ZAIS Insights

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Corporates under pressure

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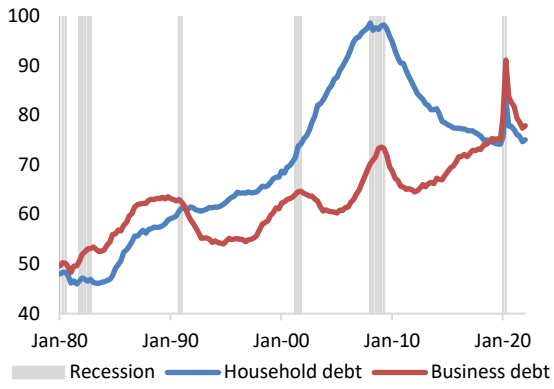
Corporates under pressure

- Corporate leverage is elevated …
- … creating risks given rising margin and interest rate pressures
- Leveraged loans in trade-off between duration and credit risks
- CLOs offer fundamental value amid rising leveraged loan default risk

In the prior issue of ZAIS Insights, we argued that businesses are more vulnerable to recession risks than households.[1] In this issue, we take a closer look at the corporate sector and the leveraged loan market.

While households have deleveraged since the financial crisis, businesses have increased their debt load (see Chart 1). We believe the large majority of firms have the ability to service their debt. Thus, we are not expecting a corporate debt crisis. Yet, we also think that mounting margin pressures and rapidly rising interest rates will challenge firms with weak operating and credit fundamentals and lead to more defaults.

Chart 1: US household & business debt
% of GDP

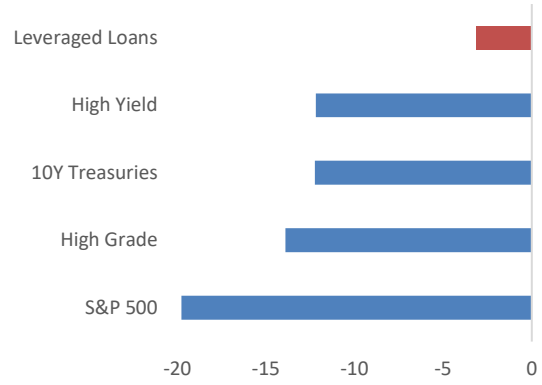


Source: Source: Board of Governors of the Federal Reserve System and US Bureau of Economic Analysis [2]

Leveraged loans outperformed all other US asset classes in the sell-off so far this year, thanks to their floating-rate nature (see Chart 2). However, the floating-rate nature also makes tail credits in the leveraged loan market particularly vulnerable to interest rate and margin pressures.

Chart 2: US financial asset performance

% total return 2022 year-to-date



Source: JPMorgan [3]

We believe CLOs continue to offer fundamental value despite rising credit risks in underlying leveraged loans, given their risk diversification and structural robustness, while benefitting from the short-duration feature of leveraged loans in a rising interest rate environment.

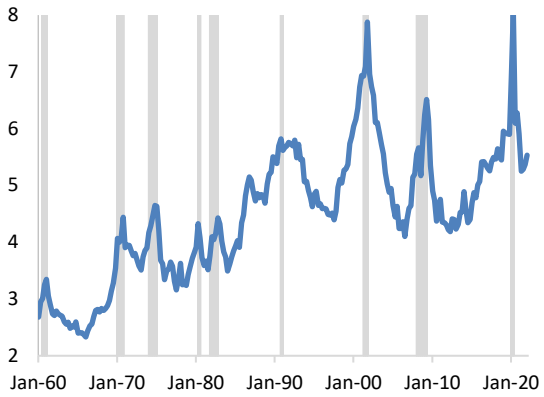
Corporate leverage is elevated

The rise in corporate leverage over the last 10 years is not inconsistent with economic theory given the parallel decline in interest rates.[4] In practice, however, it is less clear at what level the rise in corporate leverage becomes a problem. Debt-to-GDP ratios are useful for comparing debt levels between sectors and economies but are not good measures of corporate debt sustainability.

