

Fannie Mae Benchmark CPR™ Commentary

June 2021

Key Highlights

- This month, we highlight prepayment trends observed in May. The 30-Year Benchmark CPR3 for the Fannie Mae cohort decreased 15.2% to 23.5 CPR. The 15-Year Benchmark CPR3 for the Fannie Mae cohort also declined this month to 20.9 CPR, a decrease of 12.9%.
- We compare trends in the 30-year and 15-year historical BCPR data, focusing on the seller UPB exhibiting a MoM decrease of more the 10% in the BCPR3 and the continued shifting seller composition out of the >130% Note Rate Adjusted BCPR3 cohort.
- Using the BCPR Component Profile table, we explore the shifting collateral profiles of the component populations underlying the BCPR3 and compare the most recent component profile to the overall Fannie Mae 30-year TBA-eligible universe.
- We explore the two reference rates that can be used to calculate the incentive for the MBS Cohort Analyzer s-curve tool, focusing on the Actual rate.
- We expand the BCPR Heatmap view to highlight monthly prepayment changes by adding several loan attribute cuts.
- Lastly, we feature select S-curves on various Fannie Mae 30-year cohorts using the Cohort Analyzer tool in Data Dynamics.

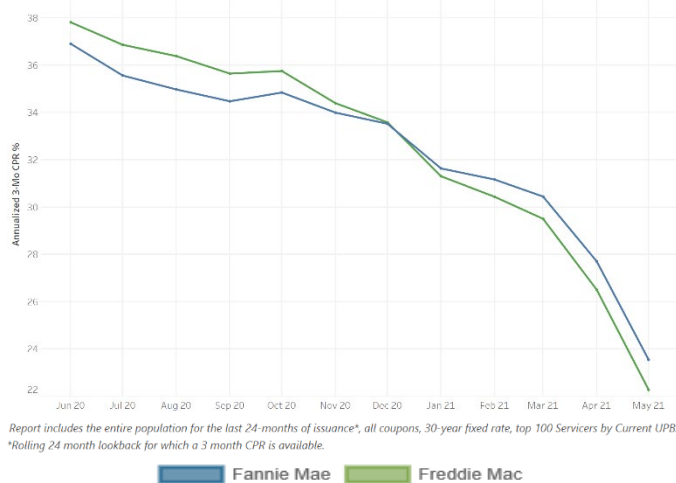
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Visit **Data Dynamics** to explore the tools used in this commentary.

Monthly Benchmark CPR Results

30 Year Benchmark CPR



Report includes the entire population for the last 24-months of issuance*, all coupons, 30-year fixed rate, top 100 Servicers by Current UPB.
*Rolling 24 month lookback for which a 3 month CPR is available.

Fannie Mae Freddie Mac

Exhibit 1

The May 30-year Benchmark CPR3 (BCPR3) for the Fannie Mae cohort decreased 15.2% to 23.5 CPR – from 27.7 CPR in April – which marks the seventh straight month the metric has declined. The May 2021 1-month component decreased 18.4% versus the April 1-month component and 41.4% versus the February 1-month component that it replaces in the BCPR3 calculation (see **Table 1a**).

Using a prevailing 30-year mortgage rate of 2.99%, which is 3bps higher MoM, we estimate that 49.1% of all mortgages – and 61.3% of conventional mortgages – remain at least 50bps in the money. This is a slight decrease in the refinancable share of the population MoM.

Table 1a. Components of Fannie Mae's 30 Year Apr and May BCPR Results

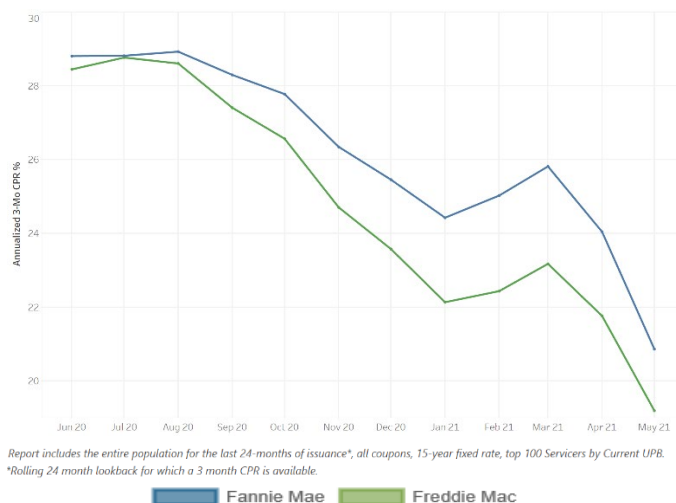
Reporting Period	BCPR3 Components			
	BCPR3	Feb	Mar	Apr
Apr 2021	27.7	30.2	31.2	21.7
May 2021	23.5		31.2	21.7

