# PREPAYMENT MONITORING REPORT

Third Quarter 2019

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# Third Quarter 2019

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#### Introduction

On June 3, 2019, Fannie Mae and Freddie Mac began issuing a new common mortgage-backed security, known as the Uniform Mortgage-Backed Securities or UMBS, through their jointly developed Common Securitization Platform, bringing to fruition important elements of FHFA's 2014 Strategic Plan for the Conservatorships of Fannie Mae and Freddie Mac. On March 12, 2019 forward trading of UMBS began in the "To-Be-Announced" (TBA) market<sup>1</sup>, with first settlements of the UMBS trades coinciding with their initial issuance by the Enterprises on June 3, 2019.

FHFA encouraged Fannie Mae and Freddie Mac to develop this new security to broaden and enhance liquidity in the secondary market for residential mortgages and to reduce costs to taxpayers.<sup>2</sup> To address those goals, UMBS issued by Fannie Mae and Freddie Mac trade in the TBA market without regard to which Enterprise is the issuer, effectively merging the formerly separate markets for mortgage-backed securities issued by each Enterprise. Consistency of prepayment rates is important to the success of UMBS and to the efficiency and liquidity of the secondary mortgage market. Some industry stakeholders have expressed concern that the rates of prepayment of the Enterprises' securities might materially diverge and undermine their fungibility. FHFA has taken a number of steps to promote the continued consistency of prepayment rates of Fannie Mae- and Freddie Mac-issued mortgage-backed securities (MBS). This quarterly report provides market participants additional transparency into a sample of the data FHFA receives and reviews on a monthly basis.

*Ex post* monitoring of prepayment rates is part of a broader effort to assure investors that cash flows from UMBS will be similar regardless of which Enterprise is the issuer. This report provides insight into how FHFA monitors the consistency of prepayment rates across cohorts of the Enterprises' TBA-eligible MBS,<sup>3</sup> where a cohort consists of those Enterprise TBA-eligible securities



<sup>&</sup>lt;sup>1</sup> The TBA market is a forward market for certain mortgage-backed securities, including those issued by Fannie Mae and Freddie Mac.

<sup>&</sup>lt;sup>2</sup> See <u>An Update on the Structure of the Single Security</u>, May 2015, p. 4

<sup>&</sup>lt;sup>3</sup> To avoid double counting, only first-level securitizations are included in the analysis. Second-level securitizations (Megas, Giants, and Supers) are excluded, with the exception of fastest quartile analyses in which case multi-lender second-level securitizations are included.

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with the same coupon, maturity, and loan-origination year and total combined issuance across the Enterprises exceeds \$10 billion. A prepayment on a mortgage loan is the amount of principal paid in advance of the loan's scheduled payments. Full prepayment occurs when a borrower pays off the loan ahead of the scheduled maturity. If a borrower defaults on the mortgage loan, the Enterprise will pay investors the remaining principal balance and remove the loan from the MBS. That action has the same effect on investors as a full prepayment. Partial prepayment occurs when a borrower pays principal in addition to the regularly scheduled payment of principal and interest.



#### **Alignment Requirements**

On March 5, 2019, FHFA published the Uniform Mortgage-Backed Security Final Rule (Final Rule). The Final Rule codified FHFA thresholds with respect to differences between the prepayment rates of corresponding cohorts of each Enterprises' TBA-eligible securities. The Final Rule uses three-month CPRs rather than one-month CPRs, and, in addition to measuring alignment with respect to entire cohorts, the Final Rule looks to the fastest paying quartile of each cohort. Generally, for the fastest paying quartile of a cohort, the Enterprises must report to FHFA differences between Fannie Mae and Freddie Mac prepayment rates when the divergence between threemonth CPRs exceeds five percentage points. For a divergence in three-month CPR in excess of eight percentage points, the Enterprises must provide a written report to FHFA on the causes of the divergence and submit a written remediation plan. In most instances, FHFA's Single Security Governance Committee will be the reviewer of the reports and address remedial actions.



#### **Prepayment Performance Charts and Tables**

FHFA uses the charts and data tables in this report to evaluate the alignment of loan attributes for newly issued Enterprise MBS and the prepayment performance of outstanding Enterprise MBS. These charts and tables have been abridged to improve readability by omitting coupons and years with lower volumes of outstanding securities. FHFA monitors similar information for both Enterprises, focusing primarily on coupons, maturities, and loanorigination years that have minimum combined outstanding principal balances in excess of \$10 billion and whose origination-years are not more than six calendar years prior to the current calendar year. Footnotes to the relevant charts and tables indicate cohorts that are below the \$10 billion threshold.

