

DEVELOPMENT OF A NUMBER OF INSOLVENCY PROPOSALS IN VARIOUS SECTORS

Dagmar Čámská

Abstract

This paper is focused on the number of corporate insolvency proposals in the Czech Republic. The analysed time period starts at year 2008 when the new Insolvency Act came to be effective. The official data are published regularly but they show only the total number of insolvency proposals, regional coverage and proposal for solving insolvency. The belonging to specific industry branch is not mentioned by the official statistic data. The aim of the paper is to show which industry sectors have been more affected by insolvency proposals from 2008-2015. The analysis is done annually and therefore it is possible to demonstrate the time development and differences among industry branches. The gained results are compared with the development of the gross domestic product, the main indicator of the whole economy. It enables to prove if some industries are more sensitive to macroeconomic shifts than others. More sensitive industries are called cyclical because they react as the economic cycle. On the other hand there can be also detected differences among cyclical industry sectors in the quickness of the number of insolvency proposals. The used methods are based on descriptive statistics and time series.

Key words: insolvency proposals, different industry branches, Czech Republic

JEL Code: G33

Introduction

The new Insolvency Act (no. 182/2006 Coll.) came to be effective in January 2008 in the Czech Republic. The number of insolvency proposals significantly increased (Svobodová, 2013) after 2008. The main reason is not this change of Czech legal framework but the overall economic situation connected with consequences of the last global economic crisis. The crisis had impact on the enterprises as well as on individual entrepreneurs and non-entrepreneurial physical persons. The wave of insolvency proposals in the time period 2008-2014 is especially tied up with bankruptcies of physical persons due to the harmful economic situation

(Randáková et al, 2014) but also with bankruptcies of businesses. There are a lot of discussions about the new Insolvency Act from the legal (Richter, 2011) as well as economic perspective (Smrčka, 2012 or Kislingerová, 2012). It is difficult to evaluate the effectiveness of the aforementioned act because an availability of statistics is limited as it will be mentioned further.

The aim of this paper is to close the information gap about business entities which entered insolvency during the time period 2008-2015. The paper is focused on one feature of the analysed business entities and it is a field of their economic activity. The contributed analysis should show if there are significant differences among different industry branches/sectors. It is generally supposed that some industry branches are more sensitive to macroeconomic shifts than others and therefore business entities belonging to these specific branches should have had higher rate of default than others.

1 Literature review

Decision making process or evaluation should be generally based on the enough relevant data. Insolvency proposal are described by researchers, state authorities as well as entrepreneurial entities in the Czech Republic. Development of absolute numbers of insolvency proposals was examined by Svobodová (2013) or even forecasted by Kislingerová and Arltová (2013) and many others tried to find out any dependencies between the number of insolvency proposals and macroeconomic variables. State authorities (Expert group 22) regularly publish data containing only the number of insolvency proposals, their kinds and regions to which they belong. It seems that only limited data are available. There are not pieces of information about industry branches, regions detailed to districts, size of enterprises or revenues from insolvency proceedings (Kislingerová, 2012). Some lack of data for the year 2012 was covered by Čámská (2013) who focused on industry branches and enterprise sizes. Kislingerová et al. (2013) published even some studies computing the revenues from the insolvency proceedings for different groups of creditors. The results gained by Kislingerová et al. (2013) are statistically significant and it was finally proved that recovery rate for creditors is very low and sometimes even zero in the Czech Republic. There are also researches focused on the personal bankruptcies analysing differences among regions, reasons for insolvency and recovery rate for creditors (Paseková, 2013 or Randáková et al., 2014).

This paper emphasizes only corporate bankruptcies and following insolvency proceedings. The corporate bankruptcies are also analysed by entrepreneurial entities as

Creditreform in the Czech Republic. Creditreform (n.d.) publishes annually the number of bankrupt business entities and it divides them according to main economic activity.

