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Effectiveness of restructuring strategies: empirical evidence from Croatian firms

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Abstract: During recent years, society has been emphasizing and putting increasingly more importance on the idea of "going green" which means promoting environmentally correct and sustainable practices in the everyday life. Therefore, brands have been translating these concepts into putting out more ecological products and practices to meet the needs of the consumers and promote the importance of a greener lifestyle. These items are being developed as distinctive products to keep track of these value-conscious customers, whose consumption patterns and purchasing decisions are changing. Customers are becoming increasingly aware about environmental issues and want to get a more actively involved in reducing the environmental impact of their actions. Therefore, this paper's objective is to examine the concept of green marketing and its rapid evolution through the years by the in-depth analysis of the Albanian consumers perceptions and behaviors towards these sustainable brands with the primary aim to measure how environmentally aware are they and what affects their choices of sustainability.

Keywords: *restructuring strategies, pre-bankruptcy proceedings, Croatian firms*
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Učinkovitost strategij prestrukturiranja: empirični dokazi hrvaških podjetij

Povzetek: Namen članka je analizirati vpliv ukrepov prestrukturiranja na verjetnost uspeha po predstečajnem postopku. Glavni raziskovalni problem je izbira najučinkovitejših strategij prestrukturiranja z namenom določiti, kateri ukrepi prestrukturiranja prispevajo k verjetnosti uspešnega okrevanja. Uporabljen je model logistične regresije z različnimi specifikacijami, ki potrjujejo robustnost podatkov in rezultatov. Raziskovalni rezultati razkrivajo, da finančne in vodstvene strategije prestrukturiranja povečujejo verjetnost uspeha po začetku predstečajnega postopka. Ti izsledki imajo lahko praktične posledice za menedžerje pri razmisleku o izbiri strategij prestrukturiranja, pa tudi za oblikovalce politik in regulatorje pri razmišljanju o pravnem okviru in drugih ukrepih za reševanje težav podjetij. Prispevek vsebuje empirični preizkusu vpliva kategoriziranih strategij prestrukturiranja na uspeh po predstečajnem postopku hrvaških podjetij.

Ključne besede: *strategije prestrukturiranja, predstečajni postopki, podjetja, Hrvaška*

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Introduction

Corporate restructuring is usually performed in situations of corporate distress and in need of ensuring survival and/or recovery of a firm. Thus, restructuring is done with the purpose of recovering and preserving firm's value (Outecheva, 2007) and restoring competitive advantage. Restructuring can be defined as "a process by which organizations make internal changes in order to efficiently utilize managerial synergy and meet the needs of the market" (Trstenjak and Penda, 2018). It presumes significant changes in corporate strategy, structure or position (Stošić, 2014).

There are numerous internal and external factors that can cause corporate distress. Global recession in 2008 and recent health pandemic were some of the most influential external factors of crisis in many sectors. Corporate distress resolution mechanisms such as bankruptcy proceedings are important legal institute that regulates insolvency and default and are especially needed when such negative external factors appear. According to available data (FINA, 2021), more than 8.900 legal entities filled for pre-bankruptcy in Croatia in the past ten years. Although majority of firms have reached settlement with creditors and emerged from pre-bankruptcy proceedings, many of them reported poor post pre-bankruptcy performance. In order to find out why some firms recovered and other did not, this research analyzes restructuring actions that contribute to successful restructuring and distinguishes among those firms that have emerged from pre-bankruptcy and turned around their performance and those that have unsuccessful performance after the pre-bankruptcy.

Restructuring strategies analyzed in this paper are divided into four generic restructuring strategies as in the case of Lai and Sudarsanam (1997) and include: (1) financial, (2) operational, (3) managerial and (4) asset restructuring.

Most authors use very similar division of corporate restructuring strategies. Trstenjak and Penda (2018) consider three different types of restructuring: strategic, operational and financial restructuring. Similarly, according to Bowman and Singh (1993) corporate restructuring action occurs in three types of restructuring: business portfolio restructuring, financial restructuring and organizational (operational) restructuring. Oxelheim and Wihlborg (2008) consider the following five restructuring options: (a) bankruptcy with liquidation of assets, (b) rehabilitation procedures and informal workouts, (c), management replacement through hostile takeover, shareholder or board action, (d) asset restructuring and (e) liability restructuring involving substantial changes in capital structure.

As said, the main reason for undertaking restructuring actions is usually to recover firms' performance and to restore its competitiveness. The outcome of restructuring can be measured with different indicators. Numerous research use primarily accounting indicators to determine the outcome of restructuring, that is the achievement of a turnaround. Zhou et al. (2016) analyze the probability of post-bankruptcy success and show that accounting variables provide the highest prediction accuracy (of 82,2 %), compared to market variables and ownership structure. Adding market driven indicators did not improve prediction accuracy.

