Pretium

2021 U.S. Credit Market Outlook April 2021

AUTHORS:

Charles P. Himmelberg
Senior Managing Director
Macro Research

Zain N. Butt
Associate
Research & Strategy

EXECUTIVE SUMMARY

A Pandemic of Disruption

- The Covid-19 pandemic arguably catalyzed at least three major paradigm shifts of importance to credit markets.
- For one, the birth of "Corporate QE" represents a new market structure for corporate spreads, one that aided dramatic reversal of spreads in and thus helped usher in a new "new normal" of not just lower rates but also tighter spreads.
- Second, the epic adjustment of cross-sector spending required to accommodate social distancing behaviors is likely to undergo comparably large spending reversals as the easing of pandemic constraints releases pent-up demand. And while pent-up spending should help drive strong GDP growth, some businesses will benefit less than others, and thus struggle under their more levered capital structures.
- Third, the Nasdaq's remarkable rally and sustained out-performance of the broader market reflects the pandemic's hastening of the "tech divide." Tech-savvy innovators are thriving at the expense of tech-lagging incumbents, leading to a "K-shaped" recovery of corporate growth featuring an unusually high number of both winners and losers.

US HY defaults would have been higher if not for policy response.

US HY defaults rising

2019 $32B

2020 $82B

An Elevated Plateau of Subdued but Sustained Credit Risk

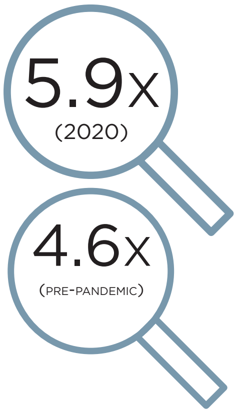
- Credit quality took a beating in 2020, with the par value of US HY defaults rising to about $82 billion (vs $32 billion in 2019), concentrated in industries like Retail and Oil & Gas where many companies were already struggling when the pandemic hit.[1]
- Default rates would have surely been higher if not for the aggressive policy response. In sharp contrast to the global financial crisis (GFC), the policy-induced easing of financial conditions allowed all but the most challenged companies to refinance their way through the recession. Defaults were also low because the industries most negatively affected (like restaurants and small

[1] Default Update from JPM, data through January 31, 2021

services) do not issue in institutional credit markets.

- Recovery rates have suffered, too, partly due to the erosion of subordination cushions, and partly due to the erosion of covenant protections (including the evolution of documentation that appears to have enabled a rise in "creditor on creditor" violence).
- Credit markets have already priced as much good macro news as we are likely to see, and the margin for error reflected in index spreads is unusually thin.
- Meanwhile, credit quality is decidedly worse, with increased borrowing and decreased earnings pushing gross leverage of US HY to 5.9x (from 4.6x pre-pandemic)[2], with most of the lowest-rated borrowers remaining on negative outlook. Strong GDP growth will help offset this, but the uneven footprint of the pandemic shock suggests an uneven recovery, too, leading us to conclude that we'll likely see a subdued but sustained plateau of idiosyncratic credit risk in 2021 and 2022.

Gross leverage of US HY



Premia for the Yield-Starved: Alpha, Illiquidity and Complexity

Over 25% of global fixed income assets have negative yields.

- While the emergence of "Corporate QE" no doubt prevented a deeper and more prolonged recession, it has only aggravated the dearth of yield. Over 25% of global fixed income assets now offer negative yields, and even in US markets, yields on many investment grade bonds have fallen below the rate of inflation.
- Corporate QE is designed to mitigate liquidity-driven sell-offs and tail risk concerns, hence it likely implies a lower level of long-run average credit spreads.
- While such premium compression arguably looms largest for the liquid investment grade markets (the Fed's point of entry) and the higher-quality parts of the HY market, it has fewer implications for risk premia in "alternative credit."
- In particular, the analytical, technical and legal skills required to earn premia for alpha selection, illiquidity, and complexity are gating factors that should slow the flow of new capital to the space, and thus help preserve a healthier menu for yield-starved investors.

[2] 4Q20 HY Credit Fundamentals from JPM, data through December 31, 2021

Pretium Forecasts for 2021 and 2022

		2019	2020	Q1	2021E	2022E
Macro	Real GDP (YoY%)	2.3%	-2.4%	4.5%**	6.0%	2.7%
	Fed Funds	1.6%	0.1%	0.1%	0.1%	0.1%
	10Y Treasury Yield	1.9%	0.9%	1.5%	1.3%	2.4%
	Mortgage Rate - 30 Yr	3.7%	2.7%	3.0%	3.3%	3.5%
	PCE Inflation	1.6%	1.3%	1.5%	2.1%	2.0%
Bonds	Default Rates (LTM)	2.9%	6.8%	6.6%	4.5%	3.5%
	Recovery Rates	23.0%	22.0%	22.0%	25.0%	25.0%
	Spreads (Spread to Worst in bps)	414	431	426	405	385
Loans	Default Rates	2.1%	4.3%	4.0	3.5%	3.5%
	Recovery Rates	49.0%	48.3%	48.0	50.0%	55.0%
	Spreads (3-Yr Discount Margin in bps)*	461	486	446	460	440

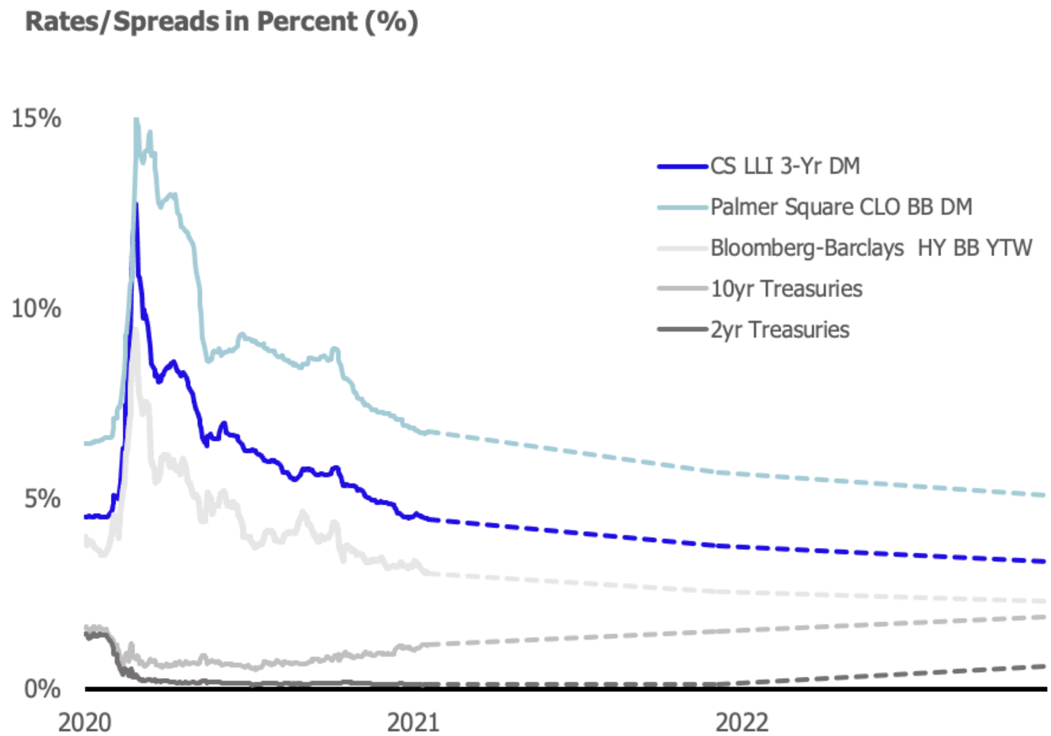
*Spreads from Credit Suisse Leveraged Loan and High Yield Index
**Bloomberg consensus mean, %QoQ SAAR

1. A Pandemic of Disruption

COVID-19 pandemic has changed the way we live, while also highlighting and exacerbating pre-existing inequities in the world. It has also disrupted the investing landscape, especially in fixed income markets. As we settle back into the "new normal" regime of lower yields – this time potentially featuring not just lower risk-free rates, but also lower credit spreads, we argue -- it is imperative to recognize the paradigm shifts that are occurring.