Table 1b. Components of Fannie Mae's 15 Year Apr and May BCPR Results

Reporting Period	BCPR3 Components			
	BCPR3	Feb	Mar	Apr
Apr 2021	24.0	25.6	27.5	19.2
May 2021	20.9		27.5	19.2

Table 1: Components of Fannie Mae's Apr and May BCPR Results

15 Year Benchmark CPR



Report includes the entire population for the last 24-months of issuance*, all coupons, 15-year fixed rate, top 100 Servicers by Current UPB.
*Rolling 24 month lookback for which a 3 month CPR is available.

Fannie Mae Freddie Mac

Exhibit 2

The Fannie Mae Cohort 15-year Benchmark CPR3 (BCPR3) came in at 20.9 CPR, which represents a 12.9% decrease from 24.0 CPR in April. The May 2021 1-month component decreased 15.6% versus the April 2021 1-month component and decreased 36.7% versus the Feb 2020 1-month component that it replaces in the calculation. See **Table 1b** for the one-month components of FNM cohort 15-year BCPR3.

Historical Benchmark CPR Data

Tables 2 and 3 below provide an updated summary of key trends of the 30-year and 15-year historical BCPR data. As a reminder, historical BCPR data can be found on the [Download Data page under the MBS section of Data Dynamics](#).

Fannie 30-year BCPR3 speeds decreased 15.2% MoM. This relatively large slowdown in speeds concentrated most lenders in the **Share of Seller UPB with >10% MoM BCPR3 Decrease bucket** as compared to only 36% last month. Lenders with a **Note Rate Adjusted BCPR >130%** dropped to 7% from 14% primarily driven by 2 larger lenders shifting down below the 130% measurement threshold from 135% of cohort to 129% and 130% to 119%, respectively (see green highlights in **Table 2**). There were two mid-size lender that entered the >130% bucket but the UPB impact did not cause a meaning change to the MoM change.

15-year BCPR3 speeds dropped 12.9% MoM. This caused a slightly less dramatic but similar shift in concentration in the **Share of Seller UPB with >10% MoM BCPR3 Decrease** to 71% versus 36% last month (see orange highlights in **Table 3**).

Summary of Fannie Mae 30 Year Historical BCPR Data - Seller view

Metric	May-2021	Apr-2021	Mar-2021	May-2020
Cohort BCPR1	15.2	18.6	27.3	29.1
Cohort BCPR3	23.5	27.7	30.4	35.2
Cohort BCPR6	34.3	37.5	40.6	32.7
WA BCPR3 of Top 25 Sellers*	25.9	30.5	33.6	35.8
WA NR-Adjusted % of Cohort for Top 25 Sellers*	110.7	111.3	111.7	102.8
BCPR3 Range (Max-Min) for Top 100 Sellers*	36.1	38.5	44.2	41.7
WA Standard Deviation BCPR3 for Top 100 Sellers*	5.9	6.6	7.0	5.1
WA Standard Deviation BCPR3 for All Sellers	7.1	8.1	8.7	6.5
Total Current UPB (\$B)	1326	1252	1199	692
% of Cohort UPB w/ NR-Adjusted BCPR3 0-90% of Cohort	30%	33%	36%	19%
% of Cohort UPB w/ NR-Adjusted BCPR3 90-110% of Cohort	33%	31%	28%	51%
% of Cohort UPB w/ NR-Adjusted BCPR3 110-130% of Cohort	31%	22%	13%	25%
% of Cohort UPB w/ NR-Adjusted BCPR3 >130% of Cohort	7%	14%	22%	5%
Share of Seller UPB with >10% MoM BCPR3 Increase	1%	2%	6%	71%
Share of Seller UPB with 5-10% MoM BCPR3 Increase	1%	2%	7%	20%
Share of Seller UPB with 0-5% MoM BCPR3 Increase	1%	4%	28%	2%
Share of Seller UPB with 0-5% MoM BCPR3 Decrease	3%	14%	33%	5%
Share of Seller UPB with 5-10% MoM BCPR3 Decrease	8%	43%	22%	0%
Share of Seller UPB with >10% MoM BCPR3 Decrease	86%	36%	4%	0%