The leverage ratio (i.e., debt/net operating income) and the interest coverage ratio (i.e., net operating income/interest payments) are more suitable metrics, since they are designed to measure firms' ability to carry and service their debt. Chart 3 shows the LR of the US non-financial corporate sector. The LR increased from the 1960s to the 1990s and since then has been moving in a range with wide cyclical swings. The LR typically increases before recessions, which is a sign of growing operating pressure and recession risk, and peaks in recessions as net operating income falls. Deleveraging and improving operating performance generally reduce the LR in the recovery period.

Chart 3: US non-financial corporate LR

Debt / net operating income



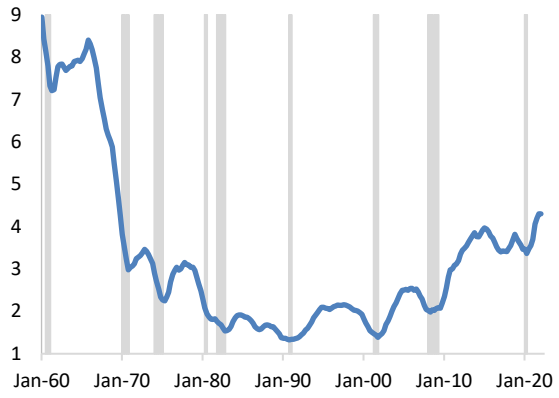
Source: Board of Governors of the Federal Reserve System and US Bureau of Economic Analysis [5]

In the last three cycles, the corporate LR dropped well below the level of 5 after each recession. This time, the corporate LR stayed above 5 and is already moving up again even though the economy is still recovering from the Corona recession. This can be attributed to the uninterrupted growth in corporate debt during and after the Corona recession and, more recently, a weakening in profits.[6]

Chart 4 shows the ICR of the non-financial corporate sector. The ICR declined from the 1960s until the 1980s as a result of rising interest rates and increased since the 1990s as a result of falling interest rates. The ICR exhibits a similar cyclical pattern to the LR, only inverted. The ICR currently exceeds the factor 4, which is a 50-year high that was only exceeded in the 1960s.

Chart 4: US non-financial corporate ICR

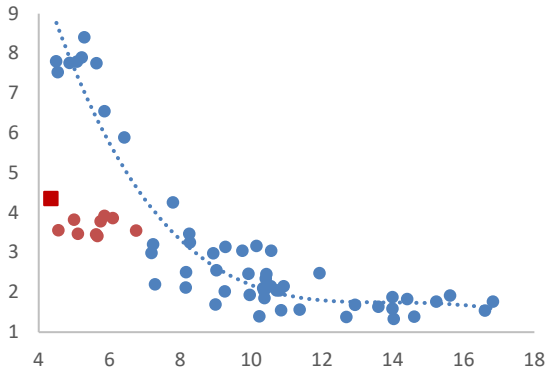
Net operating income / interest payments



Source: Board of Governors of the Federal Reserve System and US Bureau of Economic Analysis [7]

Chart 5: US corporate ICR and interest rate

ICR (vertical axis) and effective interest rate paid on corporate debt (% p.a. horizontal axis)



The blue dots mark the observations from 1960 to 2012, the orange dots are the observations from 2012 to 2020 and the red square is the observation for 2021.

Source: Board of Governors of the Federal Reserve System and US Bureau of Economic Analysis [8]

Basic calculus implies that the ICR will rise as interest rates decline and more as interest rates fall.[9] Chart 5 shows the negative non-linear relationship between the ICR and interest rates going back to 1960. It is conspicuous that the ICR rose less over the last 10 years as compared to the pattern of the prior five decades. Currently, the ICR is notably lower than in the 1960s, when interest rates were at similar levels.

The analysis of the LR and the ICR suggests to us that the expansion of corporate credit over the last 10 years has been more aggressive than in the past and that the corporate sector has not deleveraged as much following the Corona recession as is typical for a recovery.

