

Are We There Yet?

Key Takeaways

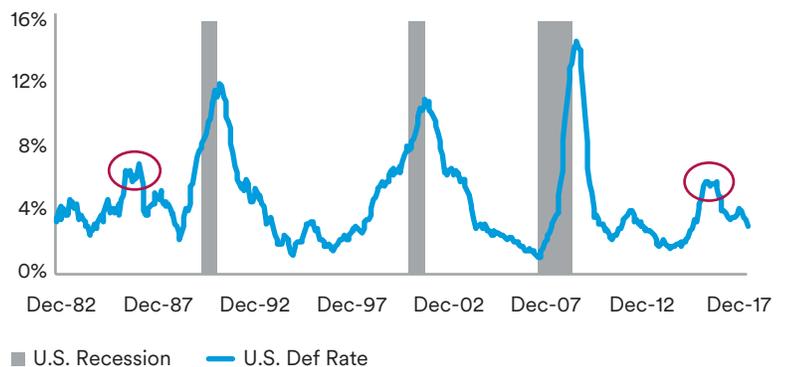
- We are in the late expansion phase of the credit cycle. At present there seems to be an elevated risk of recession by market participants in the 2020-2021 timeframe.
- Our credit cycle model is based on eight key indicators which we've back-tested rigorously since the mid-1980's: high yield spreads, 3 mo. /10 yr. Treasury curve, Senior Loan Officer Opinion Survey, CCC issuance, non-financial debt growth, profit growth, shareholder payout ratio and Fed policy.
- In prior down cycles ('01, '08, '15) our credit model flashed an average of six sell signals each time. Today our model is flashing four sell signals.
- We don't expect a credit down cycle in the next 12 months despite recent market anxiety of one potentially occurring.

For those who have children, you know exactly what I mean, as your child screams “are we there yet?” from the backseat of the car every five minutes. Today, similar questions regarding the credit cycle are continuously being asked. For instance, how long do we have? What is going to cause it? Is this time different? As a result, we decided to tackle the subject head on. While no one ever knows the exact event that eventually tips the economy into recession, we believe there are common denominators, early warnings signals, which have occurred in previous cycles that may help in our endeavor. Why is this important? At MetLife Investment Management (MIM) we believe that timing is not only an important driver for investment performance but also given Wall Street's reduced liquidity post-recession, larger portfolios will absolutely require more time to reposition themselves.

Credit cycles and economic cycles are closely intertwined (see Figure 1). During the past 35 years (1983–2018), we have experienced three economic recessions and five credit cycles as defined by elevated default rates. Historically

Figure 1 | Credit and Economic Cycles

U.S. HY Default Rate vs. Recession (1983 - 2018)

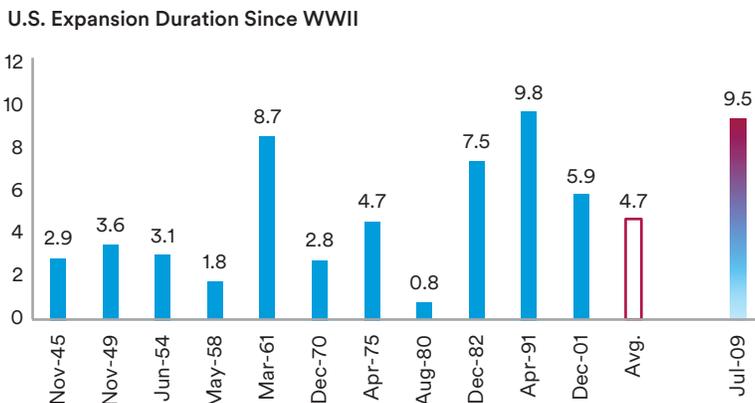


Source: MIM, Moody's, NBER

when defaults peak over 10% (which has occurred three times), all were preceded by recessions. Default cycles can still occur (1986 and 2016) without coinciding recessions. In both instances, high yield spreads widened, financial conditions tightened, credit contracted and the economy decelerated without a true NBER (National Bureau of Economic Research) defined recession.

Today, while late cycle corporate behavior is occurring and the expansion will likely be the longest on record (see Figure 2), we believe calling an end to the cycle in 2019 is premature given what we currently know. We continue to benefit from fiscal stimulus, positive corporate earnings momentum albeit slowing, supportive lending conditions and most recently a dovish Fed significantly reducing the probability of a tightening policy mistake. Nonetheless, we continue to monitor the following late cycle behavior closely: (1) slowing earnings momentum; (2) non-financial corporate leverage; (3) covenants and structure in the high yield markets; (4) debt-funded M&A; (5) share buyback activity and (6) financial conditions.

