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Complex Interplay of Eastern Bloc SMEs Trade Credit Determinants: Changes due to the Global Financial Crisis

Tamara Teplova,[1] Tatiana Sokolova,[1] Kristina Galenskaya,[1] and Mariya Gubareva[2,3]

[1]National Research University Higher School of Economics, Russian Federation, HSE University, RF. 11, Pokrovsky Boulevard, Moscow, Russia

[2]ISEG—Lisbon School of Economics & Management, Universidade de Lisboa, Rua Miguel Lupi, 20, 1249-078 Lisbon, Portugal

[3]SOCIUS/CSG—Research in Social Sciences and Management, Rua Miguel Lupi, 20, 1249-078 Lisbon, Portugal

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Abstract

We investigate whether the determinants of small and medium enterprises' (SMEs) trade credits taken for purchasing fixed assets suffered substantial changes due to the global financial crisis (GFC). The geographical focus of this paper covers 18 former Eastern bloc countries. The data sample comprises opinions of the SMEs top managers relative to the trade credit financing. The two-step Heckman procedure is applied to study complexity of the trade credit determinants. We find that before the GFC the equity concentration and inflation have negatively impacted the trade credit while foreign ownership and company's longevity have had a positive effect. The GFC has changed this complex relationship. We evidence that, after the GFC, equity concentration and state subsidies have a positive effect.

1. Introduction

Large companies are actively using various sources of funding and are more flexible in management decisions than small and medium enterprises (SMEs). Our aim is to assess the role of trade credits in financial management decisions of SMEs. We identify the determinants of the active use of trade credits in the Eastern bloc countries. Traditionally, trade credits are perceived by managers as a source of financing for working capital. A feature of SMEs in countries with a less developed financial system is the use of trade credits to finance fixed assets.

Our hypothesis is that management decisions on the use of trade credits have changed substantially after the global financial crisis (GFC). Among the factors of influence, we consider the macro-indicators and specific firm-level factors: the size, ownership structure, owner control, and managerial experience. Since our research is based on business surveys, we understand that managers' responses are influenced by their motivation to disclose information, therefore all our conclusions are made under the control of information disclosure.

SMEs are commonly considered as an important pillar of emerging economies, see Yoshino and Taghizadeh-Hesary [1]; Wellalage and Fernandez [2]; and references therein. Still, a rather limited access to finance for SMEs represents a common handicap for the acceleration of economic development in both developed and developing markets, see Casey and O'Toole [3]; Lee et al. [4]; Andrieu et al. [5]; McGuinness et al. [6]; and Schwab et al. [7]. The problem of insufficient financing to SMEs has been attracting a lot of attention from academic community and policy makers especially since the adverse impacts of the GFC, which began to unfold in the second half of 2007, see de Maeseneire and Clayes [8]; Carbó-Valverde et al. [9]; and Gupta and Gregoriou [10] among many other researches on these subjects.

Following the GFC, access of SMEs to stable finance was severely damaged. In particular, De Maeseneire and Clayes [8]; Chakravarty and Xiang [11]; and Yoshino and Taghizadeh-Hesary [1] emphasize the growing problem of information asymmetry, which due to opacity and lack of transparency makes it much harder for SMEs to attract debt financing than for large corporations. This situation is aggravated by a relatively high default risk of SMEs and lack of high-quality collateral, perhaps with exception for manufacturing SMEs; see Andrieu et al. [5]. In addition, along with large corporations, SMEs access to bank loans becomes also adversely impacted by the post-GFC tightening of banking regulation. For all these reasons, on one hand, SMEs used to relatively easy raise money by mean of bank loans before the GFC while, on the other hand, still suffer from financing constraints brought about by the GFC.

To solve this major worldwide SME problem various credit guarantee schemes, government programs, mini-bond issuance, Internet based "crowd-funding," and other innovations have been introduced to improve the supply-demand balance in the SME financing. Among alternative forms of financing many SMEs have started considering trade credit from their suppliers more actively, see Casey and O'Toole [3]; Carbó-Valverde et al. [9]; Andrieu et al. [5]; McGuinness et al. [6]; among many others. The trade credit channel is quite important as, the mentioned above financial innovations still lack appropriate regulations and also are far from being sufficient as an aggregate flow of credit to SMEs from non-traditional sources is well below the SMEs expectations, see Altman et al. [12]. Even in Europe, in 2019 SMEs financing is still predominantly represented by traditional sources: about a half is originated by bank loans and overdrafts, about one quarter by leasing, while about one fifth is trade credit, see ECB [13].

