Floating-Rate Loan Prepayments

As of November 2020

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 November 2020.
- The 12-month average constant prepayment rate (CPR) is 26% as of November 2020, with over 93% of current loans in the 1% prepayment premium phase.
- Floating-rate loans offer borrowers more prepayment flexibility with more than 80% choosing a one-year lockout option followed by 1% prepayment premium.
- Prepayment speeds are computed based on loans that are eligible to prepay during the reporting period (12 months ending November 2020) 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 aggregate and by product type, vintage, prepayment type, prepayment phase and K-F deal.
- Prepayments are generally highest when prepayment premiums are lowest and among more seasoned loans.
- Despite extremely low interest rates, there was a sharp decline in prepayments from April to September, which may be due to slowing market activity due to COVID-19.

The first Freddie Mac floating-rate K-Deal®, K-F01, was priced in October of 2012. This 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-years. Through November 2020, Freddie Mac has funded and securitized over 4,450 floating-rate loans totaling over $100 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 are now indexed to SOFR. Legacy floating-rate LIBOR-indexed bonds will be transitioned to SOFR over the next 24 months. 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 premiums where each year the prepayment premium decreases (typically starting at 3% for the first year, 2% the second year and 1% in the third year through maturity). Exhibit 1 shows the percentage of floating-rate business by term and prepay option going back to 2012.

While there are a number of loan product options, we find that roughly 83% of our originations choose a 1-year lockout followed by a 1% prepayment premium, an increase of 4% from last year's report. Roughly 6% have a 2-year lockout period followed by a 1% prepayment premium. The stepdown structure 3%-2%-1% is next most common at 4% of origination business. The remaining 7% of business has varying lockout periods followed by prepayment premiums, stepdown structures or a combination of the two.

The majority of our floating-rate loans are 7-year terms at 55%, with the second most common loan being a 10-year term at 43%. Since our 2019 report, 10-year loans have gained favorability at the expense of 7-year loans. 10-year loans increased 6% while 7-year loans have become less prevalent, declining 6% year over year. Only 2% of these loans are 5-year terms, the same level as last year.

Exhibit 1: Available Prepayment Options for Floating-Rate Loans

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

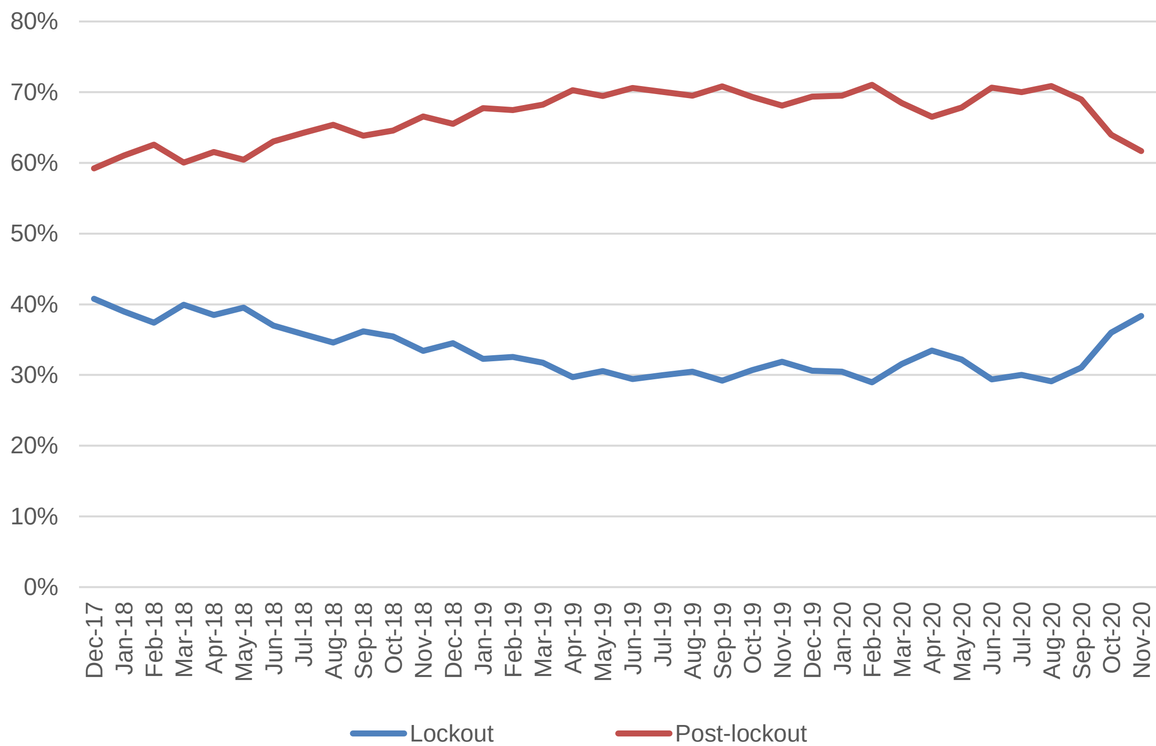
	Prepay Option % by Loan-Term			Total % Business			Total % Business
Option	**5-year**	**7-year**	**10-year**	**5-year**	**7-year**	**10-year**	
1-year lockout, then 1%	71%	83%	83%	1%	46%	36%	83%
2-year lockout, then 1%	2%	6%	6%	0%	3%	3%	6%
3% – 2% – 1%	27%	4%	2%	0%	2%	1%	4%
All others*	N/A	7%	8%	0%	4%	4%	7%
Total % Business				2%	55%	43%	100%

