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PREPARATION OF SMALL AND MEDIUM-SIZED POLISH ACQUIRING ENTERPRISES FOR MERGER – SELECTED ASPECTS

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Abstract:
Enterprises preparing for merger could be under strong pressure to carry out the merger process in order to implement the development plans devised by management boards. Hence, it can be assumed that the financial condition of small enterprises initiating merger (acquiring enterprises) will be good. In fact research results revealed that financial conditions deteriorated. The research has confirmed that in some periods there is a statistically significant relation between the receivables collection period and profitability of assets in the group of small and medium-sized enterprises. The research has confirmed that in some periods there is a statistically significant relation between the inventory conversion cycle and operating profitability of assets in the group of small and medium-sized enterprises. The research has confirmed that in some periods there is a negative relation between the payables collection period and operating profitability of assets.

Keywords:
merger, acquisition, accounting, SME.

INTRODUCTION

There are numerous studies presenting the relations between the formation of working capital management parameters and profitability of enterprises. A significant literary source reporting on the problem of working capital management against profitability of enterprises is a paper by Deloof.[1] He examined Belgian firms. His research and conclusions provided a solid basis for later publications, which expanded on the issue of managing assets and sources of financing in correspondence with profitability of enterprises (e.g. Padachi[2], Garcia-Teruel, Martinez-Solano[3], Nobanee[4]). In principle, most authors agreed with Deloof's findings, namely that there is a negative relation between components of working capital: receivables collection period, inventory conversion cycle, payables collection period, and profitability of enterprises. This means that earlier collection of receivables (the enterprise "invests" less in receivables) and ensuring earlier conversion of inventories and sales of finished goods have a positive influence on enterprises' performance.

Lazardisand and Tryfonidas[5] analysed Greek stock-listed companies. They were large companies that entered the regulated capital market. The results of their examination show that there is a negative relation between performance of enterprises (measured by

1 Deloof, M. (2003), Does working capital management affect profitability of Belgian firms? *Journal of Business Finance and Accounting*, vol. 30 (3-4)
2 Padachi, K. (2006), Trends of working capital management and its impact on firm performance …, *International Review of Business Research Papers*, vol. 2
3 Garcia-Teruel P.J,& Martinez-Solano P. (2007), Effects of working capital management on SME profitability, *International Journal of Managerial Finance, 3* (2)
4 Nobanee, H., Abdullatif, M.,& Al Hajjar, M. (2010), Cash Conversion Cycle and Firm's Performance of Japanese Firms. *Asian Review of Accounting, 19*(2)
5 Lazardis I., Tryfonidas D. (2006). Relationship Between Working Capital Management and Profitability of Listed Companies in the Athens Stock Exchange. Journal of Financial Management and Analysis, vol. 19, No. 1,

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profitability of assets) and the receivables collection period and the inventory conversion cycle (the coefficients of independent variables were negative). The opposite relation occurs in the payables collection period, where the period extension has a positive influence on profitability of enterprises. Additionally, Lazardisand and Tryfonidas studied the impact of the structure of assets on the operating profitability of the examined companies. The outcome of the research led to the conclusion that the greater the share of fixed assets in the assets of the analysed companies, the higher operating profitability was achieved by the companies.

A majority of studies analysed financial data of large enterprises. These were usually stock-listed companies, on which more reporting obligations were imposed and whose financial data were easily accessible. The size of a company might influence the method of performing economic. Based on the report prepared by Ernst & Young[6], it can be concluded that medium-sized enterprises are in a better position than small entities as regards the capability to manage working capital and, what follows, assets and sources of financing.

The problem of small and medium-sized enterprises and working capital management was studied by Lima, Martins, Brandao.[7] The authors analysed financial data of small and medium-sized enterprises from 19 European countries in the period 2008-2013. However, Poland was not among the examined countries. The general conclusion reached in their research confirms that there are negative relations between the receivables collection period, inventory conversion cycle and profitability of enterprises. It is interesting to note that there is a negative relation between the payables collection period and profitability. This means that shortening the payables collection period has a positive influence on enterprises' performance. Lima, Martins, Brandao also analysed the impact of the number of management staff on enterprises' performance. It was found that the number of persons engaged in making decisions affected profitability of enterprises. The relation between the number of management staff and profitability is negative. The research sample used in this paper corresponds with the period of the study carried out by Lima, Martins, Brandao.

