TOWARDS THE EUROPEAN INSOLVENCY LAW HARMONISATION IN THE CONTEXT OF CLUSTER ANALYSIS

Jana Majerova – Tomas Kliestik

Abstract

The issue of bankruptcy law is becoming an increasingly discussed not only by lawyers but also by economists in European Union context. The reason is the proof of the relationship between the quality of bankruptcy law and the dynamics of the economy. This is why the activities leading to harmonization of bankruptcy law accelerated in the context of EU. Given that the bankruptcy laws of individual member states are more divergent than convergent, it is essential to accept existing peculiarities in the process of an optimal European bankruptcy law creation. We consider that it is appropriate to base the creation of the single European bankruptcy law solution on the particularities and experiences of those countries that have the highest bankruptcy law quality among them similar. Detection of these countries can be based on the cluster analysis and subsequent selection analysis. The aim of the paper is to present the results of these analyzes which result to the detection of bankruptcy laws with highest quality which particularities should be taken into account within the realized legislative activities in order to create an effective single EU bankruptcy law.

Key words: bankruptcy, cluster analysis, European Union bankruptcy law

JEL Code: K20, K33, C38

Introduction

According to Succurro (2012), there is a relationship between the bankruptcy systems and the investment share of GDP across countries, i.e. the investment share of GDP is higher in those countries characterized by highly efficient bankruptcy system. Also the investment share of gross domestic product is positively associated with the degree of sophistication of the bankruptcy law. At the same time, Gutierrez et al. (2012) analysed the effect that the bankruptcy law has on firm's performance based on its financial situation focusing on Germany, Spain, United States, France and United Kingdom. They found out that under

creditor-oriented systems, there is a decrease in the value of both financially distressed firms and those filing for bankruptcy. Such information is very important in the scope of EU single market optimal existence because only by continuously increasing bankruptcy law efficiency and quality it is possible to fulfil goals that have been set. (Janoskova, Kral, 2013).

Schillig (2014) argues that there is also important to analyse reasons of such country bankruptcy law efficiency and assumes that the main reason is not only creditor or debtor orientation, but mainly character of bankruptcy law – i.e. if it is state imposed or market based.

Other authors (Dawson, 2015, Stander, 2015) developed this theory and highlighted the need of detecting individual factors influencing bankruptcy law efficiency because according to them, it is insufficient to identify only level of state regulation and market orientation when trying to find real source of bankruptcy law efficiency. This opinion is also the basic prerequisite for our analysis of possible harmonised EU bankruptcy law etalons.

1   Literature review

According to Mucciarelli (2013), there is a difficulty of EU bankruptcy law reform because of two alternative options to regulate cross-border bankruptcies. The first one allows to companies to select the bankruptcy law they prefer. This model produces negative externalities and raises legitimacy concerns because although it allows distressed firms to select the most efficient bankruptcy law, it would also displace the power of member states to protect local constituencies. The opposite solution is full harmonisation of bankruptcy law at EU level which is advantageous in scope of internalising all externalities produced by traditional cross-border bankruptcies. But on the other hand, if the EU legislative process, which is still based on negotiations between states, will be based on harmonisation, it will indirectly modify national social security strategies and equilibria. (Misankova, Chlebikova, 2013).

Nowadays, new EU bankruptcy rules entered into force on 25 June 2015 and apply from 26 June 2017. The revised bankruptcy regulation introduces new rules on secondary proceedings and innovative provisions on bankruptcy proceedings for groups of companies. But the legislature missed the opportunity to clarify the concept of so called centre of main interest (COMI), and it is still up the courts to establish international jurisdiction on the basis of rather vague criteria. Because of this, there is numerous group of sceptics in bankruptcy law theory and practice.

For example, according to Weiss (2015), it will soon be time to give life to new harmonised rules and ensure that cross-border insolvencies will be conducted more effectively than it seems to be in scope of such revised bankruptcy legislation. Possible way how to reach optimal efficiency of harmonised EU bankruptcy law is to focus on national convergences and divergences. Modern origins of this theory were established by Kim and Smith (1992), Kaiser (1996) and Spooner (1996). Current discussions can be identified as consequence of market globalization and need of corporate bankruptcy solving on the supranational base. So, there are analysed not only bankruptcy legal frameworks across countries with significantly different approach (Succurro, 2012) but also across countries with assumption of similarity (Binar, 2009).

