Research Paper

Analyzing acquisitions using bankruptcy forecasting models

Szilárd Hegedűs [1] * (iD) and László Zoltán Kucséber [2] (iD)

1   Department of Finance, Budapest Business University. Budapest, Hungary

2   Budapest Business University. Budapest, Hungary

*   Correspondence: hegedus.szilard@uni-bge.hu

Abstract: Merger and acquisition (M&A) transactions are often associated with increasing market share, improved operational efficiency and the ability to create value. Nevertheless, many studies have presented the drawbacks of M&A transactions, including an increase in the risk of bankruptcy. A significant number of companies go bankrupt in Hungary every year, even in non-recession periods. The goal of our analysis is to examine how the risks of companies, especially their bankruptcy risks, were affected by acquisitions in Hungary between 2008 and 2017. The results of our study with a focus on Hungarian companies confirm the research published in the international literature, according to which M&A transactions are unsuccessful in many cases, and the transactions are often followed by adverse effects. Our research results may change the perspectives associated with the allegedly well-known benefits and expectations of acquisitions. Based on our research, we recommend that companies planning to merge or acquire should also consider the possible failure of such transactions.

Keywords: acquisition; merger; trade; bankruptcy; risk; trade sector

1. Introduction

Commercial transactions constitute a significant proportion of the M&A market worldwide (also in Hungary as described in the next section): 7672 M&A transactions were executed in the retail and wholesale sectors worldwide, making up 11.5% of all commercial transactions between 2012 and 2020, based on EMIS database.

Important acquisitions took place in the Hungarian commercial sector, such as the acquisition of Cora stores by Auchan, the Plus chain by Spar, or the withdrawal of the French Delhaize Group from running the "Match" and "Profi" stores (Mfor, 2013). In the early 2010s, German discount stores significantly spread throughout Hungary. They typically opened their stores as part of greenfield investments, so complete acquisition of existing store chains was not part of their business policy (Juhász & Wagner, 2010).

In parallel with these processes, the number of registered enterprises in the commercial sector stagnated between 2011 and 2014 and has been steadily declining since 2015. In 2018, there were 10 percent fewer commercial enterprises than in 2010 (Hungarian Central Statistical Office, 2019). A number of factors underlie the transformation of the sector. Yet, in our study, we investigate the effects of a complex corporate transformation: we scrutinize whether bankruptcy or liquidation took place in the years after the transactions in the case of acquisitions completed in the commercial sector, and how the risk of bankruptcy changed concerning the survivor companies after these M&A transactions.

2. Background to M&A failures

What are the benefits of M&A transactions? According to Rahman and Lambkin (2015), sales increase after acquisitions. The research of Rahman et al. (2016) states that mergers have a positive effect on sales efficiency. Copeland and Weston (1992) reference mergers to be one of the most important factors in the growth of firms. The benefits of M&A transactions potentially play a role in achieving economies of scale and scope, in exiting from the industry,

in management efficiency, and in increasing market power (Wish, 2010). In this study, based on information from scientific research and questionnaires, we intend to demonstrate, in addition to the above-mentioned benefits, the financial and non-financial factors leading to failure and bankruptcy risks. M&A transactions may involve many "pitfalls" due to their complex and multi-stakeholder nature, and they do not necessarily end successfully.

Besides the risk of bankruptcy, Leland (2007) mentions tax rates, cash flows of merging companies, and relative firm size among the factors influencing the success of M&A transactions. As a result of an analysis of 239 transactions, Ghosh and Jain (2000), came to the conclusion that the financial leverage of the merged entities was high after the transactions and that the credit ratings of the companies changed unfavorably in the upcoming years. Debt financing of the acquisition underlies all these concerns. Based on international research, it may be concluded that many acquiring companies already have a high risk of bankruptcy prior to the transaction. Bruyland and de Maeseneire (2016) examined the transactions of acquiring companies with a high risk of bankruptcy. The results show that these firms select larger, less profitable target companies in different sectors and conduct transactions during recession periods.

