

Floating- and Fixed-Rate Loan Prepayments

As of June 2023

Research

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Summary

This report presents a summary of Freddie Mac Multifamily floating-rate and fixed-rate loan voluntary prepayment activity over the 12 months ending June 2023 (July 2022 through June 2023).

Floating-Rate Prepayments Key Takeaways

- The 12-month average constant prepayment rate (CPR) among the floating-rate loans is 29% as of June 2023 — a decrease of 7 percentage points from December 2022. Of the current loans, 96% are in the 1% prepayment premium phase, which is up about 1 percentage point from the December report.
- The prepayment speed decreased due to interest rate increases and declining property values in the latter half of 2022 and into 2023, after extremely low rates and strong property value growth in 2021.
- Floating-rate loans offer borrowers more prepayment flexibility, with 81% of loans with 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 (July 2022 through June 2023) 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 for floating-rate loans in the aggregate and by product type, vintage, prepayment type, prepayment phase and FRE-KF deal.
- Prepayments are generally highest among more seasoned loans, as well as when prepayment premiums are lowest and interest rates are low.

Fixed-Rate Prepayments Key Takeaways

- The June 2023 12-month annual average CPR for fixed-rate loans in their open period loans was 37%. Down considerably from the rate 12 months earlier (as of June 2022) of 67%.
- Nearly all the loans that prepaid were in their open period, with less than 1% of prepaid loans outside of their open period.

The floating-rate program offers borrowers prepay flexibility.

Floating-Rate Prepayment Analysis

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 provides borrowers with more prepayment flexibility than fixed-rate products. Typical loan terms are 5-, 7- and 10-year. Through June 2023, Freddie Mac has funded and securitized 6,694 floating-rate loans totaling nearly \$164 billion of original unpaid principal balance (UPB). This section of the report only pertains to floating rate loans.

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 since then all new floating-rate loans are indexed to 30-day average SOFR. Legacy floating-rate, LIBOR-indexed bonds have been transitioned to an alternative index in connection with the cessation of LIBOR at the end of June 2023. For most floating-rate transactions, we require borrowers obtain a third-party cap to hedge interest rate risk.

Unlike our standard, fixed-rate K-Deal where majority of the loans have a lockout period followed by defeasance, our floating-rate program provides borrowers with more flexible prepayment options. Most 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 through June 2023.

Exhibit 1: Available Prepayment Options for Floating-Rate Loans

Option	Prepay Option % by Loan Term			Total % Floating-Rate Business			Total % Floating-Rate Business
	5-year	7-year	10-year	5-year	7-year	10-year	
1-year lock out, then 1%	79%	82%	80%	0%	27%	53%	81%
2-year lock out, then 1%	7%	8%	10%	0%	3%	7%	9%
3% - 2% - 1%	0%	2%	2%	0%	1%	1%	2%
All others*	14%	8%	8%	0%	3%	5%	8%
Total % Floating-Rate Business				0%	33%	67%	100%

Note: All others include a combination of lockout and stepdown. Percentages represent original UPB balance for deals K-F01 through K-F156 and may not total 100% due to rounding..

Source: Freddie Mac.