Table 2

Summary of Fannie Mae 15 Year Historical BCPR Data - Seller view

Metric	May-2021	Apr-2021	Mar-2021	May-2020
Cohort BCPR1	13.9	16.1	23.7	20.8
Cohort BCPR3	20.9	24.0	25.8	26.2
Cohort BCPR6	28.8	31.1	33.5	25.5
WA BCPR3 of Top 25 Sellers*	22.1	25.7	28.0	18.7
WA NR-Adjusted % of Cohort for Top 25 Sellers*	113.6	114.7	116.3	105.1
BCPR3 Range (Max-Min) for Top 100 Sellers*	42.3	49.1	54.5	31.7
WA Standard Deviation BCPR3 for Top 100 Sellers*	5.5	6.5	7.3	6.5
WA Standard Deviation BCPR3 for All Sellers	7.1	8.4	9.3	8.1
Total Current UPB (\$B)	235	217	205	84
% of Cohort UPB w/ NR-Adjusted BCPR3 0-90% of Cohort	47%	46%	48%	41%
% of Cohort UPB w/ NR-Adjusted BCPR3 90-110% of Cohort	9%	9%	8%	14%
% of Cohort UPB w/ NR-Adjusted BCPR3 110-130% of Cohort	27%	29%	9%	36%
% of Cohort UPB w/ NR-Adjusted BCPR3 >130% of Cohort	16%	16%	35%	10%
Share of Seller UPB with >10% MoM BCPR3 Increase	4%	9%	19%	63%
Share of Seller UPB with 5-10% MoM BCPR3 Increase	2%	4%	22%	12%
Share of Seller UPB with 0-5% MoM BCPR3 Increase	3%	12%	36%	12%
Share of Seller UPB with 0-5% MoM BCPR3 Decrease	5%	13%	13%	10%
Share of Seller UPB with 5-10% MoM BCPR3 Decrease	14%	26%	4%	1%
Share of Seller UPB with >10% MoM BCPR3 Decrease	71%	36%	5%	2%

Table 3

BCPR Component Profiles

The BCPR Component Profiles table breaks out the component populations of the BCPR3 and highlights the evolution of the underlying profile. As a reminder, the differentiating characteristic of the BCPR is its unique reference population: a 24-month rolling issuance window of loans with at least three months of seasoning (BCPR3). Gaining visibility into the collateral profile of each component of the BCPR3 can help market participants better understand trends in this metric.

As seen in **Table 4** below, the first four records (a-d) summarize the respective collateral profiles of the Feb 21 through May 21 BCPR components as of the start of each respective month. In other words, each rep line represents the collateral profile that drove that component month's performance. The Feb-Apr components comprise the Apr BCPR3, while the Mar-May components comprise the May BCPR3. The BCPR population's credit profile has continued to improve month over month, particularly with respect to weighted average FICO, LTV, DTI, and loan size. The weighted average WAC of the population continues to decline, as higher WAC loans refinance into lower rates.

The bottom half of the table isolates the four sub-populations that distinguish the Apr-21 and May-21 component populations. Items f-g summarize the profile of loans that paid off in May-21 and Apr-21, respectively. Not surprisingly, loans that prepaid exhibit higher WACs than the respective component population and are more seasoned. Interestingly, the weighted average WAC of the May pay-offs is lower than that of Apr pay-offs, reversing the prior trend and making it something to keep an eye on. However, the weighted average WALA of loans that paid off in May continues to be higher and the weighted average loan size of loans that paid off in May continues to be lower than what paid off in Apr, supporting the theory that originators have shifted their attention to more seasoned cohorts as the refi wave matures and the refinable population of more recently originated loans wanes. In addition, we see that the credit quality of loans that paid off in May is weaker than in Apr, an acceleration of the trend observed last month. Finally, Item h summarizes the profile of Mar-21 issuances, which replace Mar-19 issuances (summarized in Item i below), in the May component. The most recent month of issuance (Mar-21) to be included in the BCPR3 component exhibits a much lower WAC, higher credit quality, and lower PMM share than the most seasoned month of issuance (Mar-19) that it replaces.

