



# PREPAYMENT MONITORING REPORT

Fourth Quarter 2020

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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. 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 with the same coupon, maturity, and loan-origination year

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

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<sup>3</sup> To avoid double counting, only first-level securitizations are included in the analysis. Second-level securitizations (Megs, Giants, and Supers) are excluded, with the exception of fastest quartile analyses and Table 2 (Quartile Report). For those exceptions, Freddie Mac multi-lender second-level securitizations traded as a single security are included and the related first-level securitizations are excluded to avoid double counting.



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 three-month 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. FHFA's UMBS Governance Committee reviews the reports and may recommend 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 loan-origination 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.



## 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.

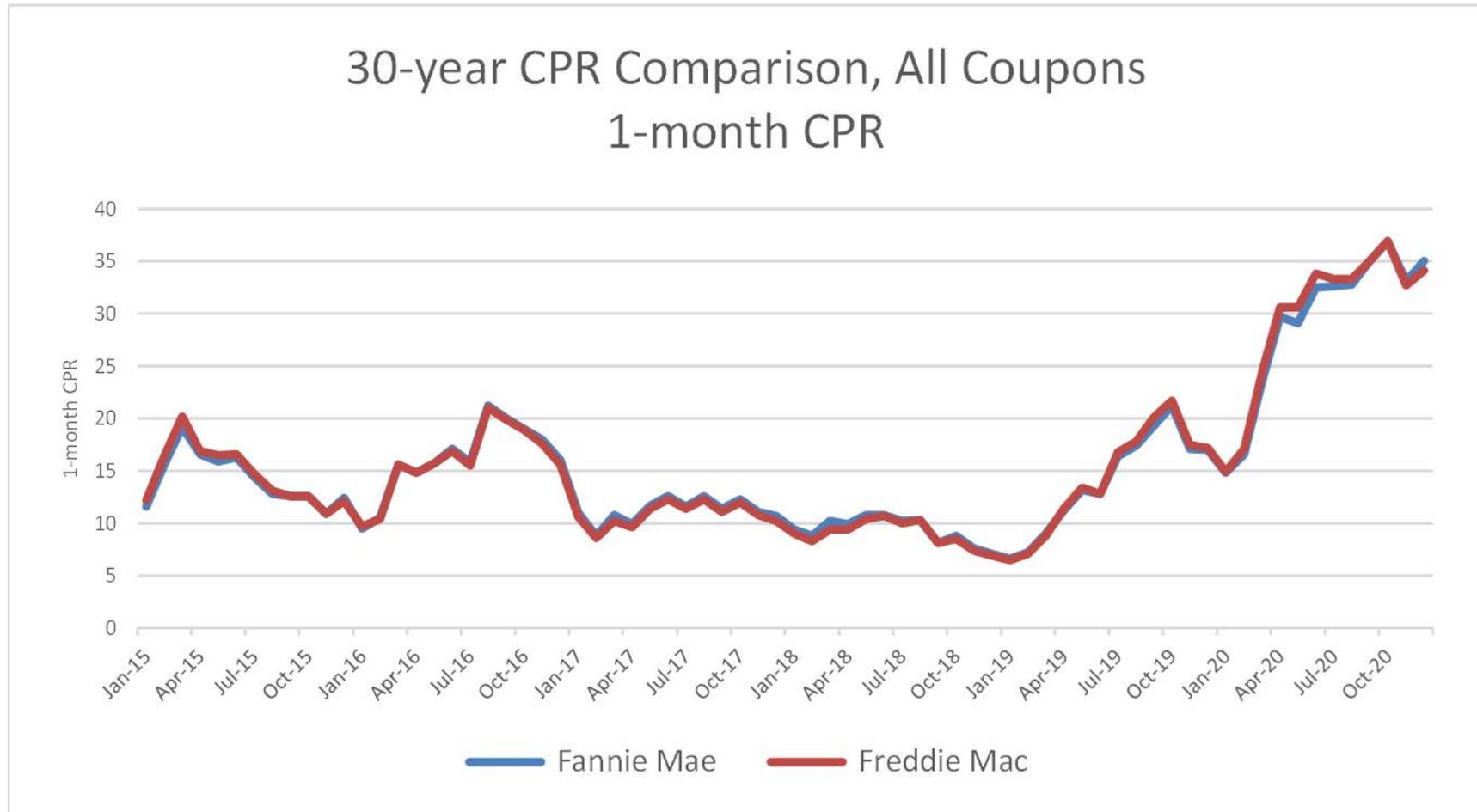
Chart 2 illustrates the comparison of pool loan-origination years for a given TBA-eligible MBS coupon. Chart 2 shows December 2020 one-month prepayment rates for entire cohorts of each Enterprise's 30-year MBS for coupons with combined issuance volume outstanding in excess of \$10 billion (2.5%, 3%, 3.5%, 4%, 4.5%, and 5%) and the six loan-origination years prior to the current calendar year.

Charts 3a through 3g 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 one-month prepayment rates across the Enterprises for recent coupons with issuance greater than \$10 billion. For each coupon in Chart 3a, the illustrated one-month prepayment rates are calculated across the fastest paying quartile at a given point in time. Charts 3b through 3g 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.



Chart 1: One-month CPR Comparison for 30-Year, for All TBA-Eligible MBS, All Coupons



Source: RiskSpan calculations from data available publicly as of January 2021. Calculations exclude new issuance with no one-month CPR information.



