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Don’t Count Them Out

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Because distressed companies predictably generate poor returns in the six months prior to default, we look at factors that might have predictive power for near-term declines. Even after accounting for valuation (in the form of OAS), it looks like share of insider ownership, market environment, negative free cash flow, liquidity, and a large amount of maturing debt within the next 12 months all have implications for near-term risks. We create a default prediction model using these factors and find that issuers whose model-implied default rate is significantly lower than what is implied by their OAS tend to outperform other distressed securities.

In our last distressed-focused report (*Benchmarking Distressed*), we took an event study approach to performance around default. We found that bonds tend to fall 30-35% in the six months before defaulting. This happens even though the risk is well telegraphed – most distressed companies are already trading with a 50% or higher probability of a loss over the life of the bond.

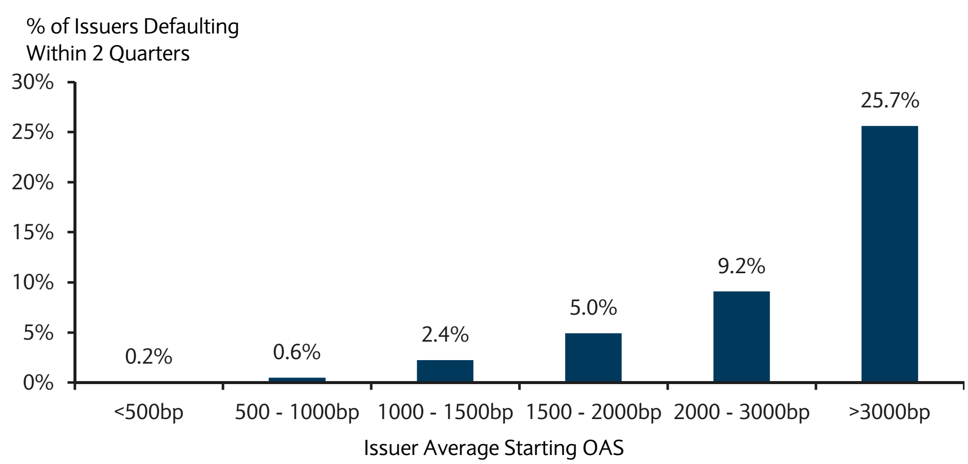
In order to avoid the securities with the most consistent declines, we need to be able to predict which issuers are going to default within the next six months. Right now, we think that most of that work is done within traditional frameworks – talking to management, modeling cash flow fundamentals, and exploring restructuring options. But we see potential for quant methods to offer incremental insights.

The Nearer-Term Predictors of Default

Spreads, obviously, tell us a lot about expected defaults (Figure 1). We use average bond OAS at the issuer level as a key input to our model, and it closely mirrors the probability of an issuer’s failing within the following six months. Across all market environments, the High Yield Index average two-quarter default rate is about 1.5%. However, among distressed bonds (which we define as those trading wider than 1000bp), the rate is almost four times higher.

Even after we account for spreads, other factors can tell us something about the chances of default (we consider each in isolation):

FIGURE 1
Starting OAS Is Closely Related to the Probability of Default



Source: Bloomberg Barclays Indices. Barclays Research

- Higher **insider ownership** makes a company less likely to default for a given spread range. This could be because closely held companies are relatively more important to the personal wealth and well being of managers. As a result, they may be more willing to explore all options for avoiding a bankruptcy filing that could result in their taking losses.
- The **market environment** is an important consideration, and its influence is somewhat counterintuitive. When the overall environment is worse, companies are actually less likely to default at any given spread range (Figure 2). This happens because as the whole market sells off, the relative quality of the companies in any given range increases. Put another way, when the entire market is strong, any companies that trade at distressed levels must be very challenged indeed.
- Negative **free cash flow to enterprise** often indicates that a company is struggling with its operating business and raises the chance of a near-term default.
- When **liquidity** (which we estimate as cash and equivalents, revolver capacity, and LTM free cash flow) is less than interest, distressed issuers have less runway to fix their difficulties. This makes them more likely to fail.
- A large amount of **maturing debt** (which we measure relative to assets to normalize the scale) is often a sign that a company has limited market access and has been unable to roll maturities. But even after accounting for the higher spreads that an issuer would face when it is locked out of new issue markets, more maturing debt raises the chances of a default.

