Collateral Thinking

Downgrade and default pressure mounts

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Leveraged Loan Strategy
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Top of the stack

The much anticipated downgrades have begun. Over the last two weeks the loan market has witnessed a record $80bn in total downgrades where a total of 100 loans have been downgraded 140 notches by S&P. Consequently, our Downgrade to Upgrade 'D/U' ratio has surged, and loans are now being downgraded at 3.7x the pace of upgrades. The same ratio by par has also zoomed past its prior peak of 2018, reaching levels last seen during the financial crisis.

In contrast to the downgrade cycle of last summer where small issuers were leading the surge in downgrades, the current wave has been dominated by large and medium sized issuers. In terms of sectors, the jump has been driven by those most impacted by the spread of COVID-19. Of the loans downgraded month to date (MTD), 60% have come from Retail, Services (Leisure), Transportation and Autos.

We think the brisk pace of downgrades will continue. Under our base case, we estimate that about 50% or $550bn of loans could get downgraded from their current ratings through the course of the downgrade cycle. Notably, $300bn worth of new loans could enter the CCC bucket, putting incremental pressure on collateralized loan obligations (CLOs). However, we don't see either CLOs or mutual funds leading the next leg lower. Instead we think that outflows from separately managed accounts (SMAs) and unwinds of levered market structures could be the catalysts to further price drops in the loan market. We think default rates could reach 7%.

Over the short term, the loan market is poised to ride the $22bn in repayments. However, if the global coronavirus news flow deteriorates, or the US is not able to execute an effective lockdown, potentially delaying economic recovery, the loan market could take another leg down and fall into the 60s. As such we reaffirm our tilt towards very high quality paper which has been dislocated, and think there will be better entry points for riskier paper that survives the default cycle.

Market technicals

Last week, demand for loans turned negative to -$780mn, the lowest print since Dec 2018, as retail outflows outstripped CLO creation and accumulated coupons. Primary market has also stayed silent with no new issuance since March 16th . YTD, demand has surpassed supply by $1.5bn, driven by $7bn in mutual fund outflows. We expect $22bn in repayments in the near term, $9bn of which is hitting the loan market this week itself.

Performance

Loans in the LCD index have returned 3% last week, a swift bounce back from losses earlier in the month. Within ratings, higher quality loans have outperformed, highlighted by a 5.7%bps gain from BB loans. MTD, CCCs have lost nearly twice of BBs (CCCs -22% vs BBs -13%) as investors rotated away from the "risky" yield. This puts the loan market at -15% YTD. Comparatively, the HY market has returned 5.3% last week for a YTD total return of -14%.

Table 1: Loan performance

Index	Level	1wk Δ	2wk Δ	YTD Rtn
All Loan	82.8 pts	6.5	-1.8	-13.0%
BBs	88.6 pts	9.7	1.8	-10.9%
Bs	82.9 pts	6.0	-2.6	-13.7%
CCCs	64.1 pts	1.1	-7.6	-22.8%

Source: S&P LCD

Table 2: HY performance

Index	Level	1wk Δ	2wk Δ	YTD Rtn
US HY	877 bps	-178	+36	-13.1%
BBs	641 bps	-164	+23	-10.2%
Bs	957 bps	-197	+34	-14.1%
CCCs	1794 bps	-153	+169	-22.4%

Source: BofA Global Research

Table 3: Fund flows ($mn)

Asset	1wk	2wk	YTD	LTM
Loans	-1,790	-2,410	-30,616	-35,029
US HY	-502	-2,814	+11,203	+6,484
US IG	-41,854	-38,694	+186,886	+314,772

Source: EPFR Global

Refer to important disclosures on page 12 to 14. Analyst Certification on page 11. 12118074

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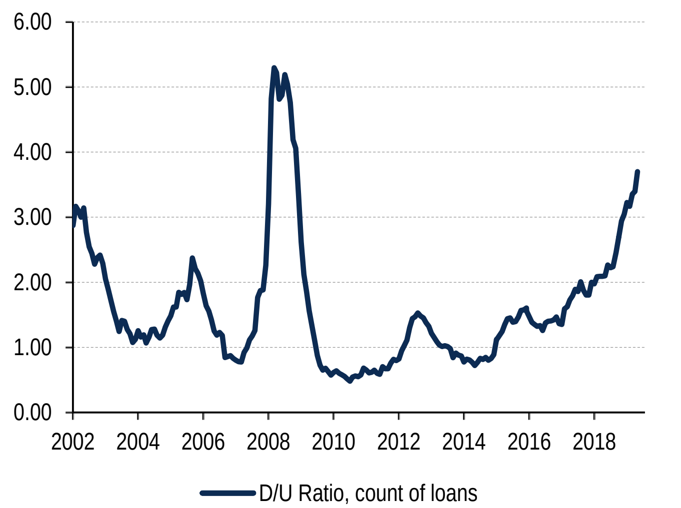
Top of the stack

The much anticipated downgrades have begun. Over the last two weeks the loan market has witnessed a record $80bn in total downgrades where a total of 100 loans have been downgraded 140 notches by S&P. This has come as a result of $40bn in downgrades each week for the past two weeks, a weekly record in of itself. The next highest toll of downgrades in a single week was established in December 2016 when the rating agency downgraded $33bn worth of loans, followed by $29bn in November 2008. Consequently, our headline Downgrade to Upgrade 'D/U' ratio has surged to 3.7, meaning that loans are now being downgraded at 3.7x the pace of upgrades (Chart 1).

