

Middle-Market Lending Does Not Always Mean High Risk

Middle-market lending does not always mean high credit risk – it can actually enhance portfolio diversification. The availability of rich data and modern statistical models enable investors to rethink traditional best practices of avoiding lending to smaller companies or capping the estimated credit quality for smaller firms at subpar levels.



Credit risk, lending, capital markets,
asset management

December 20, 2021
Issue 005

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We present evidence from Moody's Analytics C&I Data Alliance detailing the relationship between a firm's size and its credit risk. Due to the extensive nature of the data available in the Data Alliance, our study confirms that default rates tend to become lower as company size increases above \$100 million in total assets. We also show how financial ratios allow us to identify small firms of higher credit quality as well as large firms of lower credit quality.

Challenge

It has long been known that firm size and credit risk are negatively correlated. Large companies have more access to capital, pay cheaper prices for it when they need it, and default less often than smaller companies. Our data bears this relationship out. But, importantly, we also find that size alone is not a safe haven from credit risk. In this research note, we discuss when size does not matter and which financial ratios can help analysts with asset selection.

Insights

While it's not surprising that even large companies can be very risky and default, it's less obvious that smaller companies can have strong financials and very low credit risk. In fact, smaller companies showing the right financial profile can be as strong as or stronger than their larger counterparts. To better understand this phenomenon, we use Moody's Analytics C&I Data Alliance. Using its extensive coverage, we demonstrate several findings.

- » For smaller companies (total assets below \$100 million), we do not observe a strong relationship between default rate and size.
- » While default rates tend to decrease as size becomes larger than \$100 million, a model based on financial ratios can identify many small companies with low credit risk, as well as many large companies with high credit risk.

- » Overemphasizing company size in credit risk analysis can lead to missed investment opportunities.
- » Investing in many smaller firms can further improve portfolio diversification.

“Omitting financial ratios from investment decisions can potentially lead to overlooking the value of investing in smaller, but relatively safer companies, as well as taking on excessive risk by investing in larger but riskier companies.”

Analysis

Do large companies default less frequently?

A larger-scale business is usually associated with a stronger market position, a better ability to weather financial downturns, more established operations, and a more stable outlook. It's not surprising, therefore, that size plays an important role in credit risk assessment. Our analysis of rich financial statements and default data available¹ in Moody's Analytics C&I Data Alliance shows that, while size definitely matters when assessing a company's credit risk, especially for larger firms, other financial factors can play a decisive role as well. Moody's Analytics private firm RiskCalc model enables users to identify smaller companies with strong financials that have credit quality comparable to investment-grade companies.

¹ We collect information from more than 1.5 million financial statements, including more than 27,000 defaults.

Figure 1, based on the rich data available in Moody's Analytics C&I Data Alliance, shows the distribution of statements by total assets, and the observed default rate by size in Moody's Analytics C&I data.² We see a significant decrease in default rates for companies with total assets above \$100 million,³ and this trend continues as company size increases. For middle-market firms (total assets below \$100 million), we do not see a pronounced trend. In the absence of rich data on default rates for companies with total assets below \$100 million, we can anticipate a much higher default rate by continuing the trend observed for firms with total assets above \$100 million. This practice may undermine potential investment opportunities in smaller companies, which can be uncovered using a financial ratio-based model such as RiskCalc.

How can financial ratios help identify safe small companies and risky large firms?

The majority of companies in the rated population have total assets above \$100 million; among the rated companies with an investment-grade rating, virtually none are below \$100 million. Nevertheless, our experience working with a large database of middle-market companies shows that even the smallest companies can have low default risk. To demonstrate this finding, we break our sample into five roughly equal cohorts based on the EBITDA/interest expense ratio and plot the cohorts' default rates by size, shown in Figure 2. On the vertical axis, we mark the implied rating categories based on the RiskCalc EDF measure,⁴ and the red horizontal line is the boundary between investment and non-investment grade. The companies with the lowest EBITDA/interest expense values (red cohort) have the highest default rates across all company sizes. The default rates in our sample also show that if EBITDA/interest expense is above 25 (green cohort), then the company's credit quality is, on average, comparable to investment-grade companies. It's important to note that such strong credit quality is not reserved just for relatively large companies, but can be observed across firms of all sizes. This finding is robust across different industry sectors.