Modeling Default Probability

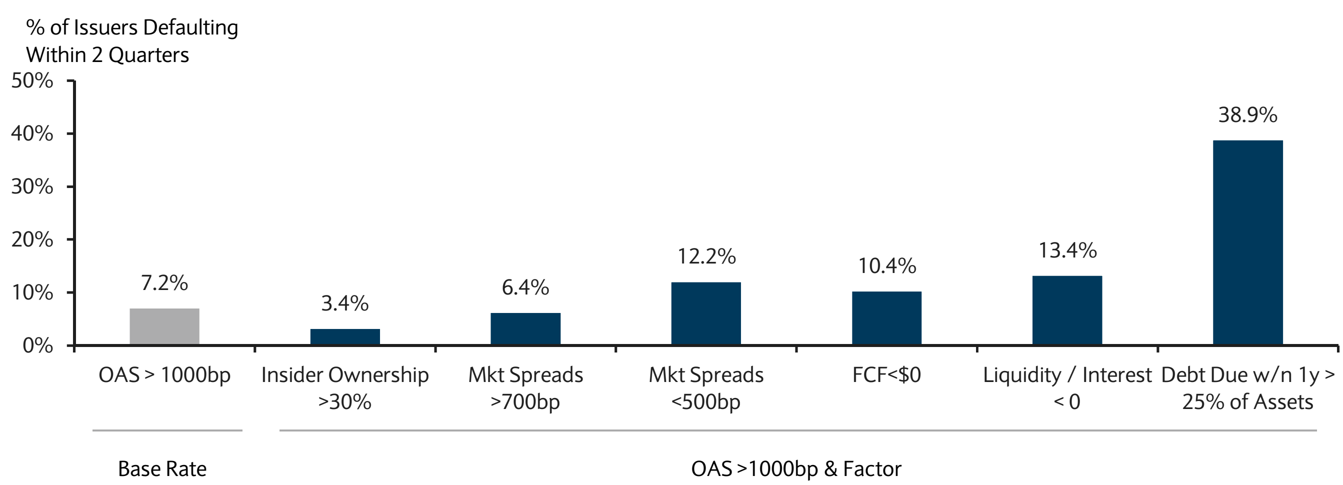
We need to take a further step to fully develop six-month default forecasts. Many of the factors we use are at least partially co-determined. For example, free cash flow challenges tend to go along with liquidity issues, which tend to make it more difficult to term out debt. As a result, it is difficult to isolate how much each factor contributed to the incremental probability of default.

One way to account for those correlations is to use a formal model of the probability of default. In this case, we use logistic regression to estimate the contribution from each factor. A few notes:

- The model input is quarterly data for the US High Yield Index since September 2006.