Chart 2: December 2020 One-month CPR on All 30-year, TBA-eligible MBS by Coupon and Loan-Originiation Year\*

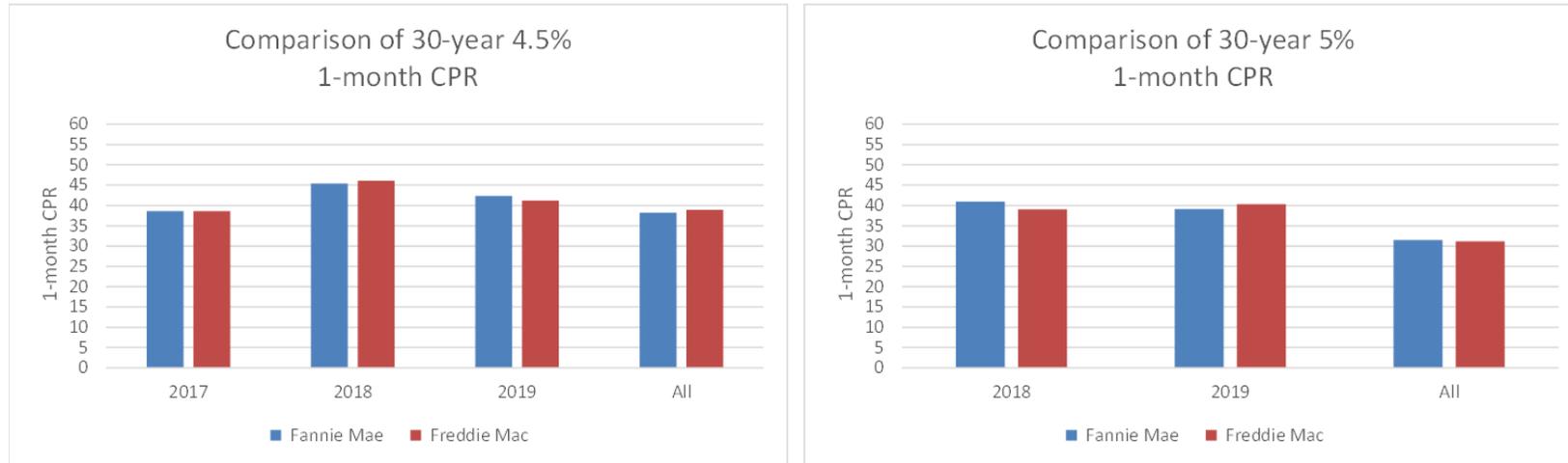


\* The 2.5 percent coupon cohorts for 2014, 2015, 2016, 2017, and 2018, and the 3 percent coupon cohorts for 2014 and 2018, are omitted because each has a combined UPB below the \$10 billion threshold.

Source: RiskSpan calculations from data available publicly as of January 2021. Calculations exclude new issuance with no one-month CPR information.



Chart 2: December 2020 One-month CPR on All 30-year, TBA-eligible MBS by Coupon and Loan-Originiation Year\*



\* The 4.5 percent coupon cohorts for 2014, 2015, and 2016, and the 5 percent coupon cohorts for 2014, 2015, 2016, and 2017, are omitted because each has a combined UPB below the \$10 billion threshold.

Source: RiskSpan calculations from data available publicly as of January 2021. Calculations exclude new issuance with no one-month CPR information.



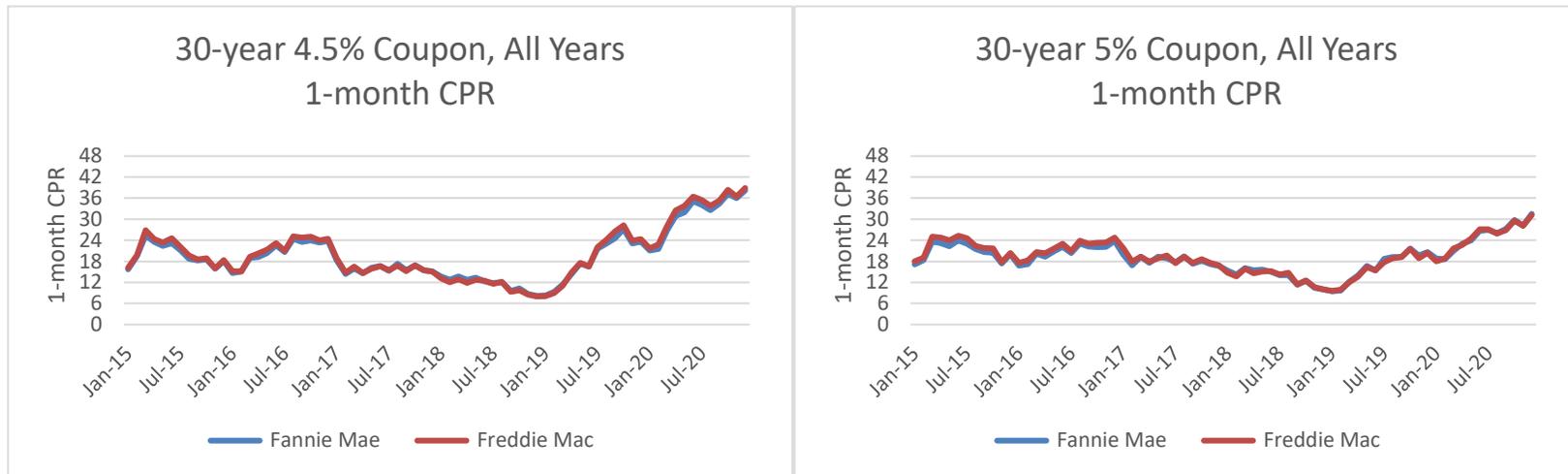
Chart 3a: One-month CPR on All 30-year, TBA-eligible MBS by Coupon



Source: RiskSpan calculations from data available publicly as of January 2021. Calculations exclude new issuance with no one-month CPR information.