Finally, we compare the most recent BCPR component profile to the overall Fannie Mae 30-year TBA-eligible universe, which is the population that many market participants focus on when analyzing monthly prepayments. Because the latter population is not limited by an issuance window, we observe that it is more seasoned than the May BCPR component population. The higher prepayments observed on the overall population are likely attributable to a higher weighted average WAC and weighted average original loan size.

Table 4. Fannie Mae 30-Year BCPR Component Collateral Profiles

	Orig amt (\$MM)	Beg bal (\$MM)	Beg loan count	WA OLS	WA WAC	WA WALA	WA FICO	WA LTV	WA DTI	% CA	% TPO	% AW	% Owner	% Investor	% Purchase	SMM	CPR
Fannie Mae BCPR																	
a. Feb component	1,199,189	1,174,356	4,420,741	271,264	3.47	10	754	75	35	20%	41%	30%	91%	5%	42%	3.0	30.2
b. Mar component	1,265,488	1,238,954	4,637,283	272,894	3.40	10	755	75	35	20%	40%	31%	91%	5%	41%	3.1	31.2
c. Apr component	1,308,399	1,280,009	4,784,297	273,478	3.34	10	755	74	35	20%	40%	32%	91%	5%	40%	2.0	21.7
d. May component	1,380,478	1,349,812	5,033,575	274,254	3.29	10	756	74	34	21%	40%	33%	91%	5%	39%	1.6	17.7
e. MoM profile change	72,079	69,803	249,278	776	-0.05	0	0	0	0	0%	0%	1%	0%	0%	-1%	-20.3%	-18.5%
f. May pay-offs	21,859	21,068	74,371	294,216	3.78	15	747	76	36	26%	47%	28%	92%	5%	40%	100.0	100.0
g. Apr pay-offs	26,070	25,143	87,665	297,688	3.84	15	749	76	36	26%	48%	26%	91%	5%	42%	100.0	100.0
h. Mar-21 issuances	105,428	104,856	372,919	282,710	2.88	2	757	71	34	25%	38%	42%	89%	7%	28%	0.3	3.1
i. Mar-19 issuances	7,753	7,375	37,979	204,136	4.92	25	731	80	38	14%	50%	6%	87%	8%	69%	6.2	53.5
Fannie Mae universe																	
j. May universe	9,421,667	2,501,416	11,848,280	306,481	3.67	36	751	74	N/A	N/A	40%	21%	89%	7%	43%	2.2	23.4
k. Diff vs. May component	8,041,189	1,151,604	6,814,705	32,227	0.38	26	-4	0	N/A	N/A	0%	-12%	-2%	1%	4%	0.6	5.7

Note: Profile calculations use public loan-level disclosures and Fannie Mae's BCPR methodology to define populations.

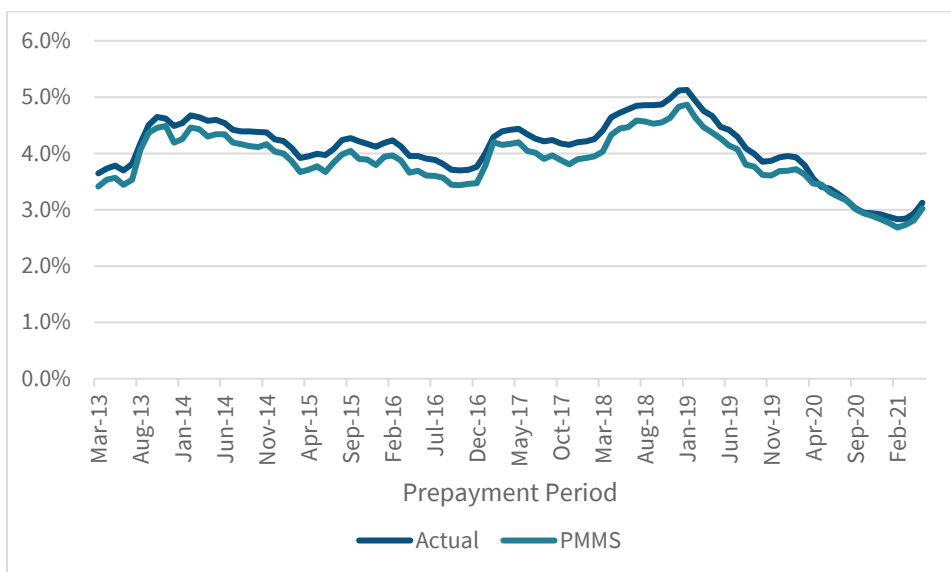
Spotlight on Cohort Analyzer Rate Options

