Analytics Insights

Through the Box (TTB) Report with the Fed

Implications on forward TBA deliverables

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Overview

At the November 2021 FOMC meeting, the Federal Reserve bank announced plans to scale back its MBS and Treasury purchases as it was deemed that the markets had sufficiently improved to warrant such a move. For December's follow up, the Fed sped up the timeline even further, reducing MBS purchases to $20 billion per month with language to suggest an end to any new purchases by March 2022.

To date, the Fed has accumulated $2.6 Trillion in Agency Mortgage-Backed Securities (MBS) dating back to the initial open market operations of January 2009. There have been 3 incarnations of the Quantitative Easing (QE) initiative involving MBS, and 4 involving Treasuries.

The Fed "desk" routinely buys TBA ("to be announced") MBS securities in the secondary market, often referred to as "cheapest to deliver" (CTD) or "worst to deliver" (WTD). Given their undiscriminating buying habits, it stands to reason that the desk's forward absence will have material repercussions upon TBA deliverables.

In our examination of the Fed's MBS holdings, we have found that the "box report" on deliveries into the Fed is only slightly worse than what the street encounters with its counter parties, primarily regarding the AOLS (average original loan size). Results in production coupons that the Fed primarily engages in aren't as severe as originally thought with the bulk of new issuance adhering to overall lower mortgage rates, hence WACs aren't as diverse as first feared. However, the increased FHFA guidelines on conforming loan limits will expand the seller's option to deliver higher AOLS to the TBA buyer and weaken deliverables at least in that regard.

Fed operations for December 2021 settlement cycle

For December 2021 Class A settlement period, the Fed bought $66.938 billion 30yr FNMA/UMBS 2%s and 2.5%s. There were $369.223 Billion TBA-eligible 30yr 2%s and 2.5%s deemed CTD or WTD worthy (generic/no spec story, <6 WALA). These have been the Fed's primary coupons the past six months and Class A the largest holdings overall.

Below is the December Class A box report of the Fed, overlayed with a comparable dealers TTB report.

Note the WAMs (weighted average maturities), WALAs (Weighted average life), FICOs (credit score) and LTVs (loan to value) are highly correlated, due primarily to current production loans all underwritten in a low interest rate environment with the bulk of those borrowers slotting into conforming GSE profiles. Basic variances on WACs, WAMs, WALAs, and AOLs speak of deteriorating profiles when set against the Yield Book model.

Exhibit 1: Class A Through-The-Box December '21-Fed vs. Street

	Coupon	WAC	WAM	WALA	AOLS	LTV	FICO	OAS	OAD	PX	CPR1	CPR LT
Fed	2	2.88	358	1	421,279	70	761	-8	5.098	99.5625	4.4	8.7
Street avg	2	2.89	359	1	381500	71	758	-6	5.159	99.5625	4.4	8.6
diff	0	-0.01	-1	0	39779	-1	3	-2	-0.061	0	0	0.1
Fed	2.5	3.28	357	2	405,641	78	737	4	3.977	101.9688	10.1	13.4
Street avg	2.5	3.29	357	3	324000	80	733	10	4.141	101.9688	10	12.9
diff	0	-0.005	0	-1	81641	-2	4	-6	-0.164	0	0.1	0.5

Source: Yield Book

Overall Fed holdings through December 2021

From the table below, you can see higher gross AOLS on most holdings. The longer WALAs and shorter WAMS are primarily a function of the holding period over and above the current TBA delivery.