Looking ahead, we expect more pressure on profit margins, given the tight labor market, supply conditions and further increases in interest rates. Unless corporates cut their debt, which we think is unlikely, we see it as inevitable that the LR will rise further and the ICR will decline.[10] We do not think this deterioration in credit fundamentals will trigger a corporate debt crisis, but we believe more firms will move into the high-risk credit tail. As a result, we expect default rates to rise from current lows toward the historical average and possibly above that in the event of a recession.

Leveraged loan dichotomy

Leveraged loans have been the fastest growing segment of the US corporate debt market over the last 10 years.[11] We feel confident that the rise of the leveraged loan market and the associated CLO market have been positive developments for the US economy. In our view, leveraged loans have improved the access to credit for non-investment-grade firms and, thus, facilitated the supply of risk capital to the economy, while the rise of CLOs has helped to

diversify and mitigate credit risks for investors.[12]

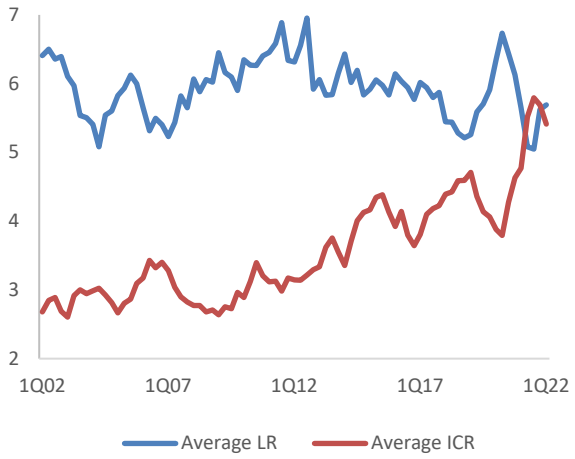
Leveraged loans have performed far better than any other US interest rate market so far this year due to their floating rate coupon (see Chart 2, again). That said, one area to closely monitor, in our view, is tail credits within the leveraged loan market. Tightening operating and financial conditions will likely contribute to increased credit dispersion at the loan level. In particular, while the floating-rate nature reduces the duration risk of leveraged loans for investors, it increases the credit risk of issuers with weak fundamentals.

Leveraged loan credit fundamentals

Aggregated leveraged loan credit fundamentals have not structurally deteriorated over the last 20 years: the LR has been moving in a range between 5 and 7 and the ICR has increased from less than 3 in the early 2000s to more than 5 after the Corona recession (see Chart 6).

Chart 6: Leveraged loan LR and ICR

Multiples



Source: S&P Global[13]

While LR and ICR are generally at favorable levels, recent dynamics point to some deterioration. After falling to a historical low of 5 in the third quarter of last year, the LR rose to 5.7 in the first quarter of this year. The ICR reached a historical high of 5.8 in the third quarter of last year and declined to 5.4 in the first quarter of this year.

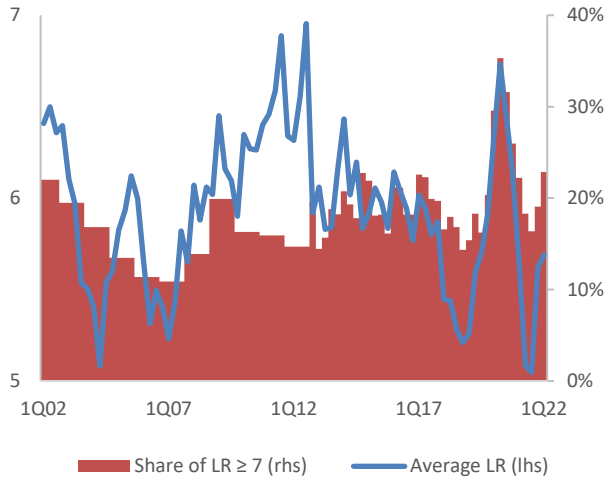
Leveraged loans to feel margin pressure

These deteriorations are not yet dramatic by past standards, but we think conditions will likely worsen going forward. We expect tight labor market conditions and ongoing supply problems will keep downward pressure on profit margins and, thus, push the LR higher. We estimate that the LR will return to its 20-year average of 6 this year with the risk of moving toward 7 in case of a recession.

