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RELATIONSHIP BANKING AND POST – CRISIS RECOVERY: EVIDENCE FROM THE POLISH SME SECTOR

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Purpose: The article examines a possible influence of relationship banking on financial situation of Polish small and medium-sized enterprises during the post-crisis recovery period.
Design/methodology/approach: An analysis of existing data and original data (survey) regarding banking relationships and financial situation of companies was conducted with the use of panel regression models.
Findings: There exists an adverse effect of banking relationships on companies' financial situation during the post-crisis recovery period. Firms that closely cooperated with their lenders in the studied period suffered due to higher cost of credit and excessive debt. No statistically significant correlation between relationship banking and SMEs' profitability was found, though.
Research limitations/implications: Due to the low response rate in the survey the size of the sample is limited. There might be also other factors that were not included in the models, which may have some impact on the results. Including other banking relationship's characteristics, such as their duration, scope or number of relationship in which a company is engaged might be possible future directions for further research.
Practical implications: The results might be significant from the perspective of companies when selecting their source of capital. Findings of the study suggest that relationship banking may not be the optimal choice for companies during the recovery period and other forms of financing should be also considered.
Originality/value: The conducted study shows that banking relationships might have a negative impact on borrower's financial situation during the post-crisis recovery period. Such problem has been rarely studied in the existing literature and the results were ambiguous. Furthermore such problem has not yet been studied in the context of Poland.
Keywords: relationship banking, financial crisis, information asymmetry.
Category of the paper: Research paper.

1. Introduction

The COVID-19 pandemic and the Russian invasion of Ukraine have plunged the global economy into crisis. One of the sectors that has suffered the most is the small and medium-sized enterprise (SME) sector. With the onset of the economic crisis, many companies urgently needed additional funds to help them survive this period and allow them to return to growth in the post-crisis recovery phase. One potential source of funding is relationship banking. This form, based on a close relationship between lender and borrower, can provide a solution to problems of access to capital.

The existing results of research in this area indicate that relationship banking enables companies (including SMEs) to count on easier access to capital and more favourable terms during the economic crisis. This, in turn, is an important aid for companies affected by the crisis and allows them to survive this period. This is related to the fact that through long-term cooperation, based on repeated interactions between both parties, the negative effects of information asymmetries and transaction costs, which are particularly acute during a downturn, are reduced. Rosenfeld (2014) argues that these benefits also occur during economic upturns, when companies begin to recover from the crisis.

The purpose of this article is to analyse whether and, if it does, how the use of relationship banking by companies in the Polish SME sector influences their financial situation during the post-crisis recovery period. This research problem has so far been rarely analysed, especially in the context of Central and Eastern European economies. Existing literature has not been able to clearly determine the existence of such relation. Therefore, there exists a noticeable research gap. The analysis covers three issues: the cost of capital for companies, their profitability and their debt level. To verify the impact of banking relationships on these three issues three hypotheses were formulated. First hypothesis states that banking relationships have a positive impact on the cost of credit for the borrower, second hypothesis says that banking relationships have a positive impact on the borrower's profitability and third hypothesis implies a positive impact of banking relationships on the borrower's debt level during the post-crisis recovery period. Panel regression models with random effects based on a random sample of Polish small and medium-sized enterprises in the period 2010-2015 were used to verify the hypotheses.

The findings indicate that not only does relationship banking not have a beneficial effect on the situation of small and medium-sized firms during the economic recovery, but the effect is the opposite. Companies using this form of cooperation had a higher cost of capital and excessive debt, which contrasts with the results of Rosenfeld (2014).