Enterprises preparing for merger could be under strong pressure to carry out the merger process in order to execute development plans designed by management boards. In such a situation, there is a conflict between owners and the management board, which is described in the relevant literature by the agency theory. It would seem that such discrepancies between the goals of management boards and those of owners will be noticeable in larger enterprises, where owners delegate their competencies to third parties. A significant factor determining the financial situation in acquiring companies is the merger financing method. Financial results could influence the valuation of the merging companies, thus affecting the price of acquisition.

The following research problems were formulated in the study:

- Medium-sized enterprises shape their asset and liability management policy to achieve the optimal financial result more consciously. This should be manifested in the relations between the basic financial indicators, which are convergent with what is presented in the relevant literature: theory and empirical research. Small enterprises, through their market position, which is normally subordinate to larger entities, will not be able to use their resources optimally. In this group of enterprises, the relations between asset and liability formation indicators do correspond to the comparable relations in medium-sized enterprises.
- In small enterprises, merger of economic entities takes place in the period of economic activity stabilisation. Hence, it can be assumed that the financial condition of small enterprises initiating merger (acquiring enterprises) will be good. In the case of medium-sized enterprises, merger can be an escape from bankruptcy or an element of further economic development.

The initial hypotheses regard the problem of managing the resources held by small and medium-sized acquiring enterprises. Based on the author's own assumptions and analysis of the relevant literature, the following hypotheses were proposed:

H1a: There is a negative relation between the receivables collection period and operating profitability of enterprises

H1b: There is a negative relation between the inventory conversion cycle and operating profitability of enterprises

H1c: There is a negative relation between the payables collection period and operating profitability of enterprises

The next hypothesis concerns the choice of the moment to carry out the merger process by acquiring companies.

H2: Financial indicators of small enterprises were improved over the five-year period preceding merger.

METHODOLOGY OF THE RESEARCH

The database prepared for the Accountants Association in Poland by InfoCredit S.A. was used in the research. The database contains financial statements of the companies which made an entry of merger or acquisition of economic entities to the National Court Register (KRS). In order to examine acquiring companies only, the information about the entry to KRS was limited to the word: acquisition or acquisition of another entity.

6 Ernst and Young, (2011). Size matter in working capital. *Capital agenda insights*

7 Lima, V., Martins, F.V., Brandao E. (2015). The Management of Working Capital and Profitability of SMEs in the Euro Area. Available at http://dx.doi.org/10.2139/ssrn.2704622

The financial data contained in the database cover the period from 2003 to 2012. The acquiring companies' statements published 5 years before merger and 1 year before merger were selected from that period.

The research focused on the companies operating in the manufacturing sector. The classification was made based on the first entry of the classification of economic activities. There is a risk that the first entry may not be the core activity for the enterprises and that the type of the activity pursued might have changed over the five-year period.

The division of the companies into small and medium-sized enterprises was made based on a comparison of the sum of the companies' assets and revenues to the assumed cut-off points. Small enterprises are ones where the sum of assets was below PLN 17,000,000 and which at the same time generated revenues below PLN 34,000,000. These values arise from the provisions of the Accounting Act[8], which stipulates which entities are small enterprises as defined in the Act in Article 3 par. 1c. The number of persons employed in the enterprises was not taken into account when identifying a small entity. The exclusion of this criterion resulted from the lack of data on employment in the merging enterprises.

For verification of hypotheses, descriptive statistics and Kolmogorov-Smirnov test were used for comparison of distribution fitting

$$D_{n_1,n_2} = \sup_{-\infty < x < \infty} \left| F_{1,n_1}(x) - F_{2,n_2}(x) \right|, \qquad (1)$$

where:
$F_{1,n_1}(x)$ - empirical distribution function of first selection
$F_{2,n_2}(x)$ - empirical distribution function of second selection

Mann-Whitney test for comparison of medians

$$U' = n_y n_x \frac{n_y(n_y+1)}{2} - R_y \,,\quad U = n_y n_x - U' \qquad (2)$$

where:
n_x - number of x-th sample observations
n_y - number of y-th sample observations
R_y - sum of y-th sample order
U, U′ - test criterion

and Kendall coefficient for linear correlation of indicators

$$r_K = \frac{n_c - n_d}{n(n-1)/2} \qquad (3)$$

where:
n - number of observations of pair of variables
n_c - number of discordant pairs
n_d - number of concordant pairs

8 The Accounting Act (Poland), Dz.U. 1994 No. 121 item 591, as amended,

The whole process of statistical analyzes was carried out in MS Excel, Statistica 12 and Statgraphics.