Corporate distress and recovery are vastly examined in the US and some of the most relevant past research include the work of Beaver (1968), Hotchkiss (1995), Datta and Iskander-Datta (1995), Chowdhury and Lang (1996), Dennis and Rodgers (2007), Altman et al. (2009), etc. However, recently, this area is researched in other countries as well. Tikicia et al. (2011) analyzed how global crisis in 2008 affected firms in Malatya. Their results indicated that most used restructuring strategies include operating turnaround strategies, revenue generating strategies and asset reduction. Santana et al. (2017) analyzed which actions should be considered in order to achieve turnaround. They emphasize that cost reduction is

often a solution but downsizing is not always the best option. Instead, a firm should study the reasons for decline and find an alternative to lay-offs. Butar-Butar et al. (2018) examined factors that affect the probability of a turnaround success. The authors examined the influence of the key factors such as firm size, free assets, and assets retrenchment as dimensions that influence the success of the turnaround process. Yulihasri et al. (2018) concluded that financial and operational restructuring together with changes in the relationship towards the employees significantly affect turnaround process. Rico and Puig (2019) examine the impact of retrenchment strategies on the probability of survival after distress. The results show that cost retrenchment and stakeholder support are positively related to the probability of survival and recovery. On the other hand, asset retrenchment has proven to be insignificant determinant of survival and causes a decline in performance and layoffs have proven to be detrimental to the performance of the firms. Kor (2020) concludes that SMEs should increase their operating revenue whilst at the same time they reduce their costs in order to achieve turnaround. Management experience is also of utmost importance for firms' turnaround. Cepec and Grizel (2021) analyzed Slovenian firms and concluded that the risk of liquidation reduces after the proceedings are completed and after ownership transfer has occurred.

The main focus of this paper are Croatian firms that filed for pre-bankruptcy. Empirical research concentrates on the following research question: which restructuring actions contribute to the probability of successful post pre-bankruptcy performance? In order to answer the research question, two hypotheses are tested:

H1: Restructuring actions are positively related to the probability of post pre- bankruptcy success.

H 1.1 Operational restructuring actions are positively related to the probability of post pre-bankruptcy success.

H 1.2 Financial restructuring actions are positively related to the probability of post pre-bankruptcy success.

H 1.3 Managerial restructuring actions are positively related to the probability of post pre-bankruptcy success.

H 1.4 Asset restructuring actions are positively related to the probability of post pre-bankruptcy success.

H2: Restructuring actions and performance indicators ROA and EBITDA are significant for explaining the difference between successful and unsuccessful firms after the pre-bankruptcy.

1. Methodology and data

The purpose of this paper is to examine the relationship between selected restructuring strategies and the probability of post pre-bankruptcy success.

Selected restructuring strategies include four types of restructuring: operational, financial, managerial and asset. Key strategic actions are categorized according to the restructuring strategy and include:

1. operational restructuring actions: cost reduction and sales increase
2. financial restructuring actions: leverage reduction and capital injection
3. managerial restructuring actions: change of management
4. asset restructuring actions: reduction in total assets.

The objective is to identify which specific restructuring action significantly contributes to the probability of post pre-bankruptcy success and to discuss whether there are significant differences between successful and unsuccessful firms after initiating the pre-

bankruptcy and beginning the restructuring process, so called post pre-bankruptcy phase. Post pre-bankruptcy phase begins after the year of pre-bankruptcy initiation.

Restructuring outcome can either be success or lack of success in performance after filing for pre-bankruptcy. In this research, the approach similar to Hambrick and Schecter (1983), Pearce and Robinson (1992) and Rico and Puig (2019) is followed, and post pre-bankruptcy success is measured by using an accounting-based indicator return on assets (ROA). Therefore, post pre-bankruptcy success is achieved if a firm recorded higher average ROA in the 3-year period after initiating the pre-bankruptcy compared to the 3-year period before initiating the pre-bankruptcy (period before and after the pre-bankruptcy was adjusted for some firms depending on data availability). Table 1 explains possible restructuring outcomes which are used in this research.

Table 1. Restructuring outcomes
(Source: Author, 2022)

Outcome	**Definition**
Success	Firm that reported higher average ROA after the year of initiating the pre-bankruptcy.
Lack of success	Firm that worsened its performance level after the year of initiating the pre-bankruptcy proceedings.

The sample consists of 124 Croatian firms that have initiated the pre-bankruptcy. Firms with data limitations were disregarded. There are also entities with limited financial information and disclosure or entities which have been erased from court that were not be included in the sample. Research sample includes large, medium-sized and small Croatian firms from different industries. Final selection of industries included in the sample depended upon data availability. Firm size definition is based on Croatian legislation, namely Accounting Law (Official Gazzete, 2020). Firms of all sizes were included in the sample with the purpose of collecting as large and significant sample as possible. What is more, the results of a wider research have suggested that the size of the firm is not an indicator relevant to discriminate healthy from unhealthy firms. The sample did not include financial institutions which are being reorganized under different regulation.