As mentioned previously, a prepayment on a mortgage loan is the amount of principal paid in advance of the loan's payment schedule. When a loan is prepaid, an MBS investor receives the payment as principal. If the investor paid a premium for the security, the prepayment reduces the investor's yield. Therefore, investors in premium securities look for MBS that are likely to prepay slower than other MBS.

For further descriptions of how FHFA uses this information, see *Update on the Single Security Initiative and Common Securitization Platform*, December 2017.



#### Charts

Charts 1 and 2 illustrate alignment of entire cohorts, using one-month CPR. FHFA uses the one-month CPR in these charts to assess the alignment at the cohort level for past origination cycles and the general trend of alignment across loan-origination years on a more granular basis than the three-month CPR would afford.

Chart 1 compares one-month CPR for all Fannie Mae and Freddie Mac TBA-eligible 30-year securities for the current year and the prior six years.

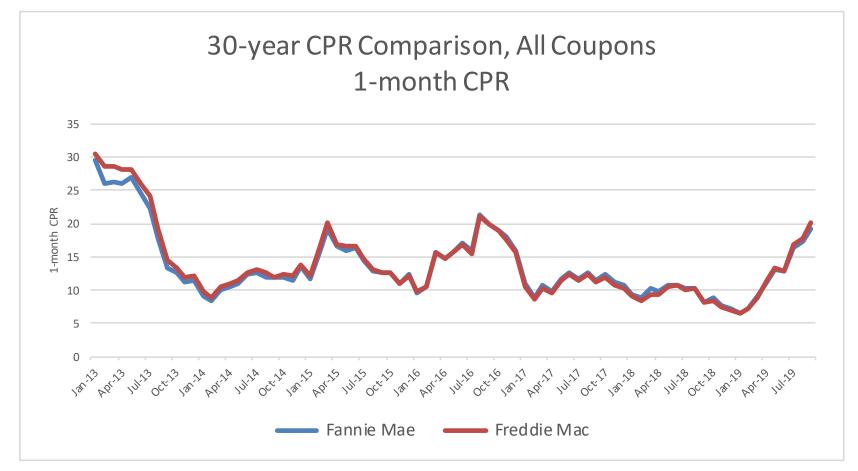
Chart 2 illustrates the comparison of pool loan-origination years for a given TBA-eligible MBS coupon. Chart 2 shows September 2019 one-month prepayment rates for entire cohorts each Enterprise's 30-year MBS for coupons with combined issuance volume outstanding in excess of \$10 billion (3%, 3.5%, 4%, 4.5%, and 5%) and the six loan-origination years prior to the current calendar year.

Charts 3a through 3f illustrate alignment with respect to the fastest paying quartiles of each cohort. FHFA uses these charts to assess alignment with respect to the fastest paying quartiles of cohorts of the Enterprises' TBA-eligible MBS on a historical basis. Chart 3a illustrates alignment in three-month prepayment rates across the Enterprises for recent coupons with issuance greater than \$10 billion. For each coupon in Chart 3a, the illustrated three-month prepayment rates are calculated across the fastest paying quartile at a given point in time. Charts 3b through 3f illustrate the degree of three-month prepayment rate alignment of the fastest paying quartile for each coupon-year cohort.

Chart 4 illustrates the spread between the weighted average loan rates (WACs) in mortgage pools to the coupon on the MBS backed by that pool for 30-year MBS issued by the Enterprises during the quarter. FHFA monitors this spread because differences in the spread between the Enterprises can lead to differences in prepayment rates as interest rates change. Securities with higher spreads are likely to experience faster prepayment rates as borrowers take advantage of opportunities to refinance due to their higher loan rates.