For the purpose of verifying hypotheses one and two, the following variables were used:
RCP – receivables collection period

$$RCP = \frac{Receivables}{Revenue\ from\ sales} \times 365 \qquad (4)$$

PCP – payables collection period

$$PCP = \frac{Short-term\ payables}{Revenue\ from\ sales} \times 365 \qquad (5)$$

ICP – inventory conversion cycle

$$ICP = \frac{Inventories}{Revenue\ from\ sales} \times 365 \qquad (6)$$

ATA – structure of assets

$$ATA = \frac{Fixed\ assets}{Total\ assets} \qquad (7)$$

CAPS – structure of financing

$$CAPS = \frac{Equity + long-term\ payables}{Total\ assets} \qquad (8)$$

ROA – return on assets

$$ROA = \frac{Operating\ result}{Total\ assets} \qquad (9)$$

RESULTS AND DISCUSSION

Hypotheses 1a, 1b and 1c will be verified based on the regression analysis, where the dependent variable will be ROA – operating profitability of acquiring companies' assets. The analysis will be conducted for two groups of companies: small enterprises and medium-sized enterprises. Additionally, examination will be carried out for the periods: 5 years before merger, and 1 year before merger.

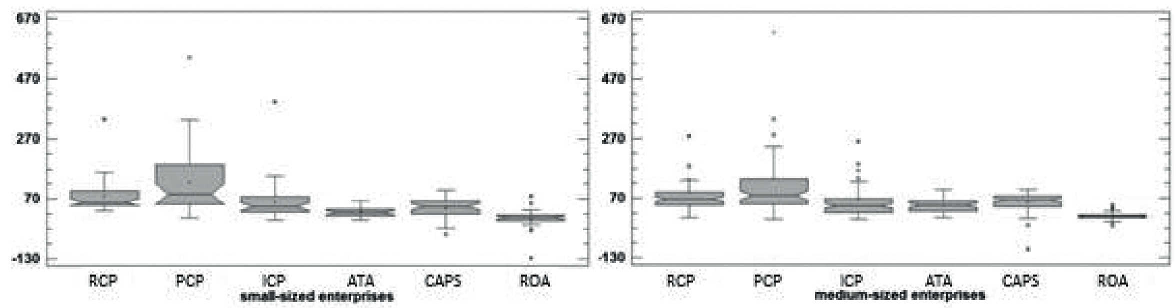
It can be assumed that in medium-sized enterprises, shortening the receivables collection and inventory conversion periods and extending the payables collection period 5 years before merger will have a positive influence on operating profitability of assets. Additionally, increasing the share of fixed assets and constant capital can be evidence of the companies' stability, which can translate into increased operating profitability of assets.

In the group of medium-sized enterprises, any deviations from the relations between variables which are considered optimal 1 year before merger can be proof of problems in the companies. These could be problems arising from the conflict of interests between owners and management staff.

It can be stated that there are discrepancies between small and medium-sized enterprises as regards means and medians of financial indicators. In comparison to medium-sized enterprises, small ones were characterised by longer receivables repayment (RCP), inventory conversion (ICP), and earlier payables repayment (PCP) time on average. Hence, small enterprises can have more difficulties shaping their credit and warehouse policies and the received trade credits. Small enterprises financed their activities with the use of short-term capital (CAPS) to a greater extent. The share of fixed assets in total assets was lower in small enterprises than in other companies (ATA). Small enterprises achieved lower return on assets on average.

5 years is quite a long time in enterprise operation. Many entities did not plan their future mergers 5 years in advance. Table1 presents the basic characteristics of small and medium-sized enterprises 5 years before merger.