2 Research

Creditreform divides insolvency business entities according to their main field of economic activity. Unfortunately this division follows popular approach and it is more oriented to people than to a possibility to use the data further. It does not respect division of economic activities according to the classification of CZ-NACE which was created and implemented due to harmonization with EU framework. The classification is also not unified for each year and it can change according to occurrence of higher default rate in some specific industry branch that year. It is almost impossible to aggregate and disaggregate these numbers to specific economic activities respecting the classification of CZ-NACE because some main sectors are more divided by Creditreform and some do not occur in their classification at all. The paper's research task or question arises from this inconsistency. The research task is described in the next part.

2.1 Research task

The main task of this paper is to describe the field of economic activity of the bankrupt business entities in the Czech Republic during the time period 2008-2015. The classification of economic activities should respect the classification of CZ-NACE which enables further analyses based on the comparison with data provided by Czech Statistical Office or Ministry of Industry and Trade Czech Republic. The further analyses will not be part of this paper due to its page range. The classification of entities will be processed annually and the approach will be unified. The unified approach enables the annual comparison and displaying development during 8 years.

It is generally supposed that some industries have been more negatively affected by the last global economic crisis. These negative consequences could occur with different intensity and quickness. It means that some industries could be affected immediately and not repeatedly in the coming years and some have had a continuous duration of the occurring insolvency proceedings.

2.2 Data sample

Difficulties in collecting data usually occur with a topic insolvency proposals or proceedings. State authorities publish only aggregated data mentioned above. The Czech insolvency register provides the detailed information about individual proceedings but it is impossible to aggregate it. Detailed information about imperfectness of the insolvency register could be found in Smrčka and Schönfeld (2014). There is not available a list of all insolvency proposals. Čámská (2013) solved this discrepancy of aggregated and individual data using the list of employers not paying wages and salaries published by the Ministry of Labour and Social Affairs(n.d.). The aforementioned list has a serious disadvantage because it is updated almost on the daily base and employers are listed maximal to 6 or 8 months. The gained database would contain a lot of duplicities and it would be difficult to create it because of daily updates for such a long time period. Even probably the oldest data are not publicly available anymore.

This paper uses a different approach based on a corporate database provided by Bisnode which is entrepreneurial entity focused on the providing data about business entities, their creditworthiness etc. The data about business entities in the form of legal persons entering the insolvency proceedings in 2008-2015 were extracted from the database.

2.3 Data processing

The final data sample contains 9 095 business entities. There were 149 duplicities at the beginning before clearing. The final number is lower than the number of all insolvency proposals although we do not have a specific figure for the number of insolvency proposals connected with business entities. The proposals till 2nd quarter 2014 (Expert group 22, n.d.) were divided according to their kinds (without proposals, bankruptcy, debt relief and reorganizations). Bankruptcy and reorganizations are fully connected with business entities but also a part of proposals without a specific solving propos can be connected with businesses. Business entities can be in the form of natural as well as legal person and this paper uses only the approach of legal persons because these entities are usually larger, more significant in the case of creation GDP and in the comparison with natural persons they most have limited liability. Last very important reason is that many insolvency proposals are not transfer into the insolvency proceedings at the end because a debtor does not have any property which could be sold and used for paying the creditors. Kislingerová et al. (2013) talks even about a figure 50% it means that 50% of the corporate debtors do not have any

valuable property at the beginning of the insolvency proposal and therefore the insolvency proceeding will not start and they disappear from our statistics.

3 Results

Main results are displayed in Table 1 and 2 which present dividing insolvency proposals of legal persons according to their main field of economic activity. The figures are displayed as absolute numbers of insolvency proposals in the specific groups respecting CZ-NACE classification.

Tab. 1: Insolvency proposals according to economic activity in the period 2008-2011