2   Cluster analysis

Clustering techniques have been applied to a wide variety of research problems. Hartigan (1973) provides an excellent summary of the many published studies reporting the results of cluster analyses. His work established new prospective of cluster analysis scientific usage not only in typical quantitative scientific discipline but also in qualitative ones. Cluster analysis is an exploratory data analysis tool which aims at sorting different objects (EU member states bankruptcy law frameworks) into groups in a way that the degree of association between two objects is maximal if they belong to the same group and minimal otherwise. When applying this analysis, it is quite challenging not only to draw up appropriately a basic set of used object characteristics but also to interpret obtained results adequately because cluster analysis simply discovers structures in data without explaining why they exist. For amalgamation, we used Ward's method because it uses an analysis of variance approach to evaluate the distances between clusters.

Each EU member state is described by these thirteen variables:

- recovery rate (cents on the US dollar),
- time (years),
- cost (% of estate),
- outcome (0 as piecemeal sale and 1 as going concern),
- strength of bankruptcy framework index (0-16),
- commencement of proceedings index (0-3),
- management of debtor's assets index (0-6),

- reorganization proceedings index (0-3),

- creditor participation index (0-4),

- GDP per capita (US dollar),

- GDP 2014 vs. 2013 (%),

- unemployment (%),

- quality of business environment (score).

These variables are internally divided into two groups which in general describe bankruptcy law (recovery rate, time, cost, outcome, strength of bankruptcy framework index, commencement of proceedings index, management of debtor's assets index, reorganization proceedings index and creditor participation index) and which describe dynamics of economy (GDP per capita, GDP 2014 vs. 2013, unemployment, quality of business environment).
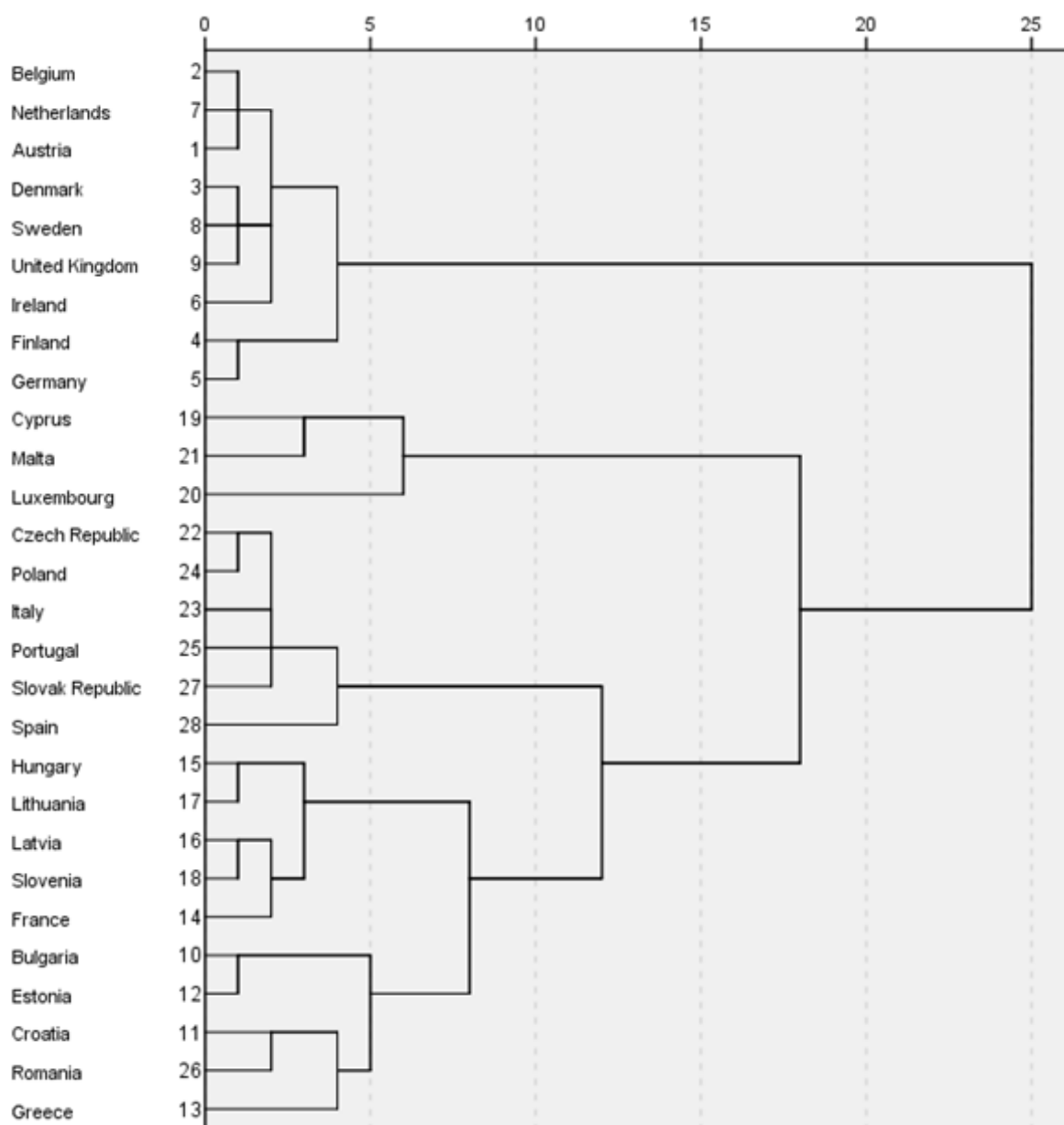
Figure 1 shows the process of clusters creation where it is visible the speed of clustering among EU member states.

