Fannie Mae Benchmark CPR™ Commentary

September 2021

Key Highlights

- This month, we highlight prepayment trends observed in August. The 30-Year Benchmark CPR3 for the Fannie Mae cohort increased 5.6% to 19.0 CPR. The 15-Year Benchmark CPR3 for the Fannie Mae cohort also increased this month to 17.5 CPR, an increase of 8.0%.

- Given the lack of consensus on the appropriate lag to assume between a decline in interest rates and the resultant increase in prepayments, we explore lag differences between Bank and non-Bank lenders.

- We compare trends in the 30-year and 15-year historical BCPR data, focusing on the narrowing range of the BCPR3 for the Top 100 Sellers.

- 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.

- Lastly, we analyze the expanded BCPR Heatmap view and feature select S-curves on various Fannie Mae 30-year cohorts using the Cohort Analyzer tool in Data Dynamics.
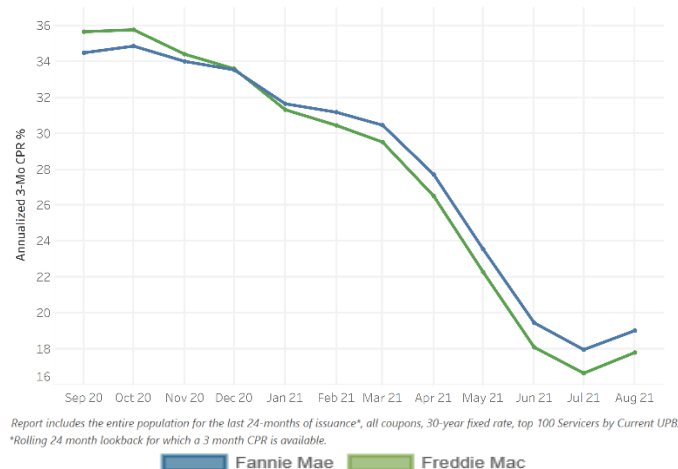
Quick Navigation

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 August 30-year Benchmark CPR3 (BCPR3) for the Fannie Mae cohort increased 5.6% to 19 CPR – from 18 CPR in July. The August 1-month component ticked 20.9% higher versus the July 1-month component and 17.5% higher than the May 1-month component that it replaces in the BCPR3 calculation (see *Table 1a*).

Using a prevailing 30-year mortgage rate of 2.88% which is 11bps higher MoM, we estimate that 46.5% of all mortgages – and 58.7% of conventional mortgages – remain at least 50bps in the money. This is a slight decrease in the refinanceable share of the population MoM.

| Table 1a. Components of Fannie Mae's 30 Year July and Aug BCPR Results						Table 1b. Components of Fannie Mae's 15 Year July and Aug BCPR Results					
30 Yr FNM Cohort		BCPR3 Components				15 Yr FNM Cohort		BCPR3 Components			
Reporting Period	BCPR3	May	Jun	Jul	Aug	Reporting Period	BCPR3	May	Jun	Jul	Aug
July 2021	18.0	17.7	19	17.2		July 2021	16.2	16.2	17.1	15.2	
Aug 2021	19.0		19	17.2	20.8	Aug 2021	17.5		17.1	15.2	20.0

Table 1: Components of Fannie Mae's July and August BCPR Results

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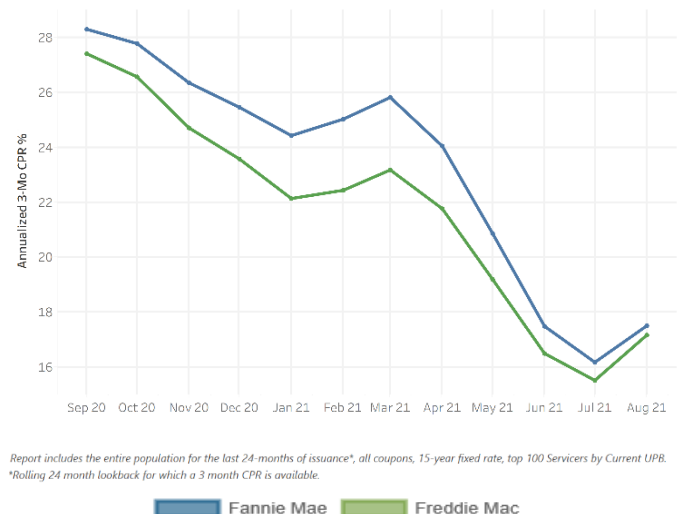
Report includes the entire population for the last 24-months of issuance*, all coupons, 15-year fixed rate, top 100 Servicers by Current UPB.
*Rolling 24 month lookback for which a 3 month CPR is available.

