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Extension School

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High yield was relatively unchanged in the first two days of this holiday-shortened week and traded down slightly in the first half of Wednesday, in line with other risky assets. The CDX index rolled to series 20, with three new credits (J.C. Penney, CenturyLink, and PulteGroup) replacing three removals (Sunoco, CMS Energy, GenOn); the roll is worth about 1.125pts in intrinsic value, and was trading very near there as of midday Wednesday.

Rates have declined over the past two weeks, but investors remain concerned that a persistent trend of rising rates has set in. As we have shown in recent reports, periods of increasing rates rarely lead to negative total returns, as the benefits of spread compression and carry exceed the losses from Treasury exposure. Beyond the potential drag on returns, investors are also understandably concerned about the effect that increasing rates can have on duration. In *Where is the Rate Risk?* we examined what would happen to the market duration under different parallel rate curve shift scenarios. This week we look to quantify the level of extension risk in the market by combining a measure of its severity with a measure of its likelihood.

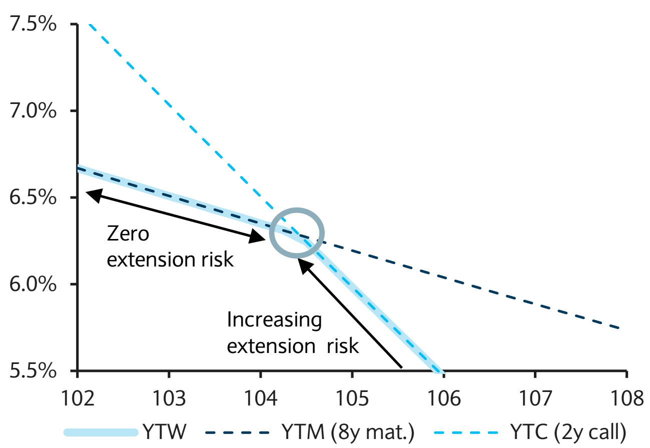
Duration extension is a consequence of negative convexity, and is experienced only when a bond transitions from trading to a call to trading to maturity (or a longer-dated call). Naturally, extension risk is at a minimum when issuer call options are out of the money, and all bonds are trading to maturity. However, that is certainly not the situation we are in today, given that approximately 47% of bonds in the US High Yield Index are trading at or above their next call price. Nonetheless, the deeper in the money issuer calls are, the further bonds are from the point of extension (Figure 2). In other words, as a bond gets more and more call constrained, the yield backup required to get it to trade to maturity increases, effectively making extension less likely. A common measure of the depth of call constraints is the difference between yield to maturity and yield to worst (Figure 3). This quantity effectively captures the buffer, in terms of yield, between the current market yield and the yield at which the risk of extending is at its peak.

FIGURE 1
Cash and CDS Movers

High Yield Cash					
Best	**Px**	**Chg**	**Worst**	**Px**	**Chg**
CZR 5.75 '17	67.50	+4.0	TLACQ 12 '19	22.00	-7.0
AFFINI 11.5 '15	87.00	+3.5	JCP 7.125 '23	95.00	-3.9
WY 7.125 '23	123.15	+3.0	NGPLCO 7.768 '37	102.00	-2.5
High Yield CDS					
Best	**5y**	**Chg**	**Worst**	**5y**	**Chg**
SVU	2.9 pts	-1.6 pts	MBIA	38.0 pts	+1.9 pts
FST	3.5 pts	-1.6 pts	AMGFIN	471 bp	+34 bp
CCU	43.5 pts	-1.3 pts	FDC	10.5 pts	+1.5 pts

