When do trade credit discounts matter?
Evidence from Italian firm-level data

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Abstract

Italian firms are top users of trade credit in an international comparison. The paper offers some clues to the determinants of this stylised fact exploiting the answers of about 1900 manufacturing firms on a wide range of contractual features, separately for domestic and foreign counterparties. The main finding is that, with the almost totality of commercial transactions made on credit, there is no evidence that trade credit is more expensive than loans. An econometric investigation shows that discounts offered have the expected effect of reducing payment delays only for customers located abroad, where customary credit periods are shorter. The result is consistent with the poor explanatory power of the discounts received for the trade debt period of domestic firms and with the evidence of larger buyers willing to exploit their market power with suppliers.

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1. Introduction*

Italy, like France, Greece, Portugal, Spain and, to a lesser extent, UK use trade credit much more than Germany, Netherlands and the U.S. (Demirgűç-Kunt and Maksimovic, 2001). Can this pattern be accounted for by the price and non-price contractual features of trade credit – agreed and ex post payment delays, discounts for quick payments and penalties for late ones - ? The evidence is rather scattered and often dated, with the partial exceptions of Ng *et al.* (1999) and Danielson-Scott (2000) for the U.S. and of Pike-Cheng (2001) and Wilson-Summers (2002) for the UK; no study is available on whether the own cost of trade credit is a significant determinant of the length of payment delays. An investigation into the subject, warranted on analytical grounds, is badly needed to evaluate whether a recently passed EC Directive[1] could be effective in reducing payment delays in the EU. The Directive, besides strengthening and making less costly to enforce the trade creditors' rights, sets a standard 30 days credit period (60 only for some types of contracts) with private and *public* counterparties and a default penalty interest rate at least 7 percentage points above the EBC main refinancing operations interest rate.

The contribution of this paper to the literature is twofold.

First, it provides firm-level data on the contractual features of this financing instrument exploiting the answers to a questionnaire of about 1900 manufacturing firms of a country, Italy, at the top in the world league of trade credit use. The main finding is that, with the almost totality of commercial transactions made on credit, there is no evidence that this is more expensive than loans. As a consequence, the positive link between trade debt and credit rationing, taken for granted in most theoretical literature (e.g. Jaffee-Stiglitz, 1990) and empirically confirmed in Petersen-Rajan (1994) for the US and subsequently in Harnhoff-Körting (1998) for Germany and Wilson *et al.* (1997) for the UK, is very weak, if it exists at all.

Second, an econometric exercise investigates whether revealed discounts do influence credit and debt periods. Discounts offered turn out to be negatively and significantly correlated with actual payment delays only in export-oriented firms. When explaining the trade debt of domestic buyers, the discounts received show up not significant or even take a perverse positive sign. All in all, the finding that there is not a cost hierarchy between trade credit and loans is robust when moving from a univariate to a multivariate analysis. The rationale suggested is that foregoing a discount opportunity is a cheap option when the customary net period is sufficiently long and there are no

[1] EC Official Journal dated 8/8/2000, L.200/35. EU countries have to comply, modifying their national legislations, within two years from the publication of the Directive.

effective penalties for stretching payments beyond the agreed terms, as it is the case of the Italian institutional and legal framework but much less so abroad.

The paper is organized as follows. Section 2 summarizes some stylized facts on trade credit features in the main EU countries and in the US. After an illustration of the questionnaire structure, a descriptive analysis of the trade credit features, including an univariate investigation on the links with credit rationing, is carried out in Section 3. Section 4 provides a cross-section econometric analysis, centered around the role of revealed discounts proposals in determining the actual credit and debt periods. Section 5 concludes.

2. Trade credit features: an international comparison

A comparison, based on averaged data from a representative sample of the industrial sector in the harmonised account data base BACH (Bardes, 2002), shows a stable ranking for the ratios to total assets of trade credit and debt in the period 1989-2000, with Italy on top (in the last year, respectively 33 and 24 per cent), followed by France and Spain (25 and 23 per cent), while Germany's indicators are the lowest (8 and 7 per cent)[2]; the U.S. indicators are slightly above the latter ones.