Figure 1 Default rate by size

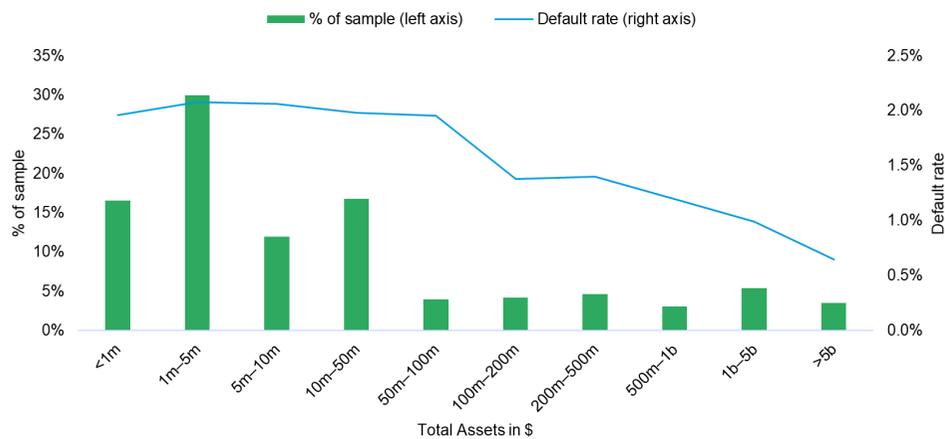
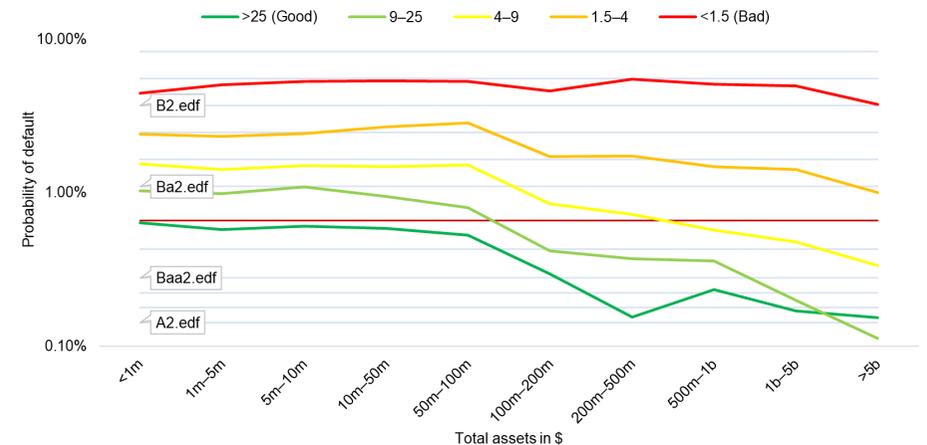


Figure 2 Default rate by size for quintiles of the data based on the EBITDA/interest expense ratio



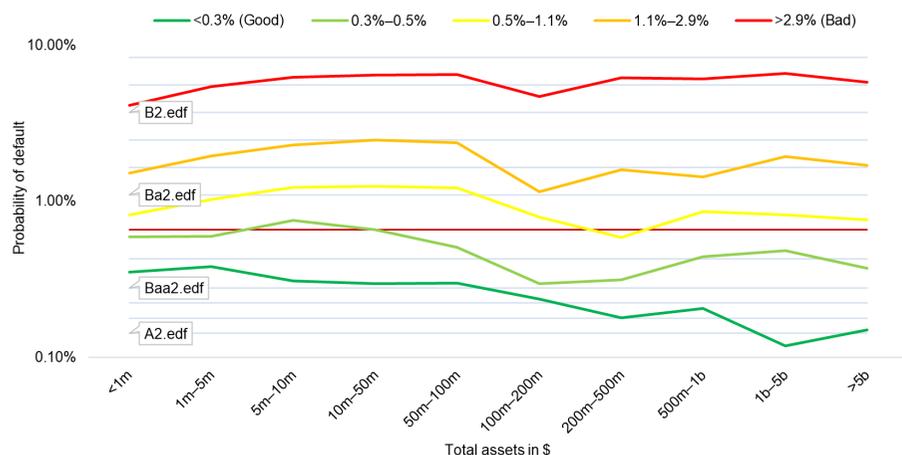
² About 18% of financial statements and about 11% defaults come from companies with total assets above \$100 million.

³ This is why, in the United States, we have two different PD models for private companies — one for large firms (RiskCalc 3.1 North America Large Firm Model) and one for all companies (RiskCalc 4.0 United States Corporate Model).

⁴ In addition to calculating probability of default (EDF measure) for a company, RiskCalc also outputs an EDF-implied rating based on the MIS rating scale. More information on this mapping can be found in "RiskCalc FAQ – Static Mapping".

Debt coverage is just one aspect of a company's credit risk profile. Most quantitative models, including RiskCalc, include multiple ratios that, taken together, represent a company's financial quality. In Figure 3, we break up the sample into five cohorts, based on the RiskCalc financial statement only score (FSO EDF1). Firms in the green cohort have strong values for multiple ratios, and firms in the red cohort look risky on multiple dimensions. Again, we plot the average default rate for each cohort by size to establish the fact that strong financials (even for smaller companies) can lead to investment-grade credit quality.⁵ Similarly, among companies with weak financials, default rates are high for both small and large companies. We conclude that company size affects credit risk, but the overall impact of financial strength is much more important.