Later research by Bruyland et al. (2019) yielded similar results: the post-transaction ROA of acquiring firms with high bankruptcy risk was less favorable than that of the reference group. Furfine and Rosen (2011) also found that merger increases the risk of bankruptcy, based on a study of 1194 mergers. Researchers have identified a greater increase in risk in the case of companies where the CEO receives performance-based allowance, which encourages managers to execute transactions even with uncertain outcomes. Companies that were classified as risky before the merger showed an even higher risk of bankruptcy after the transactions. In contrast, Koerniadi et al. (2015) found that the risk of bankruptcy of acquiring companies involved in cross-border transactions decreased. According to the authors, the result is mostly explained by the fact that the acquisitions happened between companies in the same sector.

Not only the acquiring companies but also the target companies can play a role in the failure of transactions. According to Filipović (2012), there is a significant correlation between the size of the target company (compared to the acquirer) and the success of the merger: the smaller the size of the target company, the more likely the merged company (or target company in a controlling transaction) is to improve performance. Kandžija et al. (2014) investigated non-financial enterprises in Croatia between 1998 and 2006. Based on their findings, the lower the concentration of the target company's industry, the more successful the target company's performance after takeover.

Besides financial reasons, some international analyses attribute post-acquisition to management reasons. In their study, Yen and Andre (2007) examined the relationship between certain characteristics of enterprise management (e.g., size of management, ownership concentration as a proportion of voting rights) and operational efficiency. Their research is based on a sample of 287 transactions that took place between 1997 and 2001 in the Anglo-Saxon countries. They used operating cash flow as the dependent variable. In the scope of the research, the authors examined 3 years before and after M&A. The results demonstrate a relationship between less concentrated ownership structure and the unfavorable change in operational performance in the examined countries. A specific management reason why transactions do not meet the expected synergies is the following: increasing the size of a company through an acquisition reduces the chances of becoming a target. This is explained by the following: through the M&A transaction the target becomes larger than its competitors. Defensive acquisitions can also encourage competitors to be on the defensive, so they execute even potentially unprofitable acquisitions. This process is called the "eat-or-be-eaten" scenario (Gorton et al., 2009).

Besides financial and management issues, we must mention differences in the characteristics of cultural background, as the so-called acculturation conflicts are among the main problems (Bognár, 2005). According to the lessons learnt from Savović's (2016) series of interviews with 91 managers, managers should focus not only on financial results but also on non-financial factors, such as employee satisfaction, customer base expansion, and on the development of new products and services. The study found that the three sources of poor financial performance are: inadequate strategy, poor implementation of strategies, and inadequate control of division leaders. Renneboog and Vansteenkiste (2019) also identified

human factors as a cause of failure: overconfidence of directors and managers, and, as a consequence, too frequent transactions underlie inadequate shareholder advocacy.

Research evaluating the success of M&A transactions has already taken place in Hungary (Kucséber, 2016): in the industry and service sectors, the working capital management of acquiring companies showed signs of efficiency relapse instead of efficiency gains following M&A transactions. In the trade sector, the acquisition did not significantly worsen, nor did it improve the efficiency of working capital management.

3. Methodology: Bankruptcy forecasting models

Our research goal is to examine the effects of acquisitions subject to the Hungarian Competition Authority's (HCA) authorization in the Hungarian commercial sector, with special regard to the bankruptcy risk of the acquiring companies over a time frame of seven years. The time interval includes three years before the acquisition, the year of the M&A, and three years after the transaction.

As the results of the above literature review indicate, researchers have a wide range of methodologies to analyze the financial aspects of M&A transactions (from change in the risk of bankruptcy to financing issues). These include absolute and relative analyses of the balance sheet resource side, well-known indicators of wealth situation, and bankruptcy models.

In this study, we examined the main financial indicators of 20 companies involved in M&A transactions. We investigated two areas in the study: one the one hand, compliance with the going concern principle, and, on the other hand, the change in efficiency and ability to create added value. The going concern principle is acknowledged as a generally applicable principle in accounting (Lentner, 2015; Zéman & Lentner, 2018), which means that the production of annual reports and the performance of accounting obligations are based on the assumption that the enterprise is capable of continuing its operation in the near future, and termination or significant declines of operations are not expected (Act C of 2000 on Accounting 15. Section (1)). The going concern principle can be tested using bankruptcy models (e.g., Molnár, 2019). Virág published one of the first bankruptcy models in the Hungarian literature in 1991 (Virág & Hajdú, 1998). This model was recalculated using logistic regression and discriminant analysis in 2005 (Virág & Kristóf, 2005).