For one, the Fed has raised the bar for inflation targets, so in this recovery we don't expect to see as much monetary tightening as would normally accompany such a robust fiscal expansion. This policy mix is a powerful tailwind for growth and risk appetite, and if it is joined by the pent-up consumer demand in 2021, as we think likely, it has the potential to drive even more impressive growth and market performance. In addition, the Fed has also extended quantitative easing (QE) into corporate bonds, or "Corporate QE". These macro factors should have a powerful dampening effect on the downside risks to credit markets, resulting in our forecast for continued spread compression as shown in Exhibit 1.

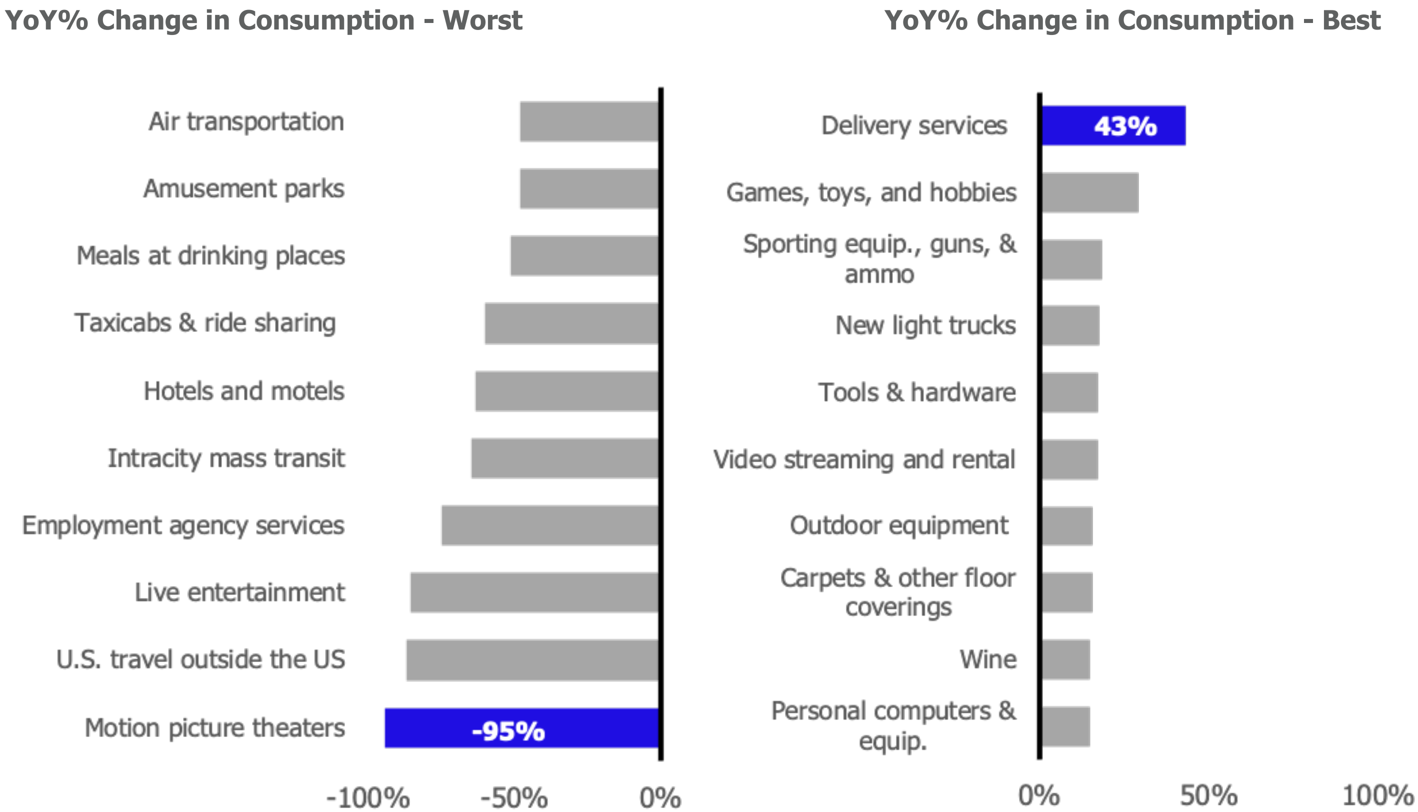
Exhibit 1: Yields will Likely Remain Lower for Much Longer



Source: Pretium Internal using Bloomberg and BofA Credit Chartbook, data through January 31st, 2021

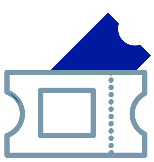
Despite the predictable tailwinds implied by GDP growth of 6% (as we expect in 2021), it is harder to predict how well credit markets will contend with the gusty cross-winds unleashed by the pandemic. The sector composition of consumer spending, for example, has undergone epic adjustments in order to accommodate the health requirements of the pandemic, mainly via social distancing. Sectors like Leisure and Hospitality, for example, have been hit with unthinkably large revenue declines, while other sectors, like Technology, have enjoyed an unexpected surge in sales. And while some of this pandemic-restricted spending can never be made up, we nonetheless expect 2021 will see a sustained surge in household spending as consumer sentiment celebrates the easing of pandemic constraints.

Exhibit 2: Consumption Patterns have Altered Dramatically

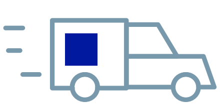


Source: Pretium Internal using BLS data through December 31, 2020

Consumption patterns



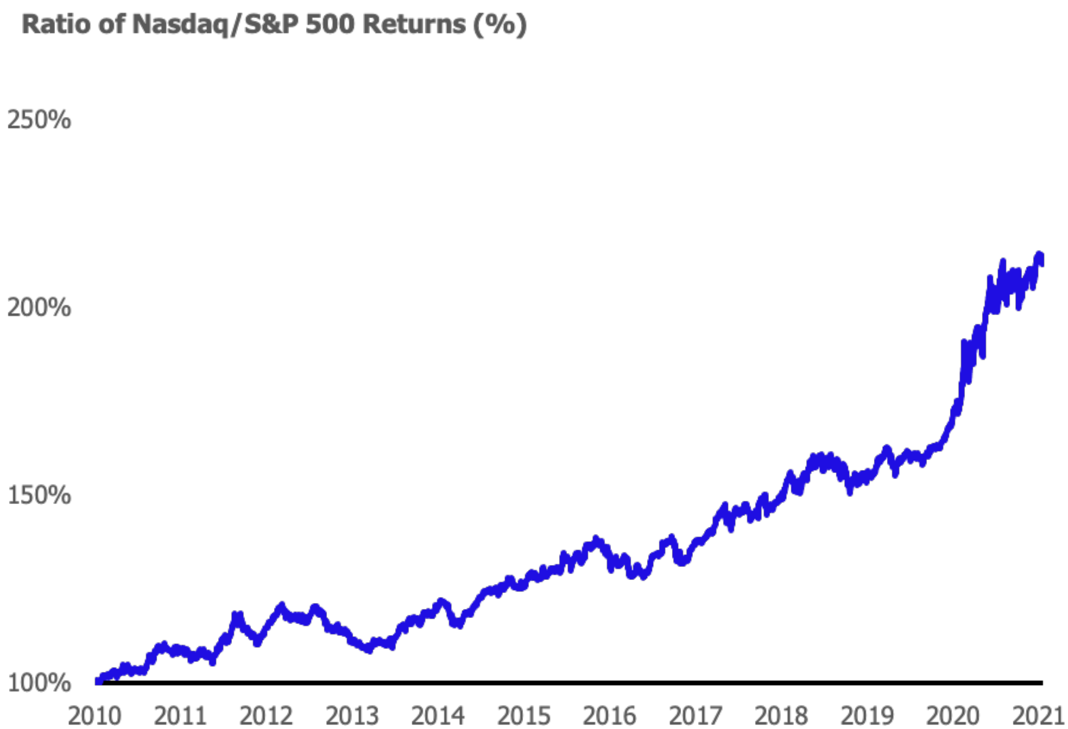
Motion picture theaters
-95%



Delivery services by non-U.S.postal facilities
+43%

The sector implications of this "rebound" scenario are not as obvious as a simple return to pre-pandemic spending levels. Social norms and consumption patterns that arose out of necessity may persist out of habit and preference. The long-run viability of work from home will likely be revealed only by experience. Similarly, while consumers will almost surely re-embrace activities like travel and going to movie theatres, we will likely discover that consumer preferences have shifted in ways that are not yet visible. For both households and businesses, the adoption of new technologies has also accelerated under the pandemic. In the media sector, for example, businesses were already moving to subscription models and the pandemic has only accelerated that. The surge in online viewership fueled fierce increase in competition among "content platforms" like Disney, YouTube, Hulu and others (Peacock, for example, recently pulled "The Office" from Netflix to woo subscribers). Such accelerating shifts in market shares will likely prove persistent, which is yet another sense in which aspects of this recovery can be described as "K-shaped". Indeed, Exhibit 3 below reveals that this technology gap extends more generally to the outperformance of Nasdaq 100 vs the broader S&P 500.

