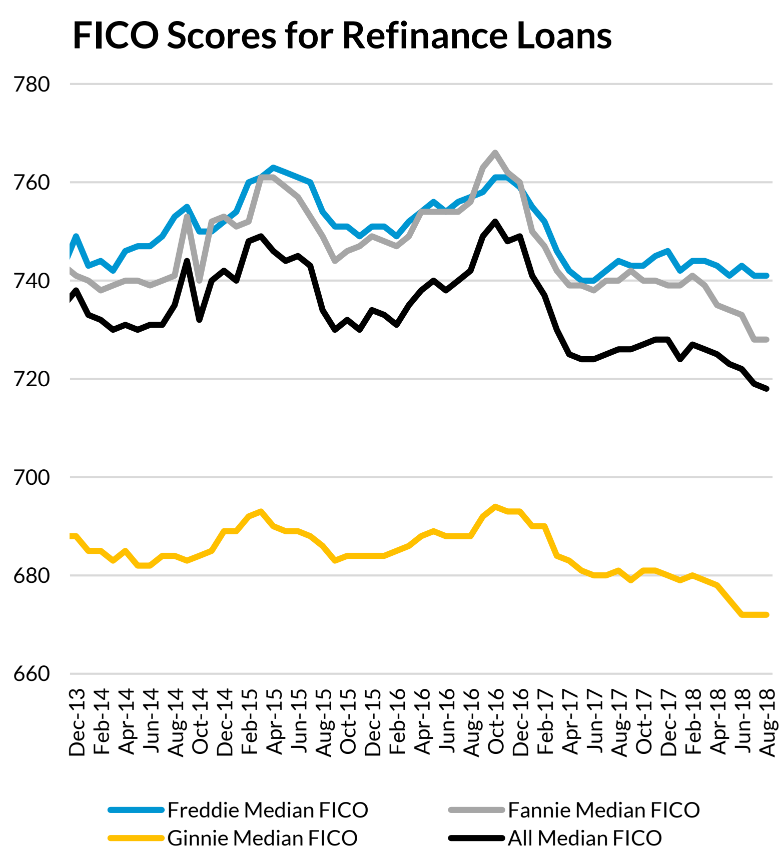
The median FICO score for all agency MBS originated in August was 730, slightly higher than in July. The figures show that the median FICO score for Ginnie Mae borrowers has always been considerably lower than for GSE borrowers. The difference between Ginnie Mae and GSE borrowers is wider in purchase loans than in refi loans.




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




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

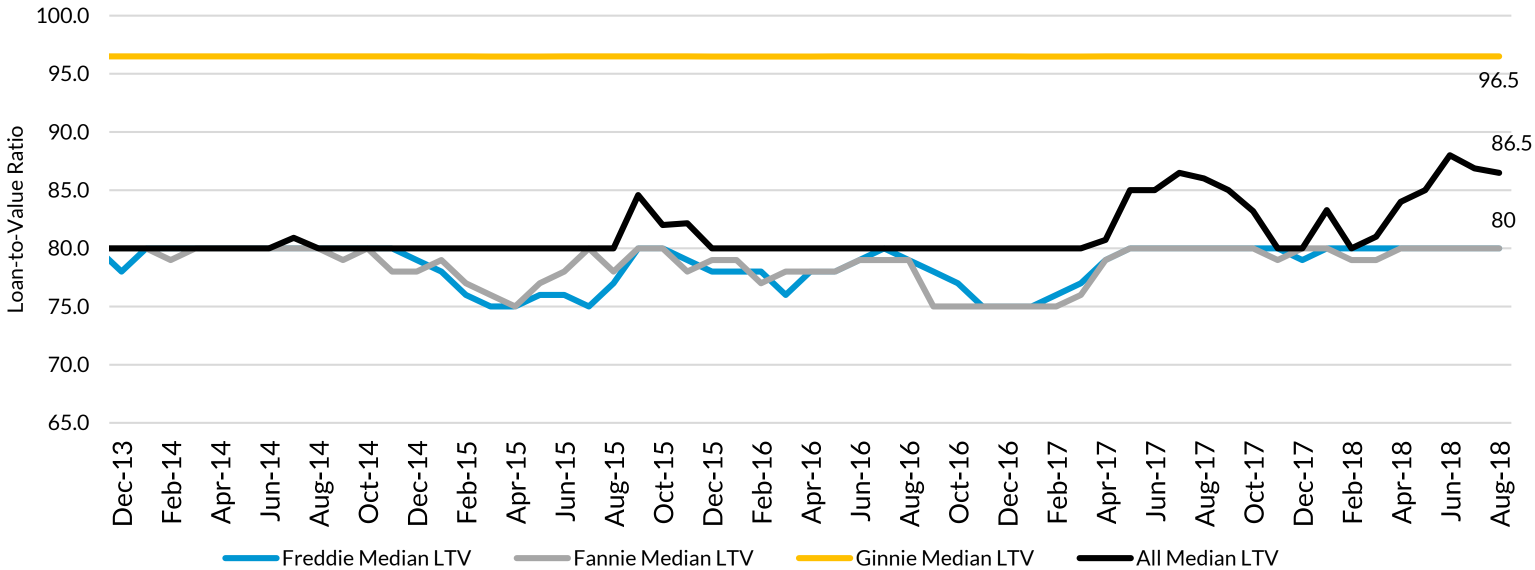



**Sources**: *eMBS and Urban Institute.* **Note:** *Data as of August 2018.*

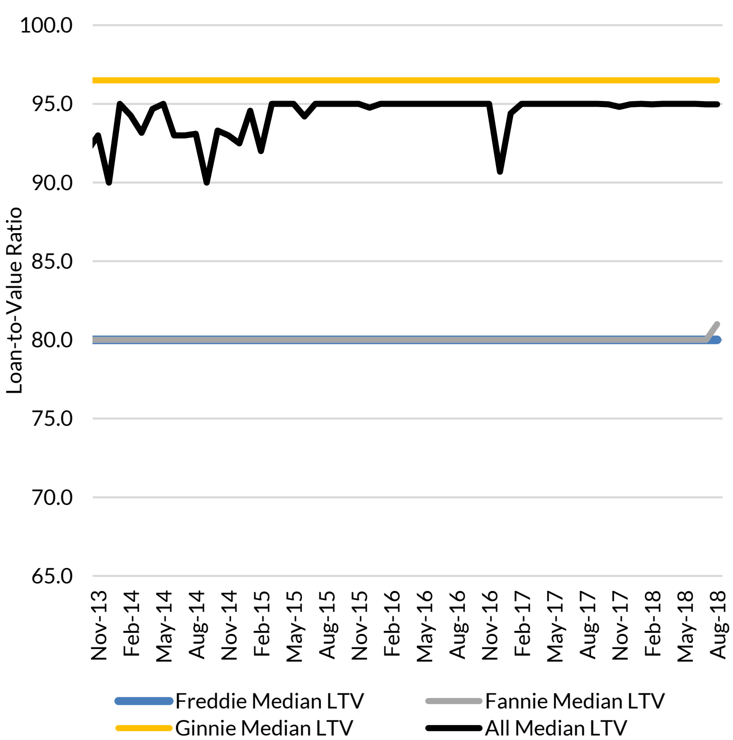
# Credit Box: Historical

Median LTVs for Ginnie Mae loans have historically been at 96.5 percent, much higher than the 80 percent LTVs for the GSEs. Through time, both Ginnie Mae and GSE refinances have LTVs about 6-12 points lower than their purchase counterparts.

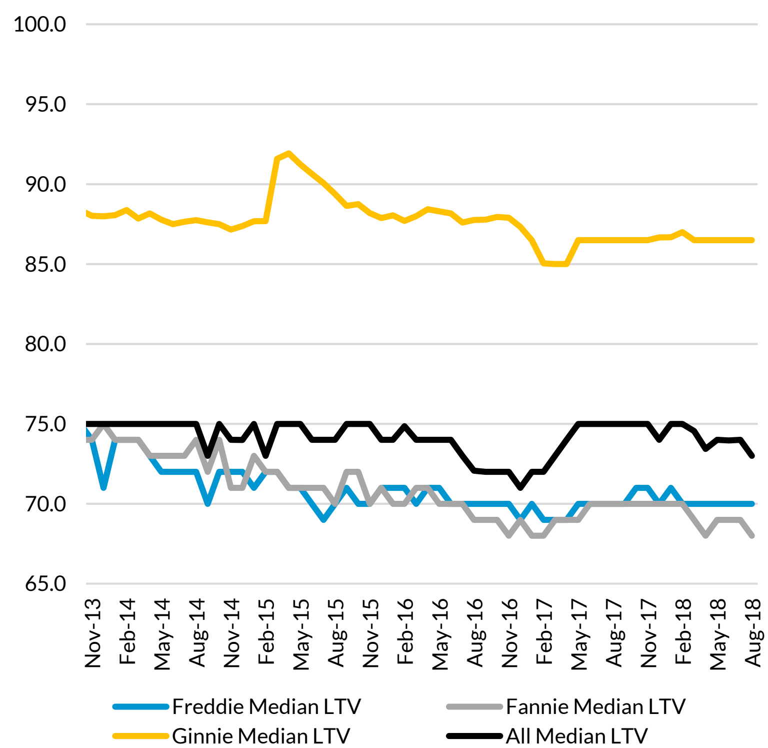
## LTV Ratio for All Loans




## LTV Ratio for Purchase Loans




## LTV Ratio for Refinance Loans

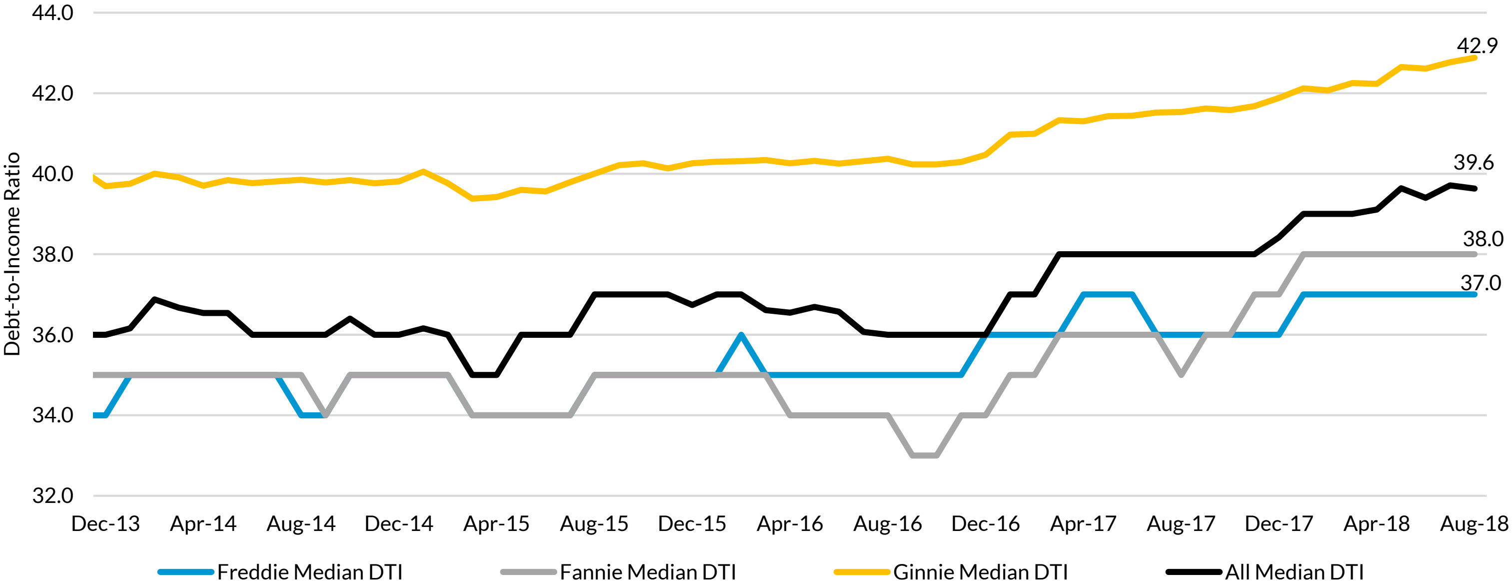



**Sources**: *eMBS and Urban Institute.* **Note:** *In May 2017 Ginnie Mae began disclosing issuer-reported LTV for FHA loans, which includes the financed upfront mortgage insurance premium. To make it consistent with the previously reported LTV, we removed the financed upfront mortgage insurance premium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

# Credit Box: Historical

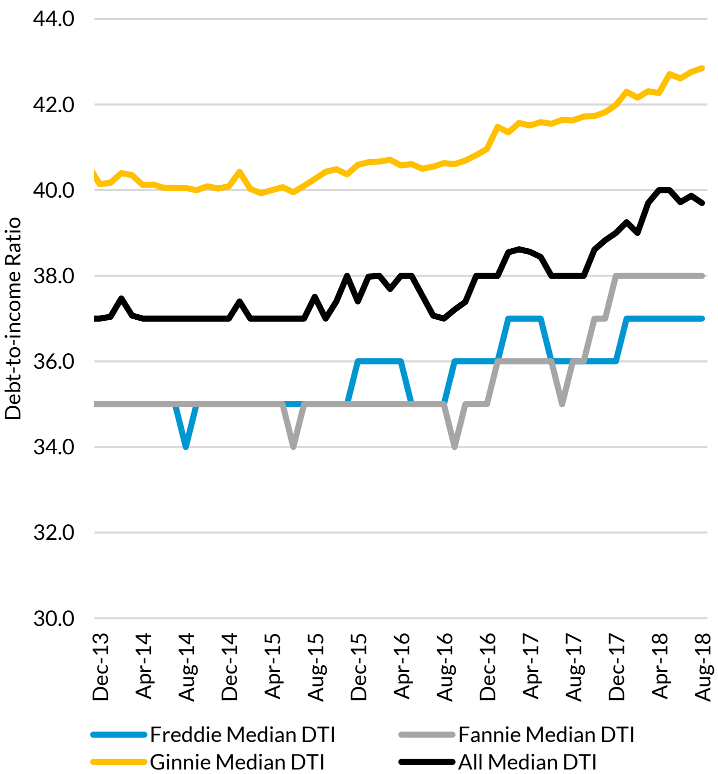
Median debt-to-income ratios on Ginnie Mae loans have historically been in the low 40s, considerably higher than that of the GSEs. DTIs have been inching up over the past year for both Ginnie Mae and GSE loans, with the movement more pronounced for Ginnie Mae loans. Increases in DTIs are very typical in the current environment of rising interest rates and home prices, as borrowers are left with sharply higher monthly payments.

