

The Distress Anomaly Puzzle

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Financial distress can be defined as the period when a firm hits zero or negative earnings and stays in that situation for around fourteen months. On the other hand, anomalies refer to returns inconsistent with standard asset pricing models such as the CAPM.

Speaking at the 10th Annual Conference of ABFER, Professor Tarun Chordia shed light on a phenomenon called the distress anomaly puzzle, which results from the violation of the fundamental paradigm in finance that higher risk translates into higher returns. In the data, the Professor found that higher-rated (i.e., lower-risk) firms earn higher returns than lower-rated (higher-risk firms).

Bond credit ratings issued to firms by S&P can be divided into deciles, with AA- being closest to the first and CCC+ to the last decile. The CCC+ stocks have the highest default risk and are, thus, categorized as distressed securities. Typically, distressed stocks are illiquid, have smaller market caps and analyst coverage, and have higher forecast dispersion.

	Credit Rating Deciles									
	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
<i>Equity and Firm-Level Data</i>										
S&P issuer credit rating: letter	AA-	A	BBB+	BBB	BBB-	BB+	BB	B+	B	CCC+
S&P issuer credit rating: numeric	4.20	6.47	7.78	8.66	9.82	11.12	12.46	13.65	14.67	16.65
Failure Probability (%)	0.00	0.00	0.04	0.02	0.02	0.08	0.18	0.41	1.31	5.41

To elucidate the puzzle, the Professor showed that monthly value-weighted portfolios comprising CCC+ stocks or bonds had significantly higher betas than the ones containing AA- stocks or bonds. Yet, despite having much higher betas, the riskier portfolios generated significantly lower monthly alphas than the safer portfolios. Interestingly, the anomalous risk-return pattern disappeared upon removing periods of distress from the sample. The Professor termed this pattern the Distress Anomaly Puzzle.

	Monthly Value Weighted Portfolios			
	C1	C5	C10	C10-C1
Stock Betas	0.87	1.05	1.83	0.96
Stock Alphas	0.20	0.14	-1.58	-1.78
Bond Alphas	0.25	0.26	-0.44	-0.69
	Remove Distress Period (Downgrades or negative earnings)			
Stock Alphas	0.22	0.16	-0.28	-0.50
Bond Alphas	0.26	0.27	0.37	0.10

The Professor then highlighted some plausible explanations for the puzzle and explained their shortcomings.

Firstly, the Professor noted that the low returns for low-rated firms and their risk are not compatible. By standard asset pricing theory, lower-rated firms are riskier, as they have higher betas, and should generate higher returns.

The Professor discarded the proposition that low returns for low-rated firms result from wealth transfer, where stockholders extract value from bondholders during the renegotiation of debt contracts in distress periods. If such a violation of absolute priority could occur, it might seem plausible that stocks of distressed firms tend to be overpriced and, thus, generate negative returns. However, if that were true, their bonds should be underpriced and thus generate higher returns, which is not so. In fact, both bonds and stocks of the distressed firm have low returns during distress and positively correlate with each other.

The Professor refuted another possible explanation: biased earnings expectations. A paper by McLean and Pontiff (2018) argues that biased earnings expectations drive anomalies, and anomaly returns are six times higher on earnings release days. The authors repeated the analysis to test this explanation, eliminating the months with quarterly and annual earnings announcements. They found

that earnings expectations did not drive the distress anomaly returns as negative returns to low-rated stocks did not concentrate around earnings announcements.

Likewise, the Professor discarded the idea that perhaps lottery-type preferences produce the anomaly: maybe purchase of illiquid securities by skewness-preferring investors leads to overpricing and subsequent lower returns. However, the Professor noted that if we looked at distressed bonds, at best investors can only get back the principal and interest. So there is no extreme upside in bonds – the 90th, 95th, and 99th percentile returns were 5%, 8%, and 21%, respectively. On the other hand, distressed stocks can have higher upside potential if they survive, typically generating 21%, 32%, and 69% returns at the 90th, 95th, and 99th percentile, respectively. So, a skewness-preferring investor should hold stocks. However, data showed similar investor interest in bonds and stocks, thus invalidating this explanation too.

Lastly, the Professor shed light on trading frictions, often cited as an explanation for the persistence of anomaly profits. High credit risk stocks are smaller in volume, with higher dispersion in analyst forecasts, higher idiosyncratic volatility, and higher illiquidity measure. Moreover, uncertainty and illiquidity increase dramatically around financial distress, making distressed stocks even harder to value and trade. Thus, limits to arbitrage and trading frictions could certainly impact the ability of arbitrageurs to eliminate any mispricing in these stocks. However, trading frictions cannot explain why mispricing obtains in the first place and why it lasts for three years or more when distress, on average, lasts for about 11.8 months.

The Professor subsequently emphasized the damaging real impact of distress. He noted that while the total assets growth of distressed firms turned negative only around the onset of distress, investment growth turned negative 12 months before the onset as firms would start throwing stuff overboard long before the distress began. As a result, the industry-adjusted CAPEX starts declining, and so does the growth of R&D, advertising, cash dividends, accounts payables, long-term debt, and shareholders' equity, compromising the long-term future of the distressed firm.

The Professor then underscored how the distress anomaly leads to real distortions by looking at the highest quintile of stocks that are "overpriced, worst rated, and distressed." He found some surprising patterns.

Firstly, these firms had 27% more investment than firms whose stocks were not worst rated, distressed, and overpriced simultaneously. That means that apart from the decrease in total assets, R&D, advertising, etc., as mentioned previously, such firms did not disinvest enough.

Furthermore, the Total Assets growth of these firms was 5.02% higher compared to companies that were not the worst rated, distressed, and overpriced.

Similarly, these firms issued more Long Term Debt than they should have, even at very high prices. These firms also appeared to either not write down common equity enough or even issue equity at very high prices.

Therefore, concluding his presentation, the Professor acknowledged that, although the puzzle is still unresolved, a likely reason for its existence might be positive expectations on the part of investors as reflected by the increase in the growth of investments, total assets, long-term debt, and common equity of the worst rated, distressed, and overpriced firms.