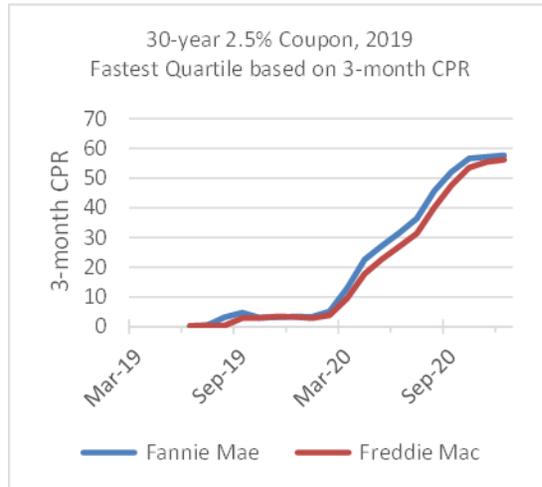
Chart 3a: One-month CPR on All 30-year, TBA-eligible MBS by Coupon



Source: RiskSpan calculations from data available publicly as of January 2021. Calculations exclude new issuance with no one-month CPR information.



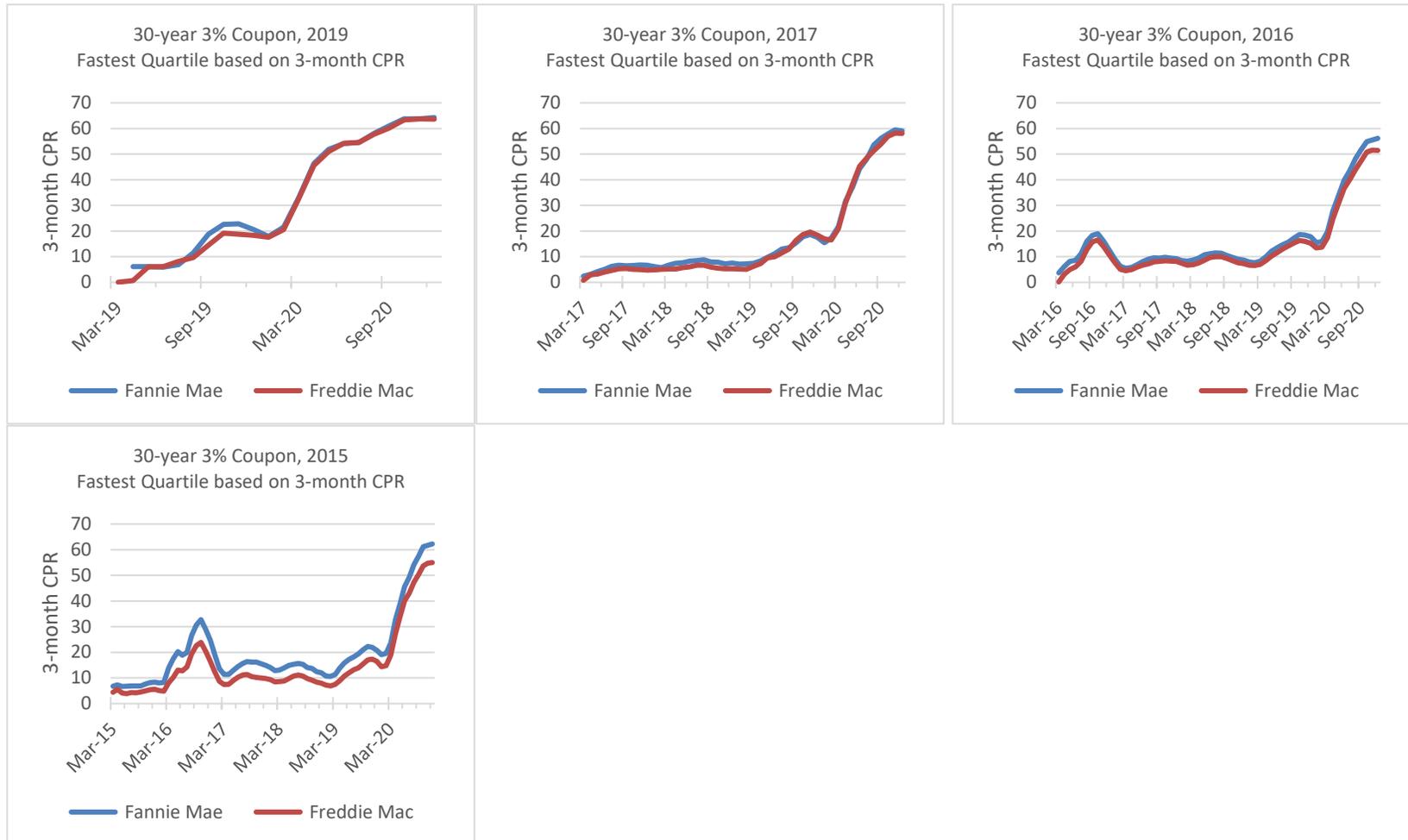
**Chart 3b: Three-month CPR on 30-year Fastest Paying Quartiles, 2.50 Percent Coupon TBA-eligible MBS by Loan-Origination Year\***



\* The 2014, 2015, 2016, 2017, and 2018 cohorts are omitted because each has a combined UPB below the \$10 billion threshold.

Source: RiskSpan calculations from data available publicly as of January 2021. Calculations exclude new issuance with no three-month CPR information.