Figure 2 | Current Expansion is the Second Longest Since WWII



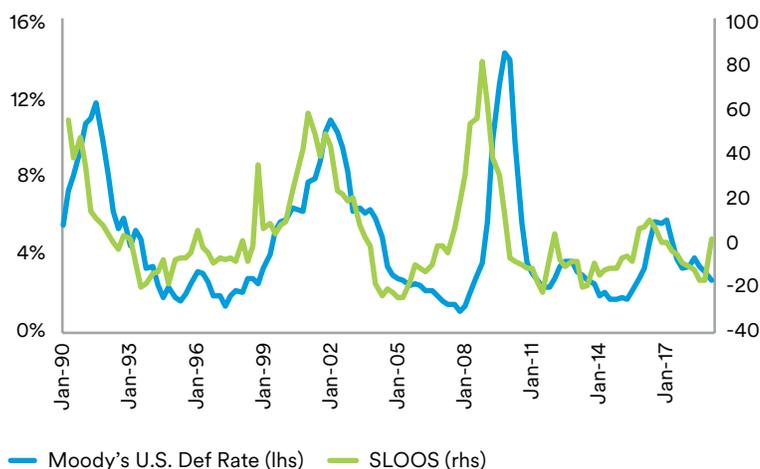
Source: MIM, NBER

Credit Cycle Key Indicators

In this section we present our key indicators, the rationale behind why each metric was chosen and finally the lead time they respectively have signaled historically to an upcoming credit default cycle.

Senior Loan Officer Opinion Survey (SLOOS)

SLOOS vs. U.S. Default Rate (1990 - 2018)

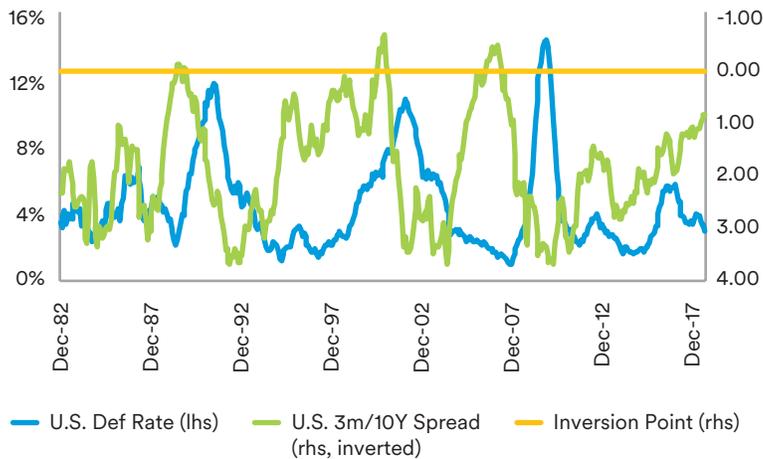


For those unfamiliar with this metric, the SLOOS measures if U.S. banks are tightening or loosening their lending standards on commercial and industrial loans they are extending to companies throughout the economy [1]. Banks are often referred to as the “blood steam” of any economy given how important credit growth is to overall economic growth. As credit conditions tighten, banks are less willing to lend and effectively take risk. That in turn hampers the ability of companies to borrow and/or refinance which eventually leads to higher default rates. We believe the SLOOS is one of the best leading indicators of our credit default model.

LEAD TIME: 3-5 quarters.

U.S. Treasury Curve: 3 Month/10 Year Spread

U.S. 3m/10Y Spread vs. U.S. Default Rate (1983 - 2018)



The yield curve is another closely watched indicator used to gauge overall economic growth. As the curve flattens and eventually inverts, it has had an uncanny ability, historically, to foreshadow economic slowdowns and/or recessions. This metric is also an input to the Fed's recession probability model [2]. Recent studies have shown that despite quantitative easing, the predictive power of the term spread still appears intact even in this low interest rate environment [3]. As short term rates rise, financial conditions tighten and therefore affect many real economy sectors like housing and autos with higher underwriting and financing costs.

LEAD TIME: 8-9 quarters.

