

Floating-Rate Loan Prepayments

As of July 2021

Research

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- This report presents a summary of Freddie Mac Multifamily floating-rate loan voluntary prepayment activity for the 12-months ending July 2021.
- The 12-month average constant prepayment rate (CPR) is 27% as of July 2021, with 92% of current loans in the 1% prepayment premium phase. It was a minor increase compared with our January report.
- Floating-rate loans offer borrowers more prepayment flexibility, with 84% choosing a one-year lockout followed by 1% prepayment premium.
- Prepayment speeds are computed based on loans that are eligible to prepay during the reporting period (August 2020 through July 2021) and exclude any loans still in their lockout period. However, that population changes monthly as loans season and exit their lockout period.
- We summarize prepayment speeds in the aggregate and by product type, vintage, prepayment type, prepayment phase and FRE-KF deal.
- Prepayments are generally highest when prepayment penalties are lowest and among more seasoned loans.
- Despite the favorable interest rates and post-COVID-19 optimism, the prepayment declined from January to May. The recovery has not reached the level in late 2020.

The first Freddie Mac floating-rate K-Deal®, K-F01, was priced in October of 2012. The K-Deal program provides borrowers with the ability to obtain financing indexed to lower, short-term rates and also provides borrowers with more prepayment flexibility than fixed-rate products. Typical loan terms are 5-, 7- and 10-year. Through July 2021, Freddie Mac has funded and securitized over 5,200 floating-rate loans totaling over \$125 billion of original unpaid principal balance (UPB).

Prepayment Options Background

We originate 5-, 7- and 10-year floating-rate loans that generally range between \$5 million and \$100 million in size. We stopped accepting new loans indexed to LIBOR during the fourth quarter of 2020, and all new floating-rate loans will be indexed to SOFR. Legacy floating-rate LIBOR-indexed bonds will be transitioned to an alternative rate prior to the end June 2023, when LIBOR is expected to cease. Borrowers obtain their own third-party cap to hedge interest rate risk. Unlike our standard, fixed-rate K-Deal where loans have a lockout period followed by defeasance, our floating-rate program provides borrowers with more flexible prepayment options. The majority of borrowers opt for a lockout period followed by a 1% prepayment premium on the outstanding balance of the loan. Other options include step-down prepayment penalties where each year the prepayment premium decreases (typically starting at 3% for the first year, 2% the second year and 1% starting in the third year through maturity). Exhibit 1 shows percentage of floating-rate business by term and prepay option going back to 2012.

The majority of floating-rate loans, which comprise approximately 84% of our originations, choose a 1-year lockout period followed by a 1% prepayment premium, which increased one percentage point from the January 2021 report. Approximately 6% have a 2-year lockout period followed by a 1% premium. The 3%-2%-1% step-down prepayment penalty structure is the next most common at 3% of origination business. The remaining 7% of business has varying lockout periods followed by prepayment penalties, step-down structures, or a combination of the two. Nearly all of our floating-rate loans are either 7- or 10-year terms, making up 99% of floating-rate business. They are nearly evenly split with 7-year totaling 50% and 10-year term at 49% of our business. Since the January 2021 report, 10-year loans have gained favorability compared with 7-year loans, increasing six percentage points, and 7-year loans have declined by five percentage points. Only 2% of these loans have a 5-year term, the same level as January of this year.