Exhibit 3: Nasdaq 100 Outperformance Compared to S&P 500



Source: Pretium Internal using Bloomberg, data through January 31, 2021

For 2022 we expect a modest downtick for bonds but an uptick for loans, with both rate posting defaults rates of 4.5%

Our forecast for defaults envisions an "elevated plateau" of subdued but sustained credit events. Despite the substantial erosion of credit quality visible in bottom-up data (more on this below), we think robust GDP growth and easy financial conditions will dominate default propensities. We therefore expect 12-month trailing default rates in 2021 to average a relatively modest 4.5% and 3.5% for HY bonds and levered loans, respectively. For 2022 we expect a modest downtick for bonds but an uptick for loans, with both rate posting defaults rates of 3.5%. The reason for this stems mostly from the fact that the levered loan market is more heavily represented by the higher-growth industries that are typically favored by private equity investors (e.g., Media, Healthcare, Information Technology), whereas the HY bond market skews more heavily toward more traditionally capital-intensive sectors (Telecommunication, Oil & Gas, Gaming & Leisure). While both markets obviously own diversified exposure to all sectors, and while the timing of default events can lag fundamentals by a year or more, our general sense is that the skew toward "new economy growth companies" should continue to favor loan issuers in 2021, whereas by 2022, the skew toward "old economy cyclicals" should modestly favor of bond issuers.

Our outlook for recovery rates is more bearish. For one, a large number of CCC companies will emerge from this pandemic with simply too much leverage. Some will survive, but for those that don't, the composition of capital structures i.e. erosion in subordinated debt, will likely continue to weigh heavily on recovery rates, much as it did throughout 2020. Our forecast basically extrapolates recent experience into 2021, expecting recovery rates to average 25% and 50% for bonds and loans, respectively. As we look ahead to 2022, we see modest scope for higher recoveries (to 25% and 55%, respectively), reflecting a stronger economy and tighter spreads. But for loans, these rates are low vs history. This view reflects the erosion of subordination cushions as well as the erosion of covenant protections (including the evolution of documentation that appears to have enabled a rise in "creditor on creditor" violence).

The implications of our outlook for investors are mixed. On the one hand, the moderation of credit and steady compression of credit spreads are tailwinds for a capital gain component of our outlook for expected returns. On the other hand, the Fed's embrace of zero rates and "Corporate QE" – and a return to a "new normal" for rates, now arguably extended to spreads – is an obvious headwind for carry. Further undermining the appeal of passive carry in credit is the prospect of an "elevated plateau" of subdued but sustained pace of credit default events.

On the other hand, the Fed's embrace of zero rates accompanied now by "Corporate QE" – a return of the "new normal" for rates, now arguably extended to spreads – is an obvious headwind for carry.

In our view, these developments tilt the investor opportunity set in favor of "yield alternatives". Indeed, the scale of disruption left by the pandemic presents a target-rich opportunity set for asset selection, which should favor alpha-focused strategies. At the same time, in the implementation of "Corporate QE", the Fed is overwhelmingly likely to remain focused on the plain-vanilla investment grade market. While this will likely imply considerable spillover into adjacent risk premia (like BB-rated crossover credits and the higher-quality parts of the HY market more generally), we think the spillover will likely weigh less heavily on "alternative risk premia". Examples include the alpha earned from asset selection (sometimes known as "opportunistic credit"), or the risk premia earned for holding illiquid assets or for acquiring the expertise to select and manage complex assets (like structured credit). Because such strategies require the acquisition of analytical, technical and legal skills, they represent gating factors that slow the flow of new capital to the space, and thus should help preserve a healthier menu of risk premia for yield-starved investors.

Credit is already pricing as much good news as we are likely to see. To judge by credit spreads alone, the market is currently saying "almost back to normal – nothing to see here, please move along". This may well prove to be correct if there are no new unexpected turns in the course of the pandemic or the recovery, and if the strength of recovery and easy financial conditions can continue to overshadow the deterioration of bottom-up credit metrics over the past year. But credit markets often signal less about the outlook for fundamentals than about weakly-anchored swings in market sentiment and money flows. To this list of "market technicals" for credit we now have to add "Corporate QE" by the Federal Reserve, which in the current market environment explains how we have managed to return with such remarkable speed to that stage of the credit cycle where the tradeoffs between risk and return are usually worse than they look.

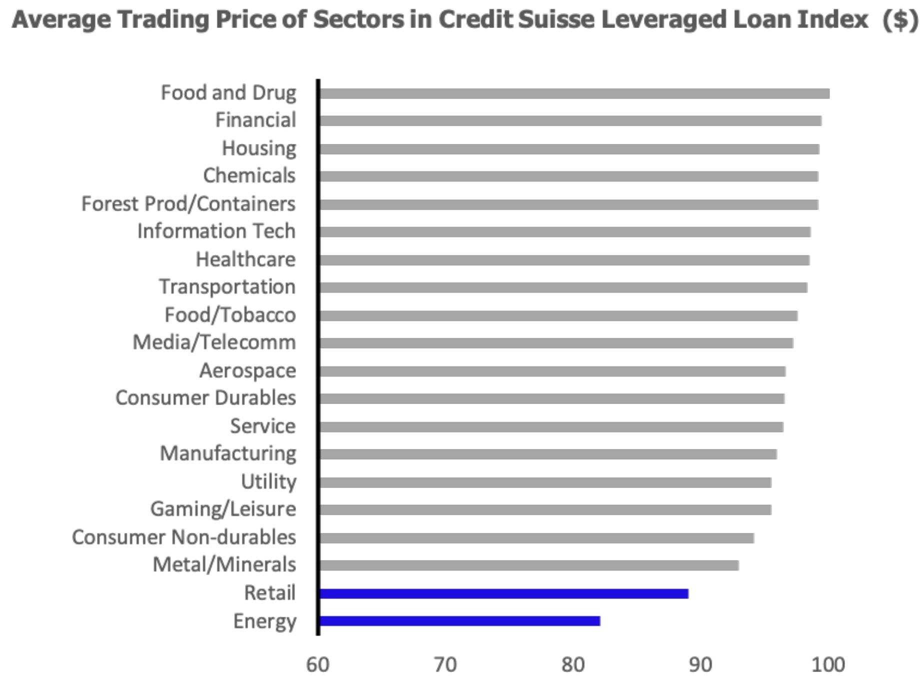
2. An Elevated Plateau of Subdued but Sustained Credit Risk

By liquifying funding markets and turbo-charging the growth outlook, policy has effectively neutralized the two main "macro catalysts" for credit defaults.

Pandemic hit industries continue to remain most distressed. By liquifying funding markets and turbo-charging the growth outlook, policy has effectively neutralized the two main "macro catalysts" for credit defaults. Without such clear macro catalysts, we expect the pace of defaults will be more subdued but more sustained, implying that the peak of this default cycle is most likely behind us. Macro pricing of equity and credit markets appears to have embraced the narrative that the end is near, and we believe the evidence for that is becoming increasingly compelling. The Biden administration is well ahead on schedule to vaccinate 100 million Americans in 100 days, with over two million Americans getting vaccinated per day while another $1.9 trillion of fiscal support is on the way. Furthermore, CDC says vaccinations for all Americans could be available beginning April 2021, leading us to conclude the "Covid shock" will likely subside over the next six months, in absence of complications from new variants.[3] Exhibit 4 shows average price for all sectors for the CS leveraged loan index are above or back to 2019 levels with the exceptions of retail and energy.