The bankruptcy models used in this paper were designed for the manufacturing industry (Kotormán, 2009). However, the benchmark required for the sector-specific models was not available at the time of the conclusion of our research.

In our research, we investigated the bankruptcy risk of the acquiring companies using the two bankruptcy models of Virág and Kristóf (2005) for classifying them into the categories of "survivors" and "bankrupts" (Table 1). The variables of the logistic regression are as follows. X1: acid test on liquidity; X2: pre-tax margin; X3: cash-flow / amount payable; X4: current assets / total assets; X5: customers / suppliers.

Having a value lower than 0.525 means that the company has a risk of bankruptcy. The accuracy of the model is 81.8% (Virág & Kristóf, 2005; Molnár, 2019).

The variables of the bankruptcy model based on discriminant analysis are the following. X1: acid test on liquidity; X2: cash flow / amount payable; X3: current assets / total assets; X4: cash flow / total assets.

Table 1. Applied models*. *Source: Authors' own*

Bankruptcy model type	Applied formula
Logistic regression	$$\text{Pr} = \frac{e^{3.432-10.32\times X1+0.01439\times X2-4.438\times X3-0.02992\times X4+8.17\times X5}}{1 + e^{3.432-10.32\times X1+0.01439\times X2-4.438\times X3-0.02992\times X4+8.17\times X5}}$$
Discriminant analysis	$\text{Pr} = 1.3566X1 + 1.63397X2 + 3.66384X3 + 0.03366X4$

* Note: value Z under 2.61612 means that the company is in a bankruptcy situation

The two bankruptcy models were chosen because they were the first models in the Hungarian practice. Therefore, we wanted to use the most widespread and accepted model in the context under scrutiny in our research. The main difference between the two models is that they were developed using different statistical methods but tested on the same sample.

The basic purpose of the study is not to test the accuracy of the bankruptcy models, but to assess the change in bankruptcy risk.

We used the following formula to calculate added value: Earnings before taxes + Personnel expenses + Depreciation. We examined value obtained in proportion to assets to eliminate deviations coming from the differences in company size. We chose the added value indicator because it can completely fulfill the information requirements arising from the accounts with respect to the whole sample. As part of the efficiency analysis, besides added value in proportion to assets, we calculate with lead time of customer and supplier receivables, ROA and ROE indicators.

4. Data

The Hungarian Competition Authority (HCA) is the only source of information and data when it comes to M&A transactions in Hungary. The HCA decides whether a transaction is M&A or not, and whether it is a subject to authorization based on the current competition law (Act LVII of 1996 Section VI. 23. (1)). The competition authority does not analyze all the cases as it is mandatory to ask for permission from the Hungarian Competition Authority only concerning those mergers when all of the affected corporate groups together with all of their members had exceeded a net income of 15 billion Hungarian forints in the preceding business year. This means that even if we have investigated all the commercial cases subject to authorization by the Hungarian Competition Authority in our study, this selection is not identical to all of the transactions executed in the sector. We disqualified some cases from the population for methodological reasons. These include the following: business organizations that executed multiple transactions in consecutive years in the investigated period (3 cases), cases and the affected companies where multiple acquiring companies were involved in the transactions (4 cases) and holding companies (6 cases). Consequently, after data cleaning, we analyzed 20 cases (Table 2).