A possible explanation of the differences in credit periods between the low users and the high users (and the UK as well[3]) is twofold, having controlled for those factors – price discrimination, sales stabilization, economies of scale – suggested in the literature and that are not country-specific.

First, the trade credit own cost depends on the contractual clauses – implied interest rates in two-part contracts allowing for discounts for quick payments[4] and penalties for ex post delays – and on the extent they are enforced. Ng et al*.,* (1999) show how, on average data by sectors in the U.S., even if trade debt is more expensive than short term loans, the actual spread cannot be easily computed, because it depends on how common is the two-part contract[5]: according to the study, it is offered by only a quarter of firms, manufacturers and not. Among the largest EU countries, only in Germany a 2 per cent discount is usually granted for payments within 15 days, even though with

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[2] German data are even slightly lower than US ones. Of course, the usual *caveat* on international comparisons of accounts data applies. In Germany, for instance, trade credit and debt are net of the items with other firms belonging to the same group.

[3] Data on UK manufacturing firms referring to early nineties show that on average less than 50% of invoices were paid in time; small firms, in the manufacturing and in the services sectors, suffered disproportionately from payment delays (Bank of England, 2000).

[4] A two-part contract, *d/D, n/N*, offers the choice of either a per cent discount *d* if the payment is done within *D* days*,* or a net period, *n*, with a full payment *N* days after the invoice date, with *N* usually two to three times *D*. The implied annual opportunity cost, should the buyer decide to forgo the discount in exchange for *N-D* additional days of financing, can be computed as $[100/(100-d)]^{360/(N-D)} - 1$.

[5] As Ng *et al.* (1999) remark, before their paper, based on an original survey, the only comprehensive documentation for the U.S., though with a focus on sectors rather than on firm level data, goes back to 1970 and is based on the records of a primary operator, Dun & Bradstreet, in the management of receivables of medium-large firms in various countries.

sizable differences across sectors (Harhoff-Körting, 1998); in France this contractual clause is far less widespread (Deutsche Bundesbank, 1999). An additional component of the own cost is the size of, and how widespread are, penalties for late payments. Wilner (2000, fn. 4) quotes a 1996 survey showing that a majority of US companies did not implement a late payment penalty and that only 7% had previously charged it. Pike and Cheng (2001) report that out of two thirds of large UK companies surveyed incorporating within their standard credit conditions the right to charge interest on late payments, only 44% had ever exercised this right and just 3% as standard practice.

Second, trade credit use, as a substitute to bank lending, can depend on a country's legal system. Demirgűç-Kunt and Maksimovic (2001), using a large sample of developed and developing countries, provide empirical support to the hypothesis of a negative relation between the size of trade credit and the efficiency in enforcing contracts of a country's legal system, to the extent that this benefits financial intermediaries, i.e. the natural suppliers of credit. The same point is made more precise in a study comparing French and German manufacturing firms financial structure. "French payment patterns are not shaped by reservation-of-ownership rules designed specially to safeguard the interest of creditors […]. The German legal system strongly encourages the settlements of trade creditors. The far-reaching legal claim, in the form of the extended or expanded reservation of ownership, also assures the seller who has agreed such a clause with the purchaser the right of access to the processed product and a claim to the proceeds of a later resale and expands the reservation of ownership to claims on the corporate group as a whole or on existing current account debtors" (Deutsche Bundesbank, 1999, p. 36).

These remarks on the French legal and contractual framework before the EC Directive apply very closely to Italy as well: its legal framework is based on the French law in the Laporta *et al.* (1998) taxonomy; among the largest EU countries, the law and order indicator that proxies the efficiency of legal systems ranks at the top Germany, followed by France, UK, Italy and Spain (Demirgűç-Kunt and Maksimovic, 2001, Table 1)[6].

3. Trade credit practices in the Italian manufacturing sector

The 1994 edition of the triennial Mediocredito Centrale (MC) survey on more than 5000 manufacturing firms – a representative sample for firms with 11 to 500 employees and all largest ones – includes, besides a short time series of annual accounts and information on a set of firms' idiosyncratic characteristics, a questionnaire on trade credit and debt (for the wording of the main questions see Appendix 1). The data-set used in the econometric exercise, that includes up to 1900 firms due to missing values or inconsistent data, under-reports smaller firms: the average employees

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[6] The indicator is scored 0-6; Germany's is 5.75, France 5.50, UK 5.31, Italy 5, Spain 4.98 .

in the first decile, 23, compares with 8.9 workers - employees and self-employed - per firm in the manufacturing sector in 1996.