Fannie Mae Freddie Mac

Exhibit 2

The August 15-year Benchmark CPR3 (BCPR3) came in at 17.5 CPR, which represents an 8% increase from 16.2 CPR in July. The August 1-month component increased 31.6% versus the July 1-month component and 23.5% over the May 1-month component that it replaces in the calculation. See *Table 1b* for the one-month components of FNM cohort 15-year BCPR3.

Bank and Non-Bank Lag Differences

Most of the overall increase in 30-year speeds for August was concentrated in the rise of cuspy 2.0% and 2.5% pass-throughs in reaction to lower primary mortgage rates. Primary rates peaked in early April and reached lows in late July not seen since February. There is no clear consensus on the appropriate lag to assume between a decline in interest rates and the resultant increase in prepayments. Speeds increasing in August after a rate decline in July points to a reduction in the lag which historically had been assumed to be two months. Delving into the data more deeply, we see that the lag also depends on the lender category with non-Bank lenders having shorter lags than bank lenders.

Table 2 shows the speed up of several cohorts for selected bank and non-bank sellers. The bank category contains the five largest Commercial Banks by UPB as listed in the BCPR report. Meanwhile, the non-bank category contains the five largest mortgage banks. We observe that non-bank speeds were faster than bank speeds in August. We also see that the jump in speeds for non-banks was greater than for banks in absolute terms and relative percentage terms despite starting from a higher July base. One conclusion for these results is that lags for large non-banks are shorter than those for Banks and that this fact is driving the overall decline in lags which we observe.

Table 2. Top Bank and Non-Bank 1-Month CPR for Select Vintage/Coupon Cohort

Coupon	Vintage	Category	UPB ($)	July CPR	August CPR	Diff	% Diff
2.0	2020	Bank	33,946,648,675	9.7	13.9	4.3	44.2%
		Non-bank	102,217,431,135	14.7	22.6	7.8	53.1%
	2021	Bank	35,367,226,534	5.5	6.2	0.7	12.9%
		Non-bank	117,203,470,841	4.9	7.8	2.9	58.1%
2.5	2020	Bank	35,197,012,677	21.2	26.5	5.4	25.4%
		Non-bank	60,858,647,181	31.4	41.4	10.0	31.9%
	2021	Bank	14,960,527,899	5.2	6.4	1.2	23.1%
		Non-bank	54,181,937,639	4.9	7.2	2.4	48.4%

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 increased 5.6% to ~19 BCPR MoM compared to a 7.2% decrease from 18 BCPR one month prior. The **BCPR3 Range (Max-Min) for Top 100 Sellers** has continued to narrow each month since September of 2020 where the range has gone from 56.9 in Sept 2020 to 23.3 in Aug 2021. The **WA Standard Deviation BCPR3 for Top 100 Sellers** tightening trend paused in August as this metric remained unchanged from July's 4.3. The 30-year BCPR3 increased 5.6% in August from down 7.2% in July, shifting the concentration of lenders in the **Share of Seller UPB with Decreasing MoM** BCPR's into the Increasing BCPR3 categories. See orange highlights.

Fannie 15-year speeds revealed a similar but less dramatic shift. Only 12% of the 30y UPB was connected to sellers where BCPR speeds decreased MoM. Only 20% of the UPB experienced a BCPR3 decrease in the 15-year universe. There was minimal shift in the **% of Cohort UPB w/ NR-Adjusted BCPR3 >130% of Cohort** or other similar categories as these metrics were largely unchanged MoM.