While the headline ratio, calculated by number of loans downgraded on a weekly basis, has been in concerning territory for a while, it is the D/U ratio by par that has made significant leaps - from 1.9 end of February to 2.8 last week, zooming past its prior peak of 2018 and reaching levels last seen during the financial crisis (Chart 2). Unsurprisingly, the already slow pace of upgrades has also come to a grinding halt as uncertainty and credit risk has mounted this month.

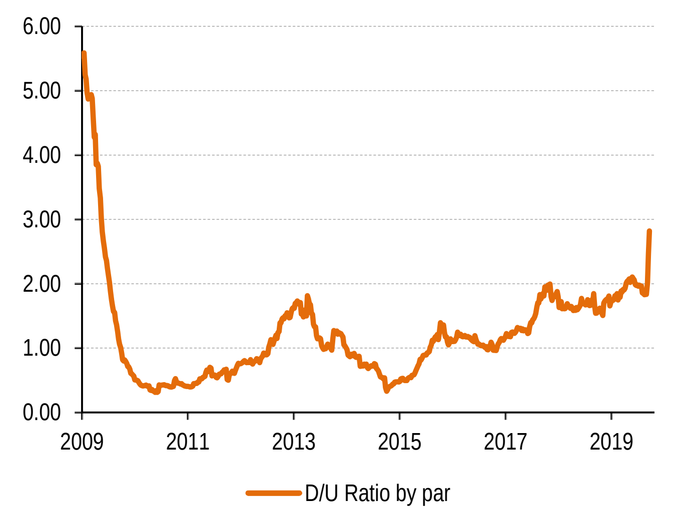
We anticipate downgrades to continue at a brisk pace posing further upside to the D/U ratios from here. We also see meaningful financing pressures building up in the levered credit space and see default rates increasing to 7%. In this report, we look at what is driving recent downgrades, contemplate whether we have reached market bottom, and quantify our downgrade and default expectations under various economic scenarios.

Chart 1: D/U ratio by number of loans



Source: BofA Global Research, S&P LCD

Chart 2: D/U ratio by par value

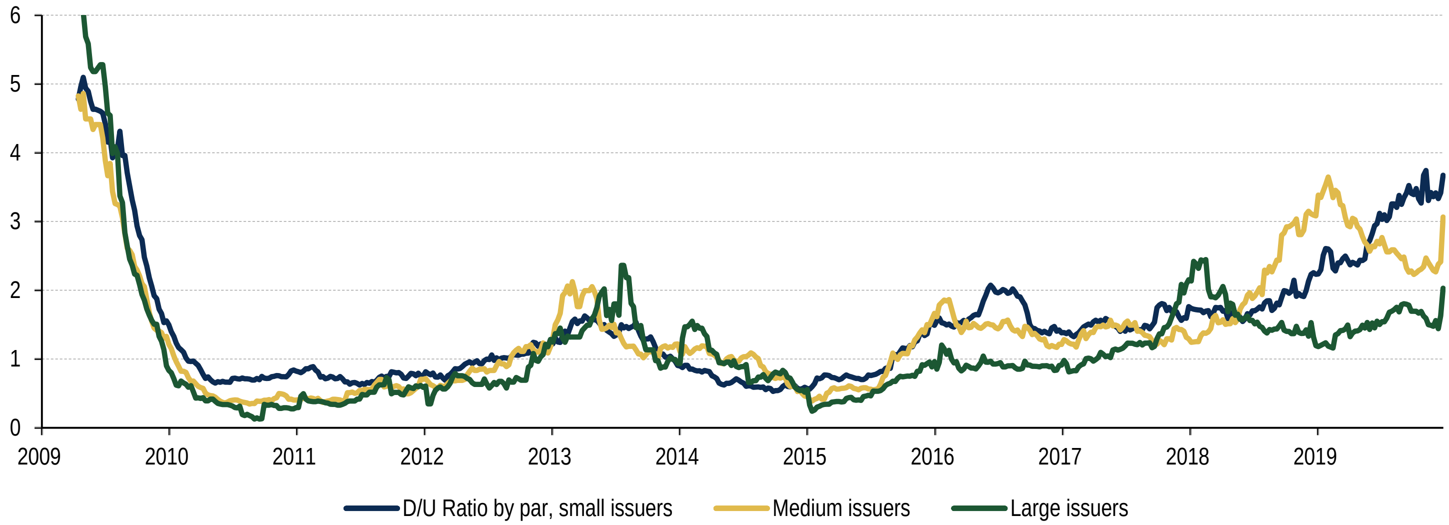


Source: BofA Global Research, S&P LCD

Who's driving the downgrades?