Every question refers separately to three counterparties: firms in the same group, other non-group Italian and foreign firms. Interpreting the answers is not, however, straightforward.

First, the answers on trade debt (the average debt period, the average delays beyond contractual agreements, discount proposals received for quick payments; Table 1), clustered around some focal points, seem to mirror what a respondent thinks to be the customary practice in the sector the firm belongs to, rather than the individual own experience.

Second, the response rate for questions related to firms in the same group is pretty low. Moreover, the questionnaire does not include a grand total answer for each question. This is rather inconvenient, because it prevents checking for the mutual consistency of answers referring to items like the annual flows of trade credit and debt and for their compatibility with balance sheet data.

Third, the questionnaire asks whether a discount proposal for payment one month earlier than agreed was made or received. Taken literally, the wording could be translated into a two-part contract, setting $D = N - 30$, $N > D$. Similar credit terms are however not found in the literature nor in the anecdotal evidence for Italy. The answer could instead be framed as referring to a standard two-part contract with $N = \alpha D$, $\alpha \geq 2$, common in the actual practice of important commercial partners such as Germany or U.S. The implied interest rate in foregoing the discount would be of course very different in the two cases, the lower the larger the $N - D$ period[7]. An upper bound could be found in the (annualized value of) *penalty* imposed for each month of delay beyond the agreed date. The result should at any rate be considered very cautiously, due to the dramatic drop in the percentage of answers to this question.

These shortcomings notwithstanding, the answers to the questionnaire provide a unique snapshot of key features of trade credit, taken and granted, among Italian manufacturers. The data refer to a not so recent year, 1994, but the 2000 evidence from the first Bank of Italy survey on trade credit suggests that in the meantime very little has changed (Banca d'Italia, 2001).

3.1 An exploratory data analysis of firms' answers

The descriptive analysis of the MC questionnaire is organized by firms split into quintiles by total assets, separately for two counterparties: Italian independent and foreign suppliers (Table 1). Italian suppliers belonging to the same group are not considered due to the very low response rate.

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[7] Wilner (2000) calculates that in the US case delayed payments, when terms of sale do not include an explicit penalty, reduce the theoretical implied interest rate by two-fifths.

-        Almost one hundred per cent of purchases from Italian independent suppliers is made on credit; the percentage falls to about three quarters when considering foreign suppliers, because of their very limited share in the first quintile.

-        The average debt period with Italian independent suppliers is longer by about ten days than for foreign ones and, on average, at least two and a half times the standard (one month) according to the EC Directive. There is evidence of variability across firms only with reference to the Italian counterparties: debt periods are positively correlated with firms' size on average data, not on median data.

-        The proportion of suppliers offering discounts is low on average (slightly below 7 per cent for Italian ones and 4 for foreigners). Moreover, the option is acknowledged to be available to a limited subset of firms: it is in fact zero on median data.

-        The annualized interest rate implied by the discount offered for early payments is on average (using the 2.6 per cent average discount for Italian suppliers) about 37 per cent with a fixed $N - D = 30$; accepting the more plausible interpretation of a standard two-part contract it drops to 19 per cent with an agreed net period $N = 84.5$ and to 10 per cent with N equal to the actual (computed on account data) debt period of 125 days (Table 7)[8]. It is useful to notice that the average short term bank lending rate in 1994 was 11.2 per cent, a figure bounding from below the average rate for uncollateralized very short term loans, i.e. the closest substitute to trade credit. A puzzling result when inspecting firms' answers by suppliers' location is that discounts are almost identical (Table 2), as if they were determined according to the buyer's industry practices; the same does not happen with average payment delays, consistently lower with foreign suppliers. As a consequence, the implied interest rate is higher when foregoing foreign suppliers' discount proposals.