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

Metric	Aug-2021	Jul-2021	Jun-2021	Aug-2020
Cohort BCPR1	18.7	15.4	16.6	27.9
Cohort BCPR3	**19.0**	**18.0**	**19.4**	**35.0**
Cohort BCPR6	25.9	28.1	31.0	14.5
WA BCPR3 of Top 25 Sellers*	20.8	19.7	21.4	37.2
WA NR-Adjusted % of Cohort for Top 25 Sellers*	112.0	111.9	111.5	106.1
BCPR3 Range (Max-Min) for Top 100 Sellers*	23.3	26.1	28.3	49.9
WA Standard Deviation BCPR3 for Top 100 Sellers*	4.3	4.3	4.8	5.8
WA Standard Deviation BCPR3 for All Sellers	5.3	5.3	5.9	7.7
Total Current UPB ($B)	**1489**	**1454**	**1394**	**820**
% of Cohort UPB w/ NR-Adjusted BCPR3 0-90% of Cohort	34%	32%	30%	27%
% of Cohort UPB w/ NR-Adjusted BCPR3 90-110% of Cohort	29%	31%	32%	39%
% of Cohort UPB w/ NR-Adjusted BCPR3 110-130% of Cohort	24%	25%	22%	31%
% of Cohort UPB w/ NR-Adjusted BCPR3 >130% of Cohort	13%	13%	16%	3%
Share of Seller UPB with >10% MoM BCPR3 Increase	30%	3%	1%	5%
Share of Seller UPB with 5-10% MoM BCPR3 Increase	33%	3%	1%	13%
Share of Seller UPB with 0-5% MoM BCPR3 Increase	24%	5%	1%	30%
Share of Seller UPB with 0-5% MoM BCPR3 Decrease	8%	24%	3%	25%
Share of Seller UPB with 5-10% MoM BCPR3 Decrease	2%	38%	5%	14%
Share of Seller UPB with >10% MoM BCPR3 Decrease	2%	28%	89%	14%

Table 3

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

Metric	Aug-2021	Jul-2021	Jun-2021	Aug-2020
Cohort BCPR1	18.4	13.8	15.2	21.9
Cohort BCPR3	**17.5**	**16.2**	**17.5**	**28.9**
Cohort BCPR6	23.4	24.6	26.8	34.1
WA BCPR3 of Top 25 Sellers*	19.2	17.4	18.6	31.3
WA NR-Adjusted % of Cohort for Top 25 Sellers*	116.8	115.2	114.3	110.4
BCPR3 Range (Max-Min) for Top 100 Sellers*	27.4	24.3	33.0	50.7
WA Standard Deviation BCPR3 for Top 100 Sellers*	4.3	3.6	4.3	7.7
WA Standard Deviation BCPR3 for All Sellers	5.7	5.1	5.8	9.5
Total Current UPB ($B)	**277**	**268**	**254**	**114**
% of Cohort UPB w/ NR-Adjusted BCPR3 0-90% of Cohort	48%	47%	44%	45%
% of Cohort UPB w/ NR-Adjusted BCPR3 90-110% of Cohort	14%	14%	15%	17%
% of Cohort UPB w/ NR-Adjusted BCPR3 110-130% of Cohort	16%	14%	15%	11%
% of Cohort UPB w/ NR-Adjusted BCPR3 >130% of Cohort	23%	25%	25%	27%
Share of Seller UPB with >10% MoM BCPR3 Increase	46%	6%	3%	21%
Share of Seller UPB with 5-10% MoM BCPR3 Increase	15%	4%	1%	15%
Share of Seller UPB with 0-5% MoM BCPR3 Increase	18%	20%	3%	17%
Share of Seller UPB with 0-5% MoM BCPR3 Decrease	8%	10%	3%	29%
Share of Seller UPB with 5-10% MoM BCPR3 Decrease	5%	20%	4%	5%
Share of Seller UPB with >10% MoM BCPR3 Decrease	7%	39%	86%	15%

