SPECTRUM
Asset Management

Junior-Subordinated Capital Securities Markets

February 2022 Updates

The significant repricing of fixed income continued in February. This was the worst 2-month period on record for preferred securities, except for the coronavirus blow-off (which we consider to be well outside of the "normal" curve). A repricing of higher inflation expectations and the Fed's anticipated accelerated actions against it were the primary reasons for the price declines. The Russian invasion of Ukraine at the end of the month has had a limited impact on hybrids with most of the repricing being expressed in wider spreads from a modest risk-off move into US treasuries. Preferred securities widened 34bps and contingent capital securities widened by 80bps compared to similar duration US government securities. Real rates on the front end of the curve (e.g., UST 5yr TIPS) ended the month 13bps lower at -1.42%; the 5yr implied breakeven inflation rate (i.e., the difference in yields between the 5yr UST and the 5yr Treasury Inflation Protected Security) gushed up 26bps to close at 3.15%. On the back end of the treasury curve, the 30yr bond closed yielding 2.16% (5bps higher; though 20bps lower than its peak earlier this month) and the 10yr note closed yielding 1.82% (4bps higher; tough 20bps lower than its peak as well this month) -- the yield differential between the two longer US treasuries steepened 1bp to +34bps. The VIX (i.e., Chicago Board Options Exchange Volatility Index) spiked by 21% to 30.15 as the S&P 500 finished the month under its 200-day moving average for the first time in two years.

Before we talk hybrids, let's look at performance in some of the more senior corporate credit sectors for comparative references on returns and yield changes:

- The junk market (measured by the ICE BofA High Yield ***h0a0*** index) fell 0.90% to close yielding 5.55% (24bps higher).
- Global bank credit (measured by ICE BofA ***e0ba*** index) fell 1.47% to close yielding 2.76% (32bps higher).
- The BBB rated 5-10yr corporate sector (measured by ICE BofA ***c6a4*** index) fell 1.80% to close yielding 3.3.34% (30bps higher).

Review of Market Structure:

The market for hybrids or **global junior-subordinated capital securities** (*i.e.,* "**Jsubs**") as we call them is comprised of two core sectors:

1. Preferred Securities, and
2. Contingent Capital Securities

Each sector has evolved with unique technical, structural, and fundamental features that are discussed and updated below:

Global junior subordinated capital securities are comprised of two sub-sets that represent a broad group of global junior-subordinated capital securities, which can be referenced by two ICE BofA indexes: 1) The ICE BofA US All Capital Securities Index (***i0cs***) and 2) The ICE BofA US Dollar Contingent Capital Index (***cdlr***).

Our litmus test for hybrids satisfies two core characteristics:

1) any non-payment of distributions would not accelerate an event of default (i.e., distributions are "junior-subordinated" to ordinary interest obligations) and,

2) balance sheet classification is something other than common stock under GAAP disclosure.

The US All Capital Securities (***i0cs***) benchmark of preferred securities represents $354 billion (face amount) of investment grade and below investment grade instruments in both the retail $25par market (36%) and the institutional $1,000par market (64%). The USD Contingent Capital Index of US dollar denominated junior-subordinated capital securities ***(cdlr)*** represents $157 billion (face amount) of investment grade and below investment grade fixed-rate instruments with contractual triggers that could subordinate them to common stock in a reorganization that would not fall into a receivership after the bail-in. These two benchmarks combine for a $511 billion universe of fixed-rate junior-subordinated USD capital securities with preferred securities (measured by ***iocs***) being a 69% subset and contingent capital securities (measured by ***cdlr****)* being a 31% subset of the total global USD junior subordinated group.