-        Penalties for late payments, consistently with other countries experiences, are applied pretty rarely (slightly over 3 per cent from Italian suppliers and less than 1 per cent from foreign ones; Table 1). The low incidence of acknowledged late payments is surprising, when compared with the measured (on account data) debt periods. On average, the proportion of ex post delays to foreign suppliers is a half compared to Italian ones and rises with firm size, especially with domestic counterparties. This finding, together with the similar one for the average debt periods, hints at some degree of market power exploitation.

-        Penalties are imposed only after a one month delay. The question on the size of the penalty per month of delay imposed by Italian suppliers receives even fewer answers (90; just 18 for foreign suppliers). With this *caveat*, the penalty rate is not so penalizing, being less than the discount proposal received.

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[8] Computed as days of debt = [end of year trade debt/purchases]*360 days.

-   The discounts proposed to customers are on average smaller than the ones received and are correlated negatively with firm size. This latter result is surprising, because larger firms could be expected to be better at implementing a discount policy if this were considered an effective financing and marketing tool, due to economies of scale. Some doubts about the feasibility of calibrating discounts to customers' characteristics are indeed raised by the almost identical answers referred to domestic and foreign customers (Table 2), irrespective of the significantly interest rate differential between Italy and the main commercial partners. This finding does not square however with the result, previously found on the debt side, that the discount is determined by the buyer' location.

-   Many more firms acknowledge to offer than to receive discounts; among the first ones, less than a half states to offer discounts to Italian counterparties and about one third to foreign ones[9]. A possible explanation of the first result could be the wider customer base – a mix of other firms and of wholesalers or retailers, domestic and foreign - on the credit side in comparison with only domestic manufacturers on the debt side. The MC dataset allows to investigate the issue because it includes answers on sales breakdown by seven customer types (see Section 4).

3.2   Credit rationing and trade credit

The link, emphasized in Petersen-Rajan (1994), between smaller firms rationed in the bank credit market and recourse to the more expensive trade credit extended by larger firms[10] is not supported by the descriptive evidence in the MC dataset[11].

Firms are asked two questions to ascertain whether they are credit rationed: first, have they applied for larger loans than in fact obtained; second, would they have accepted to pay more? (for the exact wording, see Appendix 1). A rather large set of indicators - answers to the questionnaire and economic and financial variables based on account data – , computed for the subsamples of firms acknowledging to be (about 6 per cent) and not to be rationed[12], suggests a weak link, if it ever exists (Table 3)[13]. The answers are the same, almost always up to the 75th percentile, for the average debt period, the proportion of suppliers offering discounts, the discount offer received, the average delay beyond the agreed one, the proportion of late payments, the penalty applied by

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[9] Ng et al. (1999) report, for the U.S., a much lower proportion - only a quarter of firms, manufacturing and not - offering a two-part TC contract.

[10] Caution about the Petersen-Rajan result even for the US is suggested by Ng et al. (1999, Table III). The answers distribution of respondents offering two-part contracts, when asked whether taking TC suggests that the customer cannot obtain financing elsewhere, is the following: never (49,4%), occasionally (40.3), half of the time (3.4), frequently (5.6), always (1.3).

[11] A binary dummy variable for being/not being rationed turned out always poorly significant in all regressions illustrated in Section 4.

[12] The answers to the two questions produce an almost identical self-selected subsample.

[13] Non-rationed firms with sales larger than the ones of the biggest rationed firm are excluded, because they are unlikely to be rationed. The results (available on request) do not change however when including all firms.

suppliers and the proportion of the latter, the discount offered; they are only slightly higher – statistically significantly only for the proportion of late payments - for rationed firms on average data. The pattern is very similar also for the indicators computed on account data, except for ROI, significantly lower for the rationed firms. Trade debt is larger than short term loans by a factor of one and a half, on median data, and twice as much at the 75th percentile in non rationed firms; these statistics are larger than for rationed firms. Finally, the short term loans growth rate is higher, on median and at the 75th percentile values, for rationed firms[14], a fact hardly interpretable as a signal of banks' aversion to lend.