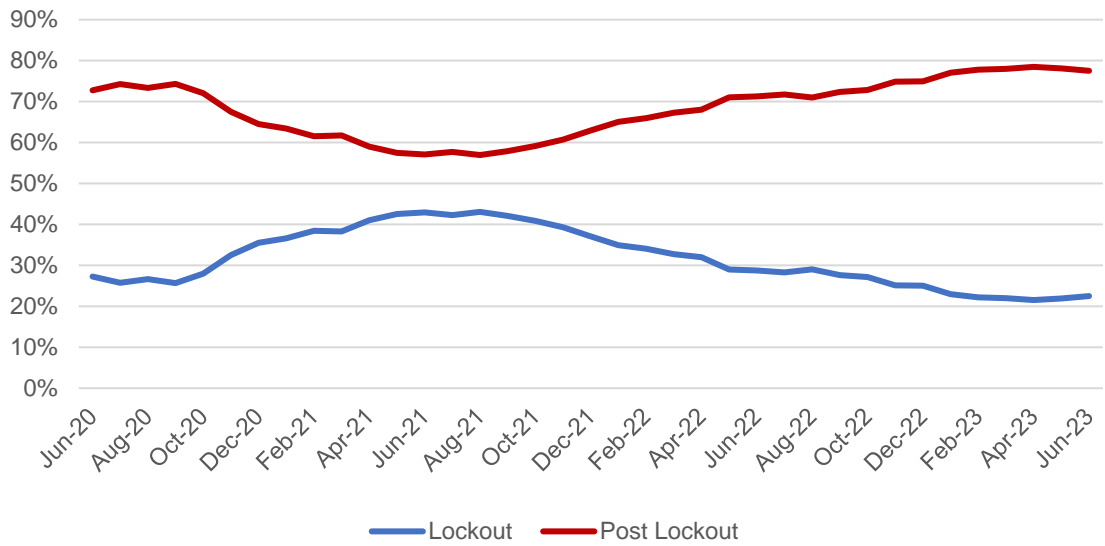
Loans that feature a 1-year lockout period followed by a 1% prepayment premium are by far the most popular structure, representing 81% of our floating-rate originations. Approximately 9% have a 2-year lockout period followed by a 1% premium, while the 3%-2%-1% step-down prepayment premium structure makes up 2% of origination floating-rate business. The remaining 8% of floating-rate business has varying lockout periods followed by prepayment premium, step-down structures or a combination of the two. Nearly all our floating-rate loans are either 7- or 10-year terms, with 5-year terms accounting for less than 1% of business.

Borrowers continue to favor 10-year loan terms, representing 67% (by UPB) of floating-rate business, while 33% are 7-year. Since our last report which analyzed data through December 2022 and was released in June 2023, the breakout has shifted 4 percentage points toward the 10-year term, when 10-year accounted for 63% of UPB and 7-year represented 36%.

The rate of loans (by UPB) entering their post-lockout period (when loans can prepay with a premium) as of June 2023 is 78% which is similar to the rate seen in June 2020 at 73% (calculated monthly by the percentage of UPB). Since June of 2020 through 2021, the percentage of UPB post lockout fell significantly, implying more loans were seasoning out of their lockout period than originated with a lockout period. Since then, the trend has reversed as the percentage of loans post lockout has risen.

Exhibit 2: Percentage of Active Loan UPB in Lockout and Post Lockout

Over the past year, the percentage of loans post lockout increased and is now similar to levels seen in mid-2020.



Source: Freddie Mac

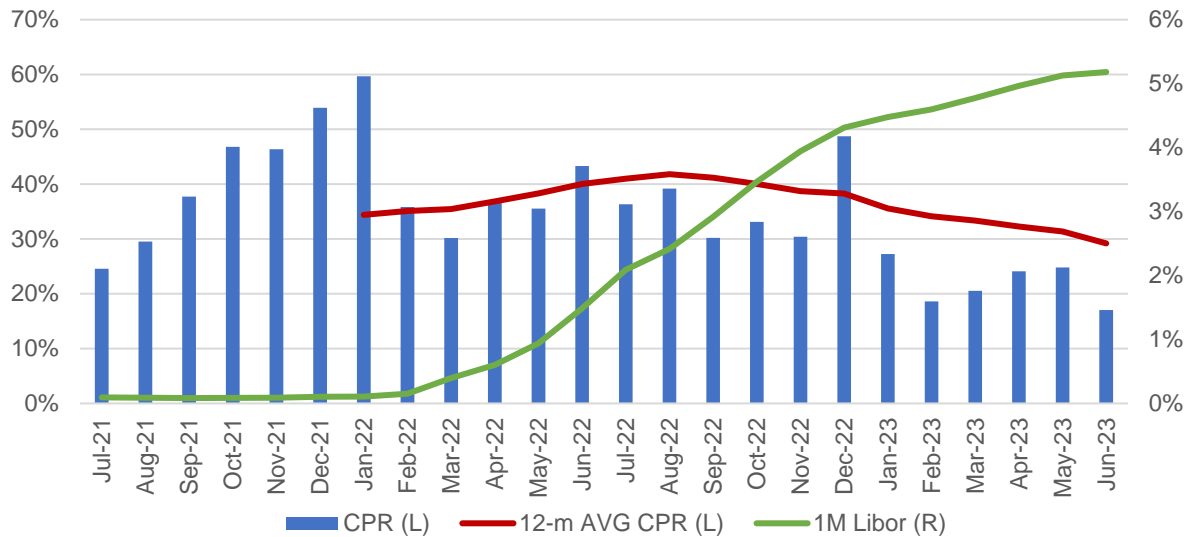
Prepayment Speeds by Loan Characteristics