Exhibit 1: Available Prepayment Options for Floating-Rate Loans

Option	Prepay Option % by Loan Term			Total % Business			Total % Business
	5-year	7-year	10-year	5-year	7-year	10-year	
1-year lockout, then 1%	71%	83%	84%	1%	41%	41%	84%
2-year lockout, then 1%	2%	6%	6%	0%	3%	3%	6%
3% – 2% - 1%	26%	4%	2%	0%	2%	1%	3%
All others*	0%	7%	7%	0%	3%	4%	7%
Total % Business				2%	50%	49%	100%

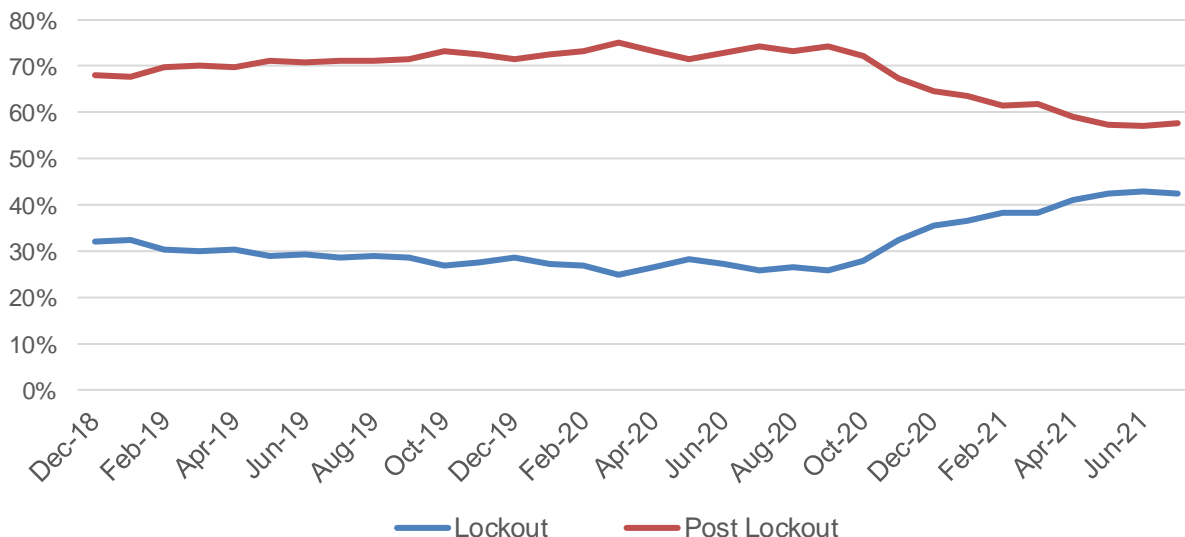
Source: Freddie Mac. Note: All others include a combination of lockout and stepdown. Percentages represent original UPB balance for deals K-F01 through K-F99 and may not total 100% due to rounding.

The Freddie Mac Multifamily floating-rate program offers borrowers prepay optionality.

From the end of 2018 through July of 2021, the rate of loans entering their post-lockout period increased slightly, implying more loans were seasoning out of their lockout period than new loans originated with a lockout period. The end of 2018 saw approximately 30% of UPB in the lockout period and 70% able to prepay with a premium, and that proportion increased through August of 2020 to 71%. Since then, the trend has reversed. As of July 2021, 58% of UPB is post-lockout.

Exhibit 2: Percentage of Active Loans in Lockout and Post-lockout

Over the past year, the percentage of loans post-lock out fell sharply.