Preferred Securities

In the preferred securities sleeve, there are four sub-component indexes in the US All Capital Securities Index (***i0cs****)* – this entire index is comprised of global "preferred securities". A **"preferred security"** can represent a capital security issued either through charter amendment (i.e., as a stock) or through indenture (i.e., as a bond) typically within the context of a "gone-concern" statutory authority (*e.g.,* US banks). As a gone concern, a company reorganization would be processed through a bankruptcy court. Preferred security payments are in priority to common stock dividends, yet can be deferred (i.e., payments are cumulative) or eliminated (i.e., payments are non-cumulative) without causing an immediate event of default; any principal loss absorption on a preferred security would be forced only *ex-post* through a statutory resolution in a bankruptcy proceeding.

The four sub-components of the *i0cs* benchmark that consolidate into the retail and institutional sectors of rated preferred securities are:

1. **ICE BofA Fixed Rate Preferred Index (*p0p1*) @ 43% *of i0cs***
   - Comprised of IG $25par and IG $1,000par (incl. US AT1)
     - The *p0p1* fell 3.17% this month to close yielding 4.28% (+65bps)
     - Headcount was rose by 4; face value rose by $1.4billion
2. **ICE BofA US Capital Securities Index (*c0cs*) @ 23% of *i0cs***
   - Comprised of dated IG $1,000par dated hybrids (excl. US AT1)
     - The *c0cs* fell 2.90% this month to close yielding 3.89% (+31bps)
     - Headcount declined by 1; face value declined $1.9 billion
3. **ICE BofA High-Yield Capital Securities Index (*h0cs*) @ 5% of *i0cs***
   - Comprised of BIG $1,000par legacy Tier1 and BIG $1,000par hybrids
     - The *h0cs* fell 3.98% this month to close yielding 5.00% (+68bps)
     - Headcount was unchanged; face value was unchanged
4. **ICE BofA High Yield Fixed Rate Preferred Index (*p0hy*) @ 29% of *i0cs***
   - Comprised of BIG $25par and BIG 1,000par (incl. US AT1)
     - The *p0hy* fell 3.26% this month to close yielding 5.20% (+65bps)
     - Headcount was down 4; face value declined by $1.9billion

Overall, the ICE BofA All US Capital Securities Index (***i0cs***) fell 3.17% in February to close yielding 4.48%, which was 57bps higher than last month's closing yield and a spread of +266bps over comparable US Treasury securities (34bps wider).

Contingent Capital Securities

A **"contingent capital security"** (i.e., a "CoCo") represents a capital security issued through indenture typically within the context of a "going-concern" type regulatory regime for banking, which would reorganize a potentially insolvent bank through the contracts of its capital before falling into a conservatorship proceeding. CoCos payments are non-cumulative and *pari passu* to common stock dividends and can be reduced or eliminated

without causing an event of default. Principal loss absorption on a CoCo could be forced ex-ante through a regulatory action in advance of any bankruptcy proceeding (note that an actual bankruptcy may not happen because enough loss absorbing bail-in capital, including tier-2 capital, could be available through the "living will" of the entity's core capital). The ICE BofA USD Contingent Capital Index (***cdlr***) is comprised of US dollar denominated constituents (exclusively), which represent 60% of the mature master multi-currency benchmark (*coco*). We will utilize the USD benchmark (*cdlr*) as it more meaningfully reflects the contingent capital currency primarily held in our portfolios. The ICE BofA USD Contingent Capital Index (***cdlr***) fell 3.17% this month to close yielding 5.48%, which was 103bps higher from last month and a spread of +378bps over comparable US Treasury securities (80bps wider).

Snapshot of Junior Subordinated Spread Sector Moves:

Capital Securities Spread Value Matrix	p0p4 (a) Retail	p0p4-e0ba (b) Retail	stb8 (a) NoCo	stb8-e0ba (b) NoCo	cdlr (a) CoCo	cdlr-e0ba (b) CoCo
Sample Periods	03/31/2017 to Date		03/31/2017 to Date		03/31/2017 to Date	
Jr-Subs	*Absolute	**Relative	*Absolute	**Relative	*Absolute	**Relative
High	588	251	479	200	660	313
Low	-178	-267	174	53	223	143
Range	766	518	305	147	437	170
Average	42	-64	241	136	325	219
Stdev	119	104	46	27	62	35
Monthend	191	81	252	142	350	240
Sector Spread Score[1]		1.32		0.23		0.50
Last Month's Score[1]		0.95		-0.60		-0.81