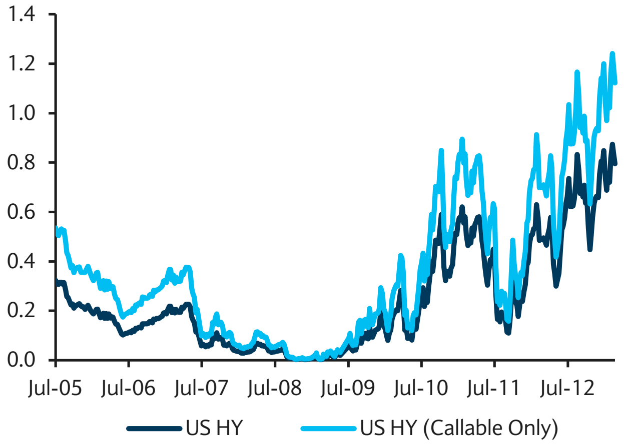
Source: Barclays Research

FIGURE 2
Extension Risk for a Hypothetical Callable Bond



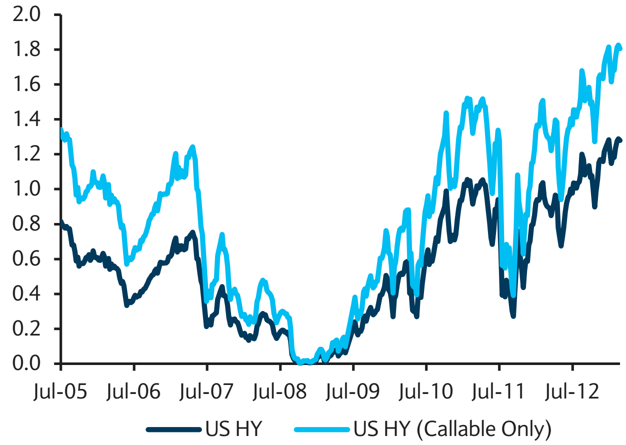
Source: Barclays Research

FIGURE 3
Yield to Maturity Minus Yield to Worst



Source: Barclays Research

FIGURE 4
Duration to Maturity Minus Duration to Worst



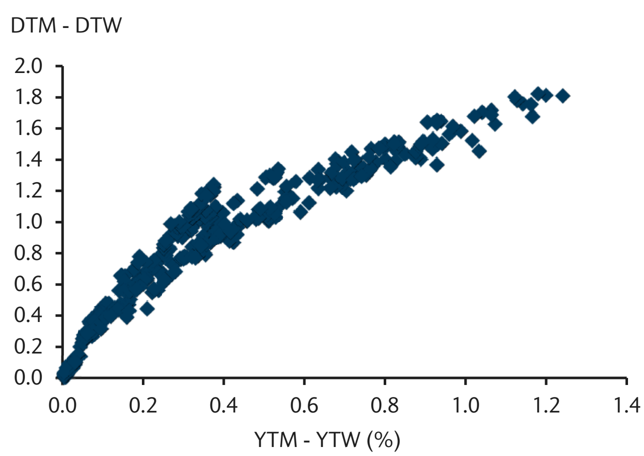
Source: Barclays Research

While deepening call constraints make extension less likely, they can make the jump from a call date to maturity more severe. Indeed, as an increasing number of bonds

trade to a call, the difference between the duration to maturity and duration to worst has reached a peak (Figure 4). This sets up a tug of war between the severity and buffer of extension risk, both of which increase as yields decrease and the market becomes more call-constrained.

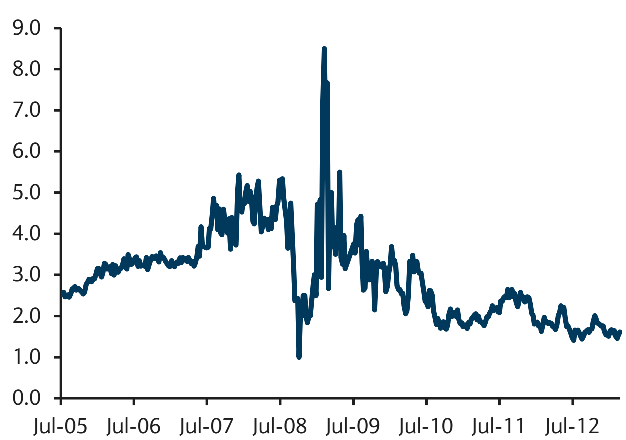
Interestingly, the relationship between the call-constraint severity and the buffer between current levels and the extension point is non-linear (Figure 5). Therefore, even though both are at or near extreme levels, the ratio – which we believe serves as a good proxy for the level of extension risk in the market – is near its lows (Figure 6). In sum, while upside potential remains very limited in a callable market trading near its peak, investors can take some solace from the fact that extension risk is not especially pronounced; with such a significant buffer to the average extension point, the market would need a very large spike in volatility to get materially longer duration.

