Strategies of Receivables Management in Multi-entity Organizations

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Abstract—**Receivables management is the most important area of financial management. Their level and a management policy have a decisive impact on the financial safety of enterprises. Receivables are the basic component of current assets. In general, short-term receivables (current receivables), i.e. receivables from customers are the largest share in the structure of receivables. Managers are still looking for some tools, methods of managing them, which will enable them to manage such a policy that will allow their quick impact without the risk of losing a contractor. Consumers operating in the functioning market gain large opportunities to manage receivables from customers in group purchasing organizations, capital groups and clusters. Joint operation allows using certain tools and methods that improve the receivables management process.**

The aim of the article is to present the strategy of managing receivables in group purchasing organizations. They were divided into branch and multi-branch ones. Purchasing groups are most often associated with the purchase process, the effect of scale. However, the joint action has a strong impact on building a receivables management strategy. The analysis was carried out on a group of 70 Polish small trade enterprises. The research was carried out on the basis of financial statements for the years 2014-2016. Selected financial ratios and statistical methods were used for the research.

Keywords—Receivables; Group purchasing organizations (GPOs); Strategies

I. INTRODUCTION

Receivables management is a process that begins much before an invoice , i.e. a deferred payment account is issued. In order to manage receivables from recipients effectively, some appropriate rules of granting trade credit should be introduced in advance. The contractors should be divided into appropriate risk groups. It is necessary to discuss lending limits and the length of trade credits for each risk group. The created policy of managing receivables simplifies the process of debt collection and minimizes the risk of bad debts. The sales department should act strictly according to the rules that are set out in the receivables management policy at the time of the sales transaction. Otherwise, such a transaction is subject to high risk. Decisions on granting trade credit are of great importance for sales volumes and maintaining financial liquidity [1]. Trade credit is a necessity today, every company must offer it to its recipients. Receivables are a form of crediting customers, which can be an excellent "weapon" to fight against competition [2]. International competition and the high number of newly created companies in a given area are

the main reasons for the financial problems of enterprises [3] Extending payment terms encourages buyers to make purchases. Receivables management is a process whose main assumption is to counteract the occurrence of overdue receivables. An enterprise that manages receivables efficiently is competitive in the market as it has free cash. It can pay faster to its contractors, which improves its image in the market. Such a company is reliable, it can offer contractors more favorable conditions for granting trade credits. In the case of receivables three basic strategies: conservative, moderate and aggressive can be distinguished [4]. The conservative strategy is based on the creation of such mechanisms that will completely eliminate the risk of customer insolvency. In the case of this strategy contractors who do not pay their obligations are quickly abandoned. This strategy is based on continuous monitoring of receivables and an aggressive debt collection. Such rules may discourage contractors from cooperation, which will have a negative impact on the level of revenues in the future. When customers give up, the revenues will decrease. The aggressive strategy is based on excessive trust towards recipients. Sales with deferred, often long-term payments are carried out for trusted and new contractors. If the recipients are honest and have no financial problems, then it results in high revenues and profits. However, if bad debts appear and continue growing, then in the long-term the aggressive strategy will lead to the bankruptcy of the enterprise. The last of the classic strategies is the moderate strategy which is an indirect solution in the case of receivables management. Moderate strategies are worth separating into moderate-conservative and moderate aggressive. In the case of the moderate-conservative strategy, the basic rules of conduct should be those that apply to the conservative strategy with one exception. Managers should introduce cautious debt collection not to discourage contractors. They should offer some discounts for early payment and limit aggressive methods of collection of receivables and take some risk of the possibility of occurrence of overdue receivables. These activities should be selected so that they do not lead to the loss of contractors. The moderate-aggressive strategy based on the aggressive one should eliminate the sales of cash to new contractors. Alternatively, a 2-3 day payment period should be introduced. Conducting sales based on granting a long trade credit will certainly lead to payment bottlenecks.