In contrast to the downgrade cycle of last summer where small issuers were leading the surge in downgrades, the current wave has been dominated by large and medium sized issuers. Chart 3 shows the par D/U ratio by issuer size, also on a weekly basis (ratios on a monthly basis will differ). We use loan tranche size as a proxy of the issuer size. We consider small issuers as those with loan face <$500mn, medium issuers as those with loan face between $500mn and $1bn, and large issuers with loan face >$1bn. The chart shows that D/U ratio of small issuers has not moved much in the last 2 weeks, though its already the highest vs other groups. Medium sized issuers' D/U ratio has increased from 2.4 to 3.0, and large issuers from 1.6 to 2.0 over the same period. Notably however, the D/U ratio of large issuers still remains lower than previous peaks of ~2.5 reached in 2018 and 2014. Medium sized issuers are catching up to the peak downgrades they reached in early 2019, while small issuers continue to get downgraded at an elevated pace.

Chart 3: D/U ratio by issuer size



Source: BofA Global Research, S&P LCD

In terms of sectors, the jump has been driven by those most impacted by the spread of COVID-19. Of the $86bn downgraded MTD, 60% has come from Retail, Services (Leisure), Transportation and Autos. These are also the sectors seeing the highest proportion of their footprint getting downgraded with numbers anywhere between 15%-30% of their par outstanding affected. On the other hand, large sectors such as Technology, Telecoms and Healthcare are facing limited downgrades at present. The below table gives a sector breakdown of the ratings actions over the month of March.

Table 4: Breakdown of MTD downgrades by sector

Sectors	Par outstanding ($mn)	Downgraded Loans	Downgraded Par	% par downgraded by sector
Autos	37,226	8	7,596	20%
Cable/Media	97,530	2	1,430	1%
Capital Goods	51,351	6	3,625	7%
Chemicals	50,104	6	4,375	9%
Energy	54,110	6	3,690	7%
Financials	128,577	5	3,558	3%
Food Producers	33,850	5	4,997	15%
Gaming	35,938	3	1,763	5%
Healthcare	143,089	3	2,186	2%
Materials	45,415	3	1,660	4%
Real Estate	54,949	6	3,480	6%
Retail	82,809	12	11,272	14%
Services	104,498	27	21,957	21%
Technology	178,134	4	4,150	2%
Telecoms	47,530	1	815	2%
Transportation	32,816	7	9,055	28%
Utilities	23,227	2	800	3%
Total	1,201,154	106	86,409	7%

Source: BofA Global Research, S&P LCD

Have we bottomed out?

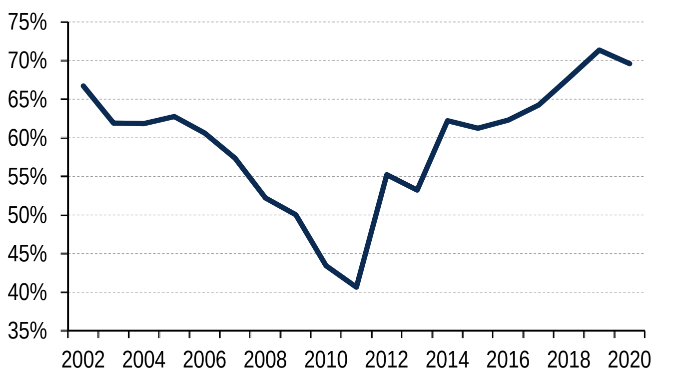
While loans have already lost a considerable amount of fervor, we could face another leg down if investors don't get clarity on how and when our economy will be able to get over the hump. Combine that with growing economic pessimism, we think there is a case for further downside from these levels. We think the next leg down will be driven by institutional capitulation as retail has more or less hit bottom. Below we discuss the status of major investors in our market.

CLOs

The events of this month have led to widespread reassessment of portfolios across our investor base, but these downgrades are particularly challenging for CLOs given their sensitivity to CCC exposure. We saw managers position themselves appropriately ahead of the last downgrade wave in the summer of 2019 in order to maintain their covenants. We expect the same is happening at this time. Our CLO strategists estimate that nearly 30% of all CLO deals are already in breach of their 7.5% CCC limits on the back of the current downgrade wave. While that in of itself is not a cashflow event, the pressure on JR OC tests is likely to keep building as downgrades continue. This threatens to shut off cashflow to certain parts of the CLO structure prompting downgrades of junior CLO tranches.