Fig. 1: Process of clusters creation
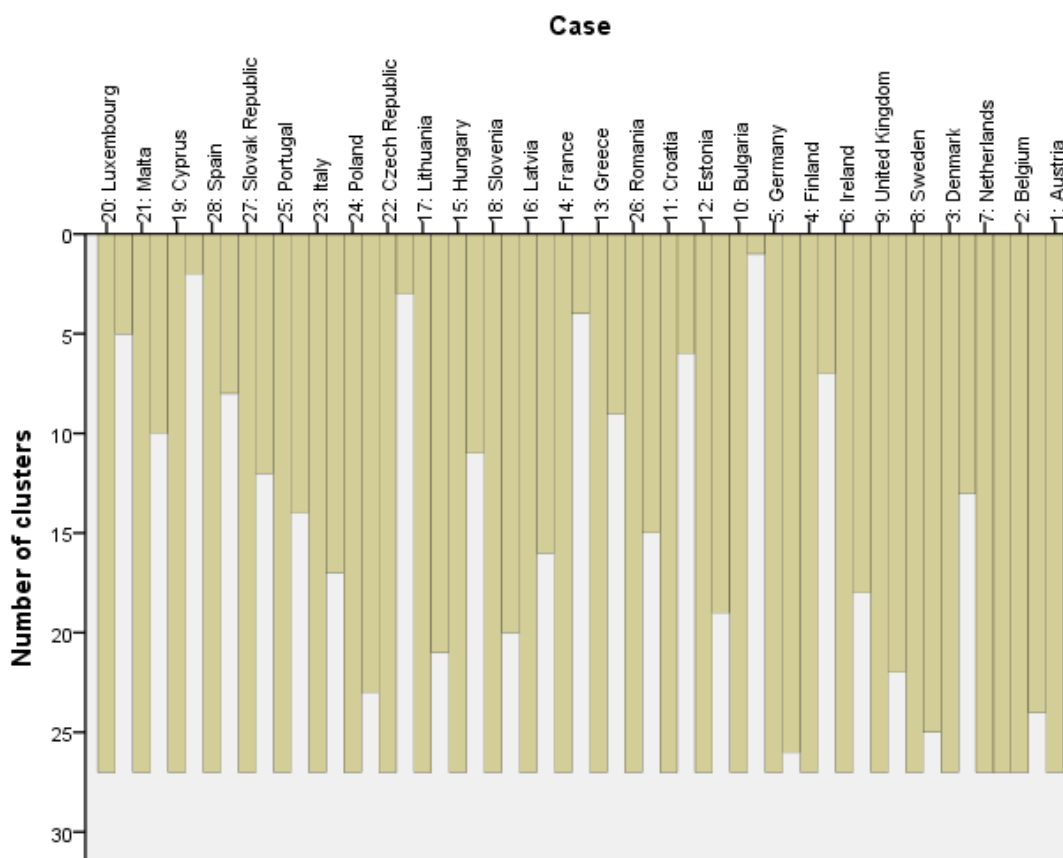
Source: own processing using IBM SPSS software.

Fig. 2: Dendrogram using Ward linkage

Source: own processing using IBM SPSS software.

As it is visible in figure 2, we found out these five clusters by analyzing EU member states in scope of mentioned variables.