## DTI Ratio for All Loans



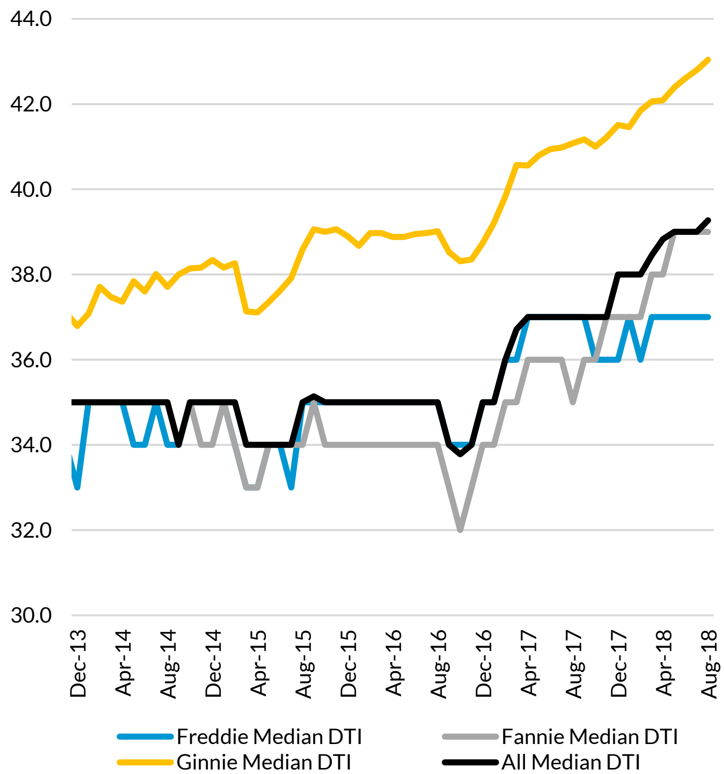

**Sources**: *eMBS and Urban Institute.* **Note:** *Data as of August 2018.*

## DTI Ratio for Purchase Loans




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

## DTI Ratio for Refinance Loans

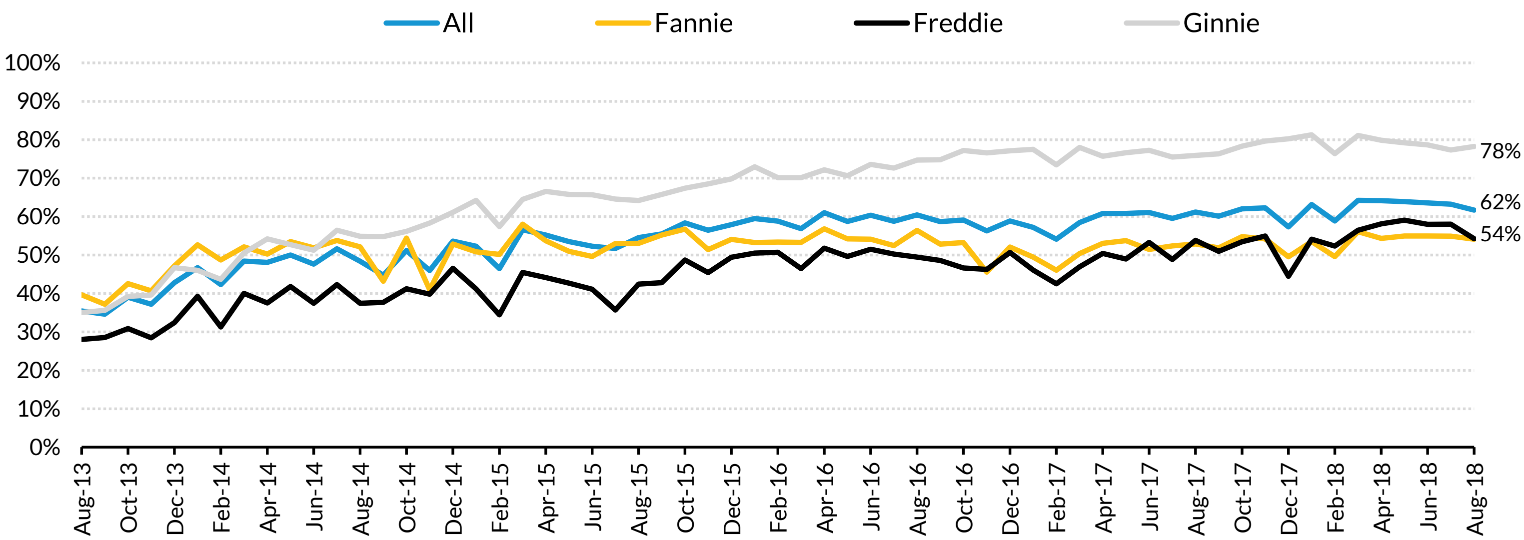



**Sources**: *eMBS and Urban Institute.*
**Note:** *Data as of August 2018.*

# Nonbank Originators

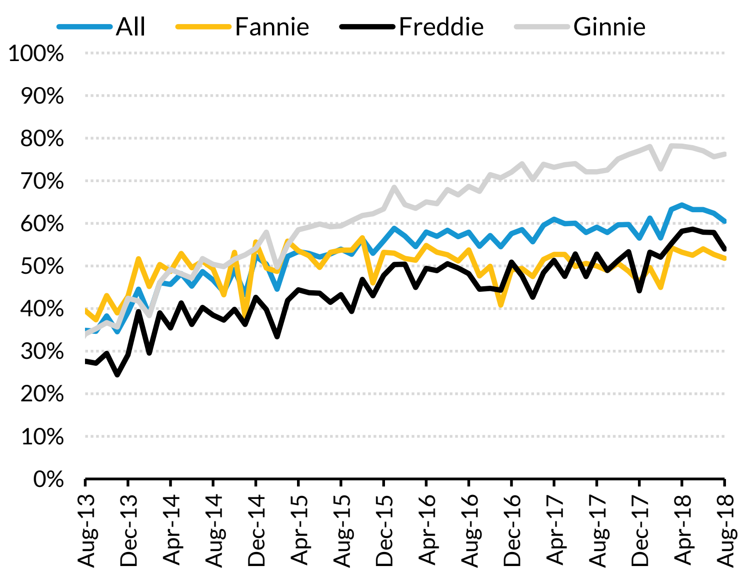
The nonbank origination share has been generally increasing since 2013. In August 2018, the Ginnie Mae nonbank originator share stood at 78 percent. Nonbank originator shares for Fannie Mae both stood at 54 percent. For Ginnie Mae, the non-bank refi share was higher than the non-bank purchase share. The differences were more modest for the GSEs.

## Nonbank Origination Share: All Loans

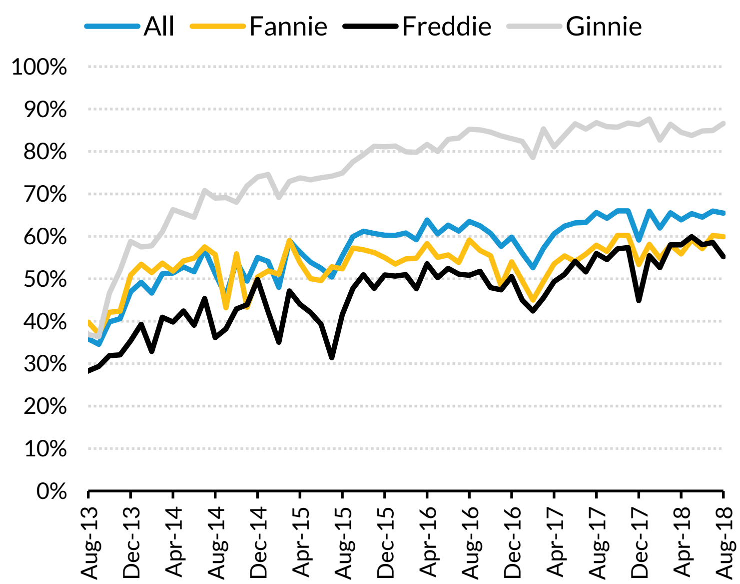



**Sources**: *eMBS and Urban Institute*
**Note:** *Data as of August 2018.*

## Nonbank Origination Share: Purchase Loans




## Nonbank Origination Share: Refinance Loans

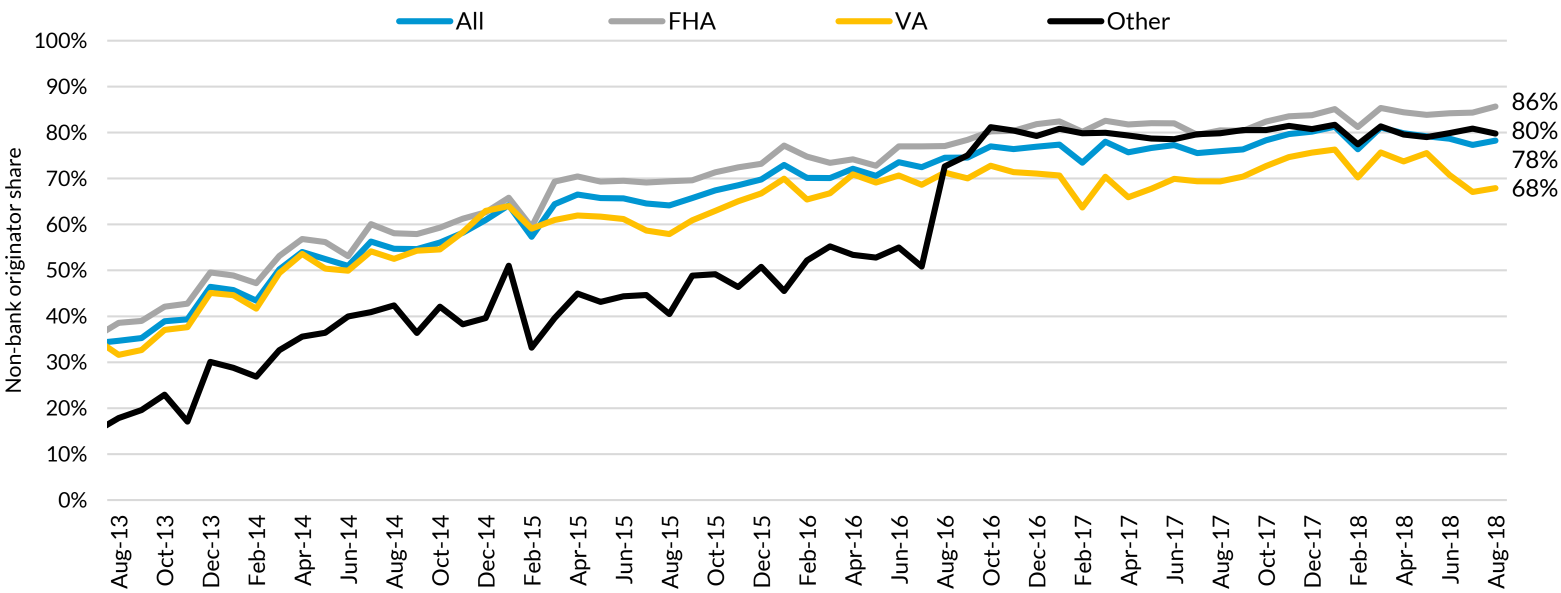



**Sources**: *eMBS and Urban Institute.* **Note:** *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of August 2018.*

# Ginnie Mae Nonbank Originators

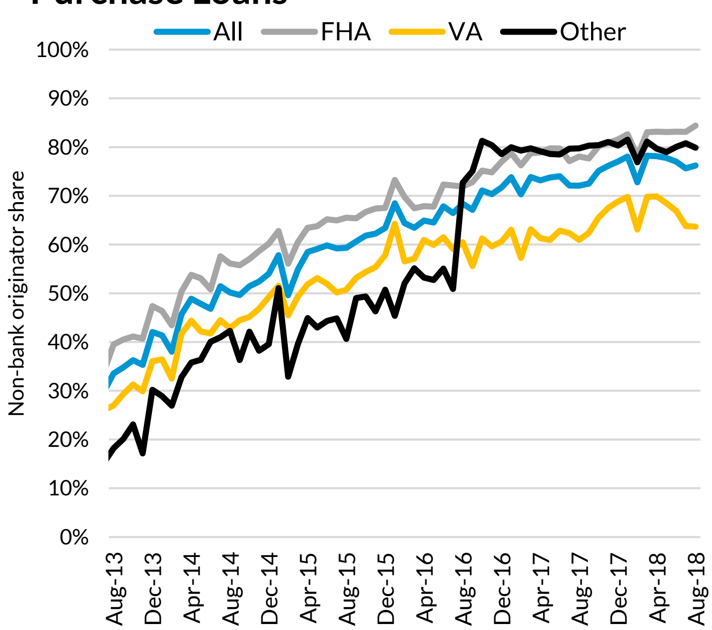
In August 2018, Ginnie Mae's nonbank share increased slightly to 78 percent. The nonbank originator share for FHA increased slightly to 86 percent, a historical high. The nonbank originator share for VA also rose slightly to 68 percent, while the nonbank originator share for other loans decreased slightly to 80 percent.

## Ginnie Mae Nonbank Originator Share: All Loans

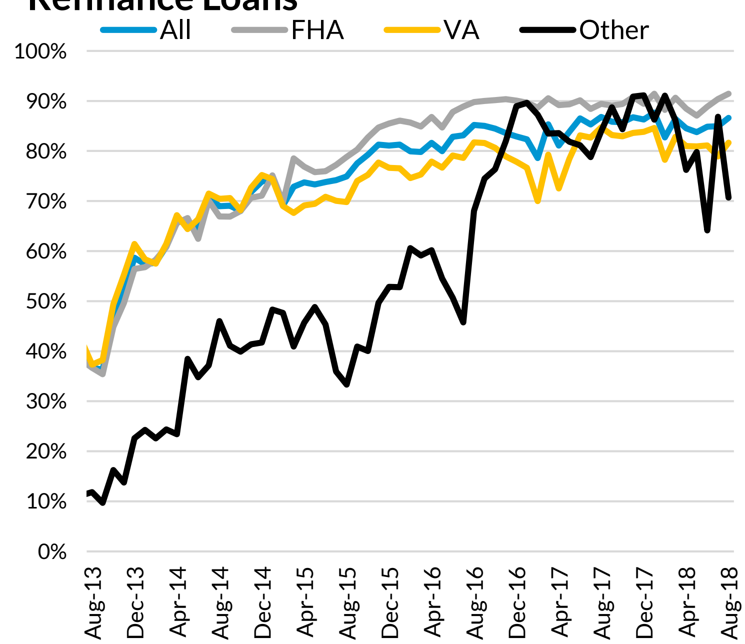



**Sources**: *eMBS and Urban Institute*
**Note:** *Data as of August 2018.*

## Ginnie Mae Nonbank Share: Purchase Loans




## Ginnie Mae Nonbank Share: Refinance Loans

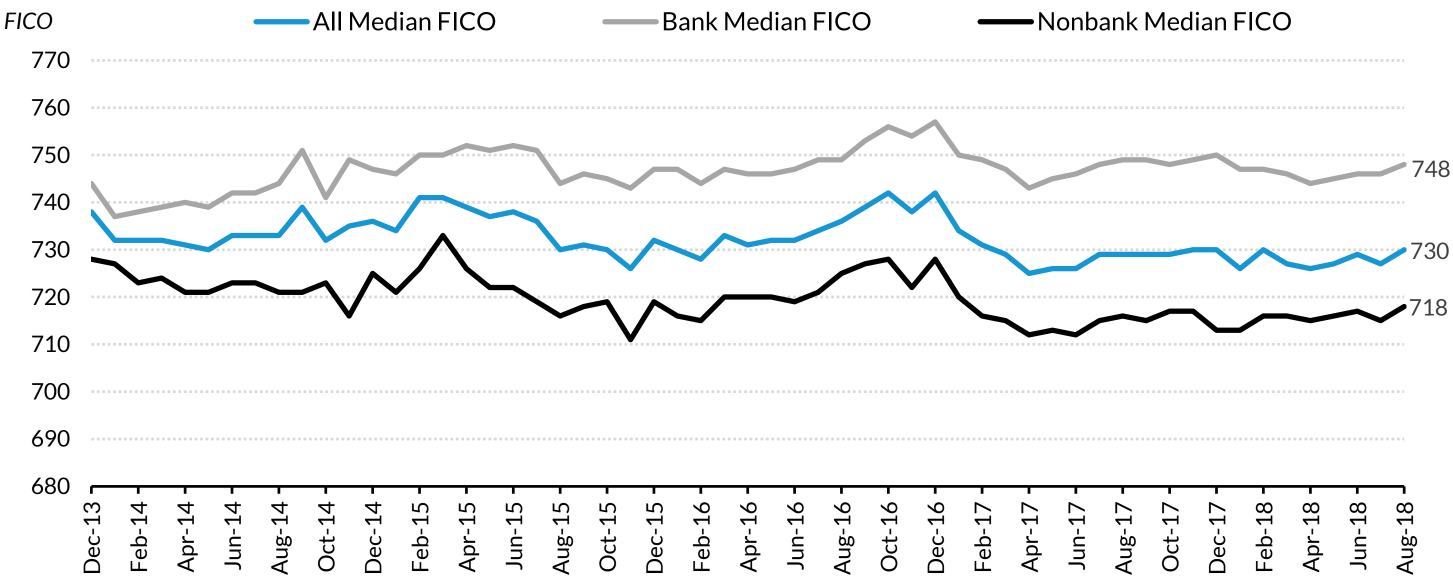



**Sources**: *eMBS and Urban Institute.* **Note: "***Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of August 2018.*

# Nonbank Credit Box

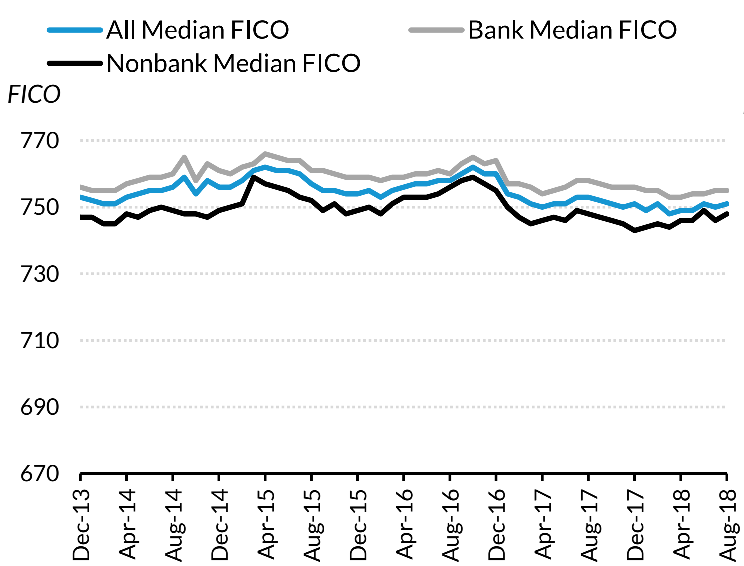
Nonbank originators have played a key role in opening up access to credit. The median GSE and the median Ginnie Mae FICO scores for loans originated by nonbanks are lower than their bank counterparts. Within the GSE space, both bank and nonbank FICOs have declined since 2014 with a further relaxation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

## Agency FICO: Bank vs. Nonbank



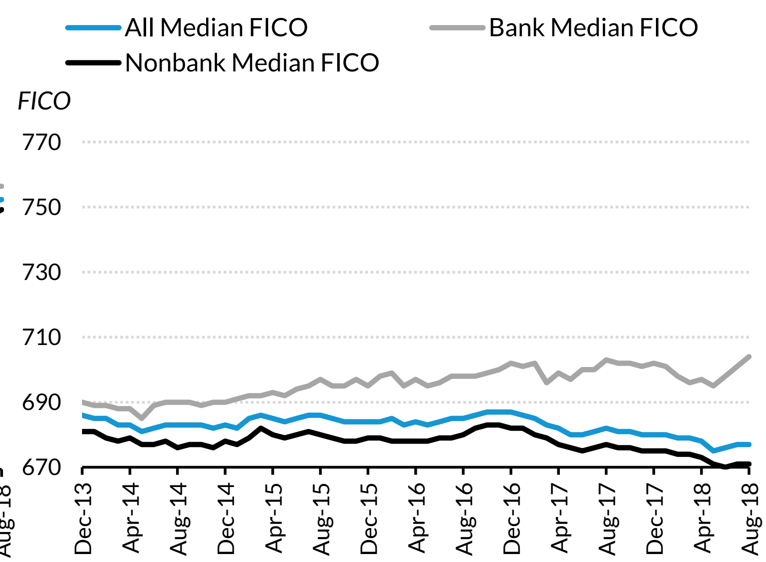

**Sources**: *eMBS and Urban Institute.* ***Note***: *Data as of August 2018.*

## GSE FICO: Bank vs. Nonbank




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

## Ginnie Mae FICO: Bank vs. Nonbank

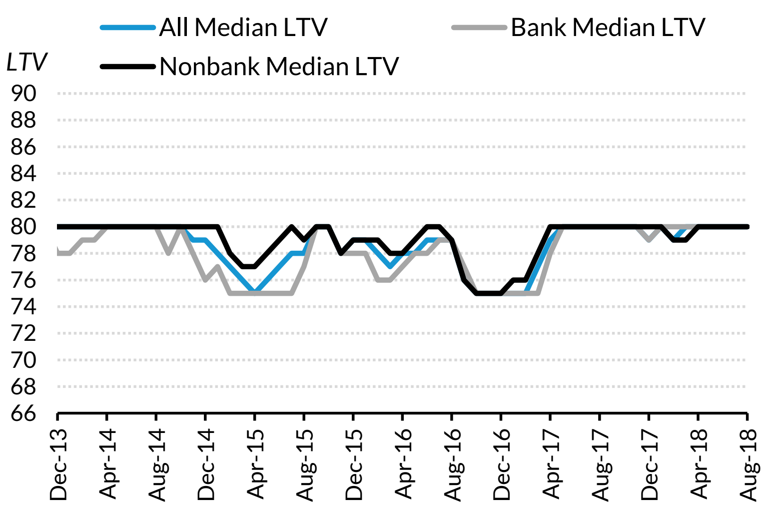



**Sources**: *eMBS and Urban Institute.*
***Note***: *Data as of August 2018.*

# Nonbank Credit Box

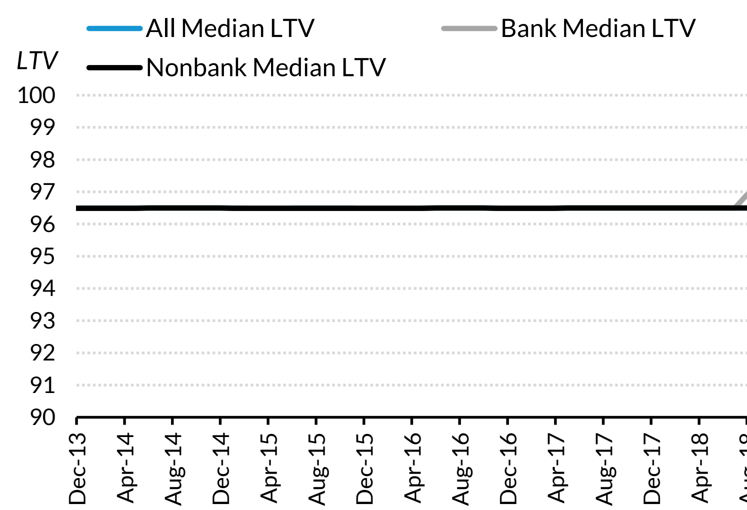
The median LTV ratios for loans originated by nonbanks are similar to that of their bank counterparts, while the median DTIs for nonbank loans are higher, indicating that nonbanks are more accommodating in this dimension as well as in the FICO dimension. Note that since early 2017, there has been a measurable increase in DTIs. This is true for both bank and non-bank originations. Rising DTIs are to be expected in a rising rate environment.

