THE IMPACT OF FISCAL POLICIES ON CORPORATE INSOLVENCIES IN THE EUROPEAN COUNTRIES

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Abstract

The institution of bankruptcy is necessary and obligatory in any market economy. Mostly, a company's insolvency is caused by the simultaneous effect of different causes, which act on the various indicators of the company's business. In addition, the practice has shown that a firm does not fail suddenly, but the process of performances decrease extends over a long time. That is why, it is important to analyse the impact of fiscal policies on corporate insolvencies. The effects of fiscal policies on the economic growth have been extensively studied in the literature. To achieve the purpose of the research, we analysed the link between the level of fiscal policies and the corporate insolvencies in the European countries. A correlation-regression analysis was conducted on a sample of 32 countries over the period 2013-2017. From the analysis results, it is evident that the low fiscal freedom leads to a lower level of corporate insolvencies. Our findings suggest that EU governments and policy-makers need to acknowledge that in order to develop the European framework for restructuring and bankruptcy management it requires the right fiscal policies.

Key words: *Corporate insolvencies, Fiscal policies, Correlation-regression analysis, Bankruptcy*

INTRODUCTION

Nowadays, the problem regarding the corporate insolvencies is actual and much discussed theme in market economy. The bankruptcy of a company has negative impact on all subjects in relationship with this entity. Possibility of evaluating and estimating the factors that may influence on corporate insolvencies of a country is an advantage for all external and internal users. Based on the assessment and identification of general environment factors on levels of bankruptcies, EU is able to take necessary corrective action in time in order to develop the European framework for restructuring and bankruptcy management.
Therefore, it is important to outline the problems and the main bankruptcy causes at the level of the European countries.
Fiscal policy is often linked with business activity, in which the high level of fiscal pressure influence negatively on economy of any country. The starting point of this study consists in finding few, inconclusive results in the literature regarding the influence of fiscal pressure or fiscal freedom on the level of corporate insolvencies. Thus, in this paper, we will highlight the biggest obstacles to the development of European Union countries in a transnational analysis perspective. The objective of this research is to analyze the influence of fiscal freedom and the quality of rule of law on corporate insolvencies. A correlation-regression analysis was performed on a sample of 32 countries during 2013-2017. Our findings suggest that the influence of fiscal freedom and lack of quality of rule of law on corporate insolvencies is significant. These two factors need to be taken into account by the EU, which is actively seeking to develop the European framework for bankruptcy restructuring and management.
Literature review
Research regarding bankruptcy prediction of a company is important in the context of

streamlining the restructuring and insolvency procedures [3]. In developed countries, the first bankruptcy estimation studies date back to the early 20th century. In Central and Eastern Europe, due to several factors, especially due to: the geopolitical situation, the economic system introduced, this research topic began to be studied only in the 1990s. Initially, due to the lack of statistical databases in most Central and Eastern European countries models of developed countries were used to estimate the level of bankruptcy risk. Subsequently, were developed more sophisticated studies based on the investigation of general environment factors influence on levels of bankruptcies [10].

From this, Cândido Peres and Mario Antão [9] were able to identify 123 different models of bankruptcy risk prediction. According to their analysis the most researched countries in this area, or those with the greatest number of published models, are the United States (30), the United Kingdom (21) and Spain (16) with approximately 24%, 17% and 13% of the total, respectively.

Thus, bankruptcy analysis in the corporate sector, in the context of developing multivariable analysis models, is an element of high originality.

A driver of bankruptcy is taxation system and especially its complicity. Complicated tax system usually directly affects private sector. Constantly increasing tax burden, unplanned tax inspections, unofficial tax payments and extremely high fines make it very difficult to conduct business [14, 11, 12]. The results of the surveys showed by Ahlin [2] note that tax regulations is indeed a serious obstacle in doing business. Taxes have strong impact on business conditions by influencing incentives and behavior of economic actors.

MATERIALS AND METHODS

Variables and data sources
The objective of our research consists in the verification of the correlation between the corporate insolvencies, the level of fiscal freedom and the quality of rule of law.

Corporate insolvencies were selected from the study made by Creditreform (Creditreform study: Corporate insolvencies 4 in Europe, 2017/18) [4]. Should be mentioned that insolvencies are usually only a fraction of the total liquidated business. Moreover, in many countries, small firms with financial difficulties are often closed without any ordinary insolvency procedure. At the same time, insolvency law are vastly different among countries, thus in the given paper, terms 'bankruptcy' and 'insolvency' are considered synonymous, and they refer to the procedure of general distrain of legal persons property, excluding private bankruptcies.

Fiscal pressure or fiscal burden is a measure of the tax burden imposed by government. It is a difficult measure to define, because the tax and social security systems varies from one country to another. A measure of fiscal burden is *fiscal freedom*, which includes direct taxes, in terms of the top marginal tax rates on individual and corporate incomes, and overall taxes, including all forms of direct and indirect taxation at all levels of government, as a percentage of GDP. It is composed of three quantitative factors (j), namely: a) the top marginal tax rate on individual income; b) the top marginal tax rate on corporate income; c) the total tax burden as percentage of GDP [8]. The fiscal freedom index ranges from 0 to 100, where 100 is the maximum degree of fiscal freedom and 0 represents the least fiscal freedom. Thus, the higher the fiscal burden, the lower the fiscal freedom. This index was used by different authors in their works (Torgler & Schneider; Achim & Borlea) [16, 1] in order to represent the level of fiscal burden of a country.