Table 1. Comparative analysis for small and medium-sized enterprises 5 years before the intended merger



*ATA, CAPS, ROA are multiplied by 100 for better illustration

	small-sized			medium-sized		
	Average	Median	St. dev.	Average	Median	St. dev.
RCP	79,68	58,02	58,31	132,03	66,51	532,83
PCP	124,94	85,94	111,85	625,92	78,90	3644,55
ICP	60,36	44,00	69,31	66,51	45,00	132,37
ATA	0,25	0,24	0,17	0,46	0,46	0,22
CAPS	0,39	0,44	0,33	0,56	0,64	0,30
ROA	0,05	0,08	0,32	0,10	0,09	0,12

Source: own work

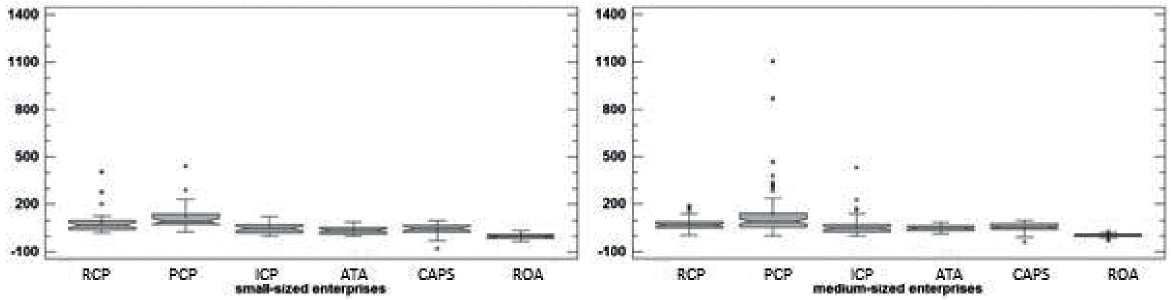
Based on the extensive data in table1, it can be concluded (median values of financial indicators) that small-sized enterprises received cash from sales earlier and converted inventories into sold finished goods faster. Yet the fact that small enterprises achieved a higher median of payables collection period is unusual. This can result from problems with liquidity or better credit conditions offered by suppliers. Small enterprises used their own fixed assets to a smaller extent (the ATA indicator is lower in small enterprises than in medium-sized ones). Profitability of small enterprises' assets was lower than that of medium-sized entities.

The financial standing changed in the acquiring companies over 5 years preceding merger. Table 2 presents means and medians of the companies' financial indicators 1 year before merger.

Based on the data from table 2, it can be stated that, on average, small enterprises in comparison to medium-sized companies, received money from the finished goods sold (RCP) earlier and converted inventories (ICP) faster 1 year before merger. Small enterprises also had to pay their liabilities (PCP) later. It can be concluded that current assets are managed better in small enterprises than in medium-sized entities.

In comparison to medium-sized enterprises, small entities had a lower share of fixed assets, but the share increased to get close to the average share of medium-sized enterprises.

Table 2. Comparative analysis for small and medium-sized enterprises 1 year before the intended merger

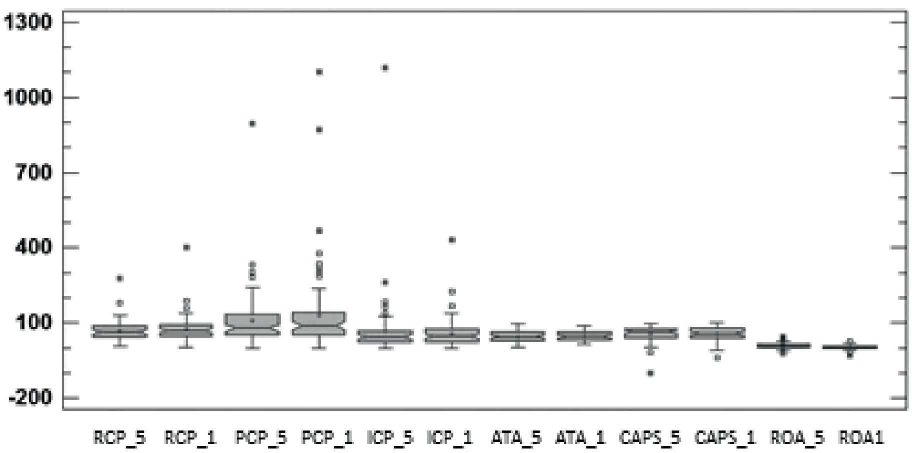


*ATA, CAPS, ROA are multiplied by 100 for better illustration

	small-sized			medium-sized		
	Average	Median	St. dev.	Average	Median	St. dev.
RCP	87,99	68,35	81,72	73,62	69,83	37,04
PCP	123,47	92,72	87,45	133,64	92,25	170,10
ICP	51,31	47,00	36,67	57,95	47,50	59,53
ATA	0,37	0,35	0,26	0,48	0,47	0,20
CAPS	0,41	0,46	0,40	0,54	0,54	0,27
ROA	-0,01	-0,02	0,14	0,04	0,03	0,09