## GSE LTV: Bank vs. Nonbank



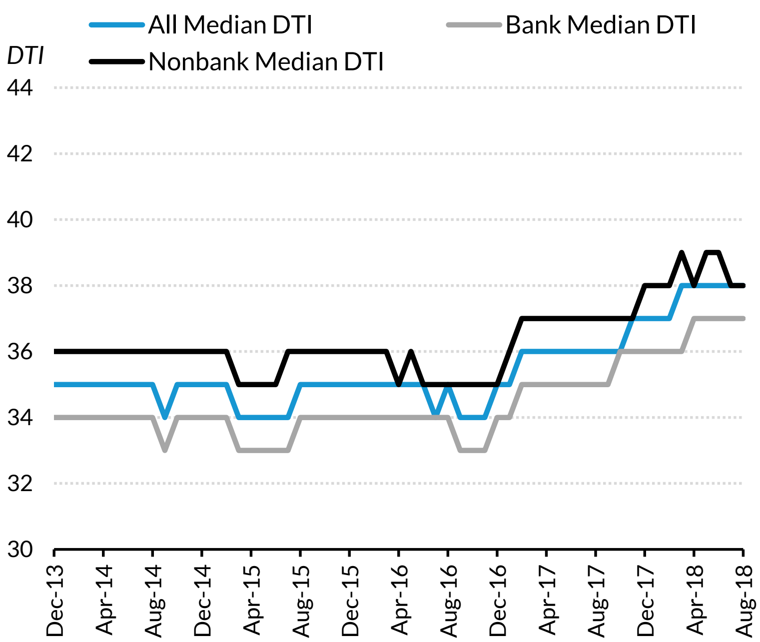

**Sources**: *eMBS and Urban Institute.* **Note**: *Data as of August 2018.*

## Ginnie Mae LTV: Bank vs. Nonbank



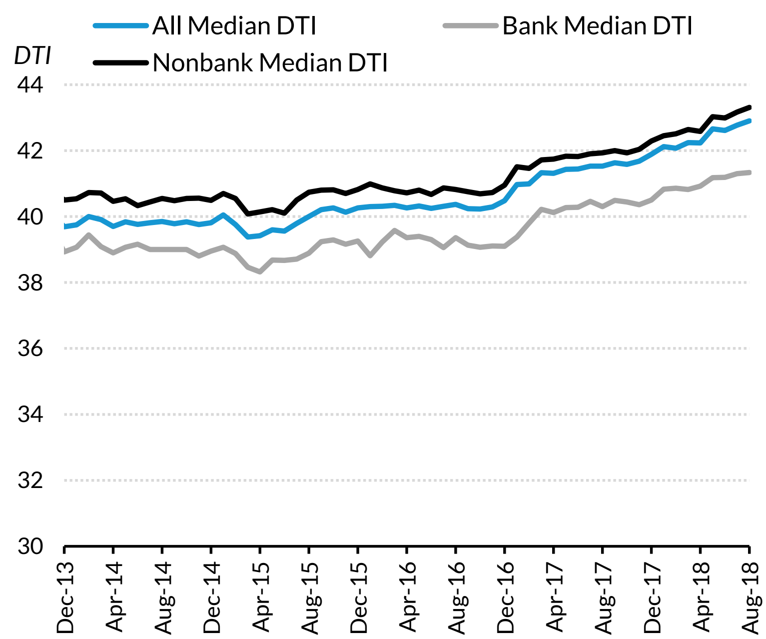

**Sources**: *eMBS and Urban Institute.* **Note**: *Data as of August 2018.*

## GSE DTI: Bank vs. Nonbank




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

## Ginnie Mae DTI: Bank vs. Nonbank

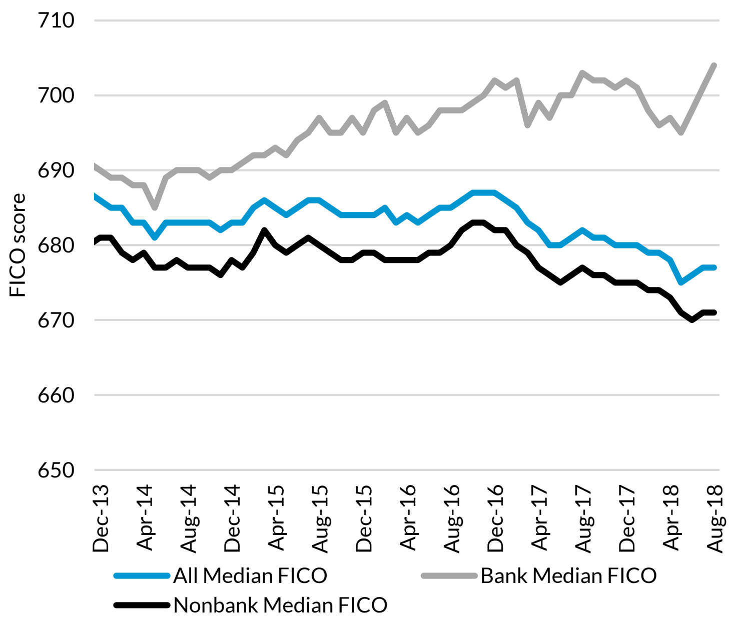



**Sources**: *eMBS and Urban Institute.* **Note**: *Data as of August 2018.*

# Ginnie Mae Nonbank Originators: Credit Box

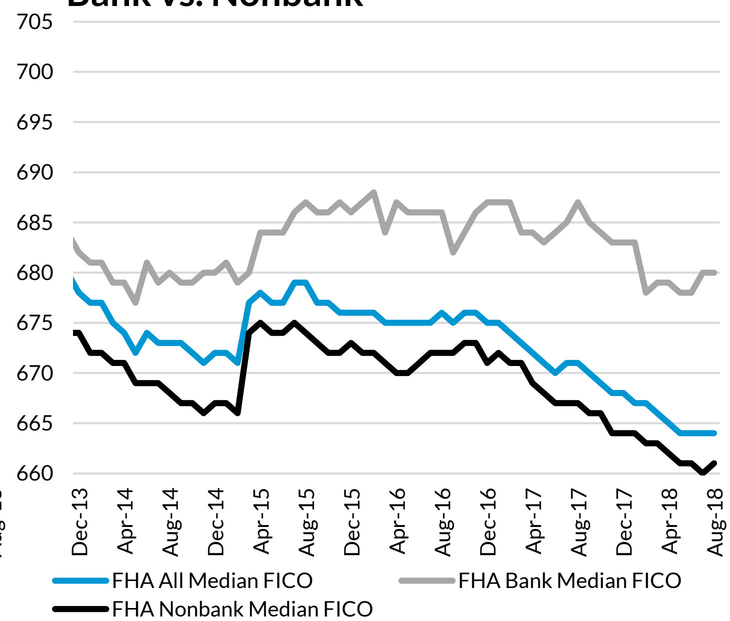
The FICO scores for Ginnie Mae bank originators increased in August 2018, while FICO scores for nonbank originators stayed flat. The spread in the FICO scores between banks and non-banks remains close to their widest level since the data became available in 2013. The gap between banks and non-banks is very apparent in all programs backing Ginnie Mae securities: FHA, VA, and Other.

## Ginnie Mae FICO Scores: Bank vs. Nonbank



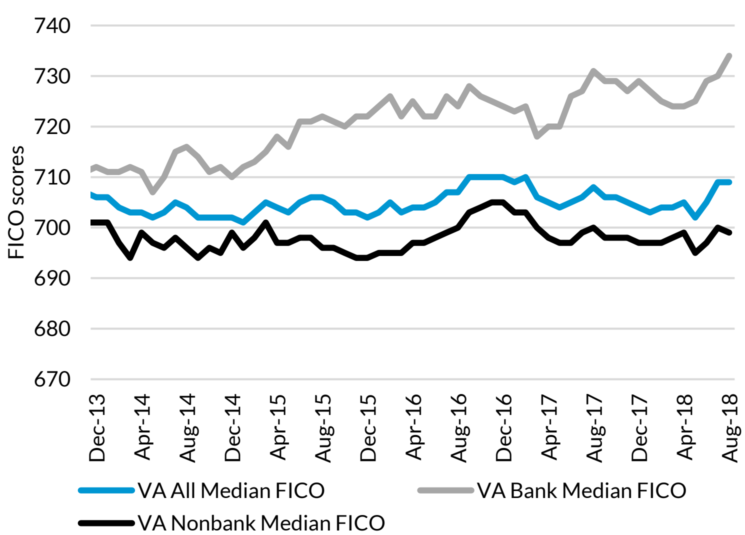

**Sources**: *eMBS and Urban Institute* **Note:** *Data as of August 2018.*

## Ginnie Mae FHA FICO Scores: Bank vs. Nonbank



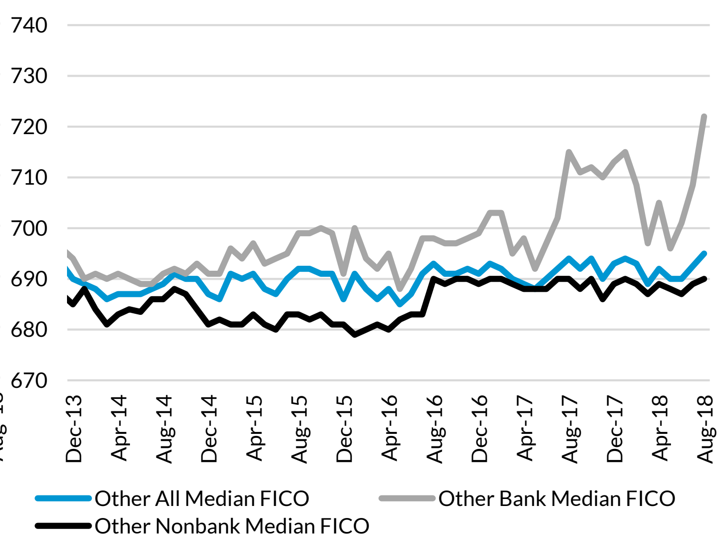

**Sources**: *eMBS and Urban Institute* **Note:** *Data as of August 2018.*

## Ginnie Mae VA FICO Scores: Bank vs. Nonbank




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

## Ginnie Mae Other FICO Scores: Bank vs. Nonbank

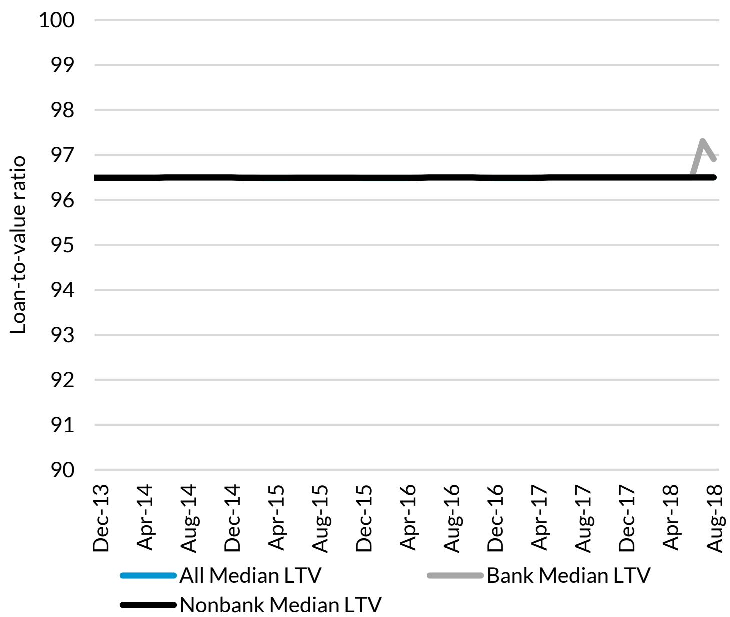



**Sources**: *eMBS and Urban Institute*
**Note:** *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of August 2018.*

# Ginnie Mae Nonbank Originators: Credit Box

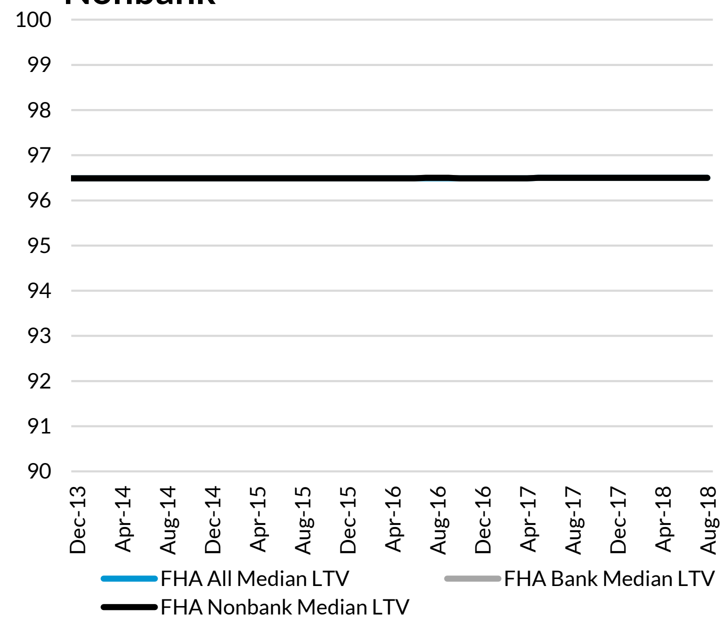
An analysis of the loans backing Ginnie Mae origination indicates that there are virtually no differences in median LTV ratios between bank originated loans and non-bank originated loans.