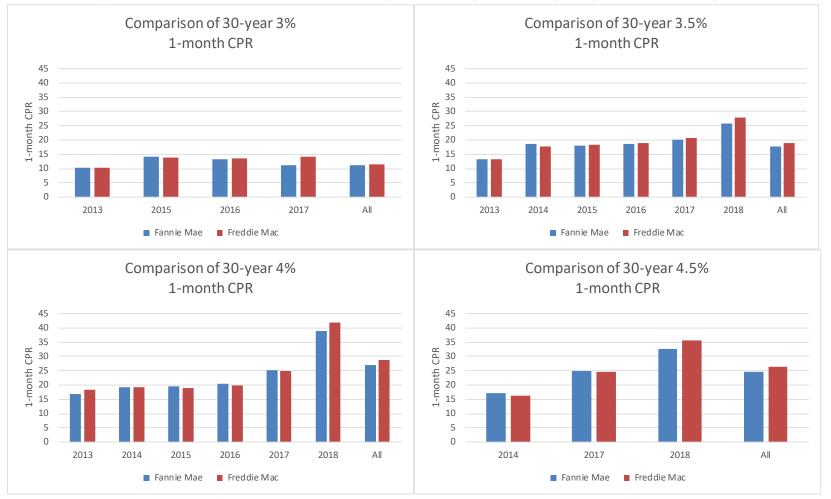








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#### Chart 2: September 2019 One-month CPR on All 30-year, TBA-eligible MBS by Coupon and Loan-Origination Year\*

\* The 3 percent coupon cohorts for 2014 and 2018, and the 4.5 percent coupon cohorts for 2013, 2015, and 2016 are omitted because each has a combined UPB below the \$10 billion threshold.



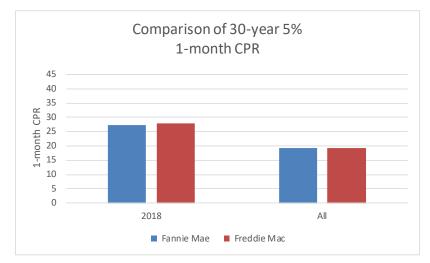


Chart 2: September 2019 One-month CPR on All 30-year, TBA-eligible MBS by Coupon and Loan-Origination Year\*

\* The 5 percent coupon cohorts for 2013, 2014, 2015, 2016, and 2017 are omitted because each has a combined UPB below the \$10 billion threshold.



Chart 3a: One-month CPR on All 30-year, TBA-eligible MBS by Coupon

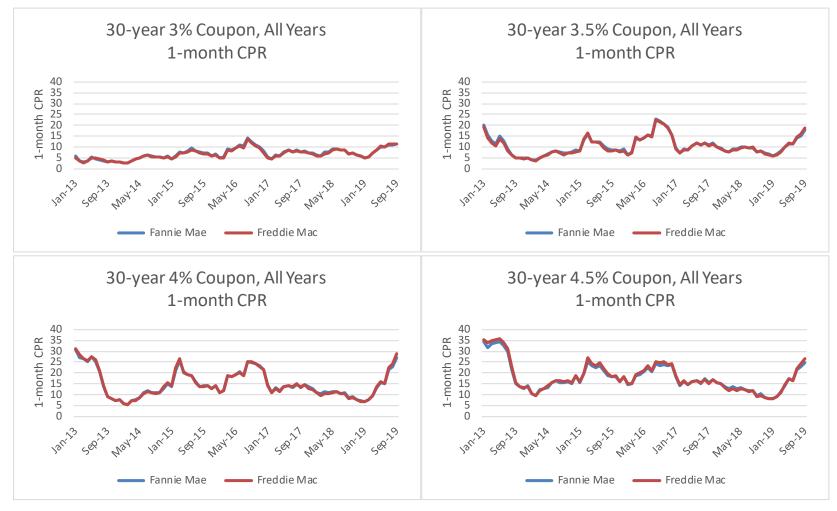




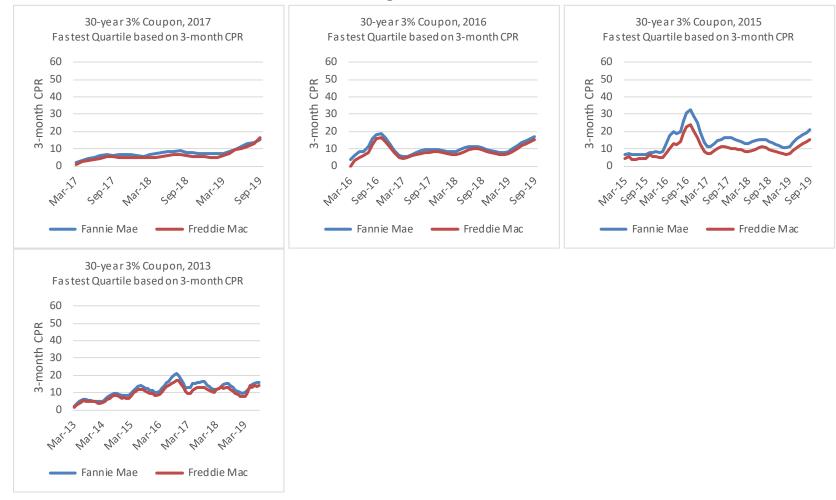
Chart 3a: One-month CPR on All 30-year, TBA-eligible MBS by Coupon