1: Sector Spread Score = {[Monthend(a)-Ave(a)]/Stdev(a)+[Monthend(b)-Ave(b)]/Stdev(b)}/2

Monthend statistical position to average per unit of standard deviation	p0p4 (a)	p0p4-e0ba (b)	stb8 (a)	stb8-e0ba (b)	cdlr (a)	cdlr-e0ba (b)
*Absolute	1.25		0.24		0.40	
**Relative		1.39		0.22		0.60

* *Absolute = Option Adjusted US Government Spread*

** *Relative = spread to global financials measured by e0ba ICE Bond Index*

Monthend estimate of spread duration benefit (units of stdev.)	Retail	NoCo	CoCo
Spread/mdurMat	-0.32	1.24	1.66
Probability Estimate to Spread Benefit	37.60%	89.30%	95.16%
		Memo: e0ba	4.13%

Source: Bloomberg, ICE Bond Indices

<u>Implications of Market Activity</u>:

<u>$25par Retail Preferred Securities Sector</u>

The retail preferred securities sector fell $4.69 in February to $96.76, the sector's first discount to par since December 2018 (i.e., excluding the COVID Crisis). The combination of new year-to-date lows this month for equity and weakness in the US Treasury market (i.e., before the Ukraine invasion) forced the retail market to reprice lower. Here are performance details this month for two more recent bellwethers in the retail sector:

1. The (A3/BBB+) Public Storage fixed-for-life perpetual preferred stock that priced at 4.10% at the beginning of January fell $2.98 (-12.3%) this month to $21.22, which was 59bps cheaper on current yield (4.83%) and spread 53bps wider (+299bps) against the 10yr treasury yield (1.84%).
2. The (Baa1/BBB+) US Bancorp 4.50% fixed-for-life perpetual preferred stock that priced at the beginning of February fell $1.16 (-4.6%) over the month to $23.84, which was 22bps cheaper on current yield (4.72%) and spread 16bps wider (+288bps) against the 10yr treasury yield (1.84%).

For retail paper, longer term interest rates are getting a little less play against valuations this year than last year as the correlation to US treasury bonds (e.g., UST10yr notes) has been less positive as rates move higher. For example, in 2021 the daily total return correlation of retail sector (i.e., *p0p4*) to the UST10yr (i.e., *ga10*) was 0.31; this year the daily correlation is 0.26 through February. Correlations of retail paper to the S&P500 have risen somewhat this year at 0.44 compared to 0.42 last year. Clearly, equity returns matter a bit more to the retail sector than 10yr UST returns over the past year or so. Importantly, it's not only correlation that matters to an asset allocation, but also the expected return of the asset classes one's applying the correlations to. Both equity and bonds have behaved

badly over the first two months so one can expect retail paper to have misbehaved as well. In our opinion, return expectations this year should rhyme with 2018 (remembering the tariff pressures and the Fed rate hikes & balance sheet pressures on equity). During the first 10 months of 2018, the return correlations for $25par vs. 10yr treasuries was 0.29 and vs. equity was 0.28 – so, not too much different from this year; but when the Fed went too far on rates (remembering Chairman Powell saying *"we're a long way away from neutral"* and the bond rally that followed) the retail sector's correlation to equity jumped in the last 3 months of the year to 0.42 (as equity blew-off) and to -0.14 vs 10yr treasuries as bonds rallied and preferred prices declined to follow equity. Such dispersion in correlations evidences an extreme risk-off mood; and what we believe may ultimately be a combination of price and spread opportunity in retail preferred securities, as the case may be. A correlation dispersion in performance to this magnitude is evident this year despite the record price declines (and high equity correlation), but we very well could see another opportunity for retail paper on the horizon given the Fed is on a similar path for rates and the balance sheet. Indeed, equity has a soaring Fed hawk to fear and prospective stagflation to reprice at inflation levels showing the highest pressure in 40years -- very concerning geopolitical risks only make financial conditions (among other things) more uncertain. Overall, retail paper is getting cheaper, and its relative value is much improved – though the sector still has less defensive value than the institutional sectors as we'll discuss below.