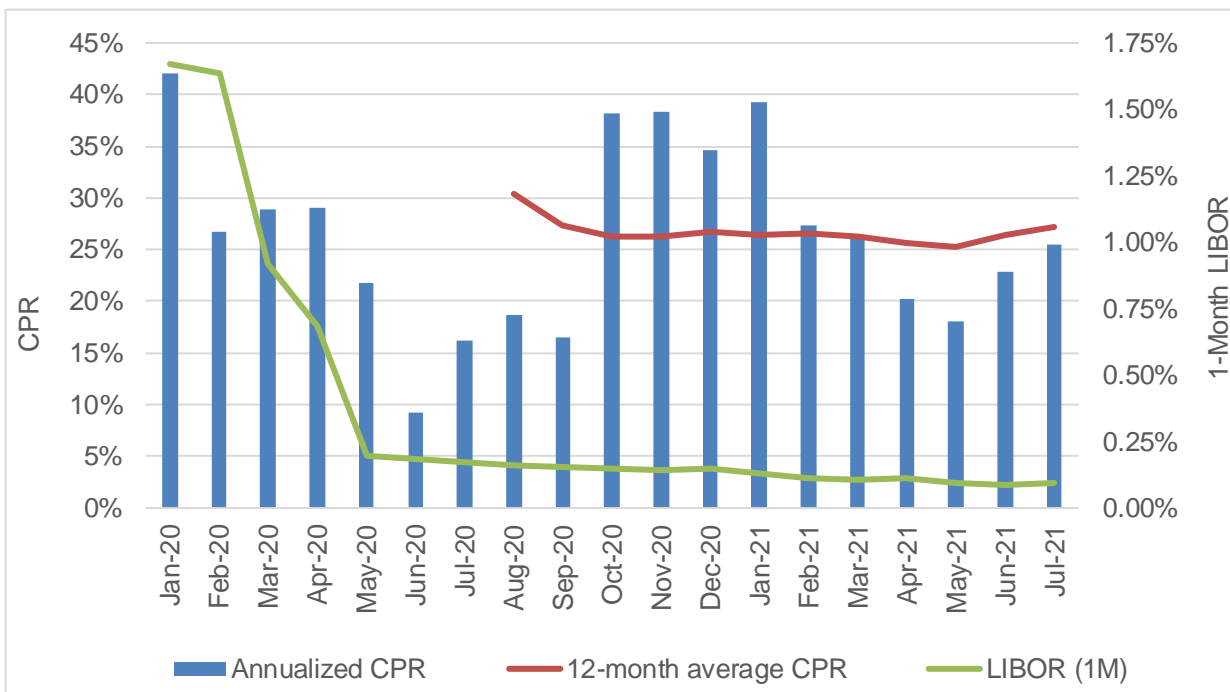
Source: Freddie Mac

Prepayment Speeds by Loan Characteristics

In our prepayment speed analysis, we isolate the population that is contractually permitted to prepay by removing any loans still in the lockout period from the analysis. Due to the seasoning of loans, the population changes monthly as they move out of their lockout period into the ability to prepay with penalties. Therefore, we are calculating the prepayment rate based on a 12-month simple average unless otherwise stated.

As of July 2021, approximately 2,546 floating-rate loans remain active, representing nearly \$62 billion in outstanding loan balance. The 12-month average CPR is 27%, compared with 26% in the January 2021 report. Exhibit 3 shows that annualized CPRs were generally between 20% to 30% in early 2020, but then fell to between 9% and 20% from May through August of 2020, before rebounding to above 30% in late 2020. 1-month LIBOR during 2020 fell from 1.64% in January to 0.13% in December. The 12-month rolling average CPR has declined slightly from 30% in July 2020 to 27% as of July 2021, while monthly CPRs fluctuated from 16% to 39% over the same period. Generally, over the past 12 months, the interest rate has fallen and since January 2021, CPRs fell first but the trend reversed in the summer.

Exhibit 3: Annualized and 12-Month Average CPR and 1-Month LIBOR



Sources: Moody's Analytics, Freddie Mac

Due to the variety of prepayment premium options, we classify each loan into one of three prepayment premium phases: less than 1% (which includes the open phase), equal to 1% and greater than 1%. Exhibit 4 below uses these classifications to show the percentage of outstanding loan balance over the 12-month period used in this report (August 2020 to July 2021). Consistent with the breakout of prepayment options in Exhibit 1, an overwhelming percentage of loans are in the 1% prepayment premium phase, with a small share in the <1% and >1% phases.

A vast majority of outstanding loans post-lockout are in the 1% prepayment premium phase.

