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Financial Fraud Prediction for Russian Non-Public Firms Using Relational Data

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Abstract : The goal of this paper is to develop the fraud risk assessment model basing on both relational and financial data and test the impact of the relationships between Russian non-public companies on the likelihood of financial fraud commitment. Relationships mean various linkages between companies such as parent-subsidiary relationship and person-related relationships. These linkages may provide additional opportunities for committing fraud. Person-related relationships appear when firms share a director, or the director owns another firm. The number of companies belongs to CEO and managed by CEO, the number of subsidiaries was calculated to measure the relationships. Moreover, the dummy variable describing the existence of parent company was also included in model. Control variables such as financial leverage and return on assets were also implemented because they describe the motivating factors of fraud. To check the hypotheses about the influence of the chosen parameters on the likelihood of financial fraud, information about person-related relationships between companies, existence of parent company and subsidiaries, profitability and the level of debt was collected. The resulting sample consists of 160 Russian non-public firms. The sample includes 80 fraudsters and 80 non-fraudsters operating in 2006-2017. The dependent variable is dichotomous, and it takes the value 1 if the firm is engaged in financial crime, otherwise 0. Employing probit model, it was revealed that the number of companies which belong to CEO of the firm or managed by CEO has significant impact on the likelihood of financial fraud. The results obtained indicate that the more companies are affiliated with the CEO, the higher the likelihood that the company will be involved in financial crime. The forecast accuracy of the model is about is 80%. Thus, the model basing on both relational and financial data gives high level of forecast accuracy.

Keywords : financial fraud, fraud prediction, non-public companies, regression analysis, relational data
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