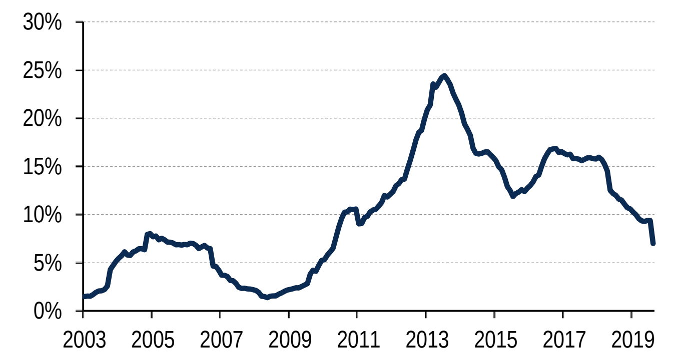
Having said that, we have neither seen (now or last summer), not are anticipating mass forced sales of loans from CLOs. We will definitely see position unwinds to get ahead of potential CCC downgrades or defaults. But the selling pressure is likely to be limited to individual credits, and should not result in widespread portfolio unwinds as the nature of these structures is to stay invested. Additionally, given that most of the loan market is trading at a significant discount, loan sales will really be swaps- selling one name with foreseeable downside, to buy another with potential upside. This is likely to increase dispersion of credits in the loan market, rather than heavily reduce CLO participation, all things equal. Chart 4 shows that CLOs still formed about 50% of the loan investor base through GFC, and bottomed out post the recession when prices rebounded.

Chart 4: CLO AUM, % of loan market



Source: BofA Global Research, S&P LCD

Chart 5: Retail AUM, % of loan market



Source: BofA Global Research, EPFR Global

Mutual funds

Retail funds have suffered $65bn of outflows since 2018 when the Fed pivoted to a rate cutting regime. In March alone the figure is $9bn, which has pushed retail ownership of the loan market to 7% from 16% in 2018. At this point we think that most of the interest rate sensitive positions have been flushed out of the market. Though we are likely to continue seeing mutual fund outflows given low short rates, we don't expect volumes for sale to be unmanageable. First, we think there is a floor at around a 2-5% participation level, close to where retail bottomed out during the GFC (Chart 5). From current levels that would indicate about a $2-$5bn AUM loss, fraction of what the retail community has already witnessed. Second, we think capital is likely to trickle as opposed to flood out as seen for most of 2019. So while retail may still be an incremental seller, we don't see this investor base as a catalyst for the next major leg down.

SMAs

The recent leg of widening in loans was on the back loan mutual fund selling, with some CLOs and non-traditional buyers taking the other side. SMAs, which form nearly 20% of the loan investor base have not really participated on either side. This form of capital is generally more patient and long term oriented than retail, and it's possible that if volatility decreases from here, they may never sell. But to us, this part of the market remains vulnerable given its size, mark to market nature, and the fact that increasing downgrades are likely to jeopardize portfolio tilt towards higher quality, necessitating widespread reallocations across asset classes.

Levered structures

To us, the most immediate threat to loan price stability comes from levered vehicles such as custom Total Return Swaps and CLO warehouses. Levered TRS products are more vulnerable given their mark-to-market nature, as opposed to the warehouses, where a majority seem to have moved away from mark-to-market language. We have seen glimpses of unwinds in this space with mammoth BWICs floating in our market last week.. We think there is a sizable amount of these vehicles outstanding, and meaningful pressure could arise from this space if weakness persists, leading to margin calls and portfolio unwinds, leading to sharp price drops like we saw this month.

The macro view

Consensus is building that the US is already in a recession, however opinions differ on the depth of the downturn, and the pace of the ensuing recovery. Both of these, in our opinion, are a function of the length of the global lockdown- the longer businesses are shut and people are out of work, the deeper the recession, and the longer it will take to get the economy back on its feet. Unfortunately, guessing the length of the lockdown is an extremely challenging task given many moving parts to the equation, medically and politically. Our economics team is of the view that US economy could contract up to 6% in 2020, with the deepest fall coming in Q2, and an extended U-shaped recovery starting well into 2021. However there are other schools of thought that are arguing for a V-shaped recovery.

Given this backdrop, we could be primed either way depending on the news flow from here. If leading indicators like Italy and Spain stabilize, and we replicate their lockdown executions, including strict nationwide curfews, then we can reasonably assume a timeline like theirs, and can make the case of bottoming out. The recent bear market rally has been supported by capital infusion from distressed funds and non-traditional players, and we know there is more deployable capital at these sources. Additionally, with nearly $22bn of forthcoming repayments, including $9bn hitting the loan market this week itself, good technicals could also help prop the market up in the interim.

However, if the global coronavirus news flow becomes more concerning or the US is not able to execute an effective lockdown, potentially leading to higher than assumed economic drag, the loan market could take another leg down and fall into the 60s. In any case, we stand by our call of investing into solid credits. If we have bottomed out then investors can ride these names to par, and if there is another leg down, there will be more opportunities to pick up lower quality names that survive the downturn.

Our downgrade and default forecasts

With the above in mind, we revise our downgrade and default forecasts for 2020. We have always maintained that the coronavirus is a wild card, and thus we have formulated our analysis under three different recession scenarios baseline, optimistic and pessimistic. Our optimistic view assumes a V-shaped recovery, pessimistic assumes a U-shaped one, while the baseline lies somewhere in between. However, in light of the growing economic pessimism, we think that there is a higher probability attached to the pessimistic case than the optimistic one at this point. Of course, as we know more about the virus and its prevention/treatment, that new information could skew the outcome in favor of the optimistic view. The below table summarizes our rating wise migration and default expectations under the three scenarios.