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#### Chart 3b: Three-month CPR on 30-year Fastest Paying Quartiles, 3.00 Percent Coupon TBA-eligible MBS by Loan-Origination Year\*

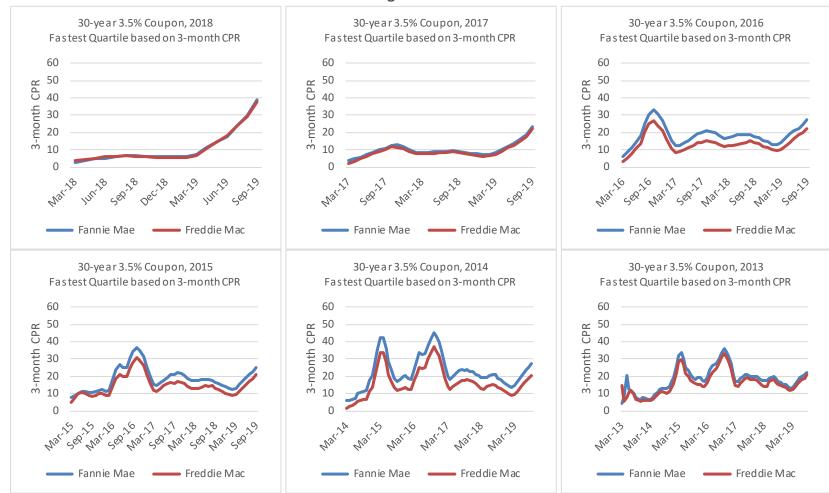


\* The 2014 and 2018 cohorts are omitted because each has a combined UPB below the \$10 billion threshold.



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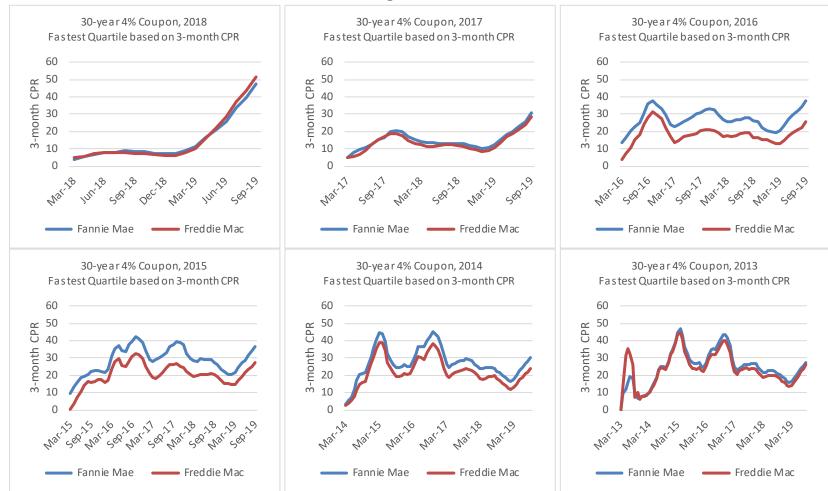
#### Chart 3c: Three-month CPR on 30-year Fastest Paying Quartiles, 3.50 Percent Coupon TBA-eligible MBS by Loan-Origination Year





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#### Chart 3d: Three-month CPR on 30-year Fastest Paying Quartiles, 4.00 Percent Coupon TBA-eligible MBS by Loan-Origination Year





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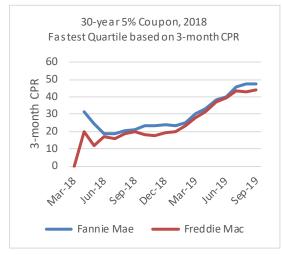
Chart 3e: Three-month CPR on 30-year Fastest Paying Quartiles, 4.50 Percent Coupon TBA-eligible MBS by Loan-Origination Year\*

\* The 2013, 2015, and 2016 cohorts are omitted because each has a combined UPB below the \$10 billion threshold.



