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FACTORS FOR TRADE DEBTS OF FIRMS AND POSSIBILITIES OF REDUCTION OF INTERFIRM INDEBTEDNESS

The article highlights the basic theoretical principles for firm financing with trade credit and the results of empirical research by the method of multiple regression analysis of factors, influencing the level of trade indebtedness of Bulgarian non-financial enterprises. Models are constructed that have been tested for two consecutive years, separately for SME and for big enterprises that allow incorporation in the analysis of the distinctions between them, including the access to institutional financing, the quality of management etc. Some of the main conclusions of the investigation are that trade credit is a substitute for institutional financing and that firms take trade credits from other firms to finance their own trade receivables and to hedge the risk. Together with the risky management of the financial structure of SME this is a prerequisite for generation of chains of arrears. Possibilities for reduction of the interfirm indebtedness and regulation of its size in the future are also formulated.

JEL: G30; G32; G39

The credit from suppliers is a traditional source of financing for firms, which is object of many theoretical and empirical investigations in different countries in the world, but still stays aside from focus of researchers' interest in our country. The use of trade credit is connected with many advantages, but the excessive growth of interfirm indebtedness and especially the growth of overdue payments in the economy is also linked with many negative effects. The effects are on firm level like expenditures for protection against bad debts, decrease in profitability and liquidity, omitted benefits because of decrease in sales on credit, risk of bankruptcy, as well as on macroeconomic level like risk of mass bankruptcy, contraction of the economy, the employment and the revenue in the budget, risk for financial system stability, etc.

According to BIA (Bulgarian Industrial Association) the interfirm indebtedness toward GDP has been increased during the last few years in Bulgaria (Bulgarian Industrial Association. Indebtedness of non-financial companies...). In 2010 interfirm indebtedness reached to 104.2 milliard levs or 66% of all interfirm debts (157.6 milliard levs).

Usually trade credit is considered as a substitute for institutional financing, but some analyses show evidences that trade credit and bank credit can also be complementary sources of financing. One of the basic tasks of this article is to test in Bulgarian economic conditions if trade credits from suppliers substitute or complement credits from financial institutions.

A reason for simultaneous use of trade credit and bank credit is the difference in their maturity, trade credit usually is a short-term financing, but bank credit is with longer term (Cole, 2010). In addition, the trade credit improves reputation before banks of younger and small firms because of informational

priorities of the suppliers (Gama, Mateus and Teixeira, 2008). The use of financing from suppliers relieves the access to bank financing due to the signal effect of trade credit. The ability of firms to attract financing from suppliers is an indicator for low default risk (Alphonse, Ducret and Severin, 2003; Antov, and Atanasova, 2007).

But Nielsen (1999) proves that in countries where firms have good relationships with banks the use of trade credit is lower. Nielsen studies small firms that have difficulties in attracting institutional financing and finds out that the value of trade credit rises when bank credit decreases. Petersen and Rajan (1997) also find a negative link between the power of relationship with banks and the demand for trade credit by firms. The ability of the firms to generate internal financial resources decreases the demand for suppliers' financing. Liquid companies are more prone to give than to seek trade credit (Petersen and Rajan, 1997).

Suppliers finance their clients even when banks are not prone to grant credits because of many priorities that they have as creditors in comparison with the financial institutions. Priorities are the easier and cheaper access to information for clients due to regular trade contacts, the possibility of exerting pressure on debtors to repay the credit under threat of stopping supplies, the possibility of resale of the goods, if necessary, smaller risk of diversion of goods than money (smaller moral hazard problem) because goods are non-liquid in contrast to money. In addition, suppliers have implicit share in the capital of their clients and are interested to have long-term relationships with them (Petersen and Rajan, 1997; Smith, 1987; Cunat, 2003; Giannetti, Burkart and Ellingsen. 2007; Frank and Maksimovic, 2005).

Firms with financial problems use more trade credit as a substitute for alternative sources of finance which decrease with the growth of default risk (Petersen and Rajan, 1997; Frank and Maksimovic, 2005; Molina and Preve. 2007; Wilner, 2000). In the literature there are examples also that financially constraint firms have difficulties in gaining trade credit (Molina and Preve, 2007; Andrade and Kaplan, 1998).

Big firms use less trade credit in case of financial distress than small firms. The size of firms indicates for the quality on management and informational transparency, influencing the relationship with financial institutions and the possibility of firms to attract institutional financing (Molina and Preve, 2007).

As a whole, in normal economical conditions characteristics like the size and the age of firms that indicate their creditworthiness influence firms' aptitude to grant and take trade credit. Often bigger firms which are accepted as less risky are likely to get more trade credit, despite of their higher cash flow and lower growth opportunity (Petersen and Rajan, 1997).