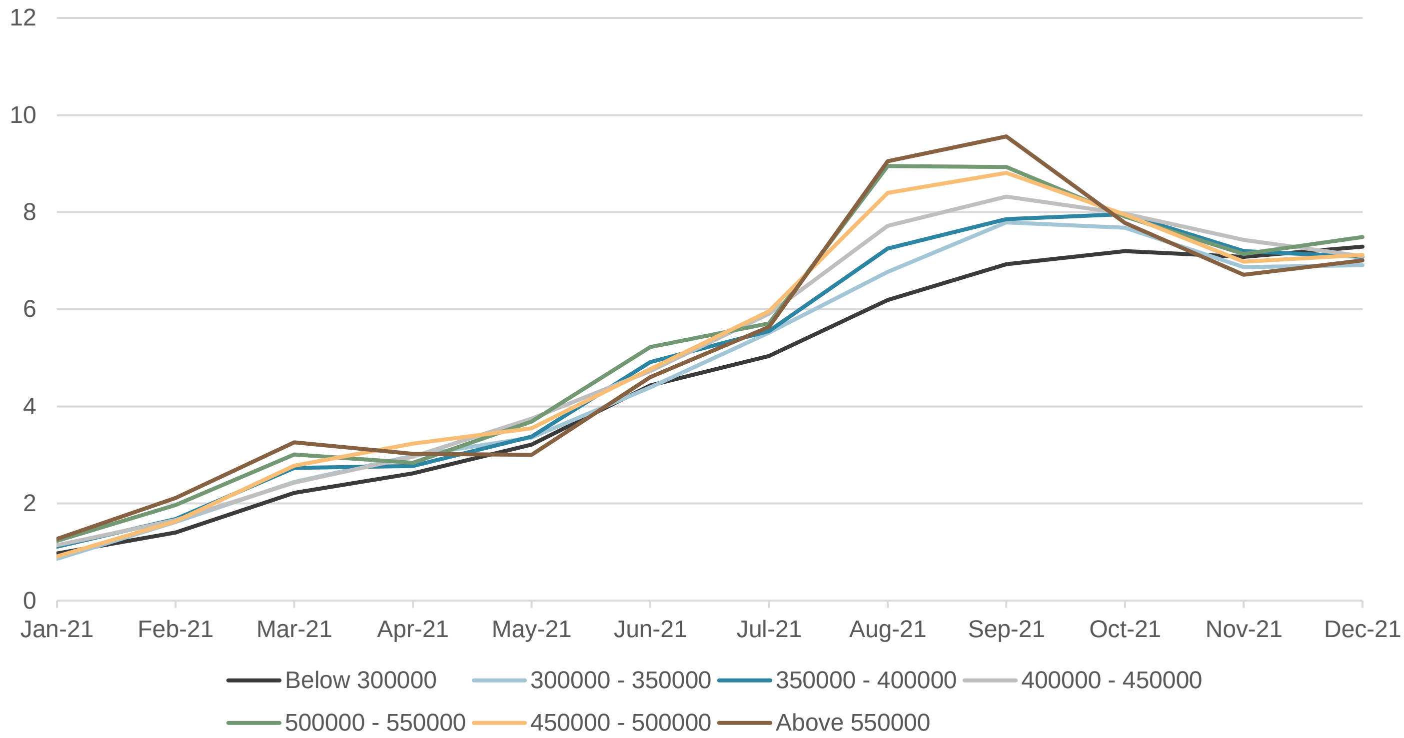
The following charts highlight the disparity in 1 month CPRs (2021 Issuance) given a higher banded AOLS, intuitively as lower banded AOLS prepay at a slower speed.

Exhibit 2: Class A Fed holdings vs. Street TTB

	Coupon	WAC	WAM	WALA	WAOLS	LTV	FICO
Fed	1.5	2.52	346.96	10.52	413270	69	773
	2	2.88	347.64	9.05	404720	71	765
	2.5	3.34	348.83	12.14	383748	75	751
	3	3.73	287.42	62.9	321309	75	759
	3.5	4.15	270.93	78.37	298506	76	749
	4	4.61	264.66	84.88	289974	76	739
	4.5	5.02	234.58	113.81	274822	73	740
	Coupon	WAC	WAM	WALA	WAOLS	LTV	FICO
Street	1.5	2.385	356.5	2.5	377	66.5	770.5
	2	2.89	359	1	381.5	70.5	754.5
	2.5	3.285	356.5	2.5	324	80	732.5
	3	3.865	342	15	324.5	82	713.5
	3.5	4.39	332.5	25	305	85	722
	4	4.83	327.5	28.5	313.5	85	713.5
	4.5	5.22	322	34	292.5	85.5	712

