Trade Credit Financing: Substitution and Matching Effect for Italian SMEs

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Abstract

This study investigates the relevance of financial motivation in the use of trade credit for Italian SMEs in the 2005-2012 period.

Using GMM models, the study aims to test whether accounts payable follow a model of partial adjustment and whether firms that grant trade credit to their customers demand delayed accounts payable from their suppliers. It also aims to find empirical evidence that supports the financial function of trade credit.

The results support the hypothesis of the existence of a model of partial adjustment, since the accounts payable terms of the previous year affect the accounts payable terms of the following year. The results also show how firms that grant extended payment terms to their customers demand delayed accounts payable from their suppliers. The empirical evidence reveals the existence of a substitution function between accounts payable and debts to banks and suggests that SMEs increase their accounts payable when short- or medium-long-term bank credit is less available.

Keywords: trade credit, SMEs, accounts payable

JEL Classification Codes: G10, G20

1. Introduction

Trade credit is the financing between enterprises that occurs when a supplier grants agreed deferred payments to a client. There are many reasons that lead firms to use trade credit, which has real and financial functions. Real functions refer to credit offers that support the selling policy, and the economic role of trade credit has been widely explored in the literature (Inter alia: Lee and Stowe, 1993; Long et al., 1993; Deloof and Jegers, 1996; Pike et al., 2005; Martinez-Sola et al. 2014). From a financing point of view, trade credit can represent an alternative form of financing in the short term. Firms tend to employ trade credit and tend to substitute trade credit for bank credit when credit from financial institutions is constrained (Petersen and Rajan, 1997; Nilsen, 2002 Casey and O'Toole, 2014, Garcia-Appendini and Montoriol-Garriga, 2013; Engemannet al. 2014).

The relationship between the use of trade credit and the extension of trade credit has also been investigated. According to the matching hypothesis (Bastos and Pindado, 2013), when firms increase the supply of trade credit, they also demand more trade credit.

This paper focuses on the relevance of financing motivations and the substitutability of trade credit in comparison to other forms of third-party financing. It also focuses on the relationship between trade credit use and trade credit supply, which can be mediated by the ability of firms to access other financial sources. The paper investigates the existence of significant relationships between the
incidence of accounts payable of the previous year to the next year, the existence of relationships
between trade credit policy and trade debt policy, and the existence of relationships between trade
payables and debts to banks.

To verify the research hypotheses, a panel data analysis is conducted. The estimation is carried
out using General Method of Moment (GMM), which allows controlling for endogeneity problems. The
empirical analysis is carried out on Italian small and medium-sized enterprises (SMEs) during the
period immediately before and after the outbreak of the financial crisis (2005-2012).

The results of the study show that conditions of substitutability can be confirmed and that
accounts payable of the previous year affect accounts payable of the following year. The results
indicate that trade debt policy is influenced by trade credit policy, which aligns with the matching
hypothesis. The results also indicate that the increased use of long- and short-term bank financing
causes less reliance on inter-company credit (substitution hypothesis).

This study contributes to the reference literature in various ways. The sample consists of SMEs,
which are chosen because trade credit is particularly important for SMEs given their greater difficulty
in accessing capital markets (Petersen and Rajan, 1997; Berger and Udell, 1998; Fisman and Love,
2003). Italy is an important case to study the determinants and the implications of trade credit because
it is characterised by an elevated practice of trade credit, much higher than other European countries. In
2012, trade credits were equal to 60 percent of the total bank debt and their value was greater than the
amount of short-term bank debts. The survey investigates the possibility that recourse in trade credits
 can be influenced by firms’ size and by their territoriality. For these purposes, the Italian economic
system represents an important context at an international level, as it consists of SMEs characterised by
different economic development conditions and locations (northern and central regions compared
with southern regions and islands).

The paper is structured as follows: the second section gives a brief review of the literature,
which leads to the research hypotheses; the third section illustrates the methodology; the fourth
paragraph describes the sample; the fifth discusses the results. The last section provides brief conclusive
assessments and discusses the implications of the studied phenomenon.

