Am I Paying too much Premium for an MBS?

We are constantly comparing investment alternatives when making decisions for our portfolios. When comparing MBS pools, one of the most important considerations is the prepayment risk. If one pool has a higher return and a higher dollar price, does it make sense to pay the higher dollar price to earn the higher return?   Stress testing of prepayment assumptions helps to answer this question.

Below are two example pools for comparison. The pool in Exhibit 1 is a FN 20y 1.5% fixed rate MBS. The pool in Exhibit 2 is a FN 30y 3.0% fixed rate MBS. The 20y pool has a yield of 0.95% at a price of 102-00 using the Bloomberg Median prepay assumption. The 30y pool has a yield of 1.25%, 30 bps higher than the 20y pool. However, the 30y pool also has a dollar price of 105-13, almost 3.5 points higher than the 20y pool. How do I evaluate whether or not to pay the higher premium to try and earn the higher yield?

Exhibit 1 – FN 20y 1.50%

Source: Bloomberg, LLC

Exhibit 2 – FN 30y 3.00%

Source: Bloomberg, LLC

The stress testing of prepayment assumptions helps to quantify the risks and rewards of paying a higher premium when actual prepayments come in different than assumptions. Here are some things to check:

1. How much can I increase the prepay assumption on the 3% pool and still at least get the same yield as the 1.5% pool? The answer is 123% (see table below). Increasing the PSA from 546 to 670 (32.8 to 40.2 for long-term CPR) reduces the yield to 0.95% for the 3% pool. This says I have some room to be wrong on my prepayment assumption on the 3% pool and still get a higher yield than the 1.5% pool.

Bloomberg Yield Tables Summary

1	FN 20y 1.50%				
2	Prepayment Speed PSA	422	519	338	633
3	Multiplier	100%	123%	80%	150%
4	Long Term CPR	25.3	31.1	20.3	38.0
5	Price	102-00			
6	Yield	0.95%	0.87%	1.02%	0.78%
7	Change		-0.08%	0.07%	-0.17%
8					
9	FN 30y 3.00%				
10	Prepayment Speed PSA	546	670	437	819
11	Multiplier	100%	123%	80%	150%
12	Long Term CPR	32.8	40.2	26.2	49.1
13	Price	105-13			
14	Yield	1.25%	0.95%	1.52%	0.61%
15	Change		-0.30%	0.27%	-0.64%

2. What happens to my yield if actual prepayments are 150% of my base assumption? The yield on the 1.5% pool falls 17 bps to 0.78% and the yield on the 3% pool falls 64 bps to 0.61% so there is some yield remaining at higher prepay assumptions of 819 PSA and 49.1% long-term CPR for the 3% pool, but it's yield is now lower than the 1.5% pool. Remember also that the 30y 3% pool has a WAC of 3.89%. With current 30y REFI rates around 2.66%, this bond has a WAC that is over 100 bps in the money so as the bond seasons, prepayments will most definitely ramp up with CPRs in the 40% to 50% range a real possibility for some months given where similar pools with more seasoning are currently prepaying (See the prepayment report by WALA for FN 30y 3% at the end of report).

3. If prepayments slow to 80% of base assumptions, the 1.5% pool picks up 7 bps in yield to 1.02% and the 3% pool picks up 27 bps to a yield of 1.52%. Keep in mind though, that if interest rates increase, these bonds will extend, especially the 3% 30y pool. We have been recommending against 30y pools for this reason. The average life of this 30y pool at Bloomberg Median Speeds up 300 bps is over 10 years, compared to 3.30 years currently.

4. Check the base prepayment assumptions as well. The 1.5% pool has a 2.515% WAC which is close to the current coupon REFI rate for 20 year mortgages, so the 25.3% long term CPR seems adequately high (maybe even a little too high). The 32.8% long-term CPR assumption for the 3% pool is appropriately much higher, but some assumption stressing, as we have done here, is always appropriate with a higher premium dollar price. Keep in mind too, that these base prepayment assumptions are the Bloomberg Median speeds so you can always check the VALL page on Bloomberg to view these in more detail. As we have written in previous notes, Bloomberg has made recent improvements to this process which will improve the accuracy of the Bloomberg Median.

5. Look at pools with different issuance years or different WALAs (weighted average loan age) of the same coupon and amortization (i.e. 20y or 30y) which will give you an idea of what to expect if rates stay where they are. For example, if you look at FN 30y 3%'s with 12 months of seasoning as a comparison to the bond in this analysis, you will see that prepayment speeds have started to ramp up into the 40-50 CPR range around month 12 (again refer to the WALA vector below). Keep in mind that this type of analysis is baked in to all the Bloomberg Median contributors prepay models, but looking at this gives you an idea of what to expect and whether the long-term prepayment assumption seems reasonable.