### Ginnie Mae LTV: Bank vs. Nonbank



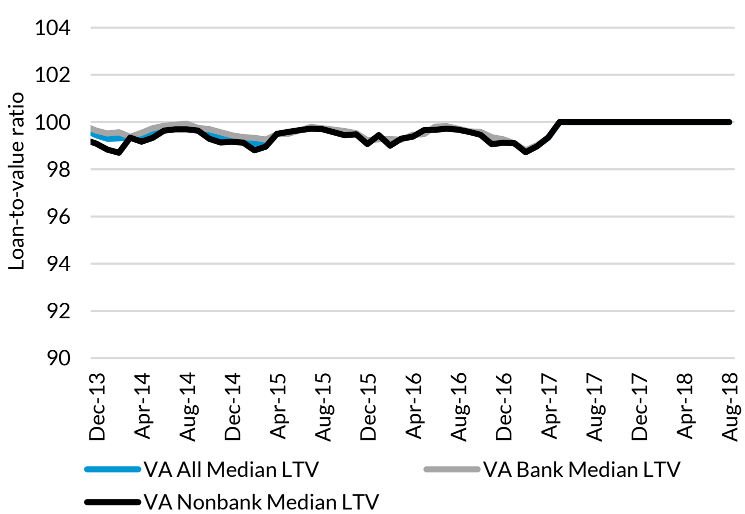

**Sources**: *eMBS and Urban Institute* **Note:** *Data as of August 2018.*

### Ginnie Mae FHA LTV: Bank vs. Nonbank



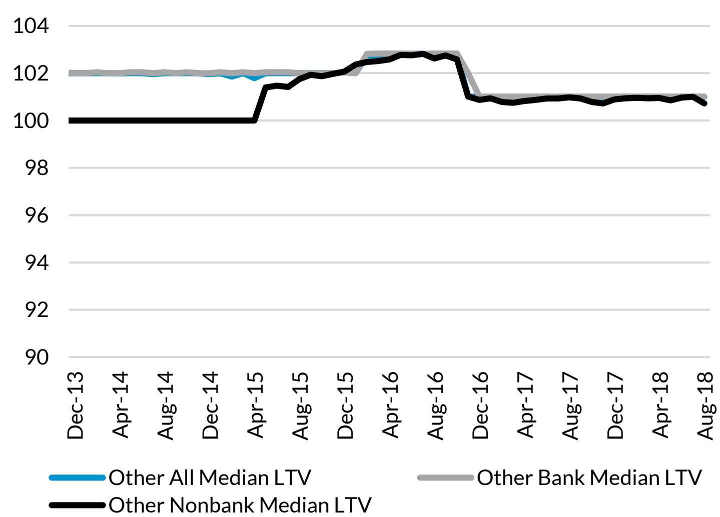

**Sources**: *eMBS and Urban Institute* **Note:** *Data as of August 2018.*

### Ginnie Mae VA LTV: Bank vs. Nonbank




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

### Ginnie Mae Other LTV: Bank vs. Nonbank

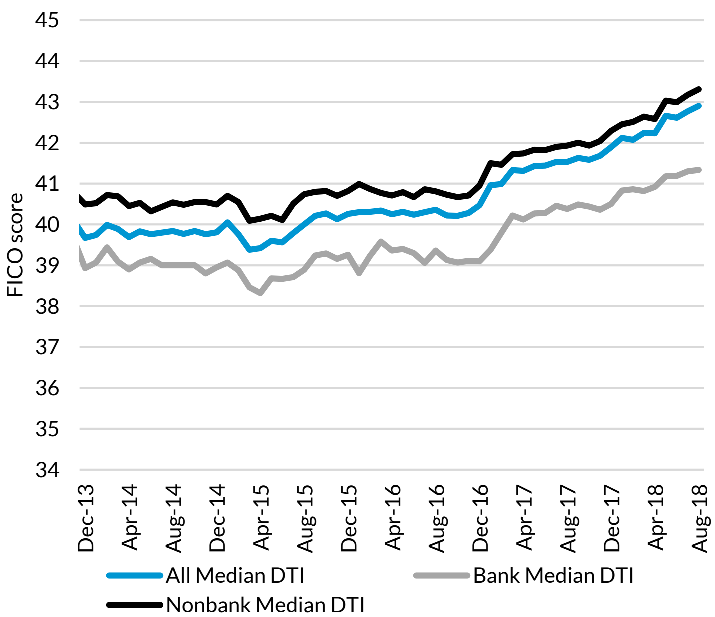



**Sources**: *eMBS and Urban Institute*
**Note:** *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of August 2018.*

# Ginnie Mae Nonbank Originators: Credit Box

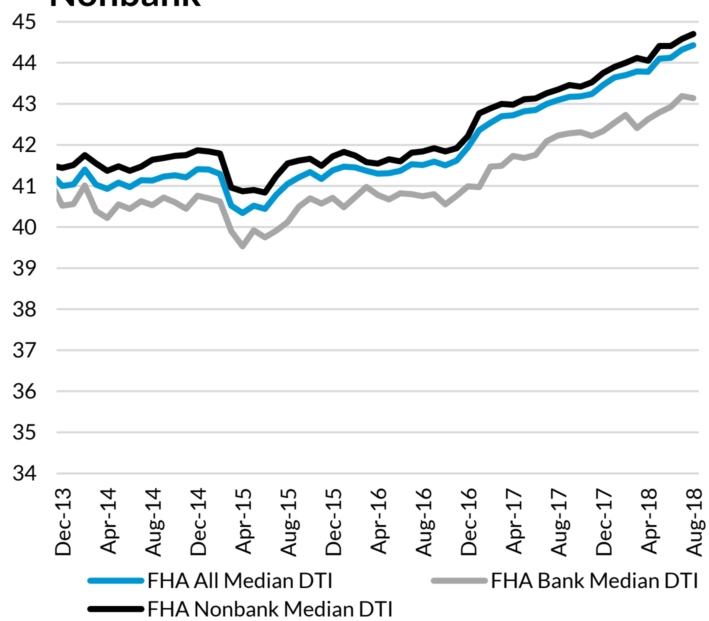
An analysis of borrowers' DTI ratios for bank versus non-bank originators indicates that the former have a lower median DTI. The DTIs for FHA and VA loans experienced notable increases since early 2017 for both bank and nonbank originations, while the Other originations' DTIs stayed relatively flat. Rising DTIs are to be expected in a rising rate environment.

## Ginnie Mae DTI: Bank vs. Nonbank



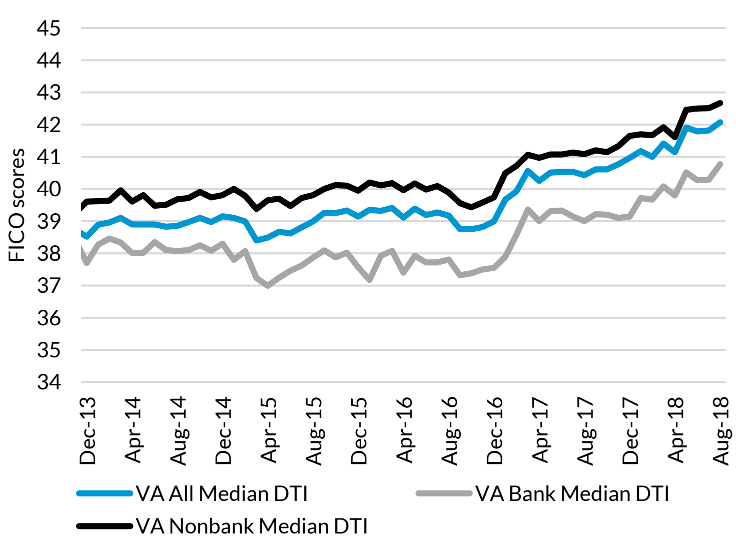

**Sources**: *eMBS and Urban Institute* **Note:** *Data as of August 2018.*

## Ginnie Mae FHA DTI: Bank vs. Nonbank



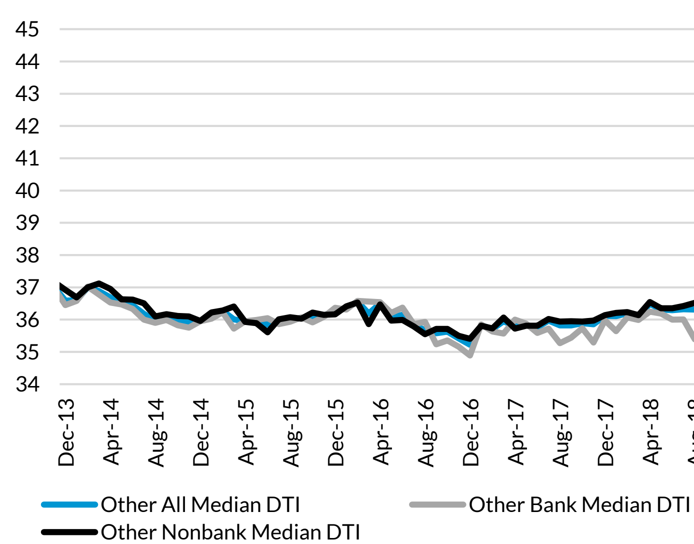

**Sources**: *eMBS and Urban Institute* **Note:** *Data as of August 2018.*

## Ginnie Mae VA DTI: Bank vs. Nonbank




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

## Ginnie Mae Other DTI: Bank vs. Nonbank



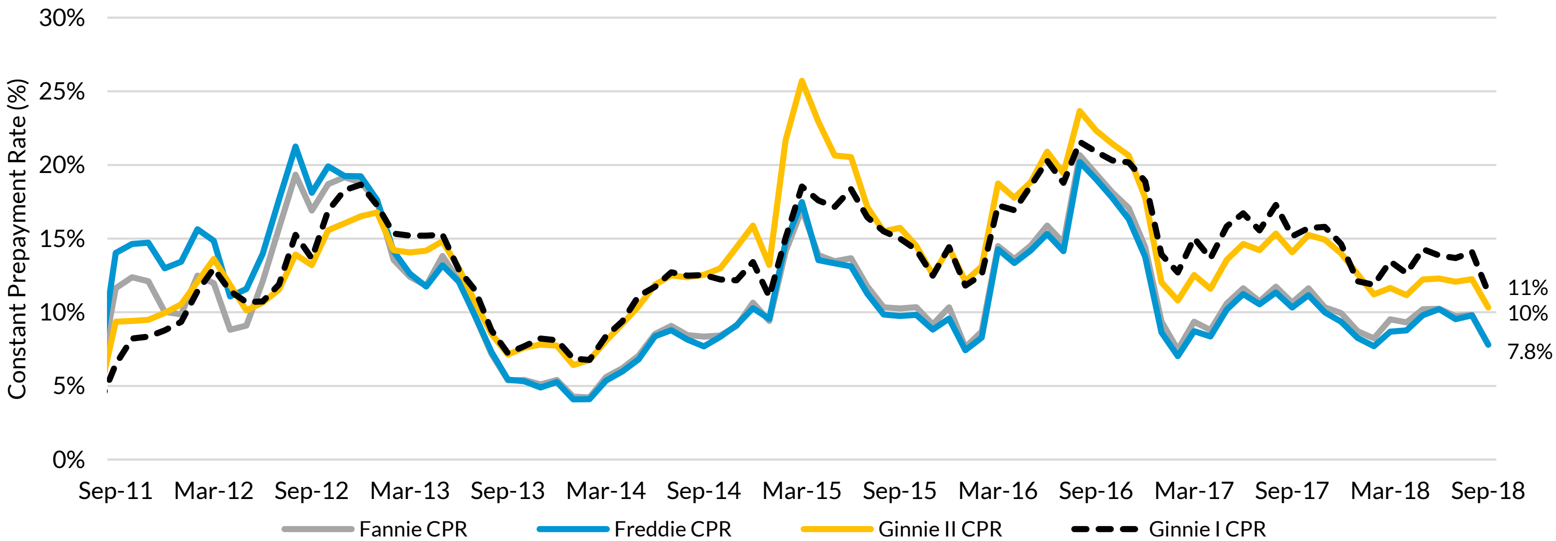

**Sources**: *eMBS and Urban Institute*
**Note:** *"Other" refers to loans insured by HUD's Office of Public and Indian Housing and the Department of Agriculture's Rural Development. Data as of August 2018.*

# Prepayments

Prepayments on Ginnie Mae securities were lower than on GSE securities from 2011 through mid-2013, but have been higher since. These increased Ginnie speeds reflect the growing share of VA loans, which prepay at faster speeds than either FHA or GSE loans. In addition, FHA streamlined refinances have applied 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.

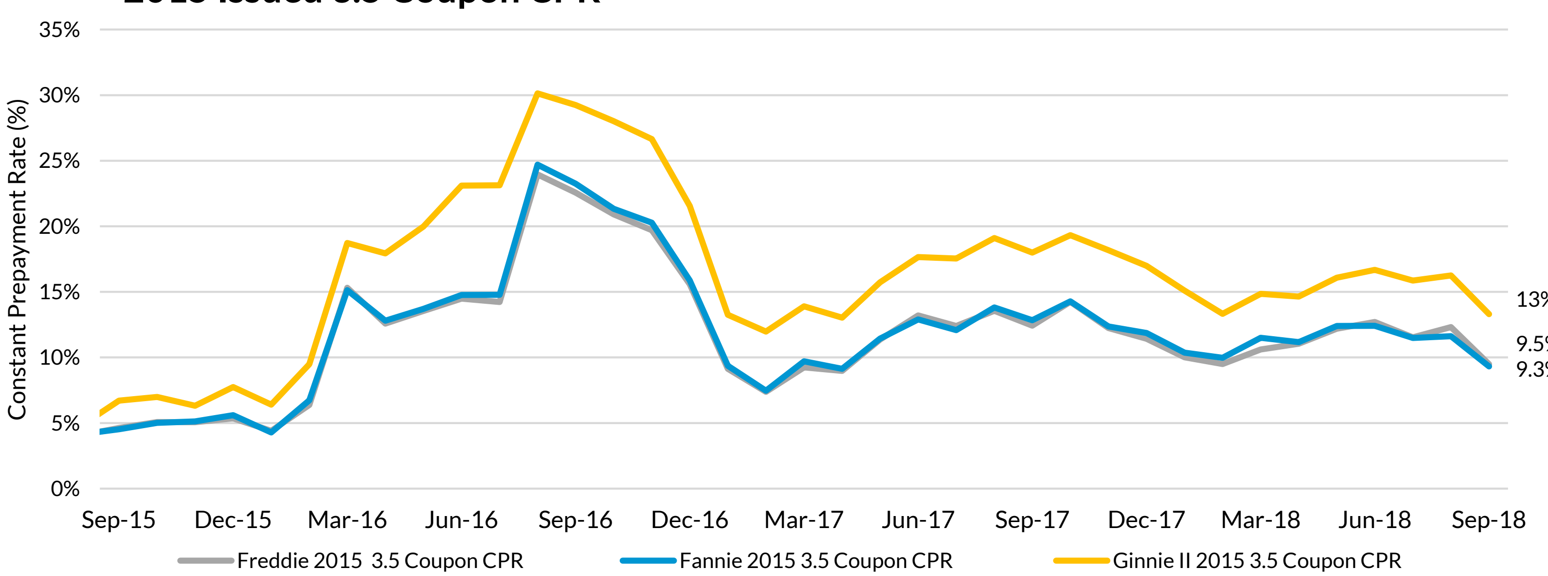
With the increase in interest rates since November 2016, the prepayment speeds for all agencies have slowed down considerably. Over the past 18 months, with the bulk of the mortgage universe finding it non-economic to refinance, the small month to month variations in speeds reflect seasonality, changes in day count and changes in mortgage rates. The prepayment speeds fell in September 2018 due to fewer days in the month. With mortgage rates substantially above 4%, we would expect prepayments in the coming months to remain at low levels.

## Aggregate Prepayments




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

## 2015 Issued 3.5 Coupon CPR



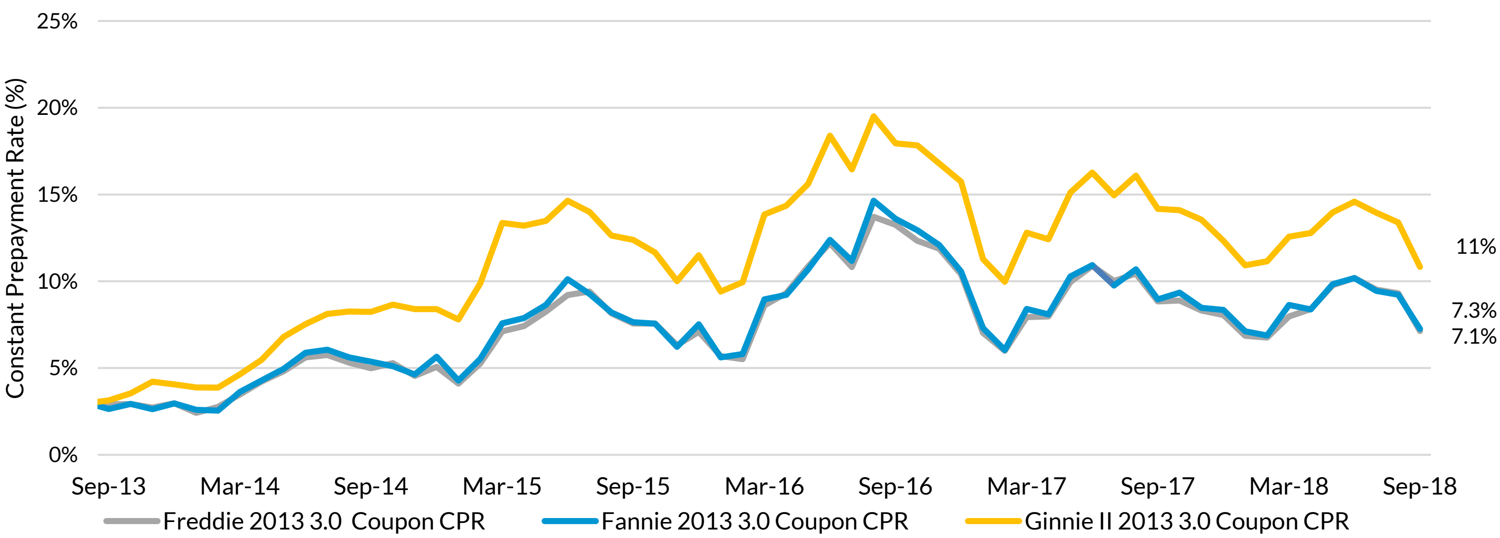

**Sources**: *Credit Suisse and Urban Institute.* **Note:** *Data as of September 2018.*

# Prepayments

The 2013 Ginnie II 3.0s have prepaid consistently 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.

