Floating-Rate Loan Prepayments

As of December 2021

Research

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- This report presents a summary of Freddie Mac Multifamily floating-rate loan voluntary prepayment activity over the past 12 months (from January 2021 through December 2021).
- The 12-month average constant prepayment rate (CPR) is 33% as of December 2021 – an increase of 6 percentage points from July 2021. Similar to July, 92% of current loans are in the 1% prepayment premium phase.
- The prepayment speed increased partially due to declining interest rates and the overall economic recovery from the pandemic.
- 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 (January 2021 through December 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 premiums are lowest and among more seasoned loans.

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 December 2021, Freddie Mac has funded and securitized 5,479 floating-rate loans totaling over $138 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 of 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 premiums 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 the percentage of floating-rate business by term and prepay option going back to 2012 and does not include Value-Add Loans.

Loans that feature a 1-year lockout period followed by a 1% prepayment premium are by far the most popular structure, representing 84% of our floating-rate originations, 1% higher than the July 2021 rate. Approximately 6% have a 2-year lockout period followed by a 1% premium, while the 3%-2%-1% step-down prepayment premium structure makes up 3% of origination floating-rate business. The remaining 7% of floating-rate business has varying lockout periods followed by prepayment premium, 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.

Borrowers are now favoring 10-year loan terms, representing 58% (by UPB) of floating-rate business, while 41% are 7-year. Over the past year, 10-year loans have gained favorability compared with 7-year loans. In the July 2021 iteration of this report, the breakout of 7- versus 10-year loans was essentially equal at 50% 7-year loans and 49% 10-year loans. Only 1% of these loans have a 5-year term, which is at the same level as July of 2021.

The floating-rate program offers borrowers prepay optionality.

Exhibit 1: Available Prepayment Options for Floating-Rate Loans

	Prepay Option % by Loan Term			Total % Floating-Rate Business			Total % Floating-Rate Business
Option	**5-year**	**7-year**	**10-year**	**5-year**	**7-year**	**10-year**	
1-year lock out, then 1%	88%	85%	83%	0%	35%	48%	84%
2-year lock out, then 1%	4%	6%	7%	0%	3%	4%	6%
3% – 2% - 1%	4%	2%	2%	0%	1%	1%	3%
All others*	4%	7%	8%	0%	3%	5%	7%
Total % Floating Rate Business				1%	41%	58%	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.

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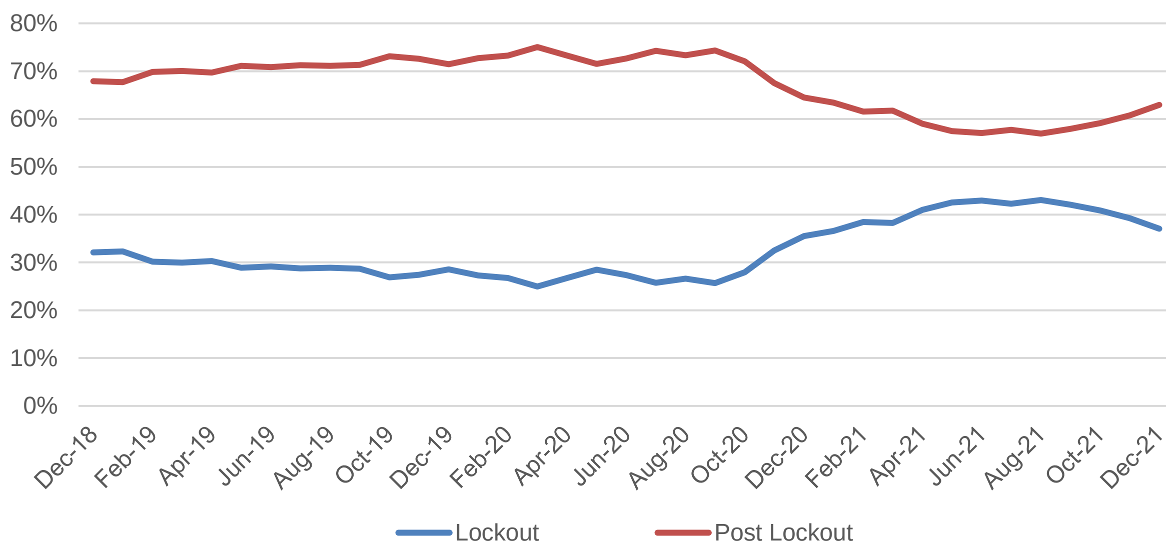
From the end of 2018 compared with the end of 2021, the rate of loans entering their post-lockout period decreased slightly (calculated monthly by the percentage of UPB), implying more loans originated with a lockout period than were seasoning out of their lockout period. The end of 2018 saw approximately 30% of UPB in the lockout period and 70% able to prepay with a premium, including those loans in the par/window period. The proportion of UPB prepayable with a premium increased through August of 2020 to 74%. Since then, the trend has reversed and, as of December 2021, 63% of UPB is post-lockout including those loans that never had a lockout period.