[3] https://news.yahoo.com/biden-100-million-vaccine-doses-201951628.html

Exhibit 4: Loan Prices Reflect Extreme Bullish Sentiment Despite Uncertainties



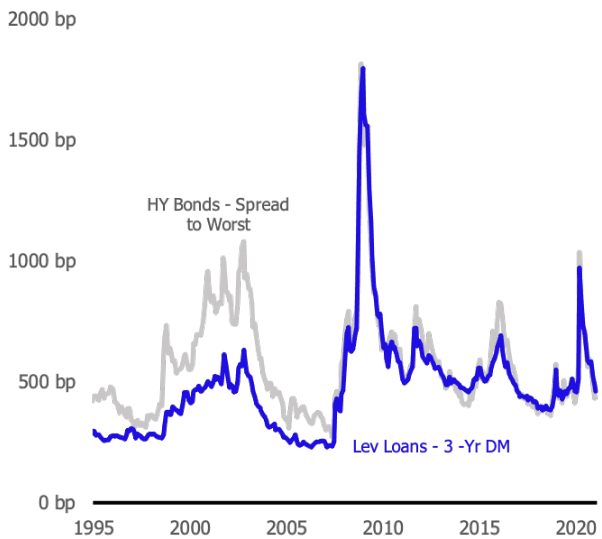
Source: Pretium Internal using Bloomberg, data through January 31, 2021

Among the sectors most impacted by COVID, retail, energy, leisure & entertainment were arguably already industries facing secular headwinds, with companies managing the pain to varying degrees. For example, retail was being upended by e-commerce and malls tried to add "experience" to their layouts to foot traffic; this strategy became ineffective with lockdowns. For energy, industry was combatting ESG headwinds and loss of business clients is likely to ripple through the supply chain as well as adjacent industries including airlines. To combat these headwinds, we expect businesses to take advantage of the low-rate environment to fill portfolio gaps via M&A as shareholder expectations continue to climb. Balance sheet health will allow issuers to differentiate themselves, but we expect some issuers may not be able to grow into their post-COVID capital structure, due to a combination of changes in consumer preferences and/or "standard operating procedures" in the post-COVID world.

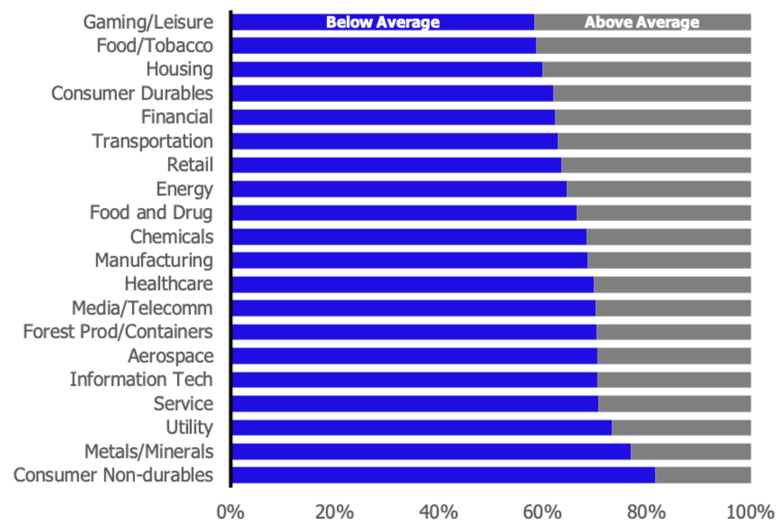
The longer the "COVID-19 shock" persists, the more it will continue to drain liquidity from Covid-exposed sectors like travel and hospitality, and the longer it will continue to drive relative industry performance. For example, the demand for personal services is generally defensive compared to the highly cyclical demand for nondurable goods. But due to the need for maintaining appropriate physical distance, consumer demand for services like restaurants, travel, and brick-and mortar retail have been among the hardest hit, whereas demand for computer software has boomed. But already we have also seen a remarkable tighten in credit spreads across sectors as shown in exhibit 5. We believe some of the tightening reflects survivorship bias.

Exhibit 5: Spreads Continue to Grind Tighter even as Vaccinations Continue

Spreads in Basis Points (bp)



Percent of Sector Above/Below Average 3yr Discount Margin



Source: Pretium Internal using Bloomberg and BofA Credit Chartbook, data through January 31, 2021

Defaults have been most pronounced in COVID exposed industries. During 2020, the par value of total defaults in U.S. high yield bonds totaled about $82 billion compared to $32 billion in 2019.[4] By contrast, defaults for U.S. leveraged loans have totaled about $47 billion, the highest since December 2009[5] and a 2x compared to 2019 . Default rates by issuer for both bonds and leveraged loans rose to the highest level since 2010 at 9.0% and 4.6%, respectively, as shown in Exhibit 6.[6] Consensus says bond and loan defaults are likely to remain in the mid-single digit range around ~4% for 2021, and we agree. For loans, that is a notable improvement from the depths of the March crash when CLO managers expected default rate peaking at 6.6% which ($78 billion in defaulted leveraged loan debt), exceeding the 2009 peak of $63.1 billion.[7]

---

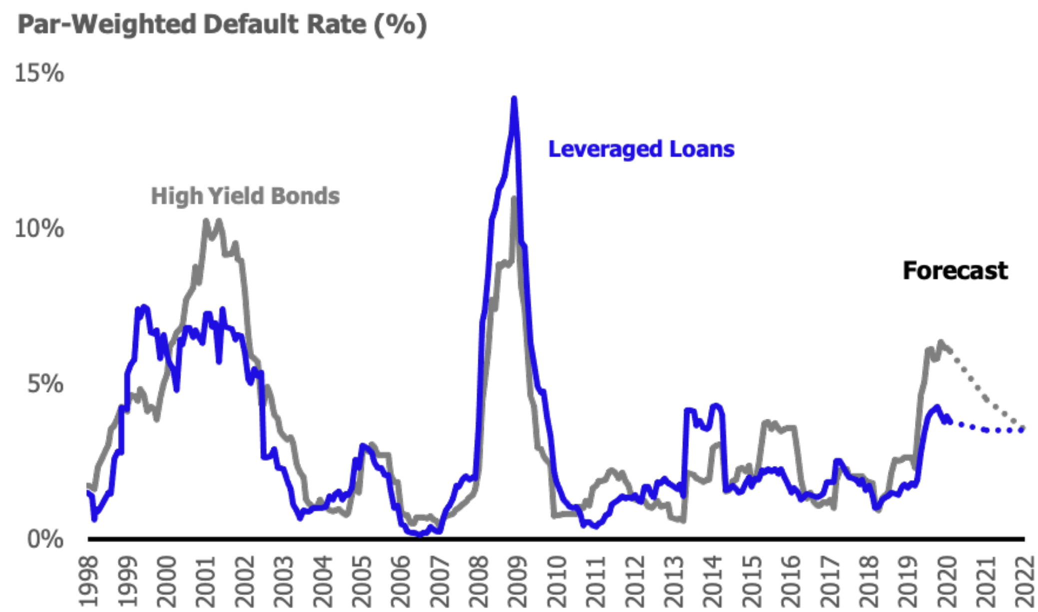
[4] BofA, HY Credit Chartbook, data through September 30, 2020

[5] S&P, LCD, US leveraged loan default rate expected to peak at 6.6%v, October 1, 2020

[6] IBD footnote 7 and 8, respectively

[7] S&P, LCD, US leveraged loan default rate expected to peak at 6.6%v, October 1, 2020

