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Corporate Bond Market Distress Index (CMDI)

What is the CMDI?

The Corporate Bond Market Distress Index (CMDI) provides a precise and timely signal of corporate bond market functioning, coalescing information from multiple sources.

What are the key features of the approach?

The index quantifies corporate bond market distress from a "preponderance of metrics" perspective. That is, the index identifies as "distress" periods during which a large number of individual measures of market functioning indicate deteriorating conditions in both the primary and the secondary markets for corporate bonds. This approach adopts the methodology of the Composite Indicator of Systemic Stress (CISS) to quantify distress in the corporate bond market in particular, rather than stress in the financial system as a whole. Boyarchenko et al. (2021) cited in the References section below describes the approach in detail.

What are the input data?

We derive primary market measures from the Mergent Fixed Income Securities Database (FISD), employing data on issuance volumes and primary market pricing as well as issuer characteristics. For the secondary market, we use the trading data available through the Financial Industry Regulatory Authority's Trade Reporting and Compliance Engine (TRACE) and include measures that reflect both the central tendencies, and other aspects of the distributions, of volume, liquidity, nontraded bonds, spreads, and default-adjusted spreads. Finally, we use quoted prices from ICE Bank of America to capture the differential secondary market conditions for traded and non-traded bonds.

How should we read the output?

The CMDI (left y-axis on the interactive chart) is calculated weekly based on a real-time flow of information. The time series extends back to 2005, when all investment-grade and high-yield U.S. corporate bonds were included as TRACE-eligible securities (except for 144A bonds). Historical calculations use data that were available in real time.

Alongside the market index, which varies from 0 to 1, we show the reading as a percentile of the pre-2020 CMDI distribution (right y-axis), which offers a more intuitive context and highlights the historically extreme levels of dislocation reached following COVID-19-related disruptions to asset markets.

Our data releases also include rating-level index readings for the investment-grade and high-yield segments of the credit spectrum. However, we present data for the historical percentile for the market CMDI only; the investment-grade and high-yield percentiles are not pictured.

How does the measure perform?

The CMDI identifies commonly accepted periods of market dislocation such as those around the global financial crisis peaking in late 2008 and early 2009, with the next largest peak during the COVID-19-related market stress in March 2020, as documented in Boyarchenko et al. (2021).

However, the index does not flag as dislocations all periods when economic fundamentals deteriorate and bond prices react accordingly, underscoring its value as a measure of conditions specific to the corporate bond market. For example, although oil prices started to decline in the summer of 2014, the CMDI does not increase until the fall of 2015, when these shocks led to credit losses in oil companies and translated into the

About the CMDI

Our index uses weekly metrics to construct an aggregate index of corporate bond market conditions for both the primary and the secondary markets. We update the CMDI at or shortly after 10 a.m. on the last Wednesday of each month.

The CMDI is not an official estimate of the Federal Reserve Bank of New York, its President, the Federal Reserve System, or the Federal Open Market Committee.

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liquidation of the Third Avenue bond mutual fund and associated corporate bond market distress.

How does the measure vary across credit-rating categories?

We apply the same index construction methodology separately to investment-grade (those rated BBB- and above) and high-yield (those rated BB+ or below but CCC/C and above) bonds. Plotting the time series of credit-rating-level CMDI shows that, in general, the rating-level CMDIs move together—a finding that suggests the market CMDI is not unrepresentative of any individual part of the credit spectrum.

Although there are periods over the full history of the time series when the dislocation is particularly pronounced for high-yield bonds, there does not appear to be a corresponding offsetting improvement in investment-grade bonds, and vice versa. That is, there is limited bifurcation in credit market conditions, with either all credit-rating categories in distress or some rating categories in distress, but no situations where conditions simultaneously improve in a different part of the market.

Can we obtain the underlying data or code?

We are making the CMDI output values available for download, but we are unable to share the code or data files used in our calculations.

How important are the sub-indices vs. the overall CMDI? Will you be sharing data on the individual subcomponents as well?

In general, we believe that focusing on any one subcomponent of the index can create an incomplete picture, which is why we are focused on sharing data on the index itself, rather than the subcomponents. As mentioned above, a key to the index is the way that it thinks about co-movement, increasing more when a number of measures appear dislocated. We have no plans to break out data on the relative contributions of the subcomponents to the index, although our commentary may occasionally address their impacts.

I see that usually the market CMDI rests between the investment-grade CMDI and the high-yield CMDI. However, there are periods when the market index either exceeds both the investment-grade and the high-yield indices or is below both (such as in the latter part of 2008, and several periods in 2013, 2014, and 2015). How can the overall corporate bond market be either more or less distressed than its constituent parts?

There are a few reasons for why the market-level index is not a simple average of the investment-grade and the high-yield indices. First, the market-level index includes unrated bonds, so even if the construction allowed for a simple average across the credit-rating-level indices, there would still be a "missing" credit-rating-level index. Second, while the individual metrics at the market level can be thought of as averages of the corresponding rating-level metrics, the correlation weighting applied to construct the overall index cannot be thought of in that way. In other words, the correlation between two weighted-average series is not the same as the weighted-average correlation between multiple series. Thus, the market-level index can put greater weight on different sub-indices than the investment-grade and the high-yield indices do. Because we estimate these weightings in a slow-moving way, and because conditions in the unrated part of the market can deviate from the rated segment for longer intervals, it is not surprising that the periods when this happens are clustered in time.

Is the CMDI available on a more frequent basis?

While this analysis is run on a weekly basis internally at the New York Fed, we publish the data and brief commentary on a monthly basis, according to the release schedule outlined on our website.

Reference

Boyarchenko, N., R. K. Crump, A. Kovner, and O. Shachar. 2021. "Measuring Corporate Bond Market Dislocations." Federal Reserve Bank of New York *Staff Reports*, no. 957, January, revised June 2022.