Over the past year, the percentage of loans post-lock out decreased slightly but ended the year with little change.

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



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 premiums. Therefore, we are calculating the prepayment rate based on a 12-month simple average unless otherwise stated.

As of December 2021, approximately 2,569 floating-rate loans remain active, representing over $64 billion in outstanding loan balance. The 12-month average CPR is 33%, compared with 27% in the July 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. During 2020, 1-month LIBOR fell from 1.64% in January to 0.11% in December and remained near that level for all of 2021. The 12-month rolling average CPR has increased from 27% in July 2021 to 33% as of December 2021, while monthly CPRs fluctuated from 18% to 53% over the same period. Generally, over 2021, interest rates were extremely low and stable, while CPR rates increased rapidly since July.

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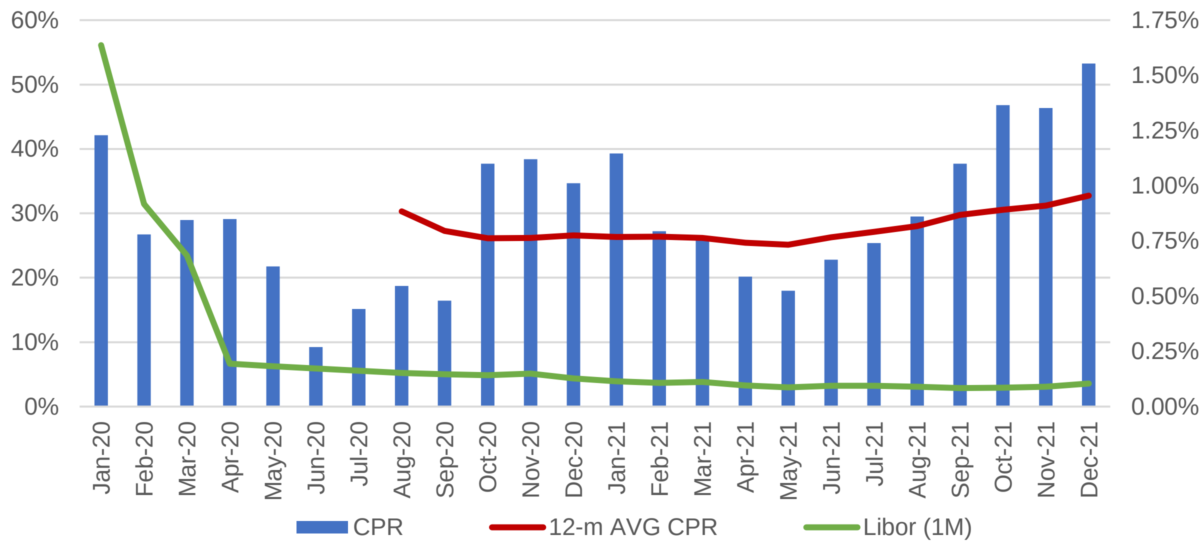
Exhibit 3: Annualized and 12-Month Average CPR and 1-Month LIBOR



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 (January 2021 to December 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 Premium Phase