II. GROUP PURCHASING ORGANIZATIONS VS. RECEIVABLES

The easiest way to describe a group purchasing organization is as a group of companies from the same or different branch that combine to make joint purchases .Another definition defines the purchasing group as a group of cooperating enterprises. They are managed by a specially created central unit whose purpose is to carry out tasks commissioned by enterprises forming a purchasing group [5]. In the case of the functioning of purchasing groups, trust and cooperation are very important. Consolidation of members of a given group is the basis for negotiations with producers [6].The purchasing group can be described as powerful buyers. They meet important criteria characteristic of powerful buyers, they buy large quantities [7]. And the fact that companies make large purchases and use the economies of scale makes that the management of receivables in purchasing groups largely depends on the purchasing power of the group. In their research, the authors, as the most important benefits offered by functioning in purchasing groups, mention a reduction in the prices of purchased goods [8], reduction of administrative costs [9,10] and production costs [11]. Benefits also arise when managing receivables from customers, which positively affects financial liquidity.

In the case of multi-entity organizations, which include purchasing groups, the willingness to cooperate within the group is important. Enterprises should exchange experiences, information and knowledge. Only those companies that cooperate within the purchasing group are able to use certain tools that positively influence the receivables management process. The group of these methods and tools include:

- Group purchases, thanks to joint purchases of the company, in addition to the favorable price, they receive an attractive merchant credit. The long period of this loan gives enterprises an opportunity to extend the loan period to the recipients. This action allows maintaining your existing customers and it is also a tool to fight for new business partners.

- Benchmarking, which is the process of learning from the best and comparing with them. It is an effective tool supporting the process of managing receivables. Benchmarking is difficult to implement if we try to compare with a direct competitor due to problems with obtaining the information needed. In purchasing groups this barrier should be eliminated because companies are trying to cooperate with each other.

- Joint monitoring of receivables, information flow about unreliable customers should be the foundation for building individual receivables management strategies. The creation of such databases in branch groups means persistence and a great simplification for enterprises.

- Mutual transactions in the purchasing group are transactions between the central unit and the enterprise or between any enterprises operating in the purchasing group. These transactions are most often introduced to help a company that is in financial trouble at the moment. In a branch purchasing group companies have

more opportunities to help themselves because they buy the same goods from the same suppliers.

In the case of purchasing groups it is important to divide them into multi-branch and branch ones [12]. The branch groups only include units from the same branch. It is easier to manage them, and most importantly, the number of suppliers the negotiations are conducted with is limited. This restriction strengthens the scale effect, there is no fragmentation of participants of the purchasing group on individual recipients. In turn, in the multi-branch purchasing group there are problems with the multi-discipline of participants. There are many suppliers, companies are separated. Table I shows which tool can be used for a specific purchasing group.

TABLE I. AN IMPACT OF TOOLS SUPPORTING THE PROCESS OF MANAGING RECEIVABLES FOR THE FUNCTIONING OF AN ENTERPRISE

Tool of receivables management	Branch group	Multi-branch group
Group purchases	High impact and high benefits	Low benefits due to the division into individual suppliers
Benchmarking	High impact and high benefits limited to only one branch	High benefits, the possibility of comparison with units from a different branch
Joint receivables monitoring	High impact and high benefits	Low benefits, enterprises operate in various branches. They have completely different recipients.
Mutual transactions	Big opportunities and high benefits	There are no such possibilities. Mutual transactions are only possible in companies in the same branch.

a. **Source:** author's own study

The use of the above methods and tool supporting the receivables management process affects positively the receivables management policy.

III. METHODOLOGY AND SUBJECT OF RESEARCH

The research covered 70 Polish small trading enterprises operating in group purchasing organizations. The enterprises belonged to the branch purchasing groups and they were wholesalers operating in the construction industry. They generate a turnover in the range from PLN 10 million (USD 2 million) to PLN 120 million.(USD 30 million). The research period covered the years 2014-2016. The analysis was concerned the evaluation of the receivables management strategy. For this purpose the selected financial ratios and statistical methods were used as basic tools.

IV. THE RESULTS OF THE ANALYSIS

In order to determine the strategy for managing receivables in purchasing groups, the ratio of the share of receivables in current assets and the receivables turnover rate in days were used. The detailed results for enterprises operating in branch and multi-branch groups are presented in Tables II and III.