Aside from expecting a general rise in the LR average, we anticipate the share of issuers with very high LRs will likely increase even more visibly. Already, the share of issuers with a LR of 7 and higher is above its long-term average (see Chart 7).

Chart 7: Leveraged loan LR & distribution

Multiple (lhs) and % of all loans (rhs)



While the average LR was in Q122 at 5.7, below its 20-year average of 6, the share of issuers with a LR ≥ 7 was 23%, already above its 20-year average of 18%.

Source: S&P Global [14]

Leveraged loan interest rate sensitivity

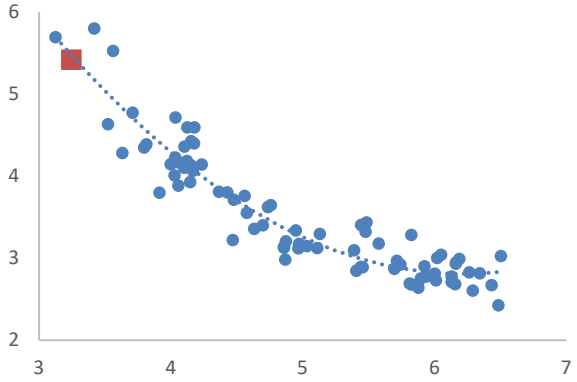
Given their floating rate nature, leveraged loan issuers will feel the direct impact of Fed tightening much faster than high yield bond issuers who only have to absorb the impact of higher interest rates when the debt comes due. Based on our experience with our portfolio of leveraged loans, we believe that the large majority of leveraged loan issuers rely on loan-only capital structures and, thus, will feel the impact of interest rate hikes on their debt quickly.[15]

Furthermore, we believe based on our portfolio observations that very few issuers hedge their floating rate exposure (i.e., swap from floating into fixed). At the beginning of the year, LIBOR and SOFR floors still provided some hedge, but this has already been exceeded by Fed rate hikes.[16]

Based on the Fed's latest projections, we expect that LIBOR and SOFR rates will rise another 200bps over the next 12 months.[17] As a result, we estimate that the average effective interest rate paid on leveraged loans will rise from slightly above 3% in the first quarter of this year to over 5% by the second quarter of next year.

Chart 8: Leveraged loan ICR and interest rates

ICR (vertical axis) and effective interest rate paid on leveraged loans (% p.a. horizontal axis)



The data range is 2001Q4 to 2022Q1 and the orange square is the latest observation (2022Q1).

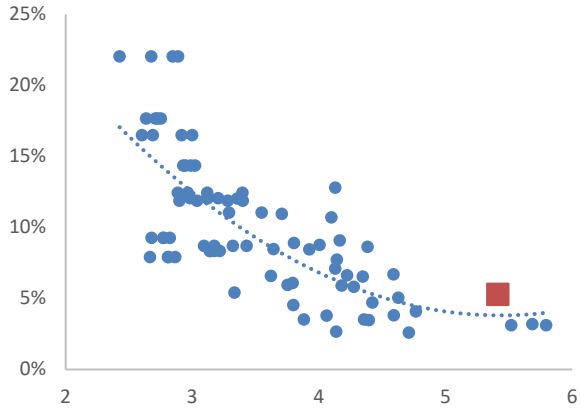
Source: S&P Global [18]

Chart 8 shows the relationship between the ICR and the effective interest rate paid on leveraged loans. As outlined before for non-financial corporate debt, the relationship is negative and non-linear for leveraged loans as well. Based on this relationship, we estimate that a rise in the effective interest rate paid on leverage loans to above 5% will lower the ICR to 3 and below over the next 12 months from above 5 in the first quarter of this year.