The market positions of the both sides of trade deals are important as well. There are evidences that the bigger the market power on firms, the more trade credit they get from their suppliers (Dass, Kale and Nanda, 2010; Fabbri, and Klapper, 2008).

Companies use trade credit also as a mechanism to reduce different kinds of costs. For example they can reduce the transaction costs - instead of paying for each delivery they pay periodically. Through the use of trade credit for the purchases and the sales simultaneously firms can form their anticipations for the net cash flow and adjust to unusual variations and tendencies in cash reserves which allow them to hold smaller cash reserve and to decrease the cost of it (Ferris, 1981).

The trade credit is also related to management of deliveries. Provision of trade credit is an instrument for subsidizing costs for holding inventory of trade partners in order to stimulate them to produce and to buy more goods or at least to keep the same level of purchases (Daripa and Nilsen, 2005).

Fabbri and Klapper (2008) consider trade debts as an instrument for hedging risk of short-term trade receivables by matching maturities of assets and liabilities. Trade credit is used for adjustment of short-term payables and receivables by small firms with limited access to bank financing as well as by big firms with opportunities to negotiate more favourable conditions of trade credit than conditions of alternative sources of outside financing. Small firms which are credit constrained use trade credit as an instrument for competition in product market and finance trade receivables with trade payables. But big firms that have sufficiently financial resources use trade debts for hedging risk of their trade receivables.

Moreover, there is ex post striving for matching the maturities. In countries in transition firms that collect their trade receivables after the maturity are prone to delay payments to their suppliers as well (Johnson, McMillan and Woodruff, 2002). The same result is obtained also for French firms (Boissay and Gropp, 2007).

While in previous two cases firms are forced to delay the payment of their trade debts due to delay in their own trade receivables, according to Fabbri and Klapper (2008) firms voluntary use their obligations for hedging risk of short-term trade receivables. Firms that receive payments for goods sold on credit before maturity of granted trade credit are also more prone to pay to suppliers before maturity because they strive to match payment structure of trade receivables and obligations, instead of attempting to increase suppliers' financing as much as possible.

The practice of adjustment depends on the availability of internal resources. Firms that reinvest their profits and have access to bank credits rely less on suppliers' financing to extend trade credit for clients (Fabbri and Klapper, 2008).

Empirical investigation of trade debts of firms

Data are used from the National Statistical Institute for 299 non-financial enterprises from all sectors of economy for three consecutive years – 2007, 2008, 2009. The investigated firms are differentiated in two aggregates in accordance with the criterion “number of employees” from 199 SME and 100 big enterprises. Within the aggregates the firms are selected at random, ensuring the representative nature of the results from the investigation.

The choice of research approach about separate analysis of the data in the financial reports of SME and big companies (with more than 249 employees) allow to take into consideration the differences between them including their access to institutional financing, possibilities to implement independent trade credit policy, the differences in their potential for economic shocks absorption and in the quality of the management.

The decision for separate analysis on SME and big companies is prompted as well by the fact that the share of the big companies in our country is too small (it is just 0.21 percent from the overall number of the non-financial enterprises for 2009 - the author's calculations according to data of NSI). Due to this reason the use of a sample of about a few hundred (and even a few thousands) firms corresponding to the structure of the general aggregate, big companies would be quite weakly represented and in fact would be left out of the scope of the research.

Despite their small relative number, big companies produce a considerable part of GDP in the country and provide about ¼ of the jobs of employees in non-financial companies (24% for 2009 - the author's calculations according to data of NSI), and therefore the analysis of interfirm indebtedness between big companies also requires investigation. In addition, theoretically big firms are considered as liquidity transmitters toward smaller firms, especially in situation of bank credit contraction that is observed in Bulgaria during the crisis.

The financial data used for the investigation are from the unconsolidated reports of the companies, avoiding any distorted results. The choice to use data from consolidated reports is related with risk of inaccurate conclusions, resulting in automatic increase in trade receivables and payables in the first year when the firm starts consolidating financial reports (Rajan and Zingales, 1995, p. 1421-1460; Delannay, and Weill, 2004).

Firms from all non-financial sectors of the economy are represented, from "A" to "S" according to the "Classification of economic activities 2008", without sectors "K" – "Financial and Insurance Activities" and "O" – "State Government".

In 2009 compared to 2008 decrease is observed in the average value of net revenue from sales by SME and sharp increase (from 0.26 to 0.44) in the average value of trade debts compared to average firms' turnover ratio. It reveals an aggravation of the problem with interfirm debts, as it is an indicator of difficulties in paying credits, caused by a decrease in the net revenue from sales during the crisis and smaller ability to generate internal funds. The bank credits restrictions and the increases in the interest rates embarrass additionally regular payments on trade creditors.