However, there are important differences between SMEs bank financing and raising funds from SMEs suppliers. For instance, Huyghebaert et al. [14]; investigating the choice between bank debt and trade credit in Belgian startups, find that the suppliers are more loyal and tolerant, than banks, to their customers-borrowers with financial difficulties. This tolerance comes at the expense of a relatively higher trade credits costs in comparison to bank loans. In line with these findings, Comeig et al. [15] reveal that in general a bank loan is a less expensive source of SMEs funding because banks, while conceding loans, take into account information about the subjacent risks based on the history of relationship lending.

It is necessary to address differences in objectives that are targeted by SMEs while borrowing from counterparties. Borrowing for financing working capital and fixed assets has different levels of risk. Trade credits for purchasing fixed assets can be considered as an intermediate stage of companies' integration, which requires a high level of trust and information transparency.

Two types of the firm's stakeholders—financial (banks) and non-financial ones (suppliers) are faced with the problem of information asymmetry, because they have different competencies regarding the analysis of company data. Banks can obtain detailed information on the firm's financial indicators, including credit history, they focus more on the past dynamics of the firm [14]. Comeig et al. [15] reveal that lenders take into account information about risks of SMEs based on the history of relationship lending. A successfully repaid loan allows the firm to decrease the cost of capital. Suppliers obtain a large range of non-financial data, they are better informed about the quality characteristics of the company, understand the specifics of business processes, appreciate potential risks well, and thus, better predict the future of the company [14].

Carbó-Valverde et al. [9]; Andrieu et al. [5] reveal the determinants of the use of bank loans and trade credits as a whole, including capital attracted for different purposes, e.g., to finance working capital, capital goods, intangible assets, and so on. However, these studies lack details regarding the purposes of fund raising, especially when the focus is on financing of fixed assets. To the best of our knowledge the issue related to the purchase of fixed assets with funds raised as trade credits from suppliers has never been studied before.

It is worth noting that from historic perspective, there are a few studies dedicated to the use of trade credit by SMEs prior to the GFC; see, for instance, Huyghebaert et al. [14]. For the post GFC period, there are also several studies on this subject; see Casey and O'Toole [3]; Carbó-Valverde et al. [9]; Andrieu et al. [5]; McGuinness et al. [6]; etc., which use firm specific data on SMEs. However, to the best of our knowledge there are no comparative studies, analyzing the use of trade credit by SMEs prior to the GFC versus after the GFC, i.e. assessing whether trade credit plays a similar role under different economic conjunctures.

It is also important to mention that the major body of the literature on SMEs funding is focused on EU and US markets, especially concerning trade credit facilities, see Chakravarty and Xiang [11]; Casey and O'Toole [3]; Carbó-Valverde et al. [9]; Andrieu et al. [5]; McGuinness et al. [6]; Altman et al. [12] and so on. Although there are rather a few studies, covering emerging markets, in particular regarding influence of innovation on SMEs funding and governmental credit guarantee programs for SMEs, see, respectively, Wellalage and Fernandez [2] and Yoshino and Taghizadeh-Hesary [1]; the specific research dedicated to the former-Eastern bloc countries, to the best of our knowledge is rather absent in the extant literature.

Having in mind the incompleteness of the SME research coverage, outlined in the three previous paragraphs, the present work fills several important gaps in the existing literature by investigating a widespread database, containing more than 20 thousand observations on SMEs from 18 Eurasian developing counties, belonging to the former Eastern bloc. In these countries, the culture of the entrepreneurship is less advanced than in developed ones and the level of trust of their populations towards SMEs is low even when compared to the level of trust towards domestic big businesses and state-owned companies (see, for instance, Edelman Trust Barometer (2015)): https://www.edelman.com/trust/2015-trust-barometer. So, to solve the problem of the sample bias, caused among other factors by biased responses registered in the database we apply the two-step Heckman procedure, see Heckman [16, 17].