FIGURE 2

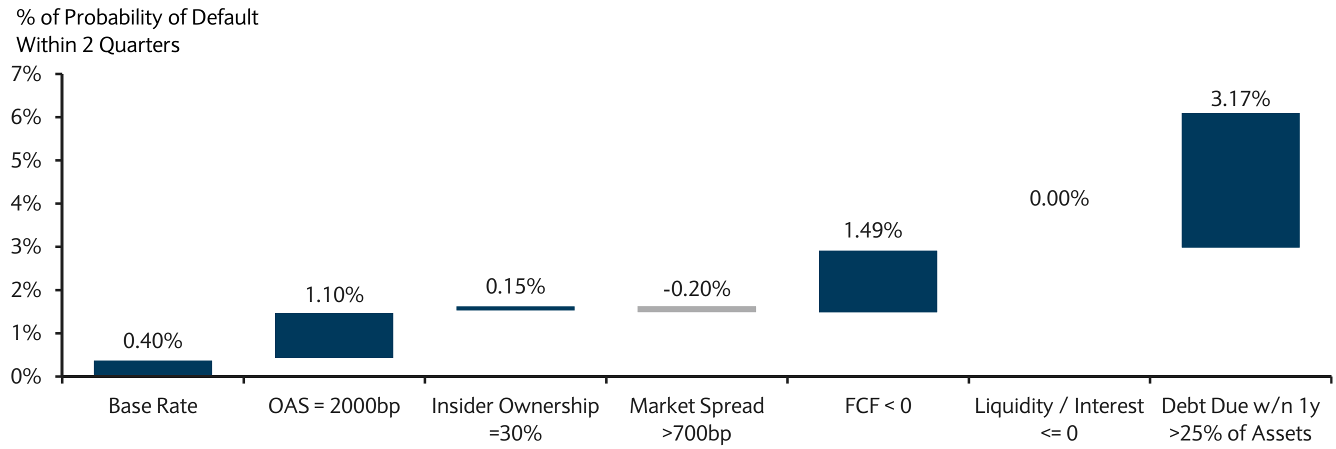
Even After Accounting for OAS, Many Factors Make Near-Term Default More or Less Likely



Note: Factor default rates are for issues with starting OAS greater than 1000bp. Source: Factset, Bloomberg Barclays Indices. Barclays Research

FIGURE 3

Logistic Regression Shows The Contribution to Incremental Probability of Default for an Illustrative Distressed Bond that Displays the Characteristics Listed Below



Note: Base rates assume averages for US HY: high yield market average OAS of 498bp, issuer OAS equal to market average, positive free cash flow, 8x liquidity to interest, 10% insider ownership, and 1% debt due <1y as share of assets. Source: Factset, Barclays Research

There were about 276 total defaults in that period.

- We limit the analysis to companies with data for all series, which also effectively limits us to considering public companies; these results might not have the same magnitude if applied to private companies.
- The model was calibrated using a training dataset that contained about 80% of the data points available. We reserved the remaining 20% of the data to use for model validation.

A few interesting implications emerge from the model:

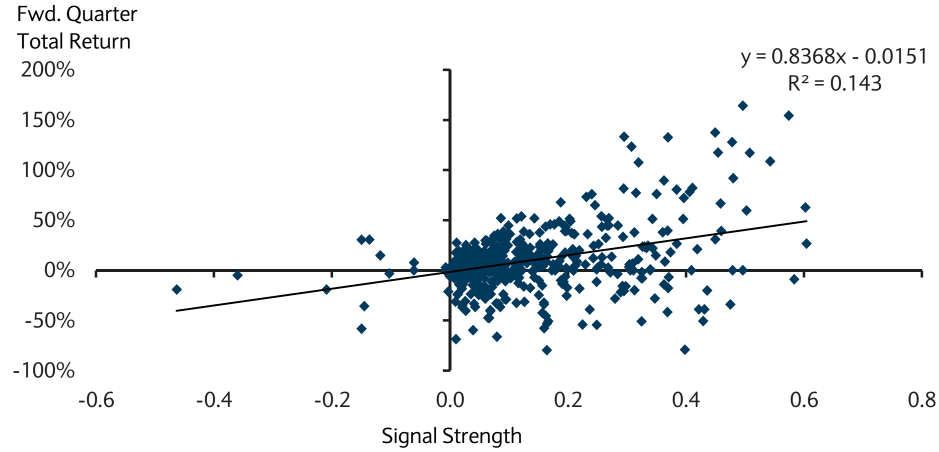
- The most important predictors of default (after OAS) are negative free cash flows and the quantity of near-term maturities. Both make sense: negative free cash flow is a signal of operating weakness, while substantial near-term maturities suggest that an issuer has had very constrained market access.
- Liquidity is not predictive, after accounting for free cash flow and maturities. This is the most surprising result to us, as our prior belief was that liquidity would be a stronger predictor than maturities.
- Overall, wider markets do reduce the probability of default, although not by much when compared with the amount that more spread increases it.
- Insider ownership actually increases the probability of default, all things equal. Given that insider ownership reduces the probability of default when the other factors are not accounted for, it suggests a correlation with them. This could mean that companies with heavy insider ownership are more likely to have positive cash flow and less likely to see maturities build up.