In our prepayment speed analysis, we isolate the loan 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 June 2023, 2,343 floating-rate loans remain active, representing over \$61 billion in outstanding loan balance. The 12-month average CPR is 29% as of June 2023, compared with 36% in the December 2022 report. Exhibit 3 shows that monthly CPRs were below 30% during July and August of 2021, but then increased markedly through January 2022 when they peaked at 60%. In February of 2022 CPR rates declined considerably and remained fairly consistent between 30-40% during the rest of the year, except for December when the 10-year rate dropped about 25 bps early in the month. Monthly CPR rates continued to decline in 2023 and fell to 17% by June.

Part of the reason for the increase in CPR through 2021 and into the beginning of 2022 is the low 1-month LIBOR rate. During 2020, 1-month LIBOR fell from 1.6% in August to less than 0.2% in December and remained near that level for all of 2021. Rates started to increase in the second half of 2022 and as of June 2023, sit above 5%. As interest rates have increased during 2022 and into 2023, prepayment speed has declined from the elevated levels seen in late 2021 when rates were extremely low.

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 (July 2022 to June 2023). 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 June 2022	As of June 2023
<1% Prepayment Premium Phase	2.0%	1.5%
=1% Prepayment Premium Phase	93.9%	94.7%
>1% Prepayment Premium Phase	4.1%	3.8%

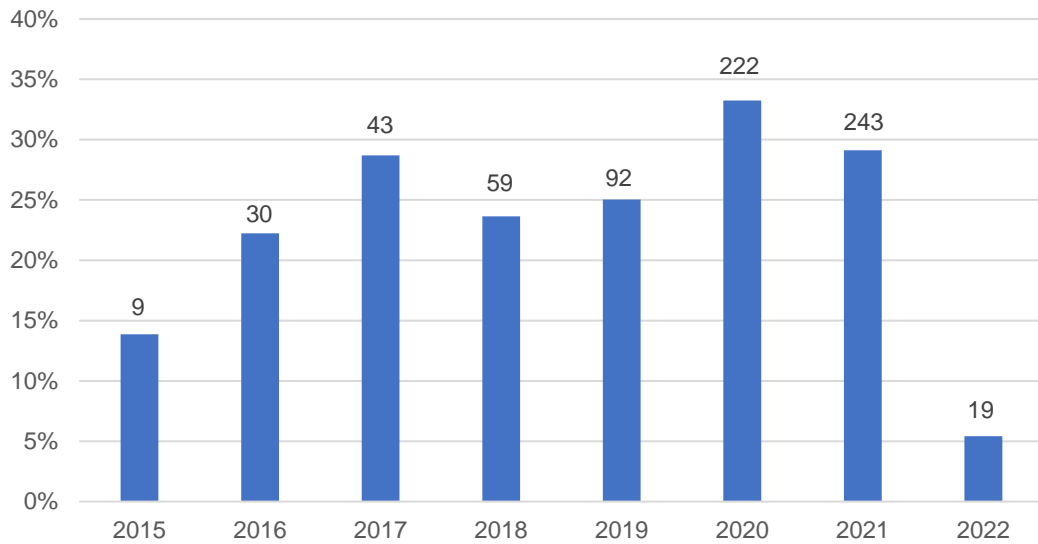
Source: Freddie Mac

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

Over the past 12 months, the highest CPR by vintage are those loans originated in 2020 at 33%, while the highest number of loans that prepaid were originated in 2021. Prepayment speeds across 2016 to 2021 vintages range from 22% to 33%.