Source: Freddie Mac. Note: All others include a combination of lockout and step-down. Percentages represent original UPB balance for deals K-F01 through K-F92.

From the end of 2017 through third quarter 2020, as our floating-rate loans seasoned and exited their lockout period, an increasing percentage of loans entered their post-lockout phase. The beginning of 2018 saw roughly 40% of UPB in the lockout period and 60% able to prepay with a premium. The proportion of UPB in the lockout period steadily increased through August of 2020, hitting 71%. Since then the trend has reversed, and as of November 2020, 62% of UPB post-lockout became similar to the levels seen in early 2018.

After increasing the past two years the percentage of loans post-lockout fell sharply and nearly equals the year-end 2017 level.

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



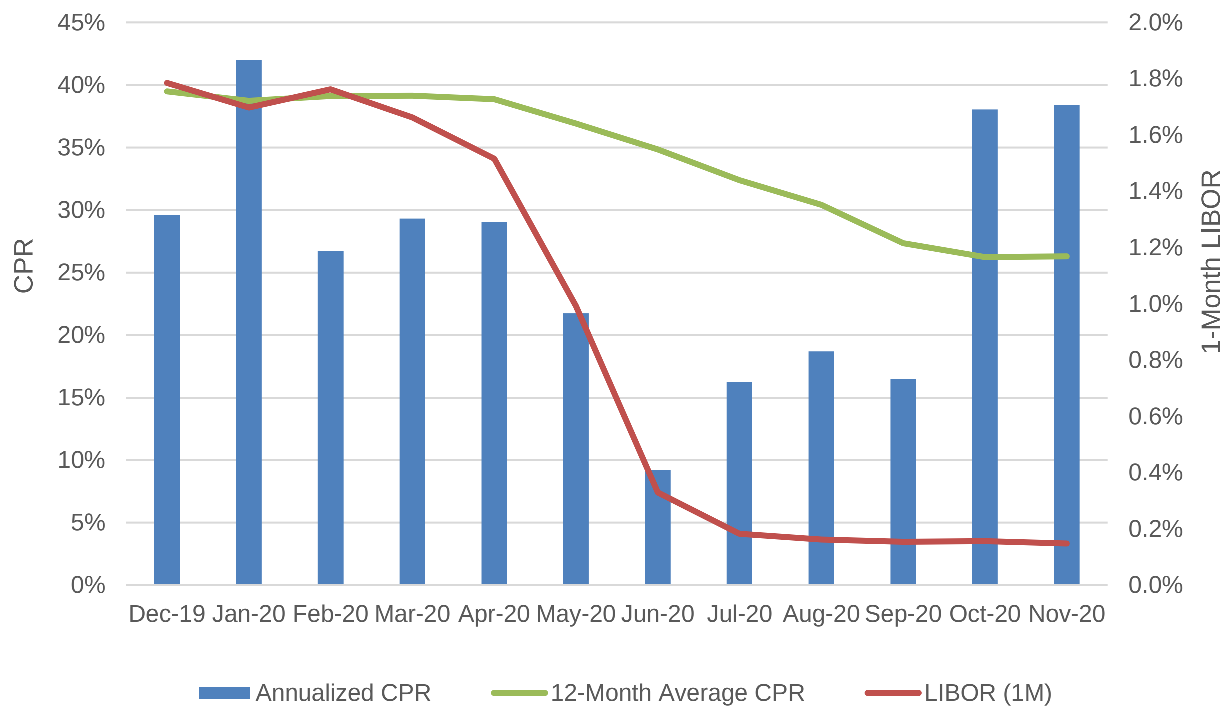
Source: Freddie Mac

Prepayment Speeds by Loan Characteristics

In this analysis, we isolate the population that is contractually allowed 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 premiums. Therefore, we are calculating the prepayment rate based on a 12-month, simple average unless otherwise stated.