The rule of law Index provided by World Bank data, reflects the extent to which agents trust and respect the rules of society, and in particular, the quality of contract execution, property rights, police, and courts, as well as the likelihood of murder and violence [18, 17]. World Bank calculates the country's score on the aggregate indicator, in units of a standard normal distribution from -2.5 (weak) to 2.5 (strong) in governance performance.

All the indicators and their data sources that are to be used in our model are briefly summarized in Table 1.

Table 1. Variables and data sources

Variable Name	Description	Source
Corporate insolvencies (CP)	Corporate insolvencies represent the number of total liquidated business of a country.	Creditreform study: Corporate insolvencies 4 in Europe, 2017/18
Fiscal burden or Fiscal freedom variable (FIF)	It ranges from 0 to 100, where 100 is the maximum degree of fiscal freedom and 0 represents the least fiscal freedom. Thus, the higher the fiscal burden, the lower the fiscal freedom.	The Heritage Foundation
Rule of law Index (RL)	It is supposed to reflect the perceptions about private and intellectual property rights protection, quality of contract enforcement and likelihood of property confiscation. It ranges from -2.5 (weak) to 2.5 (strong) in governance performance	World Bank, The Worldwide Governance Indicators

Source: elaborated by authors.

The following research hypotheses were proposed:
• ***H1*** *= the rise in fiscal freedom is associated with a greater number of bankruptcies;*
• ***H2*** *= a higher level of quality of rule of law diminishes the number of corporate insolvencies.*

In order to achieve the proposed objective and to test these two hypotheses, the following methods were used: data collecting, data processing and empirical analysis, this being materialized through a panel analysis.

The data sample consists of 32 countries: 17 countries of Western Europe and 15 of Central and Eastern Europe, over the period 2013-2017.

In order to point the influence of the considered variables on corporate insolvencies, the next baseline equation model was proposed:

$$CP_{i,t} = \alpha_i + \beta_1 FIF_{i,t} + \beta_2 RL_{i,t} + \varepsilon_{i,t} \quad (1)$$
$$i=1,\ldots, N; \quad t=1,\ldots, T$$

where:
- $CP_{i,t}$ reflects the number of corporate insolvencies of a country i;
- $FIF_{i,t}$ is the fiscal freedom variable;
- $RL_{i,t}$ denotes the extent to which agents trust and respect the rules of society (a negative sign is expected);
- ε_{it} reveals the error term.

Table 2 reports summary statistics of the unbalanced panel data.
The value of Jarque Bera's test highlights that fiscal freedom and rule of law indicators are normally distributed, but the values of corporate insolvencies are not distributed normally, so errors can vary. That is why it is important to check the regression for the heterogeneity of errors.

Table 2. Summary statistics
Sample: 2013 2017

	CORP_INSOLV	FISCAL FREEDOM	LAW
Mean	8985.210	67.98662	1.025096
Median	4544.000	66.60000	1.080000
Maximum	61429.00	94.00000	2.100000
Minimum	108.0000	37.20000	-0.810000
Std. Deviation	13191.65	15.27942	0.799534
Skewness	2.612117	-0.132952	-0.454819
Kurtosis	9.721247	1.874061	2.162522
Jarque-Bera	474.0601	8.755646	10.00097
Probability	0.000000	0.012553	0.006735
Observations	157	157	157

Source: Author's own calculations.

The value of the Skewness indicator for fiscal freedom and rule of law indicators highlights a negative asymmetry in their values (Skewness <0) and a positive asymmetry for bank failures (Skewness> 0). The Kurtosis indicator is greater than 3 only for the corporate insolvencies, which means that the values of this indicator follow a leptokurtic distribution, most of the values being concentrated near the average, which implies higher probabilities for extreme values than when a normal distribution is recorded.

Methods
The dataset of our research involves both cross-sectional and time-series variations that is why panel data analysis is applicable. For econometric models with panel data, empirical analysis begins with a choice between models with a general effect and specific effects. As a null hypothesis in the F-test, was formulated the lack of panel structure for the data, as well as, the possibility to obtain according to the pooled model using the OLS the consistent and effective estimators. Then, based on F-statistics, the coefficients of the corresponding models determination were compared.
Panel data is usually examined with one of basic models - random effects (RE) or fixed

effects (FE). Further, to determine the feasibility of choosing between models with random (RE) and fixed (FE) effects, the Hausman test was conducted. This test confirmed the validity of choosing the model with fixed effects, because the p-value for the model resulted in significant level, lower than critical value of 0,05. Thus, the null-hypothesis is rejected because random effects do not give consistent and effective estimates, is inconsistent [7]. For this reason fixed effects is applicable.