2. Previous Research
Trade credit is the granting of a loan from one company to another for the purchase of goods and
services. Through the granting of trade credit, the seller forgoes an immediate cash flow for real-type
motivations with the hope to set up, expand or consolidate relations with customers.

Trade credit can be a useful support tool for sales policies and a way to undertake and consolidate
relationships with clients due to the product quality guarantee and price discrimination (Lee
and Stowe 1993; Long Malitz and Ravid 1993; Schwartz and Whitcomb 1978, 1979). Trade credit may
be also a useful tool for the consolidation of business relations (Emery 1987) and firms’ profitability
(Martinez-Sola et al. 2014).

Recourse in trade credit also has financial motivations, and the literature weighs the relevance
of the financial reasons for the use of trade credit, distinguishing the transactional and financial
components. The transactional element refers to trade credit as a tool to synchronise receipts and
payments instead of using money, a tool to better forecast cash flow, and a tool to plan treasury
management in case of unexpected payments. Schwartz (1974) and Ferris (1981) claim that the
demand and supply of trade credit for transactional reasons explain the short-term and very-short-term
components of trade credit, which reduces the transaction costs and the liquidity buffers for precautionary reasons.

Other studies on the transactional costs hypothesise a positive relationship between demand
variability and supplier loan (Emery 1987; Long, Malitz and Ravid 1993). Long, Malitz and Ravid
(1993) demonstrate that enterprises that face variable demand make more use of trade credit than
enterprises that have stable demand. Transactional reasons refer to the use of trade credit that
synchronises receipts and payments and proves to be convenient both for the seller and the purchaser; the short-term duration and the granting of discounts when paying by cash distinguish this operation from trade credit driven by financial reasons.

The importance of financial reasons in intercompany financing operations is justified by the following factors: the greater availability of trade credit compared to other financing sources; the lower cost of trade credit in comparison to other forms of financing; and the higher ductility of trade credit, which on one hand has no complex contractual formulas and on the other hand may have an extended duration with no extra costs.

Inaccurate information on the financial system, the presence of underdeveloped financial institutions (Fisman, Love 2003) and weak legal recovery rules may determine substitutability or complementarity between trade credit and bank credit. Imperfections in the financial markets may determine the rationing of bank credit (Schwartz 1974), which has a greater influence on the financing of opaque or young enterprises (Huyghebaert 2006) and leads to recourse in trade credit as a fall-back determined by the insufficiency and inadequacy of sources of finance from third parties or banks (Duca 1996; Jaffe and Stiglitz 1990; Petersen and Rajan 1997).

Complementarity conditions and an extended recourse in trade credit are noted when non-financial enterprises know how to monitor the credit capacity of a firm and are able to transfer funds, borrow from intermediaries and grant deferred payment to other enterprises, otherwise rationed for reasons of misinformation (Demirguc, Kunt and Maksimovic 2001). In this case, trade credit can also be a signal (Agostino and Trivieri 2014) because information that financial intermediaries receive from their relationships with non-financial firms granting deferred payments can mitigate misinformation that causes problems for opaque enterprises and can decrease the conditions of credit rationing.

Opaque firms, which are predominantly small in size, can be subject to credit rationing (Stiglitz and Weiss 1981) and can turn to trade credit as an alternative source of financing. Trade credit, obtained according to the assessment made by the credit provider regarding the creditworthiness of the firms to be financed, increases the good quality reputation of creditors and allows them to earn easy access to bank credit. Therefore, trade credit can be replaceable, but it is also complementary to bank debts.

The importance of financial motivations may also appear where larger-sized firms, which do not have to worry about limited access to the financial market, in terms of funds and costs, act as intermediaries, offering trade credit to smaller firms that face greater difficulties in accessing credit market (Emery, 1984; Mian and Smith, 1992; Schwartz, 1974). The financial motivations imply that the provision of trade receivables could have a positive impact on the profitability of larger-sized firms, in this way consolidating their relationship with clients.

