Introduction

**Motivation:** Academics and practitioners have developed several indicators in order to measure firms’ financial fragility and forecast future corporate bankruptcies. However, many of these measures (such as Moody’s widely used “Expected Default Frequencies” (EDFs)) are usually not easy to compute, partly because of their reliance on hard-to-obtain proprietary data underlying those variables. In this paper, we propose to use a simplified measure of default risk, called Distance to Insolvency (DI), to forecast corporate default and to gauge how the ECB’s pandemic emergency purchase programme (PEPP) affected corporate defaults in the wake of the COVID-19 Pandemic.

**Contributions:** At the granular level, the DI dominates the EDF when looking at two different forecasting horizons (3 and 12 months). This result is confirmed when looking at aggregate data, where the DI performs better than the EDF for predictive horizons beyond 3 months. Finally, we present a counterfactual exercise that considers the level at which corporate defaults in the euro area would have settled if the ECB had not implemented the pandemic emergency purchase programme (PEPP). We show that the ECB’s intervention reduced defaults during the crisis, relative to a counterfactual scenario of no policy intervention.

Data and Definitions

We proxy defaults through strongly negative equity returns (i.e. returns lower than minus 80%) over a 3 months horizon. Historically, such strong equity price declines have usually been associated with deep financial distress of the respective company, leading to a subsequent default. While this development does not necessarily imply a default, it is a clear indication of the financial distress experienced around or before a default event. We show 12 month trailing realised default rates and our default measures in Figure 1 below. Figure 2 also shows that defaults tend to happen more frequently to firms that are smaller, less profitable, more leveraged and with lower Altman Z-scores.

Identification

We test the predictive ability of EDFs and DIs at two different horizons, 3 months and 12 months ahead. We employ two different models to assess if and to what extent EDFs and DIs are statistically relevant in explaining our proxy of corporate default. In this context, we will compare how the two predictors fare in relation to each other. At the granular level, we employ a Cox proportional hazard model, in line with the existing literature | [4] | [5] and [2]. At the aggregate level, we include the median DI and EDF values for euro area firms into a monthly VAR together with the euro area industrial production index (IP), the VIX index, the corporate (BBB rating) bond spread for euro area NFRs and the default rate (DR) for euro area non-financial speculative grade corporations, as computed by Moody’s. Our specification has six lags for the vector Y(t). We order the variables by the speed with which they react to the information flow, with the default rate being the slowest and the VIX being the fastest.

Results

At the granular level, we compare the performance of the EDF with our own DI measure in horse-race regressions, to check whether or not one of the measures dominates the other as a predictor of corporate defaults. The results are shown in Table 1. Our simple DI measure dominates the EDF, both with and without controls. If we focus on the regressions where we do not employ any controls, an increase by 1 unit in the DI measure implies an increase in the probability of default by 15 and 14 percent at the 3- and 12-month horizon, respectively. We also sort firms in EDF and DI deciles in Table 2. Then, we count the number of defaults that occur within each decile in the following 3 and 12 months, for each of the two indicators. The DI measure shows better results than the EDF at both horizons, which seems to confirm the in-sample results.

Conclusions

**A simple measure to forecast corporate defaults:** A simple measure of insolvency risk - called Distance to Insolvency (DI) - can anticipate corporate defaults better than the commonly used Moody’s EDF. Using Cox’s Hazard rate regressions, we find that the DI performs better than the EDF especially at longer horizons. Distance to Insolvency (DI) can anticipate corporate defaults better than the commonly used Moody’s EDF.

**Policy Implications:** We use the DI measure to simulate the evolution of corporate defaults during the COVID-19 crisis if the Eurosystem had not implemented the pandemic emergency purchase programme.

References