Table 2. Acquirer companies and their sales. *Source: Authors' own*

Analyzed companies	Sales before the M&A (Thousand HUF)	Sales after the M&A (Thousand HUF)
Alaszka Kereskedelmi és Szolgáltató Kft.	41 616	49 615
Alfi-Ker Kereskedelmi Kft.	21 524 070	23 680 381
Carnet-Invest Zrt.	1 175 263	1 494 330
Cenkes16 Kft.	13 200	6 000
COOP Szolnok Kereskedelmi Zrt.	28 910 295	29 673 978
Copé Vagyonhasznosító és Szolgáltató Zrt.	515 257	531 462
Csőcentrum Kereskedelmi Kft.	1 559 024	1 404 384
DIGI Távközlési és Szolgáltató Kft.	47 299 383	52 183 096
Hansa-Kontakt Kereskedelmi és Szolgáltató Kft.	51 043 253	55 894 656
Hungaropharma Gyógyszerkereskedelmi Zrt.	324 547 280	349 307 769
IKR Agrár Kereskedelmi és Szolgáltató Kft.	92 799 850	101 405 590
Magyar Lapterjesztő Zrt.	43 356 734	43 484 289
Monicomp Kereskedelmi és Szolgáltató Zrt.	6 155 840	6 764 660
Nyírzem NyírségZemplén Coop Kereskedelmi Zrt.	60 408 571	65 387 584
Shell Hungary Kereskedelmi Zrt.	313 406 000	329 435 000
UNIÓ COOP Szövetkezeti Kereskedelmi Zrt.	32 013 878	33 620 970
UNIVER-COOP Kereskedelmi és Szolgáltató Zrt.	12 454 141	13 051 445
Veolia Energia Magyarország Zrt.	27 878 259	28 118 065
Vörösvár Invest Kereskedelmi és Szolgáltató Kft.	33 998 709	40 555 722
Vörösvár Kereskedelmi és Szolgáltató Kft.	16 310 643	17 854 633

For the financial analysis, we collected data from the 'e-reporting' portal provided by the Hungarian Ministry of Justice. The analyzed period is from 2008 to 2017. The period between 2017 and 2022 cannot be analyzed for methodological reasons: in the financial analysis we examine 3 years before and after the acquisition, which means that the inclusion of the cases of the last 4 years is not possible at the moment. Applying this type of time interval is a general practice in M&A research (as the reviewed research projects also show), as the

synergies or the lack of such synergies can be easily identified in the 1-3 years after the transactions. Another reason is our intention to exclude the years of the COVID crisis.

5. Results

As already described in the introduction, a significant part of the realized cases were commercial cases, making up 23 percent of the Hungarian M&A transactions in the analyzed period. We have no information on the value of the transactions but based on the "sector information" of 2015 and 2016, we can say that the majority of the transactions were between the values of 1.5 and 7.5 billion Hungarian forints, which shows the small size of the Hungarian acquisition market (mmo.hu 2016). These data are also confirmed by the average balance sheet total of the acquiring business organizations under scrutiny in our investigation: the average balance sheet total was 9,395,720 thousand HUF in the period of the analysis, while the average number of staff members was 359 persons.

68 percent of the cases are horizontal M&A transactions (between competitors), and the non-horizontal cases included 3 mixed and 3 conglomerate type acquisitions. When it comes to the subject of the acquisition, the whole company was acquired in 14 cases, business units in 2 cases, business premises in 4 cases. From among the examined acquiring companies, one company went out of business in the 3 years following the transactions from among the examined acquiring companies.

We cannot determine the exact reasons of the termination since we perform the investigation from the perspective of an external analyst. The rest of the analyzed companies still operate today.

Regarding the non-financial characteristics of the transactions, we recognized that acquisitions typically take place between competitors, which presupposes strong market competition. This is also supported by the geographical location of the companies: besides Budapest, the examined transactions were concluded by companies based in the Hungarian Great Plain. The financial characteristics demonstrated that the acquisitions did not result in an increase in efficiency or a decrease in the risk of bankruptcy with respect to the examined cases. The results of our research covering Hungarian companies confirm the research published in the international literature, according to which M&A transactions are unsuccessful in many cases, and the transactions are often followed by adverse effects.

Before presenting the risk scores of the bankruptcy models, let us overview the change of a few of those fundamental indicators of the acquiring companies which have a strong connection to the analyzed topic (Table 3). The presented values are the average values of the analyzed companies. We have not identified any significant improvement in storage time, where a declining trend would be considered a positive result similarly to lead time of customer receivables. A slightly increasing trend for lead time of supplier receivables would be favorable. Increasing trends of ROA and ROE return rates would be favorable. However, we can see only stagnation in the short term, and a decline by the third year after the acquisition. Hence, the acquisition did not improve the efficiency indicators of the companies, although no significant negative effects can be mentioned.