Intercompany credits are important financial tools also in times of crisis. During a credit crunch, suppliers may be liquidity providers for small and opaque firms and trade credit can serve as a complement of or a substitute for bank credit (Biais and Gollier, 1997; Burkart and Ellingsen, 2004; Petersen and Rajan, 1997; Burkart, Ellingsen and Giannetti 2011; Casey and O’Toole, 2014; Deloof M. and La Rocca M. 2015; Psillaki, M. Eleftheriou, K. 2015; McGuinnes and Hogan, 2016).

The literature believes that many firms use trade credit to finance both their input purchases (accounts payable) and their financing to customers (accounts receivable). In this sense, trade credit can be considered the link between the liability side and the asset side of the firm’s balance sheet.

Many reasons lead firms to extend and use trade credit simultaneously, and those firms that need to grant trade credit to their customers may be more likely to demand trade credit by their suppliers (Fabbri and Klapper 2008). Furthermore, the timing of payments to suppliers should match the receipt of payments received from customers. Finally, the literature supports the matching hypothesis, which poses that firms that delay collection from their customers may request long-term trade payable from their suppliers (Bastos and Pindado, 2013).
3. Hypotheses
The present work aims to investigate the existence of significant relationships between accounts payable of the previous year to the next year; the existence of interdependent relationships between trade credit policy and trade debt policy; and the existence of relationships of substitutability in intercompany credit in relation to other sources of bank financing. The following research hypotheses are formulated:

**H1:** A strict interdependent relationship exists between trade credit terms received from suppliers and trade credit terms received in the previous year.

**H2:** Trade credit terms offered to customers of small- and medium-sized enterprises match trade credit terms received from suppliers.

**H3:** Conditions of substitutability exist between intercompany credit and financing from banks for small- and medium-sized enterprises.

4. Research Method
In coherence with the literature, a panel data analysis is used to verify the research hypotheses. The analysis is carried out through the General Method of Moment (GMM), which allows controlling for endogeneity problems. The random disturbances that may affect decisions about the trade credit level may also affect other financial characteristics of the firms, and the GMM model allows controlling for endogeneity using instruments.

The paper follows the estimation strategy proposed by Arellano and Bond (1991) and the Arellano-Bover/Blundell-Bond dynamic panel estimators (Arellano and Bover 1995; Blundell and Bond 1998). The Arellano-Bond estimation transforms all regressors, usually by differencing. The Arellano-Bover/Blundell-Bond estimator makes an additional assumption that the first differences of instrument variables are uncorrelated with the fixed effects: this allows the introduction of more instruments and improves the efficiency of the analysis. To verify the research hypotheses, the following model is used:

\[ Y_{it} = \alpha + \beta_1 \text{payab}_{it-1} + \beta_2 \text{receiv}_{it} + \beta_3 \text{inbanen}_{it} + \beta_4 \text{inbanol}_{it} + \beta_5 \text{ros}_{it} + \beta_6 \text{roe}_{it} + \beta_7 \text{empl}_{it} + \beta_8 \text{cosden}_{it} + \beta_9 \text{indcorr}_{it} + \beta_{10} \text{solen}_{it} + \beta_{11} \text{darea}_{it} + \beta_{12} \text{ldim}_{it} + \beta_{13} \text{logeta}_{it} + \beta_{14} \text{darea}_{it} + \eta_i + \lambda_t + \delta_s + \epsilon_{it} \]

The variables used for the analysis are presented in Table 1.