A decrease in the average value of net revenue from sales is also observed in the big companies, but the trade debts to revenues from sales ratio increase only with 3 percent points in 2009 compared to 2008 (at SME increase with 18 percent point). Possible explanation is that the big companies traditionally have

simple access to institutional financing and less necessity from suppliers financing and also better possibility for regular payments on trade debts.

Table 1

Average value of the trade debts to net revenue from sales ratio

	Years	Trade debts/net revenue from sales
SME	2009	0.44
	2008	0.26
Big enterprises	2009	0.33
	2008	0.30

As a whole in all the years of the period 2007 – 2009 at least half of the big companies are net debtors, confirming that in the developing countries the big firms use their market power to attract suppliers' financing. With worsening of the economic situation and restricting the access to institutional financing together with rising banks' interest rates gradual increase is observed in the percentage of SME that are net debtors and the percentage of big firms that are net creditors. With the development of the crisis big companies become liquidity transmitters for smaller and credit constraint firms.

Table 2

Percentage of firms net creditors or debtors

Years		SME	Big enterprises
2009	Net debtors	*52*	52
	Net creditors	46	*48*
	Trade receivables=Trade payables	2	0
2008	Net debtors	*49*	58
	Net creditors	47	*41*
	Trade receivables=Trade payables	4	1
2007	Net debtors	*47*	50
	Net creditors	40	*36*
	Trade receivables=Trade payables	13	14

For the purpose of the investigation two models are created – for trade payables of SME and of big companies, which are tested for two consecutive years – 2008 and 2009. The lack of data for some independent variables for 2007 lead to reduction in the number of years for which the models are tested. A cause of this is also the use of lag variables. But their use gives an opportunity to make the models more dynamic and allows to take into consideration the influence of the time.

The data are analyzed by means of SPSS software. The research method is a multiple regression analysis.

Dependant variables in the models are trade payables (TP) – obligations to suppliers and clients non-financial companies. Independent variables are:

- Net revenue from sales (NRS) – indicator for firm size;
- Receivables from clients and suppliers to net revenue from sales ratio (R/NRS) – used to study the influence of the share of sales on credit over trade payables;
- Retained profit (RP) – indicates firm's ability to generate internal financial resources;
- Long-term material assets (LTMA) – serve for research of the directions of use of the resources attracted from the suppliers and also business entry barriers;
- Inventories (Inv) – indicator for directions of use of the resources attracted from the suppliers and also for importance of warehouse costs;
- Obligations to financial institutions (OFI) – indicate firm's ability to attract outside financing (in general, short-term and long-term);
- Short-term obligation to financial institutions (STOFI) – indicator for firm's ability to attract working capital from financial institutions;
- Debt to assets ratio (indebtedness to creditors) with 1 year lag (D/A lag 1) – calculated as the ratio of total liabilities (but without equity), revenue for future periods and grants to total assets. The deduction of the equity, revenue for future periods and grants is because they in fact are not owed to creditors.

Model for trade payables of SME

In the model for trade payables of SME for 2009 and 2008 independent variables are: Net revenue from sales, Receivables/Net revenue from sales, Obligations to financial institutions, Long-term material assets, Debt to assets ratio (indebtedness to creditors) for previous year.

Characteristics of the model for trade payables of SME for 2009 are:

Table 3

Correlation coefficient (R)	Coefficient of determination (R^2)	Adjusted R^2	Std. Error of the Estimate	F statistic	Sig.
0.862	0.743	0.736	1674.93644	111.657	0.000

Due to F-statistic significance level Sig.=0.000<0.05 at 5% error risk and even insignificant low risk level the model could be accepted as adequate and there is a statistically significant multiple linear relationship between the trade payables of SME and the independent variables included in the model. The correlation coefficient measures the strength of the multiple relation (Boshnakov, 2009, p. 119) R=0.862>0.7 indicating a strong relation and also the coefficient of determination R^2=0.743 indicating that the aggregate influence of the differences in the value of independent variables in the model explain 74% from the differences in the value of trade payables of SME in 2009.