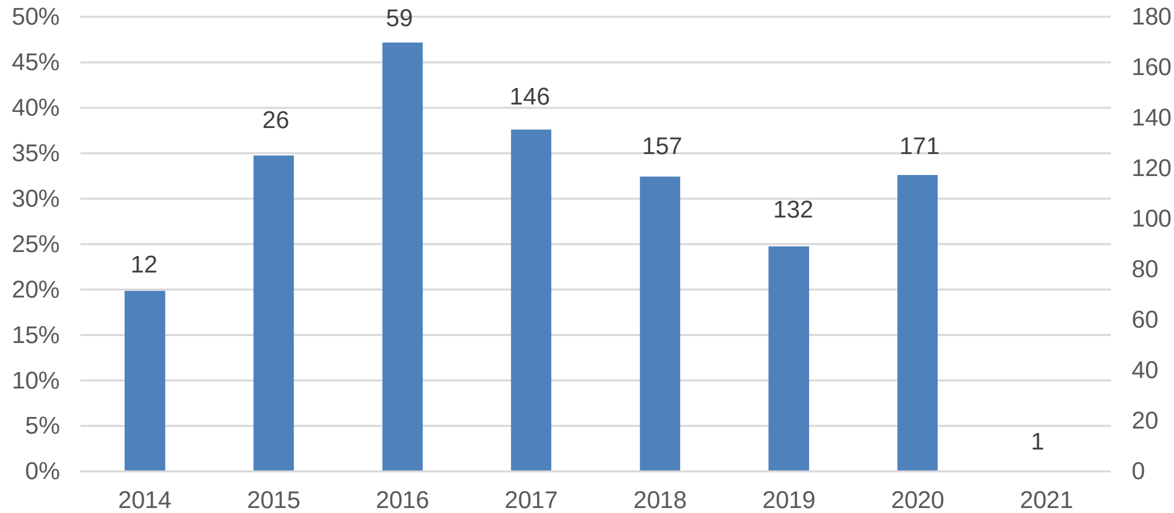
Prepayment Premium Phase	As of December 2020	As of December 2021
<1% Prepayment Premium Phase	2.44%	2.10%
=1% Prepayment Premium Phase	93.54%	92.21%
>1% Prepayment Premium Phase	4.02%	5.69%

Source: Freddie Mac

Over the past 12 months, the highest CPR by vintage are those loans originated in 2016 at 47%, while the highest number of loans that prepaid were originated in 2020.

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

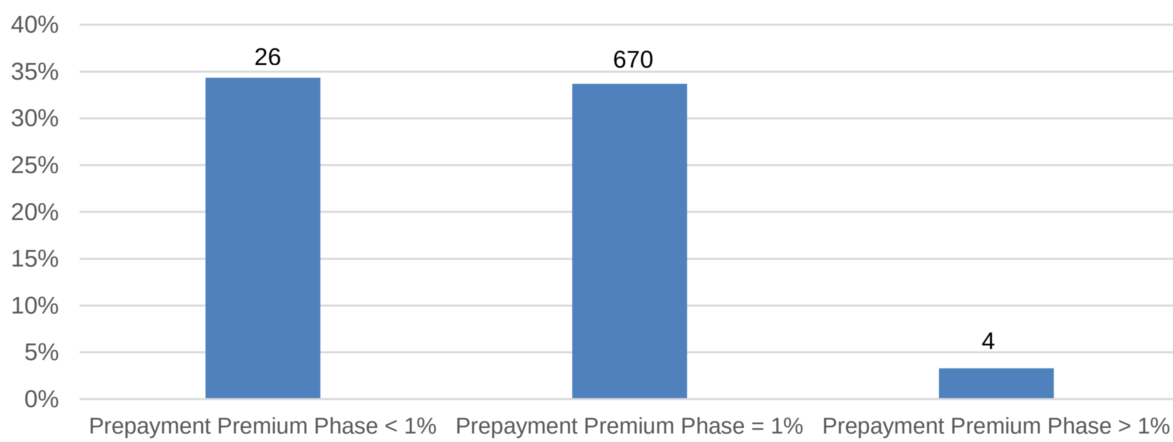
The most prepayments occurred in 2018 and 2020 vintage loans.



Source: Freddie Mac

Prepayment rates are the highest among loans that have a less than 1% prepayment premium and those with a prepayment premium of 1%, both at 34% CPR. By comparison, the CPR of loans with higher prepayment premiums is 3%.

