

Economic Analysis

Corporate financial distress in the wake of the Covid-19 pandemic

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Corporate financial distress is a condition experienced by companies under pressure to service their debt due to one or more factors such as overindebtedness, an increase in borrowing costs, challenges rolling over maturing debt due to tighter financial conditions or a decline in revenues. Companies that experience significant financial distress can become illiquid, meaning that they cannot meet their short-term financial obligations or even insolvent, implying that they are unable to cover their long-term financial obligations.

Financial distress systematically rises in economic downturns due to a decline in revenues that cannot be completely offset with a reduction of costs. These pressures could be exacerbated by tighter financial conditions or higher borrowing costs. Given the unprecedented contraction in economic activity two months into the Covid-19 pandemic, the number of business failures in the U.S. is edging up, particularly in the most heavily affected sectors. Over the past few weeks, prominent retailers and department stores like J.Crew, True Religion, Neiman Marcus and J.C.Penney have filed for bankruptcy. Other examples include Gold's Gym (fitness), Pier 1 (home furniture), CMX Cinemas (movie theaters) and Frontier Communications (telecom). This brief presents scenario analysis of corporate distress over the next ten quarters using an in-house corporate distress index ([Corporate debt in the twilight of the credit cycle](#)) and Monte Carlo simulations anchored around BBVA Research's baseline macroeconomic forecasts.

Corporate debt distress indicator

Our corporate debt distress indicator is essentially based on the logic of the interest coverage ratio, which measures the ability of a company to meet its interest costs out of its earnings before interest and taxes (EBIT). The higher the ratio of a company is, the better the financial condition and thus the lower its distress level, and vice versa. We use financial report data of a large sample of companies over the 1Q97-1Q20 period to estimate an implied interest coverage ratio for each company based on their reported earnings, debt levels, degree of leverage and prevailing corporate bond rates. The model is calibrated so that it fits accurately with corporate default rates and C&I loan delinquencies, leading by several quarters.

Simulations and bottom-up forecast

While the future values of our corporate debt distress index can be forecasted using time series methods conditional on BBVA Research's macroeconomic scenario, we are also interested in the possible paths and distribution of the indicator after relaxing the macroeconomic assumptions. To this end, we use Monte Carlo simulations to produce a range of possible outcomes and understand better the likely drivers of corporate distress over the coming periods. For this purpose, we run 100 simulations to estimate the future values of the index in three rounds: treating earnings as a

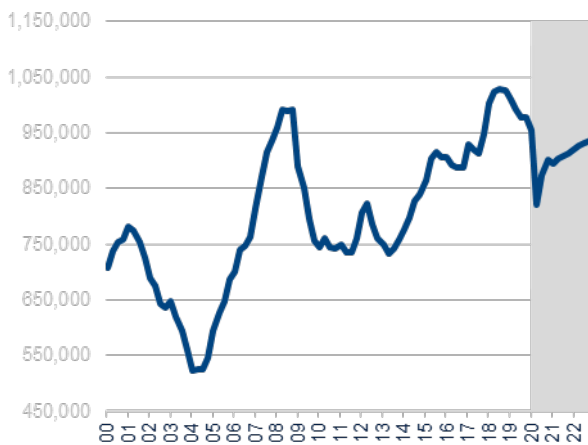
stochastic (random) variable, treating interest rates as stochastic values and treating both earnings and interest rates as stochastic variables. Conducting this exercise is to some extent more art than science, as we manually calibrate the deviation parameter for the simulations so that the results are consistent with the historical record for the relevant series, which requires a degree of expert judgment in the process. That said, the parameters are set to fit as much as possible the variance and covariance of the underlying series.

Round 1: Stochastic earnings

EBIT represents the income available to a company to pay interest, corporate taxes and compensation for equity holders in the form of distributed earnings. Forecasting EBIT at the company level conditional on macroeconomic data on a large scale is not practical, thus we assume that EBIT will increase or decrease in a similar manner, to some degree, as overall corporate earnings based on our macroeconomic scenario. Corporate earnings used for this estimation are corresponding to EBIT because they are a sum of Corporate Profits with Inventory Valuation Adjustment and Capital Consumption Adjustment and Net Interest and Miscellaneous Payments for Nonfinancial Corporations, both taken from the Financial Accounts of the United States (Figure 1) reported by the Bureau of Economic Analysis.