As a benchmark we can reference the results of Baranyi (2018). In her work she investigated 3711 annual reports of companies from the period between 2006 and 2015 using financial and statistical tools. As for the results of profitability, the companies grew their ROS (Return On Sales) slightly from 2009 to 2015, but they could not exceed the values before 2009 (Baranyi, 2018, p. 74). We can identify a similar situation in the case of ROE and ROA as well. This study also includes data about the trend of storage time and lead time of customer receivables. The storage time increased after the crisis and its value in 2015 was higher than in 2006. Besides that, there was a good trend: the lead time of customer receivables declined by 6 days from 2012 to 2015. Parallel with this the lead time of supplier receivables stagnated in the investigated period.

Table 3. The change of acquiring companies' basic financial indicators. *Source: Authors' own*

Name / Years	M&A$_{-1}$/M&A$_{-2}$	M&A$_0$/M&A$_{-1}$	M&A$_1$/M&A$_0$	M&A$_2$/M&A$_1$	M&A$_3$/M&A$_2$
Storage time	-0.35	0.01	0.13	0.16	-0.51
Lead time of customer receivables	0.04	4.31	0.24	0.46	0.11
Lead time of supplier receivables	0.23	0.05	-0.10	-0.22	-0.27
ROA	-19.83	-6.40	0.78	0.21	-0.42
ROE	5.56	-12.64	1.19	0.19	-0.21

The analysis using bankruptcy models produced the following results. Based on Table 4, we can state that the average of the 20 companies exceeded the value of bankruptcy risk (0.525) only in the second year before, and in the third year after the acquisition. Looking at the standard deviation, we can say that it is significant compared to the average, so it cannot be considered as a normal distribution based on the KS test. When it comes to the median value, we can say that the bankruptcy risk follows an increasing trend in the year of the transaction, and then it starts declining from the second year following the transaction.

Table 4. Descriptive statistics of bankruptcy forecasting logit model. *Source: Authors' own*

Year	-3	-2	-1	Year of M&A	1	2	3
Average	0.25	0.56	0.45	0.47	0.5	0.44	0.53
Standard deviation	0.32	0.43	0.42	0.41	0.41	0.41	0.39
Median	0.11	0.63	0.46	0.54	0.55	0.43	0.5

Based on the descriptive statistical analysis of the bankruptcy model based on discriminant analysis, we can see that the average exceeds the value indicating bankruptcy risk (2.61612) every year. However, as Table 5 presents, the average value of the analyzed companies decreased in the year of the acquisition, but it significantly deteriorated in the year after the acquisition. The trend has a high standard deviation (exceeding the average), and the KS test does not show normal distribution in this case, either. When it comes to the median, we can see a similar tendency: median increases in the year of the transaction, then it drops significantly. Our examination continues with an analysis of individual data.

Table 5. Descriptive statistics of discriminant analysis. *Source: Authors' own*

Year	-3	-2	-1	Year of M&A	1	2	3
Average	3.18	7.94	6.24	3.47	6.03	2.97	2.56
Standard deviation	1.5	14.51	13.02	1.72	11.04	2.97	4.65
Median	2.91	3.2	2.95	3.51	2.91	2.4	0.46

As part of the analysis of individual data, we examined how many of the companies were forecasted to go bankrupt or were close to bankruptcy based on the values indicating bankruptcy. The number of bankrupt companies decreases from the third year before the transaction, which makes up half of the analyzed companies by the year of the transaction and the year after that (Figure 1). In the case of companies with values reaching the bankruptcy risk, the value starts increasing in the second year after the M&A transaction, while it slightly decreases in the third year after the acquisition.

As it is visible on Figure 2, the ratio based on the bankruptcy risk value calculated by discriminant analysis increases starting from the second year before the acquisition, except the year after the acquisition. However, from the second year after the transaction, the proportion of companies with a bankruptcy risk significantly increases and exceeds half of the analyzed sample.

