

## Networks and News in Credit Risk Management

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### Abstract

The presumably most important function of a corporation is the establishment and management of connections to customers, suppliers, investors, debtors and competitors. All these connections may produce profits or bear risks. Hence, the isolated inspection of a corporation (or also a sovereign) may be insufficient. Instead, the economic environment of a corporation and its connections should be included in its valuation. Usually, this is done via manual and hardly standardized processes with their associated large efforts. This article presents a new method to analyze business news and to build up a network of corporations based on business news. To this end, we search in news articles from Reuters and Bloomberg for corporation names or synonyms and assume a connection exists between two corporations if the corporations are mentioned together frequently. Based on these connections, we (1) build up a network for the S&P500 companies, (2) identify groups therein to validate the approach manually and (3) test, whether corporations with many connections and a particularly favorable position in the network receive better rating grades compared to corporations with fewer connections and an average network position. The latter is equivalent to the question of whether a corporation's connections are a driver of the firm value. Moreover, we use the business news to measure a corporation's publicity and sentiment, and relate these to the corporation's rating as well. Our empirical results indicate that the network properties, the sentiment and the media attention are contained in respectively affect the rating grade. Hence, the incorporation of news in the firm valuation – as it is done by many financial institutions – is reasonable. The factors mentioned above increase the explanatory power of our regression model significantly. Since many corporations have sufficient news coverage for our approach but are not rated from a rating agency, and hence must be rated with internal models, our approach may support manual processes in financial institutions and reduce efforts and costs.

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