Sector		2008	2009	2010	2011
A	Agriculture, forestry and fishing	22	15	14	33
B	Mining and quarrying	0	2	0	2
C	Manufacturing	127	190	165	180
D	Electricity, gas, steam and air conditioning supply	0	1	3	0
E	Water supply, sewerage, waste management and remediation activities	3	4	2	6
F	Construction	71	96	123	172
G	Wholesale and retail trade, repair of motor vehicles and motorcycles	163	216	217	257
H	Transportation and storage	19	42	73	61
I	Accommodation and food service activities	19	26	32	71
J	Information and communication	1	11	22	20
K	Financial and insurance activities	5	2	7	25
L	Real estate activities	22	33	56	65
M	Professional, scientific and technical activities	36	59	60	68
N	Administrative and support service activities	13	16	14	18
O	Public administration and defense, compulsory social security	0	0	0	0
P	Education	6	4	1	6
Q	Human health and social work activities	2	0	2	3
R	Arts, entertainment and recreation	4	2	4	9
S	Other service activities	4	8	8	16
T	Activities of households as employers, undifferentiated goods - and services - producing activities of households for own use	0	0	0	0
U	Activities of extraterritorial organizations and bodies	0	0	0	0
	Total	517	727	803	1 012

Source: author based on the Bisnode data

Tab. 2: Insolvency proposals according to economic activity in the period 2002-2015

Sector	2012	2013	2014	2015	Total
A	42	58	38	31	253
B	2	0	2	0	8
C	238	286	255	151	1 592
D	1	3	1	3	12
E	11	9	8	11	54
F	264	362	385	158	1 631
G	329	489	478	262	2 411
H	91	108	96	42	532
I	113	147	119	86	613
J	16	25	23	18	136
K	38	71	41	23	212
L	100	98	90	52	516
M	89	124	124	72	632
N	33	49	33	22	198
O	0	0	0	0	0
P	6	10	11	6	50
Q	6	7	6	4	30
R	12	15	13	6	65
S	26	23	43	22	150
T	0	0	0	0	0
U	0	0	0	0	0
Total	1 417	1 884	1 766	969	9 095

Source: author based on the Bisnode data

Table 3 and 4 already process these data. Table 3 is an analogy with horizontal analysis frequently used in corporate financial analysis. The used indices are chain they always compare the coming year with the previous one. The last row of table 3 provides real GDP growth (in stable prices of year 2010) also comparing the coming year with the previous one. If the real GDP declines (is below one) the index of insolvency proposals should exceed one (more bankrupt business units) and vice versa if the real GDP increases (is above one) there should be less insolvency proposals because the economy as whole is growing. If we look at total number this is valid except years 2010 and 2011 when the whole economy grew but the consequences of the economic crisis were still permanent and many enterprises entered bankruptcy later because there is a delay because some industry sectors do not react so quickly. The individual industry branches may react differently. There can be also other

impacts than only overall economic conditions. In the case of agriculture, forestry and fishing (sector A) we can talk about European subsidies, importance of exports inside and outside EU and off course weather conditions (drought, floods etc.). Other reason is that absolute numbers of cases in some specific industry branches is too low to show statistical significance between real GDP positive or negative growth and development of insolvency proposals. It is possible to conclude that the dependency between real GDP growth and development of insolvency proposals is fully valid for the last two years 2014 and 2015. The economy is again stabilized and number of insolvency proposals in all industry branches has significantly decreases.

Tab. 3: Development of insolvency proposals according to economic activity

Sector	2009/2008	2010/2009	2011/2010	2012/2011	2013/2012	2014/2013	2015/2014
A	0.68	0.93	2.36	1.27	1.38	0.66	0.82
B	---	0.00	---	1.00	0.00	---	0.00
C	1.50	0.87	1.09	1.32	1.20	0.89	0.59
D	---	3.00	0.00	---	3.00	0.33	3.00
E	1.33	0.50	3.00	1.83	0.82	0.89	1.38
F	1.35	1.28	1.40	1.53	1.37	1.06	0.41
G	1.33	1.00	1.18	1.28	1.49	0.98	0.55
H	2.21	1.74	0.84	1.49	1.19	0.89	0.44
I	1.37	1.23	2.22	1.59	1.30	0.81	0.72
J	11.00	2.00	0.91	0.80	1.56	0.92	0.78
K	0.40	3.50	3.57	1.52	1.87	0.58	0.56
L	1.50	1.70	1.16	1.54	0.98	0.92	0.58
M	1.64	1.02	1.13	1.31	1.39	1.00	0.58
N	1.23	0.88	1.29	1.83	1.48	0.67	0.67
O	---	---	---	---	---	---	---
P	0.67	0.25	6.00	1.00	1.67	1.10	0.55
Q	0.00	---	1.50	2.00	1.17	0.86	0.67
R	0.50	2.00	2.25	1.33	1.25	0.87	0.46
S	2.00	1.00	2.00	1.63	0.88	1.87	0.51
T	---	---	---	---	---	---	---
U	---	---	---	---	---	---	---
Total	1.41	1.10	1.26	1.40	1.33	0.94	0.55
Real GDP growth	0.95	1.02	1.02	0.99	0.99	1.02	1.04