**Table 1:** Regression Variables

<table>
<thead>
<tr>
<th>NAME</th>
<th>DESCRIPTION AND MEASURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>payab</td>
<td>Average number of days of delayed payments: the ratio of total accounts payable to sales and other revenues, multiplied by 360</td>
</tr>
<tr>
<td>payabit-1</td>
<td>Number of days payable outstanding of the previous year</td>
</tr>
<tr>
<td>receiv</td>
<td>Average number of days of delayed collections: the ratio of total accounts receivable to sales and other revenues, multiplied by 360</td>
</tr>
<tr>
<td>inbanen</td>
<td>Ratio of short-term bank borrowings and shareholders’ equity</td>
</tr>
<tr>
<td>inbanol</td>
<td>Ratio of medium- and long-term bank debt and shareholders’ equity</td>
</tr>
<tr>
<td>ros</td>
<td>Ratio of operating income and sales revenues</td>
</tr>
<tr>
<td>roe</td>
<td>Ratio of net income and shareholders’ equity</td>
</tr>
<tr>
<td>empl</td>
<td>Natural logarithm of the number of employees</td>
</tr>
<tr>
<td>cosden</td>
<td>Ratio of total financial charges and short- and medium-long-term bank debt</td>
</tr>
<tr>
<td>curr</td>
<td>Ratio of current assets and current liabilities</td>
</tr>
<tr>
<td>solven</td>
<td>Ratio of equity and total assets</td>
</tr>
<tr>
<td>darea</td>
<td>Dummy that has a value of 1 for firms located in the central and northern areas of Italy and 0 for firms located in the southern regions and islands</td>
</tr>
</tbody>
</table>
The dependent variable considered, \( \text{payab} \), is measured in terms of the number of days-to-pay accounts payable, in line with the existing literature. Days payable outstanding is the firm’s average payable period, so it corresponds to the average number of days of delayed payments.

Static panel data models assume that companies are able to adjust their financing structure without any delay; instead, the model used in the present work also considers the possibility of delays in trade payable management policies (García-Teurel and Solano, 2010). Therefore, the number of days payable outstanding may also be determined by the preceding management policies. For the reasons mentioned above, the model considers the number of days payable outstanding of the previous year \( (\text{payab}_{it-1}) \) an independent variable, to test the first research hypothesis. Considering the lagged dependent variable as an explanatory variable, static estimations lose their consistency, and dynamic panel regressions are affected by the existence of autocorrelation. Due to the previous limitations, the parameters of the model will be estimated using instrumental variable estimators. The GMM estimations that use lagged variables as instruments are inconsistent if the errors are autocorrelated. The Hansen test is used to test for the absence of correlation between the instruments and the error term.

Generally, enterprises adopt a combination of trade receivables and payables that is coherent in terms of both amount and duration, so the trade credit terms offered to customers should match the trade credit terms received from suppliers. Small- and medium-sized enterprises can be subject to conditions of sale from suppliers that have a larger market share: the offer of trade credit, imposed by the exploitation of the market power of suppliers, may determine the adoption of a balancing strategy, financing the supply of trade credit with accounts payable. However, the granting of trade credit exposes the firms to costs and financial risks. The granting of credit on sales requires the firms to use financial resources, on which interest could be earned; this approach implies an opportunity cost (Nadiri 1969). The granting of trade credit exposes the firms to financial risks because late payments expose companies to liquidity problems and in some cases to bankruptcy. Then, the relative dimension of trade receivable in the balance sheets of small and medium enterprises is very important in terms of the overall management of the company and closely related to the incidence of trade payables. For these reasons, to test the second research hypothesis, the model considers the average number of days of delayed collections of accounts receivable – captured by the ratio of total accounts receivable to sales and other revenues, multiplied by 360 \( (\text{receiv}) \) – an independent variable (Bastos and Pindado, 2013).

Trade credit received can be used as an alternative source of financing and a substitute for bank credit or credit from other lenders. The literature suggests that firms increase their demand for trade credit to overcome any credit rationing, especially when credit from financial institutions is not available (Schwartz, 1974; Petersen and Rajan, 1997; Danielson and Scott, 2004). Businesses rely on loans from suppliers when other forms of credit are fully exhausted (Petersen and Rajan, 1997; Danielson and Scott, 2004; Cuñat, 2007); therefore, a substitution effect between intercompany financing and other sources of alternative financing is expected. Useful predictors to test the third research hypothesis are the following financial resources: the ratio of short-term bank borrowings and shareholders' equity \( (\text{inbanel}) \) and the ratio of medium- and long-term bank debt and shareholders' equity \( (\text{inbanol}) \).