TABLE II. THE SHARE OF RECEIVABLES AND RECEIVABLES TURNOVER IN THE SURVEYED ENTERPRISES FROM BRANCH GROUPS IN THE PERIOD 2014-2016

Enterprise	2016 Receivable Share	2015 Receivable Share	2014 Receivable Share	2016 Receivable turnover ratio	2015 Receivable turnover ratio	2014 Receivable turnover ratio
1	0.52	0.50	0.45	70	59	57
2	0.16	0.13	0.14	42	32	50
3	0.56	0.55	0.56	72	73	75
4	0.56	0.54	0.57	80	76	81
5	0.46	0.47	0.48	78	83	69
6	0.70	0.71	0.74	132	113	122
7	0.50	0.48	0.50	79	76	83
8	0.63	0.64	0.58	84	74	89
9	0.38	0.50	0.49	51	60	58
10	0.44	0.32	0.29	58	38	31
11	0.39	0.45	0.42	80	77	77
12	0.09	0.13	0.17	11	14	18
13	0.36	0.48	0.43	61	74	62
14	0.50	0.48	0.53	68	55	69
15	0.30	0.34	0.35	70	77	77
16	0.56	0.53	0.57	81	76	60
17	0.35	0.47	0.51	56	65	65
18	0.55	0.57	0.58	92	83	83
19	0.55	0.56	0.53	90	99	91
20	0.16	0.20	0.20	35	29	25
21	062	0.48	0.59	90	79	88
22	0.47	0.43	0.40	64	66	62
23	051	0.51	0.50	73	57	52
24	0.48	0.49	0.52	61	58	65
25	0.60	0.66	0.57	98	88	89
26	0.57	0.59	0.62	94	92	102
27	0.46	0.48	0.42	97	90	77
28	0.56	0.62	0.56	84	88	78
29	0.52	0.50	0.45	70	59	57
30	0.16	0.13	0.14	42	32	50
31	0.56	0.55	0.56	72	73	75
32	0.56	0.54	0.57	80	76	81
33	0.46	0.47	0.48	78	83	69
34	0.70	0.71	0.74	132	113	122
35	0.50	0.48	0.50	79	76	83

TABLE III. THE SHARE OF RECEIVABLES AND RECEIVABLES TURNOVER IN THE SURVEYED ENTERPRISES FROM MULTI-BRANCH GROUPS IN THE PERIOD 2014-2016

Enterprise	2016 Receivable Share	2015 Receivable Share	2014 Receivable Share	2016 Receivable turnover ratio	2015 Receivable turnover ratio	2014 Receivable turnover ratio
1	0,39	0,37	0,37	65	55	52
2	0,28	0,34	0,47	47	65	71
3	0,53	0,51	0,55	65	61	64
4	0,74	0,79	0,75	80	90	97
5	0,25	0,35	0,38	30	44	40
6	0,50	0,51	0,53	90	83	99
7	0,21	0,17	0,15	14	11	10
8	0,36	0,36	0,30	50	48	41
9	0,23	0,27	0,30	22	23	25
10	0,18	0,18	0,29	15	18	47
11	0,59	0,64	0,67	94	95	85
12	0,39	0,40	0,49	39	36	45
13	0,54	0,26	0,41	85	35	48
14	0,33	0,58	0,64	55	100	122
15	0,31	0,33	0,30	28	33	22
16	0,74	0,76	0,74	93	116	120
17	0,35	0,36	0,35	37	35	35
18	0,57	0,54	0,59	73	67	68
19	0,33	0,37	0,35	32	32	33
20	0,57	0,49	0,55	82	35	49
21	0,34	0,34	0,24	56	51	38
22	0,35	0,39	0,43	51	66	64
23	0,39	0,43	0,39	63	83	68
24	0,49	0,50	0,40	91	88	70
25	0,47	0,47	0,47	57	54	54
26	0,42	0,51	0,43	66	118	85
27	0,45	0,39	0,40	43	44	41
28	0,21	0,24	0,39	54	65	80
29	0,20	0,28	0,33	34	54	55
30	0,64	0,65	0,58	94	144	105
31	0,45	0,49	0,55	61	74	70
32	0,32	0,29	0,30	40	35	40
33	0,45	0,45	0,40	47	48	44
34	0,32	0,34	0,37	48	41	47
35	0,43	0,41	0,38	37	38	34

When analyzing both tables it can be seen that receivables constitute a high share in the structure of current assets. In the majority of enterprises operating in branch purchasing groups, receivables in the structure of current assets prevail. On the other hand, the receivables turnover rates in days are generally on an average level.Tables IV and V present the financial liquidity results in the analyzed enterprises in the years 2014-2016.