4. Econometric investigation

Schwartz (1974) and Emery (1984) argue that credit worthy and liquid firms should extend more trade credit, engaging in arbitrage when borrowing and lending rates of interest provide such an opportunity. Being however not only a financial tool, but also a marketing one, granting trade credit may help to smooth the pattern of demand over the business cycle and to build sales, through an implicit price discrimination policy, allowing different credit periods granted to customers to translate the same nominal price into a different actual one (Schwartz-Whitcomb, 1979; Emery 1987; Brennan *et al.* 1988). These theoretical insights underlie the specification the cross-section equations explaining trade credit use as in Petersen-Rajan (1997). Within this empirical framework I examine two main issues.

1. Does the discount offered enter in the predicted way, i.e. negatively, and significantly in an otherwise conventional equation explaining the effective credit period, after controlling for buyers' being domestic or foreign and for the cost of bank lending - proxied by the implied external borrowing rate[15] -? If the actual cost differential is low and often, it could be argued, even negative, as seen in Section 3.1, the own price effect could be predicted to be low and differentiated across customers, depending on the balance between financial and marketing considerations.

2. Does the discount proposal received shows up as a significant determinant of the effective debt period? It should not, if the main contention of the paper holds, given that on the debt side financial considerations are predominant.

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[14] The same results hold inspecting the first decile, where riskiest borrowers could be located: the growth rates are in both cases negative, but less so for rationed than for non-rationed firms (-48.7 and −59.4 per cent, respectively).
[15] The approximation is acceptable because debt financing is almost exclusively bank lending, mostly short term.

4.1 Econometric strategy

As it is well-known, trade credit and debt account data, with no counterparties matching, bundle demand and supply motivations and explanatory equations are bound to be reduced forms. Additional firm-level information can however help to disentangle to some extent these factors.

More precisely, considering first credit extended, besides the revealed discount offered (though unfortunately there is no information on whether it is accepted), the MC questionnaire provides data on the sales breakdown by seven types of customers and on the share of sales abroad. This information is potentially very useful because:

1.   being the average debt period in most European countries[16] as well as in the US lower than in Italy, it can be expected that the more domestic firms have to deal with foreign counterparties the lower, *ceteris paribus*, will be their actual credit period;

2.   discount policies, to quicken payments, could be more effective to offset the reduced collateral value of products, like those sold to other manufacturers, that are likely to be consumed quickly, compared to final goods sold to retailers (Ng *et al*., 1999).

On the debt side, the mingling of demand and supply factors is heightened by having mostly other producers as counterparties. Petersen and Rajan (1997), in a sample of small firms, have proposed an interesting way to try to distinguish demand and supply factors. First they estimate a "normal trade debt" demand equation, exploiting the information on the percentage of purchases bought on credit; the predicted values are then used as a regressor in an equation explaining the actual trade debt data together with various financial and economic indicators, taken as supply factors because of their supposed signalling role of the buyer's financial worthiness. This econometric strategy cannot be replicated in the Italian case, because the percentage of purchases on credit is close or equal to one hundred (Table 1); in addition, as already noticed, the MC database does not report a grand total for the three counterparties. An approach aimed at distinguishing normal practices from individual aspects of each firm's interaction with suppliers could however be implemented exploiting the revealed average debt period, taken as a trend-like value. This variable could be entered as a regressor in an equation explaining the effective trade debt period, besides the usual set of a firm financial position, which I would interpret as picking mostly demand factors, because no penalties are *de facto* imposed on late payments. Having controlled for the lending rate, the discount proposal received should enter negatively signed, if it is perceived as an effective cost element.

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[16] The EU area accounts for about two thirds of total export.

4.2 Credit extended

A cross-section reduced form specification of an explanatory equation for the ratio to sales of end-year trade credit[17], *cre,* usually includes financial – information on bank lending availability and/or other elements of a bank-firm relationship - and marketing determinants, as well as idiosyncratic firms' characteristics. In the specification I estimate data on bank relationships are missing, and this is admittedly a drawback[18]; the novel feature is the inclusion of the own and the opportunity cost of trade credit. More precisely, the estimated specification is:

$$cre = f\left(\underbrace{r, disc, ROI;}_{financial\ determinants}\ \underbrace{sales\ margin, sales\ growth}_{sales\ promoting\ determinants}; transaction\ technology\ ; firm's\ characteristics \right)$$

where the explanatory variables can be grouped into four categories.