Our contribution to the existing literature is three-fold: First, we collect new data on purchase of fixed assets with funds raised in a form of trade credits from suppliers. Our study provides specific details regarding the purposes of fund raising, especially shedding light on financing of fixed assets, and reveals the determinants of the intensity of trade credits usage. Earlier papers deal with determinants of the total value of trade credits or trade credits for financing working capital. In our study, we focus on trade credits for purchase of fixed assets, i.e. on long-term trade credits from counterparties. Second, our paper investigates how the GFC influenced the determinants of the use of SMEs trade credit. To the best of our knowledge, it is the first study that documents how SME firm-level factors, such as equity concentration, foreign participation in equity, SME age, and state subsidies influence the intensity of use of trade credits. We perform comparative analysis of the determinants during the precrisis and postcrisis periods, and show that before the crisis bank loans and trade finance are complementary sources while after the crisis this relationship does not hold any more, as we observe augmenting use of the trade credit not accompanied by the growth of bank financing. Third, the geographic coverage of our research represents an important enhancement to the existing body of the literature, as we cover the emerging countries of the former Eastern bloc, which are not properly addressed in the existing research on SME themes. We employ Business Environment and Enterprise Performance Surveys (BEEPS) developed by the World Bank and the European Bank (https://enterprisesurveys.org), which are based on face-to-face interviews with firm managers and owners and report diverse firm-level data on SMEs from East European and Central Asian markets. Hence, our results are potentially useful for improvement of the access of SMEs to finance in the regions where the culture of the entrepreneurship is less advanced than in the developed economies.

The rest of the paper is organized as follows. Section 2 puts our study into the perspective of the related state of art. Section 3 outlines the methodology and model variables. Section 4 presents the results. Section 5 concludes.

2. Literature Review and Hypotheses Statement

Issues of the ratio of trade credits and bank loans for companies in the real sector of the economy are being actively investigated. Carbó-Valverde et al. [9] based on the survey data analyze whether trade credits are an alternative source of external financing, in relation to bank lending, for SMEs during the GFC. Their sample includes 40 thousand SMEs, but the only country (Spain) is under consideration. Our study is also based on survey data, but the sample includes over 20 thousand SMEs from 18 emerging markets. Unlike Carbo-Valverde et al. [9], the focus of our study is on the equity structure and concentration.

Various studies focus on institutional factors that determine the choice of a source of funding by SMEs. Lee et al. [4] consider SMEs from the only country (UK) and investigate the influence of institutional factors and firm’s belonging to the innovation sector. Hernández-Cánovas and Koëter-Kant [18] analyze the role of protection of creditors’ rights and compliance with laws. The sample includes several European markets, but it is not very large (it consists of 3300 SMEs).

Important factors that influence the choice of a financing source are the age and the size of the firm. Andrieu et al. [5] investigate the determinants of bank loans and trade credit for SMEs in developed European markets in 2009–2014. We also analyze and compare results for the two time periods–before and after the GFC, but unlike Andrieu et al. [5], our sample consists of emerging markets.

A number of studies consider the role of banks for SMEs financial constraints and availability of funding [19–21]. Unlike previous studies, our research focuses on firm's internal characteristics (equity structure and concentration, age, state subsidies) and macroeconomic factors.

Rostamkalaei and Freel [22] raise the question of discriminating against SMEs by the cost of the loan on the sample of 250 UK SMEs on 2007 survey data. The results show that firms with high growth rates and introducing new products to the market are more likely to attract loans at higher rates. Unlike Rostamkalaei and Freel [22], we consider a cross-country sample and two time periods.

The effect of the concentration of equity on the ratio of bank loans and trade credits is ambiguous [23, 24]. In our study we analyze not only the effects of equity concentration, but also equity structure–participation of the government and of a foreign owner on a cross-country sample.

Our analysis of influence of macroeconomic factors continues the line of the study of Chakravarty and Xiang [11] who build their research on the data of the World Bank survey conducted during 2002–2003 on companies from 10 developing countries. Unlike Chakravarty and Xiang [11], we analyze and compare results for two time periods–before and after the GFC. Our sample is wider: we consider 18 emerging markets.

An important issue is the methodology of research based on the survey data due to possible sample bias: an answer to one question may depend on answers (or gaps in answers) to other related questions. Andrieu et al. [5] investigate the determinants of bank loans and trade credit for SMEs on the base of probit regressions models. Chakravarty and Xiang [11] use logistic regression models to find factors discouraging firms to receive loans. We see a disadvantage of these studies in ignoring the bias problem. A feature of our research is application of an original methodology–the Heckman model which allows us to solve the problem of sample bias.

We put forward the following hypotheses regarding the determinants of the intensity of use of trade credits by SMEs:

2.1. H1

The share of trade credits in the fixed assets depends on the concentration of equity. The presence of a sole owner or a large controlling owner is considered by SME counterparties as a risk factor. The perception of this risk depends on the macroeconomic environment.

Since in the countries under consideration, property rights, generally speaking, are poorly protected, and property rights to fixed assets appeared recently (in the 1990s), the problem of information asymmetry is especially relevant. The analysis of the effect of ownership concentration on the company's relationships with contractors is of academic interest.