When analyzing Tables IV and V one can see that there are clear differences in the results of financial liquidity ratios in both groups. The significance of differences in the distribution of ratios between the branch and multi-branch group was assessed using the Mann-Whitney U test. Tables VI - IX present the characteristics of the distribution of individual ratios in both groups. Due to the fairly clear asymmetry in the distribution of all ratios (the table does not consider the skewness, but this is visible, for example, on the basis of a median and average comparison), the median will be a much more reliable measure of the average level. And it is the basis for deducing the differences between the two groups. As one can see, for most comparisons, the differences between the branch and multi-branch groups are statistically significant (the value of the test probability p below 0.05). On the basis of the comparison of statistics in both groups, it can be stated that multi-branch companies are characterized by lower current financial liquidity and lower value of the fast liquidity ratio, as well as lower turnover. Only in the case of participation, there are no statistically significant differences between the two groups. The detailed results of the significance of differences in the distribution of ratios between the branch and multi-industry group using the Mann-Whitney U test are presented in Tables VI-IX.

TABLE IV.   RATIOS OF CURRENT FINANCIAL LIQUIDITY AND QUICK FINANCIAL LIQUIDITY IN THE SURVEYED ENTERPRISES OPERATING IN BRANCH PURCHASING GROUPS IN THE PERIOD 2014-2016

Enterprise	2016 Current liquidity ratio	2015 Current liquidity ratio	2014 Current liquidity ratio	2016 Quick ratio	2015 Quick ratio	2014 Quick ratio
1	1.7	1.9	1.9	0.9	1	0.9
2	11	9	7	6	4	4
3	1.3	1.3	1.3	0.8	0.7	0.7
4	3.7	3.4	3	2.1	2	1.9
5	3.9	3.9	4.1	2	2.1	2.1
6	1.5	1.4	1.5	1	1	1
7	5.9	7	6.1	3.4	3.8	3.3
8	1.8	1.9	1.8	1.1	1.2	1
9	1.8	1.8	2	0.7	0.9	1
10	3.6	4.7	4.6	1.7	1.5	1.3
11	10	15	12	4.9	8.2	5.8
12	2	1.8	1.7	0.2	0.3	0.2
13	7.9	5.6	7.1	3.2	2.9	3.3
14	2.1	1.9	1.5	1	0.9	0.8
15	7.3	8.7	10.6	4.9	5.6	6.8
16	3.4	3.6	3.5	2	2.1	2.1
17	1.4	1.3	1.1	0.7	0.8	0.7
18	1.6	1.6	1.4	0.9	0.9	0.8
19	3.3	2.5	2.7	1.9	1.4	1.5
20	7.7	7.8	7.5	3.4	3.2	2.9
21	1.3	1.3	1.5	0.8	0.6	0.9
22	1.3	1.5	1.6	0.6	0.6	0.7
23	1.2	1.2	1.3	0.6	0.7	0.7
24	1.4	1.5	1.5	0.7	0.8	0.8
25	1.7	1.5	1.5	1	1	1
26	1.7	2	1.8	1	1.2	1
27	6.5	5.8	9.6	4.3	3.6	6.5
28	1.4	1.2	1.3	0.9	0.8	0.8
29	1.7	1.9	1,9	0.9	1	0.9
30	11	9	7	6	4	4
31	1.3	1,3	1.3	0.8	0.7	0.7
32	3.7	3.4	3	2.1	2	1.9
33	3.9	3.9	4.1	2	2.1	2.1
34	1.5	1.4	1.5	1	1	1
35	5.9	7	6.1	3.4	3.8	3.3

d. **Source:** author's own study based on financial statements of enterprises

TABLE V.   RATIOS OF CURRENT FINANCIAL LIQUIDITY AND QUICK FINANCIAL LIQUIDITY IN THE SURVEYED ENTERPRISES OPERATING IN MULTI-BRANCH PURCHASING GROUPS IN THE PERIOD 2014-2016