The management of accounts payable involves a trade-off between benefits and costs. As for the benefits, trade receivables allow companies to combine payments for goods purchased with sales revenues. In the absence of trade credit, companies should pay for their purchases at the time of delivery; if the frequency of purchases is not exactly predictable, companies need a precautionary cash stock, which is an opportunity cost. Furthermore, trade credit offers more financial flexibility than bank loans, so when companies face liquidity problems, it may be less expensive to delay payment to suppliers than to renegotiate loan conditions and terms with banks (Danielson and Scott, 2004). As for the costs, it should be considered that using intercompany financing may lead to an implicit interest rate on trade credit, which is often linked to a discount for early payment, and the implicit interest rate
can also be quite high. For these reasons, it is interesting to observe the relationship between the incidence of trade payables terms and the ratio of total financial charges and the sum of short- and medium-long-term bank debt (cosden).

The ability to obtain trade credit is also linked to the customer’s creditworthiness and size. Considering the size of the companies as a proxy of creditworthiness, larger firms could receive more intercompany credit. However, larger firms, especially in a sample composed solely of SMEs, may also receive more bank credit than smaller firms as a consequence of their reputation (Berger and Udell, 1998; Niskanen and Niskanen, 2006); from this perspective, a negative relationship between the size (empl) of the firm and trade payables is expected.

Regarding the business location, the analysis also considers the impact of the darea variable, a dummy that has a value of 1 for firms located in the central and northern areas of Italy and 0 for firms located in the southern regions and islands.

Finally, the paper also considers the following variables, related to financial firm characteristics, as control variables: the ratio of operating income and sales revenues (ros); the ratio of net income and shareholders’ equity (roe); the ratio of equity and total assets (solven); and the ratio of current assets and current liabilities (curr).

The explanatory variables and the control variables are assumed to be endogenous since these variables are built from the businesses’ financial statements. The variable referring to the firm’s size is assumed to be exogenous, and the dummy variables are considered exogenous. \( \eta_i \) is designed to measure unobservable firm characteristics that vary across firms but are assumed constant for each firm. The \( \lambda_t \) parameters are time dummy variables that change over time but are equal in each period considered. \( \delta_s \) are sector-specific dummies, and \( \epsilon_{it} \) is a random disturbance.

5. Sample and Data

The reference sample is composed of SMEs whose balance sheets were available in the Aida Bureau van Dijk database at the end of 2013.

The enterprises present the following characteristics:
- Legal status: active firms; independent firms;
- Joint stock companies and limited companies;
- Fewer than 250 employees;
- Total assets less than 43 million euro;
- Financial statements available for the years 2005 to 2012.

The study was carried out for the 2005-2012 period. The sample comprises enterprises from all over Italy that are very different in terms of location and business sector, according to the classification of economic activities by the Italian National Institute of Statistics (ISTAT), ATECO classification 2007. Firms that conduct financial activities (ATECO codes: 64, 65, 66) were not included in the sample.

Most of the firms are located in the north; therefore, the sample reflects the economic and productive Italian systems, which are characterised by a greater number of firms located in the northern regions than in southern and central regions.

Before starting the analysis, observations in the extreme 1% tails of the sample distribution have been trimmed, as have all implausible values of the key variables (i.e., accounts payable and receivable implying more than one-year commercial credit and debt duration, etc.). Moreover, only the firms with non-missing observations of the key variables for at least four consecutive years have been included.