1.   *Financial determinants:* implied cost of external borrowing, *r*; discount offered, *disc*; a current profitability indicator, such as *ROI*. The expected signs for *r* and *disc* are negative: in the first case, because of the opportunity cost of borrowing from banks to grant payment delays[19]; in the second case, because a higher discount should incentive debtors to pay quickly. *disc* is computed as a weighted average of discount proposals offered to domestic (non-group) and foreign customers, the weight being the percentage of sales abroad. Entering as a regressor *disc* leaves open the question on how to compute the implied interest rate of foregoing a discount; as a consequence, the estimated coefficients of *disc* and *r* are not directly comparable. The negative sign attached to *ROI* is motivated by the claim that extending trade credit, a dominated investment choice on financial grounds according to my reading of the univariate evidence, is a policy that can be pursued by less profitable firms gambling for better performances via sales promotion.

2.   *Sales promoting determinants:* gross profit as a ratio to sales, *margin*; sales growth rate, *g*. An implicit price discrimination policy can be realized, as suggested by Petersen-Rajan (1997), if a seller has a high margin to sales, generating the required cash flow (hence positive sign for *margin*). Empirically, to pick a structural feature of the firm policy and mitigate simultaneity issues, *margin* is averaged over two years. Again following Petersen-Rajan (1997), positive and negative sales growth rates, *g*, are entered separately, to pick asymmetric effects when trade credit is used as an anticyclical instrument to stabilize sales. More precisely, the prediction is that negative *g* be negatively signed and larger in absolute value.

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[17] Credit period is conventionally computed as days of credit = [end of year trade credit/sales]*360 days.

[18] The data in the Credit Register managed by the Bank of Italy are not publicly available.

[19] Trade credit could be complementary if is efficient to have large non-financial firms partially take on the role of financial intermediaries because they can exploit monitoring or contract enforcing advantages over banks.

3.   *Sales transaction technology*: proportion of sales abroad, *export*; customer base composition. If the customary practices abroad are of shorter credit periods, the expected sign for *export* is negative. The customer base effect is picked entering the proportion of sales to seven categories: public sector, consumers, retailers, wholesalers, firms, sales to order and others[20].

4.   *Idiosyncratic characteristics: size*, proxied by total assets (in logs; end 1993 data to reduce simultaneity); Pavitt sectorization into 4 categories from a supply side perspective; location by 4 macroregions; being a member of a group. The latter feature (39 per cent of the sample) should enhance a firm's credit standing and hence lower the opportunity cost of granting payment delays; it turns out that the *group* dummy, though positively signed, as expected, is always poorly significant[21].

The OLS estimates, on a sample that excludes the few firms whose unique customer is the public sector[22], lend overall support to the *a priori* predictions (Table 4)[23]. Starting with the basic specification estimates at column (1), let us consider first the role of exports and of the buyers' typology. These regressors result strongly significant, as it can be gauged by the t-statistic for *export* and by the sound rejection of the joint zero-restrictions on the set of regressors representing the sales breakdown. An additional percentage point for *exp* implies a lower *cre* by more than one eighth of point.

The marketing role for *cre* is buttressed under both dimensions. An additional percentage point of *margin* translates into a *cre* higher by almost a half percentage point; the negatively signed and highly significant coefficient for the negative sales growth rate is easily rationalized on the grounds of stabilizing sales around the levels already attained.

Examining the financial determinants, both *r* and *ROI* coefficients are negative and highly significant: an additional percentage point implies, respectively, a lower *cre* by 0,13 and 0,41. The most interesting feature is however the negative sign and the statistical significance, marginally above the 5% confidence level, for *disc*, with an effect on *cre* only slightly lower than for *r*. An additional point in the discount offered would amount to an implied annual interest rate of 3,9 per cent, under the assumption of the two-part formula, with $N = 125$ (account-based computation of the mean effective credit period) and $D = 30$: *cre* would thus be reduced by two fifths of a percentage point, compared to a half considering the *r* coefficient.