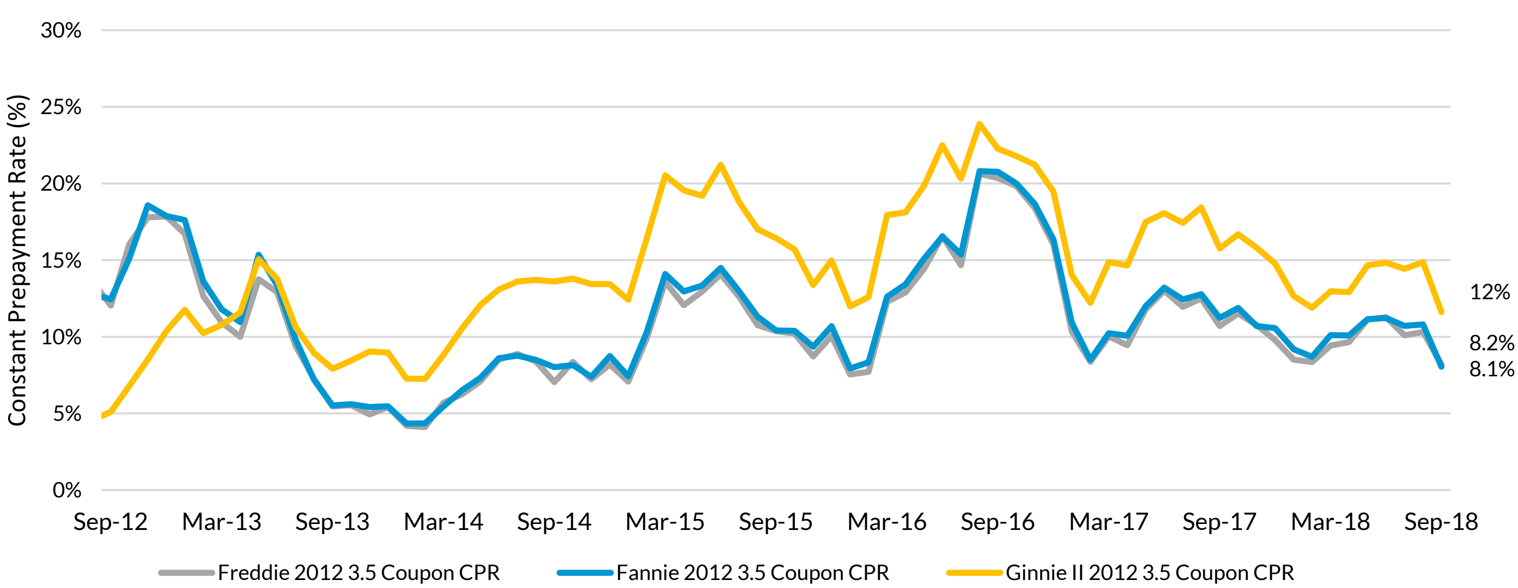
After a sharp mortgage rate rise in November 2016, the prepayment speeds of Ginnie and Conventional loans both fell dramatically. Over the past year, with the bulk of the mortgage universe finding it non-economic to refinance, the muted month to month variations in speeds reflect seasonality, changes in day count and changes in mortgage interest rates. The prepayment speeds fell in September 2018 due to fewer days in the month. With mortgage rates substantially above 4%, we would expect prepayments in the coming months to stay at low levels.

## 2013 Issued 3.0 Coupon CPR




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

## 2012 Issued 3.5 Coupon CPR

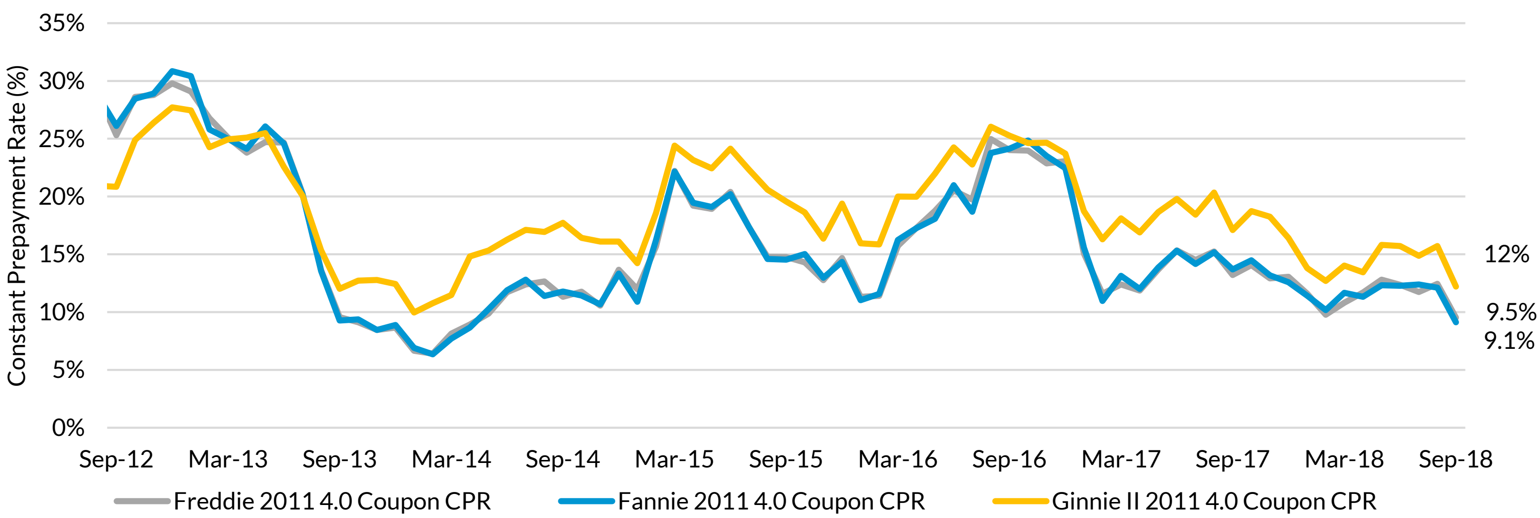



**Sources**: *Credit Suisse and Urban Institute.* **Note:** *Data as of September 2018.*

# Prepayments

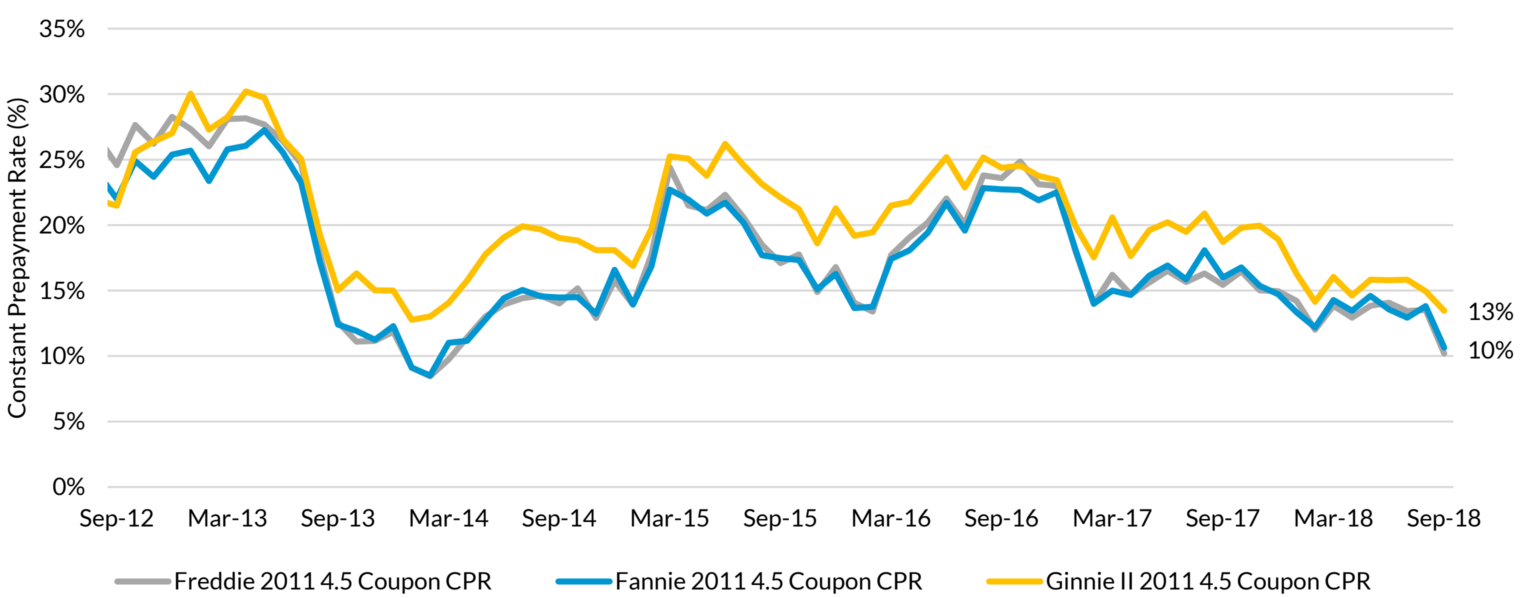
The 2011 Ginnie II 4.0s and 4.5s have been prepaying faster than their conventional counterparts since late 2013. Faster VA mortgage prepays plus simplifications to the FHA streamlined programs in 2013 are likely contributors to the faster speeds. However, as mortgage rates rose sharply since November 2016, the speeds for all agencies have slowed down considerably. Over the past year, 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 prepayments in the coming months to stay muted. Note that recent month speeds on both the Ginnie Mae II 4 and 4.5% coupons are well below same month 2017 speeds. The prepayment speeds fell in September 2018 due to fewer days in the month.

## 2011 Issued 4.0 Coupon CPR




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

## 2011 Issued 4.5 Coupon CPR

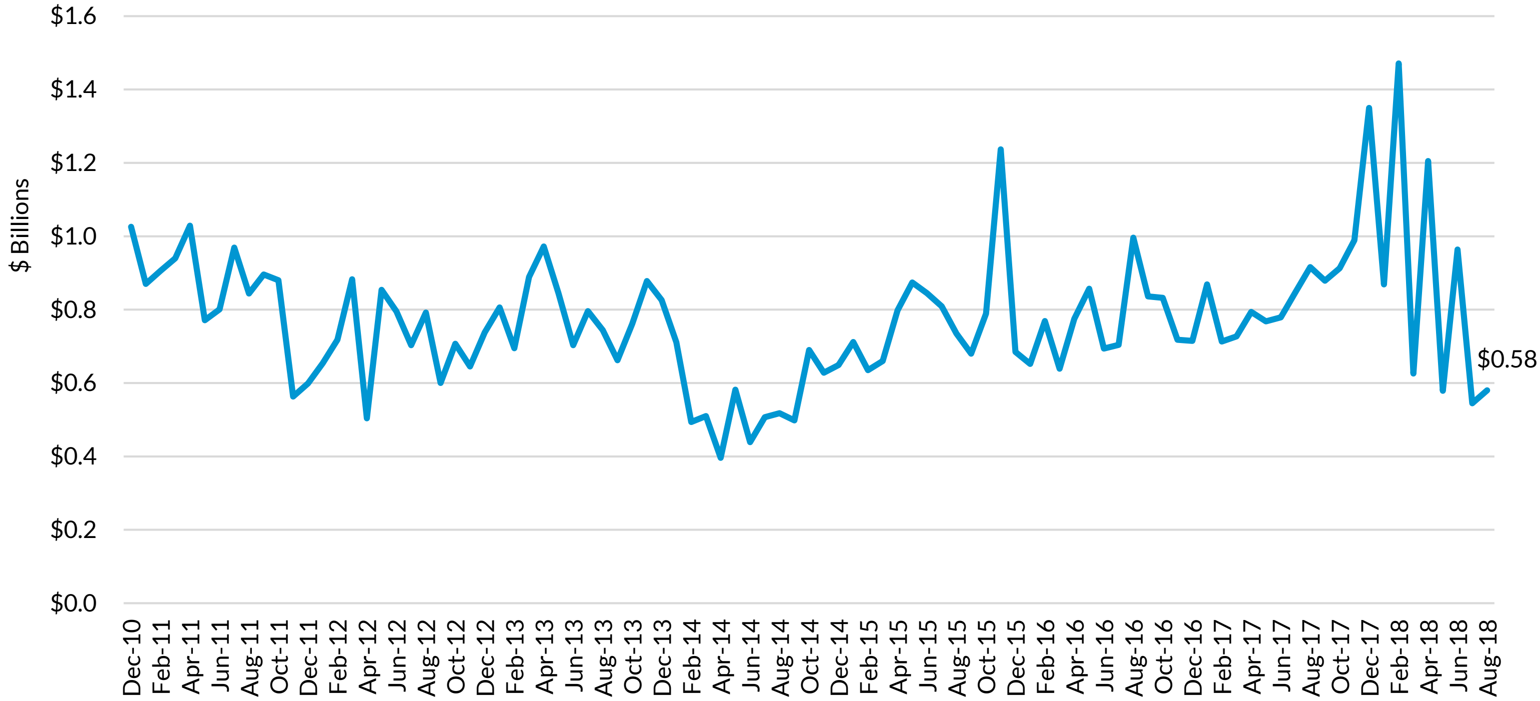



**Sources**: *Credit Suisse and Urban Institute.* **Note:** *Data as of September 2018.*

# Other Ginnie Mae Programs Reverse Mortgage Volumes

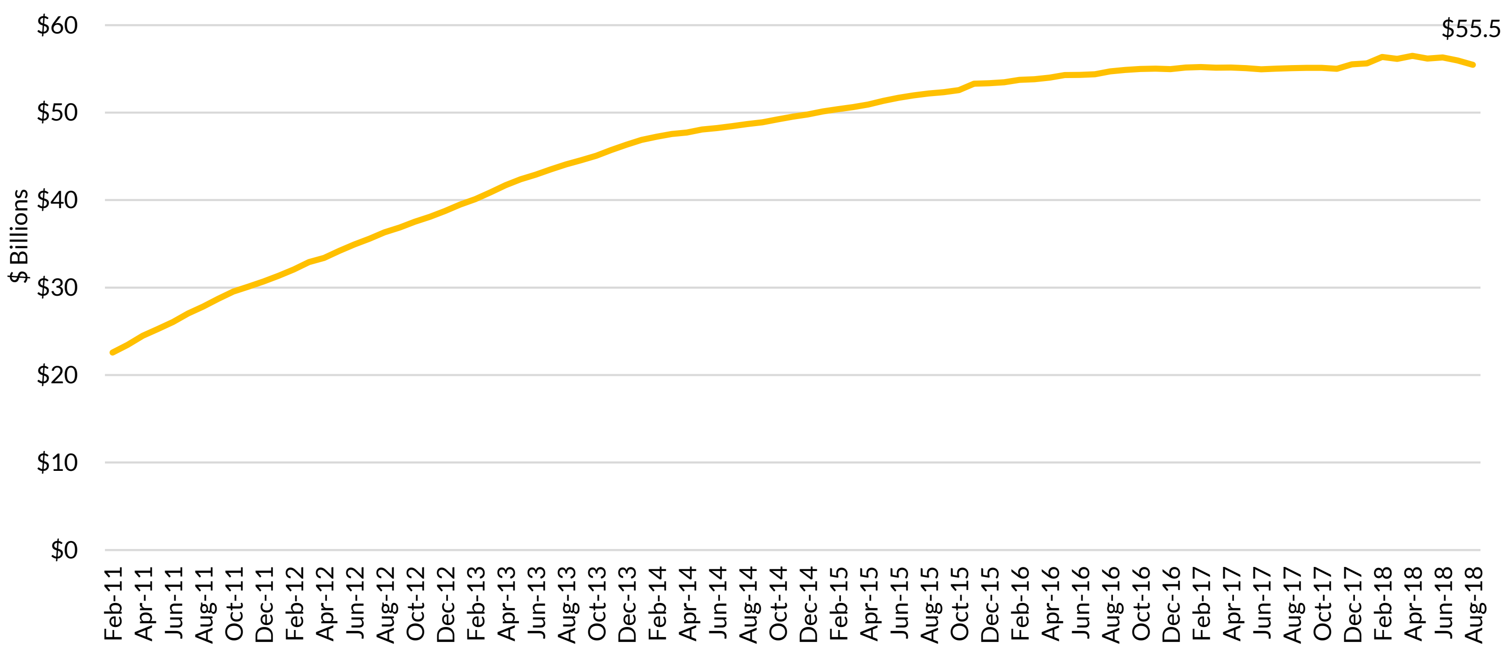
Ginnie Mae reverse mortgage issuance has been volatile in recent months. The August 2018 volume increased slightly to $0.58 billion, but remained below historical levels. The decline in 2018 was largely due to the implementation of the new, lower principal limit factors that went into effect in March 2018. In August 2018, outstanding reverse mortgage securities totaled $55.5 billion.