Figure 1. Result of bankruptcy forecasting model based on logistic regression by Hajdu and Virág (2001).
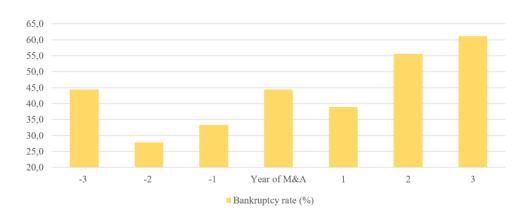*Source: Authors' own*

Figure 2. Result of bankruptcy forecasting model based on discriminant analysis by Hajdu and Virág (2001).
Source: Authors' own

Besides market acquisition, one of the goals of acquisition is to stabilize the financial positions of the company involved through improving its efficiency. Based on Table 6, it can be stated that the added value in proportion to assets (hereinafter "efficiency indicator") slightly decreases by the time of the transaction but it shows a significant increase as a result of the acquisition. Then, the average value of the indicator starts decreasing again after the transaction. An interesting trend can be observed in relation to the minimum value: the minimum value rises and ends up in the positive range as an effect of the acquisition, but then suddenly drops. All these changes are related to the same company in the analyzed period. In the analyzed sample, the maximum value was reached by two companies. One of them reached the maximum value before the transaction, and this company could manage to keep up this level even after the transaction, while the other company reached the maximum value from a very low level, hence this transaction can be considered successful. The same trend can be observed in the case of the median as in the case of the average. We identified four data patterns during the individual data analysis:

1. Continuous decline of the efficiency indicator; we could observe this trend in the case of seven companies of the sample;

2. Efficiency indicator value gets better as a result of the acquisition, then it decreases after the transaction. Still, the value remains on a higher level than before the acquisition. This trend can be observed in the case of six companies;

3. Added value in proportion to assets decreases due to the acquisition, but afterwards it exceeds the level of the year of the transaction. This was the situation in the case of three companies;

4. In the case of two companies, efficiency declines as a result of the acquisition, but afterwards it rises to a higher level than the value before the transaction.

Thus, efficiency gain can be observed as a result of the acquisition in the case of five companies: a significant increase compared to the period before the acquisition can be seen in the case of two companies, while there was a slight increase in the case of five companies.

Table 6. Descriptive statistics of discriminant analysis. *Source: Authors' own*

Year	-3	-2	-1	Year of M&A	1	2	3
Average	23.3	22.79	20.82	31.37	26.64	27.73	23.95
Standard deviation	17.43	20.05	24.64	25.77	29.05	34.79	27.61
Median	59	76	122	102	130	144	96

5. Summary

In the commercial sector, but especially in retail, market structure has been continuously transforming in the past couple of decades (including the strengthening of the position of foreign hypermarkets, growing market share of discount stores, radical decline in the number of small stores). Hence, significant change could only be caused by a few big corporates' exit from the market. Most probably the majority of future transactions will be related to the development and spread of e-trading, such as the case of E-mag and Extreme-Digital (Koi, 2019).

Based on the analyzed data, we can state that the bankruptcy risk indicator score deteriorated in the case of a significant part of the companies in the years after the fusion. From the two models, discriminant analysis showed more significant decline, whereas both models indicated a high ratio of companies with bankruptcy risk among the acquiring companies. We can also conclude that acquisitions are not only performed by companies with stable financial background. This statement is confirmed by the fact that one of the analyzed companies went out of business after the M&A transaction. From this, we can make conclusions concerning the accuracy of the model, even if this was not set as a goal for our current research.

Also, the following question arises: what is the reason for the increase in the bankruptcy risk score of the acquiring companies in the second year after the transaction? One possible reason could be that the short-term effects of the transactions improve the financial indicators of the enterprises, yet financial difficulties return after the integration of the structures. Another possible explanation is that the (reasonable) post-integration measures degrade the performance of the companies. This is mostly demonstrated by cash flow, and an increase in liabilities.

Regarding to the two research questions of the study, our summary statement is that there was no efficiency gain or decline of bankruptcy risk in the case of the analyzed population. This is supported by the finding that the bankruptcy risk score increased in the case of nine companies based on the individual data analysis and logistic regression, while the deterioration of the values was significant in seven cases. According to the results of the discriminant analysis, setback can be observed in the case of seven companies, deterioration of bankruptcy risk value was critical in three of these cases. We could only detect the improvement of efficiency in the case of seven of the companies in the period after the transactions.