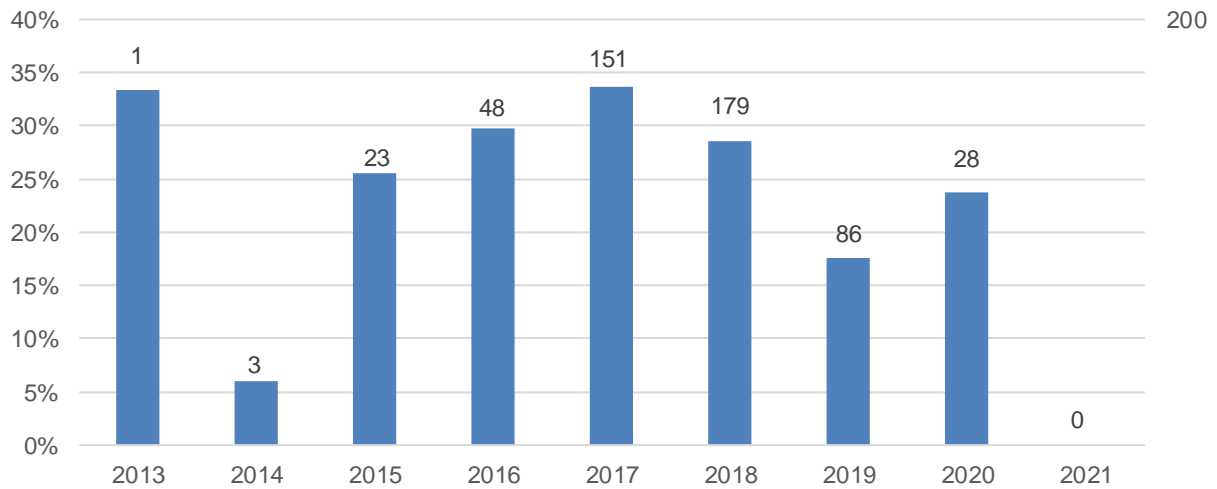
Exhibit 4: Percentage of Outstanding Balance by Prepayment Penalty Phase

Prepayment Penalty Phase	As of August 2020	As of July 2021
<1% Prepayment Penalty Phase	2.6%	2.9%
=1% Prepayment Penalty Phase	92.7%	91.9%
>1% Prepayment Penalty Phase	4.6%	5.2%

Source: Freddie Mac

Over the past 12 months, the highest CPR by vintage are those loans originated in 2017 at 34% and 65% of loans that prepaid in the past year are from loans originated in 2017 and 2018. These loans also represent the bulk of loans eligible for prepayment. The lower CPRs and prepay counts for the 2020 and 2021 vintages are attributable to the lack of seasoning in those pools.