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[20] To avoid perfect multicollinearity, the proportion of sales to firms is omitted.
[21] Firm's age, a widely used regressor, was excluded because of its even poorest significance.
[22] Exceedingly long payment delays are a widespread practice in the public sector (see Marotta, 1995). In the MC database, the 21 firms selling exclusively to the public sector have an actual average credit period of 183 days.
[23] The DW statistic is reported, as a generic misspecification indicator. The equation in column (6), including as a highly significant regressor also the trade debt to purchases ratio, confirms the robustness of the estimates in column (1). Of course, because of the possible reverse causation between trade credit and debt, an economic interpretation of such an equation would be perilous.

To explore more carefully the issue of the effects of the customer base composition the specification in column (1) is estimated for subsamples: the first two differ for the share of sales abroad: less than (column 2) or at least equal to (column 3) the median value of one third; the second two have a percent of sales to other manufacturers and to order higher than (column 4) and at most equal to (column 5) 70 per cent[24]. The first split is motivated by the different legal and institutional framework for domestic and foreign customers; the second one builds on the conjecture that products sold to other manufacturers, likely to be consumed quickly, have less collateral value to suppliers.

Comparing columns (2) and (3) a Chow test on the equality of coefficients rejects the null. The main differences are consistent with the *a priori* predictions on the two regressors likely to be affected by the sample split, namely *export* and *disc*: they are poorly significant only with the domestically-focused firms. Moreover, comparing the relative size of the *margin* and of the sales growth rates coefficients, *cre* is more influenced by the price discrimination than by the sales stabilization aim in the export-oriented firms.

Comparing columns (4) and (5), a Chow test on the equality of coefficients rejects again the null. The Ng *et al.* (1999) conjecture seems to be empirically supported, because *disc*, with the expected negative sign, is statistically significant only with firms that sell prevalently to other firms. Does the location of the latter matter? A further split according to the criterion of exported sales larger or smaller that one third shows that *disc* is significant (at the 5% confidence level) only in the export-oriented firms (Table 5).

To summarize, who the buyer is[25] and, above all, whether it is located domestically or abroad, and hence operates in different legal and institutional frameworks, do matter when trying to explain trade credit extension. More precisely, these factors more than offset, in the admittedly extreme case of the country with the largest use of trade credit, the plausible argument, put forward and empirically supported, in Ng *et al.* (1999) for the U.S. and in Wilson-Summers (2002) for the U.K., of longer payment delays when dealing with international customers, who require longer inspection periods for the products bought.

The revealed discount offered, a minor element of the customary practices compared to the length of the payment delay, as witnessed by its invariance across domestic and foreign customers, turns out to be correctly signed and marginally significant (at the 5% confidence level); the size of its effect on *cre* is sensible and comparable the impact of *r*, under the assumption of a two-period contract with an extended net period. The robustness of this result only in subsamples of export-

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[24] Results are robust varying the limit between a half and two thirds.
[25] The F-test statistics of joint zero restrictions on the set of regressors representing the sales breakdown by customers consistently reject the null.

oriented firms is the starting point to investigate whether, turning on the debt side, there is evidence of a cost hierarchy between trade credit taken and a cheaper bank lending. The claim this paper makes is that this should not be borne out by data also in a multivariate analysis when considering only domestic manufacturers.

4.3 Trade credit received

The trade credit received to purchases ratio, *debt,* is explained as a function of a set of structural determinants - the acknowledged normal average debt period[26] with the Italian non-group suppliers, an indicator of bargaining power and firm's characteristics, like size, location, Pavitt sector and customer base composition -, of a set of indicators of the cyclical condition - *ROI*, sales negative and positive growth rates - and of both the own and the opportunity costs:

$$debt = f\left(\underset{-}{r}, \underset{-}{edisc}; \underbrace{\underset{+}{average\ period}, firm's\ characteristics, \underset{?}{bargaining\ power}}_{structural\ determinants}; \underbrace{\underset{-}{ROI}, \underset{-}{sales\ growth}}_{cyclical\ indicators} \right)$$

The indicator for the bargaining power with suppliers is computed as 1993 purchases per supplier (in log) and has *a priori* an uncertain sign. A firm with more dependent suppliers (higher indicator) could set longer debt periods exploiting a monopsonistic power; the same indicator, however, could instead proxy a stronger suppliers' influence, with an opposite effect on *debt*. The expected sign is minus for *ROI* and negative growth rate of sales, uncertain for the positive growth rate, on the grounds that a less profitable and with poor sales firm is likely to exploit the cheap (compared to loans) opportunity of postponing payment schedules to junior creditors (as it is the case in Italy for suppliers compared to employees and banks)[27].