Source: own work

Table 3. Comparative analysis for small enterprises 5 years and 1 year before merger

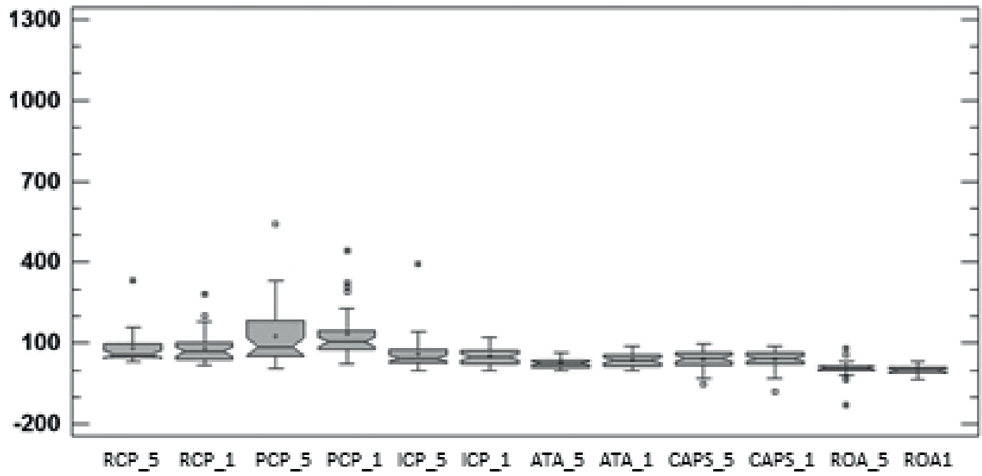


*ATA, CAPS, ROA are multiplied by 100 for better illustration

Source: own work

The analysis of the financial data from table 3 presents the companies' preparation for merger from the acquiring company's point of view. In the group of small enterprises, the companies deteriorated their resource management over the 5-year period. The median values for the receivables collection period and the payables collection period increased. The companies converted inventories in sold finished goods slower. Small enterprises also invested in fixed assets, the average ATA indicator grew by over 40% in the analysed period. Small acquiring enterprises kept the share of constant capital in the structure of financing (CAPS) at a similar level.

Table 4. Comparative analysis for medium-sized enterprises 5 years and 1 year before merger



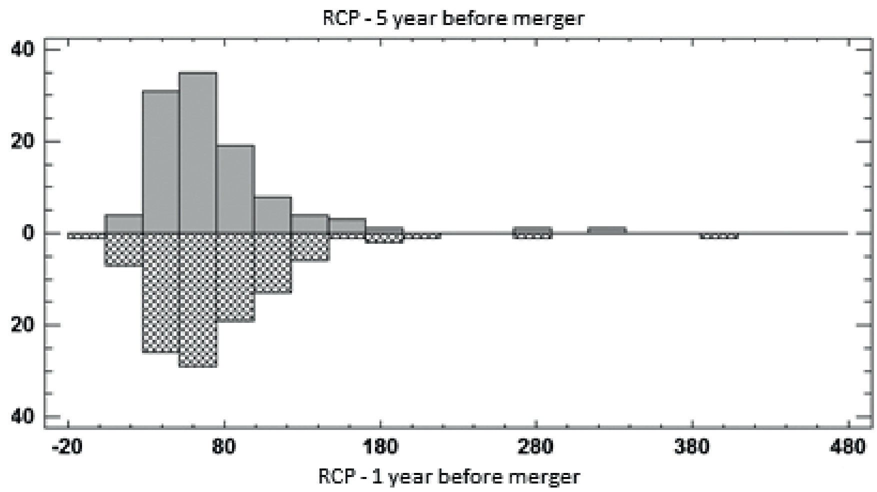
* ATA, CAPS, ROA are multiplied by 100 for better illustration

Source: own work

Table 4 demonstrates means and medians for independent and dependent variables for the group of medium-sized enterprises 5 years and 1 year before merger. Based on the analysis of mean indicators from table 4, it can be stated that the receivables collection, inventory conversion, and payables collection periods were extended. While the extension of the payables collection period is beneficial for the financial management of companies (unless it results from payment problems), the extension of the receivables collection and inventory conversion periods might be an evidence of problems with asset management. The median value of operating profitability dropped over the five-year period. In contrast to small enterprises, the structure of assets (ATA) slightly changed, from 0.46 to 0.47, in the group of medium-sized enterprises. This could indicate the optimal level of the fixed assets held.