Actual Prepayments (CPR) for FN 30yr 3.00% by WALA (Weighted Average Loan Age)

Wala	See Pay-down	Issue Amount (MM)	RPB (MM) 12/1/2020	Nbr of Pools	WAC	WAM	WALA	OCS	OLTV	WAOL Size (K)	Vol Nov 20 CPR
0	PyDn	51.1	51.0	11	3.90	356	0	733	68	248	2.3
1	PyDn	1,098.3	1,094.6	115	3.74	355	1	729	73	235	2.1
2	PyDn	3,604.2	3,579.3	201	3.63	355	2	737	73	216	3.7
3	PyDn	4,846.3	4,778.9	276	3.76	354	3	733	74	256	5.2
4	PyDn	7,007.5	6,851.3	439	3.87	353	4	729	76	317	6.9
5	PyDn	11,193.6	10,817.0	439	3.81	352	5	733	77	304	10.4
6	PyDn	11,842.4	11,258.1	420	3.84	351	6	733	76	309	16.0
7	PyDn	10,713.6	9,883.3	415	3.78	349	7	741	76	295	25.5
8	PyDn	20,752.7	18,108.6	316	3.82	349	8	743	77	305	33.7
9	PyDn	21,815.1	17,736.1	394	3.86	348	9	750	77	331	43.5
10	PyDn	25,160.8	19,460.7	409	3.86	347	10	753	77	330	43.7
11	PyDn	32,715.8	24,411.1	418	3.86	345	11	753	78	330	44.6
12	PyDn	26,915.7	19,626.0	399	3.84	345	12	754	77	324	45.5
13	PyDn	31,612.8	22,687.3	448	3.82	343	13	753	77	316	44.0
14	PyDn	30,646.4	21,283.1	450	3.84	342	14	753	78	310	45.5
15	PyDn	29,574.6	19,137.7	432	3.91	342	15	753	80	315	48.2
16	PyDn	27,943.5	17,034.9	353	3.93	340	16	756	79	313	48.7
17	PyDn	13,672.3	7,069.1	156	3.98	340	17	759	79	333	54.3
18	PyDn	8,276.0	4,065.2	114	4.00	338	18	761	77	324	57.1
19	PyDn	6,081.2	2,708.4	73	4.03	337	19	757	79	328	58.1
20	PyDn	2,479.7	952.6	24	4.22	336	20	752	78	327	59.2
21	PyDn	665.6	227.5	22	4.24	335	21	751	78	321	57.5
22	PyDn	157.8	57.2	6	4.26	332	22	752	77	310	38.0
23	PyDn	17.6	10.4	4	3.99	331	23	745	81	263	52.3
24	PyDn	30.6	16.7	7	4.05	328	24	750	75	296	15.1
25-30	PyDn	749.4	396.1	89	3.98	327	28	755	78	288	44.5
31-36	PyDn	4,327.5	2,364.3	182	3.85	318	35	759	77	304	49.0
37-42	PyDn	5,180.0	2,791.4	289	3.80	314	39	760	77	298	48.3
43-48	PyDn	30,429.3	17,261.0	697	3.55	304	48	762	72	302	39.9
49-54	PyDn	172,687.5	87,376.2	3,060	3.63	301	51	760	76	297	41.8
55-60	PyDn	49,453.6	20,860.7	1,282	3.79	294	56	762	75	300	46.9
61-66	PyDn	24,502.0	11,204.2	932	3.75	285	65	768	73	306	45.6
67-72	PyDn	45,569.4	16,472.1	1,534	3.78	280	69	766	73	304	47.5
73-78	PyDn	571.0	212.5	90	3.85	272	74	769	73	283	36.9
79-84	PyDn	115.1	47.8	30	3.62	261	82	766	68	273	28.5
85-90	PyDn	45,654.8	18,063.2	1,294	3.57	258	89	764	72	284	32.5
91-96	PyDn	194,458.9	73,129.4	4,933	3.56	253	94	764	71	289	34.0
97-102	PyDn	117,877.4	39,797.3	3,186	3.59	247	99	770	71	296	38.0

Source: eMBS.com

When returns on two MBS's are similar but the premium is higher on one of the bonds, it usually doesn't make sense to pay the higher price for the same return, all other things being equal. When the return is greater on a higher priced MBS, stress testing prepayment assumptions gives you an idea of the magnitude of risk and reward you are taking with the higher priced bond to help make a more informed investment decision.

Please call AMG at 800-226-1923 or your Capital Markets Group Representative for more information.
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