The MBS Cohort Analyzer s-curve tool offers users the option to choose between two reference rates when calculating the rate incentive. Users are likely already familiar with the Freddie Mac Primary Mortgage Market Survey (PMMS) series, but we thought it would be useful to provide a more detailed explanation of the other option, which is called the Actual rate in the tool.

The Actual rate is the weighted average interest rate of Fannie Mae and Freddie Mac combined 30-year or 15-year (depending on the product selected by the user) issuance observed in a given month. In order to align the Actual series with the PMMS series, we restrict the population to ≤ 80 LTV and ≥ 660 FICO loans. The weighted average interest rate observed for issuances in a given month is representative of the interest rate that borrowers were offered at a prior date that motivated them to refinance. As a result, we lag the Actual rate series by one month for all s-curve calculations. We acknowledge that lags are not fixed but rather, may change with various market dynamics. However, as we observe in **Exhibit 3** below, the lags we have employed allow the two series to align quite well.

That said, we observe that the PMMS series is consistently below the Actual series. Unlike the PMMS series, the Actual rate series is comprised of all loans, not just purchase loans. Given that refi loans tend to have higher rates than purchase loans, this outcome is not unexpected. One additional contributor is the treatment of points, which is explicitly surveyed but implicitly included in the Actual rate series. In recent months, the gap between the two series has narrowed, and we will continue to monitor this trend.

Exhibit 3. Time Series of Actual Rate and PMMS Rate Options



Note: a one-month lag is applied to the Actual series; a two-month lead is applied to the PMMS series. Source: Fannie Mae, Freddie Mac.

This Month's Prepayment Observations

In **Exhibit 4** we use the BCPR1 Heatmaps to highlight prepayment performance of various loan cuts. We add the MoM change and the MoM percentage change. Note that the Investor cut is listed twice. The first instance is the Investor story as part of a specified pooling waterfall. The second instance is a pure isolation of all investor loans in relation to principal residence and second homes. Note the UPB differences between the two as several investor loans are pooled in the low loan balance cuts etc.

Exhibit 4. Mo/Mo Percentage Changes of Various Spec & Loan Cuts on the BCPR1 Heatmap