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

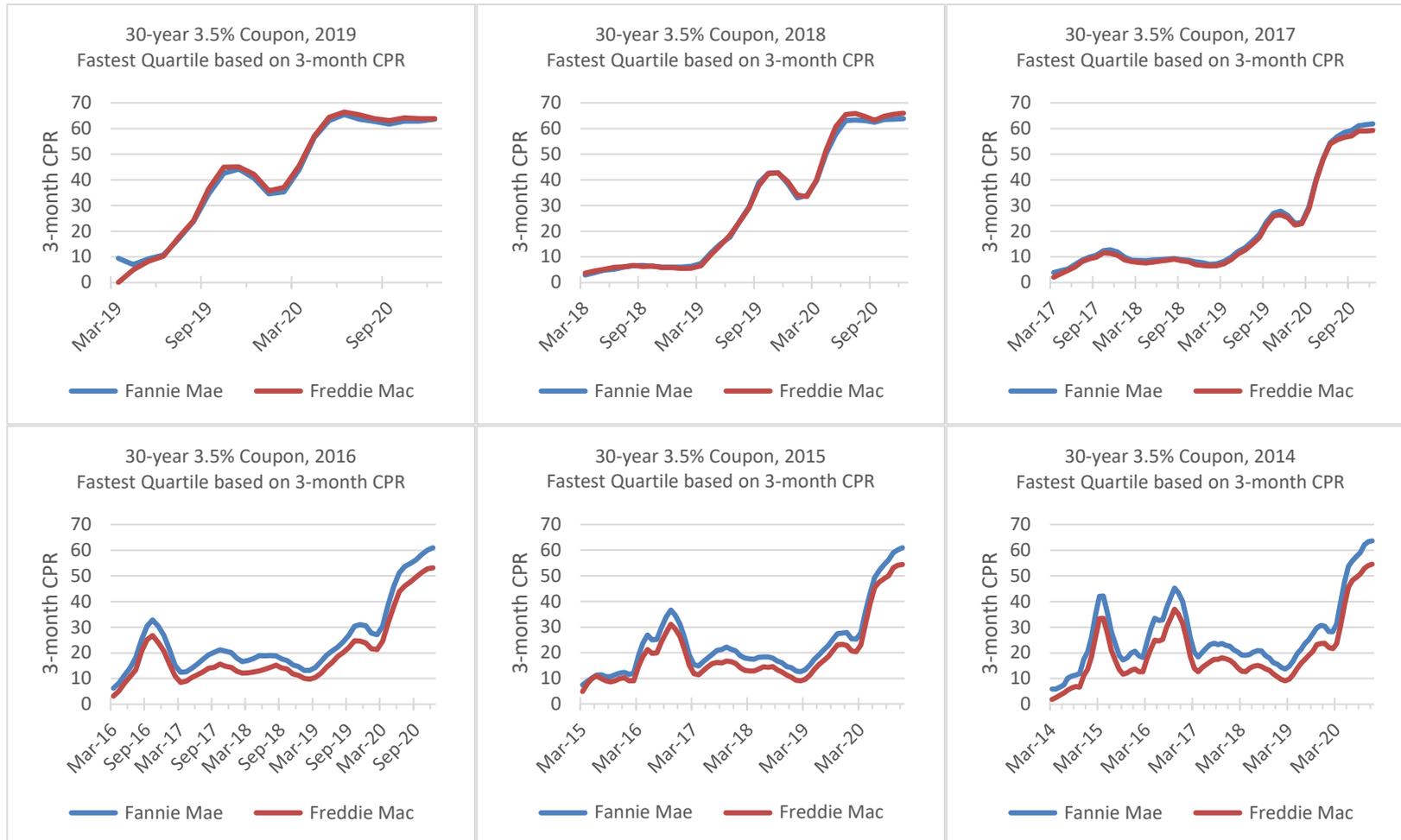


\* The 2014 and 2018 cohorts are omitted because each has a combined UPB below the \$10 billion threshold.

Source: RiskSpan calculations from data available publicly as of January 2021. Calculations exclude new issuance with no three-month CPR information.



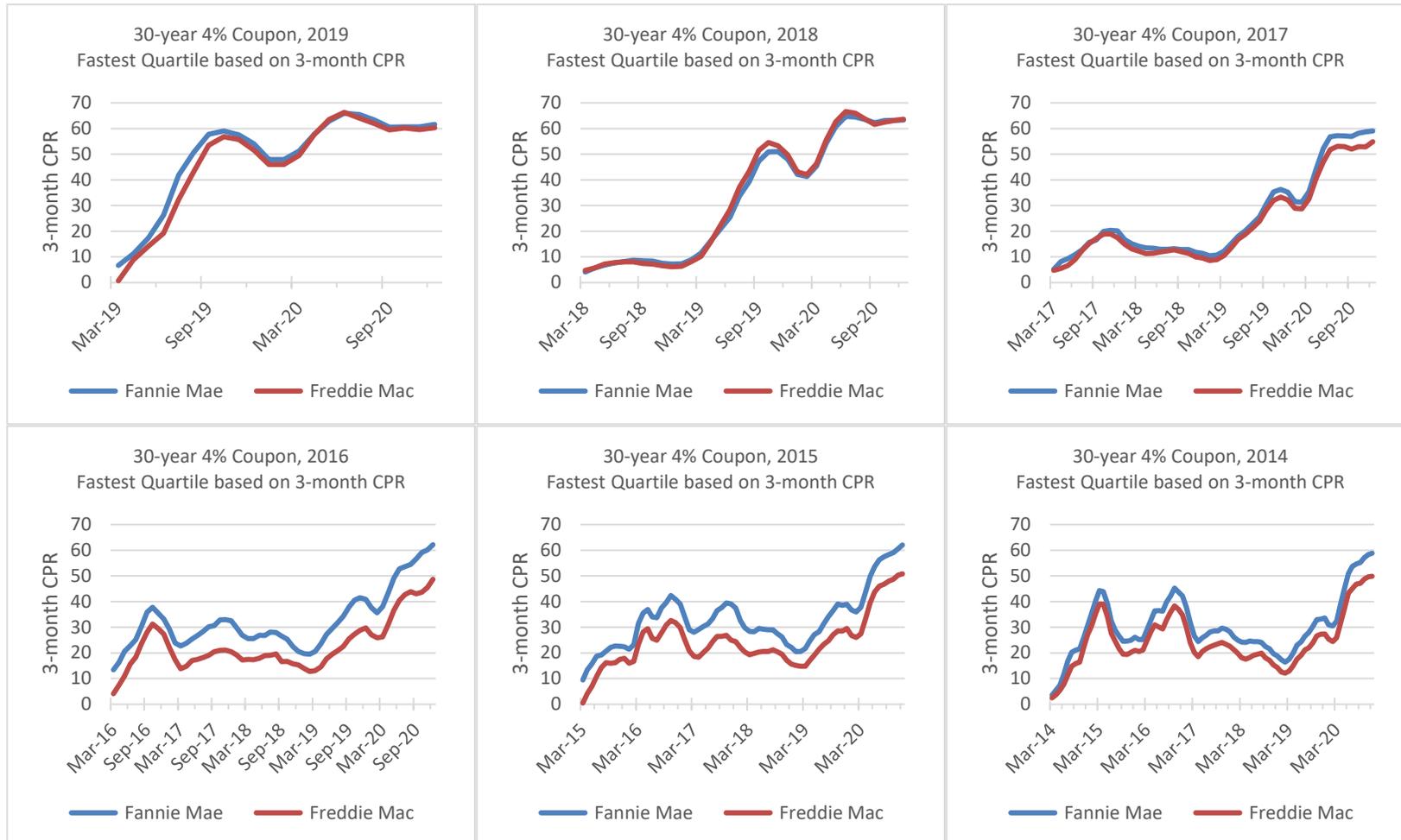
**Chart 3d: Three-month CPR on 30-year Fastest Paying Quartiles, 3.50 Percent Coupon TBA-eligible MBS by Loan-Origination Year**