Exhibit 6: Loans have had Lower Default Rate than Bonds



Source: Pretium Internal using JPM data, data through January 31, 2021

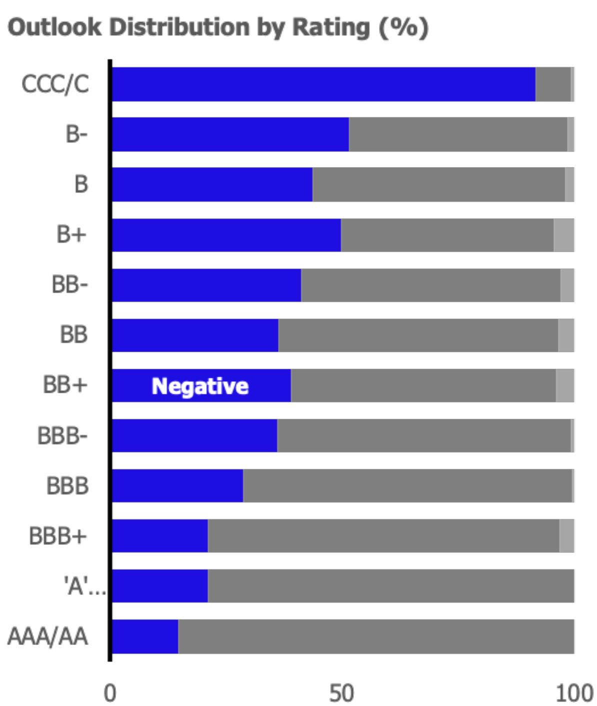
Most defaults during 2020 were in industries that were already facing secular headwinds, for which the COVID shock was simply a catalyst. This includes energy producers that were combatting a supply shock pre-pandemic and were hit with a demand shock as COVID forced lockdowns. It also includes brick-and-mortar retailers that were seeing demand shift to e-commerce but did not anticipate an inflection in adoption such as the one seen in the last year. It also included sectors that were directly exposed to the shock from COVID-19. This list of casualties caused by the dramatic shifts in spending behavior include well-known brands such as Men's Warehouse, restaurant group Chuck E Cheese's, Hertz Global Holdings Inc., Cirque du Soleil and 24-Hour Fitness. These are among a nascent-but-growing list of companies that endured rapid drops from the high end of speculative grade ratings to bankruptcy or payment default.

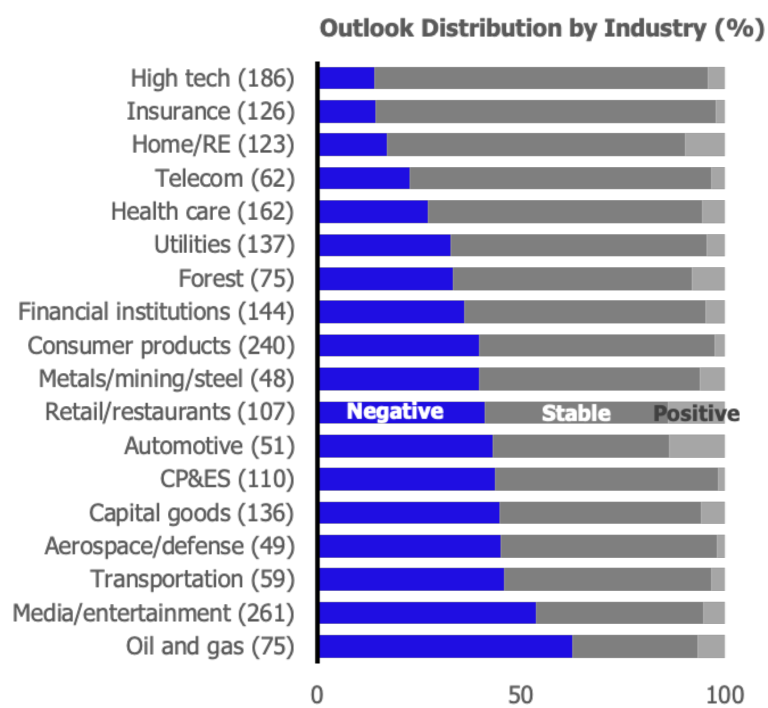
Corporate issuers were at different parts of the digital adoption curve when COVID hit, leaving those that had underinvested worse off compared to their tech-savvy peers.

Corporate issuers were at different parts of the digital adoption curve when COVID hit, leaving those that had underinvested worse off compared to their tech-savvy peers. As the recovery progresses, we believe issuers will continue to learn how the pandemic has reshaped their business. This change requires them to adapt in real-time, creating additional risks. For some sectors like retail, this comes as the industry was already facing secular decline and the need to maintain a steady supply of hand sanitizer may have been the difference between insolvency and breakeven. For others, like casinos, the pandemic may have pulled forward growth in online gambling by a year, if not a decade. It is disruption in such long-term trends coupled with lack of adaptability that we believe is likely to drive defaults in the coming month.

Looking at overall ratings distribution for loans specifically it is important to recognize while risk remains concentrated in the lowest of rating categories, as show in exhibit 7, it is by design (leveraged buyouts are primary source of new loans) and not necessarily a reflection of weak business fundamentals. Also, given the largest issuances in loans remain concentrated in technology, we are optimistic given the tailwind from the pandemic. It is worth noting that the typical bond issuer has little in common with the issuer of loans. This is evidenced by the industry breakdown of issuance where Computer & Electronics and Services & Leasing sectors combined made up ~35% of the loan volumes for 2020, while entertain & leisure, retail, gaming & hotel made up less than 8%. Bonds on the other hand saw ~10% volume from oil & gas while gaming & hotel, retail, and restaurants made up another 10%, highlighting the inherent differences between the two markets.[8]

Exhibit 7: High Tech Sector is the Largest Issuer of Loans by Face Value





Source: Pretium Internal using CS data, data through January 31, 2021

Erosion of subordination over time will result in lower recoveries. We expect recoveries in loans and bonds to be lower, we expect bond recoveries to remain below historical averages loan recoveries to remain in line with long-term historical averages. Our view on recoveries recognizes that leverage increases have

[8] Pretium internal using LCD data, through December 31, 2021

relied more heavily on senior debt, leaving reduced levels of junior debt available to absorb losses. Among loan-only capital structures, this trend shows up as larger portions in institutional first-lien term loans, and to a lesser extent, because of the absence of financial maintenance covenants in loan agreements. The consequences of these trends have already been visible in the lower average recovery rates of companies that have emerged over the past six months.

This lower-for-longer view on recovery rates is further supported by recent S&P research. This research finds that average first-lien debt recoveries have trended downward to 71% in the past two and a half years, compared to 79% over the past 12.5 years. It further documents a correlation between recovery rates and degree of subordination. First-lien debt recoveries increase with higher levels of subordination, peaking at an average recovery of 90% for debt cushions of 60%-70%. By contrast, average recovery rates were only 40% for entities that had zero to minimal debt cushion. Company-specific factors such as size, leverage, credit rating, and ability to access the capital markets also contribute to differences in capital structure and hence recovery rates. For example, larger entities can more easily issue unsecured bond debt, whereas smaller companies and those that operate in certain sectors that may have limited access.[9]

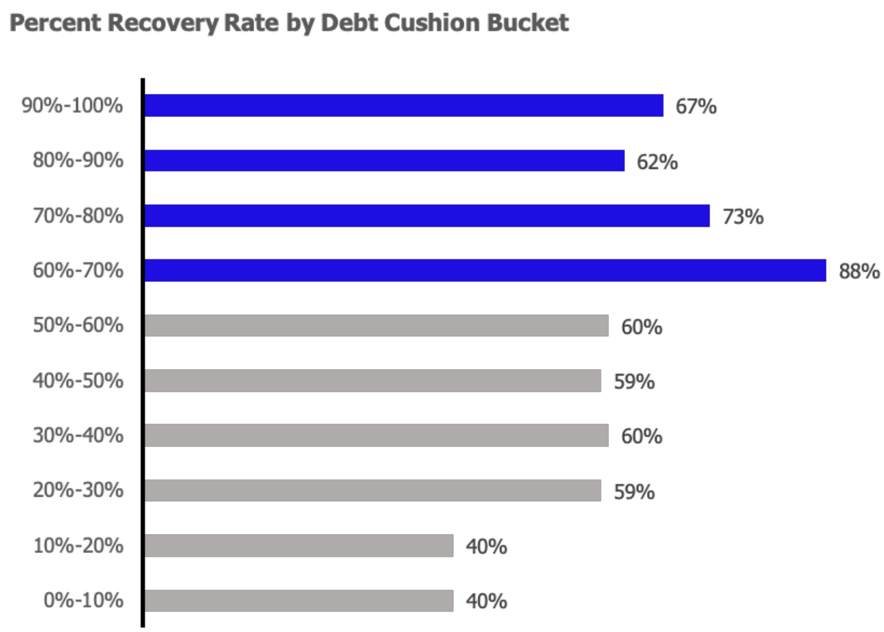
In the wake of the COVID-19 shock, owners of cov-lite loans have been exposed to more repricing risk since the absence of covenants meant they could not renegotiate for better contractual terms.