As of November 2020, roughly 2,010 floating-rate loans remain active, representing nearly $52 billion in outstanding loan balance. The 12-month average CPR for these loans is 26%. Exhibit 3 shows that the 12-month rolling average has declined significantly from nearly 40%, while monthly CPRs fluctuated from 9% to 53%. For most of 2020, as the 1-month LIBOR rate has fallen, CPRs have fallen as well. Particularly, prepayments declined sharply starting in April and lasted throughout the summer. Given there were not significant changes within our multifamily portfolio, we believe that the lower market activity due to the COVID-19 pandemic may be the major driver. It is worth noting that in October and November of 2020, the 1-month LIBOR rate was at or near historic lows. Long-term market confidence was recovering, and these factors helped the CPR bounce back to 38%.

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



Source: Freddie Mac

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

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 (December 2019 to November 2020). 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.

Exhibit 4: Percentage of Outstanding Balance by Prepayment Premium Phase

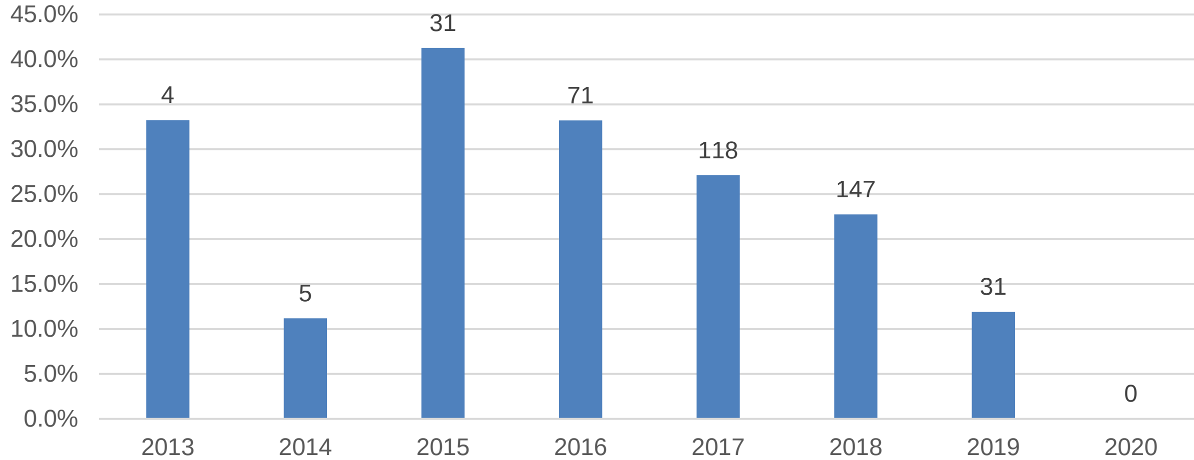
Prepayment Premium Phase	As of December 2019	As of November 2020
<1% Prepayment Premium Phase	3.9%	2.5%
=1% Prepayment Premium Phase	90.5%	93.5%
>1% Prepayment Premium Phase	5.6%	3.9%