Source: RiskSpan calculations from data available publicly as of January 2021. Calculations exclude new issuance with no three-month CPR information.



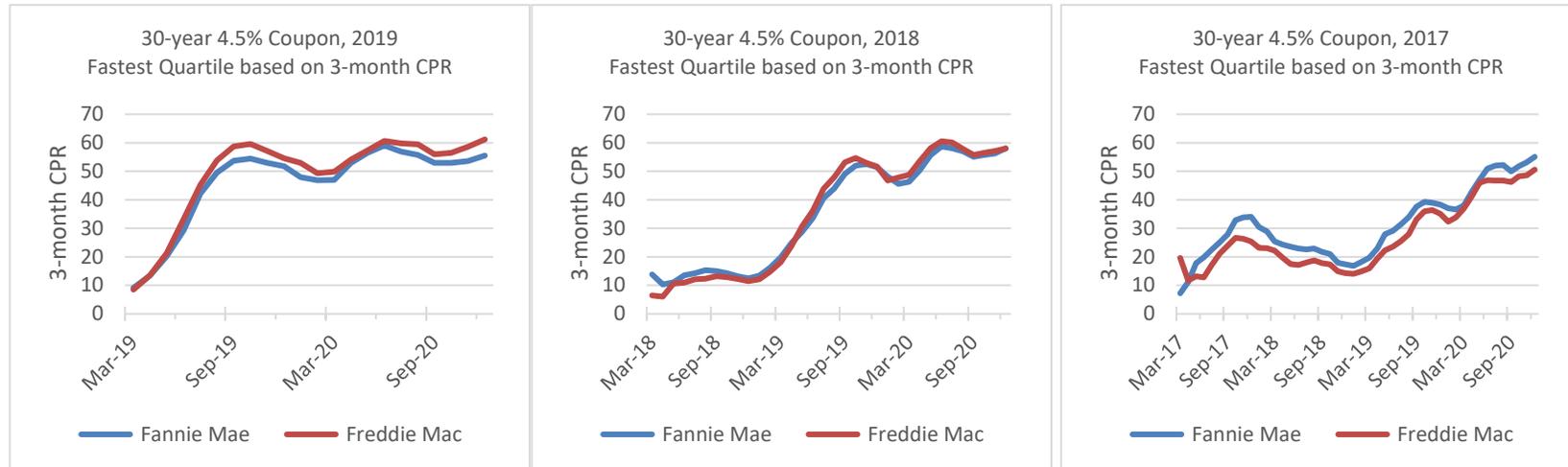
**Chart 3e: Three-month CPR on 30-year Fastest Paying Quartiles, 4.00 Percent Coupon TBA-eligible MBS by Loan-Origination Year**



Source: RiskSpan calculations from data available publicly as of January 2021. Calculations exclude new issuance with no three-month CPR information.



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

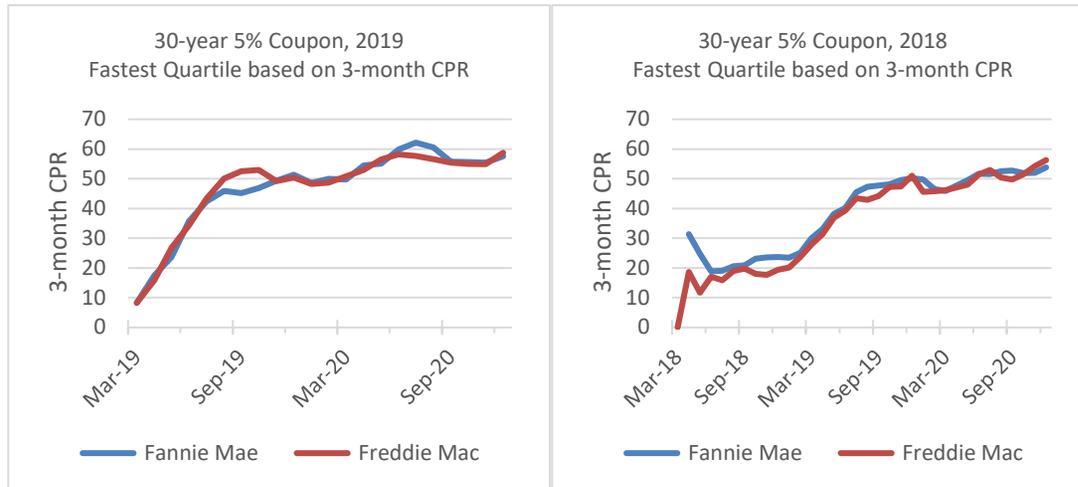


\* The 2014, 2015, and 2016 cohorts are omitted because each has a combined UPB below the \$10 billion threshold.