Table 4

Results for independent variables in the model for trade payables of SME for 2009

	in (unstandardized coefficients)	Std. Error	Beta (standardized coefficients)	t	Sig.
Constant	-551.349	208.927	-	-2.639	0.009
NRS	0.215	0.012	0.814	17.280	0.000
R/NRS	828.649	320.094	0.096	2.589	0.010
OFI	-0.112	0.019	-0.268	-5.925	0.000
LTMA	0.121	0.031	0.195	3.913	0.000
D/A lag 1	742.959	306.643	0.090	2.423	0.016

Table 5

Correlation matrix for factors in the model for trade payables of SME for 2009

	NRS	R/NRS	OFI	LTMA	D/A lag 1
NRS	1	0.104	0.466	0.608	0.025
R/NRS	0.104	1	-0.029	0.068	0.132
OFI	0.466	-0.029	1	0.555	0.110
LTMA	0.608	0.068	0.555	1	0.037
D/A lag 1	0.025	0.132	0.110	0.037	1

There is no multicollinearity, there is not even one coefficient (except those on the main diagonal) exceeding 0.7.

Characteristics of the model for trade payables of SME for 2008 are:

Table 6

Correlation coefficient (R)	Coefficient of determination (R^2)	Adjusted R^2	Std. Error of the Estimate	F statistic	Sig.
0.833	0.694	0.686	2449.166	88.799	0.000

Table 7

Results for independent variables in the model for trade payables of SME for 2008

	B (unstandardized coefficients)	Std. Error	Beta (standardized coefficients)	t	Sig.
Constant	-821.740	305.432	-	-2.690	0.008
NRS	0.164	0.013	0.642	12.388	0.000
R/NRS	1106.582	464.632	0.095	2.382	0.018
OFI	-0.0230	0.024	-0.465	-9.482	0.000
LTMA	0.330	0.038	0.462	8.766	0.000
D/A lag 1	824.022	413.363	0.079	1.993	0.048

The correlation matrix shows that there is no multicollinearity for 2008 as well.

Table 8

Correlation matrix for factors in the model for trade payables of SME for 2008

	NRS	R/NRS	OFI	LTMA	D/A lag 1
NRS	1	0.073	0.522	0.601	0.023
R/NRS	0.073	1	0.033	0.151	0.003
OFI	0.522	0.033	1	0.529	0.083
LTMA	0.601	0.151	0.529	1	0.047
D/A lag 1	0.023	0.003	0.083	0.047	1

Regarding the influence of factors, included in the model for trade payables of SME, the next results are found:

●*Net revenues from sales* – there is a positive relation with the net revenues from sales being an indicator for firm's size. Bigger firms have stronger market positions and can attract more financing from suppliers. In addition they make more purchases and have regularly more trade accounts payable.

●*Receivables from clients and suppliers to net revenue from sales ratio* – in accordance with the transaction theory, a positive relation is found between trade payables and the share of trade receivables into net revenue from sales. The use of trade credit for purchases and for sales simultaneously allows firms to decrease costs and to carry out their activity with a smaller money reserve. Moreover firms strive to hedge risk of receivables from clients through adjustment of trade receivables and trade payables. The companies finance sales on credit with credit from suppliers.

●*Long-term material assets* – the established positive relationship indicates a risky financial management because of not observing the rule for matching maturities of liabilities and assets that are financed by these liabilities. Some LTMA are financed by obligations to suppliers that are almost entirely short-term debts. This increases financial risk, probability of liquidity problems and also probability of overdue payments to suppliers. The reasons thereto could be insufficient management quality, striving for increase in assets' profitability by taking higher risk and/or difficulties in attracting financial resources, especially long term, which is a result of the insufficient level of development of the financial sector in our county and the risk in the economy.

The high value of LTMA means also bigger fixed costs and bigger losses in case of reducing or stopping the production process which require keeping a definite volume of production. This means that these firms make also more purchases of necessary resources and demand more trade credit.

The higher level of LTMA indicates also higher business entry barriers and smaller number of competitors. It gives market power to firms and opportunity to attract more suppliers financing.

●*Obligations to financial institutions* – the established negative relation of the obligations to suppliers and clients with the value of obligations to financial institutions

shows that trade credit is used by SME in Bulgaria as a substitute for institutional financing. This is a normal result in conditions of insufficiently developed financial market and further more in conditions of crisis, decrease in bank credits, accompanied with rising interest rates of bank credits. Additional conclusion is that trade credit, which is mainly short-term, is used by SME as a substitute for long-term institutional financing. This is also in accordance with the positive relationship between LTMA and the value of the obligations to suppliers. This again indicates the high risk for the management of the financial structure of SME in the country. The conclusion is that the bank credits reduction and the rising price of bank credits provoke an increase in indebtedness to suppliers of SME not only because of the effect of substitution between trade credit and bank credit, but also due to the increasing financial risk caused by the not well balanced financial structure which is a serious prerequisite for emerging liquid problems and interfirm payment arrears.