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

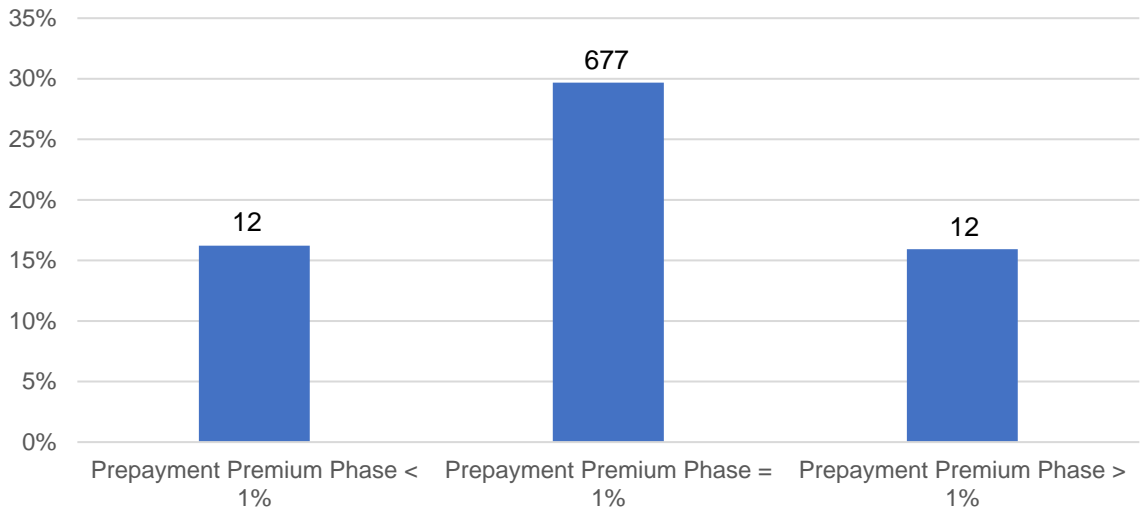
Prepayment speeds from the 2016 vintage to 2021 are between 22% to 33%.



Source: Freddie Mac

Prepayment rates are the highest among loans that have a 1% prepayment premium, at 30%. Loans with a prepayment premium of more than 1%, and those with a prepayment premium of less than 1% both have a CPR of 16%.

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



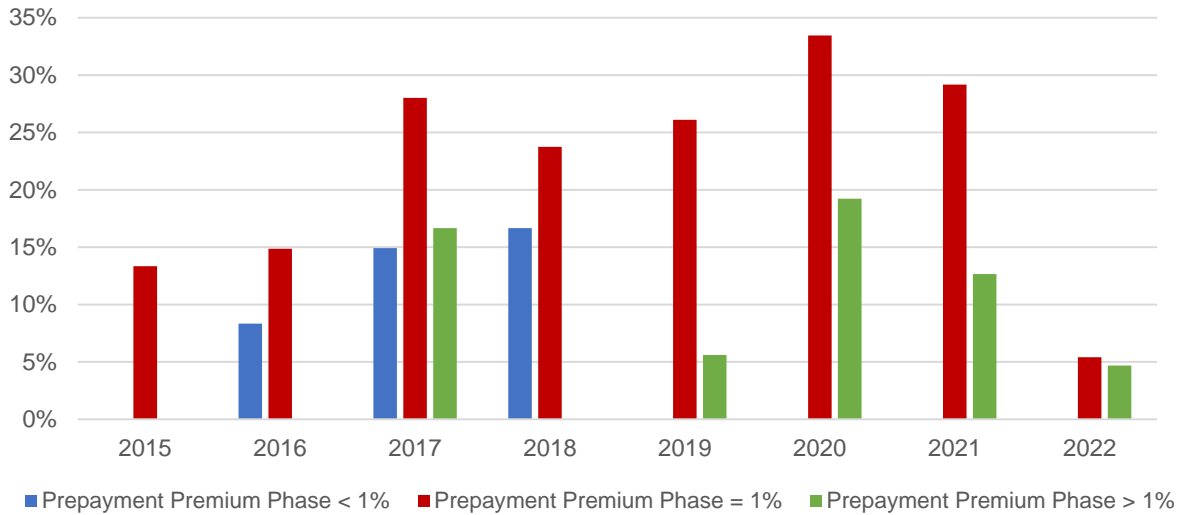
Source: Freddie Mac

Across vintage and prepayment premium phase, there is significant variation in prepayments, as shown in Exhibit 7. Loans with prepayment premiums of 1% generally have the highest prepayment

rates, and older vintage loans with a prepayment premium of less than 1% have higher prepayment rates. Meanwhile, loans with prepayment premiums of more than 1% are prepaying at slightly higher rates compared with our [last report in December](#).