## HMBS Issuance Volume




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

## HMBS Outstanding

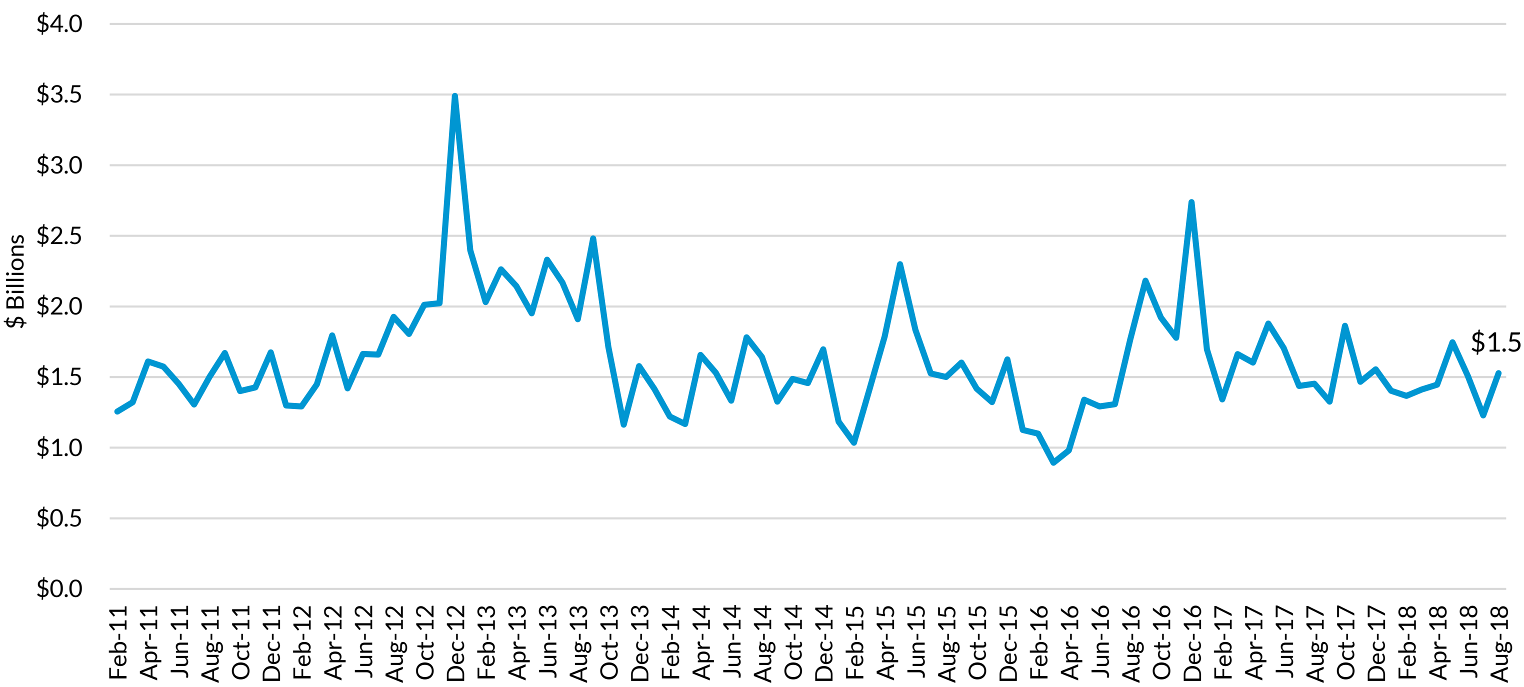



**Sources**: *Ginnie Mae and Urban Institute.* **Note:** *Data as of August 2018.*

# Other Ginnie Mae Programs Multifamily Market

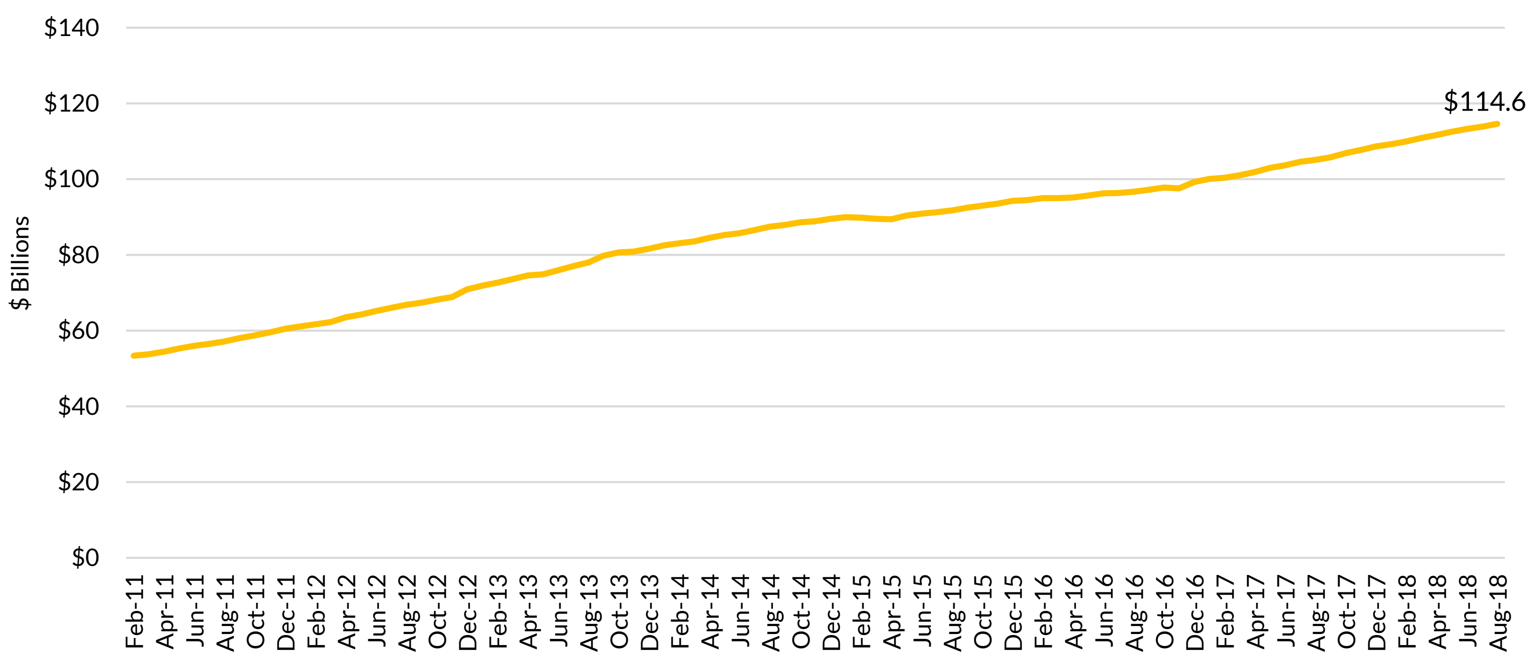
Ginnie Mae multifamily issuance volume in August 2018 totaled $1.5 billion, similar to average issuance levels of the past 18 months, up from last month's unusually low $1.1 billion. Outstanding multifamily securities totaled $114.6 billion in August.

## Ginnie Mae Multifamily MBS Issuance




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

## Ginnie Mae Multifamily MBS Outstanding

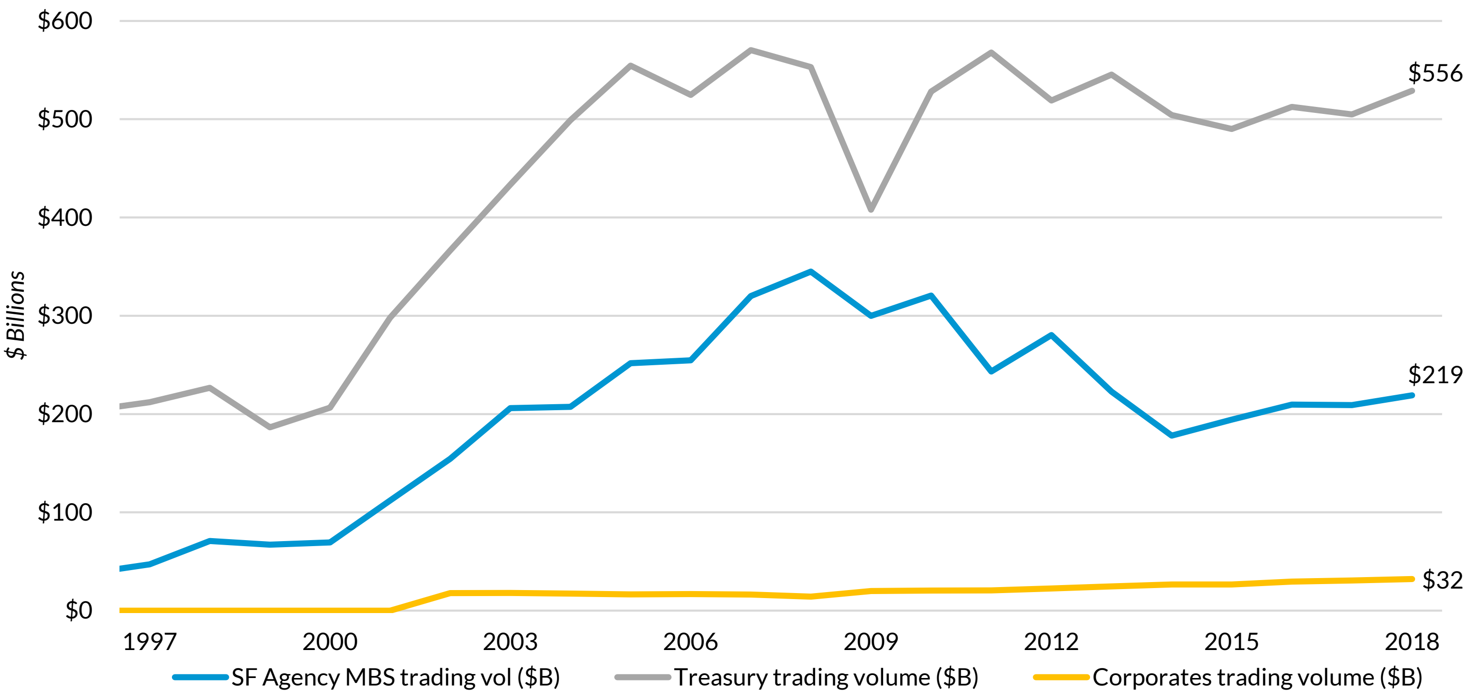



**Sources**: *Ginnie Mae and Urban Institute.* ***Note****: Data as of August 2018.*

# Market Conditions

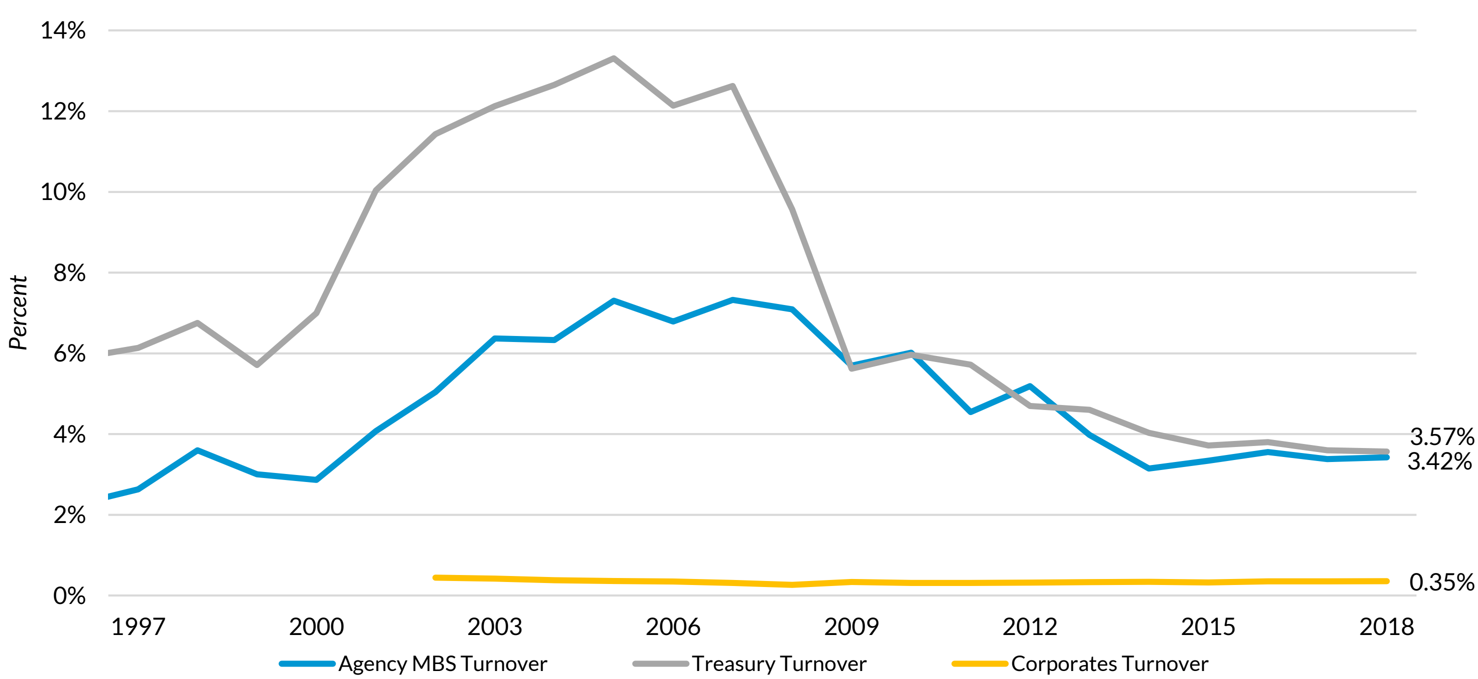
Agency MBS trading volume was $219 billion/day in September 2018; slightly more robust than in the 2014-2017 period. Agency MBS turnover has also been higher in 2018 than in the 2014-2017 period; in the first nine months of 2018, average daily MBS turnover was 3.42 percent versus 3.38 percent in 2017. Both average daily mortgage and Treasury turnover are down from their pre-crisis peaks. Corporate turnover is miniscule relative to either Agency MBS or Treasury turnover.

## Average Daily Fixed Income Trading Volume by Sector




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

## Average Daily Turnover by Sector

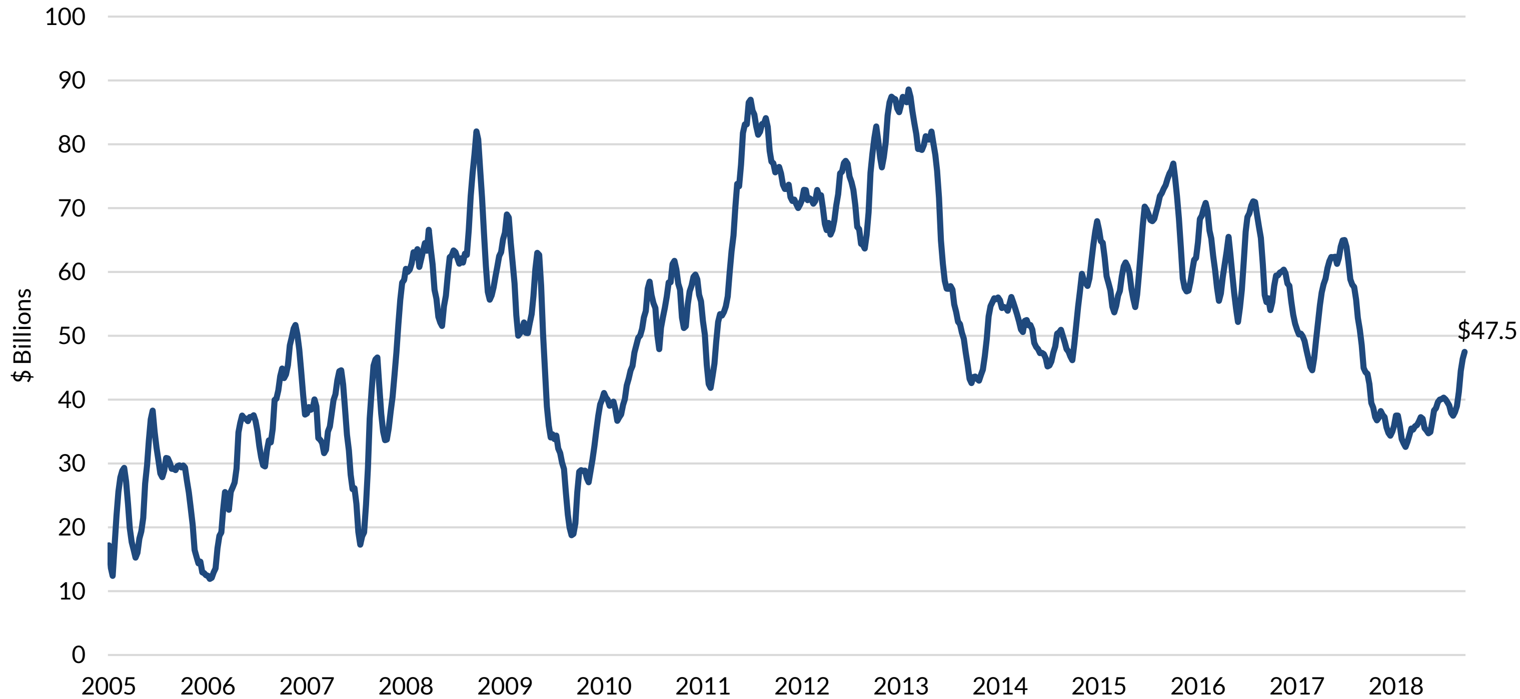



**Sources**: *SIFMA and Urban Institute.* ***Note:*** *Data as of September 2018.*

# Market Conditions

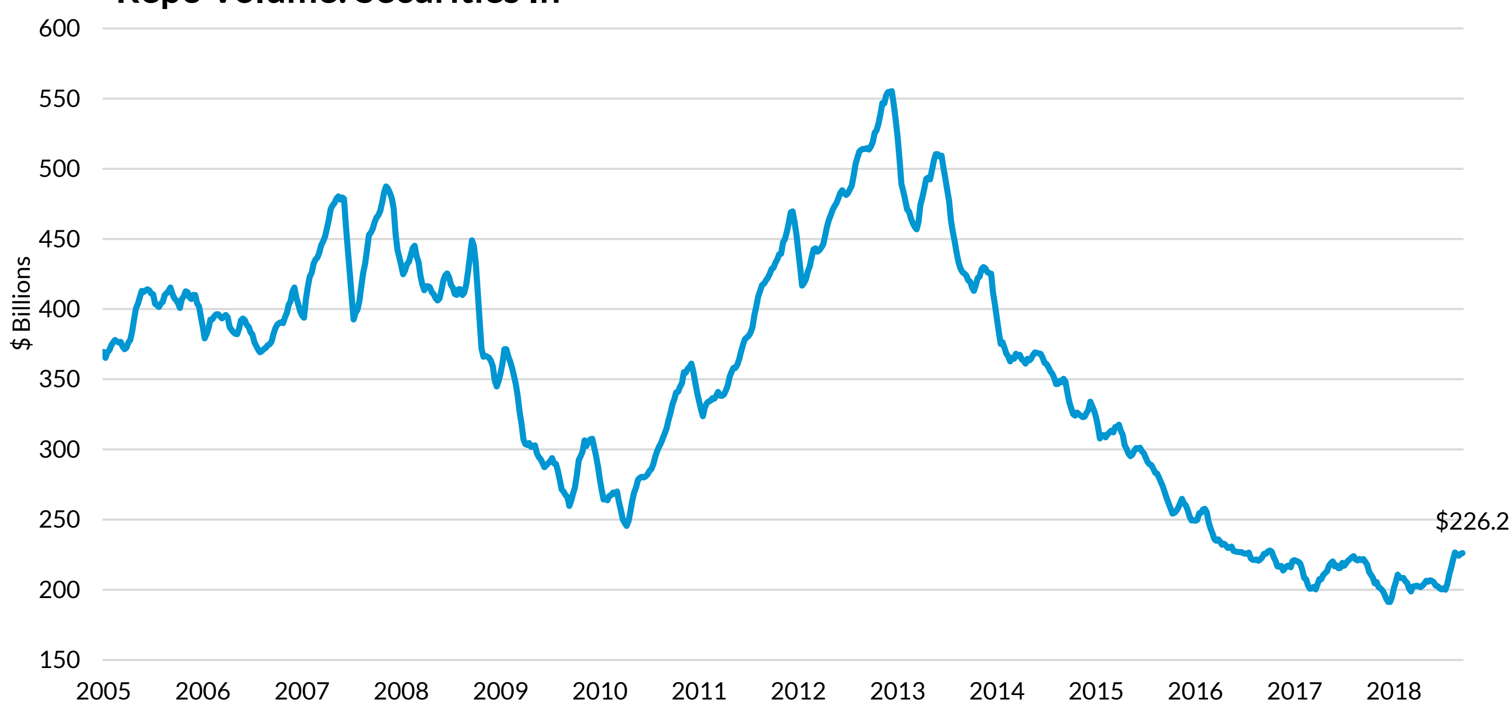
Dealer net positions in agency MBS are down from the 2012-2013 time period, but remain within historic ranges. Gross dealer positions are likely to have fallen more than net positions. The volume of repurchase activity is up slightly from the near 13-year low two months ago. The large decline through time 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 September 2018.*

