Where Are We in the Credit Cycle?

By Edward Altman, PhD
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By my definition, benign credit cycles are periods when most if not all four aspects of the market are incentivizing major growth in the supply and demand for credit. That means three or more of the following are in place:

1. Low and below-average default rates
2. High and above-average recovery rates on actual defaults
3. Low and below-average yields and spreads required from issuers by investors
4. Highly liquid markets in which the riskiest credits can issue considerable debt at low interest rates

At the midpoint of 2019, all four signals indicated we are still in a benign credit cycle, one that, assuming 2016 was an energy industry anomaly, has just finished its 10th year. That’s the longest by far of any benign cycle in the history of modern finance.

Nonetheless, I am concerned that the bubble in credit markets has achieved new momentum. The following discussion, except where noted otherwise, contains numerous calculations and data estimates based on the author’s own research and databases at the New York University (NYU) Salomon Center for the Study of Financial Institutions.

**Benign credit cycles are periods when most if not all four aspects of the market are incentivizing major growth in the supply and demand for credit.**

**Benign Credit Cycles**

Benign credit cycles from the recent past, as figure 1 demonstrates, have well below-average default rates, high recovery rates, low interest-rate spreads, and high liquidity. They tend to be much shorter than the current 10-year cycle, averaging between four and seven years.

Since the modern high-yield bond market began in the late 1970s, the average benign cycle has lasted about six years. Also, once such a cycle ends, the subsequent spike in high-yield bond default rates and decline in recovery rates have been dramatic, with default rates reaching at least 10 percent for one or two years and recovery rates dropping below 40 percent and sometimes even below 30 percent.

The weighted-average dollar-denominated high-yield bond default rate from 1971 to 2018 is 3.27 percent, with a standard deviation of 3.1 percent. For the first half of 2019, the rate is 1.1 percent. Recovery rates—the weighted-average prices of defaulted bonds just after default—were 52.1 percent in 2018 and 48.8 percent for the first six months of 2019. These are much higher than the 39 percent historical weighted average on high-yield corporate bonds.

Recessions accompanied the three recent spikes in default rates to 10 percent or above. Though timing recessions is challenging at best, the confluence of a stressed credit cycle with recession is a “perfect storm” that has occurred before and likely will occur again. The difficult question is, when? But in the next downturn, default rates will increase to very high levels and defaults will increase to very high dollar amounts. The catalyst of a credit market crisis is hard to spot, but it could be as simple as a major stock market correction or a significant decline in economic growth.

**Figure 1**

**Historical Default Rates and Recession Periods**

**In the United States: High-Yield Bond Market, 1972-2Q 2019**

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<th>Default Rate (%)</th>
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<th>Default Rate (%)</th>
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<tr>
<td>12%</td>
<td>0</td>
<td>2%</td>
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</tbody>
</table>

* Periods of Recession: 11/73-3/75, 1/80-7/80, 7/81-11/82, 7/82-3/90, 4/93-12/01, 12/07-6/09
** Benign credit cycles approximated. All rates annual, except 2Q 2019, which is last 6 months.

Source: Altman-Kuehne default rates and the National Bureau of Economic Research
growth in a systemically important country or region—say, the United States or China. Indeed, the increase in yield spreads and negative and volatile returns early in 2016 and again in the final quarter of 2018 corresponded with concerns about China and the United States and lower oil prices. There is also now clearly high correlation between high-yield bond returns and the stock market, with the correlation rising well above 70 percent since 2008–2009.

**YIELD SPREADS AND RISK TOLERANCE**

The non-investment-grade yield spreads since the record low point in June 2007, when the yield-to-market (YTM) spread was only 2.6 percent, are depicted in figure 2. As of June 30, 2019, the yield spread was 4.54 percent (with an option-adjusted spread of 4.07 percent), 194 basis points (bps) above the all-time low and 66 bps below the historical average spread of 5.2 percent for U.S. high-yield bonds. Investors seem content with these yields; and fund flows into risky debt markets, although choppy, still have been elevated as of late. In other words, “risk-on” remains the current theme in credit markets.

The fourth credit cycle measure—the liquidity of the market—is the most elusive, volatile, and difficult to gauge and forecast. CCC rated bonds issued as a percentage of all high-yield bonds is a helpful barometer of market liquidity. It effectively demonstrates the market’s acceptance of the lowest-quality bonds, especially at relatively low interest rates. Indeed, the historical cumulative five-year default rate for CCC bonds is about 47 percent. Interestingly, the CCC percentage registered an all-time high of more than 37 percent in 2007, one year before the start of the most recent crisis, and has averaged 17.3 percent since 2005. In 2018, it was 17.3 percent. So far in 2019, it is 10.2 percent, indicating that market liquidity is slightly below the mean—and the only one of the four credit cycle metrics that is beginning to signal a potential change in the cycle.

This will be an important metric to monitor in the quarters ahead.