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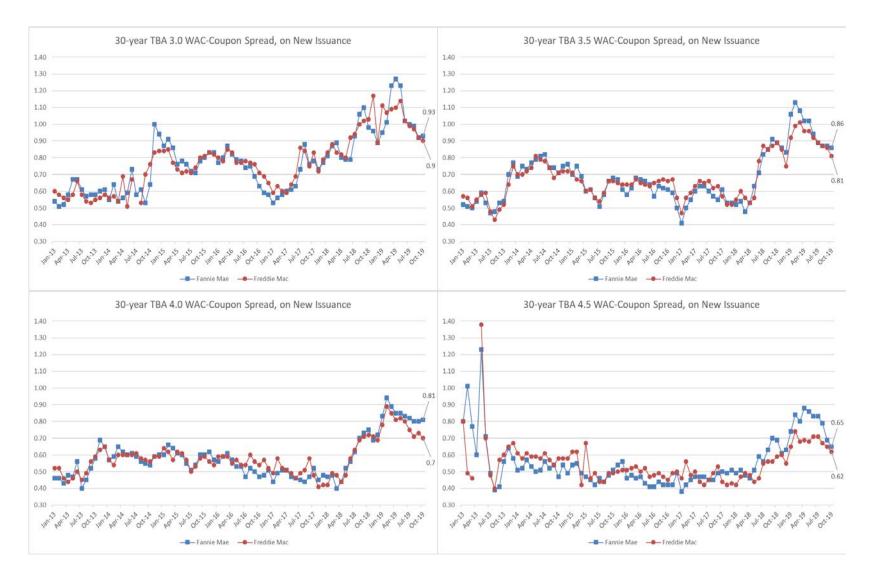
#### Chart 3f: Three-month CPR on 30-year Fastest Paying Quartiles, 5.00 Percent Coupon TBA-eligible MBS by Loan-Origination Year\*



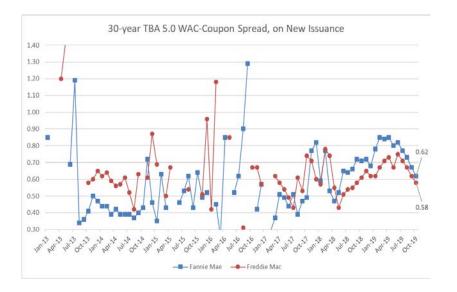
\* The 2013, 2014, 2015, 2016, and 2017 cohorts are omitted because each has a combined UPB below the \$10 billion threshold. Source: RiskSpan calculations from data available publicly as of October 2019. Calculations exclude pools with pool age equal to two or less.



#### Chart 4. Comparison of Weighted Average Loan Rate to Coupon Spread on New 30-year MBS Issuance







#### Chart 4. Comparison of Weighted Average Loan Rate to Coupon Spread on New 30-year MBS Issuance



### **Data Tables**

FHFA uses Table 1, the Annual Vintage Report, to compare, at the cohort level, Fannie Mae's and Freddie Mac's three-month prepayment rates with cohort attributes, such as the weighted-average loan rate (WAC), the weighted-average loan maturity (WAM), the weighted-average loan age (WALA), and the unpaid principal balance (UPB). These comparisons provide context to understand better any significant differences in CPRs across the Enterprises.

Table 2, the Quartile Report, is used to compare the range of prepayment rates across all of the TBA-eligible MBS that have the same coupon issued by a given Enterprise. To do so, all of an Enterprise's TBA-eligible MBS pools outstanding in the month, excluding specified pools as defined in the glossary, and bearing the stated coupon are ranked by their three-month CPRs from fastest to slowest. The pools are then grouped into quartiles based on UPB. The Report presents the WALA, WAC, average loan size (ALS), and credit score (FICO) for each quartile. Quartile 1 in this table corresponds to the fastest paying quartile. Table 2 presents this information as of the end of the quarter.

Table 3, the Total Industry Issuance Report, provides a comparison, at the coupon cohort level, of Fannie Mae's and Freddie Mac's previous three months of issuance, with various key loan attributes that would affect the expectations of prepayments and delinquencies. FHFA uses this report to identify any differences in loan attributes that may cause a divergence in prepayment rates. The attributes that generally create faster prepayments, such as high credit score and low loan-to-value (LTV) ratio, also generally lower defaults. Analyzing new issuance data allows FHFA and the Enterprises to make timely adjustments to business practices to reduce potential misalignments in future prepayment rates.