With the rise in interest rates and the expected fall in the average ICR we also estimate that the share of tail credits with very low ICRs (i.e., issuers that are likely to face difficulties making interest payments) will increase. Chart 9 shows the relationship between the average ICR and the share of issuers with an ICR of less than 1.5. Based on this relationship, we estimate that the share of issuers with ICRs of less than 1.5 will at least double to 10% or triple to 15% over the next 12 months.

Chart 9: Leveraged loan ICR & distribution

% share of issuers with ICR < 1.5 (vertical axis) and average ICR (horizontal axis)



The data range is 2001Q4 to 2022Q1 and the orange square is the latest observation (2022Q1).

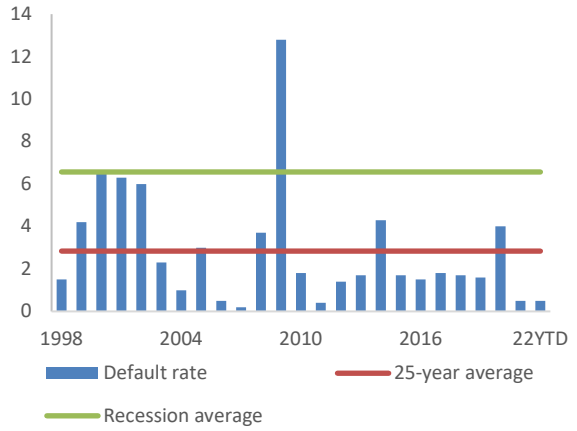
Source: S&P Global [19]

Default rates to rise

We do not think our analysis implies that the leveraged loan market as a whole is in trouble. Instead, we believe it is the tail credits that are likely to come under more pressure from falling margins and rising interest rates.

We think the fallout will become visible in rising default rates over the next 12 months. We estimate that the leveraged loan default rate will rise from the current low of 0.5% toward its 25-year average of around 2.8% over the next 12 months, possibly higher in the case of a recession (see Chart 10).

Chart 10: Leveraged loan default rate
Percent a.r.



Source: JPMorgan[20]

CLOs offer fundamental value

Despite the expected credit deterioration, we continue to see value for investors in the loan market, especially through CLOs.[21] In our view, CLOs are supported by two factors.

First, CLOs typically issue floating rate notes, like the underlying loans, and so their returns are likely to benefit from further short-term interest rate increases.

Second, CLOs are designed to tranche and mitigate the credit risk of the underlying loan portfolio. In our view, the regulatory changes following the financial crisis have substantially improved CLOs' risk profile and investor protection mechanisms.

We believe diversification across CLO portfolios, structural protections and reinvestment capabilities further reduce CLOs' default risk. Indeed, CLOs have a better default track record than comparable high-grade or high-yield corporate debt. As shown in Table 1, default rates for CLOs historically have been far lower than those for corporate debt. This is particularly evident in the high-yield sectors where the historical default rate of CLOs has been significantly lower than that of corporate debt (see Table 1).

Table 1: Average cumulative default rates
Percent, 10-year horizon

Rating	CLOs	Corporate debt
AAA	0.0	0.8
AA	0.1	1.0
A	0.1	1.7
BBB	0.7	4.1
BB	2.0	14.1
B	2.8	16.7

Source: S&P Global[22]

CLO performance also depends on the capability of the CLO manager, and we anticipate more manager tiering given our expectation of increasing credit dispersion within the underlying leveraged loan market.[23]

CLO spreads have increased in response to expected higher credit risks and stand already well above their historical averages (see Table 2). In our view, CLO yields and spreads offer fundamental value, both in absolute terms as well as relative to historical averages and default rates (see Table 2).