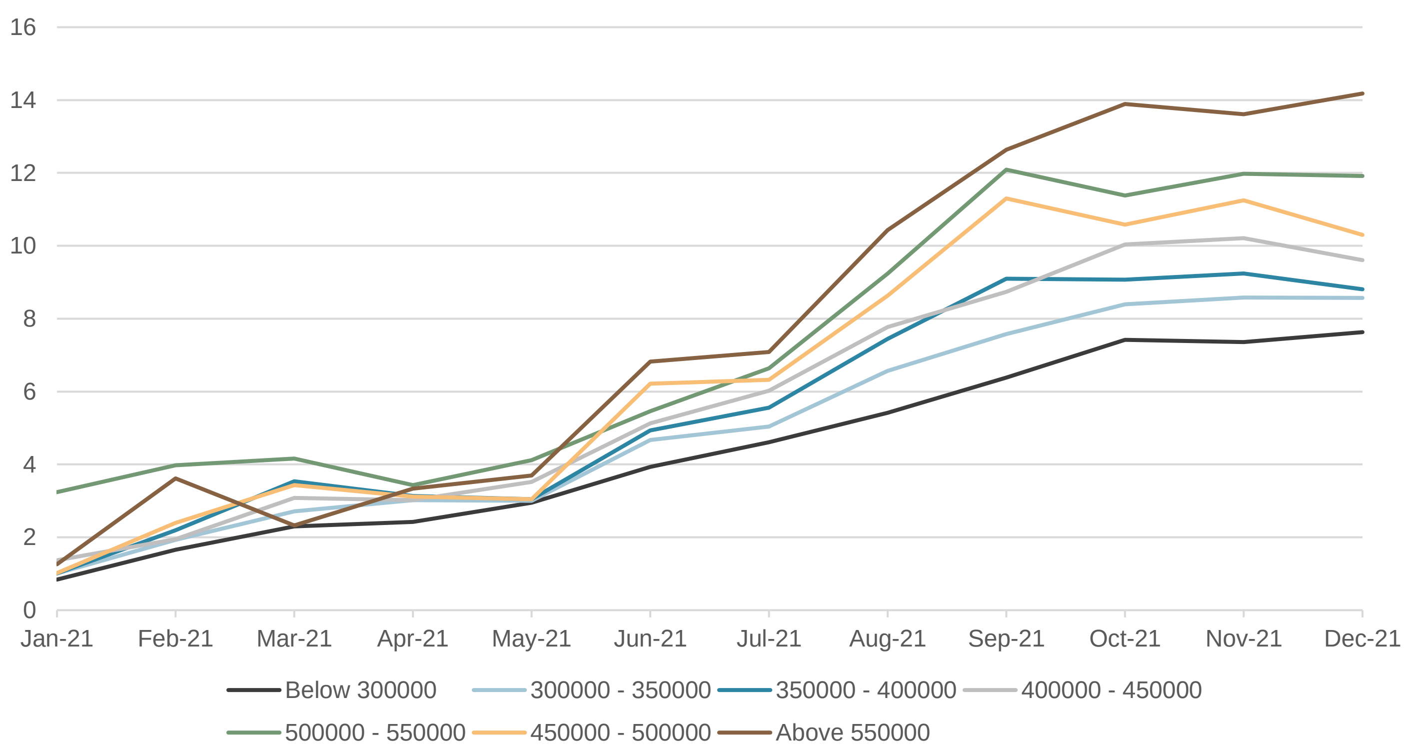
Source: Yield Book

Exhibit 3: Upper band AOLS CPRs UMBS 2s



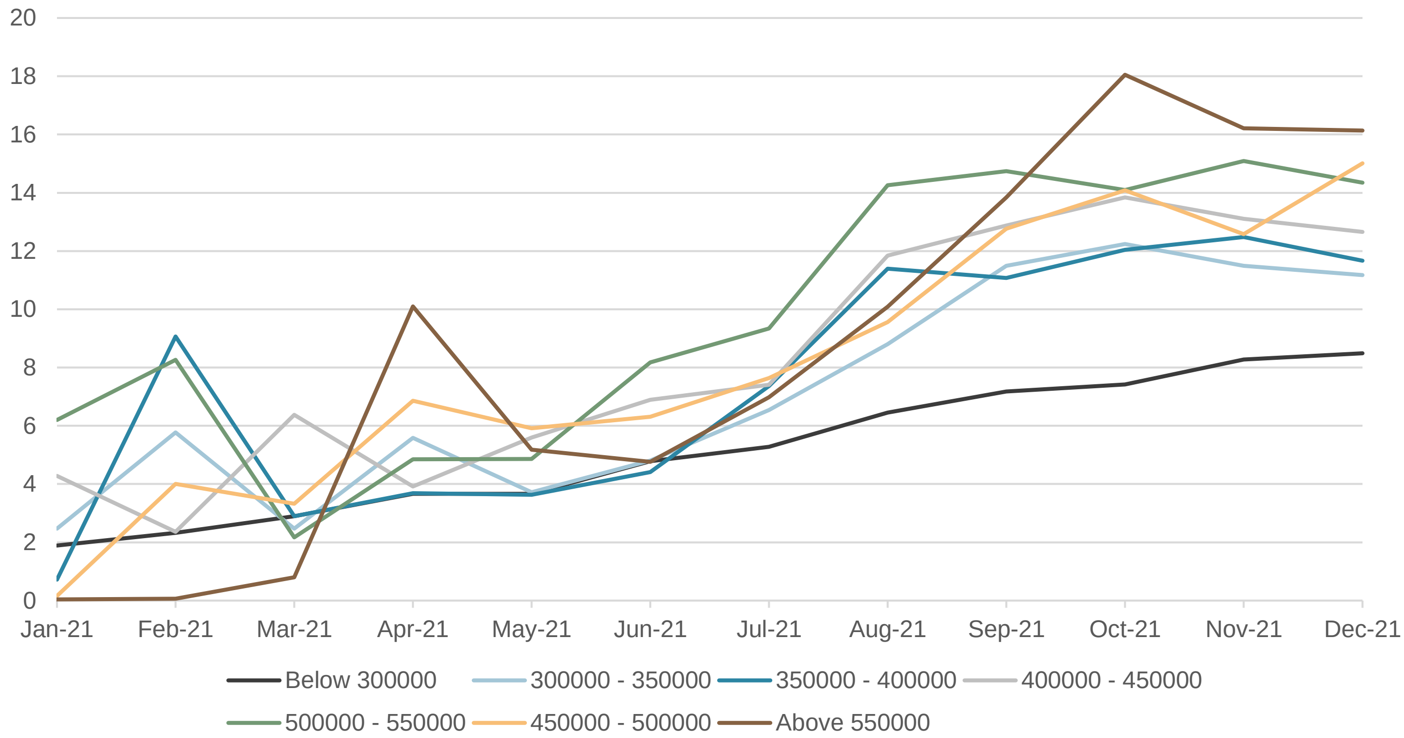
Source: eMBS AMA, FNMA, FHLMC

Exhibit 4: Upper band AOLS CPRs UMBS 2.5%s



Source: eMBS AMA, FNMA, FHLMC

Exhibit 5: Upper band AOLS CPRs UMBS 3s



Source: eMBS AMA, FNMA, FHLMC

Data findings and conclusions

1. Higher Gross WACs are evident on the Through the Box vs. generic aggregations (2021 vintages). Using premium priced UMBS 3% for effect; overall averages for 2021 vintages (TBA probable) we find; 3.67% WAC, 352 WAM, that calculates to a break even or dollar roll “carry” of 6 ¾ 32nds. Using the CTD profile from the Street; 3.86 WAC, 342 WAM,” carry” or break even decreases to 2 ¼ 32nds.

2. Average Original Loan sizes were the main disparity between Street and Fed TTB results on par and current production coupons. While production coupons (UMBS 2%s, 2.5%s) all delivered low WALAs and had similar characteristics otherwise (LTV, FICO, WAM), the larger loan sizes are the differentiators and could portend potentially fast prepay speeds. AOLS on Street CTD was $386k while Fed AOLs was $421k, causing speeds to rise 0.5CPR Lifetime OAD to shorten 0.164 years and OAS to tighten 6bps (on cuspy 2.5S $102 priced securities).

3. Once the Fed does exit TBA purchases and is relegated to only prepayment reinvestments, the TBA delivery upon the street will have its greatest consequence in AOLS. Because the Fed did stick to current coupons primarily, the lower interest rates it fostered did result in less damaging WACs for its portfolio. Variance in average loan size will be the main consequence to forward TBA buyers.

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