Table 4

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 5** below, the first four records (a-d) summarize the respective collateral profiles of the May-21 through Aug-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 May-Jul components comprise the Jul BCPR3, while the Jun-Aug components comprise the Aug BCPR3. We observe a continued increase in the weighted average original loan size of the reference population, reflecting continued home price appreciation and re-leveraging. Additionally, the BCPR population's credit profile continues to improve, and 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 Jul-21 and Aug-21 component populations. Items f-g summarize the profile of loans that paid off in Aug-21 and Jul-21, respectively. Not surprisingly, loans that prepaid exhibit higher WACs than the respective component population and are more seasoned. The weighted average loan size of Aug pay-offs was notably higher than that of Jul pay-offs, while the WAC and WALA were lower and the credit profile cleaner, suggesting that lenders have refocused their attention on the cleanest borrowers. Finally, Item h summarizes the profile of Jun-21 issuances, which replace Jun-19 issuances (summarized in Item i below), in the Aug component. The most recent month of issuance (Jun-21) to be included in the BCPR3 component exhibits a much lower WAC, higher weighted average loan size, and higher credit quality than the most seasoned month of issuance (Jun-19) that it replaces. The share of investor properties continued to decline meaningfully.

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 Aug 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 5. 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. 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
b. Jun component	1,454,756	1,421,712	5,272,347	275,922	3.25	10	756	74	34	21%	39%	34%	91%	5%	39%	1.7	19.0
c. Jul component	1,515,444	1,480,185	5,455,600	277,778	3.22	10	756	74	34	21%	39%	34%	91%	5%	39%	1.6	17.2
d. Aug component	1,558,742	1,521,142	5,589,924	278,849	3.20	11	756	74	34	21%	39%	34%	91%	5%	39%	1.9	20.8
e. MoM profile change	43,298	40,958	134,324	1,071	-0.02	1	0	0	0	0%	0%	0%	0%	0%	0%	23.3%	20.9%
f. Aug pay-offs	29,477	28,466	97,663	302,215	3.51	14	750	76	35	27%	44%	33%	94%	4%	35%	100.0	100.0
g. Jul pay-offs	23,147	22,315	79,257	292,346	3.62	15	748	76	36	25%	44%	30%	93%	4%	37%	100.0	100.0
h. Jun-21 issuances	79,501	79,044	274,760	289,345	3.16	2	750	75	35	20%	40%	27%	94%	3%	49%	0.4	5.2
i. Jun-19 issuances	13,705	12,972	63,805	214,794	4.50	26	739	80	37	12%	50%	7%	88%	6%	73%	4.8	44.7
Fannie Mae universe																	
j. Aug universe	9,613,888	2,546,099	11,873,847	311,220	3.60	35	751	74	N/A	N/A	39%	22%	90%	6%	43%	2.3	24.6
k. Diff vs. Aug component	8,055,146	1,024,957	6,283,923	32,372	0.39	24	-5	1	N/A	N/A	0%	-12%	-2%	1%	4%	0.4	3.8

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

This Month's Prepayment Observations

In *Exhibit 3* 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 other stories.

Exhibit 3. Mo/Mo Percentage Changes of Various Spec & Loan Cuts on the BCPR1 Heatmap