●*Debt to assets ratio (indebtedness to creditors) with 1 year lag* – the achieved level of indebtedness to creditors is an indicator for financial risk of the firms. The higher the coefficient, the bigger the probability of financial distress and impossibility of meeting obligations. The higher the indebtedness of the company, the more difficult it is for the firm to attract additional outside financing. It is confirmed again that institutional credits and trade credits are substitutes. In accordance with the financial theory of trade credit, firms have advantages over banks as creditors and because of that are prone to finance risky clients which can't attract institutional financing. Moreover, firms have implicit share in clients' capital and are interested in their survival.

Often the extension of trade credit is involuntary for firms creditors, an evidence for this is the high level of overdue interfirm debts.

Model for trade payables of big firms

In the model for trade payables of big firms independent variables are: Net revenue from sales, Receivables/Net revenue from sales, Short-term obligations to financial institutions, Retained profit, Inventories.

Characteristics of the model for trade payables of big firms for 2009 are:

Table 9

Correlation coefficient (R)	Coefficient of determination (R^2)	Adjusted R^2	Std. Error of the Estimate	F statistic	Sig.
0.985	0.970	0.968	12043.984	605.108	0.000

There is a very strong multiple correlation ($0.7<R=0.985<1$). The aggregate influence of factors included in the model explain almost entirely the variation of dependent variable. 97% (R^2) of the differences in the value of trade payables of big companies from the non-financial sector in the economy are related with the differences in the value of the factors included in the model.

Table 10

Results for independent variables in the model for trade payables of big companies for 2009

	B (unstandardized coefficients)	Std. Error	Beta (standardized coefficients)	t	Sig.
Constant	-3912.732	1547.167	-	-2.529	0.013
NRS	0.247	0.006	1.053	42.270	0.000
R/NRS	29694.605	4222.041	0.133	7.033	0.000
STOFI	-0.468	0.121	-0.111	-3.852	0.000
RP	-0.404	0.075	-0.125	-5.359	0.000
Inv	0.258	0.114	0.062	2.264	0.026

The test with correlation matrix shows that there is no multicollinearity.

Table 11

Correlation matrix for factors in the model for trade payables of big firms for 2009

	NRS	R/NRS	STOFI	RP	Inv
NRS	1	-0.014	0.636	0.180	0.185
R/NRS	-0.014	1	0.019	0.171	0.294
STOFI	0.636	0.019	1	0.088	0.475
RP	0.180	0.171	0.088	1	0.547
Inv	0.185	0.294	0.475	0.547	1

The model is tested also for 2008 and again shows high explanatory ability. Characteristics of the model for trade payables of big firms for 2008 are:

Table 12

Correlation coefficient (R)	Coefficient of determination (R^2)	Adjusted R^2	Std. Error of the Estimate	F statistic	Sig.
0.950	0.902	0.897	17203.029	168.146	0.000

Table 13

Results for independent variables in the model for trade payables of big companies for 2008

	B (unstandardized coefficients)	Std. Error	Beta (standardized coefficients)	t	Sig.
Constant	-469.106	2252.975	-	-0.208	0.836
NRS	0.188	0.008	1.111	24.110	0.000
R/NRS	24748.248	7117.791	0.120	3.477	0.001
STOFI	-1.141	0.161	-0.380	-7.100	0.000
RP	-0.577	0.090	-0.274	-6.439	0.000
Inv	0.976	0.129	0.359	7.563	0.000

The requirement of the multiple regression analysis has been fulfilled that factors, included in the model should be independent of each other, in the correlation matrix there is not even one coefficient greater than 0.7.

Table 14

Correlation matrix for factors in the model for trade payables of big firms for 2008

	NRS	R/NRS	STOFI	RP	Inv
NRS	1	0.045	0.649	0.175	0.219
R/NRS	0.045	1	0.024	0.319	0.204
STOFI	0.649	0.024	1	0.055	0.496
RP	0.175	0.319	0.055	1	0.503
Inv	0.219	0.204	0.496	0.503	1

As regards the influence of factors that are included in the model for trade payables of big companies, the following results are found:

●*Net revenue from sales* – firm size, measured with the net revenue from sales, and trade payables have a positive relation. The firms with greater turnover make more purchases. They have also stronger market positions and attract more suppliers' financing.

●*Receivables to net revenue from sales ratio* – similarly to SME, in accordance with the transaction theory, a positive relationship is established between the percentage of sales on credit and the value of trade debts. Firms attract trade credit to finance investments in accounts receivable. Simultaneously the use of trade credit for purchases and sales reduces the necessity of holding big cash reserve and allows firms to avoid problems caused by temporary liquidity shortage. By matching trade receivables and payables companies strive to hedge risk of bad credits for clients. The high level of overdue interfirm debts in the country reinforces this motive. The firms that are up against overdue payments from clients delay their obligations to suppliers because of liquidity problems or in their strive to match the maturity of trade receivables and payables, providing the chain character of interfirm indebtedness.