Figure 3 Default rate by size for quintiles of the data based on RiskCalc financial score



⁵ We note there is still a downward trend in the observed default rate with respect to size for companies with the best financials (dark green line in Figure 3). This trend is less pronounced than in Figure 2, because size is one of the factors in FSO EDF1. However, because the RiskCalc 3.1 North America Large Firm Model has a lower bound below the RiskCalc 4.0 US Corporate Model and is also designed to generate more low EDF measures, there are more companies with low EDF measures and low default rates among larger companies compared with middle-market companies. For the companies in the green cohort, as company size increases from the lowest bucket to the highest bucket, both observed default rate and average EDF drop by roughly 50%. Due to the relatively safer companies in the large-firm buckets compared with the middle-market buckets, we observe the trend above.

⁶ Relative contributions represent the relative importance of the company's financial ratios in producing the company's one- and five-year EDF credit measures. A positive number means that the factor indicated on the left increases the probability of default, and a negative number means that the ratio's contribution decreases the probability of default. The most negative and most positive numbers indicate the ratios most important in determining why the firm received its specific EDF credit measure.

Two Retail Companies

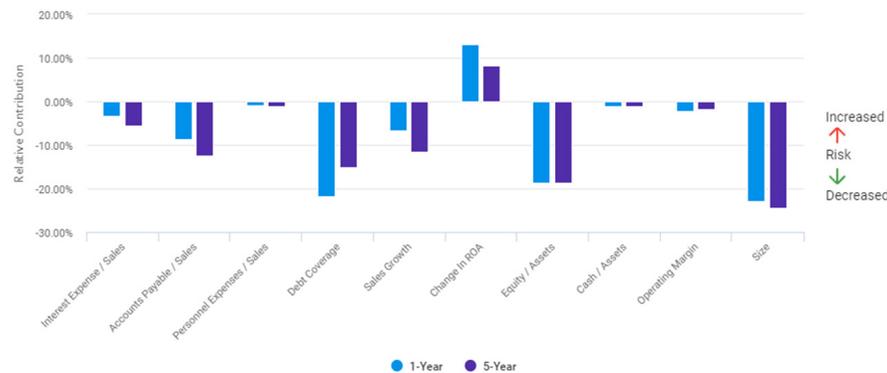
To illustrate the idea of how a model based on financial statements can help identify strong companies of all sizes, consider two retailers. We first look at The Michaels Companies, Inc., a US retailer of arts and crafts supplies. As of August 2021, Moody's Investor Services assigns Michaels a B1 long-term credit risk rating. With total assets of \$4.5 billion, this company has a relatively large scale for retailers, but its overall size is still on the smaller side for the rated population of companies. Spreading the financial statement in RiskCalc 3.1 North America Large Firm Model generates a strong EDF measure of 0.31%, associated with an investment-grade implied rating. Figure 4 shows the relative contribution of financial ratios,⁶ and we can see that all of Michaels' financials, with the exception of leverage, point to strong credit quality and help reduce the company's credit risk.

Figure 4 Relative contributions of financial ratios to the credit risk of The Michaels Companies, Inc.



Another (smaller) retailer is a French company Societe d'exploitation De Boutiques A l'enseigne De Marques Sebe M,⁷ which sells clothing and is a private, unrated company. With a smaller size of €16.1 million, it has even stronger financials. Using the latest available financial statement data with the RiskCalc 4.0 France Model, we obtain a RiskCalc EDF measure of 0.19%. Debt coverage, liquidity, leverage, and activity ratios are strong and help to reduce the company's credit risk. In Figure 5, relative contributions for all ratios except change in ROA help decrease this company's risk.

Figure 5 Relative contributions of financial ratios to the credit risk of Societe d'exploitation De Boutiques A l'enseigne De Marques Sebe M



Takeaways

- » Middle-market lending does not always mean high credit risk – it can actually enhance portfolio diversification.
- » The availability of rich data and modern statistical models allow investors to rethink the traditional best practices of avoiding lending to smaller companies or capping the estimated credit quality for smaller firms at subpar levels.
- » Using Moody's Analytics C&I Data Alliance, we demonstrate that the overall quality of a company's financials matters more for its credit risk than simply company size and show how a financial ratio-based model can help identify safe small firms and risky large companies in different industry sectors.
- » Moody's Analytics private firm RiskCalc model can identify smaller companies with strong financials that have credit quality comparable to investment-grade companies.

www.moodyanalytics.com/product-list/data-alliance

The Data Alliance is a collaborative effort by leading financial institutions and Moody's Analytics to create the world's largest collection of private credit risk data.

www.moodyanalytics.com/product-list/riskcalc

The RiskCalc™ solution provides a comprehensive approach for assessing the default and recovery of private firms, financial institutions, and project finance transactions. RiskCalc models generate forward-looking probability of default (PD) or EDF™ (Expected Default Frequency) credit measure calculations, loss given default (LGD), and expected loss (EL) values.

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⁷ BvD ID n° FR349543587

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