Table 2: CLO yields, spreads and loss-coverage ratios

Rating	Current yield (% p.a.)[1]	Current spread (bps)[1]	Average spread (bps)[2]	Spread default ratio[3]
AAA	5.2	194	143	N/A
AA	5.9	266	209	26.3
A	6.5	320	290	32.0
BBB	8.3	497	421	7.1
BB	12.7	934	726	4.7
B	16.6	1310	1001	4,7

1. As of June 28th, 2022
2. Historical average January 2012 to June 2022
3. Current CLO spread (in %) divided by the historical CLO default rate as in Table 1

Source: JPMorgan and S&P Global[24]

The risk of recession

The main uncertainty for the CLO market is the probability and extent of a recession. We think the US economy has moved into a late-cycle stage, given tight labor market conditions, high inflation and monetary tightening. Thus, in our view, slowing growth appears inevitable, and recession is a clear and present danger.

At the same time, the economy is also resilient, in our judgment, and is still emerging from the supply and demand distortions caused by the Corona crisis. It is difficult to say whether the Fed can successfully engineer a soft landing, but if a recession occurs, we believe it will be shallow. The result could be more spread widening and volatility in the CLO market, but that would be a buying opportunity in our view, as we believe the fundamental value features of CLOs will endure in this scenario.

A big challenge to our positive view on CLO fundamentals would be a deep recession associated with a financial crisis. We cannot rule out such an outcome with certainty, but we think the probability is low. In our view, there are no major imbalances in the economy like the housing bubble prior to the financial crisis, and the financial sector, especially bank balance sheets, is a lot stronger. Even in such an adverse scenario, we believe history suggests that CLO debt tranches would be more impacted by severe spread widening than actual tranche level defaults.[25]

More information

As always, we are available to discuss our views with you. Please contact your Client Relations representative at +1 732 978 9722 or zais.clientrelations@zaisgroup.com

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[1] See the following ZAIS Insight: "Households less vulnerable to recession risk than businesses"; May 2022.

https://www.zaisgroup.com/households-less-vulnerable-than-businesses.html

[2] Board of Governors of the Federal Reserve System (US), Households and Nonprofit Organizations; Debt Securities and Loans; Liability, Level [CMDEBT], retrieved from FRED, Federal Reserve Bank of St. Louis; June 16, 2022.

https://fred.stlouisfed.org/series/CMDEBT

Board of Governors of the Federal Reserve System (US), Nonfinancial Noncorporate Business; Debt Securities and Loans; Liability, Level [TCMILBSNNB], retrieved from FRED, Federal Reserve Bank of St. Louis; June 17, 2022.

https://fred.stlouisfed.org/series/TCMILBSNNB

Board of Governors of the Federal Reserve System (US), Nonfinancial Corporate Business; Debt Securities and Loans; Liability, Level [TCMILBSNNCB], retrieved from FRED, Federal Reserve Bank of St. Louis; June 16, 2022.

https://fred.stlouisfed.org/series/TCMILBSNNCB

U.S. Bureau of Economic Analysis, Gross Domestic Product [GDP], retrieved from FRED, Federal Reserve Bank of St. Louis; June 16, 2022.

https://fred.stlouisfed.org/series/GDP

[3] JPMorgan; Credit Strategy Weekly Update; June 24, 2022; Page 30.

https://markets.jpmorgan.com/#research.na.high_yield

[4] The Great Leverage 2.0? A Tale of Different Indicators of Corporate Leverage; By Falk Bräuning and J. Christina Wang; Current Policy Perspectives; Federal Reserve Bank of Boston; April 2020.

https://www.bostonfed.org/publications/current-policy-perspectives/2020/the-great-leverage-2-0-a-tale-of-different-indicators-of-corporate-leverage.aspx

The authors show using a simple production function model with diminishing returns to scale that rising leverage is consistent with a firm's optimal choice of leverage in response to falling interest rates.