Recent S&P research also finds that recoveries have been driven lower by the proliferation of covenant lite structures, as shown in Exhibit 8. Where such concessions were rare in the pre-crisis period, granted to only the best borrowers (less than 10% in 2010), they today account for 85% of institutional term loans. And among first-lien term loans, cov-lite recovery rates average about 68% of par vs 79% for non-covenant-lite.[10] Whatever the reasons for this evolution in covenant terms, their absence will continue to shape the recovery landscape because lenders will less have negotiating power on loan terms when credit quality deteriorates. In the wake of the COVID-19 shock, owners of cov-lite loans have been exposed to more repricing risk since the absence of covenants meant they could not renegotiate for better contractual terms. Such loans have also been more exposed to more event risk, since existing claims are diluted when borrowers exploit the financial flexibility afforded by cov-lite structures to access additional secured funding (for example, via receivables factoring or sale leasebacks).

[9] S&P CapIQ, From Crisis To Crisis: A Lookback At Actual Recoveries And Recovery Ratings From The Great Recession To The Pandemic, October 08, 2020

[10] S&P CapIQ, Settling For Less: Covenant-Lite Loans Have Lower Recoveries, Higher Event And Pricing Risks, October 13, 2020

Exhibit 8: High Debt Cushion Corresponds to Better Recovery Rates



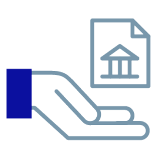
Source: Pretium Internal using Bloomberg, data through January 31, 2021

In 2020:

Bond Issuance

$435 BIL.
69% REFI.

VS



Loan Issuance

$395 BIL.,
26% REFI

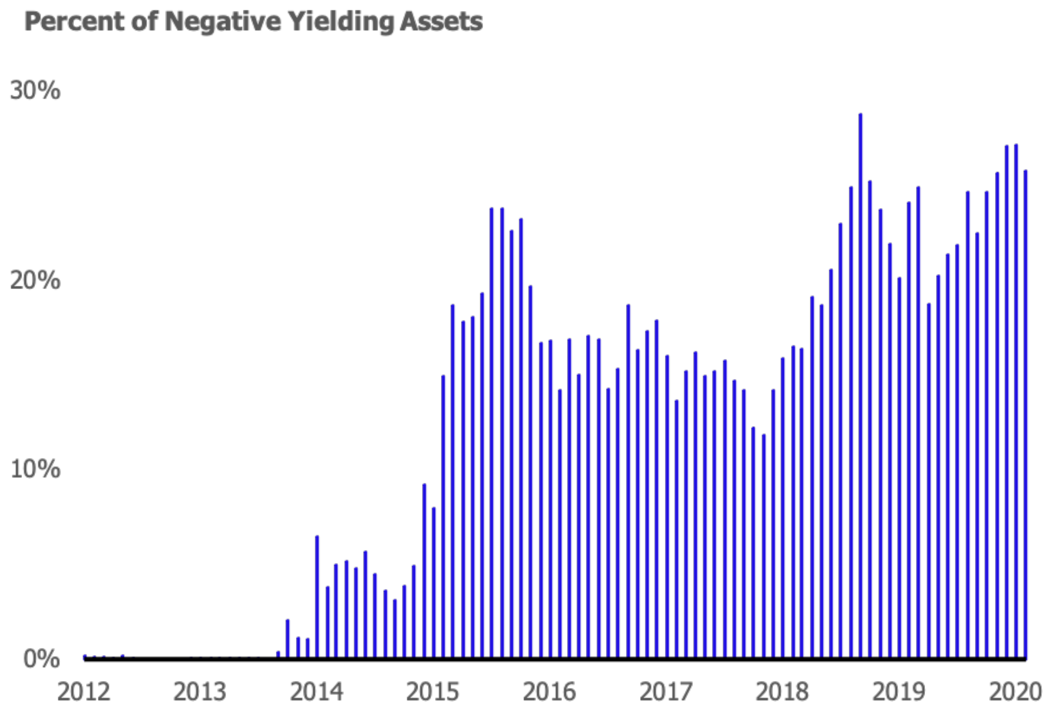
As the amount of global debt offering negative yields has yet again risen, the hunt for yield has intensified (Exhibit 9.) Negative yielding debt had started to decline after peaking in August 2019, but the coordinated central bankers' response to the pandemic has likely put any meaningful reduction on the back burner with the Bank of England also contemplating negative rates. Meanwhile, nominal investment grade corporate yields in the US have barely matched the inflation, pushing real yields on high-quality corporates into negative territory for the first time in history.

We expect search for yield to continue to be a driver of issuance in 2021. During 2020, bond issuance totaled $435 billion, 69% of the proceeds used towards refinancing, while loan issuance totaled $395 billion of which only about 26% of proceeds were for refinancing, highlighting the fundamental differences in the type of issuers that access each market. 10% of proceeds from bond issuance were used for M&A compared to 47% for loans.[11] We expect issuance to remain robust in loans supported by this intensified search for yields and appetite from institutions, in particular CLO managers that continue to absorb close to 80% of all new issue volume. We believe the opportunity in CLO equity is particularly compelling given about 70% of loan issuers remain private, creating enhanced opportunities

[11] Pretium Internal using BofA Credit Chartbook, data through January 31, 2021

to earn alpha, at a time the CLO equity arbitrages continues to improve.[12]

Exhibit 9: Negative Yield Debt has been on the Rise



Source: Pretium Internal using Bloomberg and BofA Credit Chartbook, data through January 31, 2021

2021 CLO Formation

27 DEALS
$13.8B ISSUED

SOURCE: S&P

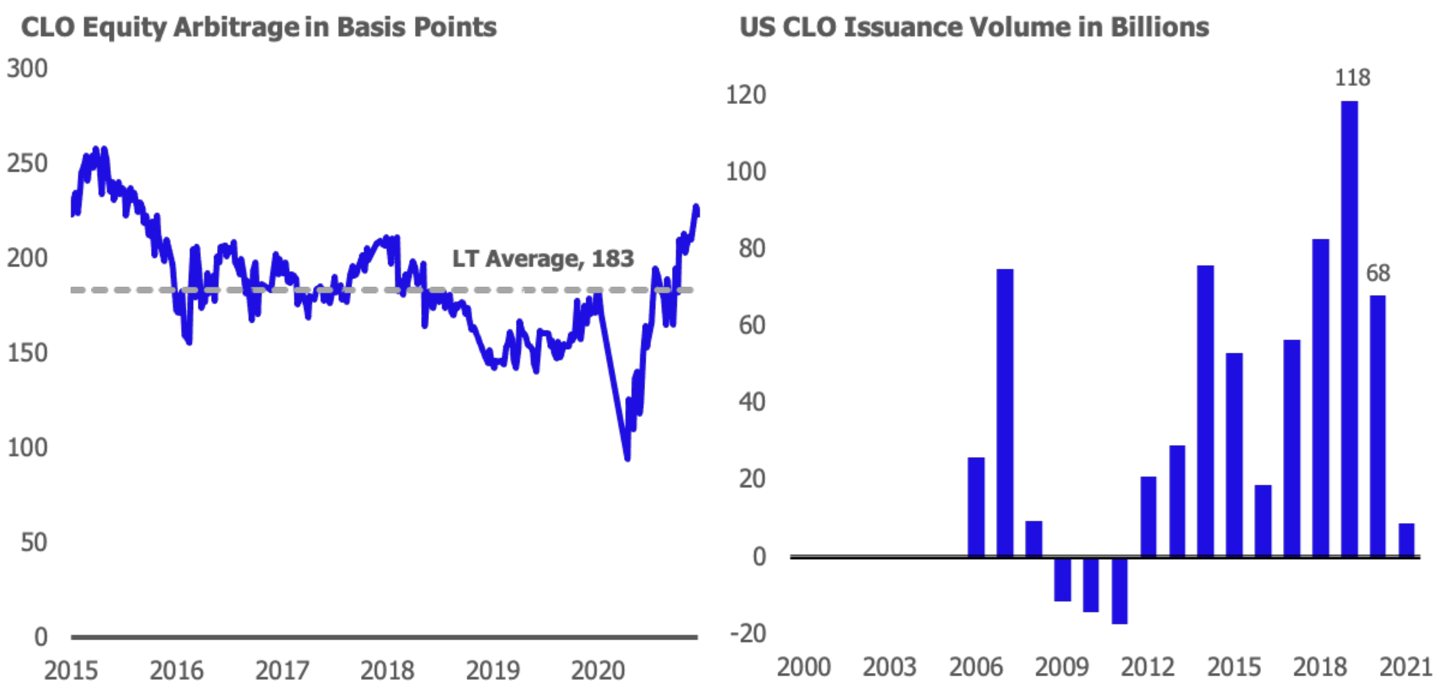
Since the Fed's intervention in credit markets was focused primarily on investment grade bonds, the spillovers to the CLO market were stronger at the top of CLO capital structures than at the bottom. The spread between funding costs and collateral yields consequently widened to multi-year highs. Consistent with such attractive funding spreads, many sell side shops (e.g., Morgan Stanley and Credit Suisse) have recommended CLO equity as a favored trade coming out of the pandemic. At the same time, Deutsche Bank has noted material dispersion in CLO manager performance, with equity distributions in Q1 varying between 0.4% and 6.8%. For CLO investors, this dispersion in performance underscores the importance of combining data, technology and expertise to identify relative value.