2. The importance of relationship banking in corporate finance

Relationship banking can be defined as the offering of financial services by a financial intermediary who makes an investment in the acquisition and collection information about the client and evaluates the potential returns on that investment during repeated interactions with him that take place over time (Boot, 2000). Given this definition, there are essential elements to it: the acquisition and collection of information about the client and a long-term relationship based on repeated interactions. The financial intermediary (usually a bank) obtains information about the client primarily during the initial screening process of its potential client and during the subsequent monitoring process. Among the relevant information that is collected by the financial intermediary is soft information, i.e. information that is not usable by any other person than the one who produced it (Stein, 2002). This is due to their subjective nature. Such information can include, for example, rumours, opinions, assessments. This distinguishes relationship banking from transaction banking, which is based purely on hard information, i.e. figures extracted from sources such as financial statements. The second point important from the perspective of relationship banking is its long-term nature. It allows for the accumulation of an ever-increasing body of knowledge about the client and the use of this knowledge in subsequent interactions with the client. This is important since it reduces information asymmetry and transaction costs (Beck, 2013).

Reducing the adverse effects of information asymmetry can result in improved credit availability and more favourable credit terms for borrowers (Boot, Thakor, 1994; Brick, Palia, 2007; Bonfim, Dai, Franco, 2018). In addition, banks incur transaction costs in the lending process, which are mainly fixed. This ability to reuse previously collected information makes it possible to reduce these costs in subsequent transactions with a given client. This may also improve accessibility, terms and conditions of credit services for businesses (Angori, Aristei, Gallo, 2020). The aforementioned benefits can be particularly relevant from the perspective of small and medium-sized enterprises, i.e. entities that are characterised by greater opacity and therefore have more difficult access to external sources of finance (Hasan et al., 2017). Relationship banking, however, is not necessarily always beneficial for the borrower. The danger associated with a close relationship with a bank is the hold-up problem. As the relationship develops, the information asymmetry regarding the borrower between its bank and the other banks increases. Then the lender with which the company cooperates can take advantage of its dominant position and begin to offer its services on increasingly worse terms. The company, in turn, is unable to turn to other banks, which will refuse for fear of the so-called winner's curse. They will believe that the company has approached them on the grounds that it had been refused by their relationship bank due to some factors of which they are unaware. The client is then forced to continue cooperation with their current lender or give up the financing completely (Sharpe, 1990; Mattes, Steffen, Wahrenburg, 2013; Zhang, Song, Zhong, 2016).

Initial analyses of the impact of relationship banking on the situation of companies were primarily concerned with periods of prosperity. It was not until the onset of the global financial crisis in 2007-2009 that there was a significant increase in interest in analysing this problem from the perspective of the crisis period. When there is a widespread economic crisis, it is necessary to consider both the party providing the financing and the party making demand for this financing. Companies affected by the crisis will report a need for this financing. Companies affected by the crisis will report a need for additional funds that could allow them to survive the downturn. Due to the unfavourable situation in the sector, banks, in turn, will have limited opportunities to finance companies (especially those that are less transparent and therefore higher risk) and will have to select their clients more carefully. In such a situation, a prior relationship with a lender may provide an advantage for businesses over their competitors. A bank that has additional information about its clients is better at estimating the risk of the loan and assess whether the company in question can survive an unfavaourable period, and be a profitable client later on. Current empirical results mostly indicate that companies, previously using relationship banking during the crisis, could count on, among others, better credit availability (Albertazzi, Bottero, 2014; Sette, Gobbi, 2015; Bolton et al., 2016; Meslier, Sauviat, Yuan, 2020; Flögel, Gärtner, 2020) and lower price for their credit services (Gambacorta, Mistrulli, 2014; Sette, Gobbi, 2015).

While the importance of relationship banking in the context of an economic crisis a frequent subject of empirical studies, the recovery period following the crisis has so far rarely been analysed. As Rosenfeld (2014) demonstrates, relationship banking also adds value for companies in this phase. The author points out that companies using this form of financing were more likely to be able to recover from the crisis than other entities and were characterised by better financial performance. Accordingly, three research hypotheses are formulated:

1. H1: Banking relationships have a positive impact on the cost of credit for SMEs during the post-crisis recovery.
2. H2: Banking relationships have a positive impact on SMEs' profitability during the post-crisis recovery.
3. H3: Banking relationships have a positive impact on SMEs' debt level during post-crisis recovery.