$1,000par Institutional Preferred Securities Sector

The $1,000 par institutional sector of the preferred securities market fell $3.17 in February. Relative values to more senior financials are above average as spreads on junior subordinated paper widened more than spreads on more senior paper. The chart below

shows the option adjusted spread of NoCos (i.e., *stb8*: a custom weighted combination of ICE BofA's *cips* and *hips*) vs. Eurodollar Banking Index spread (i.e., *e0ba*) since 2013:

Source: Bloomberg

We look back to 2013 to include three intra-cycle sparks or shocks within the broader economic cycle from 2013's QE-III to 2020's QE-IV: 1) the aftermath (2014) of the bottom of QE3's Taper Tantrum (2013), 2) the commodity implosion and high yield (oil) market bust (2016) and 3) the market's revolt to the Fed's overshoot on rates (2018) – and now, the ongoing fear of and recovery from the COVID-19 pandemic and associated variants (2020+). NoCo spreads to comparable treasuries closed 40bp wider (+253). Relative to more senior financials, NoCos moved 21bps wider closing at +142bps which is 0.22 standard deviations more than average. We expect the yield compression on junior subordination to more senior credit to move tighter than average as interest rates rise though not without some

moves wider along the way like we saw this month. The Fed has proclaimed that the labor market in the US is "very tight", and that the US economy is "very strong", yet "it remains to be seen" whether the Fed can move quickly on balance sheet reductions due to the Russia-Ukraine war. To this extent, a slow plan for balance sheet reductions would be constructive for mitigated equity volatility given the volatility additions from the news flow from Ukraine. As credit spreads follow the volatility path of equites, any expectations for a more cautious Fed would be constructive for equity and for spreads, so barring any unexpected liquidity shocks which the Fed is seeking to avoid, we expect quality spreads from NoCos to be bought at the margin. The wider spread moves this month have helped to elevate NoCo yields by 50bps over last month to close at 4.38%. The estimated probability of spread duration benefiting NoCo capital rose (again) to 89.30% from 74.44% last month which implies that rising spreads per unit of duration are getting stretched to where just 10.70% of the area under the normal curve is left to widen – so the higher the probability becomes (e.g., 89.30%), the more likely the sector is to outperform more senior financials of the same duration.

Contingent Capital Securities Sector

The CoCo sector followed the NoCo sector closely this month and declined $4.39 as European bank stocks fell almost 12.0% when Ukraine was attacked. The contingent capital securities benchmark had a 2.67% concentration in Russian banks at the beginning of the month. But this concentration fell to 1.08% by the end of the month as the Russian banks were sanctioned and their CoCo prices plummeted by 50-75 points. Adjusted for the Russian bank exposure, the CoCo benchmark fell $3.29. If the Russian banks do not pay and they are removed from the benchmark at zero, the remaining cumulative price impact on the ICE USD Contingent Capital Index is $0.36 after the $1.10 haircut within the group this month.

The graph below shows the spreads in CoCos (i.e., *cdlr*) relative to the spreads measured in Eurodollar bank credit that is not CoCo (i.e., *e0ba*) since the benchmark's inception (Dec-13) – note that CoCos were improved in 2016 after the Pillar-2 capital stack was redefined, thus reducing payment trigger risks for CoCos:

Source: Bloomberg

Since the 2015-2016 high spread zones reflected higher pre-Pillar-2 risks that weakened payment probabilities. But since then, Pillar-2 regulations have improved, loan quality is stable and core capital is much improved -- which leads us to conclude that this data sample over-tests extreme downside risks in CoCos given those fundamental improvements. It is important to note that we believe there to be an improved "normal" for CoCos since 2016 (one that not even the pandemic could break) because the subordination spread spike from the pandemic held to be 2 standard deviations lower than the spread spike in 2016 leading into the Pillar 2 reform.