Refined Default Probability Can Systematically Improve Performance

One way to take advantage of a more nuanced understanding of near-term default indicators is to use the model to generate a signal about where to look for the most attractive opportunities. Given the difficulty of shorting distressed bonds, our focus is on identifying potential longs. We created a simple signal by comparing a rough estimate of the

FIGURE 4

Issuers with a Stronger Signal from Default Model Outperformed Other Distressed Issuers



Note: Performance of signal and returns for validation dataset. Source: Barclays Research

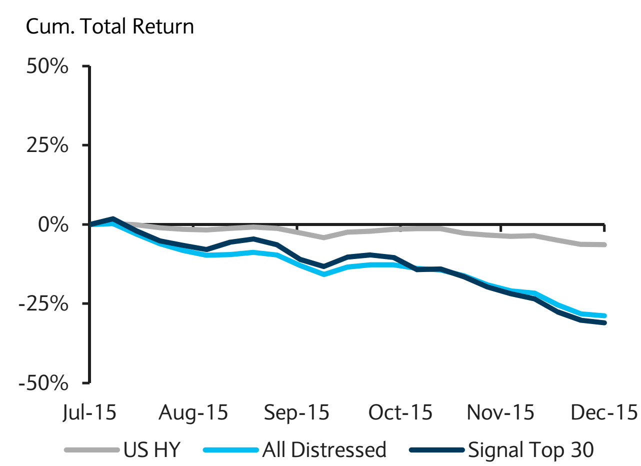
OAS-implied default probability for each issuer with the default probability from our model and normalized the results.

Within the validation data, the strength of the signal was a good predictor for one-quarter-ahead total returns (Figure 4).

If we look at the top-30 scoring issuers identified by the signal, we see that they appear to be higher-convexity situations. For example, in the July-December 2015 sell-off, a portfolio of those issuers performed in line with the average for distressed bonds (Figure 5). But during this year's strong rally, the top 30 portfolio outperformed meaningfully (Figure 6).

FIGURE 5

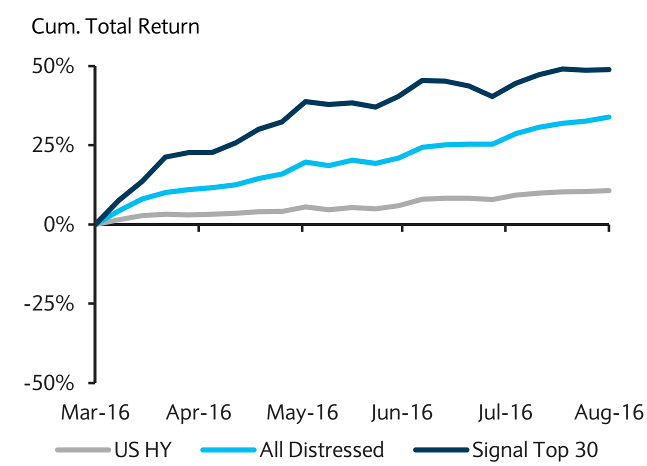
Top 30 Issuers with Default Signal Perform in Line with Other Distressed Bonds during Sell-offs…



Source: Barclays Research

FIGURE 6

…But Outperform Comfortably during Rallies



Source: Barclays Research

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