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

CPRs are typically highest among loans in the 1% prepayment premium phase.



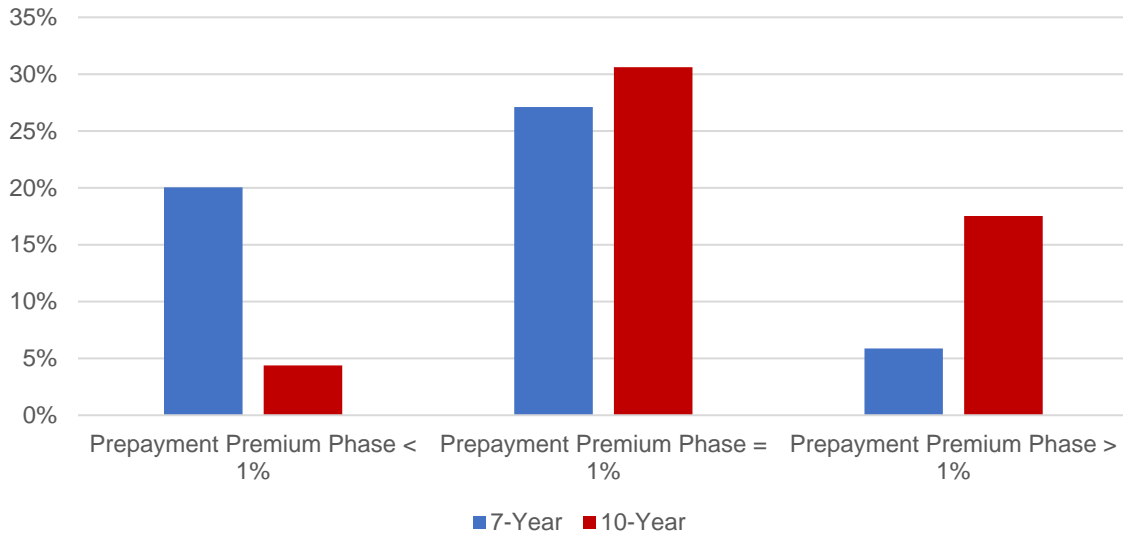
Note: To preserve scale we removed two loans from the chart that originated in 2021 with a prepayment premium of <1% and have since paid off with a CPR of 100%.

Source: Freddie Mac

Since approximately 99% of floating-rate loans are either 7- or 10-year terms, when analyzing prepay speeds by loan term, we grouped loans that are seven years or less into one category and 10 years into another. Exhibit 8 shows the CPR by origination term and prepayment premium phase. Ten-year loans with a prepayment premium of 1% and those with a premium of more than 1% have a higher CPR than their 7-year equivalents. Meanwhile the CPR is higher for 10-year loans with a prepayment premium of 1% or more when compared with 7-years loans with the same prepayment premium.

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

Loans with lower prepayment premiums and shorter loan terms have typically have higher CPRs.



Source: Freddie Mac

CPRs vary greatly by deal and are heavily dependent on when loans leave the lockout period and enter a prepayment premium phase (see Appendix for deal-level CPRs). 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, as of November 2019, K-F50 had 43 post-lockout loans. This represented 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.

Fixed-Rate Prepayment Analysis

This section of the report summarizes the prepayment speed of fixed loans based on three years of data, from July 2020 through June 2023. Loans included were 5-, 7-, 10- and 15-year terms as well as single-borrower deals. Typically, multifamily fixed-rate loans offer two prepayment options: Lockout-defeasance-open structure and yield maintenance-open structure.¹ The vast majority of fixed-rate loans are lockout-defeasance-open, representing 96% of our business while yield maintenance (YM) followed by an open period represents 4%. YM and defeasance significantly reduce the prepayment risk during the prepayment premium phase of the loan. The average CPR for