Data analysis is based on secondary data available from FINA and FININFO databases and consists of a comprehensive set of performance indicators in order to analyze business performance during the restructuring process. Selected indicators were measured for the period of 10 years (2010-2019), based on available year-end financial statements. Table 2 describes independent variables used in the model.

Table 2. Independent variables
(Source: Author, 2022)

Variable	Description
dC	cost reduction as a percentage of cost in comparison to the year of officially initiating pre-bankruptcy proceedings (base year)
dI	amount of increase in revenue in comparison to the year of officially initiating the pre-bankruptcy proceedings (base year).
dnoe	reduction in number of employees in comparison to the year of officially initiating pre-bankruptcy proceedings (base year)
dtl	amount of reduction in the total liabilities in comparison to the year of officially initiating the pre-bankruptcy proceedings (base year)

cm	categorical variable representing change in management and taking value "1" in case of change in management after initiating the pre-bankruptcy proceedings and "0" in case of no change in management
dta	amount of reduction in total asset in comparison to the year of officially initiating the pre-bankruptcy proceedings (base year)
CI	amount of capital injection after officially initiating the pre-bankruptcy proceedings.

Logistic regression model is employed with various specifications added to confirm the robustness of data and results. Equation (1) represents specification for estimating the effects of chosen independent variables on the post pre-bankruptcy success:

$$PBS = \beta_1 \cdot dC + \beta_2 \cdot dnoe + \beta_3 \cdot dtl + \beta_4 \cdot cm + \beta_5 \cdot dta + \beta_6 \cdot CI + \beta_7 \cdot dI + \varepsilon \quad (1)$$

Specifications in the equation (1) were estimated using Maximum Likelihood Estimation method (MLE) in the program R. Empirical results obtained while evaluating the hypotheses are consistent, complementary and robust to different econometric specifications.

2. Results

Post pre-bankruptcy success was identified for 84 firms and lack of post pre-bankruptcy success was detected in the case of 40 firms.

Value of each variable except "change in management" was calculated as an average amount in the period after initiating the pre-bankruptcy. Variable "change in management" takes the value "1" in case of management change after initiating the pre-bankruptcy or "0" in case there were no changes in management after the pre-bankruptcy. If members/president/deputy of the Management Board or the procurator were replaced or members/president/deputy of the Supervisory Board were replaced, it is considered that change in management has occurred. Descriptive statistics for independent variables is provided in the Table 3.

Table 3. Descriptive statistics for independent variables in H1
(Source: Author, 2022)

	dC	CI	dnoe
Min:	-0,723	20000	-0,673077
1st Qu:	-0,182	5130373	-0,225417
Median	0,004	24130279	-0,006883
Mean	146,36	60817741	0,016875
3rd Qu:	0,237	76782776	0,026118
Max:	18022,131	664515545	7,9
	dtl	dta	dI
Min:	-0,494495	-0,530926	-0,7485
1st Qu:	-0,124576	-0,132036	-0,2151
Median	-0,014276	-0,032236	0,0088
Mean	0,004586	0,005145	22,2824
3rd Qu:	0,027833	0,014583	0,3825

Max:	1,386158	4,455672	2589,4199

Logistic regression model specified in the equation (1) was estimated to illustrate the effects of considered independent variables on the post pre-bankruptcy success. As illustrated in the Table 4, change in management and capital injection were found as significant drivers of post pre-bankruptcy success because their probability value (Pr(>|t|)) is smaller than 0,05. Other considered variables obtained no statistical significance at the level of 5 %.

Table 4.1 Drivers of the post pre-bankruptcy success
(Source: Author, 2022)

	Estimate	Std. Error	t value	Pr(>|t|)
dC	2.992e-05	4.509e-05	0.664	0.50825
dI	-3.280e-04	2.698e-04	-1.216	0.22643
dnoe	8.577e-03	7.284e-02	0.118	0.90646
dtl	-3.701e-01	2.944e-01	-1.257	0.21127
cm	2.626e-01	9.293e-02	2.825	0.00555
dta	2.174e-01	1.401e-01	1.551	0.12356
CI	3.404e-09	5.933e-10	5.736	7.72e-08

Estimated coefficient for variable change in management has a positive sign, and thus change in management increases the odds ratio for 0,2626. In other words, if there is a change of management in the firm, then the odds for achieving post pre-bankruptcy success increase. Estimate for variable capital injection is also positive which means that injection of capital increases odds ratio. Injection of 1.000.000,00 HRK of capital increases odds ratio for 0,003404 in average. Operational and asset restructuring strategies are not statistically significant due to the fact that their p-value is higher than 0.05. Therefore, **hypothesis H1 is partially confirmed.**

Hypothesis H2 tested the difference between successful and unsuccessful firms after the pre-bankruptcy and assumed that ROA and EBITDA as additional performance indicators, together with considered restructuring actions, are significant variables for explaining the difference between successful and unsuccessful firms after initiating the pre-bankruptcy.