## Repo Volume: Securities In

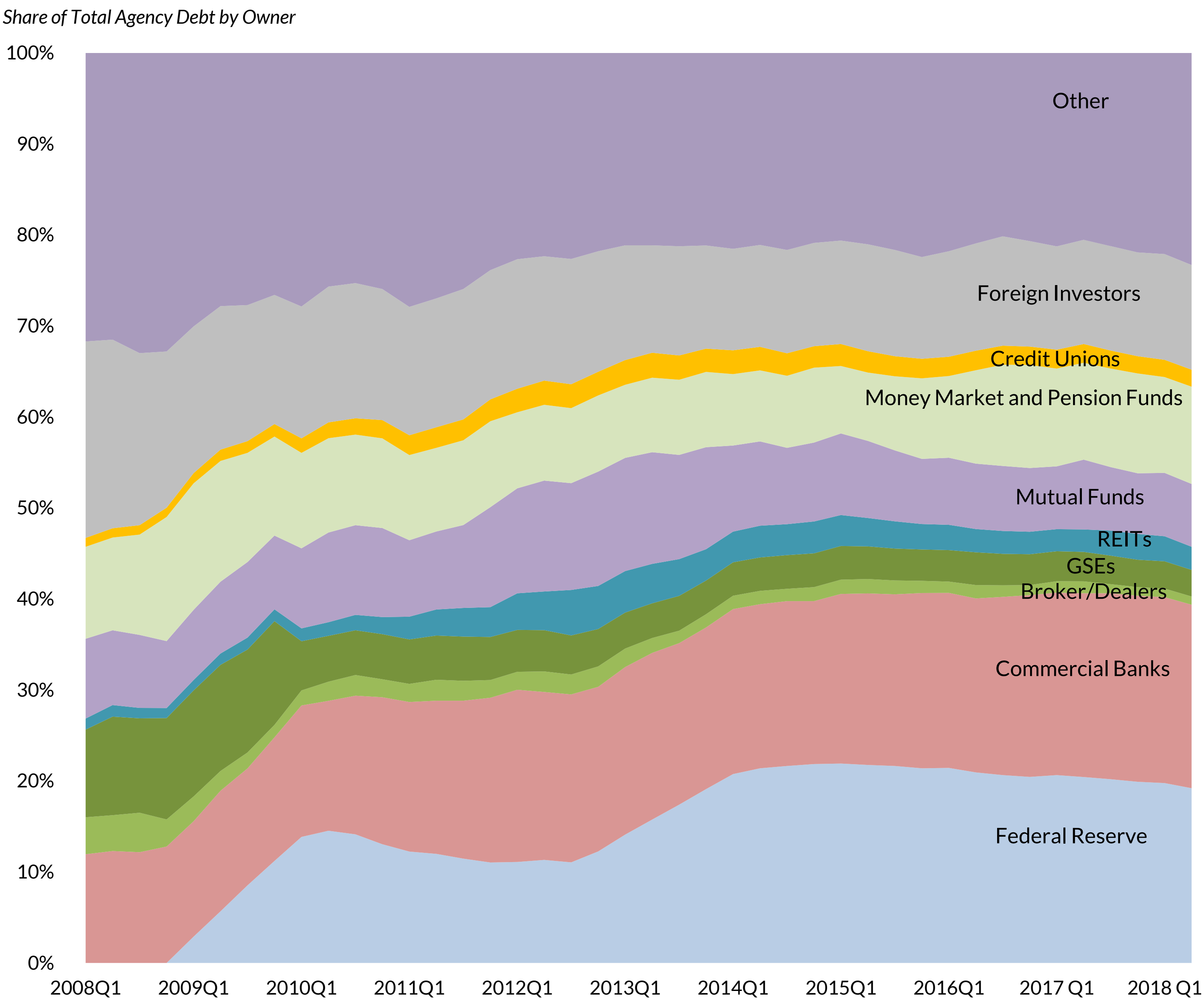



**Sources:** *Federal Reserve Bank of New York Primary Dealer Statistics and Urban Institute.* **Note:** *Data as of September 2018.*

# MBS Ownership

The largest holders of agency debt (Agency MBS + Agency notes and bonds) include the Federal Reserve (19 percent), commercial banks (20 percent) and foreign investors (12 percent). The broker/dealer and GSE shares are a fraction of what they once were.

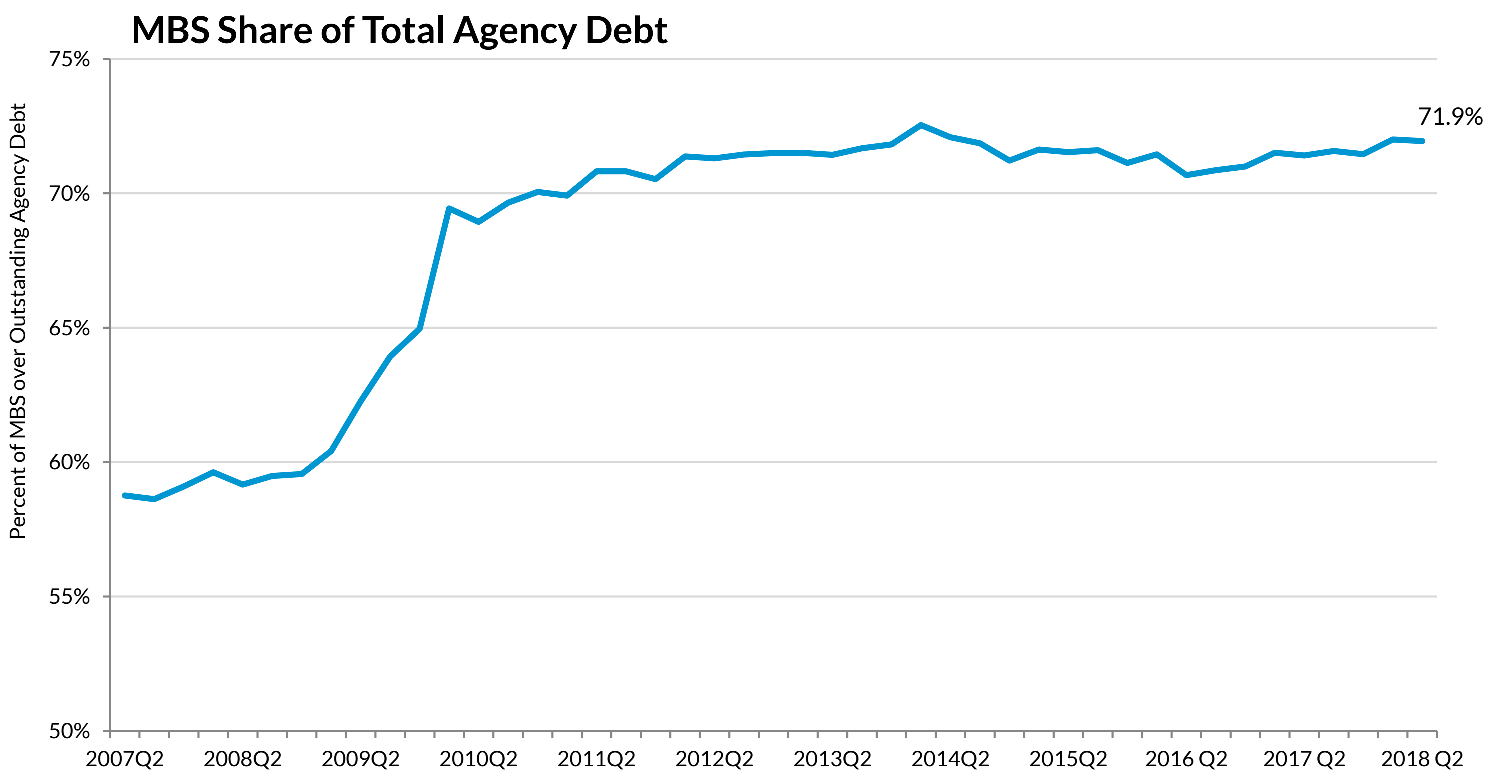
**Who owns  Total Agency Debt?**




**Sources:** *Federal Reserve Flow of Funds and Urban Institute.* **Note**: *Data as of Q2 2018.*

# 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 Q2 2018, the MBS share of total agency debt stood at 71.9 percent. Commercial banks are now the largest holders of Agency MBS. Out of their $1.8 trillion in holdings as of the end of September 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 Q2 2018.*

| | Commercial Bank Holdings ($Billions) | | | | | | | | Week Ending | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sep-17 | Mar-18 | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Sep 12 | Sep 19 | Sep 26 | Oct 3 |
| Largest Domestic Banks | 1,272.0 | 1,273.3 | 1,274.5 | 1,283.5 | 1,297.5 | 1,303.9 | 1,307.0 | 1,304.4 | 1,305.5 | 1,303.1 | 1,303.4 | 1,305.6 |
| Small Domestic Banks | 490.0 | 491.6 | 493.0 | 495.4 | 496.9 | 495.6 | 494.7 | 495.0 | 495.1 | 495.5 | 495.5 | 491.9 |
| Foreign Related Banks | 11.7 | 33.0 | 34.6 | 31.3 | 32.7 | 28.6 | 25.4 | 22.4 | 21.2 | 22.9 | 23.0 | 21.8 |
| Total, Seasonally Adjusted | 1,773.7 | 1,797.9 | 1,802.1 | 1,810.2 | 1,827.1 | 1,828.1 | 1,827.1 | 1,821.8 | 1,821.8 | 1,821.5 | 1,821.9 | 1,819.3 |

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

# MBS Ownership

Out of the $1.8 trillion in MBS holdings at banks and thrifts, $1.3 trillion is in agency pass-through form: $976.9 trillion in GSE pass-throughs and $368.9 billion in Ginnie Mae pass-throughs. There are another $414.4 billion in Agency CMOs. Non-agency holdings total $46.4 billion. MBS holdings at banks and thrifts declined slightly in Q2 2018, although over the past 2 years, the growth has been quite strong, with Ginnie pass-throughs the fastest growing sector.

## Bank and Thrift Residential MBS Holdings

| | All Banks & Thrifts ($Billions) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Total | Agency MBS PT | GSE PT | GNMA PT | Agency CMO | Private MBS PT | Private CMO |
| 2000 | $683.90 | $392.85 | $234.01 | $84.26 | $198.04 | $21.57 | $71.43 |
| 2001 | $810.50 | $459.78 | $270.59 | $109.53 | $236.91 | $37.62 | $76.18 |
| 2002 | $912.36 | $557.43 | $376.11 | $101.46 | $244.98 | $20.08 | $89.88 |
| 2003 | $982.08 | $619.02 | $461.72 | $75.11 | $236.81 | $19.40 | $106.86 |
| 2004 | $1,113.89 | $724.61 | $572.40 | $49.33 | $208.18 | $20.55 | $160.55 |
| 2005 | $1,139.68 | $708.64 | $566.81 | $35.92 | $190.70 | $29.09 | $211.25 |
| 2006 | $1,207.09 | $742.28 | $628.52 | $31.13 | $179.21 | $42.32 | $243.28 |
| 2007 | $1,236.00 | $678.24 | $559.75 | $31.58 | $174.27 | $26.26 | $357.24 |
| 2008 | $1,299.76 | $820.12 | $638.78 | $100.36 | $207.66 | $12.93 | $259.04 |
| 2009 | $1,345.74 | $854.40 | $629.19 | $155.00 | $271.17 | $7.53 | $212.64 |
| 2010 | $1,433.38 | $847.13 | $600.80 | $163.13 | $397.30 | $7.34 | $181.61 |
| 2011 | $1,566.88 | $917.10 | $627.37 | $214.81 | $478.82 | $3.28 | $167.70 |
| 2012 | $1,578.86 | $953.76 | $707.87 | $242.54 | $469.27 | $17.16 | $138.67 |
| 2013 | $1,506.60 | $933.73 | $705.97 | $231.93 | $432.60 | $26.11 | $114.15 |
| 2014 | $1,539.32 | $964.16 | $733.71 | $230.45 | $449.90 | $20.33 | $104.94 |
| 2015 | $1,643.56 | $1,115.40 | $823.10 | $292.30 | $445.39 | $11.14 | $71.63 |
| 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 |
| 4Q17 | $1,844.15 | $1,378.53 | $1,010.83 | $367.70 | $413.97 | $4.63 | $47.01 |
| 1Q18 | $1,809.98 | $1,352.28 | $991.57 | $360.71 | $412.37 | $3.92 | $41.37 |
| 2Q18 | $1,806.58 | $1,345.80 | $976.92 | $368.88 | $414.41 | $7.45 | $38.92 |

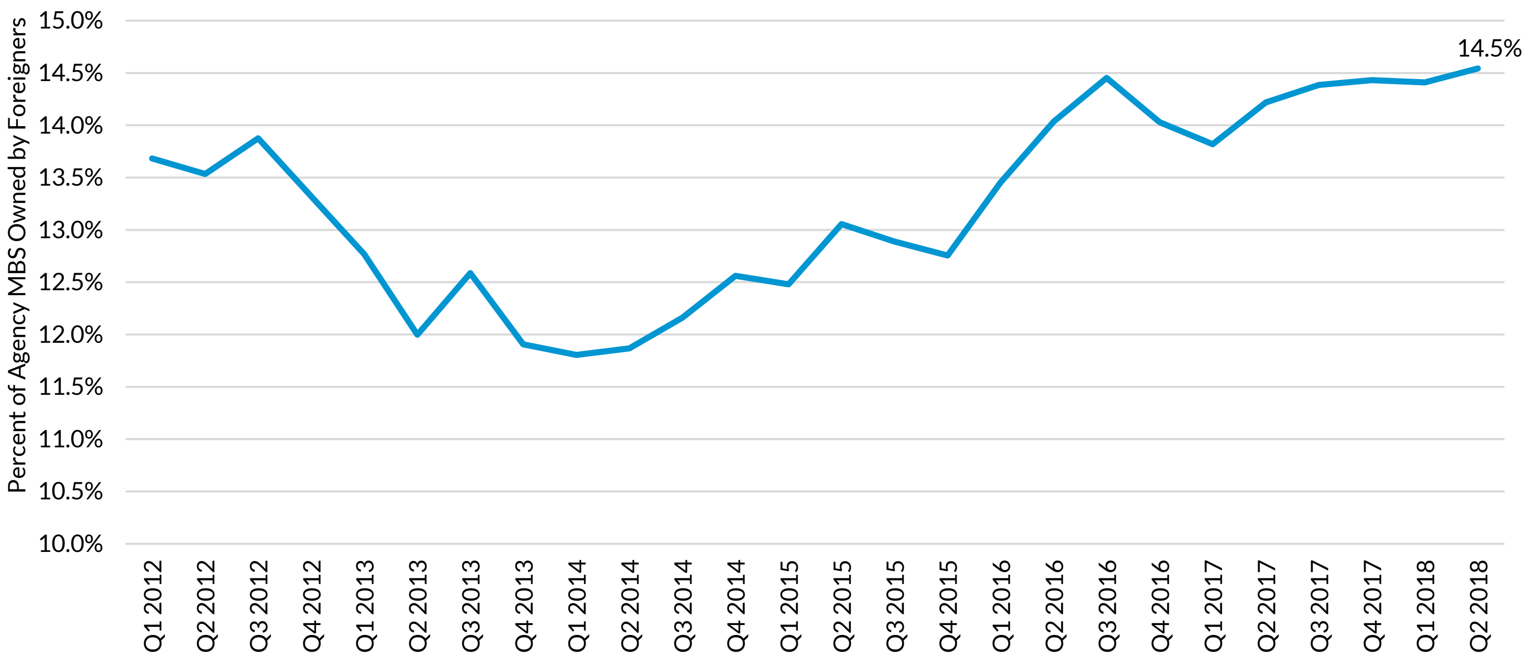
| | Top Bank & Thrift Residential MBS Investors | Total ($MM) | GSE PT ($MM) | GNMA PT ($MM) | Agency REMIC ($MM) | Non-Agency ($MM) | Market Share |
|---|---|---|---|---|---|---|---|
| 1 | Bank of America Corporation | $320,041 | $187,657 | $119,582 | $12,529 | $273 | 17.7% |
| 2 | Wells Fargo & Company | $239,142 | $175,350 | $55,563 | $4,233 | $3,996 | 13.2% |
| 3 | JP Morgan Chase & Co. | $91,524 | $57,068 | $24,420 | $356 | $9,680 | 5.1% |
| 4 | U S. Bancorp. | $77,811 | $36,872 | $13,197 | $27,741 | $1 | 4.3% |
| 5 | Charles Schwab Bank | $77,565 | $46,161 | $12,054 | $19,350 | $0 | 4.3% |
| 6 | Capital One Financial Corporation | $64,923 | $27,006 | $14,597 | $22,248 | $1,073 | 3.6% |
| 7 | Citigroup Inc. | $59,890 | $43,359 | $4,445 | $8,855 | $3,231 | 3.3% |
| 8 | Bank of New York Mellon Corp. | $51,348 | $30,678 | $1,771 | $17,279 | $1,620 | 2.8% |
| 9 | PNC Bank, National Association | $46,035 | $36,648 | $4,192 | $2,540 | $2,654 | 2.8% |
| 10 | Branch Banking and Trust Company | $37,502 | $12,770 | $6,260 | $17,918 | $554 | 2.1% |
| 11 | State Street Bank and Trust Company | $34,365 | $12,607 | $9,052 | $8,921 | $3,785 | 1.9% |
| 12 | HSBC Banks USA, National Association | $23,761 | $6,980 | $7,139 | $9,639 | $3 | 1.3% |
| 13 | E*TRADE Bank | $23,476 | $12,404 | $4,226 | $6,846 | $0 | 1.3% |
| 14 | KeyBank National Association | $23,103 | $888 | $993 | $21,222 | $0 | 1.3% |
| 15 | Morgan Stanley | $22,528 | $9,342 | $6,940 | $6,246 | $0 | 1.2% |
| 16 | SunTrust Bank | $22,384 | $11,478 | $10,906 | $0 | $0 | 1.2% |
| 17 | The Northern Trust Company | $17,822 | $8,564 | $22 | $9,203 | $33 | 1.0% |
| 18 | Regions Bank | $17,765 | $10,610 | $4,534 | $2,618 | $3 | 1.0% |
| 19 | Ally Bank | $17,732 | $9,866 | $3,024 | $2,369 | $2,473 | 1.0% |
| 20 | MUFG Union Bank | $17,376 | $5,559 | $4,297 | $6,646 | $874 | 1.0% |
| | **Total Top 20** | **$1,286,091** | **$741,867** | **$307,214** | **$206,758** | **$30,252** | **71.4%** |