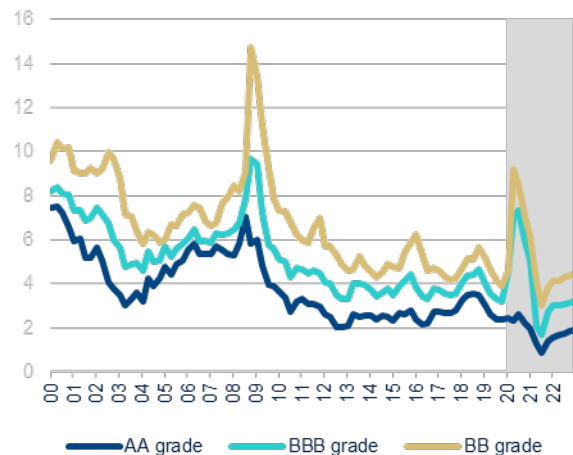
In our simulations, we assume that the quarterly percent changes in earnings in our sample will be similar to total corporate earnings. That is, in the quarters when we expect total corporate earnings to decrease, earnings for each of the companies will decrease as well, subject to some random variation around the central value, which is represented by the change in total corporate earnings. In this first round, we keep our forecasted values for corporate interest rates (Figures 2 and 3) fixed. The results (Figure 4) suggest a U-shape recovery consistent with a spike in corporate distress, which falls quickly, supported by massive monetary and fiscal policy that prevents occurrence of overly tight financial conditions and high corporate debt spreads. After the decline in distress, the index nevertheless reverts upward, as corporations come out of the crisis with larger debt levels and thus more sensitive to the slow increase in interest rates that is part of our baseline scenario.

Figure 1. **Corporate earnings (\$Mn)**



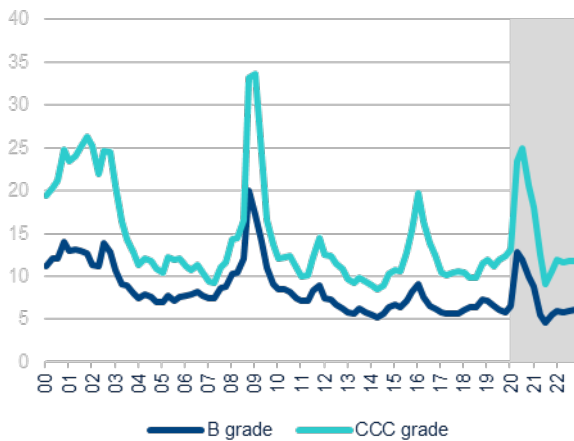
Source: BBVA Research and Federal Reserve

Figure 2. **Corporate debt interest rates (%)**



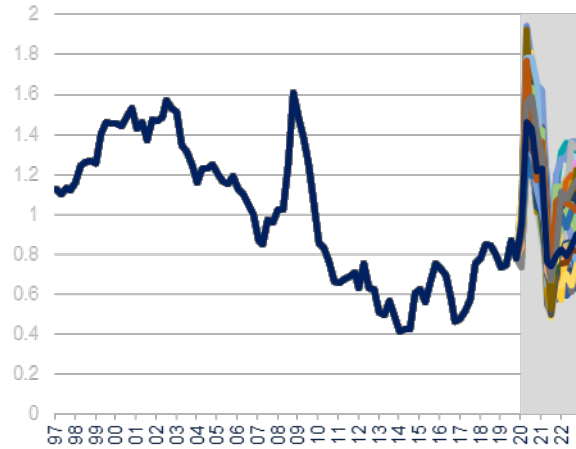
Source: BBVA Research and ICE/BofA/ML

Figure 3. **Corporate debt interest rates (%)**



Source: BBVA Research and ICE/BofA/ML

Figure 4. **Corporate debt distress index (Average 1997-2019=1), simulated EBIT**



Source: BBVA Research using Bloomberg data

Round 2: Stochastic interest rates

The second step in our analysis is to assess the level and distribution of the distress index taking interest rates as stochastic values centered around a baseline forecast, while holding earnings constant. In order to ensure that interest rates move in a synchronized manner, we run the simulation on a single rate factor, which is then used to forecast the interest rate scenarios. As a result, if one rate increases above its baseline, all of the other rates do the same and vice versa. Interest rates fluctuate harmoniously around their central value but to a different degree, with high-grade fluctuating less than low-grade, which is consistent with past behavior. However, we introduced a floor to avoid rates from falling below a certain unrealistic level.