Hypothesis 2 provided that financial indicators improved in the group of small acquiring enterprises. The hypothesis will be verified based on the equality test of two medians: for the period of 5 years before merger and 1 year before merger. Rejection of the hypothesis of equality of two medians will be the basis for concluding that the mean value differed significantly in the examined periods. According to the author, the role of stimulant is played by the payables collection period (PCP), structure of assets (ATA), structure of capital (CAPS). Antistimulants (the lower the value, the more beneficial for the company) will be the receivables collection period (RCP) and the revenue conversion cycle (ICP).

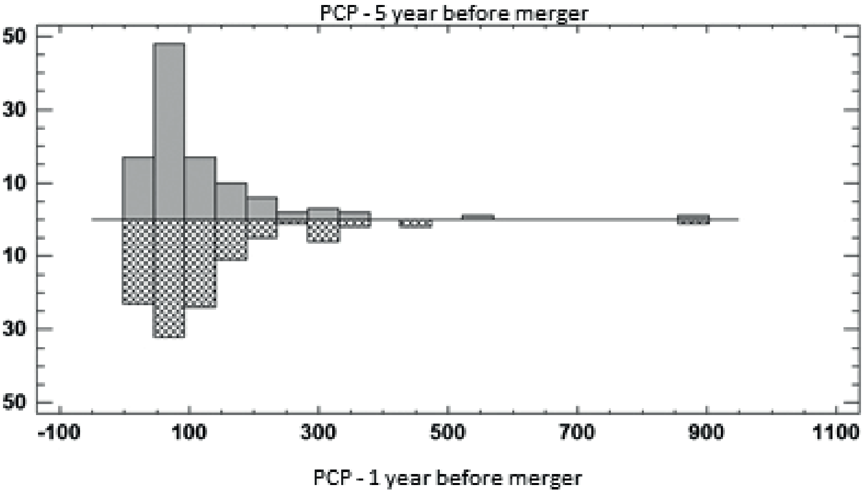
Table 5. Comparative analysis of RCP indicator 5 years and 1 year before merger



Based on K-S test (T = 0,102; p = 0,623) and W-test (T = 6048; p = 0,476) there are no statistically significant differences between medians and distributions of RCP.

Source: own work

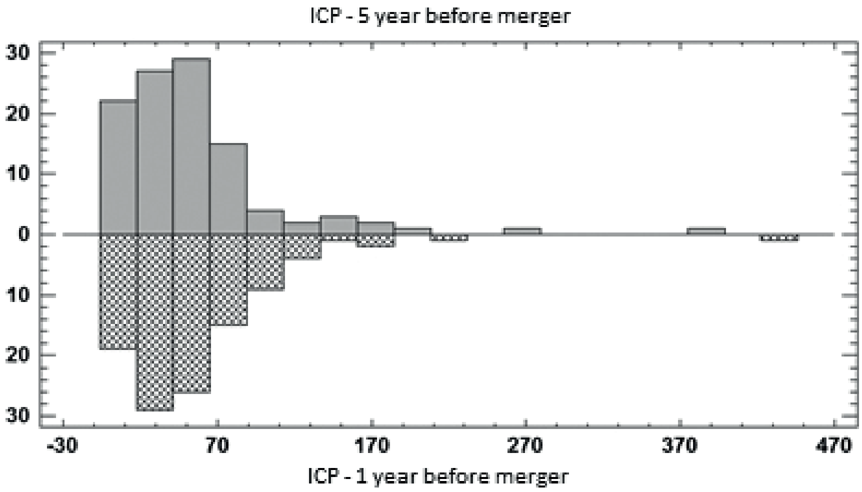
Table 6. Comparative analysis of PCP indicator 5 years and 1 year before merger



Based on K-S test (T = 0,121; p = 0,414) and W-test (T = 6012,5; p = 0,525) there are no statistically significant differences between medians and distributions of PCP.