High Yield Spreads

HY Option-Adjusted Spread (OAS) vs. U.S. Default Rate (1983 - 2018)



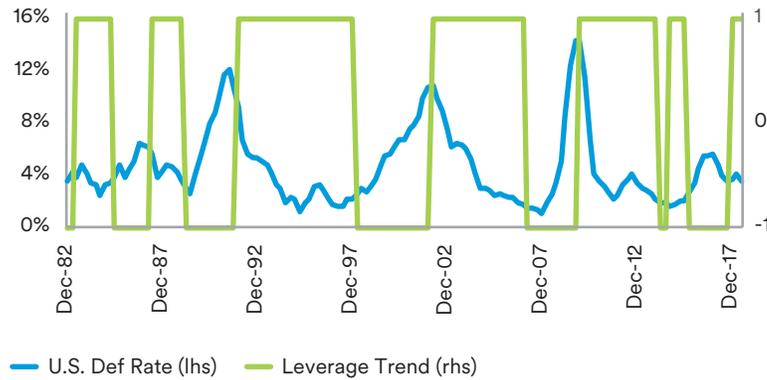
Source: MIM, Moody's, BofA

Intuitively high yield spreads should lead default rates given the market is always forward looking. High yield spreads lead defaults by 3-4 quarters with a high correlation of ~80%. So why is the correlation not 100%? While default loss is a major risk that spreads must compensate for, it is not the only risk. Other risks that require spread compensation include downgrade, volatility and liquidity risks. Spreads do tend to over or undershoot actual default losses when the market is being driven by fear or greed. When default risk is mispriced, opportunities present themselves.

LEAD TIME: 3-4 quarters.

Non-Financial Corporate Leverage

Leverage Trend vs. U.S. Default Rate (1983 - 2018)

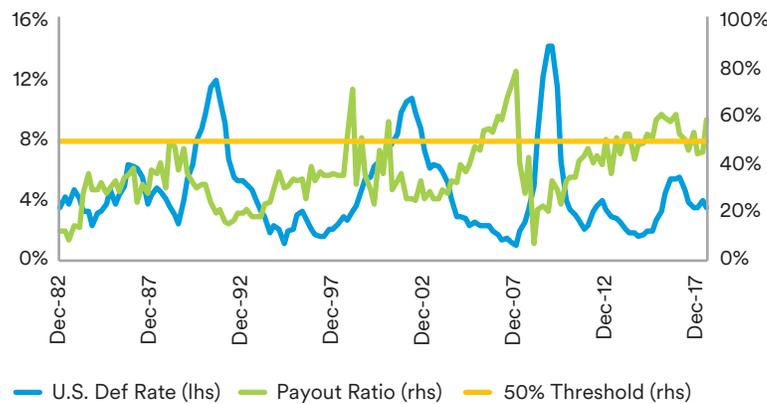


Source: MIM, Moody's, Fed Z1 data
Pre-tax profits are before tax and with inventory valuation adjustment (IVA) and capital consumption adjustments (CCAdj)

Non-financial corporate leverage is total debt divided by pre-tax profits. If profit growth outpaces debt growth (+1) then defaults are low but when debt growth outpaces profit growth (-1) it usually signals the beginning of a default cycle. Rising leverage in a slowing profit growth environment has historically been a bad combination. As the initial fiscal boost from Tax Reform begins to fade in 2019, GDP growth and corporate earnings likely follow suit putting pressure on those companies with the heaviest debt burdens.

Shareholder Friendly Activities

Shareholder Payout Ratio vs. U.S. Default Rate (1983 - 2018)