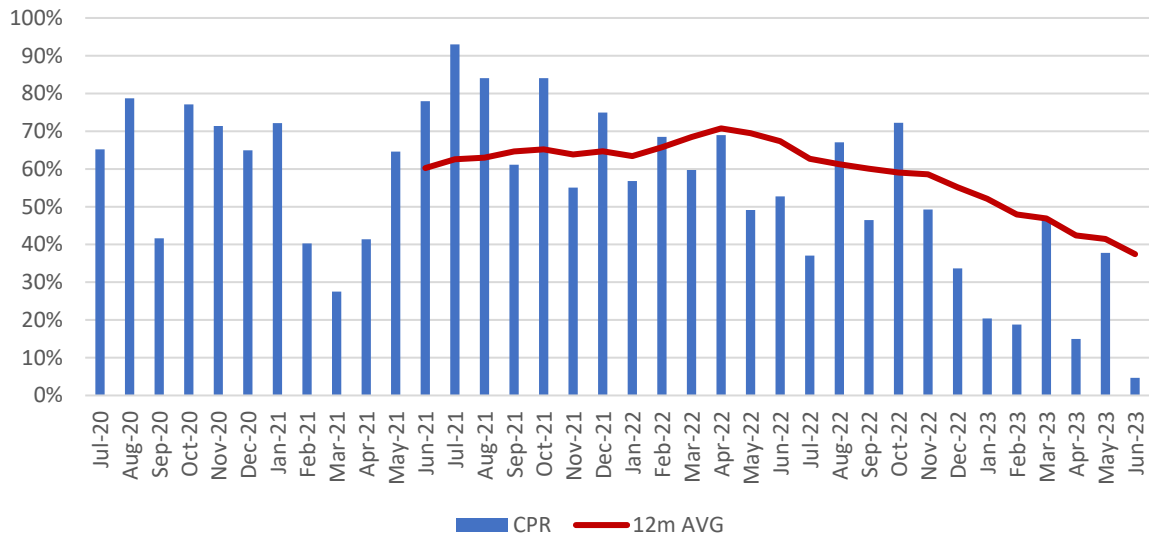
¹ Yield maintenance prepayment usually consists of two portions: (1) The loan’s unpaid principal balance and (2) a prepayment premium. This premium is typically determined by calculating the present value of the remaining loan payments, with a discount factor equal to the current yield on the U.S. Treasury that matures closest to the loan’s maturity date.

For defeasance prepayment, the borrower replaces the real estate securing its loan with a portfolio of securities that will generate the same debt service as the original collateral would over the term of the loan. Defeasance provides prepayment protection similar to yield maintenance for a Multifamily portfolio.

loans in either their defeasance or YM period over the past three years is less than 1%, while the CPR for loans without a prepayment premium is 55%.

Exhibit 9 shows the CPR for those loans in their open period. Over the past three years on a monthly basis, the annualized CPR has varied from about 5% in June 2023 to over 90% in mid-2021 and has been falling as interest rates have been rising. The 12-month average annual CPR as of June 2023 was 37%, down considerably from the 67% rate seen as of June 2022.

Exhibit 9: Fixed-Rate Loans Annualized CPR During Open Period



Summary

Floating-rate prepayment speeds continued to decline in the first half of 2023 as interest rates rose throughout the first half of the year. As of June 2023, the overall 12-month CPR is 7 percentage points lower than the 12-month average as of December 2022 for floating-rate loans, and 14 percentage points lower than a year ago in June 2022. As these loans season and leave their lockout periods, we would typically expect loans to prepay more quickly and the CPRs to increase. However, the rapid rise in interest rates may impact CPR speeds for floating-rate loans because higher interest rates typically slow down prepayment activity. Fixed-rate loan prepayments are minimal until the loans enter their open period, at which point prepayment speeds increase. However, the CPR of fixed-rate loans in their open period has also declined in the past several months due to higher interest rates as well.