Source: Freddie Mac

Below we analyze the prepayment rates for a variety of loan characteristics. Over the past 12 months, the highest CPRs are in the 2015 vintage at 41%, and the 2013 and 2016 vintages at 33%. Despite lower CPRs, 65% of loans that prepaid in 2020 are from loans that originated in 2017 and 2018, and these loans represent the bulk of loans eligible for prepayment. The lower CPRs and prepay counts for the 2019 and 2020 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 & 2018 vintage loans, despite lower CPRs.

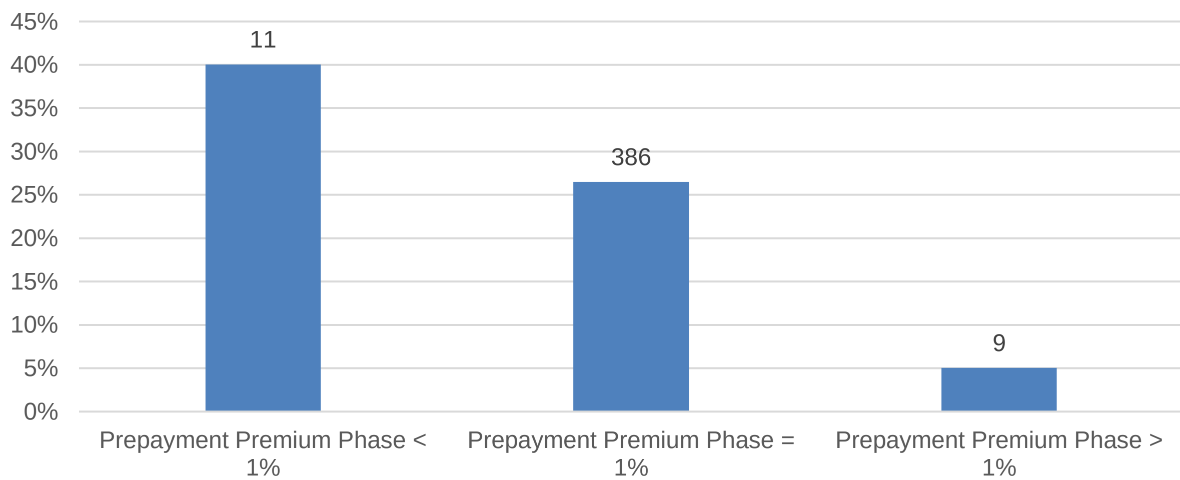


Source: Freddie Mac

Prepayment rates are the highest among loans that have the less-than-1% prepayment premium, at 40% CPR. However, this represents the smallest population of floating-rate loans. Loans with a 1% prepayment premium saw a 27% CPR. By comparison, the CPR of loans with higher prepayment premiums is much less at 5%.

CPRs are higher in loans originated three or more years ago and loans with smaller prepayment premiums.