[5] Board of Governors of the Federal Reserve System (US), Nonfinancial Corporate Business; Debt Securities and Loans; Liability, Level [TCMILBSNNCB], retrieved from FRED, Federal Reserve Bank of St. Louis; June 16, 2022.

https://fred.stlouisfed.org/series/TCMILBSNNCB

U.S. Bureau of Economic Analysis, Net value added of nonfinancial corporate business: Net operating surplus [W326RC1Q027SBEA], retrieved from FRED, Federal Reserve Bank of St. Louis; June 17, 2022.

https://fred.stlouisfed.org/series/W326RC1Q027SBEA

[6] US non-financial corporate debt rose 18.6% since the start of the Corona recession. In contrast, non-financial corporate debt fell 4% during and immediately after the financial crisis, was flat during and after the dot.com crisis and fell 2.3% in the 1990s recession.

US non-financial corporate net operating income stalled in the fourth quarter 2021 and fell 0.5% in the first quarter 2022.

Board of Governors of the Federal Reserve System (US), Nonfinancial Corporate Business; Debt Securities and Loans; Liability, Level [TCMILBSNNCB], retrieved from FRED, Federal Reserve Bank of St. Louis; June 16, 2022.

https://fred.stlouisfed.org/series/TCMILBSNNCB

U.S. Bureau of Economic Analysis, Net value added of nonfinancial corporate business: Net operating surplus [W326RC1Q027SBEA], retrieved from FRED, Federal Reserve Bank of St. Louis; June 17, 2022.

https://fred.stlouisfed.org/series/W326RC1Q027SBEA

[7] Board of Governors of the Federal Reserve System (US), Nonfinancial Corporate Business; Interest Paid, Transactions [BOGZ1FA106130001Q], retrieved from FRED, Federal Reserve Bank of St. Louis; June 17, 2022.

https://fred.stlouisfed.org/series/BOGZ1FA106130001Q

U.S. Bureau of Economic Analysis, Net value added of nonfinancial corporate business: Net operating surplus [W326RC1Q027SBEA], retrieved from FRED, Federal Reserve Bank of St. Louis; June 17, 2022.

https://fred.stlouisfed.org/series/W326RC1Q027SBEA

[8] Board of Governors of the Federal Reserve System (US), Nonfinancial Corporate Business; Interest Paid, Transactions [BOGZ1FA106130001Q], retrieved from FRED, Federal Reserve Bank of St. Louis; June 17, 2022.

https://fred.stlouisfed.org/series/BOGZ1FA106130001Q

U.S. Bureau of Economic Analysis, Net value added of nonfinancial corporate business: Net operating surplus [W326RC1Q027SBEA], retrieved from FRED, Federal Reserve Bank of St. Louis; June 17, 2022.

https://fred.stlouisfed.org/series/W326RC1Q027SBEA

[9] The negative nonlinear relationship between the ICR and interest rates makes already intuitive sense since the interest rate is in the denominator of the fraction: $ICR = X/(i*D) = 1/(i*LR)$ where X is net operating income, D is debt, i is the interest rate payed on the debt and $LR = X/D$. Based on the quotient rule, the first derivative of ICR with respect to i equals $-1/(i^2*LR)$. The derivative is negative and all else equal implies that it grows disproportionally as interest rates fall.

See also footnote 3. The authors' model also reveals that the fall in the interest coverage ratio

due to a rise in interest rates is magnified when interest rates are at low levels.

[10] LR = X/D = (X/Y)/(D/Y) = x/d where X is net operating income, D is debt, Y is revenue, x is the net operating margin and d is the ratio of debt to revenue. Thus, the LR increases if x falls unless d falls proportionally more.

The negative non-linear relationship between the ICR and interest rates was already demonstrated in footnote 7.