Source: RiskSpan calculations from data available publicly as of January 2021. Calculations exclude new issuance with no three-month CPR information.



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

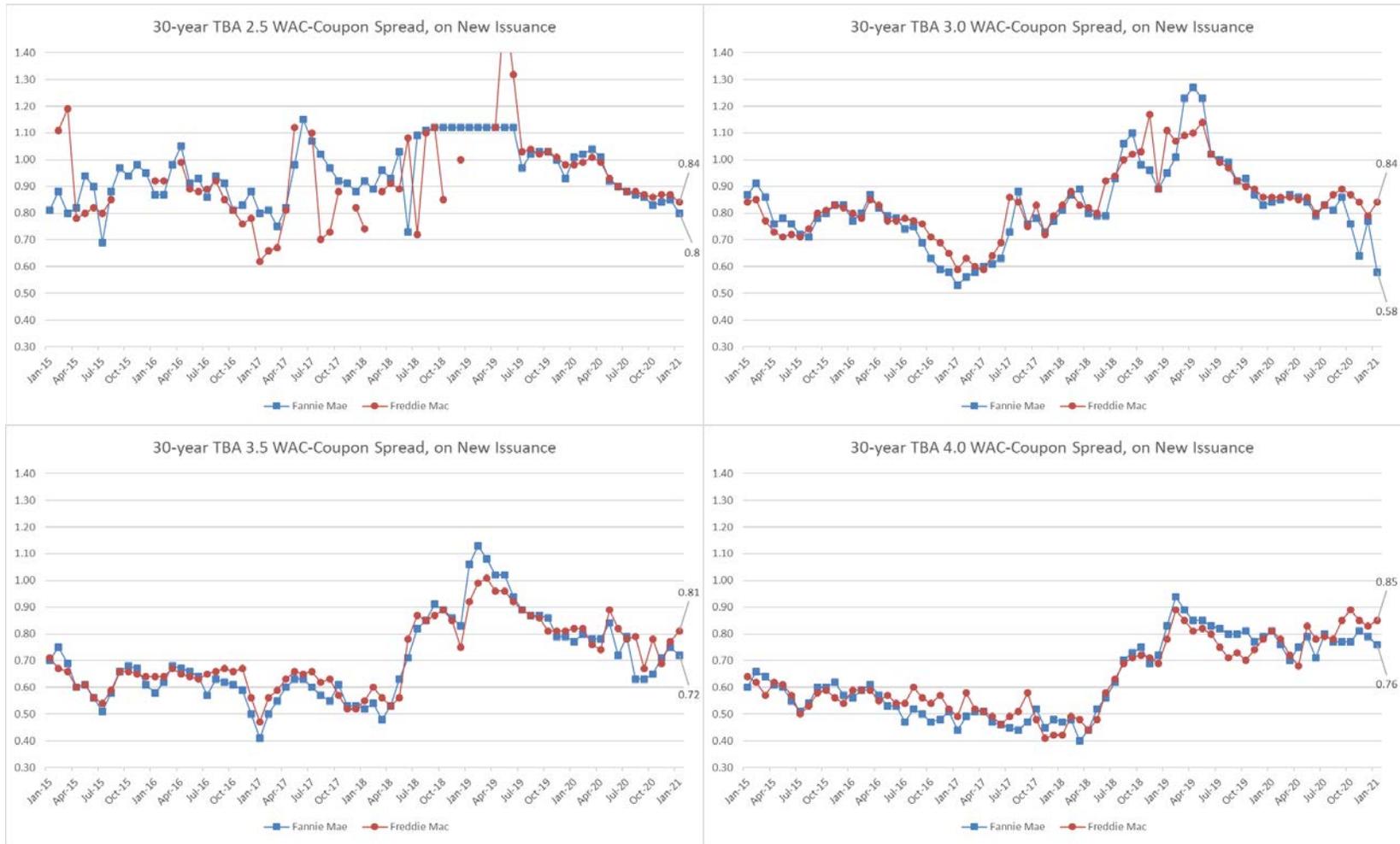


\* The 2014, 2015, 2016, and 2017 cohorts are omitted because each has a combined UPB below the \$10 billion threshold.

Source: RiskSpan calculations from data available publicly as of January 2021. Calculations exclude new issuance with no three-month CPR information.



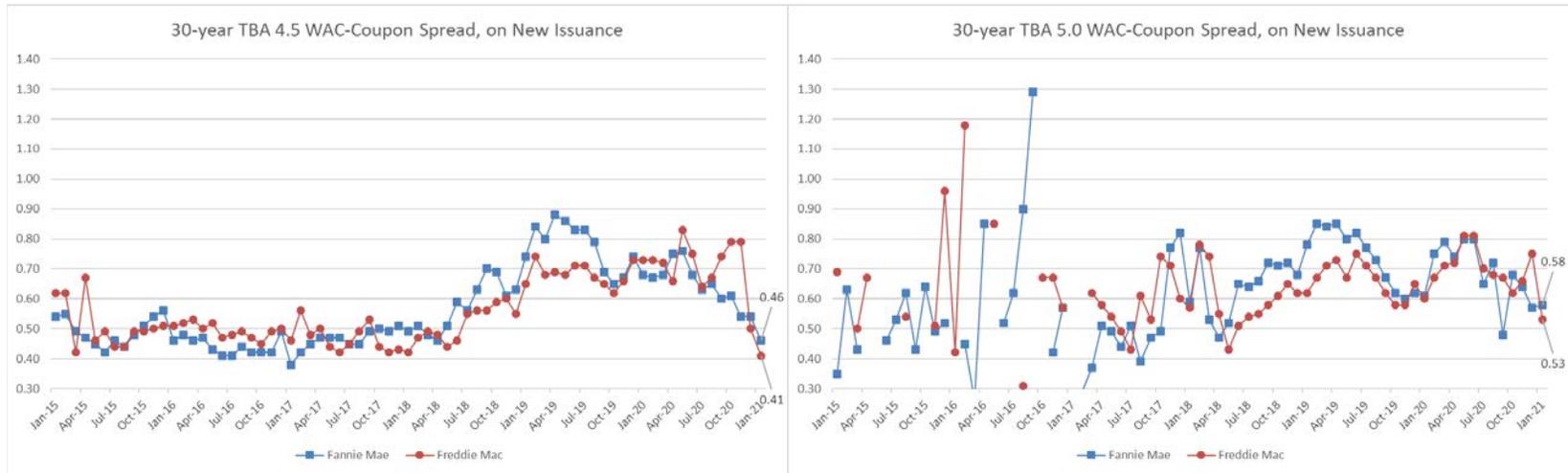
Chart 4: Comparison of Weighted Average Loan Rate to Coupon Spread on New 30-year MBS Issuance