Source: author based on the Bispode data and Czech Statistical Office data (2016)

Table 4 is an analogy with vertical analysis frequently used in corporate financial analysis. Table 4 shows which industry sectors contribute most to the total number of insolvency proposals. Generally there can be several reasons. Some industries are more sensitive to macroeconomic shifts and in this case the decrease of demand. Some industries were already ailing before the last global economic crisis. The last reason is connected with an importance of that specific industry branch on GDP creation. Some industries are more important in the Czech Republic therefore they consist of more business entities than others. The presented numbers are absolute and not relative therefore they do not explain the rate of default in specific industries. It is possible to conclude that the most insolvency proposals during the period 2008-2015 occurred in sectors manufacturing (C), construction (F) and wholesale and retail trade, repair of motor vehicles and motorcycles (G).

Tab. 4: Proportion of insolvency proposals according to economic activity

Sector	2008	2009	2010	2011	2012	2013	2014	2015
A	4.26%	2.06%	1.74%	3.26%	2.96%	3.08%	2.15%	3.20%
B	0.00%	0.28%	0.00%	0.20%	0.14%	0.00%	0.11%	0.00%
C	24.56%	26.13%	20.55%	17.79%	16.80%	15.18%	14.44%	15.58%
D	0.00%	0.14%	0.37%	0.00%	0.07%	0.16%	0.06%	0.31%
E	0.58%	0.55%	0.25%	0.59%	0.78%	0.48%	0.45%	1.14%
F	13.73%	13.20%	15.32%	17.00%	18.63%	19.21%	21.80%	16.31%
G	31.53%	29.71%	27.02%	25.40%	23.22%	25.96%	27.07%	27.04%
H	3.68%	5.78%	9.09%	6.03%	6.42%	5.73%	5.44%	4.33%
I	3.68%	3.58%	3.99%	7.02%	7.97%	7.80%	6.74%	8.88%
J	0.19%	1.51%	2.74%	1.98%	1.13%	1.33%	1.30%	1.86%
K	0.97%	0.28%	0.87%	2.47%	2.68%	3.77%	2.32%	2.37%
L	4.26%	4.54%	6.97%	6.42%	7.06%	5.20%	5.10%	5.37%
M	6.96%	8.12%	7.47%	6.72%	6.28%	6.58%	7.02%	7.43%
N	2.51%	2.20%	1.74%	1.78%	2.33%	2.60%	1.87%	2.27%
O	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
P	1.16%	0.55%	0.12%	0.59%	0.42%	0.53%	0.62%	0.62%
Q	0.39%	0.00%	0.25%	0.30%	0.42%	0.37%	0.34%	0.41%
R	0.77%	0.28%	0.50%	0.89%	0.85%	0.80%	0.74%	0.62%
S	0.77%	1.10%	1.00%	1.58%	1.83%	1.22%	2.43%	2.27%
T	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
U	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source: author based on the Bisnode data

Conclusion

The aim of the paper was dividing insolvency proposals according to specific industry sectors and show which industries have been more affected by insolvency proposals in the time period 2008-2015. The insolvency proposals were divided according to the classification of economic activity CZ-NACE and compared with the development of real GDP growth. It proved that industry sectors reacted differently in the quickness and intensity of occurrence of insolvency proposals. There are also other reasons for insolvency discussed in the case of agriculture for example. The construction sector (F) was negatively affected almost the full analysed period (only exceptional is the last year 2015). The most insolvency proposals during the period 2008-2015 occurred in sectors C, F and G. These numbers were absolute and for further research the figures need to be analyzed as default rate (taking into account also the original amount of all enterprises).