In estimating the extended empirical model with additional variables (ROA and EBITDA), asset profitability represented by returns on asset (ROA) obtained statistical significance at 10 % level of significance. The effect of asset profitability on the success of firms that have entered pre-bankruptcy is coherent with theoretical assumptions. Capital injection and change in management as restructuring actions obtained significance at 1 % significance level. The results show that if there is a change of management in the firm, then the odds for achieving post pre-bankruptcy success increase. Estimate for the variable capital injection is also positive which means that injection of capital increases odds ratio. Other considered variables obtained no statistically significant effects on the post pre-bankruptcy success of firms.

Consistent estimations of the model with different specifications confirm the robustness of results and bring forward the conclusion that financial and managerial restructuring strategies contribute to the success of firms, and together with ROA these variables are good differentiating indicators between successful and unsuccessful firms.

Table 5. Drivers of post pre-bankruptcy success including ROA and EBITDA
(Source: Author, 2022)

	Estimate	Std. Error	t - value	Pr(>|t|)
ROA	6,81E-01	4,00E-01	1,702	0,09153
EBITDA	-7,77E-10	3,85E-09	-0,202	0,84063
dC	7,11E-05	5,03E-05	1,412	0,16072
dnoe	1,34E-02	7,27E-02	0,185	0,85366
dtl	-3,68E-01	2,94E-01	-1,25	0,21379
cm	2,73E-01	9,26E-02	2,951	0,00384
dta	1,46E-01	1,45E-01	1,009	0,31487
CI	3,38E-09	8,26E-10	4,085	8,18e-05
dI	-3,18E-04	2,78E-04	-1,143	0,25536

Conclusively, following the assumptions in hypothesis H2, ROA, capital injection and managerial change are significant differentiating factors between successful and unsuccessful firms. Therefore, hypothesis H2 is confirmed.

3. Discussion

There are numerous corporate distress and turnaround studies that use accounting-based ratios such as return on assets (ROA), return on investments (ROI) or earnings before interest, taxes, depreciation, and amortization (EBITDA) to analyze firm's performance (Hambrick and Schecter, 1983; Pearce and Robinson, 1992; ECB, 2005; Welc, 2017; Nurhayati et al., 2017; Pervan et al., 2018; Rico and Puig, 2019; Ogachi et al., 2020; Mukhambetov et al., 2020; Rahman 2021). However, Pandit (1996) states that defining corporate performance and turnaround based on profitability alone could be problematic because competitiveness and profitability do not always change at the same pace. In line with Pandit (2000), preferred approach in respect of the above challenges is to use multiple accounting indicators. In fact, more recent research are using multiple accounting-based indicators and employ suitable statistical methods to ensure the quality of results

Empirical results from testing the hypotheses in this paper suggest that capital injection (financial restructuring) and change in management (managerial restructuring) increase the likelihood of the post pre-bankruptcy success. Operational and asset restructuring strategies are not statistically significant, although most of them show positive correlation with the dependent variable. Likewise, ROA, capital injection and managerial changes are significant differentiating factors between successful and unsuccessful firms. The results are In line with previous research such as Rico and Puig (2019) that suggest retrenchment, as part of operational restructuring, is not always the best solution for firms in crisis and that firms should focus more on management and stakeholder relations. Hotchkiss (1995), Bogan et al. (2012) and Naujoks (2012) also confirmed that management change is significant variable of corporate restructuring. Similarly, Yulihasri et al. (2018) and Kor (2020) also emphasize the importance of a good management for successful turnaround.

4. Conclusions

Empirical results reveal that financial and managerial restructuring actions increase the likelihood of success after initiating the pre-bankruptcy. Additionally, it was examined what differentiates firms that have successfully recovered from distress and those that did

not. Recovery success was measured using average value of ROA. After testing the model, results indicated that ROA, capital injection and managerial changes are significant differentiating factors between successful and unsuccessful firms. Research findings can have practical implications for managers when considering which restructuring strategies to employ for improving firms' performance and which factors influence successful recovery after distress. Value of the research is seen in the empirical analysis of the impact of selected groups of restructuring strategies and associated restructuring actions on post pre-bankruptcy success of Croatian firms. Limitation of the research is seen in heterogeneous sample and the use of only accounting indicators. For future research, it could be useful to analyze not only restructuring strategies and their success, but also a wider set of determinants that lead to the distress of firms and then connect them to restructuring strategies.

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