Board of Governors of the Federal Reserve System (US), Nonfinancial Corporate Business; Debt Securities and Loans; Liability, Level [TCMILBSNNCB], retrieved from FRED, Federal Reserve Bank of St. Louis; June 16, 2022.

https://fred.stlouisfed.org/series/TCMILBSNNCB

[11] The outstanding of leveraged loans rose 179% over the last 10 years, while high grade and high yield bonds rose 105 and 46% respectively

Board of Governors of the Federal Reserve System (US), Nonfinancial Corporate Business; Corporate Bonds; Liability, Level [CBLBSNNCB], retrieved from FRED, Federal Reserve Bank of St. Louis; , June 24, 2022.

https://fred.stlouisfed.org/series/CBLBSNNCB

S&P Global; S&P/LSTA Leveraged Loan Index; SPBDAL - S&P-LSTA Leveraged Loans Index.

https://www.lcdcomps.com/lcd/idx/index.html?rid=10

S&P Global; US HY; Interactive High Yield Report - WEB - HY US.

https://www.lcdcomps.com/lcd/n/home.html?hy

[12] This article discusses general market outlook and should not be construed as a recommendation to invest in any ZAIS-managed or other CLO. All investment decisions should be made on the basis of individual circumstances and investment objectives.

[13] S&P Global; S&P/LSTA Leveraged Loan Index; Current Credit Stats.

https://www.lcdcomps.com/lcd/idx/index.html?rid=10

[14] S&P Global; S&P/LSTA Leveraged Loan Index; Current Credit Stats.

https://www.lcdcomps.com/lcd/idx/index.html?rid=10

[15] Goldman Sachs estimates that the share of leveraged loan issuers with loan-only capital structures rose from less than 50% in 2011 to more than 70% today.

Goldman Sachs Economic Research; A Faster Hiking Cycle is a Greater Risk to Leveraged Loans than to the High Yield Bond Market; June 14, 2022

[16] LIBOR/SOFR floors range from 0bps to 150bps with a weighted average of about 39bps.

S&P Global; S&P/LSTA Leveraged Loan Index; LLI Index Components.

https://www.lcdcomps.com/lcd/idx/index.html?rid=10

[17] FOMC, Summary of Economic Projections, June 15, 2022.

https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20220615.pdf

[18] S&P Global; S&P/LSTA Leveraged Loan Index; Current Credit Stats.

https://www.lcdcomps.com/lcd/idx/index.html?rid=10

[19] S&P Global; S&P/LSTA Leveraged Loan Index; Current Credit Stats.

https://www.lcdcomps.com/lcd/idx/index.html?rid=10

[20] JPMorgan High Yield and Leveraged Loan Research; Default Monitor; Page 12; June 1, 2022.

https://markets.jpmorgan.com/#research.na.high_yield

[21] This article discusses general market outlook and should not be construed as a recommendation to invest in any ZAIS-managed or other CLO. All investment decisions should be made on the basis of individual circumstances and investment objectives.

[22] S&P Global; Default, Transition, and Recovery: 2020 Annual Global Leveraged Loan CLO Default And Rating Transition Study; Table 18; September 1, 2021

https://www.spglobal.com/ratings/en/research/articles/210901-default-transition-and-recovery-2020-annual-global-leveraged-loan-clo-default-

and-rating-transition-study-12092101#:~:text=The%20overall%20global%20CLO%20default,transactions%20issued%20before%20the%20GFC.

S&P Global; Default, Transition, and Recovery: 2020 Annual Global Corporate Default And Rating Transition Study; Table 25; April 7, 2021

https://www.spglobal.com/ratings/en/research/articles/210407-default-transition-and-recovery-2020-annual-global-corporate-default-and-rating-transition-study-11900573

[23] This article discusses general market outlook and should not be construed as a recommendation to invest in any ZAIS-managed or other CLO. All investment decisions should be made on the basis of individual circumstances and investment objectives.

[24] JPMorgan CLOIE; Yield and spreads January 2, 2012 to June 21, 2022.

https://markets.jpmorgan.com/#dataquery

CLO default rates same as footnote 20.

[25] This article discusses general market outlook and should not be construed as a recommendation to invest in any ZAIS-managed or other CLO. All investment decisions should be made on the basis of individual circumstances and investment objectives.

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