- **I. cluster:** Belgium, Netherlands, Austria, Denmark, Sweden, United Kingdom, Ireland, Finland, Germany,

- **II. cluster:** Bulgaria, Estonia, Croatia, Romania, Greece,

- **III. cluster:** Cyprus, Malta, Luxembourg,

- **IV. cluster:** Czech Republic, Poland, Italy, Portugal, Slovak Republic, Spain,

- **V. cluster:** Hungary, Lithuania, Latvia, Slovenia, France.

    In table 1, there are shown mean values of created clusters in comparison to overall.

Tab. 1: Mean values of clusters I. to V. in comparison to overall

Variable	Overall mean	Cluster I. mean	Cluster II. mean	Cluster III. mean	Cluster IV. mean	Cluster V. mean
RecoveryRate	59,83929	*85,8889*	26,3500	51,0667	58,6429	46,6800
Time	2,0	*1,0667*	3,2250	2,1667	2,5286	*1,8600*
Cost	10,14286	*6,278*	10,375	13,000	14,643	*8,900*
Outcome	0,571429	*1,000*	0,000	0,333	*0,857*	0,000
SIF_Index	11,57143	*12,056*	*12,750*	6,833	*13,214*	10,300
CP_Index	2,75	*2,833*	2,625	2,333	*3,000*	2,600
MDA_Index	5,053571	*5,667*	4,750	2,333	*5,500*	*5,200*
RP_Index	1,767857	1,444	*2,625*	0,167	*2,714*	1,300
CredP_Index	2,0	*2,111*	*2,750*	2,000	2,000	1,200
GDP per capita	34520,14	*52083,878*	15740,650	*56771,700*	21440,471	22889,620
GDP2014_2013	2,04	*2,383*	0,843	1,463	1,694	*3,226*
Unemployment	10,46429	*7,467*	15,650	*9,300*	12,300	*9,840*
QualityBusinessEnviro	7,215	*7,8778*	6,4700	*7,5100*	6,9557	6,8040

Source: own processing using IBM SPSS software.

According to the content of table 1, cluster I. is characterized by the majority of variables values over detected average. Clusters IV. and V. contain equally 5 variables from 13 variables in total over detected average. Clusters II. and III. contain equally 3 variables over detected average. So, when considering the EU bankruptcy law harmonisation, it is vital to chose main bankruptcy law and to adapt it to specifics of detected clusters. This is important because EU member states are historically proud on their legal sovereignty and each intervention is perceived quite sensitively and with initial refusal. A possible way how to solve this critical point on the way to EU bankruptcy law harmonization is to choose the most effective bankruptcy law across member states and to use it as an axis. When detecting the most effective bankruptcy law, we focused on cluster I. where values of variables are mainly over detected average. In this cluster, German bankruptcy law is the most effective (strength of insolvency framework is 15) and German economics is the most dynamic one (2,99%) if we abstract from countries with Anglo-American legal framework which is not typical for Europe. Main characteristics of German bankruptcy law are briefly described in table 2.

Tab. 2: Main characteristics of bankruptcy law in Germany

Bankruptcy law topics	German characteristics of bankruptcy law topics
procedures available to a debtor when commencing insolvency proceedings	debtor may file for both liquidation and reorganization
procedures available to a creditor to file for insolvency of the debtor	creditor may file for both liquidation and reorganization
basis for commencement of the insolvency proceedings allowed under the insolvency framework	both options above are available, but only one of them needs to be complied with
continuation of contracts supplying essential goods and services to the debtor	yes
rejection by the debtor of overly burdensome contracts	yes
avoidance of preferential transactions	yes
avoidance of undervalued transactions	yes
possibility of the debtor obtaining credit after commencement of insolvency proceedings	yes
priority to post-commencement credit	yes over ordinary unsecured creditors but not over secured creditors
creditors who vote on the proposed reorganization plan	only creditors whose rights are affected by the proposed plan
requirement that dissenting creditors in reorganization receive at least as much as what they would obtain in a liquidation	yes
division of creditors into classes for the purposes of voting on the reorganization plan, separate voting of each class and equal treatment to creditors in the same class	yes
approval by the creditors for selection or appointment of the insolvency representative	yes
approval by the creditors for sale of substantial assets of the debtor	yes
the right of creditor to request information from the insolvency representative	no
the right of creditor to object to decisions accepting or rejecting creditors' claims	yes

Source: own processing according to http://www.doingbusiness.org/.