An advantage of FE model consists in possibility of unobserved characteristics elimination if they are time-invariant, so it permits estimating the net effect of the explanatory variables on the outcome [15]. Accordingly, FE method particularly fits for estimating corporate insolvencies that depends on time invariant heterogeneity differences among countries.

Another reason to use FE method for our analysis is due to the fact that FE estimator could resolve endogeneity problem [6].

Elimination of both the endogeneity problem and the source of omitted variable bias in the FE model can be performed using deviations-from-means estimator, or so-called "within estimator".

It follows that FE regression holds constant average effects of each data category, i.e. country in the case of this work. Consequently, coefficients in FE model tell how much each observation differs from the average; namely, FE regression reports the average within-group effect. Additionally, FE regressions are particularly important to use when data is categorized, because it can be tricky to control for all characteristics of the categories [13]. All the procedures mentioned above we accomplished with the help of EViews software.

RESULTS AND DISCUSSIONS

Results of the hypothesized assumptions

The results of testing both hypothesis are shown in Table 3. The results are based on the panel regression equation including the dependent variable, CP and two explanatory variable, FIF and RL at the time.

In table 3 performed with the help of EViews software, we find the estimated coefficients and probabilities associated with them, the standard errors, and the value of t-Statistic test.

Table 3. Testing regression model parameters on panel data

Dependent Variable: CORP_INSOLVENCIES

Method: Panel EGLS (Cross-section weights)

Date: 03/23/19   Time: 18:57

Sample: 2013 2017

Periods included: 5

Cross-sections included: 32

Total panel (unbalanced) observations: 157

Linear estimation after one-step weighting matrix

White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FISCAL FREEDOM	16.04338	5.419689	2.960203	0.0037
LAW	-826.9633	216.6947	-3.816260	0.0002
C	8742.191	498.3385	17.54268	0.0000

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.991206	Mean dependent var	21157.70
Adjusted R-squared	0.988847	S.D. dependent var	21081.61
S.E. of regression	2506.112	Sum squared resid	7.73E+08
F-statistic	420.1294	Durbin-Watson stat	1.257093
Prob(F-statistic)	0.000000		

Source: Author's own calculations.

Since the values of the coefficients are significantly different from zero, it can be deduced that there is interdependence between the dependent variable, the corporate insolvencies and the independent variables, as follows:

-A higher level of fiscal freedom (together with low fiscal pressure) leads to a higher level of corporate insolvencies. Increasing with a unit the level of fiscal freedom will cause a growth in the average of 16 units of the corporate insolvencies indicator.

-Increasing with a unit the level of rule of law will cause a reduction in the average of 827 units of the bankruptcy indicator.

Adjusted R-squared (0.989) indicates a strong intensity of the relationship between the dependent variable and the two independent variables. Thus, 98.9% of the change in the number of bankruptcies is determined by the variation of the independent variables, the difference being caused by the variation of the residual variable and the errors (e) respectively.

The value of the Adjusted R-squared is close to that of the R-squared coefficient, which means that the developed regression model can be extended to all the analyzed countries [5]. The value of the F test is statistically significant (420.1) and the probability that the identified relationship between the variables studied in the model is random is null. The value of the Durbin-Watson test (1.26) indicates that the regression model from the point of view of the lack of autocorrelation of the residual variable is valid.

This result fully conforms to the hypothesis H1 and H2. Thus, a higher level of fiscal freedom (together with low fiscal pressure) leads to a higher level of corporate insolvencies. It may be caused by the fact that year by year the efficiency of institutions is lower and the government institutions are weak, and do not succeed in controlling. As a result, higher fiscal freedom (meaning lower fiscal pressure) leads to a greater number of bankruptcies under weak quality institutions.

CONCLUSIONS

The purpose of this article is to observe the correlation between the number of bankruptcies, the level of fiscal freedom and the quality of rule of law in the European Union countries. To achieve the goal, firstly we defined what the causes that may influence on bankruptcy phenomenon are. Secondly, we have set two hypotheses, based on which a model has been created that combines the influence of fiscal freedom and rule of law on the number of bankruptcies. A panel analysis was used on a large sample of 32 countries over the period 2013-2017.

Due to the fact that coefficients values in the panel regression model are significantly different from zero, it has been demonstrated that for the period 2013-2017, at the level of the 32 EU countries exists a strong interdependence between the corporate insolvencies recorded in each country and independent variables used in the model, namely: Fiscal Freedom and Rule of Law. Interdependence is confirmed by the value of the Adjusted R-squared coefficient, 98.9% of the modifications in the number of bankruptcies are determined by the variation of the independent variables.

Based on the findings of this paper, the lesson for EU countries can be crucial. It was found that a higher level of fiscal freedom (together with low fiscal pressure) leads to a higher level of corporate insolvencies. It may be caused by the fact that year by year the efficiency of institutions is lower and the government institutions are weak, and do not succeed in controlling. As a result, higher fiscal freedom (meaning lower fiscal pressure) leads to a greater number of bankruptcies under weak quality institutions. These factors need to be taken into account by the EU, which is actively seeking to develop the European framework for restructuring and bankruptcy management.

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