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#### Table 1: 30-year, Fastest Quartile of TBA-eligible MBS Vintage Report

		Weighte	d Average	Weighter	d Average	Weighted	d Average	Unpaid	Principal	Fastest Quartile based on 3-month CPR						
		Coupon (percent)		Maturity (months)		Loan Age (months)		Balance (	\$ billions)	Septembe	er 3m CPR	August 3m CPR		July 3	m CPR	
Coupon	Year	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	
3	2013	3.60	3.58	270	275	78	76	22.2	16	15.80	13.90	15.70	13.60	15.40	14.20	
	2015	3.80	3.84	298	302	52	51	9.8	10.3	21.00	15.40	19.40	13.90	18.20	13.20	
	2016	3.74	3.75	313	319	39	38	39.1	34.6	17.20	15.30	15.70	14.10	14.70	13.00	
	2017	3.75	3.92	327	332	26	25	3	3.6	15.30	16.30	13.50	13.00	13.00	11.50	
3.5	2013	4.06	4.09	275	278	74	74	7	4.5	22.10	21.20	20.90	19.00	19.90	18.10	
	2014	4.25	4.23	289	294	61	60	7.3	7	27.50	20.70	25.20	19.00	23.70	17.50	
	2015	4.16	4.16	301	306	51	49	20.5	19.5	25.20	20.80	22.90	18.60	21.10	17.00	
	2016	4.17	4.19	312	318	41	39	11.1	9.9	27.10	22.20	24.30	20.10	22.30	18.60	
	2017	4.10	4.16	326	330	28	28	32.5	22.3	23.50	22.40	18.80	17.60	16.10	15.00	
	2018	4.45	4.40	342	344	13	14	10.2	8.4	39.00	37.80	29.60	29.10	23.90	23.70	
	2013	4.59	4.60	278	281	72	72	4.4	3	27.50	26.00	25.90	24.10	24.20	22.30	
	2014	4.59	4.58	288	293	63	62	7.6	6.5	30.40	24.00	27.90	21.90	26.60	21.20	
4	2015	4.64	4.61	302	307	50	50	2.3	1.8	36.60	27.20	34.10	24.80	31.30	23.30	
4	2016	4.58	4.58	314	318	40	40	1.6	1.9	38.00	25.50	34.20	22.50	31.80	20.90	
	2017	4.49	4.55	326	330	28	29	15.3	11.1	30.60	28.40	25.60	23.90	22.80	21.20	
	2018	4.78	4.78	344	347	12	11	28.9	20.8	47.40	51.60	39.30	43.50	33.70	37.20	
	2014	5.11	5.10	286	290	65	65	0.3	0.2	48.00	34.80	44.90	34.50	43.40	31.50	
4.5	2017	5.03	4.93	331	331	26	27	1.8	1.6	37.50	33.00	33.90	27.90	31.50	25.50	
	2018	5.26	5.22	346	347	11	11	8.4	6	49.20	53.40	44.00	48.00	40.50	43.90	
5	2018	5.79	5.73	346	347	11	11	1.2	0.8	47.70	44.20	47.30	42.80	45.50	43.50	



30-year, 3.0	Quar	tile 1	Quar	tile 2	Quar	tile 3	Quartile 4			
Fannie Mae	17	.3	12	.5	9.	.8	2.2			
Freddie Mac	15.4		13	.1	11	.1	3.1			
Difference	1.9		-0	.6	-1	.3	-0.9			
Attributes	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE		
WALA	45	41	48	44	54	56	25	22		
WAC	3.74	3.78	3.65	3.73	3.62	3.62	3.84	3.86		
ALS	289	299	295	299	290	282	305	315		
FICO	763	760	764	762	765	764	763	763		

30-year, 3.5	Quar	tile 1	Quar	tile 2	Quar	tile 3	Quartile 4		
Fannie Mae	28	.2	18	.6	15	.3	6.9		
Freddie Mac	27	.3	18	.8	17	.2	8.6		
Difference	0.9		-0	.2	-1	.9	-1.7		
Attributes	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	
WALA	32	26	37	39	40	46	30	27	
WAC	4.25	4.26	4.10	4.13	4.09	4.11	4.21	4.21	
ALS	290	304	292	295	294	285	284	291	
FICO	755	757	755	752	757	755	751	754	