Table 5: Downgrade and default expectations under various scenarios

Starting Loan Rating	Curr Size ($bn)	Baseline Downgrade Pct	Baseline Downgrade Par ($bn)	Baseline Default Pct	Optimistic Downgrade Pct	Optimistic Downgrade Par ($bn)	Optimistic Default Pct	Pessimistic Downgrade Pct	Pessimistic Downgrade Par ($bn)	Pessimistic Default Pct
BBB3	101	19%	19.20	4%	9%	9	0%	20%	21	5%
BB1	77	37%	28.43	6%	22%	17	2%	36%	28	11%
BB2	87	39%	33.80	2%	19%	16	2%	42%	37	4%
BB3	118	45%	52.89	2%	21%	24	1%	51%	60	4%
B1	186	52%	96.27	4%	24%	44	2%	59%	111	9%
B2	322	56%	179.87	7%	24%	77	3%	68%	220	11%
B3	175	56%	97.69	10%	25%	43	6%	73%	129	15%
CCC1	41	54%	22.24	15%	22%	9	10%	70%	29	21%
CCC2	31	45%	14.21	23%	19%	6	21%	55%	17	33%
CCC3	8	35%	2.95	33%	11%	1	32%	46%	4	40%
CC	2	0%	-	60%	0%	-	57%	0%	-	64%
Total	**1,150**	**48%**	**548**	**7%**	**21%**	**246**	**4%**	**57%**	**654**	**11%**

Source: BofA Global Research, Moody's CTM

Base case

Our base case is that the US economy goes into a sharp contraction in Q2 and Q3, which eases up by Q4, followed by a recovery in 2021. In terms of spreads we assume spreads sell off more from here, reach peak levels in Q2, followed by a recovery in 2H20. Under this scenario, we estimate that about 50% or $550bn of loans may get downgraded from their current ratings through the course of the downgrade cycle. Notably, $300bn worth of new loans could enter the CCC zone from higher rating categories, which represents the incremental pressure that CLO buyers are likely to face in their CCC buckets, adjusted for CLO share of the loan market (Table 6).

As we suggested in our last report, loan defaults are expected to rise materially from here given the sudden and total halt in economic activity. We estimate that default rates could go rise to 7% from the current 3% levels as reported by Moodys. We studied our credit analysts' bottom's up analysis within the levered credit universe, which also suggests this magnitude of default pressures building up in our space.

Optimistic case

In an optimistic scenario we assume that the recession caused by the coronavirus will be milder. Here the economy stops contracting in Q3, followed by a healthy 2021 recovery. Spreads stay at current distressed levels until early spring, and start contracting in Q2. Under this scenario, we expect total downgrades to reach $250bn, or 20% of the loan market, while new downgrades to CCC to total $90bn. Under this situation the default pressures are going to be more benign and we think total default rate will inch up marginally to 4%.

The basis for an optimistic outcome is one of having an aggressive Fed that is supporting the economy with extreme speed and resolve, going above and beyond the GFC playbook, and using unprecedented methods to stabilize liquidity in the treasury and make sure credit keeps flowing through the economy. Additionally, we have seen bipartisan support for policy stimulus come through in Washington, and there still remains much that can come by way of fiscal support, such as infrastructure spending, corporate bail outs and additional household grants. Also importantly, given the collective intellectual horsepower behind finding methods of prevention, treatment and vaccination we are hopeful to see some sort of medical intervention that upends the current infection curve, clearing the path to economic recovery.

Pessimistic case

In this scenario we assume a shallower 2021 recovery. Spreads go past GFC peaks in Q2, recovering slowly through 2H20 and next year. Note that under this scenario, the fallout is likely to rival GFC levels: we expect close to 60% of the loan market to get downgraded, half of which is poised to land in the CCC bucket. Default pressures are going to be massive and we think total default rate could shoot north of 10% like it did in the great recession.

We model the severe case in the event a situation arises where the economic fallout may be worse than GFC. There are already 8 strains of the virus circling the globe. If the pathogen becomes more virulent, or if the government extends the lockdown in order to protect our hospitals and frontline staff from being overburdened, we can see widespread corporate liquidity crunch, reaching levels from which it may be hard to return, in spite of the fiscal and monetary stimulus enacted thus far. Additionally, while there may be plenty of private dry powder in PE and PD pockets, we think it will only be deployed in situations where the exit is clearly in sight. If there is a reasonable chance that a business may not return back to its feet in Q3, sponsors and lenders may prefer to write off their investment capital.

Ultimately, we think that it is the extent of the lockdown, here and globally, that will dictate the severity of the recession, and thus the extent of the breakdown of business models in the leveraged finance space. The below table shows the expected incremental downgrades to CCC under various economic scenarios.