References

- Čámská, D. (2013). *Základní charakteristiky podniků v insolvenční*. In Jedlička, P. (Ed.), *Sborník recenzovaných příspěvků z mezinárodní konference Hradecké ekonomické dny 2013, Díl I., Ekonomický rozvoj a management region at University Hradec Králové* (pp. 83-88). Hradec Králové: Gaudeamus.
- Creditreform (n.d.). Vývoj insolvencí v ČR. Retrieved April 16, 2016 from <http://www.creditreform.cz/novinky-downloads/vyvoj-insolvenci-v-cr.html>.
- Expert group 22 (n.d.). Insolvency Act, Statistics. Retrieved June 16, 2015 from <http://insolvenzni-zakon.justice.cz/expertni-skupina-s22/statistiky.html>.
- Czech Statistical Office (2016). GDP from the production side (constant prices of 2010). Retrieved April 16, 2016 from http://apl.czso.cz/pll/rocenka/rocnkavyber.makroek_prod.
- Kislingerová, E., Arltová, M. (2013). Forecasting the Number of Insolvency Petitions and Bankruptcies for 2013-2014. In Jirčíková, E., Knápková, A., Pastuszková, E. (Ed.). *Proceedings of the 6th International Scientific Conference: Finance and the performance of Firms in Science, Education and Practice at UTB Zlín* (336-347). Zlín: Univerzita Tomáše Bati.
- Kislingerová, E., Richter, T., Smrčka, L., & et al. (2013). *Insolvenční praxe v České republice v období 2008-2013*. Prague: C. H. Beck. 2013.
- Kislingerová, E. (2012). *Lack of Insolvency-Related Information as a Factor Limiting the Reform of the Insolvency System*. In *Proceedings of the 1st WSEAS International Conference*

on Finance, Accounting and Auditing (FAA '12) at Thomas Bata University in Zlín (pp. 180-185). Athens: WSEAS Press.

Ministry of Labour and Social Affairs (n.d.). Insolventní firmy evidované Úřadem práce ČR. Retrieved April 16, 2016 from

http://portal.mpsv.cz/sz/download/?_piref37_264786_37_264785_264785.typiv=1#ukaz.

Paseková, M. (2013). Personal Bankruptcy and its Social Implications. *International Advances in Economic Research*, 19(3), 319-320.

Randáková, M., Bokšová, J., Maixner, J., & Hospodka, J. (2014). *Personal bankruptcies of individuals in the Czech Republic in relation to different groups of creditors*. In Čulík, M. (Ed.), *Managing and modelling of financial risks at VŠB-TU Ostrava* (pp. 80-86). Ostrava: Technická univerzita v Ostravě.

Richter, T. (2011). Reorganizing Czech Businesses: A Bankruptcy Law Reform under Recession Stress-Test. *International Insolvency Review*, 20(3), 245 – 254.

Smrčka, L. (2012). *Chances of the business recovery principle in modern insolvency law*. In *Proceedings of the 7th International Conference ACCOUNTING AND MANAGEMENT INFORMATION SYSTEMS (AMIS 2012) at Bukurest ASE* (pp. 289-300). Bukurest: EDITURA ASE.

Smrčka, L., Schönfeld, J. (2014). *Insufficient utilisation of information technology in the state administration. The example of insolvency proceedings and the insolvency register in the Czech Republic*. In Rocha, A., Correira, A.M., Tan F.B., Stroetmann K.A. (Eds.), *New Perspectives in Information Systems and Technologies* (12 p.). Heidelberg: Springer.

Svobodová, L. (2013). *Trends in the number of bankruptcies in the Czech Republic*. In Jedlička, P. (Ed.), *Sborník recenzovaných příspěvků z mezinárodní konference Hradecké ekonomické dny 2013, Díl III., Ekonomický rozvoj a management region at university Hradec Králové* (pp. 393-399). Hradec Králové: Gaudeamus.

Contact

Dagmar Čámská

Czech Technical University in Prague, The Masaryk Institute of Advanced Studies,
Department of Economic Studies

Kolejní 2637/2a, Prague 6, 160 00, Czech Republic

dagmar.camska@cvut.cz