30-year, 4.5	Quar	tile 1	Quar	tile 2	Quar	tile 3	Quar	tile 4	
Fannie Mae	50	.6	40	.6	33	.1	16.0		
Freddie Mac	54	.4	41	.5	33	.7	19.6		
Difference	-3	.8	-0	.9	-0	.6	-3.6		
Attributes	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	
WALA	12	11	15	14	19	20	25	24	
WAC	5.30	5.26	5.22	5.14	5.12	5.02	5.14	5.10	
ALS	296	314	301	307	295	293	269	266	
FICO	721	731	713	723	715	723	711	714	

30-year, 5.0	Quar	tile 1	Quar	tile 2	Quar	tile 3	Quartile 4		
Fannie Mae	47	.1	40	.5	34	.6	13.2		
Freddie Mac	48.7		39	.7	32	.1	11.8		
Difference	-1.6		0.	8	2.	5	1.4		
Attributes	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	
WALA	11	10	12	13	14	13	14	11	
WAC	5.81	5.79	5.79	5.72	5.74	5.73	5.73	5.66	
ALS	280	288	294	276	280	279	259	278	
FICO	684	711	683	703	687	699	693	698	

30-year, 4.0	Quar	tile 1	Quar	tile 2	Quar	tile 3	Quartile 4		
Fannie Mae	47	.5	35	.3	24	.9	13.0		
Freddie Mac	49	.1	35	.5	24	.6	15.2		
Difference	-1.6		-0	.2	0.	.3	-2.2		
Attributes	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	
WALA	13	12	20	19	33	31	43	49	
WAC	4.80	4.77	4.62	4.63	4.51	4.54	4.64	4.62	
ALS	306 317		299 310		289	293	262	260	
FICO	750	754	747	748	739	736	736	739	

\* We omit the average prepayment speeds of pools with the age less than 3m and coupon cohorts with a combined UPB less than \$1b. \* The weighted-average statistics that are published in this table use beginning-of-quarter balances and end-of-quarter WAC, WALA, and FICO. ALS statistics represent a simple average of all loans in the cohort.



#### Table 3: Q3 2019 30-year, TBA-eligible MBS Total Industry Quarterly Issuance Report\*

	2.00%	2.5	0%	3.0	0%	3.5	0%	4.0	0%	4.5	0%	5.0	0%	5.5	0%	6.0	0%	All Lo	bans
	FNM	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE
Loan Count	65	31069	22,583	244,758	190,651	185,483	119,447	70,869	47,812	26,058	22,047	11,349	11,103	588	908	158	43	570,397	414,594
UPB (billions)	0.02	10.49	7.53	71.86	55.67	48.17	31.28	14.69	9.31	5.10	3.60	2.28	1.77	0.10	0.10	0.04	0.01	152.75	109.27
% of Production Volume	0.00	6.90	6.90	47.40	50.90	31.50	28.60	9.60	8.50	3.30	3.30	1.50	1.60	0.10	0.10	0.00	0.00	100.00	100.00
WA Note Rate (%)	3.09	3.53	3.52	3.93	3.92	4.37	4.36	4.80	4.71	5.22	5.15	5.67	5.62	6.26	6.18	6.36	6.45	4.20	4.16
WA Loan Age (mos.)	1	2	5	5	5	2	2	2	2	2	2	3	2	2	2	15	54	3	4
WA FICO	769	768	754	760	752	743	747	722	728	712	718	705	711	695	702	689	693	749	747
WALTV	0.73	0.73	0.75	0.78	0.79	0.8	0.81	0.79	0.78	0.81	0.77	0.82	0.77	0.87	0.81	0.77	0.79	0.78	0.79
%FICO<680	5.00	1.00	1.00	2.00	2.00	7.00	6.00	21.00	16.00	30.00	27.00	35.00	33.00	43.00	41.00	58.00	43.00	7.00	5.00
%FICO>740	83.00	82.00	81.00	72.00	73.00	54.00	58.00	37.00	42.00	33.00	35.00	28.00	32.00	19.00	26.00	18.00	22.00	62.00	65.00
%LTV>80	34.00	28.00	30.00	37.00	39.00	44.00	45.00	34.00	36.00	40.00	24.00	40.00	19.00	55.00	32.00	11.00	20.00	38.00	39.00
%FICO<680 & LTV>80	0.00	0.00	0.00	1.00	0.00	3.00	2.00	8.00	6.00	14.00	8.00	13.00	8.00	15.00	7.00	3.00	2.00	3.00	2.00
%DTI>40	25.00	30.00	29.00	34.00	33.00	42.00	40.00	46.00	43.00	49.00	42.00	52.00	44.00	60.00	42.00	55.00	35.00	38.00	36.00
%Purchase	64.00	45.00	56.00	59.00	64.00	65.00	68.00	57.00	61.00	64.00	56.00	63.00	54.00	67.00	59.00	38.00	61.00	60.00	64.00
%Rate/Term	33.00	44.00	37.00	29.00	27.00	17.00	16.00	12.00	11.00	8.00	8.00	7.00	7.00	2.00	4.00	10.00	0.00	24.00	22.00
%Cash out**	3.00	11.00	7.00	12.00	9.00	18.00	16.00	31.00	28.00	28.00	36.00	30.00	38.00	31.00	37.00	52.00	39.00	16.00	14.00
%Owner Occupied	100.00	97.00	97.00	96.00	96.00	93.00	93.00	83.00	86.00	71.00	66.00	67.00	49.00	78.00	49.00	56.00	56.00	92.00	93.00
%Second Home	0.00	3.00	3.00	4.00	4.00	4.00	4.00	3.00	4.00	2.00	3.00	2.00	2.00	1.00	1.00	1.00	0.00	4.00	4.00
%Investor	0.00	0.00	0.00	1.00	0.00	3.00	2.00	14.00	11.00	27.00	31.00	32.00	49.00	21.00	50.00	43.00	44.00	4.00	4.00