Cut	Orig Amount (\$ MM)	Current UPB (\$ MM)	Mo/Mo % Change												Mo/Mo % Change	
			20-Jun	20-Jul	20-Aug	20-Sep	20-Oct	20-Nov	20-Dec	21-Jan	21-Feb	21-Mar	21-Apr	21-May		BCPR1
85k	\$11,552	\$10,319	13.41	13.87	12.18	13.28	13.38	12.3	13.06	10.62	10.75	13.21	11.71	10.44	-1.27	-11%
110k	\$24,144	\$21,427	16.37	16.09	14.91	15.8	15.41	14.22	15.86	12.21	12.81	15.15	12.48	11.15	-1.33	-11%
125k	\$24,559	\$21,663	17.55	17.2	16.16	16.04	16.23	15.51	15.75	13.62	13.73	16.88	13.23	11.91	-1.32	-10%
150k	\$56,839	\$49,849	19.26	18.42	16.85	17.69	17.92	16.14	16.9	14.18	14.86	17.5	13.54	11.68	-1.86	-14%
175k	\$74,735	\$64,817	21.18	19.7	19.14	19.66	19.82	17.66	18.46	15.63	16.34	18.61	14.29	12.21	-2.08	-15%
200k	\$98,911	\$85,048	23.69	21.95	20.02	21.65	21.67	18.74	19.99	17.56	17.64	19.64	14.98	12.38	-2.6	-17%
225k	\$110,974	\$94,293	25.8	23.54	21.96	22.98	22.7	19.69	20.99	18.94	19.45	21.4	16.03	12.89	-3.14	-20%
NY	\$44,825	\$40,342	19.48	17.48	15.61	16.41	17.77	15.65	15.3	12.5	12.4	14.54	10.79	8.39	-2.4	-22%
TX	\$83,080	\$68,977	29.24	27.29	25.42	25.72	25.03	21.34	22.89	22.29	20.78	24.87	17.85	15	-2.85	-16%
FL	\$75,951	\$64,813	26.68	24.07	22.51	23.42	23.42	19.38	21.83	18.66	19.93	22.64	16.75	13.55	-3.2	-19%
PR	\$405	\$383	15.43	8.99	11.92	7.97	12.32	14.38	4.36	11.34	5.69	6.85	7.49	5.09	-2.4	-32%
LTV>=95	\$158,028	\$123,162	34.55	30.48	28.51	29.68	30.93	27.89	30.79	27.91	30.28	32.44	23.29	18.71	-4.58	-20%
Investor	\$52,509	\$43,471	25.05	25.99	24.34	25.4	27.14	22.9	25.43	23.46	24.84	27.66	20.7	16.86	-3.84	-19%
FICO<700	\$101,721	\$78,730	32.11	30.61	29.56	30.12	31.8	29.39	31.93	26.9	28.24	31.76	24.97	21.69	-3.28	-13%
Non-Spec	\$965,275	\$739,886	33.97	32.99	33.38	35.01	35.9	31.13	33.8	30.73	31.26	30.89	19.57	15.69	-3.88	-20%
Retail	\$1,093,444	\$913,660	26.66	24.24	23.28	24.43	24.87	21.84	23.88	21.35	22.29	24.2	16.59	13.64	-2.95	-18%
Correspondent	\$489,225	\$356,696	34.58	34.38	34.24	36.71	37.38	33.11	35.07	31.72	32.23	33.53	23.4	18.31	-5.09	-22%
Broker	\$301,207	\$236,823	29.11	29.19	30	30.62	33.71	29.35	33.31	30.7	30.93	28.82	19.03	16.42	-2.61	-14%
Purchase	\$731,149	\$580,735	33.99	31.07	28.97	29.57	29.78	25.92	27.28	24.52	25.66	28.13	19.96	15.42	-4.54	-23%
Refi	\$799,825	\$650,107	22.69	23.72	25.47	27.63	28.89	25.01	27.93	25.65	26.02	25.84	16.52	14.17	-2.35	-14%
Cash-out	\$352,720	\$276,337	29.7	29.51	29.56	31.49	32.78	29.7	32.3	27.87	28.1	28.9	20.83	17.16	-3.67	-18%
Principal	\$1,721,494	\$1,371,298	30.25	28.68	28.26	29.67	30.43	26.7	28.96	26.07	26.73	27.64	18.7	15.3	-3.4	-18%
Second Home	\$68,937	\$57,027	29.11	28.17	25.9	26.4	26.86	22.35	24.15	21.26	21.58	23.61	17.44	13.35	-4.09	-23%
Investment	\$93,070	\$78,853	21.87	22.94	21.38	22.22	23.56	20.5	22.13	19.85	21.1	24.15	18.68	14.96	-3.72	-20%
Stand Appraisal	\$1,260,640	\$997,617	30.61	28.66	27.75	29.1	29.95	26.42	28.44	25.39	26.55	28.61	20.3	16.23	-4.07	-20%
Appraisal Waive	\$622,872	\$509,562	26.67	27.45	28.19	29.55	30.07	25.82	28.5	26.03	25.61	24.58	15.29	13.17	-2.12	-14%

MBS Cohort Analyzer Reports

Below, we continue featuring S-curves for various Fannie Mae 30-year cohorts for different historical performance periods to see how relative prepay behavior has evolved over time. Prepay sensitivity is displayed for the April activity, the previous month, six months ago and a year ago. We highlight performance on FICO, Loan Size, LTV, Channel, Loan Purpose, Selected States, Occupancy, and Appraisal Waiver Status in the snapshots below (See **Exhibits 5-12**). We invite readers to review our [MBS Cohort Analyzer User Guide](#) to review various ways to utilize this tool.