Even as spreads compress, we believe the inertia from "Corporate QE" has started a new cycle for CLO formation, which will undoubtedly come with its own set of challenges, but one that may allow investors to earn attractive returns in credit. S&P notes a strong start for CLO formation for 2021 with 27 deals issuing $13.8 billion YTD. They say this is because liabilities are roughly 20 basis points tighter

[12] Pretium Internal using BofA Credit Chartbook, data through January 31, 2021

on a weighted average cost of capital basis than a year ago, while the WACC is in a broad 150bps to 170bps range for a 5/2 year deal.[13] That said, tight liabilities are not the only driver of issuance, as risk appetite is also robust, allowing managers with different styles and collateral pools to come to market as shown in Exhibit 10.

Exhibit 10: Attractive CLO Equity Arb to Support CLO Formation and Loan Growth



Source: Pretium Internal using Bloomberg and BofA Credit Chartbook, data through January 31, 2021

3. Premia for the Yield-Starved: Alpha, Illiquidity and Complexity

While monetary and fiscal policy can claim credit for preventing a more severe recession, they have nonetheless disrupted the landscape for credit investors. Not only did policy reverse the dramatic spread widening in March, it arguably helped drive spreads to levels that in some cases are lower than they were before the pandemic. Spreads on the Bloomberg/Barcap CCC corporate index, for example, have tightened to just 552 bps, a remarkable 227 bps tighter than their pre-pandemic tights in February.[14] At the same time, CCC credit risk is arguably worse (or at least certainly no better), which implies that CCC credit premia – approximately the difference between spread and average annualized expected

[13] CUS leveraged finance issuance hits new highs in frenetic first quarter from LCD, as of March 2021

[14] CCC's have outperformed higher rated bonds in HY. In particular, Ba/B spreads are currently at 280 bps, still 56 bps wider than their February tights.

loss -- have been compressed even more than spreads, arguably to their lowest level since the Global Financial Crisis.

The Fed's willingness to backstop credit markets helps explain this state of affairs. In addition to its prior willingness to pursue quantitative easing via the purchase of Treasuries and Mortgage-Backed Securities, the Fed has now demonstrated its willingness to purchase corporate bonds when their spreads have moved excessively wide relative to what Fed officials judge suitable for the free-flow of credit to the economy. While this new instrument in the policy toolkit will presumably help the Fed offset recessionary economic shocks, it is potentially a game-changer for credit investors.

Tighter spreads are an obvious byproduct of "Corporate QE". Back in January 2009, then Fed Chairman Ben Bernanke gave a speech in which he sought to characterize the goals of the Fed's new balance sheet expansion as "credit easing". The language didn't stick ("quantitative easing" became the term of art), but the concept did. Consistent with the intent, the first phase of quantitative easing ("QE1") was explicitly focused on restoring the flow of mortgage credit to households. As such, the purchase target for mortgage-backed securities exceeded treasuries by a ratio of 5:1.[15]

Credit cycle chronologies typically observe that early-cycle spreads are "generous" whereas late-cycle spreads tend to become "too tight". There's a sensible theoretical story to go along with this chronology. During the early phase of recovery from recession, the elevated level of credit spreads arguably reflects both elevated levels of residual growth uncertainty (elevated risk) as well as elevated levels of risk aversion and deleveraging pressures due to recent wealth declines (hence an elevated price of risk). Later in the expansion, as growth propels wealth levels higher and recession memories fade, recession risk declines, the appetite for risk taking (including the use of leverage) returns, and credit spreads eventually grind lower to cycle tights.

"Corporate QE" is likely a paradigm shift for credit, because it implies a lower long-run average of spreads over the cycle. In the past, passive beta strategies in corporate credit could be expected to suffer lower (or negative) returns during late-cycle spread tightenings and recessions, but then earn outsized "beta premia" during the early years of expansions. These fat years would offset the lean years, and on average, passive investors could expect to earn a premium in exchange for owning credit risk. Corporate QE threatens to upend this pattern. As markets

[15] Pretium Internal using Bloomberg and BofA Credit Chartbook, data through January 31, 2021

adjust to the fact that tail risk has been mitigated by the "Fed put" (as it is more colloquially known), investor demand will likely drive spread levels to sustainably lower levels in the long run.

How then can fixed income investors earn attractive yields in credit? The pandemic-era compression of credit premia could hardly have come at a more painful time, since it comes on the heels of a return to the "new normal" of low, low yields in sovereign bond markets. These changes warrant a clear-eyed understanding of where attractive risk-adjusted yields in credit markets can still be earned, and where they cannot. While the above arguments suggest that risk premium in "plain vanilla" credit markets may have entered a new era of lower risks and tighter spreads, there are good reasons to expect limited spillover to sub-pockets of the credit markets like structured credit and distressed, also known as "complex" credit markets.

Private assets should see less spread compression than public assets, and complex assets should see less compression than plain vanilla ones.

By design, the goal of QE is to encourage the flow of credit to the economy by forcing investors to rebalance their portfolios out of safer bonds and into riskier ones. But the scope for substitution varies by asset, sometimes also known as the degree of "market segmentation". Hence, even if "corporate QE" ends up driving risk premia to new lower levels in credit markets where the Fed is directly intervening ("plain vanilla" investment grade bonds, namely), the re-pricing will arguably be less severe in subsectors of the credit markets that are harder for investors to access (CLO tranches, for example). By this logic, private assets should see less spread compression than public assets, and complex assets should see less compression than plain vanilla ones.

Complexity and illiquidity are significant barriers to spread-reducing capital flows. For many investors, the longer lock-up periods required by the managers of illiquid assets are simply not suitable. This is one important reason why the spreads on BB-rated CLO tranches, for example, trade at roughly twice the spread of BB-rated plain vanilla bonds, despite having comparable loss expectations. The nature of complex credit assets limits access, too, because the management of such assets requires specialized expertise. And just as importantly (if not more so), the effective selection of expert managers requires a high degree of similar expertise, too. Indeed, a team of economists from UCLA, Stanford and the University of Hong Kong has recently noted the puzzle that investor participation is lower in more complex asset markets, despite the fact that such assets earn higher Sharpe ratios.[16] By appealing to the scarce expertise need to access such assets, they derive a model that explains how these higher returns can persist in equilibrium.

