

US Agency Notes

Agency Callables vs. Corporates in a Low-Spread World

- Our analysis projects that at similar durations, callables can beat representative corporates on a total-return basis over six months, but at like-maturities, the corporates still outperform callables.
- However, the risks involved in agencies are likely rather lower than those for corporates, and it does not require a large adverse move for the callable performance to start looking noticeably better at five- to ten-year tenors.

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Agency Callables vs. Corporates in a Low-Spread World

With Treasury yields stubbornly sitting near historic lows, investors are hungry for spread. But this demand creates a vicious circle, tightening spreads further. The Fed's quantitative easing programs have contributed to the cycle, taking longer, higher-yielding Treasuries out of circulation and soaking up a substantial portion of new mortgage supply.

In light of how tight corporate spreads have been driven, we look at callable agencies as an alternative to high-grade corporates, trading credit risk for convexity risk.

- Our analysis that at similar durations, callables are projected to outperform representative corporates on a total-return basis, but at like-maturities, the corporates still outperform callables.
- However, the risks involved in agencies are likely rather lower than those for corporates, and it does not require a large adverse move for the callable performance to improve noticeably at five- to ten-year tenors.

The Investment Environment

Spreads have come in dramatically, and while they are not as historically tight as Treasury yields are low, spreads for agencies and higher-grade corporates are mostly in the bottom quartile or even decile for the post-crisis era (Figure 1). In fact, looking back since year-end spreads for bullet agencies are just about at their lows. This does suggest that there is little upside to agency spreads and probably more room for corporate spreads to tighten. On the flip side, looking at the spread range for the same period, corporate spreads have exhibited much higher volatility, have experienced more extreme two-week adverse moves and have a lot more room to widen than agencies.

Figure 1. Historical Spreads of High-Grade Corporate Sectors of the Citi BIG Index, and Agency Benchmarks, 19 Sep 2012

Corporates			Current		YTD Stats			
Sector	Tenor	Rating	Level	Percentile	Max	Min	StDev	Max 2-wk Increase
USBIG, Financials	3-7	AA/AAA	100	2%	96	221	26	32
	3-7	A	157	1%	155	355	40	51
	7-10	AA/AAA	169	2%	162	266	25	43
	7-10	A	195	1%	192	343	32	45
USBIG, Industrials	3-7	AA/AAA	54	16%	46	80	8	12
	3-7	A	75	0%	75	112	9	13
	7-10	AA/AAA	79	16%	73	106	8	12
	7-10	A	104	0%	104	141	10	21
Agency Benchmarks			Current		YTD Stats			
Tenor			Level	Percentile	Max	Min	StDev	Max 2-wk Increase
5			16	3%	12	36	5	7
7			22	1%	21	43	5	9
10			30	3%	27	52	5	11

Source: Citi Research

Volatility, another source of risk for agency callables, is notably friendlier (Figure 2). Not only are the relevant yield vols at less extreme values, but the macro situation is likely to be relatively benign. The Fed's guidance that policy rates are likely to stay in the current range until mid-2015 should help keep volatility in check, as should

their efforts to keep rates low. In addition, the mortgage purchase program should cause intermediate volatility to decline further.

Figure 2. Relevant Historical Yield Volatilities, 19 Sep 2012

Structure	Current		YTD Stats			
	Level	Percentile	Max	Min	StDev	Max 2-wk Increase
1x4	51.8	56%	46.5	61.5	2.9	11.1
1x7	42.9	32%	39.7	50.5	2.5	6.0
1x10	39.7	21%	36.9	47.1	2.5	4.6

Source: Citi Research

Head-to-Head: Callables vs. Corporates

We look at three tenors of European callable agencies, 5NC1, 7NC1 and 10NC1 (Figure 3), and compare them to a range of single-A and double-A financial and industrial bonds at five- and ten-year tenors (Figure 4). The corporates we selected were all issued in the last six months, and most have over \$1 billion outstanding. We chose them to be close to the average spread for their respective categories.

We run the comparisons for three scenarios, looking at six-month returns:

- The base case scenario has rates, spreads and vols unchanged.
- The rate risk scenario has rates rising 50bp.
- The spread/vol risk scenario has rates unchanged but spreads widening and volatility increasing in line with the worst two-week move in 2012 for each instrument.

On a duration-matched basis, the best comparison is a 10NC1 versus five-year corporates. The callable performs substantially better in the base case scenario and still better in the spread risk and rate risk scenarios. Its advantage in the rate risk scenario is a function of its call moving out of the money, reducing the value of the option it is short and offsetting the impact of its negative convexity. Additionally, in the spread risk scenario, the 10nc1 is projected to outperform ten-year IBM, the top corporate in that scenario.

Figure 3. Callables in Six-month Base Case and Risk Scenarios, 19 Sep 2012

Structure	Coupon	Maturity	Yield	Price	OAS	Effective Duration	Effective Convexity	Vega	6-mo Return by Scenario		
									Base Case	Spread Risk	Rate Risk
5NC1Y	0.95	10/11/2017	0.95	100.00	8	2.94	-3.03	0.02	0.71	0.61	-0.68
7NC1Y	1.49	10/11/2019	1.49	100.00	5	3.66	-3.14	0.04	1.09	0.86	-0.47
10NC1Y	2.16	10/11/2022	2.16	100.00	-6	4.50	-3.59	0.06	1.51	1.11	-0.46

Source: Citi Research

The shorter callables can't match up with the corporates in the base case scenario, but are projected to outperform all the corporates in the rate risk scenario. In addition, we project that they outperform all but the ten-year IBM in the spread risk scenario.

Figure 4. Corporates in Six-Month Base Case and Risk Scenarios, 19 Sep 2012

Sector	Tenor	Rating	Ticker	Coupon	Maturity	Yield	Price	OAS	Effective Duration	6-mo Return by Scenario		
										Base Case	Spread Risk	Rate Risk
Financials	5yr	AA-	BMO	1.4	9/11/2017	1.38	100.10	67	4.82	1.13	-0.26	-1.02
	5yr	A	JPM	2	8/15/2017	1.87	100.61	118	4.68	1.35	-0.75	-0.73
	10yr	AA-	CME	3	9/15/2022	2.99	100.07	121	8.84	2.34	-1.15	-1.81
	10yr	A+	USB	2.95	7/15/2022	2.93	100.15	118	8.68	2.31	-1.25	-1.76
Industrials	5yr	AA	RDS	1.125	8/21/2017	1.09	100.17	39	4.80	0.98	0.49	-1.16
	5yr	A	ABIXX	1.375	7/15/2017	1.21	100.78	53	4.67	1.02	0.46	-1.05
	10yr	AA-	IBM	1.875	8/1/2022	2.34	95.91	55	9.20	2.10	1.05	-2.22
	10yr	A	ABIXX	2.5	7/15/2022	2.50	99.98	74	8.90	2.13	0.44	-2.04

Source: Citi Research

Appendix A-1

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