Exhibit 5: CPR and Loans Prepaid by Origination Vintage in the Past 12 Months

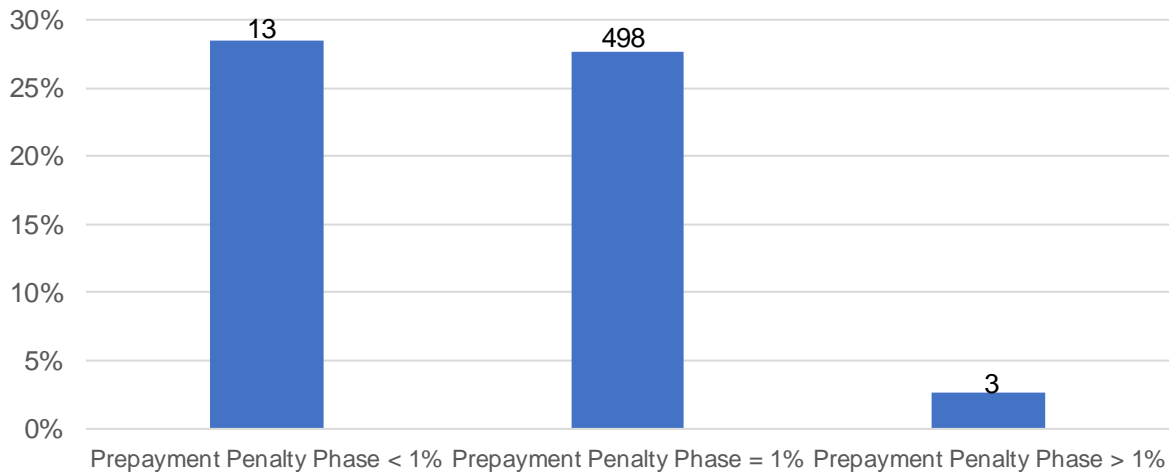


The most prepayments occurred in 2017 and 2018 vintage loans.

Source: Freddie Mac

Prepayment rates are the highest among loans that have a less than 1% prepayment premium, at 29% CPR. However, this represents the smallest population of floating-rate loans. Loans with a 1% prepayment premium saw a 28% CPR, nearly equal to the CPR of loans with a premium of less than 1%. By comparison, the CPR of loans with higher prepayment penalties is 3%.

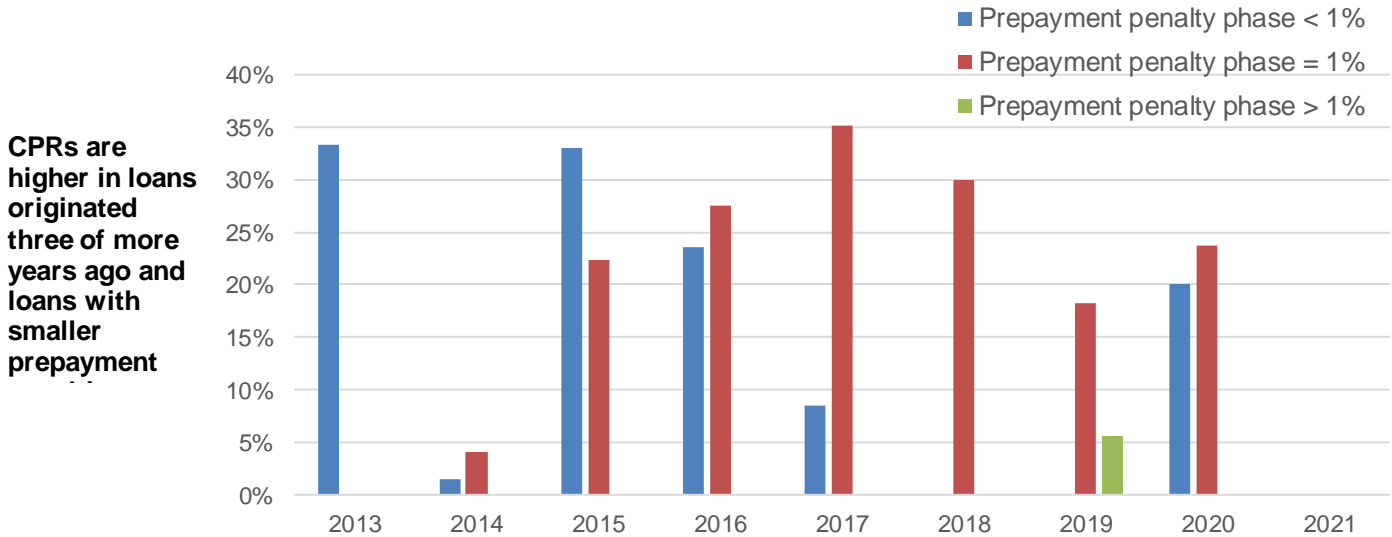
Exhibit 6: CPR and Loans Prepaid by Prepayment Penalty Phase in the Past 12 Months



Source: Freddie Mac

Across vintage and prepay premium phase, there is significant variation in prepays, as shown in Exhibit 7. Loans with prepayment penalties of 1% or less and more seasoned loans generally have the highest prepayment rates, while loans with prepayment penalties of more than 1% were minimal. There were seven loans from the 2020 cohort having a 0.5% prepayment penalty after a five-month lockout period. One loan in K-F86 was prepaid immediately after its lockout period.