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

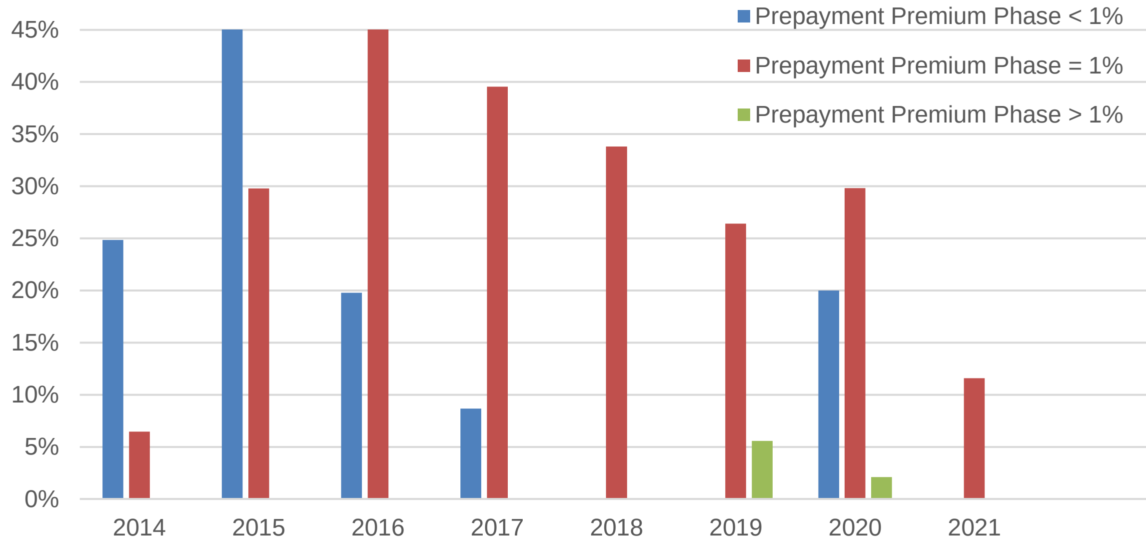


Source: Freddie Mac

Across vintage and prepay premium phase, there is significant variation in prepays, as shown in Exhibit 7. Loans with prepayment premiums of 1% or less and more seasoned loans generally have the highest prepayment rates, while loans with prepayment premiums of more than 1% were minimal.

CPRs are higher in loans originated three of more years ago and loans with lower prepayment premiums.

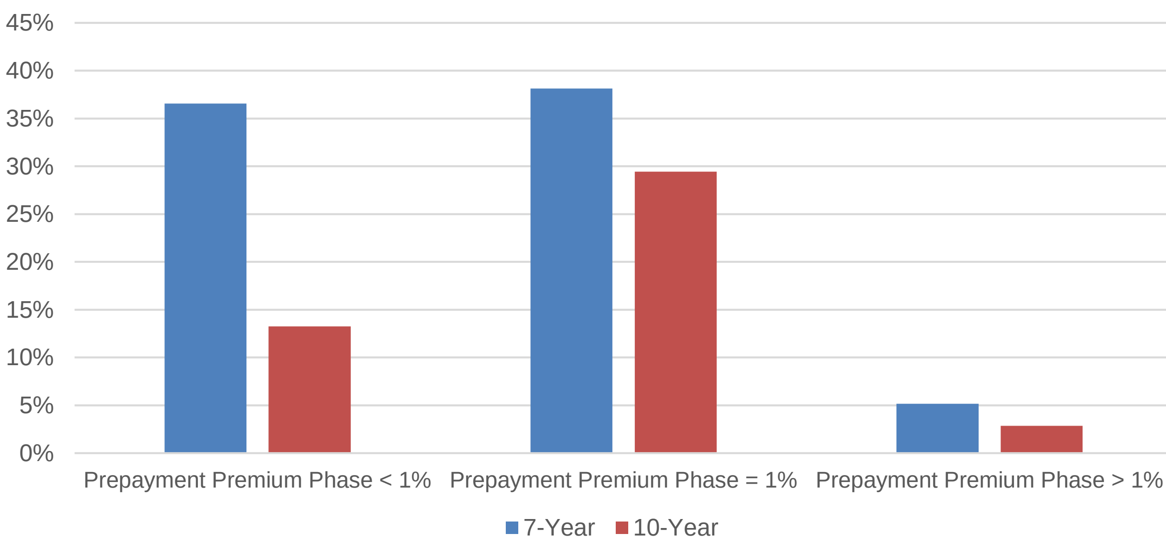
Exhibit 7: CPR by Vintage and Prepayment Premium Phase in the Past 12 Months



Source: Freddie Mac

Since approximately 99% 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 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 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 below-average CPRs.