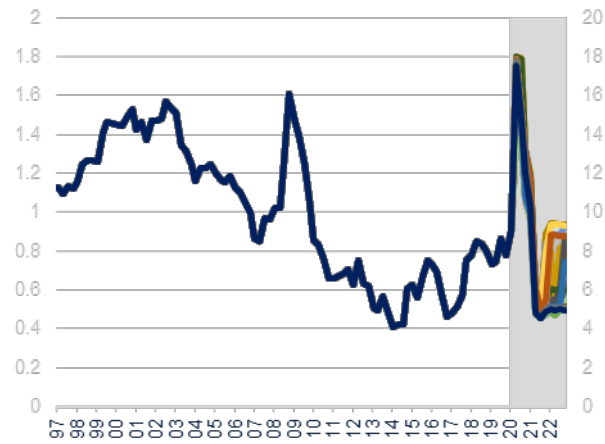
Unlike the simulation of earnings where these vary by firm within the same scenario, all companies face the same rates under the same scenario. That said, the implied cost of debt depends on the company's leverage ratio. Companies with greater leverage are assumed to have a lower grade debt rating (for example B or CCC), and thus face higher interest rates and vice versa. Holding earnings unchanged, but treating rates as stochastic variables results in a distribution of the index that is narrower in the earlier periods in the forecast horizon and wider in the later periods. This was expected since, unlike in the earnings simulation, there is no variation within the scenario, meaning that it can take longer for the scenarios to diverge (Figure 7).

Round 3: Stochastic earnings and interest rates

Treating both earnings and interest rates as stochastic variables help us obtain the final estimates of the possible scenarios for the debt distress index. The results suggest that while short-lasting, the level of corporate debt distress is likely to surpass those observed in the past two recessions, possibly to a significant degree. The average of the simulated values of the index for 2Q20, stands at 1.65, 5% higher than the local maximum of 1.57 in 3Q02 and 3% higher than the

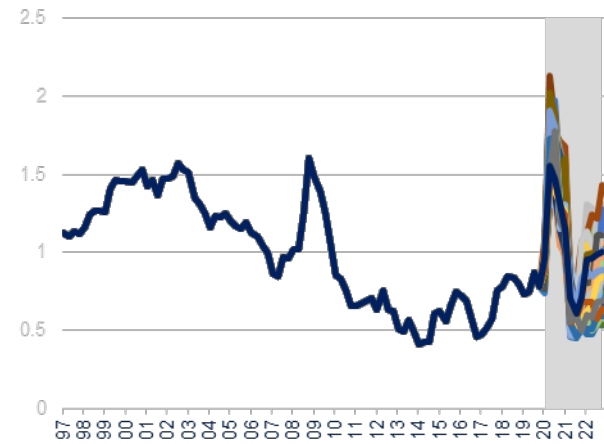
historical peak of 1.61 in 3Q08. While the level of distress declines dramatically after this, it remains above the minimum level reached in 2014. After this drop, the distress index begins to revert to its long-run average in 4Q21.

Figure 5. **Corporate debt distress index (Average 1997-2019=1), simulated interest rates**



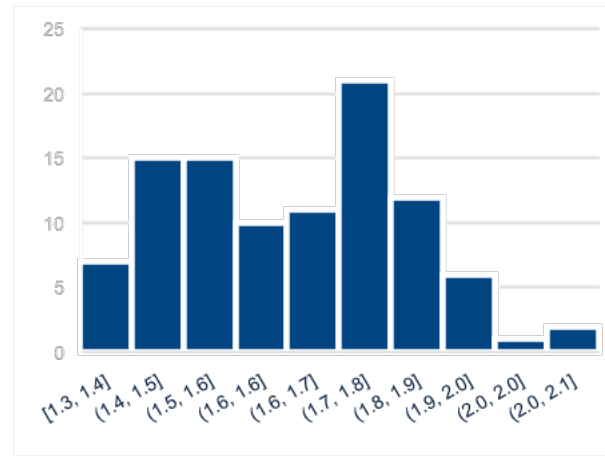
Source: BBVA Research using Bloomberg data

Figure 6. **Corporate debt distress index (Average 1997-2019=1), simulated EBIT and interest rates**



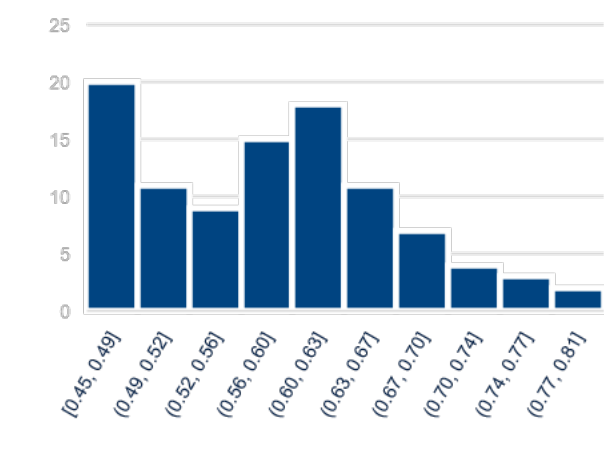
Source: BBVA Research using Bloomberg data