Table 6: Pct and par ($bn) amounts downgraded to CCCs

Starting Loan Rating	Curr Size	Pct D/g	Par D/g	Pct D/g	Par D/g	Pct D/g	Par D/g
BBB2	2	0%	0	0%	0	0%	0
BBB3	101	1%	1	0%	0	1%	1
BB1	77	6%	4	1%	0	5%	4
BB2	87	8%	7	1%	1	9%	8
BB3	118	15%	18	3%	3	16%	19
B1	186	26%	49	6%	11	29%	54
B2	322	35%	113	10%	34	41%	133
B3	175	56%	98	25%	43	73%	129
Total downgrade to CCCs			**290**		**92**		**347**

Source: BofA Global Research, Moody's CTM

Summary

A looming recession, and the threat of downgrades, levered structure unwinds, and a lack of support from CLOs could ultimately push the loan market another leg wider if the economic risk posed by a worsening Coronavirus situation doesn't show signs of abating. As such we aren't out of the woods yet, in our opinion. At the same time, it is incredibly hard to time the market, and we think that solid credits should be bought here. If we have bottomed out then investors can ride their high quality credits higher, but if there is another leg to go then investors will be presented with more opportunities later on to pick up lower quality names that survive the downturn.

Market Technicals

Last week, demand for loans turned negative to -$780mn, the lowest print since Dec 2018, as retail outflows outstripped CLO creation and accumulated coupons. YTD demand was 16% less than 2019 demand for the same period (2020 YTD $22bn vs 2019 YTD $26bn). Primary market has also stayed silent with no new issuance since March 16th . YTD, demand has surpassed supply by $1.5bn, driven by $7bn in mutual fund outflows. We expect $22bn in repayments in the near term, $9bn of which is hitting the loan market this week itself.

Table 7: Weekly Technicals ($mns)

	YTD as of 3/27/20	3/20/20	3/13/20	3/6/20	2/28/20
Retail flows (a)	-7,202	-2,254	-2,819	-1,412	-1,440
CLO creation (b)	15,267	503	1,995	1,512	2,363
Coupons (c)	13,892	971	950	1,481	937
Demand (a+b+c)	21,957	-780	126	1,582	1,859
Issuance Ex-repricings (d)	89,482	0	0	0	2,476

Table 7: Weekly Technicals ($mns)

	YTD as of 3/27/20	3/20/20	3/13/20	3/6/20	2/28/20
Repayments (e)	69,004	NA	3,193	4,742	8,308
Supply (d-e)	20,477	NA	-3,193	-4,742	-5,832
Demand net of Supply	1,480	NA	3,319	6,324	7,691

Source: S&P LCD, EPFR Global.
Values in $mn. Weekly coupon values are estimated by dividing each month's coupon payment by 4.

Performance by segment

Loans in the LCD index have returned 3% last week, a swift bounce back from losses earlier in the month. 2nd liens and Middle Market loans have underperformed the index with weekly losses of -168bps and -307bps respectively. Within ratings, higher quality loans have outperformed, highlighted by a 5.7%bps gain from BB loans. MTD, CCCs have lost nearly twice of BBs (CCCs -22% vs BBs -13%) as investors rotated away from the "risky" yield. This puts the loan market at -15% YTD. Comparatively, the HY market has returned 5.3% last week for a YTD total return of -14%. The most liquid loans as per the LCD Leveraged Loan 100 benchmark have returned 797bps, greatly outperforming the broader All Loans index.

Table 8: Total Returns (price plus coupon return), bps

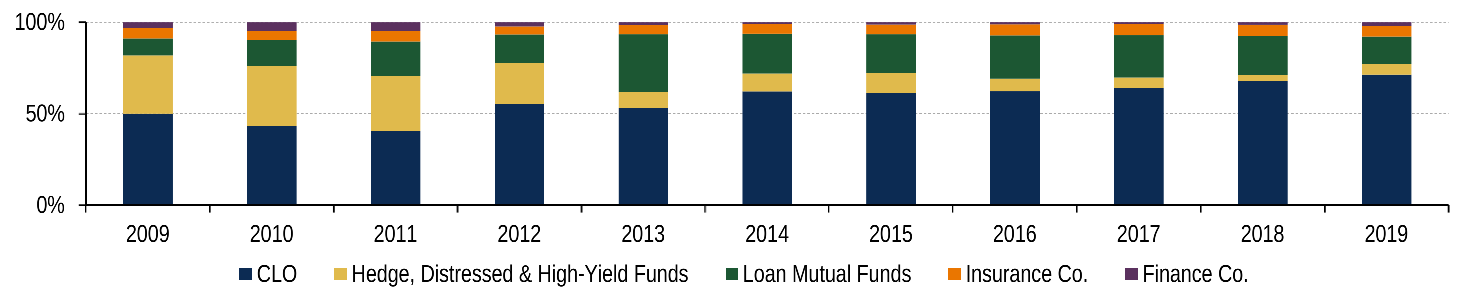
	3/27/2020	3/20/2020	3/13/2020	3/6/2020
All Loans	297	-1,117	-586	-104
BB	569	-1,180	-571	-114
B	223	-1,135	-587	-99
CCC	-403	-1,041	-789	-134
2nd Lien	-168	-907	-690	-105
LL100	797	-1,227	-582	-104
Middle Market	-307	-672	-486	-67

Source: S&P LCD
Middle market defined as $50mn EBITDA or less. LL100 composed of the 100 largest issuers (by face value) in the S&P LCD Leveraged Loan Index.