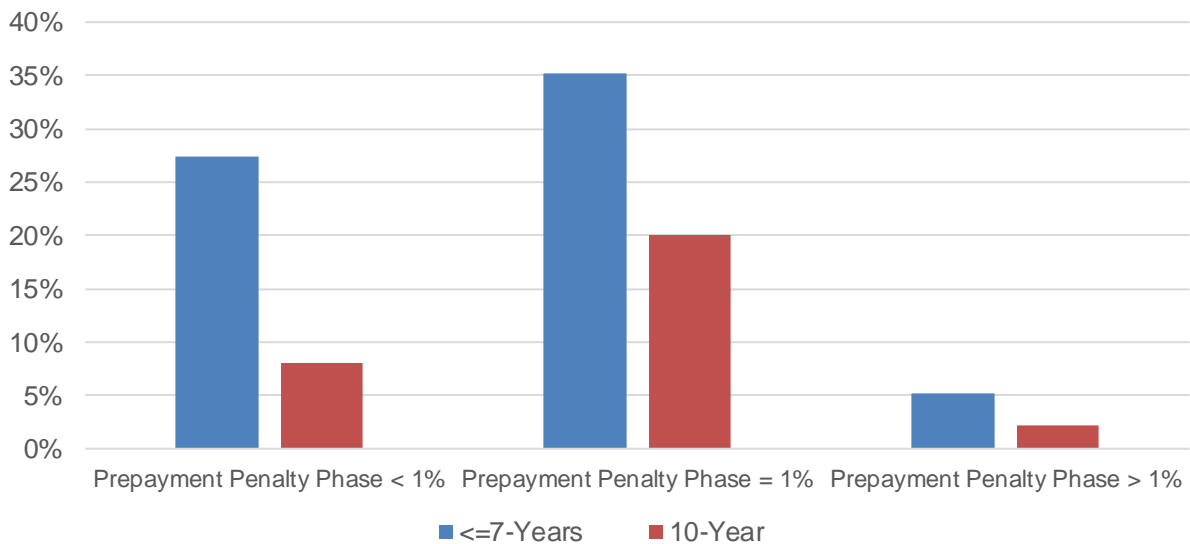
Exhibit 7: CPR by Vintage and Prepayment Penalty Phase in the Past 12 Months



Source: Freddie Mac

Seeing that approximately 98% of floating-rate loans are either 7- or 10-year terms, we grouped any loans that are seven years or less into one category when analyzing prepay speeds by loan term. Exhibit 8 shows the CPR by origination term and prepayment premium phase. Across all three prepayment penalties, 7-year or shorter loans have a higher CPR than their 10-year counterparts.

Exhibit 8: CPR by Prepayment Penalty Phase and Original Term in the Past 12 Months



Source: Freddie Mac

As shown in Exhibit 9, CPRs vary greatly by deal and are heavily dependent on when loans leave the lockout period and enter a prepayment premium phase. In the deal-level analysis, the CPRs are calculated using a weighted average of the number of loans in a post-lockout period in each month to the sum of loans in a post-lockout period over the 12-month reporting period. For example, K-F50 had 43 post-lockout loans as of November 2019, representing 16% of the total post-lockout loans in the 12-month reporting period. As of November 2020, only 20 loans were in a post-lockout period, representing 6% of the loans in a post-lockout period. This provides a comparison of CPRs among K-Deals, which shows that prepayment is dependent on loans exiting their lockout period. While the results vary, we typically see higher CPRs in the middle vintage K-F deals while older K-F deals either have no (or very few) loans remaining in the pools, and with below-average CPRs.