3. Data and methodology

In order to verify the research hypotheses, a panel of data covering a random sample of small and medium-sized enterprises from Poland was constructed. The data cover the period from 2010 to 2015, i.e. the period of recovery from the global financial crisis. The financial data was gathered from the Amadeus database owned by Bureau van Dijk. Data relating to

banking relationships, on the other hand, were obtained from a survey of the drawn companies. The sampling process took place in three stages. First, those entities that remained active at the end of the survey period were identified. Second, firms that did not meet the European Commission's definition of small and medium-sized enterprises were rejected (according to the accepted definition, SMEs are companies with fewer than 250 employees and annual turnover of less than EUR 50 million and/or an annual balance sheet of no more than EUR 43 million). From the remaining 26,411 entities, a sample of 1000 companies was drawn (including: 248 micro, 545 small and 207 medium-sized enterprises). A survey was conducted among these entities, in which company representatives were asked to answer a set of questions on whether they use relationship banking and the nature of this cooperation. 315 companies chose to participate in the survey. 161 companies (51.11%) responded that they had used this form of financing during the surveyed period.

Three dependent variables were constructed for the study. The variable *Cost_of_credit*, defined as the company's interest expenditures divided by its total liabilities, is used to verify the H1 hypothesis. The generalised model is presented in the following formula:

$$Cost\_of\_credit_{i,t} = \beta_0 + \beta_1 C_{i,t} + \beta_2 R_{i,t} + \beta_3 T_{i,t} + \beta_4 I_{i,t} + \varepsilon_{i,t} \quad (1)$$

The dependent variable is the ratio of interest expenditures to total liabilities of firm i in year t, $C_{i,t}$ is a set of variables controlling for various firm characteristics, $R_{i,t}$ is a variable indicating the fact of using relationship banking, $T_{i,t}$ are time dummies, $I_{i,t}$ are industry dummies.

The second explanatory variable is *Profitability*, which is the return on sales ratio (ROS) calculated as the ratio of operating profit to sales revenue. The generalised model is defined by the following formula:

$$Profitability_{i,t} = \beta_0 + \beta_1 C_{i,t} + \beta_2 R_{i,t} + \beta_3 T_{i,t} + \beta_4 I_{i,t} + \varepsilon_{i,t} \quad (2)$$

The dependent variable is EBIT to sales ratio of firm i in year t, $C_{i,t}$ is a set of variables controlling for various firm characteristics, $R_{i,t}$ is a variable indicating the fact of using relationship banking, $T_{i,t}$ are time dummies, $I_{i,t}$ are industry dummies.

The third variable used to verify the H3 hypothesis is the variable *Debt*. The ratio of total debt to total assets of the entity was used to calculate it. The generalised formula is defined by the equation below:

$$Debt_{i,t} = \beta_0 + \beta_1 C_{i,t} + \beta_2 R_{i,t} + \beta_3 T_{i,t} + \beta_4 I_{i,t} + \varepsilon_{i,t} \quad (2)$$

The dependent variable is total debt to total assets ratio of firm i in year t, $C_{i,t}$ is a set of variables controlling for various firm characteristics, $R_{i,t}$ is a variable indicating the fact of using relationship banking, $T_{i,t}$ are time dummies, $I_{i,t}$ are industry dummies.

Table 1 provides a description of the variables used in all models. The variables *Size* refers to the size of enterprise and is measured as the natural logarithm of its total assets. The values of this variable have been deflated by the consumer price index (CPI). The variable *Profitability*

is an indicator of profitability from sales (return on sales, ROS). The variable *Assets_efficiency* is measured as the ratio of sales revenue to total assets (total assets turnover, TAT). The variable *Equity* measures the ratio of equity to total assets. The variable is excluded from the model relating to the level of companies' debt. The next variable is *Cash*, which is measured by the ratio of cash and cash equivalents to total assets. The final control variable is *Fixed_assets*, which is defined as a ratio of company's fixed assets to its total assets. The most relevant variable from the perspective of the study is *Relationship*. This is a binary variable that determines whether or not an entity uses relationship banking. A variable defined in this manner will allow the hypotheses to be verified.