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

Deal	CPR	Active Loans as of June 2023	Original Loan Count	Deal	CPR	Active Loans as of June 2023	Original Loan Count
KF02	.	.	1	KF80	33%	15	41
KF03	.	.	2	KF81	31%	12	42
KF04	.	.	2	KF82	12%	15	28
KF05	.	.	3	KF83	30%	12	35
KF06	.	.	6	KF84	21%	11	36
KF07	0%	3	8	KF85	21%	7	40
KF08	.	.	9	KF86	19%	5	33
KF09	.	.	5	KF87	38%	11	49
KF10	.	.	8	KF88	8%	9	23
KF12	0%	1	10	KF89	15%	10	35
KF13	8%	1	4	KF90	15%	14	37
KF14	25%	.	16	KF91	20%	19	41
KF15	100%	.	16	KF92	35%	20	45
KF16	17%	1	11	KF93	21%	17	43
KF17	17%	.	8	KF94	33%	22	45
KF18	8%	1	2	KF95	25%	21	38
KF19	8%	2	14	KF96	33%	18	49
KF20	.	.	4	KF97	27%	18	37
KF21	0%	37	41	KF98	12%	22	31
KF22	.	.	14	KF99	19%	18	28
KF23	0%	2	9	KF100	31%	15	41
KF24	16%	1	16	KF101	18%	14	33
KF25	3%	7	21	KF102	15%	17	36
KF26	11%	1	9	KF103	25%	16	31
KF27	8%	1	28	KF104	29%	9	26
KF28	8%	1	5	KF105	29%	15	29
KF29	5%	4	23	KF106	15%	19	30
KF30	16%	2	13	KF107	13%	16	30
KF31	8%	3	11	KF108	43%	17	37
KF32	12%	2	18	KF109	31%	19	40
KF33	3%	5	14	KF110	7%	28	42
KF34	3%	4	24	KF111	34%	21	43
KF35	13%	3	21	KF112	26%	18	38
KF36	30%	1	27	KF113	12%	30	39
KF37	0%	6	22	KF114	37%	29	44
KF38	28%	4	24	KF115	31%	44	65

Deal	CPR	Active Loans as of June 2023	Original Loan Count	Deal	CPR	Active Loans as of June 2023	Original Loan Count
KF39	10%	5	22	KF116	17%	24	37
KF40	14%	5	25	KF117	30%	32	61
KF41	13%	2	12	KF118	19%	31	42
KF42	7%	5	36	KF119	33%	24	44
KF43	16%	6	17	KF120	13%	38	46
KF44	13%	12	47	KF121	27%	21	28
KF45	8%	13	40	KF122	24%	29	37
KF46	23%	3	32	KF123	31%	22	32
KF47	17%	5	44	KF124	12%	29	35
KF48	17%	5	31	KF125	0%	24	25
KF49	11%	10	41	KF126	8%	30	35
KF50	8%	8	42	KF127	9%	29	34
KF51	27%	4	27	KF128	21%	29	42
KF52	30%	6	27	KF129	19%	32	36
KF53	10%	10	39	KF130	7%	22	24
KF54	14%	15	38	KF131	13%	41	48
KF55	13%	14	34	KF132	1%	34	35
KF56	11%	8	20	KF133	3%	28	29
KF57	27%	11	39	KF134	8%	26	29
KF58	7%	7	36	KF135	0%	30	30
KF59	31%	9	40	KF136	11%	27	33
KF60	8%	15	45	KF137	10%	27	32
KF61	11%	13	31	KF138	0%	38	38
KF62	12%	9	35	KF139	5%	36	43
KF63	9%	20	36	KF140	6%	31	33
KF64	21%	4	26	KF141	0%	44	44
KF65	11%	10	26	KF142	0%	27	27
KF66	14%	17	30	KF143	0%	21	21
KF67	7%	10	21	KF144	0%	32	32
KF68	0%	13	29	KF145	.	30	30
KF69	27%	6	33	KF146	.	32	32
KF70	23%	9	32	KF147	0%	29	29
KF71	11%	23	34	KF148	.	28	28
KF72	19%	7	26	KF149	0%	31	31
KF73	12%	26	38	KF150	0%	30	30
KF74	33%	4	19	KF151	0%	31	31
KF75	33%	8	32	KF152	0%	31	31

Deal	CPR	Active Loans as of June 2023	Original Loan Count	Deal	CPR	Active Loans as of June 2023	Original Loan Count
KF76	18%	17	39	KF153	0%	22	22
KF77	23%	7	24	KF154	.	28	28
KF78	22%	17	33	KF155	.	28	28
KF79	20%	21	37	KF156	.	29	29

