Business Administration and Business Economics

The Activity Analysis of Companies within Certain Economic Sectors Based on Risk Indicators

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Abstract: The paper represents a topical subject in the economic-financial field and constitutes a particular interest to some specialists from the economic environment, because it presents a conscious and calculated assuming of the reality, evaluated equally in time and space. The practical research of this paper is materialized in a scientific approach that includes a number of 27 companies, divided equally in three economic sectors (production, construction and tourism), which has in view the obtainment of useful and perspective information, concerning the impact that risk indicators have on activities which underlie at each economic sector. The purpose of this research is developing and deepening the risk problematic, focusing on the role of relevant financial indicators, with which can be identified the optimal solutions of each analyzed company from the corresponding economic sector, allowing the formulation of some proposals and structure analysis that are intended to contribute to the development of knowledge in the domain studied. The paper itself is a matter of utmost importance, because it attempts to provide a comprehensive picture of the current stage in which the economic entities are found and responds to exigencies faced by managers in the current economic context.

Keywords: risk; risk of exploitation; financial risk; risk of bankruptcy

JEL Classification: M; M2; M21

1. Introduction

Risk can be defined informally in different ways, but the central notions are those of uncertainty about meeting goals or about potential loss, and of incomplete control over the outcomes of decisions. Risk management is the effort to understand these uncertainties in order to make better choices among goals and meet them more effectively (Malz, 2011). In other words, enterprise risk management is the process of identifying major risks that confront an organization, forecasting the significance of those risks in business processes, addressing the risks in a systematic and coordinated plan, implementing the plan, and holding key individuals responsible for managing critical risks within the scope of their responsibilities (Hampton, 2009).

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Nowadays the economic activity is dominated by risk, due to the lack of interest of the managers for knowing and understanding the elements that determine the risk which leads to the appearance of differences between companies in the same economic sector. Therefore, a manager must identify, understand and manage more efficiently the company risks, because it will allow him to reduce losses and to find opportunities for business improvement, as well taking the correct decisions.

Risk approach from the perspective of organizations must be consistent with the type of their activity and with all the characteristics of markets and environments in which they act as economic and social agents. Regardless of the activity profile, legal status, size and space in which it operates, the company is obliged permanently adapt to risky situations, that can occur in the current activity, as well as in the predicted one.

Taking into account the current economic context, there are taking place profound changes in all fields of activity and the implications are felt in the financial situation of each company. To mitigate the risks that can influence a company's activity, managers must know what are the pressures factors that may arise from the company's external environment and also the weaknesses within the internal environment of the company, in order to formulate the correct suggestions regarding their remedy.

2. Literature Review

Although in the specialized literature, risk has several acceptations for businesses carried out by economic agents (economic risk, exploitation risk, financial risk, commercial risk, investment risk etc.) the economic significance of risk is considered to be an important one, because it points out the inability of a company to adapt on time and at the lowest costs to environmental changes; in other words the economic risk expresses the volatility of the economic outcome under exploitation (Lala, 2010). Below are presented briefly three risk categories, because they are the most common risks to which it is subjected the activity of an economic agent.

A. The risk of exploitation (also called economic risk) is specific to the productive and commercial activities of a company, and represents an economic event or process (unstable and probably) that can cause a damage, a loss within an activity, operation or economic action.

In order to determine the risk of exploitation which characterizes a particular activity, the business practice uses the threshold of profitability method, which represents the point where the turnover covers the operating expenses delineated in fixed and variable costs, calculated in physical or value units, for a product or for the entire activity. The relation for calculating the threshold of profitability is:

$$CAcr = \frac{CF}{1 - \dfrac{CV}{CA}}$$

Where:

CAcr - Turnover to achieve the threshold of profitability; CF - Total fixed costs; CV - Total variable costs; CA - Total turnover; CV/CA - Part of variable costs in turnover.

B. The financial risk reflects the resulting variability indicators due to the changed financial structure of the company (Buglea, 2009). The financial risk can be evaluated using the threshold of profitability method, which is similar with the calculation of the exploitation threshold of profitability, but adding interest costs.

The relation for calculating the financial threshold of profitability is:

$$CAcr = \frac{CF + Chd}{1 - \dfrac{CV}{CA}}$$

Where:

CAcr - Turnover to achieve the threshold of profitability; CF - Total fixed costs; Chd - Interest costs; CV - Total variable costs; CA - Total turnover; CV/CA - Part of variable costs in turnover.

C. The risk of bankruptcy is closely linked to the state of solvency, reflecting the possibility that a company can not fulfill its payment obligations. In this case we can say that the company is in a financial difficulty state (Buglea, 2008).

In the present economic theory are elaborated several models which are based on the scoring method, such as: Altman; Conan-Holder; Holder, Loeb and Partier; Bailesteanu; Anghel; etc.