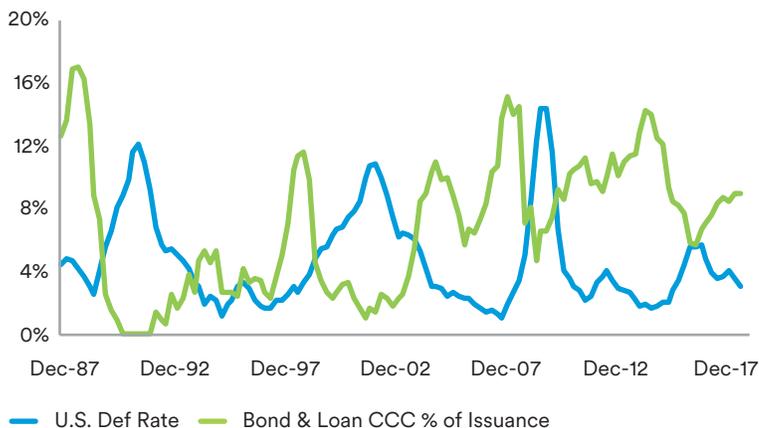
Source: MIM, Moody's, Fed Z1 data

The shareholder payout ratio is calculated as the sum of dividends and share buybacks divided by after tax profits. Shareholder friendly activities tend to benefit equity investors at the expense of credit investors. As the payout ratio crosses 50%, it has historically signaled elevated late cycle behavior. As profit growth slows, companies then look to accelerate buybacks and dividends to mask the slowing organic trend. In a similar vein, though captured in the leverage metric, companies have been known to execute debt-funded M&A for similar reasons and to also avoid equity dilution altogether.

LEAD TIME: 9-10 quarters.

CCC Issuance

CCC Bond & Loan Issuance vs. U.S. Default Rate (1988 - 2018)



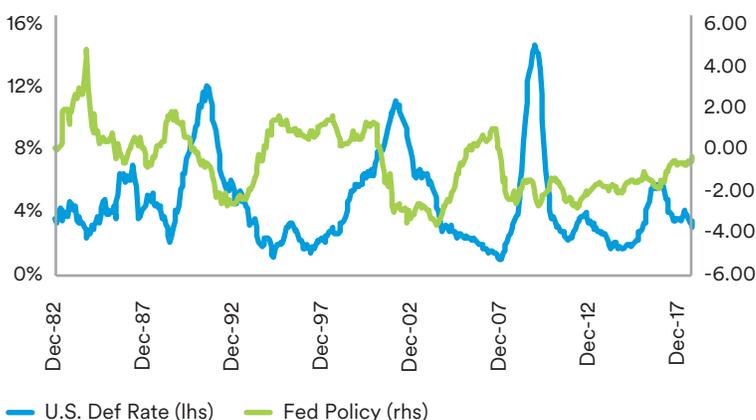
Source: MIM, Moody's, BofA

CCC issuance has historically been a useful indicator of credit market frothiness as investors chase higher yields with little regard to leverage or structure. CCC issuance here is measured as a percentage of total leveraged finance issuance (high yield bonds plus leveraged loans). As the loan and bonds markets have become more interchangeable (second lien vs. unsecured high yield debt) we thought looking at both markets collectively made the most sense. While this metric has shown false positives in the past, CCC's historically have planted the seeds for the next upcoming default wave given high five year cumulative default rates of 34.7% (1970 - 2017).

LEAD TIME: 9-10 quarters.

Fed Policy

Fed Policy vs. U.S. Default Rate (1983 -2018)



Source: MIM, Moody's, Fed

Fed policy is defined as the real Fed fund rate minus the natural interest rate (R-star). Much like the Treasury curve, Fed policy helps determine whether the current policy rate setting environment is accommodative, neutral or restrictive. R-Star is defined as the natural real interest rate that supports the economy at full employment while keeping inflation constant. As Fed policy (the green line) moves above zero it becomes more restrictive and tends to foreshadow slowdowns.

LEAD TIME: 8-9 quarters.

Stages of the Credit Cycle

Based on our credit cycle indicators and stage characteristics below, we believe we are in the “Late Expansion” stage of this credit cycle. The yield curve has been flattening, financial conditions were restrictive prior to the Fed’s most recent pivot, elevated shareholder friendly activities continue occurring, CCC issuance is on the rise and the most recent SLOOS release showed standards tightening sequentially.

- High but declining spreads and default rates
- Fed policy very accommodative, steep yield curve
- Tight but loosening credit conditions
- Low CCC issuance and shareholder payout
- High but declining leverage

Credit return: most attractive

- Mid range declining spreads and default rates
- Fed policy accommodative
- Credit conditions continue to loosen
- CCC issuance and shareholder payout rising
- Improving leverage: profit growth outpaces debt growth

Credit return: positive and average

Low Credit Growth

- Sharply rising spreads and default rates
- Fed policy changes to accommodative from restrictive
- Credit contraction with sharp tightening of lending standards
- Very low CCC issuance and shareholder payout
- Rising leverage: profit decline outpaces debt reduction

