

Estimating likelihood of filing a petition for reorganization and bankruptcy: evidence from Finland

The objective of Finnish Company Reorganization Act (FCRA) is to recover a temporally financially distressed but viable firm, that is able to pay its obligations in the future. In Finnish Bankruptcy Act (FBA) bankruptcy means that the assets of an unviable firm are liquidated and divided by the creditors of the firm. It is argued that firms filing for FCRA include unviable firms (hypothesis 1). If unviable firms are filing for reorganization, reorganization proceedings become inefficient due to increased bureaucracy and costs for stakeholders. It is also argued that firms filing for FBA include viable firms (hypothesis 2). This makes proceedings inefficient, because these firms should be reorganized to continue business. Thus, both FCRA and FBA may suffer from filtering failures that impair their efficiency. The first purpose of this study is to test these hypotheses. The hypotheses are tested by logistic regression analysis applied to estimate likelihood of filing for reorganization and bankruptcy contrasting reorganizing and bankrupt

firms with viable firms. The second purpose is to test two hypotheses set for the estimated probabilities: 1) pre-filing bankruptcy increases the probability to file a reorganization petition (hypothesis 3) and 2) reorganization increases the probability of bankruptcy (hypothesis 4). Hypothesis 3 proposes that a distressed firm is likely to file for reorganization when the bankruptcy petition is active. Hypothesis 4 implies that firms reorganizing under FCRA show an exceptionally high risk of bankruptcy. The probabilities are estimated using data from 47143 non-default (viable) firms, and from 81 and 244 firms filing reorganization or bankruptcy petition, respectively. The results are validated in hold-out samples. Both financial and non-financial variables are used as predictors. Evidence implied that both FCRA and FBA suffer from a filtering failure as argued by hypotheses 1 and 2. At least 50% of the firms filing a petition for reorganization do not share the characteristics of viable firms at all being considered unviable. In addition, at least 5% of bankrupt firms shared characteristics of typical (median) viable firms, indicating viability. In addition, pre-filing bankruptcy remarkably affected the likelihood to reorganize (hypothesis 3). The probability of filing a reorganization petition is more than 50 times higher for a firm that has pre-filed a bankruptcy petition than for a similar firm without such a petition. Finally, reorganization had a significant effect on the likelihood to bankrupt (hypothesis 4). The probability of filing a bankruptcy petition is about six times higher for a reorganizing firm than for a similar firm not reorganizing. The study thus indicates inefficiencies in FCRA and FBA leading to a filtering failure. These kinds of inefficiencies can be removed firstly by improving relevant legislation and secondly by developing efficient statistical

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methods to discriminate between viable and unviable firms. These statistical methods can help stakeholders (consultants, courts, lawyers, entrepreneurs, managers) *ex ante* measure the viability of a firm considering filing a petition for either reorganization or bankruptcy. This study shows that it is possible to develop such efficient methods. ■