The descriptive statistics are presented in Table 2.
Table 2: Descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th>payab</th>
<th>payab1</th>
<th>receiv</th>
<th>totasset</th>
<th>inbanen</th>
<th>inbanol</th>
<th>ros</th>
<th>roe</th>
<th>empl</th>
<th>cosden</th>
<th>curr</th>
<th>solven</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>3451</td>
<td>3451</td>
<td>3451</td>
<td>3451</td>
<td>3451</td>
<td>3451</td>
<td>3451</td>
<td>3451</td>
<td>3451</td>
<td>3451</td>
<td>3451</td>
<td>3451</td>
</tr>
<tr>
<td>mean</td>
<td>100,892</td>
<td>101,852</td>
<td>112,845</td>
<td>12,836,160</td>
<td>0,193</td>
<td>0,083</td>
<td>3,369</td>
<td>4,790</td>
<td>51,678</td>
<td>5,299</td>
<td>1,447</td>
<td>0,302</td>
</tr>
<tr>
<td>sd</td>
<td>41,225</td>
<td>41,104</td>
<td>50,903</td>
<td>7,331,991</td>
<td>0,134</td>
<td>0,088</td>
<td>4,276</td>
<td>12,466</td>
<td>36,888</td>
<td>3,031</td>
<td>0,605</td>
<td>0,165</td>
</tr>
<tr>
<td>min</td>
<td>9,510</td>
<td>9,510</td>
<td>1,380</td>
<td>655,253</td>
<td>0,000</td>
<td>0,000</td>
<td>-17,450</td>
<td>-54,020</td>
<td>1,000</td>
<td>0,020</td>
<td>0,320</td>
<td>0,009</td>
</tr>
<tr>
<td>max</td>
<td>287,210</td>
<td>287,210</td>
<td>273,140</td>
<td>35,497,560</td>
<td>0,719</td>
<td>0,472</td>
<td>23,160</td>
<td>63,920</td>
<td>219,000</td>
<td>17,720</td>
<td>6,500</td>
<td>0,854</td>
</tr>
</tbody>
</table>

6. Results of the Analysis

Table No. 3 reports the results of the analysis. The coefficient of the variable payab1 is positive and significant at the 5% level, so the first research hypothesis is verified. The results also confirm that small and medium enterprises are able to adjust their accounts payable terms to reach a target accounts payable term. Therefore, the dynamic approach adopted is not rejected, as in previous literature (Garcia-Teruel and Martinez-Solano 2010).

Table 3: Dynamic panel-data estimation – two-step system GMM

<table>
<thead>
<tr>
<th>Dependent: payab</th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payab1</td>
<td>0,281</td>
<td>0,143</td>
<td>0,049**</td>
</tr>
<tr>
<td>Receiv</td>
<td>0,183</td>
<td>0,107</td>
<td>0,088*</td>
</tr>
<tr>
<td>Inbanen</td>
<td>-156,270</td>
<td>51,275</td>
<td>0,002***</td>
</tr>
<tr>
<td>Inbanol</td>
<td>-98,853</td>
<td>46,069</td>
<td>0,032**</td>
</tr>
<tr>
<td>Ros</td>
<td>0,854</td>
<td>0,977</td>
<td>0,382</td>
</tr>
<tr>
<td>Roe</td>
<td>-0,605</td>
<td>0,321</td>
<td>0,059*</td>
</tr>
<tr>
<td>Empl</td>
<td>-0,083</td>
<td>0,113</td>
<td>0,461</td>
</tr>
<tr>
<td>Cosden</td>
<td>-1,837</td>
<td>1,616</td>
<td>0,256</td>
</tr>
<tr>
<td>Curr</td>
<td>-8,814</td>
<td>5,424</td>
<td>0,104</td>
</tr>
<tr>
<td>Solven</td>
<td>-106,393</td>
<td>29,917</td>
<td>0,000***</td>
</tr>
<tr>
<td>Darea</td>
<td>-4,466</td>
<td>5,118</td>
<td>0,383</td>
</tr>
<tr>
<td>Const</td>
<td>143,825</td>
<td>35,612</td>
<td>0,000***</td>
</tr>
<tr>
<td>Time dummies</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sector dummies</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>3451</td>
<td>Instruments</td>
<td>58</td>
</tr>
<tr>
<td>Num. of groups</td>
<td>550</td>
<td>Obs per groups</td>
<td>4</td>
</tr>
<tr>
<td>Hansen</td>
<td>chi2(38)=31,37</td>
<td>P-value</td>
<td>0,768</td>
</tr>
</tbody>
</table>

The empirical evidence also supports a positive and significant relationship between the dependent variable and the variable receiv, which is the average number of days of delayed collections of accounts receivable. This result supports the matching hypothesis (Bastos and Pindado 2013); small and medium enterprises that delay collection to their customers seem to adopt a combination of trade receivables and payables that is coherent in terms of duration. Trade receivable terms in the balance sheets of small and medium enterprises are closely related to trade payables terms, and this may highlight the adoption of a balancing strategy that finances the supply of trade receivables with trade payables.