[16] Complex Asset Markets", by Andrea Eisfeldt, Hanno Lustig and Lei FN Zhang, NBER WP #23476, June 2017

Over time, of course, the "death of credit spread" will likely encourage investments in the expertise required to pursue yield alternatives. For investors willing to make such investments, the recent disruption of the investing landscape means that the returns available from low-cost strategies designed to harvest credit premia from plain-vanilla public markets have clearly fallen, whereas the "returns to expertise" available in less-vanilla credit premia like alpha, illiquidity and complexity have arguably risen. The opportunity set for such assets is determined in part by their supply vs the market's ability to scale expertise and investment capacity accordingly. Returns on such assets are highest when either the investible asset supply has unexpectedly increased, or when the "stock" of expertise has unexpectedly depreciated due to the sudden obsolescence of investor knowledge. The current pandemic has arguably increased the supply of such assets, while the many "rules of thumb" relied upon by investors have arguably become less useful. In short, it's an investing environment where the "scarce input" to investing is not capital, but expertise.

Confidentiality and Other Important Disclosures

This report discusses general market activity, industry or sector trends, or other broad-based economic, market or political conditions and should not be construed or relied upon as research or investment advice, as predictive of future market or investment performance or as an offer or solicitation of an offer to buy or sell any security or investment service. This report reflects the views of Pretium Partners, LLC ("Pretium"), as of the date on the cover and these views are subject to change without notice as the market conditions change and evolve, which can occur quickly. Past performance is not indicative of future results.

Recipients are urged to consult with their financial advisors before making any investment. All investments entail risks, and mortgage-related investments are speculative and entail special risks. Changes in interest rates, both real estate and financial market conditions, the overall economy, the regulatory environment and the political environment can affect the market for mortgage-related investments and should be considered carefully. Investors may lose all or substantially all an investment, and no investment strategy or process is guaranteed to be successful or avoid losses.

This report is being furnished on a confidential basis and is intended solely for the person to whom it was originally delivered. Distribution of this report to any person other than the person to whom it was originally delivered is unauthorized, and any reproduction of these materials, in whole or in part, or the divulgence of any of its contents, without the prior express written consent of Pretium, is prohibited.

Certain information in this report has been obtained from published and non-published sources prepared by third parties, which, in certain cases, have not been updated through the date hereof. While such information is believed to be reliable, Pretium has not independently verified such information, does not assume any responsibility for the accuracy or completeness of such information nor does it warrant that such information will not be changed. Any reference to a specific company or security does not constitute a recommendation to buy, sell, hold or directly invest in the company or its securities.

The information included herein may not be current and Pretium has no obligation to provide any updates or changes. No representation, warranty or undertaking, express or implied, is given as to the accuracy or completeness of the information or opinions contained herein, and nothing in this report should be relied upon as a promise or representation.

The information set forth in this report is not intended as a representation or warranty by Pretium or any of its affiliates as to the composition or performance of any future investments. Assumptions necessarily are speculative in nature. It is likely that some or all the assumptions set forth or relied upon in this report will not materialize or will vary significantly from any assumptions made (in some cases, materially so). You should understand such assumptions and evaluate whether they are appropriate for your purposes. Certain information in this report is based on mathematical models that calculate results using inputs that are based on assumptions about a variety of future conditions and events. The use of such models and modeling techniques inherently are subject to limitations. As with all models, results may vary significantly depending upon the value and accuracy of the inputs given, and relatively minor modifications to, or the elimination of, an assumption, may have a significant impact on the results. Actual conditions or events are unlikely to be consistent with, and may differ materially from, those assumed. ACTUAL RESULTS WILL VARY, AND MAY VARY SUBSTANTIALLY FROM THOSE REFLECTED IN THESE MATERIALS.

This report includes a discussion of certain market opportunities as determined by Pretium. There can be no assurance that such opportunities will exist, and both the timing and opportunities are subject to change based on Pretium's analysis of current market conditions.

This report contains forward-looking statements, which can be identified by the use of forward-looking terminology such as "may," "will," "should," "seek," "expect," "anticipate," "project," "estimate," intend," continue," "target," "plan," "believe," the negatives thereof, other variations thereon or comparable terminology and information that is based on projections, estimates, and assumptions. Such statements and information cannot be viewed as fact and are subject to uncertainties and contingencies. Actual results during the period or periods covered by such statements and information may differ materially from the information set forth herein, and no assurance can be given that any such statement, information, projection, estimate, or assumption will be realized or accurate.

Recipients should note that COVID-19 has already caused a worldwide public health emergency, straining healthcare resources and resulting in extensive and growing numbers of infections, hospitalizations and deaths. In an effort to contain COVID-19, national, regional and local governments, as well as private businesses and other organizations, have taken severely restrictive measures, including instituting local and regional quarantines, restricting travel (including closing certain international borders), prohibiting public activity (including "stay-at-home" and similar orders), and ordering the closure of large numbers of offices, businesses, schools, and other public venues. As a result, COVID-19 has significantly diminished global economic production and activity of all kinds and has contributed to both volatility and a severe decline in all financial markets. Among other things, these unprecedented developments have resulted in material reductions in demand across most categories of consumers and businesses, dislocation (or in some cases a complete halt) in the credit and capital markets, labor force and operational disruptions, slowing or complete idling of certain supply chains and manufacturing activity, and strain and uncertainty for businesses and households, with a particularly acute impact on industries dependent on travel and public accessibility, such as transportation, hospitality, tourism, retail, sports and entertainment.

The ultimate impact of COVID-19 — and the resulting precipitous and near-simultaneous decline in economic and commercial activity across several of the world's largest economies — on global economic conditions, and on the operations, financial condition and performance of any particular industry or business, is impossible to predict, although ongoing and potential additional materially adverse effects, including a further global or regional economic downturn (including a recession) of indeterminate duration and severity, are possible. The extent of COVID-19's impact will depend on many factors, including the ultimate duration and scope of the public health emergency and the restrictive countermeasures being undertaken, as well as the effectiveness of other governmental, legislative and financial and monetary policy interventions designed to mitigate the crisis and address its negative externalities, all of which are evolving rapidly and may have unpredictable results. Even if and as the spread of the COVID-19 virus itself is substantially contained, it will be difficult to assess what the longer-term impacts of an extended period of unprecedented economic dislocation and disruption will be on future macro- and micro-economic developments, the health of certain industries and businesses, and commercial and consumer behavior.

For questions or comments on this report, please contact your Pretium relationship manager.

Charles P. Himmelberg, Senior Managing Director – Macro Research, chimmelberg@pretium.com

Charlie Himmelberg is Senior Managing Director and Head of Macro Research at Pretium, where he has overall responsibility for global market research across all of the firm's strategies, including real estate. Mr. Himmelberg joined Pretium in 2020 with more than 25 years of experience in mortgage, credit, market, and policy research. Prior to joining Pretium, he spent 15 years at Goldman Sachs & Co., most recently as Partner & Managing Director, Global Investment Research, responsible for the global market research teams in rates, FX, credit, mortgages, EM and macro equity; previously, he was head of global credit and mortgage research. Prior to joining Goldman, Mr. Himmelberg had a distinguished career in policy research and academia at the Federal Reserve Bank of New York, Columbia University, New York University, and The University of Chicago. Mr. Himmelberg is a member of Pretium's Executive Committee. He received a BA in Economics and a BS in Mathematics from the University of Kansas, and a PhD in Economics from Northwestern University. Additionally, he serves as a trustee of St. Peter's Catholic Church.

Zain N. Butt, Associate – Research & Strategy, zbutt@pretium.com

Zain Butt is an Associate on the Macro Research Team at Pretium, where he supports global market research across all of the firm's strategies, analyzing trends in the economy, capital markets and housing markets, as well as working across the organization to translate top-down thoughts into the investment process and business development efforts. Zain joined Pretium in 2019 after completing a 3-year credit rotation program from S&P Global Ratings and has experience in analyzing healthcare, insurance, and asset-backed securities. Prior to S&P, he also spent 1 year at Aegis Capital as part of their equity research team focusing on biotech. Zain graduated cum laude from CUNY Baruch College with a BBA in Economics and Finance, and is a CFA level 2 candidate.