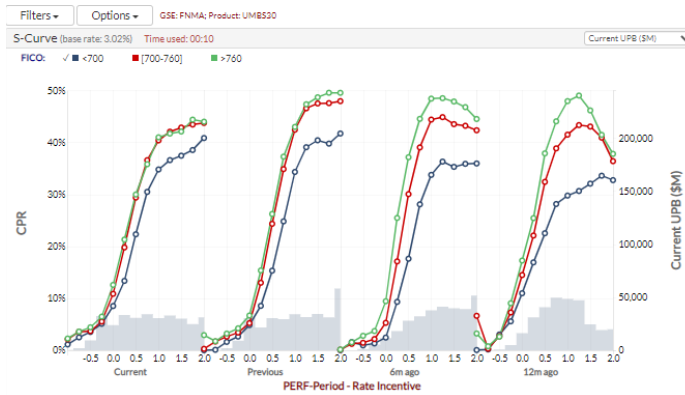


Exhibit 5: S-Curves for FICO Buckets Over Various Performance Periods

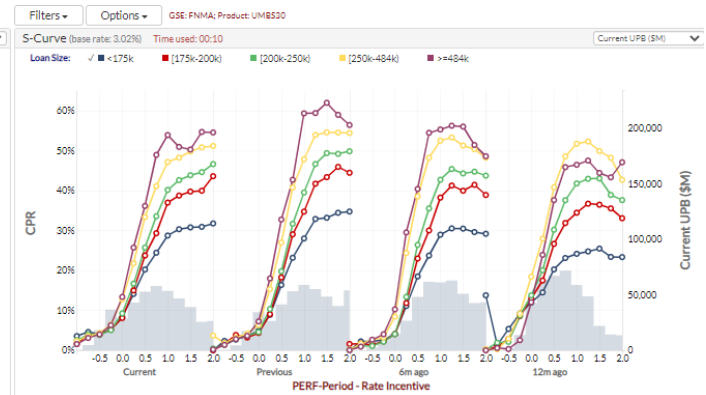


Exhibit 6: S-Curves for Loan Size Buckets Over Various Performance Periods

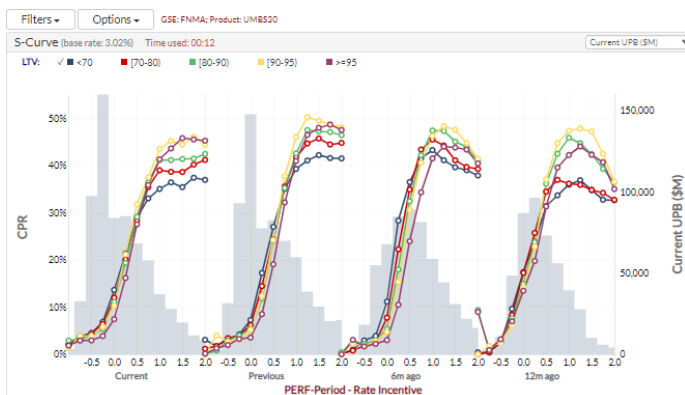


Exhibit 7: S-Curves for LTV Buckets Over Various Performance Periods

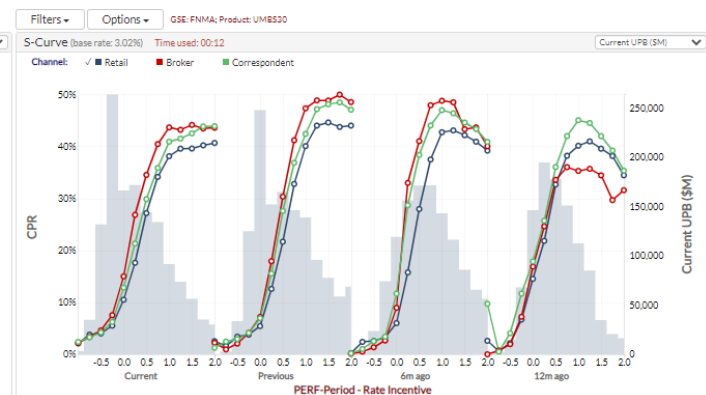


Exhibit 8: S-Curves for Channel Buckets Over Various Performance Periods

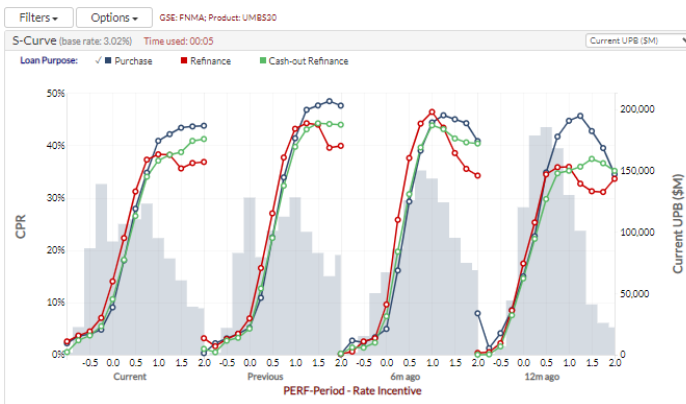


Exhibit 9: S-Curves for Loan Purpose Buckets Over Various Performance Periods