Appendix

CLOs are an important factor to consider in the loan market given they are the single biggest buyer of loans and represent 71% of the primary demand within this asset class. Loan retail funds are the second largest buyers although their participation has shrunk since the peaks of 2013. Since then, we have seen increasing activity from CLO managers. At the same time, hedge, distressed & high yield funds have played a lesser role in the primary market.

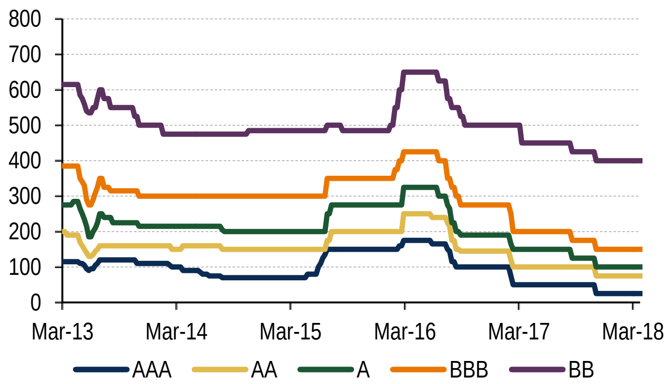
Chart 6: Primary institutional investor market by type



Source: S&P LCD

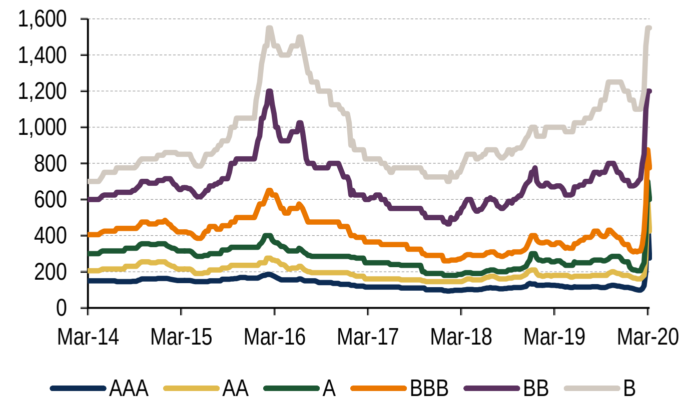
Three generations of CLOs exist today, CLO 1.0 (pre-crisis), and CLO 2.0/CLO 3.0 (post-crisis). The market is primarily driven by the latter. Below charts show CLO spread levels by tranches.

Chart 7: US CLO 1.0 indicative spread levels (bps)



Source: BofA Global Research

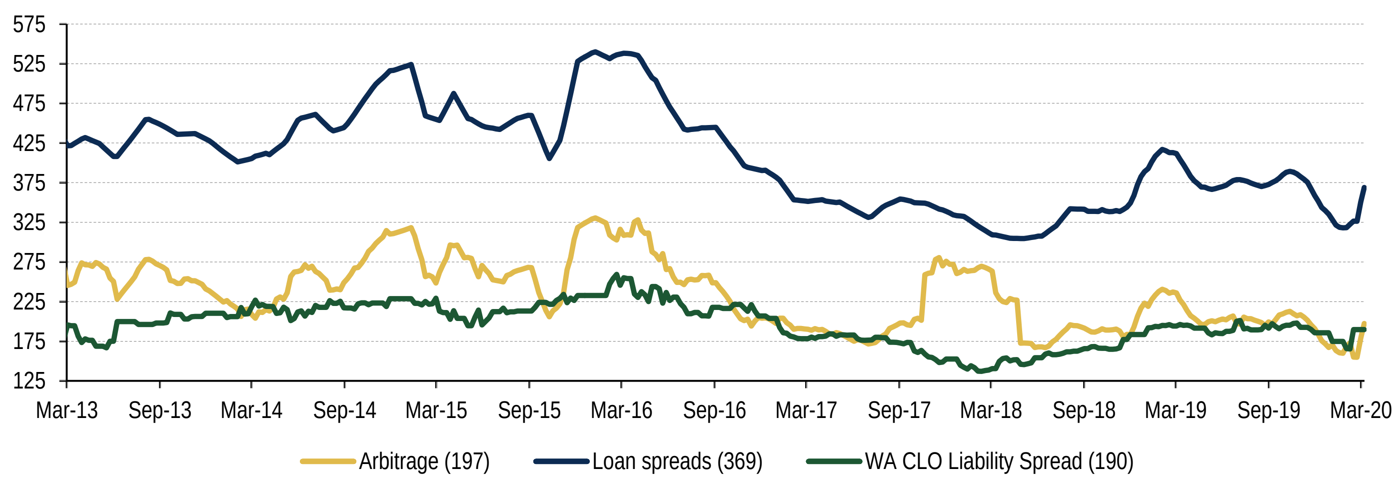
Chart 8: US CLO 2.0/3.0 indicative spread levels (bps)



Source: BofA Global Research

CLO arbitrage is a widely followed statistic in the loan market, and represents the theoretical spread that managers can capture by issuing CLOs. The below chart compares CLO asset (loan) spreads to the weighted average spreads of CLO liabilities. The difference between these two values is the theoretical arbitrage and represents the current attractiveness of creating new CLOs. A higher arbitrage number means a greater incentive for managers to bring new CLOs to the market, and thus provide incremental loan demand, and vice versa.