**U.S. CORPORATE DEBT GROWTH**

Both U.S. corporate debt and global debt issuance have grown enormously. Since 2009, investment- and non-investment-grade U.S. corporate bonds have doubled to roughly more than $9 trillion for 2019. The BBB rating class has expanded the most in dollar amount, to about $2.5 trillion, and high-yield bonds have increased more than 60 percent, to $1.67 trillion. Coupled with similar growth in leveraged loans, most without any meaningful protective covenants for investors, we can see why so much liquidity has fostered a “risk-on,” low-default market as investors seek higher-yielding, riskier debt amid a generally low interest rate environment. In addition, non-bank lending to commercial borrowers—the so-called shadow banking market—has exploded to an estimated 42 percent of all commercial lending, according to a 2018 Bank of America Merrill Lynch estimate.

Figure 3 compares nonfinancial corporate debt (NFCD) as a percentage of...
gross domestic product (GDP) with the dollar-denominated high-yield bond default rate from 1987 to 2018. The three peaks in NFCD/GDP prior to the possible new summit in 2018 were followed by huge spikes in the default rate on risky debt. Of course, these default rate spikes closely followed the end of the prior recession. Many economists believe there is a reasonably high probability of a U.S. recession in the next 12 to 24 months. Thus, the recent increase in NFCD/GDP indicates to me that the magnitude of the next spike in default rates, whenever it occurs, will be severe.

**GLOBAL DEBT GROWTH**

The four main sectors of global debt and their growth between 1997 and 2017 are shown in figure 4. The NFCD/GDP ratio has soared from 64 percent to 92 percent and government debt to GDP has increased from 58 percent to 87 percent. Although the growth in financial corporate (mainly banks) and household debt is not as dramatic, the latter is still of great concern in certain regions—Scandinavia among them. Combining the debt to GDP ratios of all four sectors yields a total debt to GDP ratio of 217 percent in 1997, 278 percent in 2007, and 318 percent in 2017. I believe the growth in global GDP (unimpressive as it has been) has been fueled, in large part, by the use of low-cost debt.

**CORPORATE CREDIT RISK PROFILE, 2007 VS. 2017: COMPARING Z-SCORES**

So, are the credit default profiles of corporate bond issuers in general, and high-yield issuers in particular, stronger now than they were just before the default rate began to spike during the most recent financial crisis? Were investors requiring absurdly low rates of return in 2007 given issuer risk profiles? Are they doing the same thing in 2019?

To answer these questions, we calculated Z-scores through the end of 2017 and compared them with 2007. Altman et al. (2019) provides a detailed description of the Z- and Z"-score models, which measure a company’s financial health and probability of bankruptcy. The Z-score model uses market value and the Z"-score model uses book value.

In 2007, the median Z score on a sample of 294 high-yield bond issuers was 1.84, mapping to a bond-rating-equivalent (BRE) of B+. The median Z"-score was 4.82 (also B+) on a sample of 378 issuers. In 2017, the median Z-score on a larger sample of 529 high-yield issuers increased slightly to 1.98 (still a B+ BRE). The median Z"-score was 5.09, rising to a BB- BRE in a sample of 583 firms. Thus, both the Z- and Z"-scores of the more recent period were marginally higher than they were in 2007, though not to a statistically significant degree. The higher earnings and cash-flow figures were essentially neutralized by much higher levels of debt in the most recent period, even if the substantial increase in the sample’s market value of equity—X4 in our model—is factored in.1

Slightly better credit profiles than those just before the global financial crisis (GFC) do not instill confidence. Yet continued weak credit fundamentals do not seem to be influencing current required yields and spreads, though they should.

**CONCLUSION**

All indications are that the benign credit cycle will continue through 2019 and possibly beyond, especially with the near-term outlook for positive, albeit slightly reduced, economic growth in the United States and China.

History shows that even with positive GDP growth, default rates on U.S. corporate debt can and will start rising before a recession. The current cycle also has been extended by numerous out-of-court restructurings, the covenant-lite environment, and expectations that the U.S. Federal Reserve will respond to signs of an economic slowdown or increased market volatility, or both, with aggressive monetary stimulus.

When both macro and micro market forces point to an unmistakably negative outlook, I expect the next stressed credit cycle to produce default amounts that will be higher than any in the past due to the enormous bond, bank, and non-bank debt build-up, and the crisis may last longer than the previous one. Why? Because central banks will have fewer tools to bring to bear and the fiscal stimulus, if any comes, will take longer to assist in the eventual recovery.
I do not expect the next crisis to be as severe or as global as the most recent one. But if real estate and personal mortgage losses also escalate dramatically and China’s economy sharply contracts, it may very well be.

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In August 2019, Edward Altman spoke with members of the Journal of Investment Consulting Editorial Advisory Board about the Z-score models, their applications, evolution of the credit markets, and the current credit cycle. Read the Masters Interview in Journal of Investment Consulting 19, no. 1, 2019, pp. 13-20. Contact Altman at ealtman@stern.nyu.edu.

ENDNOTE
1. For the Z-score model, X4 is the market value of equity divided by total liabilities; for the Z’-score model, X4 is the book value of equity divided by total liabilities.

REFERENCE

This article previously appeared on CFA Institute’s Enterprising Investor blog, blogs.cfainstitute.org/investor/2019/08/05/edward-altman-where-are-we-in-the-credit-cycle. All posts are the opinion of the author. As such, they should not be construed as investment advice, nor do the opinions expressed necessarily reflect the views of CFA Institute or the author’s employer.

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