This month, the relative OAS differential between CoCos and more senior financials widened by 52bps with a difference of 240bps in favor of CoCos as the more senior sector widened 17bps and the CoCo sector widened 69bps. The impact of the Russian bank devaluations on the benchmark OAS was 34bps, so excluding Russian banks, CoCos widened by 35bps. Having Russian banks in the benchmark no doubt complicates the sector's overall value comparisons especially as international sanctions weigh on global compliance initiatives, many of which, require liquidation of the Russian bank constituents. At this time, the ICE BofA index provider has not decided on whether to eliminate Russian bank CoCos from the CoCo benchmarks.

Outlook:

The Russian invasion of Ukraine weighs negatively on an already defensive outlook. The war is likely an inflection point that shifts the phase of globalism (a policy of ideological appeasement and economic cooperation) from maturity into decline. The implication of declining globalism would be a paradigm shift in the West's economic policies (among other things) that seek to strengthen individual sovereign weaknesses in production (and defense) – this means more immediate inflation as production and supply dependencies that have strengthened dangerous countries are cut and switched to foster more self-reliant goals in the West. Chairman Powell says that the Fed pivoted aggressively late last year because "inflation is too high" and that it underestimated the extent of the supply-side constraints – of course, its pivot was mere messaging rather than policy action. Precarious world events are moving quickly. Markets will anticipate and price their own views before the Fed can know whether the Russian invasion of Ukraine will impact its intended course of tightening. But for now, the Fed is on track for a series of rate hikes and intends to passively shrink the balance sheet this year through run-off allowances. According to Chairman Powell, the committee will "make good progress" on the balance sheet plan at

the March meeting, which suggests an upcoming series of springtime public messages from committee members and a likely plan determined during the May meeting.

Russia's invasion of Ukraine no doubt elevates market uncertainties which implies heightened volatility risks to hybrid valuations. This month, we begin following the month end marks against prior valuation bottoms for the retail and institutional preferred markets to help put some price risks (and opportunities) into perspective for our monthly outlooks – February's valuation comparisons are shown here:

Retail Pfds	Valuation Implosions			Average	Feb	Diff to	
Bottoms	2013	2016	2018	Prior Bottoms	2022	Average	
GA10	3.00%	2.50%	3.20%	2.90%	1.84%	-1.06%	
PCE DEFY	1.50%	1.50%	2.10%	1.70%	6.10%	4.40%	
Real UST10yr	1.50%	1.00%	1.10%	1.20%	-4.26%	-5.46%	
$25Coupon	6.72%	6.45%	6.10%	6.42%	5.43%	-0.99%	
$25Price	$94.50	$100.70	$94.00	$96.40	$96.76	$0.36	
$25CY	7.11%	6.41%	6.49%	6.67%	5.61%	-1.06%	
Mdur Worst	10.30	10.80	10.85	10.65	10.88	0.23	
CY Spread vs. T10yr	4.11%	3.91%	3.29%	3.77%	3.77%	0.00%	Static Risk
						-11.50%	Px. Risk to AveCY
				Est. Annualized Risk Left:		-5.89%	Px. Risk plus CY
					Memo:	-7.75%	Total Return YTD

Institutional Pfds	Valuation Implosions			Average	Feb	Diff to	
Bottoms	2013	2016	2018	Prior Bottoms	2022	Average	
GA10	3.00%	2.50%	3.20%	2.90%	1.84%	-1.06%	
PCE DEFY	1.50%	1.50%	2.10%	1.70%	6.10%	4.40%	
Real UST10yr	1.50%	1.00%	1.10%	1.20%	-4.26%	-5.46%	
Coupon	7.02%	6.40%	6.00%	6.47%	5.24%	-1.23%	
Price	$104.35	$104.55	$97.64	$102.18	$102.04	-$0.14	
CY	6.73%	6.12%	6.15%	6.33%	5.14%	-1.20%	
Mdur Worst	6.18	5.30	4.75	5.41	4.03	-1.38	
CY Spread vs. T10yr	3.73%	3.62%	2.95%	3.43%	3.30%	-0.14%	Static Risk
						-4.82%	Px. Risk to AveCY
				Est. Annualized Risk Left:		0.32%	Px. Risk plus CY
					Memo:	-4.25%	Total Return YTD