Source: RiskSpan calculations from data available publicly as of January 2021. Gaps in data may occur in some months due to a lack of MBS issuance.



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



Source: RiskSpan calculations from data available publicly as of January 2021. Gaps in data may occur in some months due to a lack of 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.



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

Coupon	Year	Weighted Average Coupon (percent)		Weighted Average Maturity (months)		Weighted Average Loan Age (months)		Unpaid Principal Balance (\$ billions)		Three Month Conditional Prepayment Rates (percent)					
		FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	December		November		October	
		FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE
2.5	2019	3.50	3.52	341	340	15	15	9.3	7.6	57.70	56.20	57.10	55.40	56.60	53.50
3	2015	3.78	3.79	281	281	67	66	7.5	7.1	62.30	55.00	61.70	54.80	61.20	53.70
	2016	3.71	3.78	296	295	54	56	27.5	21.9	56.20	51.50	55.50	51.60	54.90	50.80
	2017	3.77	3.84	312	315	39	37	2.2	2.5	59.10	58.10	59.50	58.20	57.90	56.90
	2019	3.98	3.97	338	338	17	17	22.7	20.9	64.30	63.60	63.80	63.80	63.80	63.30
3.5	2014	4.23	4.23	272	271	76	76	5	4	63.60	54.60	63.30	54.00	62.10	52.90
	2015	4.12	4.13	283	286	66	64	14	11	60.90	54.40	60.10	54.10	59.00	53.10
	2016	4.13	4.16	295	294	56	58	7.5	5.6	61.00	53.20	60.00	52.70	58.40	51.30
	2017	4.06	4.10	310	311	42	41	15.9	12.7	61.80	59.30	61.50	59.10	61.10	59.10
	2018	4.27	4.34	322	323	31	30	6.1	4.4	63.90	66.00	63.60	65.60	63.50	64.80
	2019	4.41	4.41	337	336	18	19	11.2	8.3	63.60	63.90	62.90	63.90	62.90	64.20
4	2014	4.55	4.59	271	270	78	79	5.3	4	58.80	49.80	58.30	49.60	57.10	48.80
	2015	4.60	4.57	287	289	64	63	1.6	1.2	62.00	50.80	60.50	50.30	59.00	48.70
	2016	4.56	4.61	298	298	55	55	1.1	1.2	62.10	48.70	60.10	45.50	59.20	43.70
	2017	4.45	4.48	309	310	44	44	8	5.7	59.10	54.90	58.70	52.80	58.20	52.90
	2018	4.71	4.66	325	325	29	29	13.9	9.2	63.30	63.60	63.20	63.10	63.10	62.50
	2019	4.94	4.86	332	332	23	22	5.2	3.1	61.60	60.30	60.70	59.60	60.60	60.20
4.5	2017	5.00	4.97	313	312	42	42	1.2	0.9	55.10	50.60	53.20	48.60	51.80	48.20
	2018	5.18	5.16	327	328	28	27	4	3.3	58.10	58.00	56.30	57.10	55.70	56.50
	2019	5.34	5.34	338	333	19	22	1.7	0.9	55.50	61.20	53.60	58.60	52.90	56.50
5	2018	5.74	5.72	328	327	28	27	0.7	0.4	53.80	56.30	52.00	54.20	51.90	51.60
	2019	5.78	5.70	337	336	18	20	0.5	0.4	57.60	58.70	55.40	54.90	55.60	55.00

Source: RiskSpan calculations from data available publicly as of January 2021. Calculations exclude new issuance with no three-month CPR information, and exclude specified pools (see appendix for definition). The balances displayed on the table are beginning-of-quarter balances for the population included in the fastest quartile for each cohort.



Table 2: 30-year TBA-eligible, less Specified Pools, Cohort Quartile Report for Qualifying Cohorts

30-year, 2.5	Quartile 1		Quartile 2		Quartile 3		Quartile 4	
Fannie Mae	52.9		36.7		22.6		6.8	
Freddie Mac	51.6		37.1		21.8		7.6	
Difference	1.3		-0.4		0.8		-0.8	
Attributes	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE
WALA	13	14	9	10	7	7	5	5
WAC	3.48	3.47	3.40	3.41	3.38	3.38	3.35	3.37
ALS	336	331	337	334	343	346	307	309
FICO	765	766	763	763	763	763	757	757

30-year, 4.0	Quartile 1		Quartile 2		Quartile 3		Quartile 4	
Fannie Mae	62.8		57.8		53.0		40.1	
Freddie Mac	62.7		57.3		51.4		41.1	
Difference	0.1		0.5		1.6		-1.0	
Attributes	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE
WALA	30	29	32	29	33	38	40	44
WAC	4.72	4.69	4.66	4.72	4.62	4.55	4.61	4.62
ALS	291	300	294	297	295	294	264	271
FICO	744	748	741	740	729	732	725	725