FIGURE 5
Extension Risk: Severity vs Buffer



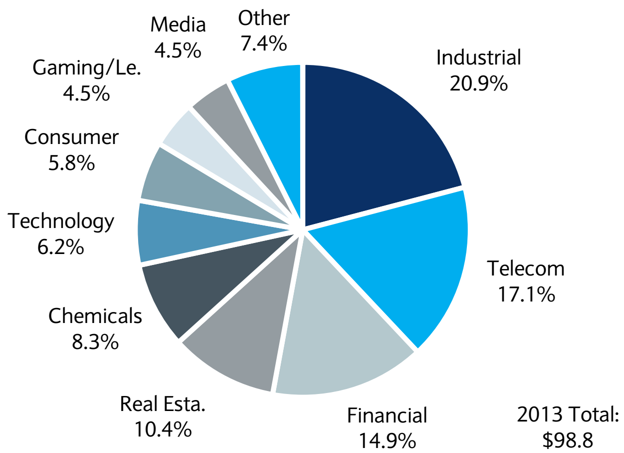
Source: Barclays Research

FIGURE 6
Extension Risk: Ratio of Severity to Buffer



Source: Barclays Research

High Yield Supply by Sector – 2013 Breakdown



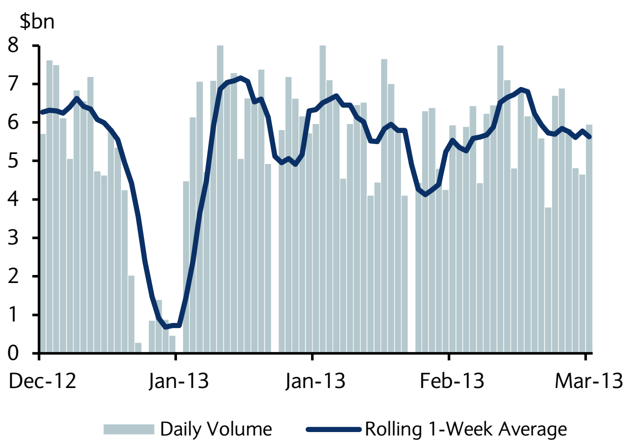
Source: Barclays Research

Top On-the-Run CDX Index Names by Weekly CDS Volume

	Notional Outstanding ($bn)		Volume – Week Ending 3/22/13 ($mn)
	Gross	Net	Gross
MBIA Insurance	70.4	2.1	448.5
Caesars Ent.	24.2	1.4	421.6
Springleaf Finance	4.7	0.6	395.0
ILFC	28.7	1.4	361.0
MGIC Investment	29.9	1.2	337.0
First Data	16.8	0.7	304.5
Tex Comp Elec Hld	14.5	0.9	291.9
Sprint Nextel	25.6	1.2	273.7
Clear Channel	25.6	1.2	272.5
Radian Group	38.6	1.2	272.0

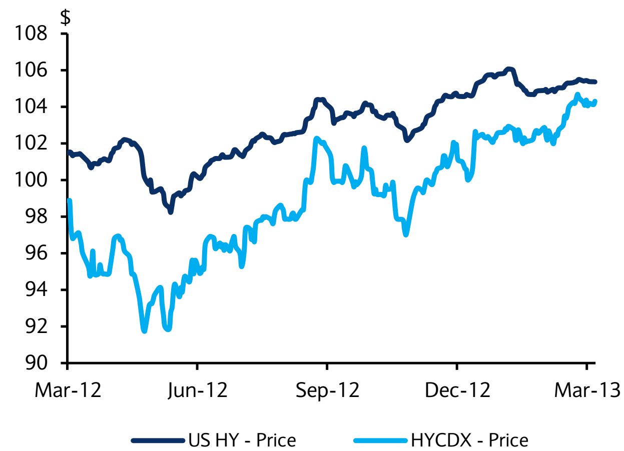
Source: Barclays Research

High Yield Average Institutional Trade Volume



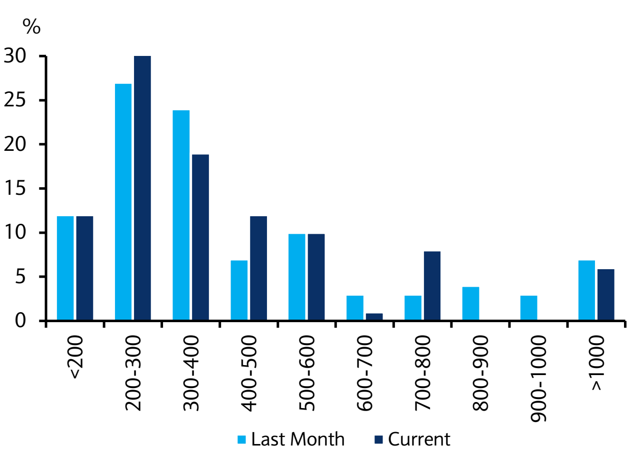
Source: Barclays Research

On-the-Run HYCDX versus U.S. High Yield Index



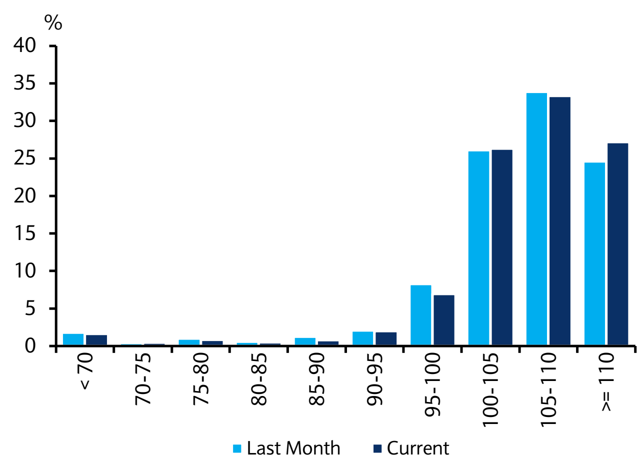
Source: Barclays Research

On-the-Run HYCDX Spread Distribution



Source: Barclays Research

High Yield Index Price Distribution by Par



Source: Barclays Research

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