Footnotes:

1. The sample stress periods for hybrid valuation bottoms are:
   a) the Taper Tantrum (2013)
   b) the commodity price implosion (2016)
   c) the Fed's ongoing rate hike policy mistake (2018)
2. The 10yr US Treasury yield was higher than the Personal Consumption Expenditure Deflator (i.e., the PCE DEFY is the Fed's key inflation measure) during each stress period except for now – this highlights the Fed's current policy challenge and why it's prepared to be more aggressive if inflation becomes chronic.

Current yield spreads for preferred securities (in the green highlights) by the end of February were inside the high-low stress range and spot on the average for retail paper and just 14bps less than average for institutional paper. The price blow-off so far this year appears to have significantly discounted the expected equity volatility associated with balance sheet reductions. But current yields for preferred securities are still roughly 1.20% lower because US Treasury yields are still over 1% lower than average too. The implication here is that nominal yields should still be under pressure as the Fed journeys through its plan to combat inflation over the next few years.

The primary takeaway from this analysis to estimate how bad "bad" could be from here if current yields in each sector are to rise back to the average yield of the stress periods – for the retail sector the price risk could be -11.50% and for the institutional sector the price risk could be -4.82%. When we add back the annual accrued income assumptions, the estimated annualized risk left (highlighted in yellow) is still negative for $25par paper but positive for NoCos primarily because of the 6.85yr duration differential between sectors.

Markets realize that the Fed may move not only soon, but also aggressively because the labor markets are extremely tight while inflation is zooming. But there is nothing good that comes from the Ukraine invasion. If the war prolongs the Fed's inflation tolerance

because of recession fears from the real world implications of war, then perhaps real yields would stay negative for some time to help prevent "stagflation" (i.e., low growth and high inflation) from morphing into "dragflation" (i.e., negative growth and high inflation). The yield repricings for hybrids compared to corporates and junk bonds is shown below:

	Hybrids		Corporates	
2/28/2022	Preferreds	CoCos	IG Corps	BIG Corps
Bloomberg Index	*cips+hips*	*cdlr*	*c6c0*	*h0a0*
Mod.Duration	4.03	3.23	6.27	4.24
Yield-to-Worst	4.32	5.48	3.15	5.55
Inflation[1] Adjustment	3.15	3.15	3.15	3.15
Real Yields	1.17	2.33	0.00	2.40
Default[2] Adjust	-0.11	-0.11	-0.04	-2.57
YTW, net, net	**1.06**	**2.22**	**-0.04**	**-0.17**
Composite Rating	*BBB2*	*BB1*	*BBB1*	*B1*
Last Month End				
YTW, net, net	**0.87**	**1.45**	**-0.07**	**-0.15**
Change since Month End	☆ 0.19	☆ 0.77	☆ 0.03	☆ -0.02

[1] *Inflation assuption based on the UST5yr breakeven inflation rate*
[2] *Default assuption based on Sprectrum's 10yr annual default study through 2020*

Defense is our primary investment objective this year and positive real yields can be accretive to the playbook. Hybrids offer positive real yield opportunities while some investment grade corporates do not. When yields are adjusted for historical default experience, the defensive book yield plays in the institutional hybrid sectors are positive, while the other corporate sectors are negative. So, while hybrid performance in neither February nor January were laudable, commensurate price declines have made for improved relative value positioning compared to investment grade corporates and junk

bonds. Positive real yield opportunities for hybrids make them worthy inflation combatants and a tactical defensive adjunct for fixed income sleeves.

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March 7, 2022

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