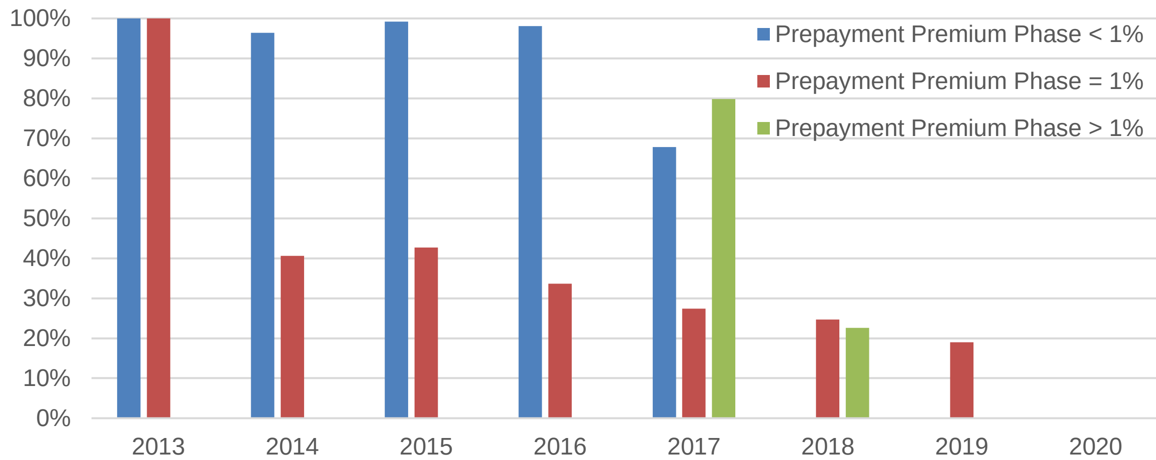
Exhibit 6: CPR and Loans Prepaid by Prepayment Premium Phase in the Past 12 Months



Source: Freddie Mac

Across vintages and prepay premium phases, there is significant variation in prepays, as is shown in Exhibit 7. Loans with prepay premiums of less than 1% and older vintage loans have the highest prepayment rates. CPRs for loans with a greater-than-1% premium were also quite high for loans originated in 2016 and 2017 at 80% and 23% respectively, but no other vintages with premiums of more than 1% prepaid during the year.

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

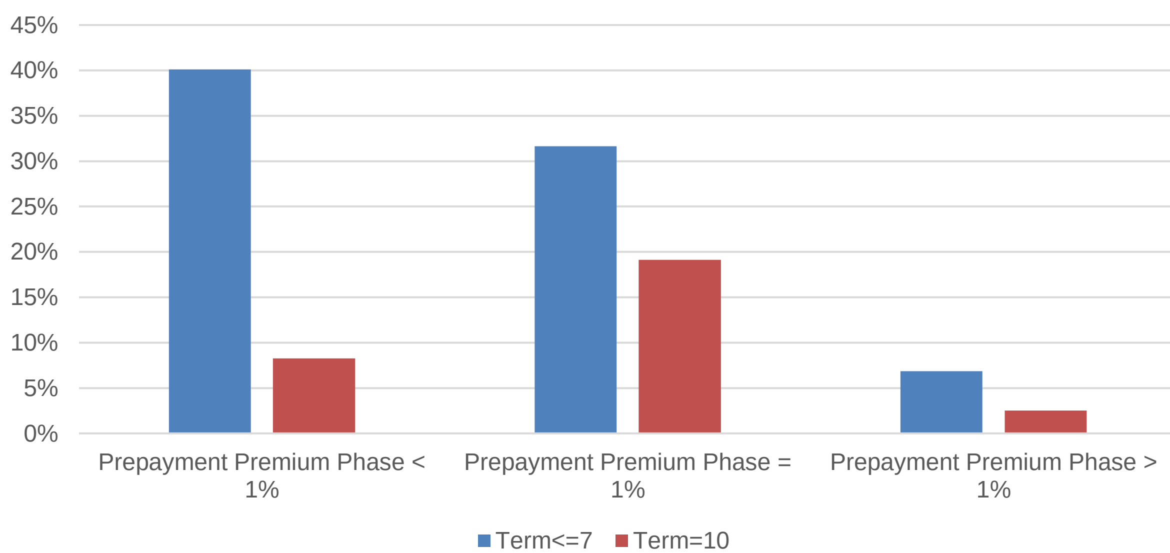


Source: Freddie Mac

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

Seeing that roughly 98% of floating-rate loans are either 7- or 10-year terms, we grouped any loans that are 7-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 premiums, 7-year or shorter loans have a higher CPR than their 10-year counterparts.