Population	Orig Amount ($ MM)	Current UPB ($ MM)	20-Sep	20-Oct	20-Nov	20-Dec	21-Jan	21-Feb	21-Mar	21-Apr	21-May	21-Jun	21-Jul	21-Aug	Mo/Mo Change BCPR1	Mo/Mo % Change
85k	$11,544	$10,325	13.28	13.38	12.3	13.06	10.62	10.75	13.21	11.71	10.44	11.12	10.48	10.57	0.09	1%
110k	$24,746	$22,000	15.8	15.41	14.22	15.86	12.21	12.81	15.15	12.48	11.15	12.36	11.63	12.32	0.69	6%
125k	$25,314	$22,418	16.04	16.23	15.51	15.75	13.62	13.73	16.88	13.23	11.91	12.58	12.14	12.51	0.37	3%
150k	$58,441	$51,459	17.69	17.92	16.14	16.9	14.18	14.86	17.5	13.54	11.68	12.94	11.97	13.28	1.31	11%
175k	$76,492	$66,653	19.66	19.82	17.66	18.46	15.63	16.34	18.61	14.29	12.21	13.56	12.82	14.2	1.38	11%
200k	$101,791	$88,041	21.65	21.67	18.74	19.99	17.56	17.64	19.64	14.98	12.38	13.77	13.37	14.95	1.58	12%
225k	$114,274	$97,917	22.98	22.7	19.69	20.99	18.94	19.45	21.4	16.03	12.89	14.61	13.88	15.69	1.81	13%
NY	$47,601	$43,520	16.41	17.77	15.65	15.3	12.5	12.4	14.54	10.79	8.39	7.92	7.23	7.86	0.63	9%
TX	$89,474	$75,256	25.72	25.03	21.34	22.89	22.29	20.78	24.87	17.85	15	16.13	15.06	17.31	2.25	15%
FL	$81,895	$70,726	23.42	23.42	19.38	21.83	18.66	19.93	22.64	16.75	13.55	15.1	13.96	15.18	1.22	9%
PR	$458	$434	7.97	12.32	14.38	4.36	11.34	5.69	6.85	7.49	5.09	4.84	6.67	2.86	-3.81	-57%
LTV>=95	$164,617	$133,015	29.68	30.93	27.89	30.79	27.91	30.28	32.44	23.29	18.71	20.5	19.17	22.57	3.4	18%
Investor	$52,529	$43,124	25.4	27.14	22.9	25.43	23.46	24.84	27.66	20.7	16.86	15.91	13.98	16.9	2.92	21%
FICO<700	$111,962	$88,467	30.12	31.8	29.39	31.93	26.9	28.24	31.76	24.97	21.69	22.51	20.73	23.19	2.46	12%
Non-Spec	$1,010,728	$785,627	35.01	35.9	31.13	33.8	30.73	31.26	30.89	19.57	15.69	16.35	15.85	20.43	4.58	29%
Retail	$1,165,448	$977,929	24.43	24.87	21.84	23.88	21.35	22.29	24.2	16.59	13.64	15.17	14.37	17.38	3.01	21%
Correspondent	$484,564	$364,834	36.71	37.38	33.11	35.07	31.72	32.23	33.53	23.4	18.31	19.54	17.61	20.32	2.71	15%
Broker	$323,064	$256,220	30.62	33.71	29.35	33.31	30.7	30.93	28.82	19.03	16.42	17.73	15.85	21.03	5.18	33%
Purchase	$754,477	$626,311	29.57	29.78	25.92	27.28	24.52	25.66	28.13	19.96	15.42	16.14	14.4	16.37	1.97	14%
Refi	$835,230	$670,045	27.63	28.89	25.01	27.93	25.65	26.02	25.84	16.52	14.17	16.14	15.46	19.97	4.51	29%
Cash-out	$382,277	$302,627	31.49	32.78	29.7	32.3	27.87	28.1	28.9	20.83	17.16	18.72	17.14	20.33	3.19	19%
Principal	$1,809,314	$1,462,491	29.67	30.43	26.7	28.96	26.07	26.73	27.64	18.7	15.3	16.82	15.56	18.99	3.43	22%
Second Home	$70,082	$58,718	26.4	26.86	22.35	24.15	21.26	21.58	23.61	17.44	13.35	14.29	13.19	14.21	1.02	8%
Investment	$92,466	$77,775	22.22	23.56	20.5	22.13	19.85	21.1	24.15	18.68	14.96	14.84	13.34	15.47	2.13	16%
Standard Appraise	$1,302,203	$1,055,269	29.1	29.95	26.42	28.44	25.39	26.55	28.61	20.3	16.23	17.39	15.98	18.56	2.58	16%
Appraise Waive	$669,667	$543,715	29.55	30.07	25.82	28.5	26.03	25.61	24.58	15.29	13.17	15.09	14.12	18.83	4.71	33%