Source: own work

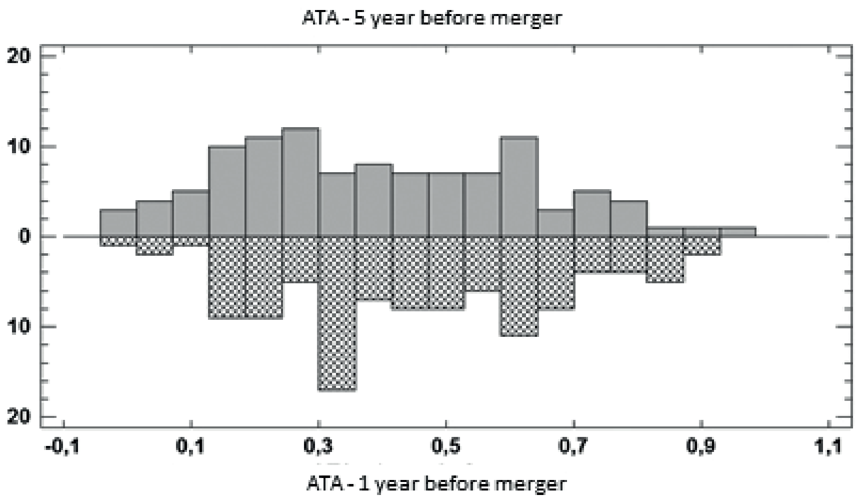
Table 7. Comparative analysis of ICP indicator 5 years and 1 year before merger



Based on K-S test (T = 0,065; p = 0,976) and W-test (T = 5966; p = 0,595) there are no statistically significant differences between medians and distributions of ICP.

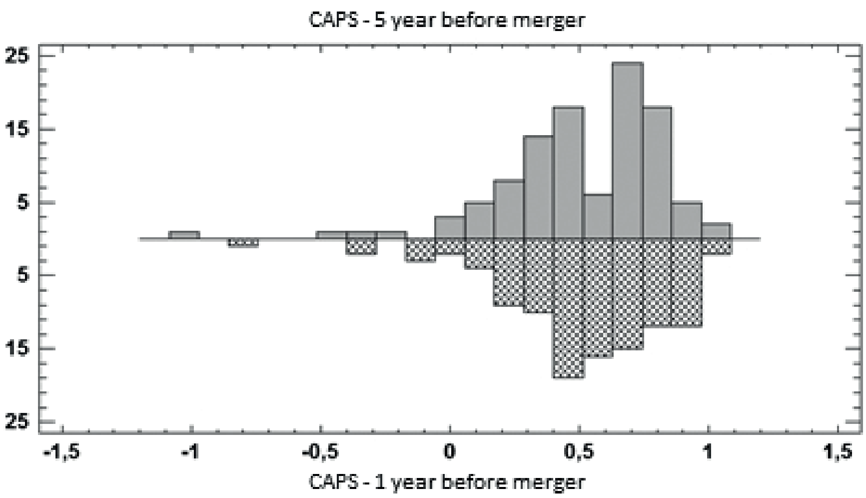
Source: own work

Table 8. Comparative analysis of ATA indicator 5 years and 1 year before merger



Based on K-S test (T = 0,168; p = 0,097) and W-test (T = 6570; p = 0,062) there are no statistically significant differences between medians and distributions of ATA.
Source: own work

Table 9. Comparative analysis of CAPS indicator 5 years and 1 year before merger



Based on K-S test (T = 0,075; p = 0,926) and W-test (T = 5675; p = 0,914) there are no statistically significant differences between medians and distributions of CAPS.
Source: own work

On the basis of the analysis of changes of the median values of elements influencing working capital, structure of assets, and structure of financing in small acquiring enterprises, it can be concluded that such companies commenced their mergers when their economic activities were not stabilised. It can be assumed that the merger of the companies and their role in the merger process (acquiring companies) prove their willingness to overcome operating or financial difficulties or acquiring companies manipulate their financial position before merging date.

Hypotheses regarded the relations between the individual components of working capital, structure of assets, and structure of financing in the companies and operating profitability of enterprises. The hypotheses will be verified with the use of correlation analysis, for small and medium-sized enterprises separately.

H1a: There is a negative relation between the receivables collection period and operating profitability of enterprises

H1b: There is a negative relation between the inventory conversion cycle and operating profitability of enterprises

H1c: There is a negative relation between the payables collection period and operating profitability of enterprises

First, the correlation analysis will be carried out for acquiring companies, regardless of the period of 5 years or 1 year before merger, for small enterprises and for medium-sized enterprises.

Table 10 presents the correlation equation coefficients for medium-sized enterprises.