Table 1.
Variables description

Name	Description	Source
Cost_of_credit	Interest expenditures to total liabilities ratio	Amadeus
Profitability	EBIT to sales ratio	Amadeus
Debt	Total debt to total assets ratio	Amadeus
Size	Natural logarithm of total assets (deflated by CPI)	Amadeus
Assets_efficiency	Sales to total assets ratio	Amadeus
Equity	Equity to total assets ratio	Amadeus
Cash	Cash and cash equivalents to total assets ratio	Amadeus
Fixed_assets	Fixed assets to total assets ratio	Amadeus
Relationship	Use of relationship banking ('0' - no, '1' - yes)	Survey

Source: Author's data.

4. Empirical results

Random effects panel regression models based on the generalised least squares (GLS) method were used to verify the research hypotheses. The results of all estimations are presented in Table 2. Each of the three models refers to one of the research hypotheses and used a different dependent variable. Model 1 relates to hypothesis H1 (the variable *Credit_cost* was used as the explanatory variable), model 2 to hypothesis H2 (the explanatory variable is *Profitability*) and model 3 to hypothesis H3 (the explanatory variable is *Debt*).

According to the estimation results for model 1, maintaining a relationship with the bank is positively correlated with the cost of credit that firm incurs. This indicates the opposite correlation than that assumed in hypothesis H1. Firms that cooperate closely with their lenders not only cannot count on cheaper credit, but it appears that it is more expensive during the recovery period. This correlation is statistically significant at the 5% level. The use of relationship banking increases the cost of credit by 0.0073 compared to companies that do not use this form of financing their activities. The results therefore suggest that there was the hold-up problem during the period studied. Lenders took advantage of their dominant position over

clients by imposing higher prices for their services. Clients, in turn, had to agree to such conditions due to the winner's curse.

The results of the calculation of the control variables for the first model indicate that the cost of credit is negatively correlated with the variables *Size*, *Assets_efficiency* and *Equity*. An increase in the value of the first of these variables by a unit results in a decrease in the cost incurred for credit by 0.0033. This correlation is statistically significant at the 1% level. This suggests that larger, more established companies can count on preferential treatment from the lender. As the indicator improves by a unit, a company can expect the cost of capital to decrease by 0.0016 (at a statistical significance level of 10%). Furthermore, an in increase in the value of *Equity* is reflected in a decrease in the dependent variable of 0.0153 (statistical significance level of 1%). Companies that have an adequate amount of equity and are characterised by lower insolvency risk level will also receive a more favourable offer to finance their economic activity. In contrast, a correlation of the opposite direction is shown by the variables *Cash* and *Fixed_assets*. The results of the estimates are statistically significant at level, in both cases, equal to 5%. In the case of the first variable, the cost of capital is expected to increase by 0.0153. In the second case, on the other hand, a change in the explanatory variable by a unit will result in an increase in the independent variable by 0.0116. It is possible that this phenomenon is due to the fact that the companies in the sample are characterised by an assets structure that is suboptimal from a lender's perspective, i.e. companies accumulate cash instead of reinvesting it and have too high share of fixed assets, which worsens their flexibility in a crisis situation.

The estimation results of the second model showed no statistically significant correlation between the profitability of companies and the fact that they cooperated with their lenders within a banking relationship. The control variables are also mostly not correlated with the dependent variable in a statistically significant way. A positive significant correlation at the 10% level is only shown by the variables *Equity* and *Cash*. An increase in the first of these variables by a unit improves the return on sales ratio by 0.0342, and the second by 0.0422. Companies with a stable source of financing in the form of equity and not at risk of liquidity problems during the recovery period are also characterised by a higher level of profitability. The positive correlation between the dependent variable and *Equity* may also suggest that overuse of external sources such as bank credit is unfavourable.

The last model analyses the potential impact of the use of relationship banking on companies' debt levels. In this variant, the variable *Relationship* is positively correlated with the dependent variable. This correlation is statistically significant at the 1% level. Such a result suggests that maintaining relationship with a bank during post-crisis recovery period leads companies to becoming more indebted. These companies do so at a higher rate than firms that use transaction banking or other forms of financing. The companies thus expose themselves to an increased level of leverage risk, which, in an extreme situation, can even lead to their bankruptcy instead of an improvement in business performance and recovery from the crisis.