We reject the hypothesis of the research based on our results: the number of companies with bankruptcy risk among the analyzed companies increased as a result of the transaction. Furthermore, significant efficiency improvement could only be observed in the case of a small proportion of the companies. Also, efficiency improvement was not a clear tendency.

The limitation of the research is that two methods were used to assess the risk of bankruptcy, while the Hungarian practice uses more than one model. However, the analysis with these two models is relevant in terms of further research directions.

Conflicts of Interest: The authors declare no conflict of interest.

References

- Baranyi, A. (2018). *A magyarországi vállalati szektor pénzügyi típusjelenségeinek vizsgálata a 2006−2015 közötti időszakban [Examination of the financial type phenomena of the Hungarian corporate sector in the period between 2006−2015]*. Líceum Kiadó.
- Bognár, E. X. (2005). A vállalati összeolvadások és fúziók megvalósításának kihívásai, avagy játék határok nélkül? [The challenges of implementing corporate mergers and acquisitions, or a game without borders?]. In L. Józsa & J. Varsányi (Eds.), *Marketingoktatás és kutatás a változó Európai Unióban [Marketing education and research in the changing European Union]* (pp. 455–464). University of Győr.
- Bruyland, E., & de Maeseneire, W. (2016). The Risk Effects of Acquiring Distressed Firms. *Journal of Business Finance and Accounting*, *43*(9-10), 1297–1324. https://doi.org/10.1111/jbfa.12210
- Bruyland, E., Lasfer, M., De Maeseneire, W., & Song, W. (2019). The performance of acquisitions by high default risk bidders. *Journal of Banking & Finance*, *101*, 37–58. https://doi.org/10.1016/j.jbankfin.2019.01.019
- Copeland, T. E., & Weston, J. F. (1992). *Financial Theory and Corporate Policy*. Addison-Wesley Publishing Company.
- Filipović, D. (2012). Impact of Company's Size on Takeover Success. *Economic Research-Ekonomska Istraživanja*, *25*(2), 435–444. https://doi.org/10.1080/1331677X.2012.11517516
- Furfine, C. H., & Rosen, R. J. (2011). Mergers increase default risk. *Journal of Corporate Finance*, *17*(4), 832–849. https://doi.org/10.1016/j.jcorpfin.2011.03.003
- Ghosh, A., & Jain, P. C. (2000). Financial leverage changes associated with corporate mergers. *Journal of Corporate Finance*, *6*(4), 377–402. https://doi.org/10.1016/S0929-1199(00)00007-9
- Gorton, G., Kahl, M., & Rosen, R. J. (2009). Eat or Be Eaten: A Theory of Mergers and Firm Size. *Journal of Finance*, *64*(3), 1291–1344. https://doi.org/10.1111/j.1540-6261.2009.01465.x
- Hajdu, O., & Virág, M. (2001). A Hungarian model for predicting financial bankruptcy. *Society and Economy in Central and Eastern Europe*, *23*(1-2), 28–46.
- Hungarian Central Statistical Office (2019). *A regisztrált gazdasági szervezetek száma, 2018 [Number of registered economic organizations, 2018]*. https://www.ksh.hu/docs/hun/xftp/gyor/gaz/gaz1812.pdf
- Juhász, A., & Wagner, H. (2010). *A kemény diszkontláncok terjedésének külkereskedelmi hatásai. Trójai falovak Németország szolgálatában? [Foreign trade effects of the spread of hard discount chains. Trojan horses at the service of Germany?]*. Agrárgazdasági Kutató Intézet.
- Kandžija, V., Filipović, D., & Kandžija T. (2014). Impact of industry structure on success of mergers and acquisitions. *Technical Gazette: Tehnički Vjesnik*, *21*(1), 17–25. https://hrcak.srce.hr/clanak/172317
- Koerniadi, H., Krishnamurti, C., & Tourani-Rad, A. (2015). Cross-border mergers and acquisitions and default risk. *International Review of Financial Analysis*, *42*, 336–348. https://doi.org/10.1016/j.irfa.2015.08.009