Table 10. Correlation analysis in the group of medium-sized enterprises 5 years before merger

-1,0 … 1,0

X = not significant at 5%

	RCP	PCP	ICP	ATA	CAPS
ROA	X	-0,29	X	-0,28	0,29

Source: own work

Based on the results from the table 10, it can be concluded that structure of assets (ATA) and payable collection period in the group of medium-sized enterprises 5 years before merger have a negative effect on operating profitability of assets.

Table 11. Correlation analysis in the group of medium-sized enterprises 1 year before merger

-1,0 … 1,0

X = not significant at 5%

	RCP	PCP	ICP	ATA	CAPS
ROA	-0,39	-0,27	-0,28	X	X

Source: own work

The research results presented in table 11 show similar tendencies in the group of medium-sized enterprises 5 year before mergers as in the same group of enterprises 1 year before mergers. The coefficient is negative in the case of the indicator of the payable collection period. 1 year before merger receivables collection period and inventory conversion period have a negative impact on return of assets. In the period of 1 year before merger there is no negative effect of assets structure on profitability (ROA).

Table 12. Correlation analysis in the group of small enterprises 5 years before merger

-1,0 … 1,0

X = not significant at 5%

	RCP	PCP	ICP	ATA	CAPS
ROA	-0,16	-0,26	X	-0,16	X

Source: own work

It can be assumed that the companies were incapable of optimal formation of receivables and payables policy. The research results reveal similar tendencies in the group of medium-sized enterprises 5 year before mergers as in the same group of small enterprises 5 year before mergers. The coefficient is negative in the case of the assets structure indicator.

Table 13. Correlation analysis in the group of small enterprises 1 year before merger

-1,0 … 1,0

X = not significant at 5%

	RCP	PCP	ICP	ATA	CAPS
ROA	X	X	X	-0,18	X

Source: own work

As far as small companies 1 year before merger are concerned, surprisingly only assets structure indicator has an impact on return rate of assets (negative coefficient). Neither receivable and payable collection period nor inventories conversion period influence profitability of assets.

CONCLUSION

Polish acquiring enterprises, divided into small and medium-sized ones, were selected for the research. Additionally, small acquiring enterprises were analysed in two periods that are significant from the point of view of the merger process: 5 years and 1 year before merger. Based on the literature review, there are no scientific studies presenting results of such research.

H1a: There is a negative relation between the receivables collection period and operating profitability of enterprises

The research has confirmed that there is a statistically significant relation between the receivables collection period and profitability of assets only in the group of medium-sized companies 5 years before merger and 1 year before merger. There are no statistically significant relations between receivables collection period and return of assets in a group of small companies. It might indicate that small companies have less power in creating their receivables policy.

H1b: There is a negative relation between the inventory conversion cycle and operating profitability of enterprises

The research has confirmed that there is a statistically significant relation between the inventory conversion cycle and operating profitability of assets only in the group of medium-sized enterprises 1 year before merger.

H1c: There is a negative relation between the payables collection period and operating profitability of enterprises

The research has confirmed that there is a negative relation between the payables collection period and operating profitability of assets in the group of medium sized companies (in all periods) and in the group of small companies only 5 years before merger. This means that, contrary to the author's assumption, extension of the payables collection period results in reduced operating profitability of acquiring companies.

H2: Financial indicators of small enterprises were improved over the five-year period preceding merger.

Based on the changes of medians values over the five-year period, it can be concluded that financial condition of acquiring companies deteriorated. The median values of the receivables collection period, payable collection period and the inventory conversion cycle were increased. Small acquiring enterprises waited for their money from consumers for a longer time and converted inventories in sold finished goods longer. In 5-year period preceding merger profitability of assets decreased. The median values of the structure of assets were extended. Small acquiring enterprises developed by increasing their assets, including fixed ones.

It is interesting to note that also in case of medium sized companies, financial indicators in five-year period preceding merger also deteriorated. As far as correlation analysis is concerned, the research revealed that 1 year before merger medium-sized companies had negative coefficient for working capital components. In the same period working capital indicators for small acquiring companies were not significant from statistical point of view.

Based on the tests of equality of the medians values of the indicators, it can be stated that the difference of values (between the 5th and the 1st year before merger) was not statistically different than 0. In all cases, there were no grounds to reject the statement about the equality of the medians values of independent variables.

The research focused on the companies operating in the manufacturing sector. The classification was made based on the first entry of the classification of economic activities. There is a risk that the first entry may not be the core activity for the enterprises.

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