Enterprise	2016 Current liquidity ratio	2015 Current liquidity ratio	2014 Current liquidity ratio	2016 Quick ratio	2015 Quick ratio	2014 Quick ratio
1	2,3	2	2,2	1	0,7	0,8
2	4	3,6	3,1	1,1	1,2	1,4
3	2	1,9	1,8	1,1	1	1
4	1,1	1,1	1,2	0,8	0,9	0,8
5	1,8	1,6	1,6	0,6	0,6	0,6
6	1,6	1,7	1,6	0,8	0,8	0,8
7	1,6	1,6	1,5	0,5	0,4	0,4
8	2	2,3	2,7	0,8	1	1,3
9	2,1	2,3	1,9	0,9	0,9	0,9
10	2,9	2,4	2,2	0,7	0,7	0,9
11	1,1	1	1	0,7	0,8	0,8
12	1,4	1,4	1,4	0,6	0,6	0,7
13	1,4	1,8	2	0,7	0,8	0,5
14	1,8	2	1,3	0,8	1,3	0,9
15	1,1	0,8	0,8	0,3	0,3	0,3
16	1,3	1,4	1,3	1	1	1
17	12	12	9	6	6	5
18	1,3	1,3	1,4	0,7	0,7	0,8
19	1	1	1	0,3	0,3	0,4
20	1,4	1,2	1	0,8	0,7	0,6
21	2,3	2,8	2,3	1,2	1,4	0,7
22	4	2,6	4,1	1,6	1,2	2
23	3,3	2,3	3	1,5	1,3	1,4
24	1,2	1,2	1,3	0,6	0,6	0,5
25	1,4	1,4	1,3	0,7	0,6	0,7
26	1,3	1,2	1,7	0,6	0,7	0,9
27	1,8	1,5	1,8	0,8	0,6	0,7
28	7,1	6	5	5,8	4,5	4,1
29	0,6	0,8	1,1	0,1	0,3	0,3
30	3	1,9	2,5	2,2	1,4	1,7
31	1,7	1,6	1,7	0,8	0,8	0,9
32	2,5	3,1	2,7	1	1,1	1,3
33	1,4	1,3	1,2	0,8	0,7	0,5
34	1,6	1,5	1,6	0,6	0,6	0,5
35	0,8	0,8	0,9	0,37	0,33	0,35

e. **Source:** author's own study based on financial statements of enterprises

TABLE VI.   THE RESULTS OF THE RATIOS OF THE SHARE OF RECEIVABLES IN CURRENT ASSETS IN THE BRANCH AND MULTI-BRANCH GROUP

Year	Group										p
	Branch (N = 35)					Multi-branch (N = 35)					
	$\bar{x}$	Me	s	min	max	$\bar{x}$	Me	s	min	max	
2014	0,47	0,50	0,14	0,14	0,74	0,44	0,40	0,14	0,15	0,75	0,0979
2015	0,46	0,48	0,14	0,13	0,71	0,42	0,39	0,15	0,17	0,79	0,1215
2016	0,45	0,47	0,14	0,09	0,70	0,41	0,39	0,15	0,18	0,74	0,1079

f. p –test probability value calculated by means of the Mann-Whitney U test

TABLE VII.   THE OF CURRENT FINANCIAL LIQUIDITY RATIOS IN THE BRANCH AND MULTI-BRANCH GROUP

Year	Group										p
	Branch (N = 35)					Multi-branch (N = 35)					
	$\bar{x}$	Me	s	min	max	$\bar{x}$	Me	s	min	max	
2014	3,49	2,2	2,87	1,1	12,0	2,06	1,6	1,51	0,8	9,0	0,0092**
2015	3,52	2,2	2,98	1,2	15,0	2,13	1,6	1,98	0,8	12,0	0,0069**
2016	3,35	2,0	2,64	1,2	11,0	2,26	1,6	2,08	0,6	12,0	0,0235*