- Koi, T. (2019). *Létrejöhet az eMAG-Edigital fúzió [The eMAG-Edigital fusion could be created]*. HWSW. https://www.hwsw.hu/hirek/60985/emag-extreme-digital-fuzio-gvh-engedelyezes.html
- Kotormán, A. (2009). *A mezőgazdasági vállalatok felszámolásához vezető okok elemzése [Analysis of the reasons leading to the liquidation of agricultural companies]* [Doctoral dissertation, University of Debrecen]. University of Debrecen
- Kucséber, L. Z. (2016). A hazai felvásárlás előtt és után: fókuszban a forgótőke-menedzselés [Before and after the domestic acquisition: focus on working capital management]. *Hitelintézeti Szemle*, *15*(1), 70–90. http://epa.oszk.hu/02700/02722/00076/pdf/EPA02722_hitelintezeti_szemle_2016_1_070-090.pdf
- Leland, H. E. (2007). Financial Synergies and the Optimal Scope of the Firm: Implications for Mergers, Spinoffs, and Structured Finance. *The Journal of Finance*, *62*(2), 765–807. https://doi.org/10.1111/j.1540-6261.2007.01223.x
- Lentner, C. (2015). A vállalkozás folytatásának számviteli alapelvének érvényesülése a közüzemi szolgáltatóknál [The application of the accounting principle of the continuation of the business at utility service providers]. In C. Lentner (Ed.), *Adózási pénzügytan és államháztartási gazdálkodás [Tax finance and public finance management]* (pp. 763–785). Ludovika University of Public Service.
- Mfor (2013). *Csúnyán megfeküdte a felvásárlás a CBA és az Auchan gyomrát [The acquisition was a bad experience for CBA and Auchan]*. Menedzsment Fórum. https://mfor.hu/cikkek/vallalatok/Uzletatvetelek_rontottak_a_legnagyobb_magyar_uzletlanc_eredmenyet.html
- Molnár, P. (2019). Az önkormányzati vállalatok működőképessége megyei összehasonlításban [Operability of corporations owned by local government in Hungary in county comparison]. *Területi Statisztika*, *59*(3), 273–299. https://doi.org/10.15196/TS590302
- Rahman, M., & Lambkin, M. (2015). Creating or destroying value through mergers and acquisitions: A marketing perspective. *Industrial Marketing Management*, *46*(2), 24–35. https://doi.org/10.1016/j.indmarman.2015.01.003
- Rahman, M., Lambkin, M., & Hussain, D. (2016). Value creation and appropriation following M&A: A data envelopment analysis. *Journal of Business Research*, *69*(12), 5628–5635. https://doi.org/10.1016/j.jbusres.2016.03.070
- Renneboog, L., & Vansteenkiste, C. (2019). Failure and success in mergers and acquisitions. *Journal of Corporate Finance*, *58*, 650–699, https://doi.org/10.1016/j.jcorpfin.2019.07.010
- Savović, S. (2016). The post-acquisition performance of acquired companies: Evidence from the Republic of Serbia. *Economic Annals*, *61*(209), 79–104. https://doi.org/10.2298/EKA1609079S
- Virág, M., & Hajdu, O. (1998). Pénzügyi viszonyszámok és a csődelőrejelzés [Financial ratios and bankruptcy forecasting]. In T. Bácskai, J. Király, J. Marmoly, B. Májer, M. Sulyok-Pap (Eds.), *Bankról, pénzről, tőzsdéről: Válogatott előadások a Bankárképzőben 1988-1998* (pp. 440–457). Kossuth Kiadó.

- Virág, M., & Kristóf, T. (2005). Az első hazai csődmodell újraszámítása neurális hálók segítségével [Recalculation of the first domestic bankruptcy model using neural networks]. *Közgazdasági Szemle*, *52*(2), 144–162.
- Wish, R. (2010). *Versenyjog [Competition law]*. Hvg-Orac Lap- és Könyvkiadó.
- Yen, T.-Y., & André, P. (2007). Ownership structure and operating performance of acquiring firms: The case of English-origin countries. *Journal of Economics and Business*, *59*(5), 380–405. https://doi.org/10.1016/j.jeconbus.2007.04.003
- Zéman, Z., & Lentner, C. (2018). The Changing Role of Going Concern Assumption Supporting Management Decisions after Financial Crisis. *Polish Journal of Management Studies*, *18*(1), 428–441. https://doi.org/10.17512/pjms.2018.18.1.32