●*Inventories* **–** the positive relation with the dependent variable indicates the strive of the firms to finance their inventories, that have short-term character, with short-term obligations to suppliers and clients. This enables big companies with better quality of management to achieve higher profitability. The transaction theory is confirmed as well. According to this theory trade credit is a subsidy for holding inventory. The crisis causes contraction of the markets and difficult sales of the production and forces firms to prefer the temporization strategy to the immediate production. But the temporization strategy creates problems for suppliers of resources and stimulates them to subsidize clients through trade credit.

●*Short-term obligations to financial institutions* – the negative relation between trade debts and short-term obligations to financial institutions indicates that for big companies trade credit from suppliers and credit from financial institutions are also

substitutes. Big companies have easy access to outside financing, but nevertheless they also experience shortage of financial resources, which they strive to compensate with more suppliers' financing. The contraction of bank credit, increment of interest rates and the lack of alternative source of financing, lead to increase in interfirm indebtedness, regardless of the firms' size.

●*Retained profit* – the retained profit is an indicator for firm's ability to generate internal financial resource. The greater that ability, the smaller the necessity of outside financing, including suppliers financing. This explains the negative relation between the retained profit and the dependent variable in the model. In addition, firms with bigger retained profit have easier access to outside financing in case of necessity and shortage of own resources.

Conclusions from the investigation of the trade payables and opportunities for reduction on interfirm indebtedness

The analysis shows that the economic crisis influences the trade credit demand and the value of trade payables of firms because of the restraint of the access to institutional financing and the shortage of liquidity.

The created models for SME and big enterprises are tested for two consecutive years and show stability over the time, the models keep their significance and explanatory power during the years. Because of that, they can be used in making recommendations for solving the problem with interfirm indebtedness in the country.

The bigger coefficient of determinations of the model for big companies that the model for SME expresses the higher quality of management and the better ability to implement an independent, discretionary policy about managing trade payables of big firms than SME. At SME the influence of accidental factors is stronger.

Unlike the model for the big firms, the SME model includes a variable with 1 year lag - debt to assets ratio. The results from the investigation indicate "ceteris paribus" that more indebted SME seek more trade credit and have more obligations to suppliers that serve as substitute for institutional financing. The high indebtedness and the risk of financial distress influence stronger the ability of SME to attract financing than big companies. Some reasons are the traditionally better relationships of the big companies with banks, because of their importance for banking business, the higher informational transparency and the lower risk. Moreover the SME have limited choice of alternative sources of financing and less possibility to refinance the debts in case of financial difficulties to meet obligations to older creditors.

This is a explanation also for the growth of the percentage of the net trade debtors SME during the crisis (in the crisis the financial situation of the firms is worse and the bank financing is shrinking) and for the growth of the percentage of the net trade creditors big firms, which serve as transmitters of liquidity.

The results of a multiple regression analysis on obligations of SME reveal that they take high risk since they finance long-term assets with short-term obligations

to suppliers. This discrepancy generates liquidity problems and impossibility of meeting the trade debts. Therefore it is important to improve the overall financial management of the firms in order to reduce the interfirm indebtedness and especially of the overdue debts.

The reductions of the level of interfirm indebtedness require diversification and more widely entering of methods of protection against bad debts proved in the world practice. Among them are arbitration and mediation which have many advantages over judicial debts collection procedures, for example speed, lower costs and mainly opportunity to save good trade relations. It is very important to improve the quality of management of trade credits, including better drawing up of documentation of trade receivables, imposition of interests for payment arrears, investigation of clients' creditworthiness before granting a credit, setting suitable trade credit terms offered to customers. The improvement of receivables management and reduction of overdue payments can be facilitated by the use of outside suppliers of services like factoring company, debt collectors firms, consulting firms, rating agencies.

During the investigation a substitution effect between trade credit and institutional financing was established. An important factor that determines the size of indebtedness between the companies is the lack of liquidity. The problem could be settled by means of a diversification of the sources of financing for firms and improvement of the access to financial resource through development of the stock market, public-private partnerships, risk capital founds, rising EU-funds adoption, government guaranties for improving access to bank credit for SME.