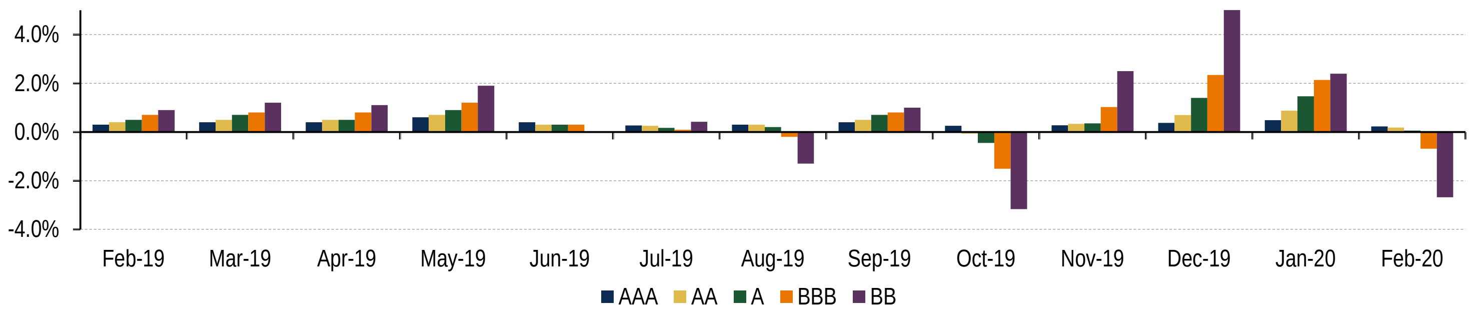
Chart 9: CLO arbitrage (bps)



Source: BofA Global Research, S&P LCD
Arbitrage: Loan asset spread - WA CLO spread X liability %.
Loan spreads (running avg 8 wks): 50% new-issue B+/B, 30% primary BB, 10% secondary BB. 10% secondary B.

Chart 10 shows monthly CLO returns as defined by the Palmer Square CLO index (price plus coupon returns).

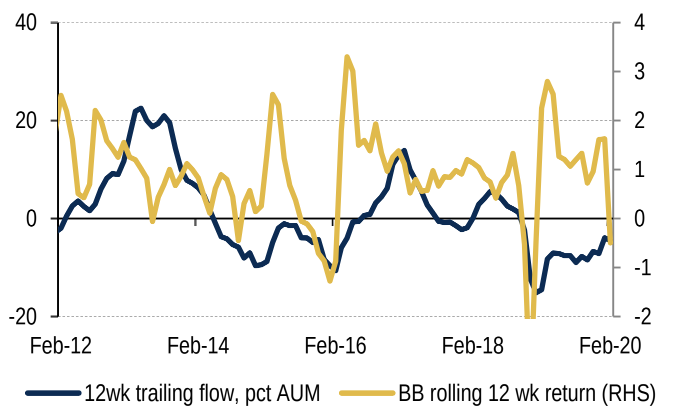
Chart 10: Monthly CLO 2.0 returns by rating



Source: BofA Global Research, Merrill Lynch PriceServe, Palmer Square CLO Indices, Bloomberg

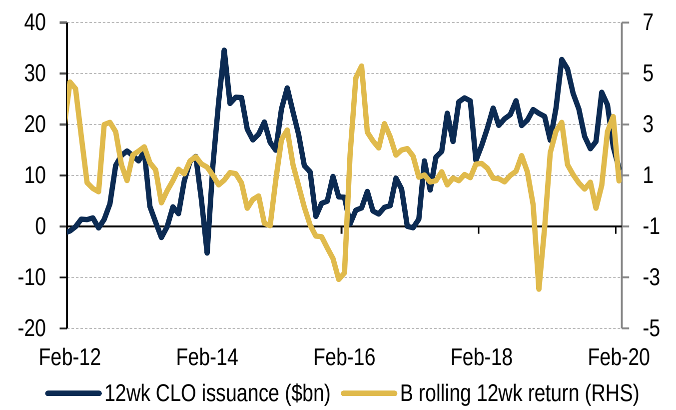
Since technicals play a big role in the loan market, following retail patterns is also essential. In general, we see that the performance of the BB section of the loan market correlates most with retail flows, while new CLO issuance seems to correlate to B Loan returns. This makes sense as mutual funds generally gravitate towards less risky investments while CLOs invest in single B rated assets on average. Chart 11 shows a measure of retail flows (12 week trailing retail flows as a percentage of outstanding AUM) vs. monthly BB Loan total returns, while Chart 12 depicts monthly CLO issuance vs. monthly B Loan total returns.

Chart 11: BB performance vs Loan retail flows



Source: S&P LCD, EPFR Global

Chart 12: B performance vs CLO creation



Source: S&P LCD, EPFR Global

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