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 August 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 4-11**). We invite readers to review our MBS Cohort Analyzer User Guide to review various ways to utilize this tool.
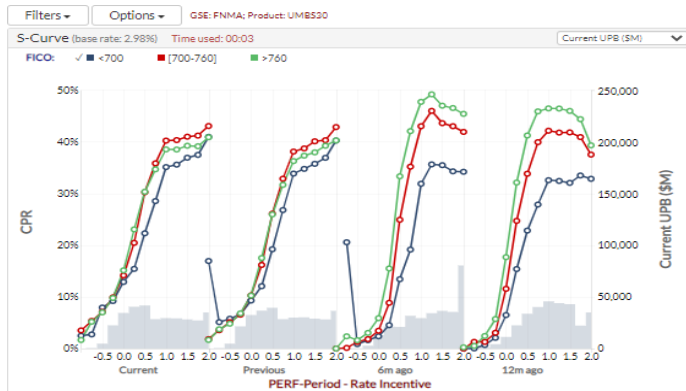
Exhibit 4: *S-Curves for FICO Buckets Over Various Performance Periods*
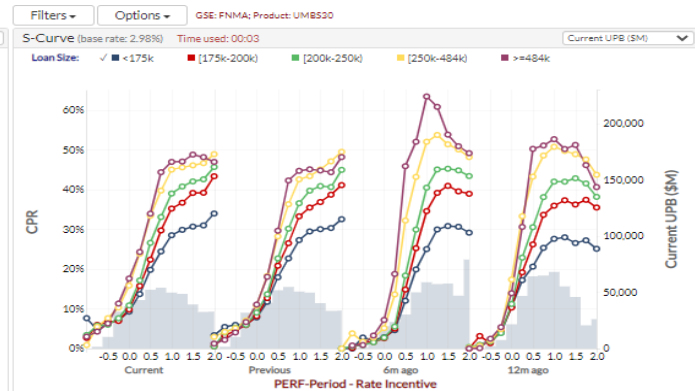
Exhibit 5: *S-Curves for Loan Size Buckets Over Various Performance Periods*
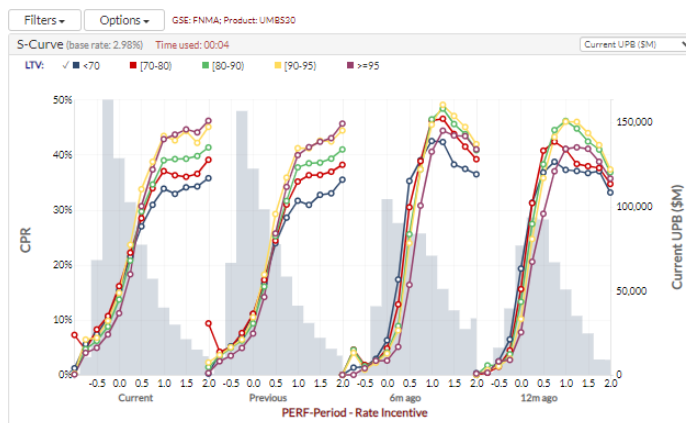
Exhibit 6: *S-Curves for LTV Buckets Over Various Performance Periods*
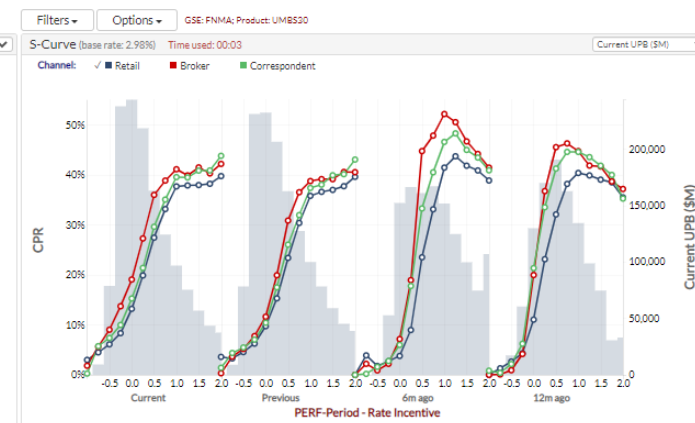
Exhibit 7: *S-Curves for Channel Buckets Over Various Performance Periods*