***Sources:*** *Inside Mortgage Finance and Urban Institute.* ***Note:*** *Data as of Q2 2018.*

# MBS Ownership

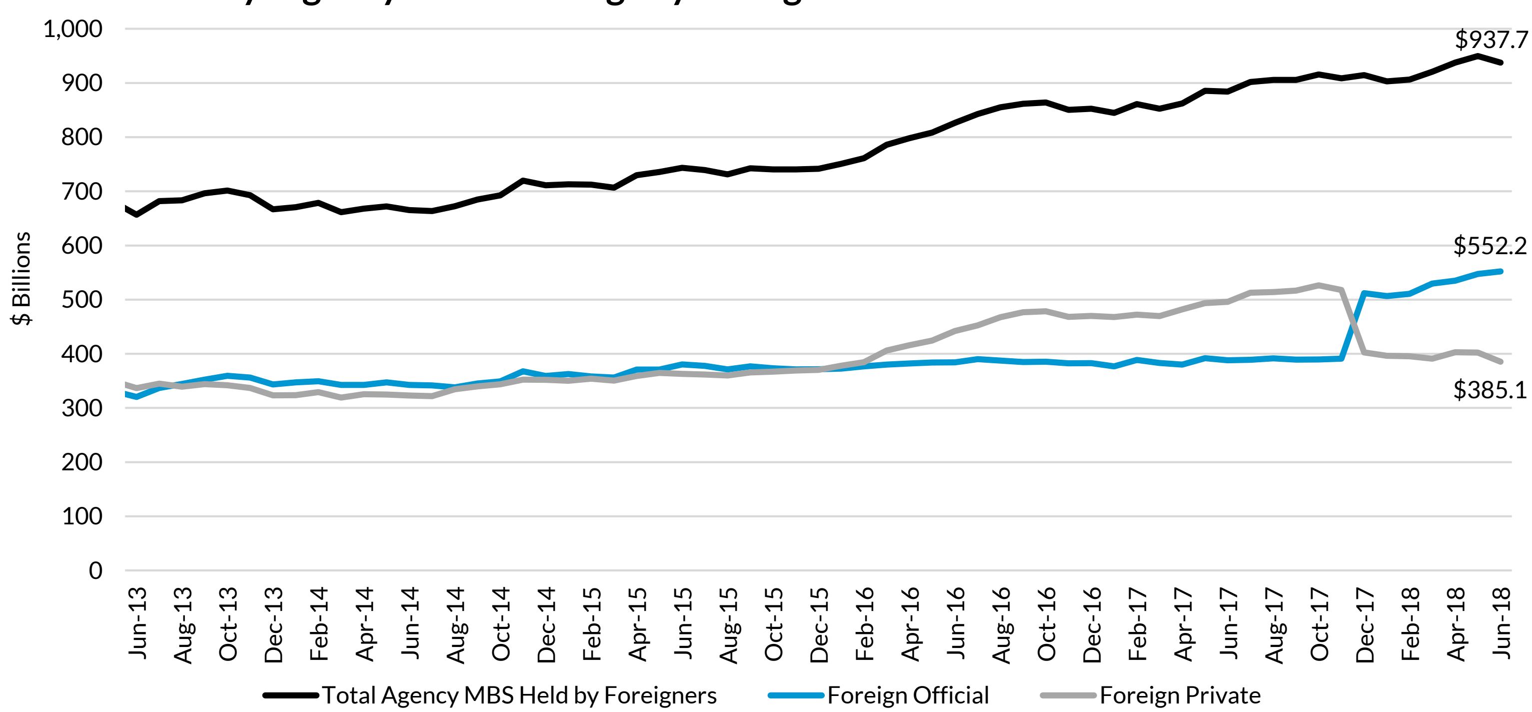
Foreign investors held 14.5 percent of agency MBS in Q2 2018, up from a low of 11.8 percent in Q1 2014. For the month of June 2018, this represents $937.7 billion in Agency MBS; $385.1 billion held by foreign private institutions and $552.2 billion held by foreign official investors.

## Foreign Share of Agency MBS




***Sources****: SIFMA and Treasury International Capital (TIC).* ***Note****: Data as of Q2 2018.*

## Monthly Agency MBS Holdings by Foreigners




***Sources****: Treasury International Capital (TIC) and Urban Institute.* ***Note****: Data as of June 2018. In December 2017, there was a data correction that moved about $120 billion from privately held U.S. agency bonds to officially held U.S. agency bonds; this resulted in a series break at December 2017 in the split between the portion held by foreign private and the portion held by foreign official.*

# MBS Ownership

The largest foreign holders of Agency MBS are Taiwan, Japan and China; these three comprise around 70 percent of all foreign holdings. Since June of 2017 we estimate Japan and Taiwan have expanded their agency MBS holdings by $21 and $22 billion, respectively, while China has contracted their holdings.

## Agency MBS+ Agency Debt

| | Level of Holdings ($Millions)* | | | | | Change in Holdings ($Millions)* | | | |
|---|---|---|---|---|---|---|---|---|---|
| Country | Jun-17 | Sep-17 | Dec-17 | Mar-18 | Jun-18 | Q3 2017 | Q4 2017 | Q1 2018 | Q2 2018 |
| Taiwan | 227,195 | 229,030 | 234,234 | 245,182 | 249,451 | 1,835 | 5,204 | 10,948 | 4,269 |
| Japan | 228,466 | 244,261 | 241,067 | 246,344 | 248,837 | 15,795 | -3,194 | 5,277 | 2,493 |
| China | 183,393 | 177,580 | 170,702 | 173,169 | 180,820 | -5,813 | -6,878 | 2,467 | 7,651 |
| South Korea | 46,791 | 47,581 | 45,467 | 44,099 | 44,167 | 790 | -2,114 | -1,368 | 68 |
| Ireland | 44,229 | 46,648 | 51,525 | 49,164 | 47,662 | 2,419 | 4,877 | -2,361 | -1,502 |
| Luxembourg | 31,289 | 33,026 | 37,575 | 39,336 | 37,111 | 1,737 | 4,549 | 1,761 | -2,225 |
| Cayman Islands | 32,682 | 29,016 | 28,374 | 29,026 | 29,760 | -3,666 | -642 | 652 | 734 |
| Bermuda | 26,767 | 27,125 | 28,904 | 28,055 | 27,350 | 358 | 1,779 | -849 | -705 |
| Switzerland | 17,312 | 18,675 | 16,794 | 13,063 | 11,813 | 1,363 | -1,881 | -3,731 | -1,250 |
| Malaysia | 12,365 | 13,162 | 12,751 | 12,139 | 12,754 | 797 | -411 | -612 | 615 |
| Rest of World | 129,723 | 124,357 | 125,465 | 124,266 | 122,885 | -5,366 | 1,108 | -1,199 | -1,381 |
| Total | 980,212 | 990,461 | 992,858 | 1003843 | 1012610 | 10,249 | 2,397 | 10,985 | 8,767 |

## Agency MBS Only (Estimates)

| | Level of Holdings ($Millions)* | | | | | Change in Holdings ($Millions)* | | | |
|---|---|---|---|---|---|---|---|---|---|
| Country | Jun-17 | Sep-17 | Dec-17 | Mar-18 | Jun-18 | Q3 2017 | Q4 2017 | Q1 2018 | Q2 2018 |
| Taiwan | 227,073 | 228,914 | 234,127 | 245,069 | 249,349 | 1,841 | 5,213 | 10,942 | 4,280 |
| Japan | 221,528 | 237,689 | 234,985 | 239,898 | 243,028 | 16,161 | -2,704 | 4,914 | 3,129 |
| China | 177,546 | 172,042 | 165,576 | 167,737 | 175,924 | -5,504 | -6,465 | 2,161 | 8,187 |
| South Korea | 33,891 | 35,362 | 34,158 | 32,114 | 33,365 | 1,471 | -1,204 | -2,044 | 1,251 |
| Ireland | 33,663 | 36,640 | 42,262 | 39,348 | 38,815 | 2,977 | 5,623 | -2,914 | -533 |
| Luxembourg | 28,314 | 30,208 | 34,967 | 36,572 | 34,620 | 1,894 | 4,759 | 1,605 | -1,952 |
| Cayman Islands | 24,897 | 21,642 | 21,549 | 21,793 | 23,241 | -3,255 | -93 | 244 | 1,448 |
| Bermuda | 23,156 | 23,705 | 25,738 | 24,700 | 24,326 | 549 | 2,034 | -1,038 | -374 |
| Switzerland | 13,867 | 15,412 | 13,774 | 9,862 | 8,928 | 1,545 | -1,638 | -3,911 | -934 |
| Malaysia | 11,905 | 12,726 | 12,348 | 11,712 | 12,369 | 821 | -379 | -636 | 657 |
| Rest of World | 94,872 | 91,345 | 94,913 | 91,888 | 93,703 | -3,527 | 3,567 | -3,024 | 1,815 |
| Total | 890,712 | 905,684 | 914,397 | 920,694 | 937,669 | 14,972 | 8,713 | 6,297 | 16,975 |

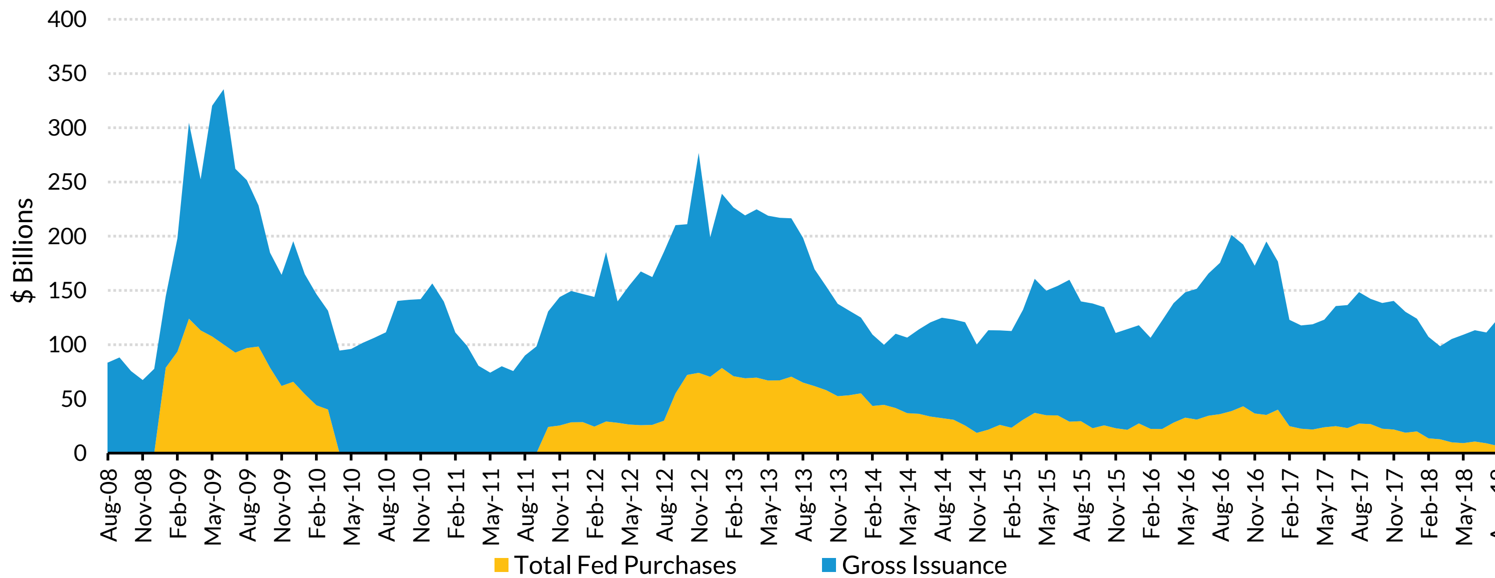
***Sources** :Treasury International Capital (TIC) and Urban Institute.*

***Note:** *calculated based on June 2017 report with amount asset backed per country. Revised to include Top 10 holders of MBS listed as of June 2017. Monthly data as of June 2018.*

# MBS Ownership

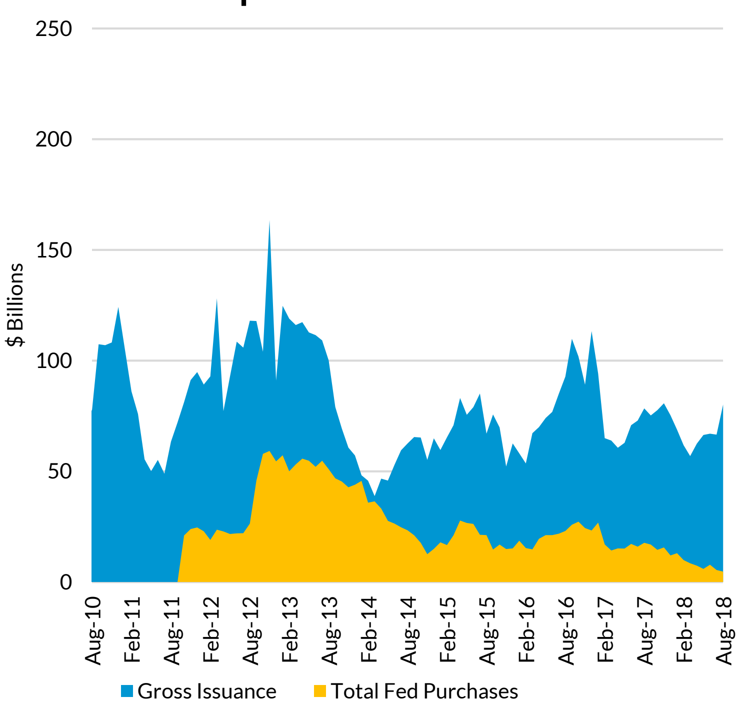
The Fed has begun to wind down their portfolio, and we are beginning to see the effects in slower absorption rates. During the period October 2014-September 2017, the Fed had ended its purchase program, but was reinvesting funds from mortgages and agency debt into the mortgage market, absorbing 20-30 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 August 2018, total Fed purchases decreased to $6.5 billion, yielding Fed absorption of gross issuance of 5.6 percent, the lowest level since the Fed began its second mortgage purchase program. The Fed absorbed 4.9 percent of Ginnie Mae issuance and 5.9 percent of GSE issuance, respectively.

## Total Fed Absorption



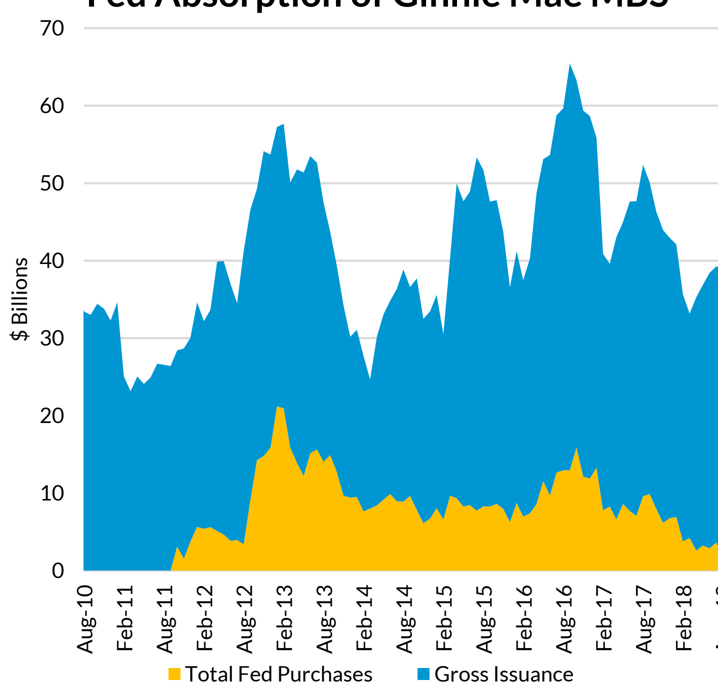

***Sources***: *eMBS, Federal Reserve Bank of New York and Urban Institute.* ***Note:*** *Data as of August 2018.*

## Fed Absorption of GSE MBS




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

## Fed Absorption of Ginnie Mae MBS




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

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