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

Deal	CPR	Active Loans as of December 2021	Original Loan Count	Deal	CPR	Active Loans as of December 2021	Original Loan Count
KF01	0%	0	2	KF64	31%	8	26
KF02	0%	0	1	KF65	12%	22	26
KF03	0%	0	8	KF66	18%	24	30
KF04	20%	0	3	KF67	19%	16	21
KF05	18%	0	10	KF68	31%	16	29
KF06	10%	0	13	KF69	30%	18	33
KF07	8%	4	15	KF70	27%	17	32
KF08	29%	2	19	KF71	11%	27	34
KF09	16%	1	23	KF72	21%	13	27
KF10	8%	3	23	KF73	10%	33	38
KF11	0%	0	18	KF74	14%	14	19
KF12	11%	1	23	KF75	7%	27	32
KF13	8%	3	26	KF76	1%	38	39
KF14	28%	6	29	KF77	24%	18	24
KF15	36%	6	32	KF78	7%	30	33
KF16	6%	3	24	KF79	8%	34	37
KF17	8%	4	27	KF80	15%	32	41
KF18	0%	2	15	KF81	23%	32	42
KF19	14%	8	32	KF82	14%	21	28
KF20	19%	0	23	KF83	23%	23	35
KF21	0%	37	56	KF84	17%	24	36
KF22	25%	5	33	KF85	37%	18	40
KF23	24%	3	28	KF86	29%	22	33
KF24	22%	9	27	KF87	15%	31	49
KF25	32%	10	44	KF88	28%	16	23
KF26	24%	4	13	KF89	21%	24	35
KF27	34%	6	42	KF90	26%	29	37
KF28	14%	2	39	KF91	10%	37	41
KF29	44%	5	42	KF92	6%	43	45
KF30	16%	6	46	KF93	33%	32	43
KF31	16%	5	29	KF94	19%	40	45

Loans with lower prepayment premiums have higher CPRs, along with shorter term loans.

KF32	20%	8	42	KF95	8%	36	38
KF33	18%	8	43	KF96	22%	39	49
KF34	12%	11	41	KF97	4%	35	37
KF35	10%	9	54	KF98	0%	31	31
KF36	17%	18	48	KF99	20%	27	28
KF37	32%	9	38	KF100	12%	39	41
KF38	39%	9	42	KF101	11%	30	33
KF39	15%	11	40	KF102	13%	33	36
KF40	35%	9	46	KF103	0%	31	31
KF41	14%	6	20	KF104	0%	26	26
KF42	27%	12	58	KF105	0%	29	29
KF43	26%	10	42	KF106	0%	30	30
KF44	38%	20	74	KF107	0%	30	30
KF45	16%	21	63	KF108	0%	37	37
KF46	26%	17	51	KF109	0%	40	40
KF47	19%	14	55	KF110	0%	42	42
KF48	18%	16	43	KF111	0%	43	43
KF49	18%	17	55	KF112	0%	38	38
KF50	31%	15	49	KF113	0%	39	39
KF51	18%	13	42	KF114	0%	44	44
KF52	28%	13	36	KF115	0%	65	65
KF53	28%	17	47	KF116	0%	37	37
KF54	28%	24	41	KF117	0%	61	61
KF55	20%	22	40	KF118	0%	42	42
KF56	9%	15	21	KF119	0%	44	44
KF57	30%	21	42	KF120	0%	46	46
KF58	35%	14	41	KF121	0%	28	28
KF59	9%	30	40	KF122	0%	37	37
KF60	26%	26	45	KF123	0%	32	32
KF61	18%	21	33	KF124	0%	35	35
KF62	35%	19	37	KF125	0%	25	25
KF63	5%	29	36				

Source: Freddie Mac

Summary

During the first half of 2021, the monthly prepayment rate decreased despite the low interest rates and the optimism surrounding the strong post-vaccine economic recovery. However, the second half of the year saw the prepayment speed increase, and the overall 12-month CPR is now 6 percentage points higher than what we reported in July 2021. The analysis indicated that seasoning and lower prepayment premiums increase the likelihood that loans will prepay. As loans season and leave their lockout periods, we expect loans to prepay more quickly and the CPRs to increase. However, rapid rises in interest rates may impact CPR speeds because higher interest rates typically slow down prepayment activity.