We assume that if the entire stake of shares (all equity) is owned by the sole owner of the SME, he or she is an entrepreneur. The situation with the presence of a large controlling owner and several other owners in the structure of equity capital can be interpreted in several ways. Option one is the appearance of an external owner through the sale of a part of the business by the founding entrepreneur. The second option is a forced assignment of a part of the capital, for example, as a result of a loan default. At the same time the fact that, information asymmetry increases with increasing concentration of equity capital is confirmed by Lin et al. [25] for the Chinese market, Haiyan et al. [26] for the New Zealand market. So, the presence of a sole or large controlling owner can be associated with the possibility of investing in high-risk projects in the interests of the controlling owner. In this regard, it can be assumed that the relative share of trade credits in the fixed assets will decrease with increasing ownership concentration. We consider a large controlling owner as an institutional investor, and we assume that suppliers may perceive its presence as a signal of a possible conflict of interest of the owners or of the unfavorable financial position of the firm. On the contrary, we assume that before the crisis, in the absence of a blocking stake, the owners had a deterrent effect on each other when making high-risk decisions, and such a structure was positively perceived by suppliers.

At the same time, for the postcrisis period, due to changes in the macroeconomic environment and increased competition, we expect changes in the direction of influence on the share of trade credits in the fixed assets in case of a sole owner-entrepreneur. So, Andrieu et al. [5] using data on companies in developed EU markets during the period 2009–2014, find that access to bank loans and trade credits is easier if the owners are entrepreneurs. The number of highly profitable and, accordingly, highly risky projects in the postcrisis period has decreased, the cost of debt financing has decreased. In case of the sole owner, there is no conflict of interests, and in addition, he or she can provide effective control over management actions [24]. Ciampi [27] shows that greater ownership concentration is negatively correlated with the probability of default of SMEs for the Italian market. According to Ciampi [27], large shareholders of SMEs are highly motivated to work hard for the success of the firm and are aimed at the stability and survival of the firm in the medium and long term. We assume that suppliers have revised the crediting policy, priority attention has been paid to the absence of a conflict of interests of owners and to ensure control over the actions of management. We assume that after the crisis, amid changes in the macroeconomic environment, there was a reassessment of risks on the part of suppliers, the scattered ownership structure became a negative signal of a potential conflict of interest between owners.

2.2. H2

The share of trade credits in the fixed assets depends on inflation. Expensive money narrows the possibilities of trade crediting.

Significantly higher rates of inflation are more common for emerging markets than for developed economies. During the postcrisis period, inflation rates in developed markets were close to 1-2 percent, and we assume that an increase in the inflation rate can be considered as a signal of economic growth. On the contrary, for emerging markets, an increase in the rate of inflation is considered by investors as a risk. The relatively high inflation will impede the financing of fixed assets by means of agents (equipment suppliers). The inflation rate is a proxy indicator of the cost of debt financing. Expensive money hinders the possibilities of trade credits. Chakravarty and Xiang [11] reveal that high interest rates demotivate companies from borrowing.

2.3. H3

The age of the company has a positive effect on the share of trade credits.

We consider the age of the company as a proxy variable of managerial experience. This hypothesis is based on the results by Rostamkalaei and Freel [22] evidencing that the age of the company has a significant negative impact on loan rates and that SMEs are discriminated by cost of debt. Andrieu et al. [5] show that the availability of bank lending is significantly influenced by the size and age of the company. Information asymmetry is enhanced in the case of young firms that lack an accounting and credit history. Berger and Black [28] underline that SMEs are less transparent, compared to large firms, so SMEs can be discriminated by large banks that prefer to lend money to transparent firms. So, we assume that it is less expensive for suppliers to obtain information on firms with a longer history; therefore, such firms are provided with more trade credits [5, 19].

2.4. H4

Government support (subsidies) has a positive effect on the intensity of the use of trade credits, and this effect is more pronounced in the postcrisis period.

We consider government support as managerial administrative resource of a company. In the postcrisis period, state intervention in the economy increased, while government subsidies were widely used to solve the financial problems of companies. Receiving government subsidies is a positive signal of quality for contractors and lenders. Meuleman and de Maeseneire [29] conclude that the receipt of R&D subsidies by SMEs is a signal of quality for lenders and enhances the ability of SMEs to attract long-term financing.

2.5. H5

Trade credits and bank loans are complementary, not mutually exclusive sources of financing.

This hypothesis is based on the results by Andrieu et al. [5] for European SMEs, which demonstrate that bank lending and trade credits are complementary sources of financing. In assessing the company’s creditworthiness, the provision of trade credits by suppliers may be a positive signal for banks, and vice versa.

A description of the model variables and the expected direction of influence are presented in Table 1.