The reduction of bank interest rates will also influence positively the reduction of debts between firms, because it will make the financial resource more accessible, but also will free liquidity in firms and will help decreasing interfirm indebtedness additionally. To relieve the liquidity problems of the companies, timely payments should be effected by the state. The state is a source of liquidity problems for the firms and a generator of interfirm indebtedness because of delayed payments and late refund of VAT. According to data of the Ministry of Finance the payment arrears of the Central Government and the Local Governments as at 30.09.2011 reach BGN 457 017.3 thousand. The release of this detained liquidity from the state will allow a further reduction of interfirm indebtedness, because of the opportunity to pay off a lot of obligations with the same sum of money. A responsibility of the state for solving the problem with interfirm indebtedness includes also setting up an effective institutional framework, including adoption and application of effective legislation protecting trade creditors' rights for deterred payment transactions.

The necessity of the engagement of the state with the problem is also acknowledged on EU level with adoption of important changes in Directive 2000/35/EC of the European Parliament and the Council of 29 June 2009 on combating late payment in commercial transactions, which aim is to improve the market discipline and to stimulate debtors to make timely payments.

The focus in the revisited Directive 2011/7/EC of 16 February 2011 is a more strict regime for government's payment arrears, a requirement for payment 30 days

after the date of invoice and only in case of objective circumstances within 60 calendar days after the invoice date. The presumption is that government authorities encounter less difficulties in financing their activity than SME.

The Directive imposes in obligation on the state to guarantee full transparency and to increase knowledge about the rights and responsibilities, resulting from the regulations of the Directive and also from the means for legal protection of the companies against payment arrears. The creation of codes for timely payments in the EU countries is stimulated. The contract terms of payments between firms also are restricted to 60 calendar days, but the term could be extended in case of explicit negotiation between the companies, if this is not an obvious abuse upon the creditor. Although the creditors are not obliged to impose interests on payment arrears, a very important change is that contractual exclusion of penalty interest for arrears and compensation for collection expenses are considered as an obvious misuse, the reason is that very often the weaker market position of the seller as a cause for acceptance of disadvantageous payment terms. Without this clause, to a great degree, it would be useless to change the Directive. The interest for arrears and the compensation for expenses are due without notification of the debtor. In case of arrears, the creditor receives from the debtor a minimum fixed sum of 40 EUR.

The clauses of the Directive must be transposed in the legislation of the Member States by March 2013. Because of the seriousness of the problem with the interfirm indebtedness in our country, it would be useful this deadline to be shortened, although the implementation of the Directive is not enough for solving the problem. The Directive aims to increase incentives of the debtors for timely payments on debts but cannot solve the problem with the factors that generate liquidity and solvency problems for firms.

In addition the weaker market position of the firms, due to lower competitiveness and the striving for sales of the production can cause acceptance of obvious disadvantageous payment terms for the creditor and hiding of turnover to circumvent the provisions of the Directive. The hiding of turnover means that the firms in fact deprive themselves of the opportunity to use almost all means for protection against bad debts. In this respect a mechanism for reduction in interfirm debts is connected with increasing competitiveness and improving market position of the firms and also terms of payments.

A precondition for launching adequate measures by the state is the creation of an indicator for the level of interfirm indebtedness. For this reason and also to overcome information opacity and the difficulties in the resulting trade credit risk evaluation in trade crediting, can contribute to the creation of a united register of firms that are incorrect debtors covering also overdue debts to financial institutions, to the state and to employees in the firms.

The previous attempts of some firms to create registries for incorrect trade debtors have not provided the expected result. The Register of debtors of the Bulgarian Chamber of Private Enforcement Agents gives information only about availability or lack of initiated enforcement procedure in the country. The provided

inquiries are just for information and do not give any rights, obligations or responsibilities to the private enforcement agent having prepared the inquiry, to the Chamber of Private Enforcement Agents or to any third organizations or persons (https://www.registry.bcpea.org/).

It is necessary to create a united register, comprising a wider range of continuously updated data, such as submission of information on late payment and the entry in the register to have legal consequences for the creditor and for the incorrect debtor. The creation of a united national register is a more effective measure, because it shall guarantee the access of all firms to a unified information for arrears of a firm to different creditors and a better ability for estimation of the willingness of the firm to pay in time. Moreover the different legal protection of the rights of various types of creditors generates preconditions for differences also in the incentives of debtors and the priorities for timely payments of the various types of obligations. The creation of a united register will enable economy of scale and will save time and expenditures to ascertain the creditworthiness of the trade partners through providing maximum full and actual information on incorrect debtors from one source. The effect of registration of incorrect debtors in a united national register would be stronger than the registration in a separate register with more limited data base and narrower circle of users of the information of him.