Figure 7. **Peak period forecast (2Q20) distribution of results under simulated EBIT and corporate debt interest rates (%)**



Source: BBVA Research

Figure 8. **Lowest period forecast (3Q21) distribution of results under simulated EBIT and corporate debt interest rates (%)**

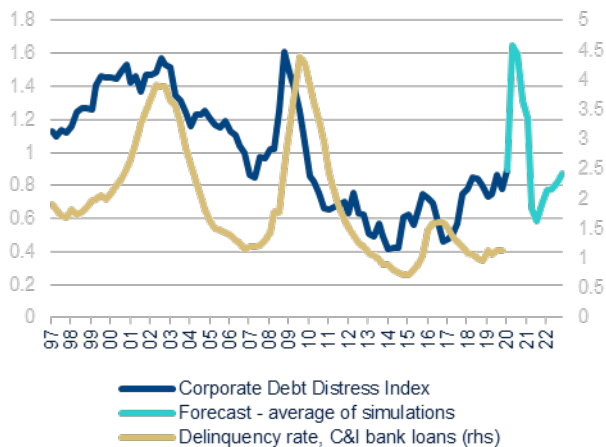


Source: BBVA Research

Implications

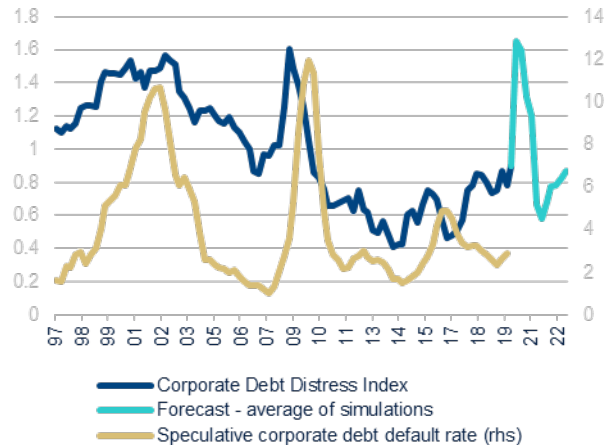
There are four primary implications of our corporate debt analysis. First, given that the corporate debt distress index leads default rates and loan delinquencies, the simulations suggest a peak in corporate defaults at the end of 2020 and the beginning of 2021. The C&I loan delinquency rate is likely to reach a level above 4% (Figure 9) and the speculative default rate could climb above 10% (Figure 10), two-and-a-half times above its long-run average. Second, while the improvement in credit quality could be quick, companies will face more challenging conditions in the wake of the current crisis relative to the previous cycle. This is consistent with the notion that corporate debt leverage was not critical in the run-up of the Great Recession, but it was significant in the run-up of the current crisis. Third, corporate overindebtedness will be further aggravated due to the massive emergency borrowing that is occurring currently, with companies increasing their leverage further in order to stay in operation through the duration of the Covid-19 induced shutdowns and gradual recovery. Last but not least, the range of possible outcomes is wide and not normally distributed, indicating elevated uncertainty and nontrivial risks of negative surprises. While massive monetary and fiscal support action could limit these risks, it could also exacerbate other potential problems down the road such as maintaining an overly indebted business sector.

Figure 9. **Corporate debt distress index and C&I bank loan delinquency rates (Index and %)**



Source: BBVA Research and FRB

Figure 10. **Corporate debt distress index and speculative corporate debt default rates (Index and %)**



Source: BBVA Research and S&P

Bottom line

Corporate debt is and will remain a major concern in the short- to medium-term due to the large leverage buildup before the current downturn and the nature of the current crisis. The induced sudden stop of operations has forced many businesses to borrow unprecedented amounts to be able to service their financial obligations. In this brief we presented an alternative methodology to estimate and forecast corporate debt distress that, in addition to determining a most likely scenario of our corporate debt distress index, allows us to investigate the distribution of the possible outcomes and explore the interplay of the underlying data under different assumptions. Using our macroeconomic baseline forecasts and simulating different scenarios around them, we find that corporate delinquencies and defaults are likely to peak between the end of 2020 and the beginning of 2021 and that the range of outcomes is wide and not normally distributed. While a quick improvement will follow, a remaining debt overhang will present firms with large debt service costs despite enjoying an extended period of low interest rates and abundant liquidity.

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