\*Numbers in the table represent end of quarter, not at-securitization, values. UPB = unpaid principal balance; WA = weighted average; WAC = weighted average coupon; WALA = weighted average loan age; LTV = loan-to-value ratio; DTI = debt-to-income ratio.

Source: RiskSpan calculations from data available publicly as of October 2019.



Glossary

- Average loan size (ALS) refers to the average dollar amount of the loans as stated on the notes at the time the loans were originated or modified.
- **Cohort** refers to those Enterprise TBA-eligible securities with the same coupon, maturity, and loan-origination year where the combined unpaid principal balance of such securities exceeds \$10 billion. The loan-origination year is calculated as the value-weighted average of the origination years of the mortgages collateralizing a security.
- **Conditional prepayment rate (CPR)**, also known as the constant prepayment rate, measures prepayments as a percentage of the current outstanding principal balance of the pool of loans backing a mortgage-backed security or cohort of those securities. The CPR is expressed as a compound annual rate.
- **Debt-to-income (DTI) ratio** is the ratio obtained by dividing the total monthly debt expense by the total monthly income of the borrower at the time the loan was originated or modified.
- **Fastest paying quartile of a cohort** means the quartile of a cohort that has the fastest prepayment speeds as measured by the three-month CPR. The quartiles shall be determined by ranking outstanding TBA-eligible securities with the same coupon, maturity, and loan-origination year by the three-month CPR, excluding specified pools, and dividing each cohort into four parts such that the total unpaid principal balance of the pools included in each part is equal.
- FICO refers to a credit score produced by FICO and used in the mortgage underwriting process.
- **Loan-to-value (LTV) ratio** is the ratio, expressed as a percentage, obtained by dividing the amount of the loan at origination by the value of the property.
- **Specified pools** for the purpose of this report, are those pools with one or more of the following characteristics at issuance: a maximum loan size of \$200,000, a loan-to-value ratio at the time of loan origination of greater than 80 percent, a FICO score of less than 700, where all loans finance investor-owned properties, or where all loans finance properties in the states of New York or Texas or the Commonwealth of Puerto Rico.



- **To-be-announced (TBA) market** is a forward market for certain mortgage-backed securities, including those issued by Fannie Mae and Freddie Mac.
- **Uniform Mortgage-Backed Security (UMBS)** is the new single, common mortgage-backed security that Fannie Mae and Freddie Mac will be issuing to replace their current offerings of TBA-eligible single class, fixed-rate mortgage backed securities.
- Unpaid principal balance (UPB) is the portion of a loan that the borrower has not yet paid back to the lender.
- **Weighted average coupon (WAC)** refers to the average gross interest rates owed on the mortgages underlying the security weighted by the percentage of the security's unpaid principal balance that each mortgage represents.
- Weighted average loan age (WALA) refers to the average number of months since the date of origination of mortgages underlying the security weighted by the percentage of the security's unpaid principal balance that each mortgage represents.
- Weighted average maturity (WAM) refers to the average number of months remaining until the final payment is due on mortgages underlying the security weighted by the percentage of the security's unpaid principal balance that each mortgage represents.