There are some restrictions for the use of credit registers for incorrect debtors as a mechanism for solving the problem with interfirm indebtedness. Among them is the motivation of the creditors to reveal information. They don't want to reveal the bad debts in their balance sheets, which is one of the basic reasons for creditors' passivity. Moreover revealing information about their debtors can influence the probability for collection of the receivables. If the firms have overdue receivables and know for liquidity problems of their debtors, for firm creditors it is better to not reveal the problems, which would enable the debtors to attract financing from other sources and to pay to them. Revealing information about problems of their clients would worsen the situation, would reduce their chance for collection of the debt and would expose to risk the future trade relationships with the client.

This problem can be solved exactly through a united register, because usually an incorrect debtor has overdue debts also to other creditors who can also reveal information for him, but the duration of the term of waiting before submission of information for the register can be included in the Commerce Law as a criterion for the sequence of satisfaction of the nonguaranteed debts in case of insolvency of the incorrect debtor. The longer the waiting period before providing information for the register, the further down in the list of nonguaranteed debts should be the claim of the creditor in case of insolvency of the debtor.

There is another restriction for the creation and the functioning of the united national register of incorrect debtors because of the property model in Bulgaria. Many owners of firms are not interested in long-term existence in business and the reputation

of good payers. This is confirmed by the short life cycle of the firms in the country. This problem could be overcome by including information in the register not only on the firms, but also on the owners of the firms and on related firms.

The information in the register must also include data on the date of maturity of the overdue debt, because it will allow observation of the term of detention and also the presence of contract or legal guaranties for the receivable and will allow to other creditors more objective assessment of the probability of repayment of the other obligations of the debtor. The timely indication in the register for repayment of overdue debts is also necessary. A regulation is required for better assessment of the risk of a particular debtor, obliging the debtors included in the register to present regularly their financial reports to the register in order to be made accessible to the public. To guarantee the reliability of the information in the register the creditor must prove the existence of the overdue payments and to bear penal responsibility for submission of false data. Any objections of the debtor must be presented as well.

The existence of a national register will help the enhancement of the contract discipline and will make firms more active in collection of their receivables, including because of the threat for inclusion the creditors themselves in the list of incorrect debtors because of liquidity problems due to bad credits.

The existence of the national register also will lead to specific financial sanctions for incorrect debtors forced by the market. The objective estimation of the risk of the incorrect debtors, included in the register, will provoke an increase in the risk premium and the price of outside financing. Their transaction costs will also grow, as the creditors will require bank guarantees of timely payment, payment through more secure and more expensive forms of payment as the letter of credit, in addition, it will decrease the number of suppliers prone to sell them on credit and possibly the quality of the production with all negative consequences for the business of the incorrect debtor. For quite indebted firms, with big share of arrears, which continue to exist thanks only to accumulation of new debts, it will be very hard to continue to fulfill their activity. Actually the not viable firms will be eliminated from economic turnover and the business environment will be recovered.

Last, but not least the currently updated data base of overdue interfirm debts in the national register can serve for creation of a permanent mechanism for clearing of arrears aiming to untwist the chain of interfirm arrears and reduce the risk of mass bankruptcies. The function of clearing of arrears will stimulate firms to submit information on overdue receivables.

The reliable and effective functioning of the register and the mechanism for clearing should be regulated in a special law. The submission of information to the register has to be voluntary, by the decision of the creditors on the basis of creation of sufficient incentives for them. The aim is to guarantee free trade relationships and to prevent restriction of the functions of the trade credit as an efficient instrument in the corporate activity, for example enabling an insurance of clients against temporary liquidity shocks, and maintaining long-term relationships

with them to encourage sales and to increase competitiveness, to provide a quality checking period, and to invest free liquid reserve etc.

The imposition of sanctions on the creditors when they do not submit information to the register is related with risk of enhancing the grey economy, with all negative consequences. In particular for the interfirm indebtedness to hide turnover means that firm creditors are deprived from almost all legitimate methods for protection against bad debts with the exception of stopping deliveries to the incorrect debtor. Because of this the possible forcing of sanctions on the firm creditors must be accompanied with sufficiently effective measures against the grey economy.

Conclusion

It may be generalized that the reasons for interfirm indebtedness are complex, internal but also external for firms, requiring a complex approach for solving the problem. Measures should be taken simultaneously on firm and macroeconomic level. The engagement of the state is also necessary. At the same time measures must be taken against creditors' passivity, towards increasing incentives of the debtors for timely payments and also towards improving the real possibilities for payment in time. Measures are necessary for total improvement of business conditions in the country, including institutional situation. The measures against interfirm arrears must guarantee free merchant relationships, to prevent restrictions of trade credit functions, not to cause opportunist behaviour in firms and not to increase the grey economy.

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