Exhibit 9: CPR by K-F Deal in the Past 12 Months

Deal	CPR	Active Loans as of July 2021	Original Loan Count	Deal	CPR	Active Loans as of July 2021	Original Loan Count
KF01	0%	0	80	KF59	11%	34	40
KF02	0%	0	87	KF60	17%	35	45
KF03	33%	0	85	KF61	7%	28	33
KF04	10%	0	79	KF62	17%	29	37
KF05	4%	2	88	KF63	6%	33	36
KF06	0%	6	66	KF64	32%	14	26
KF07	6%	6	40	KF65	1%	25	26
KF08	13%	6	73	KF66	5%	28	30
KF09	14%	2	80	KF67	7%	19	21
KF10	23%	3	76	KF68	16%	23	29
KF12	11%	2	79	KF69	15%	26	33
KF13	0%	4	48	KF70	19%	25	32
KF14	21%	8	83	KF71	16%	27	34
KF15	16%	10	67	KF72	14%	19	27
KF16	29%	3	69	KF73	5%	36	38
KF17	8%	4	56	KF74	31%	14	19
KF18	0%	2	41	KF75	1%	31	32
KF19	13%	9	66	KF76	1%	38	39
KF20	2%	3	48	KF77	14%	20	24
KF21	0%	37	83	KF78	0%	33	33
KF22	33%	5	58	KF79	3%	36	37
KF23	9%	5	49	KF80	3%	39	41
KF24	16%	12	50	KF81	9%	38	42
KF25	26%	11	70	KF82	6%	26	28
KF26	16%	7	21	KF83	0%	35	35
KF27	15%	11	55	KF84	20%	33	36
KF28	6%	3	61	KF85	16%	37	40
KF29	30%	10	54	KF86	38%	23	33
KF30	27%	8	56	KF87	0%	49	49

Loans with lower prepayment penalties have higher CPRs, along with loans of seven years or less.

KF31	32%	5	45	KF88	20%	22	23
KF32	30%	9	58	KF89	14%	34	35
KF33	5%	11	58	KF90	0%	37	37
KF34	17%	15	48	KF91	0%	41	41
KF35	24%	10	54	KF92	0%	45	45
KF36	22%	20	50	KF93	12%	42	43
KF37	40%	10	41	KF94	0%	45	45
KF38	17%	15	49	KF95	0%	38	38
KF39	9%	15	42	KF96	0%	49	49
KF40	29%	11	46	KF97	0%	37	37
KF41	16%	7	23	KF98	0%	31	31
KF42	29%	14	58	KF99	0%	28	28
KF43	17%	13	42	KF100	0%	41	41
KF44	39%	24	74	KF101	0%	33	33
KF45	26%	21	65	KF102	0%	36	36
KF46	15%	23	51	KF103	0%	31	31
KF47	23%	16	55	KF104	0%	26	26
KF48	16%	21	43	KF105	0%	29	29
KF49	30%	19	55	KF106	0%	30	30
KF50	15%	22	49	KF107	0%	30	30
KF51	21%	16	42	KF108	0%	37	37
KF52	28%	17	36	KF109	0%	40	40
KF53	26%	23	47	KF11	0%	0	78
KF54	22%	28	41	KF110	0%	42	42
KF55	23%	26	40	KF111	0%	43	43
KF56	9%	17	21	KF112	0%	38	38
KF57	15%	31	42	KF113	0%	39	39
KF58	21%	23	41	KF114	0%	44	44

Source: Freddie Mac

Summary

Starting at the beginning of 2021, the monthly prepayment rate decreased despite the low interest rates and post-COVID-19 recovery optimism in the market. The overall 12-month CPR is only slightly higher than what we reported in January 2020. The analysis indicated that seasoning and lower prepayment penalties increase the likelihood that loans will prepay. Many factors influence a borrower's decision to originate a floating-rate versus a fixed-rate loan. As loans season and leave their lockout periods, we expect loans to prepay more quickly and the CPRs to increase.