Within the practical research it is used the latest version of the Altman model updated and revised, presents the advantage of applicability in case of non-industrial enterprises and those that operate in countries which are under development (Matis, 2012).

The Altman scoring function, in this last version, is as follows:

$$Z = 6.56X1 + 3.26X2 + 6.72X3 + 1.05X4$$

The model variables have the following meaning:

$$X_1 = \frac{\text{Working capital}}{\text{Total assets}} \quad ; \quad X_2 = \frac{\text{Retained earnings}}{\text{Total assets}}$$

$$X_3 = \frac{\text{Earnings before interest and taxes}}{\text{Total assets}} \; ; \; X_4 = \frac{\text{Book value of equity}}{\text{Total liabilities}}$$

The critical intervals for this function are:

- Level I: safe zone, with very low probability of bankruptcy, practically negligible; creditworthy firms $Z > 2.6$;

- Level II: uncertain zone, firms with temporary financial difficulties, which can be remedied if the applicable strategy is suitable $1.1 < Z < 2.6$;

- Level III: risky zone, bankruptcy firms $Z < 1.1$;

3. Material and Methods

In the following case study, taking into account the current economic context, will be calculated the risk indicators (risk of exploitation, financial risk and risk of bankruptcy) and the results acquired will facilitate making the correct decisions on the settlement of existing problems, in order to improve this system.

The data to which is referred within the undertaken study belong to a representative sample of 27 companies from Timis County, Romania, and are divided equally into three economic sectors (production, construction and tourism) in order to identify the particularities of each sector separately, on a reference period of four years (2008-2011), from the risk point of view. In this case, the analyzed companies are grouped and evaluated on three sectors, namely:
- Sector 1 - Production;
- Sector 2 - Construction;
- Sector 3 - Tourism.

At the level of the case study, it is used a comparative method in order to identify differences and similarities between the results of companies, within the analyzed economic sectors.

4. Results and Discussion

Based on the data held and calculation of risk indicators (risk of exploitation, financial risk and risk of bankruptcy) using IBM SPSS Statistics 19.0.1 software, have been obtained the following results:

- For **sector 1 – Production**, the situation is as follows:

  ➢ Risk of exploitation

**Table 1. Results of the risk of exploitation in the period 2008 - 2011
for enterprises in the production sector (RON)**

Production enterprise	Time span			
	2008	**2009**	**2010**	**2011**
P1	3648391	3960178	4425008	7716296
P2	9972396	7685570	7597277	10999803
P3	9077139	9444772	4652404	5348122
P4	14948494	21285982	17294820	16108250
P5	13313169	10419786	15575624	32956828
P6	7801670	8434026	8917440	12672132
P7	15653270	11506581	9764143	13475151
P8	11481899	8484361	5733925	8333181
P9	11749315	9827405	12023293	7015556

Source: own compilation

Based on the threshold of profitability and safety index deviation (indicator calculated separately) results, is detached that enterprises P2, P3, P7 and P8, in the period 2008-2009 show an unstable situation, namely a high risk of exploitation; while in 2010-2011 the situation of the first two enterprises is relatively stable, whilst the last one's, are exposed to a low risk of exploitation. Based on the data in the above table, it can be noticed that enterprise P1 recorded in the period 2008-2010 a low risk of exploitation, and in the last year its situation depreciated, presenting an unstable position.

> ➤ Financial risk

**Table 2. Results of financial risk in the period 2008 - 2011
for enterprises in the production sector (RON)**

Production enterprise	Time span			
	2008	**2009**	**2010**	**2011**
P1	4062641	4297939	4641541	8026860
P2	9972396	7685570	7597277	11010272
P3	9716333	9690481	5099677	5757511
P4	16099801	22934254	18199597	16901823
P5	15857354	11445006	16343828	33720908
P6	8672708	9628089	9805045	13536713
P7	16946847	12095705	11482299	15056086
P8	11508170	8638931	5957465	8536590
P9	11931470	10150995	12198720	7280288

Source: own compilation

9

Regarding the enterprises that operate in the production sector in the period 2008-2011, the situation is approximately similar (in terms of oscillation recorded values) with the risk of exploitation, but with slightly higher values due to the inclusion of interest costs. P2 recorded in all four years, financial risk values equal with the risk of exploitation, which proves a lack of interest costs. Enterprises P3 and P9 are in an unstable situation, because they are exposed to a high risk of exploitation, the entire period of time.