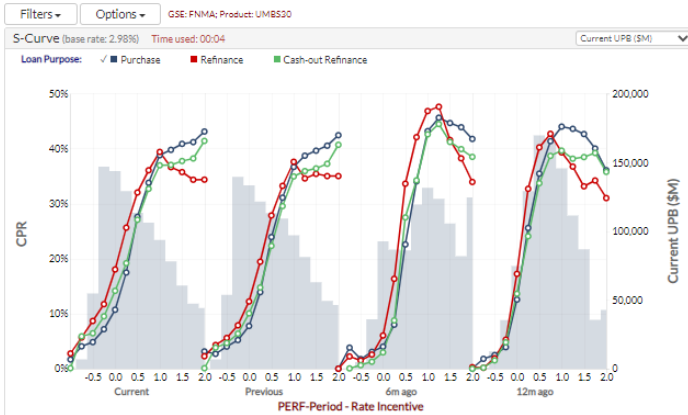
Exhibit 8: *S-Curves for Loan Purpose Buckets Over Various Performance Periods*
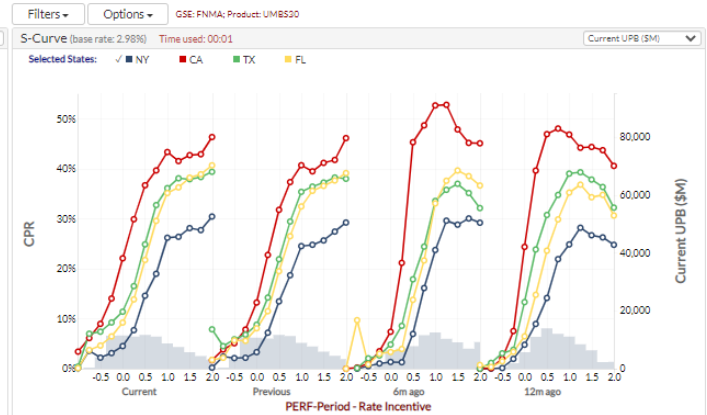
Exhibit 9: *S-Curves for GEO Story Buckets Over Various Performance Periods*
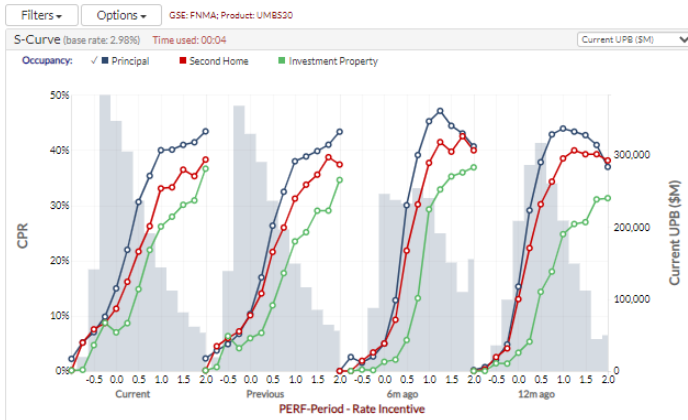
Exhibit 10: *S-Curves for Occupancy Buckets Over Various Performance Periods*
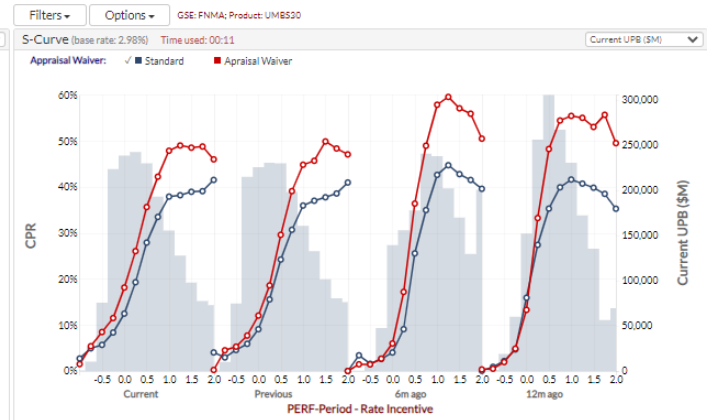
Exhibit 11: *S-Curves for Appraisal Buckets Over Various Performance Periods*

Additional Resources

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

Benchmark CPR Dashboard

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