g. p –test probability value calculated by means of the Mann-Whitney U test

TABLE VIII.   THE RESULTS OF QUICK FINANCIAL LIQUIDITY RATIOS IN THE BRANCH AND MULTI-BRANCH GROUP

Year	Group										p
	Branch (N = 35)					Multi-branch (N = 35)					
	$\bar{x}$	Me	s	min	max	$\bar{x}$	Me	s	min	max	
2014	1,78	1,0	1,68	0,2	6,8	1,04	0,8	0,96	0,3	5,0	0,0057**
2015	1,80	1,2	1,63	0,3	8,2	1,05	0,8	1,11	0,3	6,0	0,0015**
2016	1,73	1,0	1,45	0,2	6,0	1,11	0,8	1,26	0,1	6,0	0,0057**

h. p –test probability value calculated by means of a test

TABLE IX.   THE RESULTS OF RECEIVABLES TURNOVER RATES IN DAYS IN THE BRANCH AND MULTI-BRANCH GROUP

Year	Group										p
	Branch (N = 35)					Multi-branch (N = 35)					
	$\bar{x}$	Me	s	min	max	$\bar{x}$	Me	s	min	max	
2014	68,0	69,0	21,4	18	122	59,1	52,0	27,0	10	122	0,0583
2015	67,4	74,0	22,3	14	113	59,6	54,0	30,4	11	144	0,0955
2016	70,5	72,0	23,3	11	132	55,4	54,0	23,1	14	94	0,0085**

i. *p* –test probability value calculated by means of a test

Then, the correlations between the various indicators were also examined using for this purpose the Spearman's rank correlation coefficient. The calculations were made without any division into a group of branch and multi-branch enterprises. The details are presented in Table X.

TABLE X.   .SPEARMAN'S RANK CORRELATION COEFFICIENT FOR THE ANALYZED RATIOS IN 2016

2016	Receivables share	Financial liquidity	Qucik ratio	Receivable turnover
Receivables share	1	-0,30 (0,0118*)	0,12 (0,3164)	0,84 (0,0000***)
Financial liquidity	-0,30 (0,0118*)	1	0,85 (0,0000***)	-0,04 (0,7317)
Quick ratio	0,12 (0,3164)	0,85 (0,0000***)	1	0,34 (0,0037**)
Receivable turnover	0,84 (0,0000***)	-0,04 (0,7317)	0,34 (0,0037**)	1

The high correlation in 2016 showed a turnover and a share (R = 0.84) as well as Quick ratio and liquidity (R = 0.85). These correlations are quite high; one can say that in the description of the financial condition of companies, the ratio is somewhat interchangeable. In 2015 and 2014 correlation rates were at a similar level for the same ratios as in 2016

V.   CONCLUSION

The use of the above methods and tools supporting the process of managing receivables is more possible in enterprises operating in branch group purchasing organizations. Especially using the economies of scale allows getting a favorable trade credit. It later becomes an important element of the receivables management policy. Enterprises do not have to pay their liabilities quickly so they can extend the repayment date for their recipients. The materiality test showed that the difference in the receivables turnover in days was statistically significant. Enterprises operating in the branch purchasing groups charge more slowly in comparison to companies operating in multi-branch groups. It is a conscious policy of managing receivables, but not an inept debt collection policy. In the purchasing groups it is also easier to apply benchmarking. It is also more effective to monitor recipients collectively if enterprises operate in the same branch. This allows reducing the risk of occurrence of overdue receivables. The same applies to mutual

transactions which are designed to improve financial safety. When analyzing the ratio of current and quick financial liquidity, there are high differences which are statistically significant. An excess in liquidity appears in companies operating in branch purchasing groups. These enterprises also have high quick liquidity, which indicates a high level of receivables in the structure of current assets. Indeed, the share of receivables in current assets in the entities forming branch purchasing groups is high. In 24 enterprises operating in branch groups they constitute the largest share.

To sum up, companies operating in branch purchasing groups have excess liquidity but do not use aggressive policy of debt collection as evidenced by higher receivables turnover rates in days. The share of receivables over inventories is also higher. These results indicate moderate - conservative strategies for managing receivables. On the other hand, enterprises operating in multi-branch purchasing groups are also characterized by high liquidity, but definitely lower in the previous group. In the case of 25 enterprises, the share of inventories in current assets is higher than receivables. In addition, debts are collected quickly. All these elements indicate the conservative strategy of receivables management.

However, in both purchasing groups managers should continue an implementation of additional solutions that will lead to an improvement in receivables turnover in days.

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