Among the control variables, a statistically significant correlation has been recorded for the variables *Assets_efficiency* and *Cash*. The first variable is positively correlated (at a level of statistical significance equal to 5%). As the value of this variable increases, the dependent variable increases by 0.0054. This leads to the conclusion that companies which manage their assets more efficiently are characterised by higher debt level. However, it is possible that this is due to the fact that companies took more aggressive measures in order to recover faster, and such strategy was financed using debt. A second possibility is they were subject to the hold-up problem. Banks are more likely to exploit firms with such characteristics in order to generate interest income (this applies to firms using relationship banking). The variable *Cash*, on the other hand, is negatively correlated (at a statistical significance level of 5%), so firms with a higher level of liquidity are less likely to increase debt during the recovery period. An increase in the value of this variable by a unit leads to a decrease in *Debt* by 0.0375.

Table 2.
Empirical results

Variable	Estimation results		
	model 1	**model 2**	**model 3**
$Size_{t-1}$	-0.0033***	0.0047	0.0043
	(-3.35)	(1.17)	(1.51)
$Profitability_{t-1}$	0.0080	-	0.0162
	(1.06)	-	(0.879)
$Assets\_efficiency_{t-1}$	-0.0016*	0.0010	0.0054*
	(-1.78)	(0.294)	(2.32)
$Equity_{t-1}$	-0.0153***	0.0342*	-
	(-3.24)	(1.94)	-
$Cash_{t-1}$	0.0153**	0.0422*	-0.0375**
	(2.52)	(1.96)	(-2.51)
$Fixed\_assets_{t-1}$	0.0116**	-0.0200	0.0106
	(2.32)	(-0.936)	(0.727)
$Relationship_{t-1}$	0.0073**	-0.0029	0.0711***
	(2.50)	(-0.232)	(7.99)
Industry dummies	YES	YES	YES
Time dummies	YES	YES	YES
No. of observations	854	1,366	1,194
R^2	0.0542	0.0279	0.0731

The table reports the coefficient estimates from GLS random effects panel regressions. The analyses cover the period 2010-2015. The definitions of the variables are presented in Table 1. Constants are not shown. *t*-Values are in parentheses. ***, **, * denote statistical significance at the levels 1%, 5% and 10%, respectively.

Source: Author's calculations.

5. Conclusion

This paper analyses the potential impact of the use of relationship banking by small and medium-sized enterprises in Poland on their financial situation in the post-crisis recovery period. In a study conducted on a random sample of entities for the period 2010-2015,

the problem was addressed at three levels – the cost of credit for companies, their profitability and the impact on their debt level. The purpose of the article has been achieved, since the influence of relationship banking on Polish SMEs during the post-crisis recovery period was identified and measured. However, our findings did not allow us to positively verify the research hypotheses. In the case of profitability, the use of relationship banking did not have a statistically significant impact on this issue. In contrast, the results of the other estimations indicate that relationship banking not only does not have a positive influence on the cost of credit and the level of debt, but it leads to a deterioration of companies' financial situation. Firms in relationships were characterised by increasing level of debt and the terms on which they obtained credit worsened. This suggests that there was the hold-up problem during the period studied. Our findings may also be of relevance in the context of the recovery period caused by, among other things, the COVID-19 pandemic and the war in Ukraine.

There are several limitations to the study that may affect the evaluation of the research problem. First, the main limitation is the size of the sample. If a larger sample was used, the results would be more accurate. This problem is mainly caused by low response rate in the survey conducted among the SMEs in Poland. Second, there might be some other factors related to relationships which may affect the dependent variables. Including them in models can lead to obtaining additional results and more insightful interpretation. This indicates possible future directions of the research regarding relationship banking in the context of post-crisis recovery. For example, it would be advisable to analyse the problem how does scope or duration of the relationship influence the companies' financial situation in the post-crisis recovery period. Furthermore, some companies are engaged in more than one banking relationship, so it should be studied whether or how affected are such companies with regard to firms dedicated solely to one lender.

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