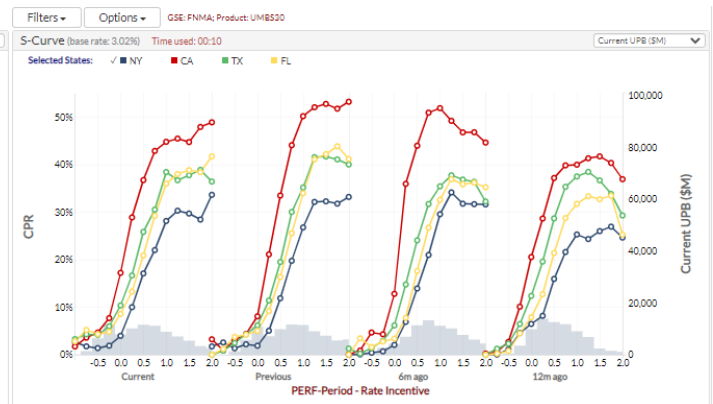


Exhibit 10: S-Curves for GEO Story Buckets Over Various Performance Periods

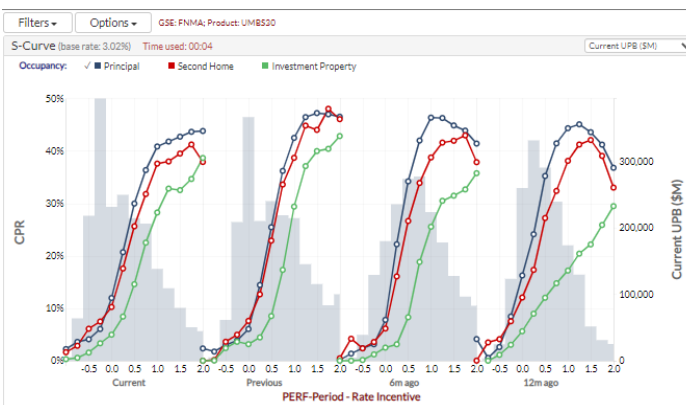


Exhibit 11: S-Curves for Occupancy Buckets Over Various Performance Periods

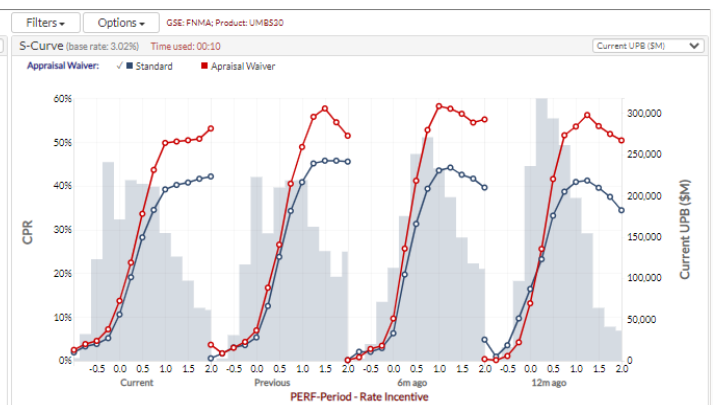


Exhibit 12: S-Curves for Appraisal Buckets Over Various Performance Periods

Additional Resources

For questions, contact the Fannie Mae Investor Help Line at 1-800-232-6643, Option 3 or by [e-mail](#).

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