> ➢ Risk of bankruptcy

Table 3. Results of the risk of bankruptcy in the period 2008 - 2011 for enterprises in the production sector

Production enterprise	Time span			
	2008	**2009**	**2010**	**2011**
P1	1.45	4.94	5.09	1.46
P2	-9.91	-10.27	-7.45	-4.66
P3	-0.24	-1.41	1.21	1.53
P4	0.92	-1.27	-0.78	0.31
P5	1.65	2.12	1.95	1.76
P6	2.57	2.69	2.87	-2.02
P7	-0.69	0.42	2.61	4.28
P8	-0.59	0.59	3.57	1.9
P9	2.18	3.05	3.3	2.03

Source: own compilation

It is remarked that between 2008 and 2011 enterprises P2 and P4 are in a risky area, namely bankruptcy. Enterprises P3, P7 and P8 are in a risky area in the first half of the range, and later, in the second half takes place an improvement of them, namely they go into a safe and uncertain area in terms of financial difficulty. Creditworthy enterprises and those who have temporary difficulty that can be remedied if proper strategy is applied are P1, P5 and P9. Also, it can be observed that in the first three years P6 is the only creditworthy enterprise whose values increases systematically from one of the other, but in 2011 is part of a strong downward evolution, which positions her in a risky area (of bankruptcy).

- ▪ For **sector 2 – Construction**, the situation is as follows:

> ➢ Risk of exploitation

Table 4. Results of the risk of exploitation in the period 2008 - 2011
for companies in the construction sector (RON)

Construction company	Time span			
	2008	**2009**	**2010**	**2011**
C1	6523277	6755197	3977887	6441023
C2	8538309	7300781	6236112	7393679
C3	4134533	3672431	3181822	4032163
C4	3861643	9395876	9014112	15747140
C5	9628962	9702063	8940136	13074903
C6	8362234	8906273	15087759	18105514
C7	3743550	3677044	5809098	6471639
C8	19768099	5466875	1835571	11326775
C9	9259646	7878621	15713857	11585807

Source: Own compilation

Based on the results above and safety index deviation indicator, it can be observed that between 2008 and 2011, companies (C4 and C5) that are working in the construction sector, show a similar situation, namely in the first three years they register a low risk of exploitation, and in the last year the companies show an unstable situation, respectively a high risk of exploitation. The profitability thresholds of company C3, in the first and last year, then in the second and third year are almost equal, and the risk of exploitation is the lowest compared to other companies within the representative sample. Following the safety index deviation determined separately, C7 is the only company that registers a low risk of exploitation the entire period, which allows adaptation of the services offered to market demands.

> ➤ Financial risk

Table 5. Results of financial risk in the period 2008 - 2011
for companies in the construction sector (RON)

Construction company	Time span			
	2008	**2009**	**2010**	**2011**
C1	6523277	6755197	3977887	6441023
C2	8747403	7601021	6582311	7741278
C3	4250895	3863985	3339957	4122703
C4	3901640	9459876	9054533	16474454
C5	9702928	9806239	8963661	13140634
C6	8563756	9033621	15585778	18502543
C7	3743550	3677044	5813430	6477237
C8	22202271	8392324	3590674	17881478
C9	9664026	8358951	16159178	12040156

Source: Own compilation

Over the four years period of analysis, at the level of companies that activate in the construction sector, the situation is almost similar (in terms of fluctuation recorded values) with the risk of exploitation, but with slightly higher values due to the inclusion in the calculation formula of interest costs. Exception to the above mentioned is company C1 which records a similar evolution as within the risk of exploitation, because the interest costs recorded a zero value the entire range. For company C7 the situation is similar to the previous one (risk of exploitation), except for the years 2010 and 2011, because it recorded interest expense less than 2,000 RON.

> Risk of bankruptcy

**Table 6. Results of the risk of bankruptcy in the period 2008 - 2011
for companies in the construction sector**

Construction company	Time span			
	2008	**2009**	**2010**	**2011**
C1	63.11	10.97	11.03	46.40
C2	-1.09	-1.15	-2.09	-1.15
C3	3.68	1.06	4.04	3.63
C4	4.84	5.78	1.82	1.55
C5	4.42	5.90	7.26	5.89
C6	1.08	0.90	0.57	1.13
C7	6.22	7.08	4.38	4.26
C8	-3.12	2.76	2.98	2.07
C9	3.14	1.89	1.84	1.67

Source: Own compilation

Based on the available data in the above table, it is remarked that a number of three companies (C1, C5 and C7) in this economic sector, registered a very low probability of bankruptcy, practically negligible, the entire four years period. It wouldn't be recommended to overlook the values obtained by company C1 during the entire period, due to too high values recorded regarding book value of equity in comparison with total liabilities. According to the values obtained, C2 and C6 are the only companies in bankruptcy, but the latter records an improvement in the last year, placing it in an area with temporary financial difficulties. The creditworthy companies and those who have temporary difficulty that can be remedied if proper strategy is applied are C4, C8 and C9.