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



Source: Freddie Mac

As seen in Exhibit 9 on the following page, 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 post-lockout in each month to the sum of loans post-lockout 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

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reporting period. As of November 2020, only 20 loans were post-lockout, representing 6% of the post-lockout loans. This provides a way to compare CPR speeds among K-Deals® seeing that the 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 loans left or very few, with below average CPRs.

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

Deal Name	12M CPR	Active Loans as of Nov. 2020	Original Loan Count	Deal Name	12M CPR	Active Loans as of Nov. 2020	Original Loan Count
K-F01	0%	0	80	K-F47	22%	33	55
K-F02	6%	0	87	K-F48	12%	26	63
K-F03	16%	0	85	K-F49	17%	24	55
K-F04	17%	1	79	K-F50	21%	25	49
K-F05	15%	3	88	K-F51	40%	18	42
K-F06	0%	6	66	K-F52	12%	23	56
K-F07	10%	6	40	K-F53	22%	31	47
K-F08	14%	7	73	K-F54	4%	36	41
K-F09	14%	4	80	K-F55	22%	31	40
K-F10	8%	5	78	K-F56	6%	18	21
K-F11	36%	0	78	K-F57	4%	37	42
K-F12	20%	3	79	K-F58	20%	29	41
K-F13	15%	4	48	K-F59	5%	38	40
K-F14	20%	15	83	K-F60	4%	42	45
K-F15	7%	15	67	K-F61	10%	29	33
K-F16	17%	7	69	K-F62	15%	32	37
K-F17	20%	5	56	K-F63	7%	34	36
K-F18	0%	2	41	K-F64	26%	19	26
K-F19	26%	12	66	K-F65	0%	26	26
K-F20	18%	4	48	K-F66	0%	30	30
K-F21	9%	37	83	K-F67	0%	21	21
K-F22	24%	11	58	K-F68	8%	27	29
K-F23	25%	7	49	K-F69	11%	31	33
K-F24	6%	14	50	K-F70	26%	30	32
K-F25	18%	18	70	K-F71	15%	33	34
K-F26	0%	9	21	K-F72	26%	23	27
K-F27	23%	16	55	K-F73	0%	38	38
K-F28	27%	4	61	K-F74	38%	18	19
K-F29	21%	20	54	K-F75	0%	32	32
K-F30	47%	9	56	K-F76	0%	39	39
K-F31	28%	9	45	K-F77	0%	23	24
K-F32	31%	12	58	K-F78	0%	33	33
K-F33	15%	12	58	K-F79	0%	37	37
K-F34	15%	17	48	K-F80	0%	41	41
K-F35	30%	14	54	K-F81	0%	42	42
K-F36	22%	23	50	K-F82	0%	28	28
K-F37	8%	20	41	K-F83	0%	35	35
K-F38	8%	23	49	K-F84	0%	36	36
K-F39	12%	17	42	K-F85	0%	40	40
K-F40	16%	19	46	K-F86	0%	33	33
K-F41	13%	9	23	K-F87	0%	49	49
K-F42	25%	26	58	K-F88	0%	23	23
K-F43	19%	17	42	K-F89	0%	35	35
K-F44	33%	35	74	K-F90	0%	37	37
K-F45	22%	34	65	K-F91	0%	41	41
K-F46	16%	28	51	K-F92	0%	45	45

Source: Freddie Mac

Summary

Based on our analysis, we found that lower prepayment premiums and more seasoning increase the likelihood that loans prepay. Many factors influence a borrower's decision to originate a floating-rate versus a fixed-rate loan. These decisions could impact our prepayment premiums as loans enter prepay phases at different rates based on the flow of our floating-rate business. As loans season and leave their lockout periods, we expect loans to prepay more quickly and the CPRs to increase.