The coefficients of the variables inbanen and inbanol are negative and significant at the 1 per cent level and 5 per cent level, respectively, highlighting that as the incidence of bank debt increases, the trade payables terms decrease. Both variables have a significant economic impact; therefore, a clear substitution effect is observable between intercompany credit and bank credit. This result is in line with previous literature (inter alia Schwartz, 1974; Petersen and Rajan, 1994; Bastos and Pindado, 2013). This result also confirms the third research hypothesis – that is the substitution hypothesis – and
suggests that small and medium enterprises reduce their accounts payable terms if they have the chance to access to short-term bank financing but also if they have access to long-term bank financing (Deloof and Jegers 1999; Garcia-Teruel and Martinez-Solano 2010).

With regard to the control variables, statistically significant relationships are observable for the roe and solven variables. The coefficients are negative and significant at the 10 per cent level and 1 per cent level, respectively, and in this case, both variables also have a significant economic impact. This appears to establish that small- and medium-sized enterprises that have greater profitability and greater solvency – therefore, the companies that may be less rationed by the financial system - have lower trade payables terms.

The ability to obtain trade credit may be also linked to firm size, as larger firms, especially in a sample composed solely of SMEs, may also receive more bank credit than smaller firms as a consequence of their reputation, as explained above. The empirical analysis results do not confirm that fact because no significant relationship is observed between the variable size and payables to suppliers.

Finally, the dummy variable darea is not significant; therefore, the localisation of small and medium Italian enterprises is not relevant to inter-company debt terms.

7. Conclusion
Using firm-level data from Italian SMEs during the 2005-2012 period, this paper provides empirical evidence on the relevance of financial motivation in the use of trade credit.

The study tests whether decisions about accounts payable follow an adjustment process and considers the possibility that the number of days payable outstanding may also be determined by the preceding management policies, that is, the number of days payable outstanding of the previous year (Garcia-Teruel and Martinez-Solano 2010). The relationship between the use of trade credit and the extension of trade credit has also been investigated, according to the matching hypothesis (Bastos and Pindado, 2013), in an attempt to understand whether firms tend to demand more trade credit when they increase the supply of trade credit in order to adopt a combination of trade receivables and payables that is coherent in terms of duration. Finally, this paper investigates the existence of a substitution effect between inter company financing and bank financing, according to which firms increase their demand for trade credit to overcome credit rationing from financial markets (Schwartz, 1974; Petersen and Rajan, 1997; Danielson and Scott, 2004).

The results show that decisions about accounts payable terms may follow an adjustment process. Indeed, the number of days payable outstanding may be determined by the number of days payable outstanding of the previous year. This reveals that the previous year’s management policies are relevant because firms may have a target level to achieve.

According to the relationship between the use of trade credit and the extension of trade credit terms, the empirical evidence suggests that accounts receivable are positively related to accounts payable. The relative dimension of trade receivable in the balance sheets of small and medium enterprises is very important because it exposes the firms to financial risks and liquidity problems due to late payments. Then, SMEs try to match trade credit terms offered to customers with trade credit terms received from suppliers in order to limit potential financial and liquidity problems. Indeed, when companies face liquidity problems due to late payments by customers, it may be less expensive to delay payment to suppliers than to renegotiate loan terms with banks.

Finally, looking at the results related to the relevance of financial motivations, it is possible to confirm the existence of a substitution effect between intercompany financing and bank financing. SMEs increase their accounts payable terms when credit from banks is less available (Schwartz, 1974); therefore, a substitution effect is observable.

The importance of trade credit for short-term financing has been established in several studies (Inter alia: Petersen and Rajan, 1997; Berger and Udell, 1998) and our results are in line with previous literature because empirical evidence shows that small and medium enterprises reduce their accounts
payable terms if they have the chance to access to short-term bank financing. It is interesting to observe that the analysis highlights how SMEs also reduce their accounts payable terms if they have access to long-term bank financing (Deloof and Jegers 1996; Garcia-Teruel and Martínez-Solano 2010), so the study provides new empirical evidence on the relevance of accounts payables also as a substitute for long-term bank financing.

References