Conclusion

Bankruptcy law is one of the main topics when considering on EU law harmonisation. The reason is its importance for the single market efficient functioning. In presented paper, we focused on cluster analysis of EU member states bankruptcy law with intention to detect the most convenient bankruptcy law which could be an appropriate axis of future harmonised EU bankruptcy law. But it is also important to detect common bankruptcy law characteristics of EU member states grouped in detected clusters. It is because member states are proud on their legal sovereignty and radical intervention could be more counterproductive than beneficial. So, these clusters characteristics should be incorporated into future harmonised EU bankruptcy law based on German framework.

Acknowledgment

References

Binar, J. (2009). Comparison of Czech and Slovak Legal Emendation of Bankruptcy Law from the Perspective of Insolvency Act. In: Jedlicka, P. *Economic Development and Management of the Region.* Paper presented at International Scientific Conference on Hradec Economical Days 2009, University Hradec Kralove, Faculty of Informatics & Management, Hradec Kralove, Czech Republic, pp.41-43. Hradec Kralove: Gaudeamus.

Dawson, A. (2015). The Problem of Local Methods in Cross-Border Insolvencies. Berkeley Business Law Journal, 12(1), 45-80.

Gutierrez, C. L., Olmo, B. T., & Azofra, S. S. (2012). Firms' performance under different bankruptcy systems: A Europe-USA empirical analysis. *Accounting and Finance*, 52(3), 849-872.

Hartigan, J.A. (1973). Clustering. *Annual review of biophysics and bioengineering,* 2, 81-101.

Janoskova, K., Kral, P. (2013). Regulatory Impact Assessment - the basic institutional framework of assessment of government regulations in the Slovak Republic. *Ekonomicko-manazerske spektrum*, 7(1), pp. 60-64.

Kaiser, K. M. J. (1996). European bankruptcy laws: Implications for corporations facing financial distress. *Financial Management,* 25(3), 67-85.

Kim, C., Smith J. C. (1992). International Insolvencies – an English-American Comparison of Proposed Solutions. Goerge Washington Journal of International Law and Economics, 26(1), 1-32.

Misankova, M., Chlebikova, D. (2013). Possibilities for financing innovation activities in Slovak Republic. In: Culik, M. *Financial Management of Firms and Financial Institutions.* Paper presented at International Scientific Conference on Financial Management of Firms and Financial Institutions 2013, VSB TU Ostrava, Fac Econ, Dept Finance, Ostrava, Czech Republic, pp.562-570. Ostrava: VSB-TECH UNIV OSTRAVA, FEECS, DEPT ELECTR POWER ENG.

Mucciarelli, F. M. (2013). Not Just Efficiency: Insolvency Law in the EU and Its Political Dimension. *European Business Organization Law Review*, 14(2), 175-200.

Schillig, M. (2014). Corporate Insolvency Law in the Twenty-First Century: State Imposed or Market Based? *Journal of Corporate Law Studies,* 14(1), 1-38.

Spooner, J. (1996). Long Overdue: What The Belated Reform of Irish Personal Insolvency Law Tells Us About Comparative Consumer Bankruptcy. *American Bankruptcy Law Journal*, 86(2), 243-304.

Stander, A. L. (2015). The Application of the Different Theories for Evaluating the Legal Position of Preferential Creditors in a Cross-Border Insolvency Procedure. 2015(1), 105-124.

Succurro, M. (2012). Bankruptcy Systems and Economic Performance Across Countries: Some Empirical Evidence. *European Journal of Law and Economics*, 33(1), 101-126.

The World Bank (2015). Strength of legal right index. [online] In: The World Bank web portal. [cited 19.4.2016] Available on: http://data.worldbank.org/indicator/IC.LGL.CRED.XQ

Weiss, M. (2015). Bridge over Troubled Water: The Revised Insolvency Regulation. *International Insolvency Review*, 24(3), 192-213.

Contact

JUDr. Ing. Jana Majerova, PhD.

University of Zilina, Faculty of Operation and Economics of Transport and Communications

Univerzitna 1, 010 26 Zilina, Slovak republic

jana.majerova@fpedas.uniza.sk

prof. Ing. Tomas Kliestik, PhD.

University of Zilina, Faculty of Operation and Economics of Transport and Communications

Univerzitna 1, 010 26 Zilina, Slovak republic

tomas.kliestik@fpedas.uniza.sk