▪ For **sector 3 – Tourism**, the situation is as follows:

> Risk of exploitation

**Table 7. Results of the risk of exploitation in the period 2008 - 2011
for firms in the tourism sector (RON)**

Tourism firm	Time span			
	2008	**2009**	**2010**	**2011**
T1	2210819	1834799	1948765	2514025
T2	3458809	3212448	2720322	3740713
T3	5484138	5104471	2934843	662404
T4	3683312	3333888	5273252	3345993
T5	15240914	8440188	5476747	5201398
T6	1289944	2594809	1144567	3283972
T7	2503995	2110188	768697	604988
T8	29244524	2696308	17897985	2540656
T9	1806613	447700	4311694	4006616

Source: Own compilation

In the representative sample of firms (T5 and T8) that are operating in the tourism sector in the period 2008-2011, can be observed highly fluctuating values of the risk of exploitation. Firm T7 registers a low risk of exploitation throughout the entire analyzed period, compared to the other firms in the same economic sector, which demonstrates the ability to easily adapt to customer requirements. Following the safety index deviation results, firms T4 and T8 registered in the first and second year a low risk of exploitation, after that in the third and fourth year appeared a high economic risk.

> ➢ Financial risk

**Table 8. Results of financial risk in the period 2008 - 2011
for firms in the tourism sector (RON)**

Tourism firm	Time span			
	2008	**2009**	**2010**	**2011**
T1	2326508	1917149	2000409	2545112
T2	3741294	3474016	2842200	3834565
T3	5572817	5268991	3104116	816599
T4	3731446	3338592	5335107	3347447
T5	15302050	8463316	5507543	5230114
T6	1289944	2968541	1489588	4121610
T7	2561699	2285542	1130561	849144
T8	32412936	4884009	20313469	11840165
T9	2055719	614155	4435906	4088776

Source: own compilation

At the level of all firms activating in the representative sample, between 2008 and 2011 the situation is almost similar (in terms of oscillation recorded values) with the economic risk, but with slightly higher values due to the inclusion in the calculation formula of interest costs. Exception to the above mentioned is firm T6 which recorded a similar value in 2008 as within the economic risk, because interest expenses are zero. Just as in the risk of exploitation case, company T7 shows a low financial risk throughout the entire analyzed period, compared to the other firms within the same economic sector.

> ➢ Risk of bankruptcy

Table 9. Results of the risk of bankruptcy in the period 2008 - 2011 for firms in the tourism sector

Tourism firm	Time span			
	2008	2009	2010	2011
T1	208.47	38.41	38.35	123.78
T2	1.12	-0.34	-0.02	-0.08
T3	-1.49	-2.24	-6.99	-6.57
T4	10.84	12.81	2.24	6.25
T5	1.81	-0.17	0.44	0.42
T6	2.13	-3.07	-3.31	0.58
T7	0.46	-0.14	-0.35	0.99
T8	2.73	-5.17	-1.57	-5.95
T9	4.17	4.00	5.95	7.86

Source: Own compilation

In the interval 2008-2011, it is remarked that a number of three firms (T1, T4 and T9) within this economic sector, registered a very low probability of bankruptcy. It wouldn't be recommended to overlook the values obtained in all four years by firm T1, due to the small values recorded regarding earnings before interest and taxes in comparison with total assets. Starting with 2009 until the end of 2011, most firms (T2, T3, T5, T6, T7, and T8) are in bankruptcy. In 2008, some of them (T2, T5 and T6) have tried to remedy their financial difficulties through some strategies appropriate to the situation, but have not succeeded.

5. Conclusion

The entire period 2008-2011, words like "crisis", "bankruptcy", "layoffs", "reduction", "rescue plan" were often used economically, both in the private sector and the public one. Political turbulences were disastrous for the Romanian economy, that experienced an increase, but its mismanagement brought a big risk for managers and investors.

Based on the calculation above and values obtained, by comparing the results between risk indicators and as a result of poor management, of some internal dysfunctions and external factors, companies P2, P3, C2, T3, T5 and T8 are in a difficult situation, namely bankruptcy. The results obtained by the financial risk are more significant compared to the risk of exploitation, because the companies that resort to loans have to systematically support financial costs (namely interests), which means an intensification of its commitments and implicit of the risk. Any debt, regardless of its size, brings with it an amendment of results and implicitly of the financial risk. Given the direct analysis results of companies, from the economic sectors presented, based on the indicators system which express risk, the most favorable situation is found in the construction sector, followed by the production sector, and last in the tourism sector.

The undertaken analysis indicates that the companies from the three economic sectors benefit of many strong points which can be harnessed for the future activity, but face difficulties regarding recovery of receivables and stock management of raw materials, finished goods and work in progress. It is recommended to change the administration of receivables and stocks of raw materials, to outsource activities that are large consumers of financial resources to specialized firms, and to adopt production methods meant to streamline the operations. The analyzed companies should diversify their activities to the detriment of one field of activity, because in case of any difficulties appearance, profitability of others could compensate the losses registered.

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