30-year, 3.0	Quartile 1		Quartile 2		Quartile 3		Quartile 4	
Fannie Mae	62.2		54.8		47.5		32.8	
Freddie Mac	60.4		53.8		48.2		36.4	
Difference	1.8		1.0		-0.7		-3.6	
Attributes	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE
WALA	21	18	34	38	44	49	30	30
WAC	3.90	3.91	3.80	3.82	3.70	3.74	3.76	3.77
ALS	325	330	310	307	293	294	276	277
FICO	758	757	759	760	759	757	752	752

30-year, 4.5	Quartile 1		Quartile 2		Quartile 3		Quartile 4	
Fannie Mae	57.8		51.8		48.2		36.5	
Freddie Mac	58.1		51.6		47.9		36.7	
Difference	-0.3		0.2		0.3		-0.2	
Attributes	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE
WALA	27	27	26	29	30	30	33	34
WAC	5.21	5.17	5.28	5.16	5.18	5.15	5.13	5.07
ALS	287	289	295	290	293	286	268	276
FICO	712	722	706	717	707	713	708	711

30-year, 3.5	Quartile 1		Quartile 2		Quartile 3		Quartile 4	
Fannie Mae	63.1		56.8		52.7		39.9	
Freddie Mac	61.9		56.4		50.8		43.7	
Difference	1.2		0.4		1.9		-3.8	
Attributes	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE
WALA	33	30	37	36	52	57	48	49
WAC	4.29	4.28	4.14	4.16	4.08	4.14	4.16	4.15
ALS	296	302	297	299	286	276	263	272
FICO	749	753	751	751	753	750	743	743

30-year, 5.0	Quartile 1		Quartile 2		Quartile 3		Quartile 4	
Fannie Mae	57.5		46.0		42.5		28.1	
Freddie Mac	59.5		49.1		41.4		26.9	
Difference	-2.0		-3.1		1.1		1.2	
Attributes	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE
WALA	24	23	26	24	26	23	26	27
WAC	5.75	5.72	5.81	5.75	5.77	5.68	5.73	5.69
ALS	264	278	272	264	281	279	258	266
FICO	680	700	680	700	686	696	689	694

\* FHFA omits the average prepayment speeds of pools with the age less than 3m and coupon cohorts with a combined UPB less than \$10b.  
 \* Qualifying Cohorts are defined as cohorts of TBA-eligible pools, excluding Specified Pools, issued during the most recent six origination years, including the current origination year.  
 \* 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: Q4 2020 30-year, TBA-eligible MBS Total Industry Quarterly Issuance Report\*

	1.50%		2.00%		2.50%		3.00%		3.50%		4.00%		4.50%		5.00%		All Loans	
	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE
Loan Count	109,609	146,210	667,897	587,456	278,596	167,463	60,489	19,145	8,296	3,768	3,532	1,788	1,912	784	149	30	1,130,480	926,644
UPB (billions)	39.37	51.19	202.07	181.20	68.93	42.38	9.39	3.63	1.30	0.58	0.61	0.28	0.29	0.23	0.04	0.01	321.99	279.51
% of Production Volume	12.20	18.30	62.80	64.80	21.40	15.10	2.90	1.30	0.40	0.20	0.20	0.10	0.10	0.10	0.00	0.00	100.00	100.00
WA Note Rate (%)	2.53	2.54	2.89	2.90	3.33	3.36	3.64	3.82	4.22	4.24	4.78	4.84	5.01	5.26	5.58	5.63	2.98	2.93
WA Loan Age (mos.)	1	1	1	1	1	1	2	2	4	2	2	2	4	4	7	2	1	1
WA FICO	773	773	764	763	744	742	736	730	724	728	714	721	711	703	686	687	759	761
WALTV	0.7	0.7	0.72	0.73	0.73	0.73	0.73	0.73	0.77	0.75	0.78	0.77	0.78	0.75	0.77	0.8	0.72	0.72
%FICO<680	1.00	1.00	2.00	2.00	10.00	11.00	16.00	19.00	25.00	20.00	31.00	26.00	30.00	39.00	55.00	42.00	4.00	4.00
%FICO>740	85.00	85.00	75.00	74.00	56.00	53.00	50.00	45.00	42.00	43.00	36.00	40.00	33.00	26.00	17.00	12.00	71.00	72.00
%LTV>80	23.00	23.00	27.00	28.00	24.00	22.00	21.00	19.00	26.00	21.00	23.00	19.00	23.00	14.00	10.00	26.00	25.00	26.00
%FICO<680 & LTV>80	0.00	0.00	1.00	0.00	4.00	3.00	5.00	4.00	9.00	6.00	11.00	7.00	9.00	6.00	4.00	0.00	1.00	1.00
%DTI>40	24.00	24.00	30.00	28.00	34.00	34.00	34.00	37.00	37.00	34.00	41.00	39.00	42.00	44.00	49.00	27.00	30.00	28.00
%Purchase	37.00	37.00	36.00	36.00	32.00	29.00	38.00	30.00	52.00	46.00	54.00	50.00	55.00	37.00	27.00	40.00	35.00	35.00
%Rate/Term	54.00	54.00	49.00	49.00	40.00	40.00	29.00	30.00	16.00	19.00	11.00	12.00	9.00	6.00	14.00	0.00	47.00	49.00
%Cash out	9.00	9.00	15.00	15.00	29.00	31.00	33.00	40.00	32.00	34.00	35.00	38.00	36.00	56.00	59.00	60.00	18.00	17.00
%Owner Occupied	96.00	96.00	94.00	95.00	81.00	82.00	67.00	68.00	61.00	56.00	49.00	49.00	52.00	50.00	81.00	63.00	90.00	93.00
%Second Home	4.00	4.00	4.00	4.00	3.00	3.00	3.00	2.00	3.00	2.00	1.00	1.00	3.00	1.00	1.00	0.00	4.00	4.00
%Investor	0.00	0.00	2.00	1.00	16.00	15.00	30.00	30.00	36.00	42.00	49.00	50.00	45.00	49.00	18.00	37.00	6.00	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 January 2021.



## 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 issues, which replaced their previous 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.