Credit return: very poor with high volatility

Leverage Falling



High Credit Growth

- Very low spreads and default rates
- Fed policy restrictive, flat or inverted yield curve
- Aggressive M&A deals, low quality issuance, and shareholder payout
- Lending standards loose but tightening
- Low and rising leverage

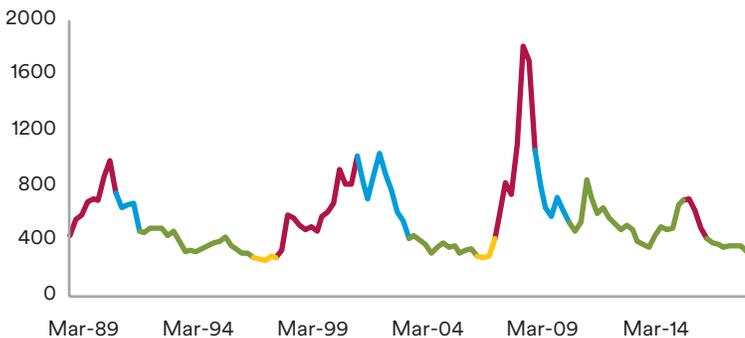
Credit return: still positive but below average

Best time to reduce credit risk

Source: MIM

Average Credit Performance by Cycle Stage- High Yield Spreads

HY Spreads by Cycle Phase (1989 - 2018)



— Downturn — Recovery — Expansion — Overheat

| Phase | Spread Change | Duration (in Qtr) |
|-----------------------|---------------|-------------------|
| Downturn Avg. | 352 | 8.3 |
| Recovery Avg. | -466 | 6.3 |
| Expansion Avg. | -13 | 15.3 |
| Overheat Avg. | 65 | 3.5 |

Current and Historical MIM Credit Model Sell Signals

| | Lead Time | Start of Credit Downcycles | | | Dec-18 |
|---------------------------------------|-----------|----------------------------|--------------|--------------|------------|
| | | Mar-98 | Sep-07 | Dec-15 | |
| U.S. Default rate | | 2.5% | 1.3% | 3.4% | 2.6% |
| HY OAS | 3-4Q | 282 | 420 | 695 | 533 |
| CCC Issuance | 9-10Q | 7.1% | 10.7% | 8.2% | 8.5% |
| Fed Policy | 8-9Q | 1.43 | 1.05 | -1.04 | 0.06 |
| 3m/10y Spread | 8-9Q | 0.48 | -0.51 | 2.01 | 0.32 |
| SLOOS | 3-4Q | 1.80 | 7.50 | 7.40 | -15.90 |
| Shareholder Payout Ratio ¹ | 9-10Q | 36% | 73% | 61% | 45% |
| Profit YoY Growth ¹ | | -3.1% | -19.0% | -13.8% | 17.2% |
| Debt YoY Growth ¹ | | 9.9% | 12.2% | 7.5% | 6.7% |
| Total sell signals² | | 5.5/8 | 7.5/8 | 5.5/8 | 4/8 |

¹Fed Z. 1 data as of 3Q18

²Sell signal scoring:

■ = 0 points

■ = 1/2 point

■ = 1 point

Source: MIM

Conclusion

While many investors are anxiously wondering if a credit downturn is around the corner given the record length of this economic expansion, we think it is not, especially over the next 12 months. We believe we are currently in the “Late Expansion” phase of this credit cycle with just four of eight sell signals flashing in our credit model now. But, as this cycle progresses, and we cross into the Overheat stage (and we are close) we’d recommend using periods of strength to upgrade portfolios in order to take advantage of existing liquidity as credit returns are low but generally still positive in the Overheat stage.

References:

¹ C. Lown, D. Morgan, S. Rohatgi, “Listening to loan officers: The Impact of Commercial Credit Standards on Lending and Output,” July 2000.

² A. Estrella and F. Mishkin, “The Yield Curve as a Predictor of U.S. Recessions,” June 1996.

³ M. Bauer and T. Mertens, “Economic Forecasts with the Yield Curve,” March 2018.

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Our investment methodology is based on a disciplined in-house credit research and underwriting process which leverages the deep expertise of our seasoned investment teams. Institutional investors can have access to MIM's in-house investment capabilities, including deal originations, asset acquisition, rigorous portfolio monitoring, proprietary risk analytics and risk management. Our expansive global footprint, with strong capabilities in key markets, makes us well positioned to serve our clients' investment needs.

For more information, visit:

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