The predicted sign for *r* is negative, if bank lending is a substitute for trade debt. The expected discount, *edisc*, <u>if</u> it is perceived as an effective cost, should enter negatively signed. The regressor is computed as the average discount proposal received times the (very low; Table 1) percentage of suppliers offering it, both answers related to the Italian non-group suppliers (the same holds for the revealed average debt period). The choice of only one counterparty is due to the fact that the questionnaire does not allow to estimate the breakdown between purchases made domestically and abroad and that more answers refer to domestic than to foreign suppliers (Table 1).

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[26] The questionnaire answers are entered as regressors inverting the formula in fn. 8.
[27] It could be argued however that the same sign could be motivated if suppliers, in order to keep a customer, would be willing to let the debtor to stretch payment terms when facing transitory difficulties.

The OLS estimates of the basic specification with a sample of 828 firms acknowledging that a non null proportion of domestic suppliers has offered a discount[28] fit overall the *a priori* predictions, with a notable exception for the cost variables (Table 6, column 1)[29]. First of all, the survey based average debt period enters very significantly. The negatively signed purchases per supplier suggests that the bargaining power of (large) suppliers more than offsets the buyer's monopsonistic influence. *ROI* and negative *g* enter significantly and with the expected sign, supporting their interpretation as demand indicators for a distressed firm. One additional percentage point in *ROI* is associated with a lower *debt* by about 0.18 per cent; the combined effect of a higher ROI on payment delays offered (Table 4) and taken is definitely a reduction in the net trade credit to sales ratio. Positive *g* enters significantly but it is smaller in absolute level.

The most interesting findings are however the poor significance of the correctly signed *r* and, above all, the positive sign attached to the expected discount.

To better understand these results, as before, the same equation is run over some suitably defined subsamples.

First, let us consider the dimension divide. A time-honoured claim (e.g. Davis-Yeomans, 1974, for the UK; Marotta, 1997, on averaged panel data for Italy) is that larger firms exploit their market power stretching debt periods when penalties for late payments are not enforced, if they exist at all. Splitting the sample at the 60th total assets quantile, a Chow test rejects indeed the null of equality of coefficients (columns 2 and 3). Comparing the two columns, larger firms seems to act more on their own terms when determining *debt*, as suggested by a much larger coefficient for revealed average debt period, a market power indicator coefficient reduced to almost a half and cyclical indicators, like *ROI* and positive *g,* poorly significant. The dimension divide shows up also in the coefficients of *r* and *edisc*: the first is marginally ($t = 1.7$) or not at all significant; the second one is highly significant (t = 2.5) only for larger firms, but "wrongly" signed.

Second, let us consider only the more financially sophisticated firms, which I take to be those acknowledging to pursue a policy of discount offers (column 4). Consistently with the predictions, *r* enters highly significant and with a size roughly similar to what found in the *cre* equations; even in this case, however, *edisc* is wrongly signed.

Third, the sample is split between firms acknowledging to/not to be late payers (columns 5 and 6). The Chow test rejects the null also in this case. Should foregoing the discount be perceived as a sizable cost the prediction would be that *edisc* should show up correctly signed in the equation for

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[28] The main results do not change when considering also firms answering they have received no discount proposals.
[29] Column 7 reports the regression with the added explanatory variable *cre*. As explained in fn. 23, it must be interpreted only as a check of robustness of the estimated equation in column 1.

firms on schedule. Late payers only, instead, show a highly significant (t = 3.2) effect of *edisc*, but once again with a wrong sign.

All in all, I interpret the consistent pattern of the *edisc* coefficients as the other side of the coin of the poor significance found for discount offered when modelling credit periods for domestically-oriented firms. In an institutional and legal system with a low enforcement of creditors' rights, larger and/or more financially expert firms are more likely to exploit their ability to get informal finance stretching their debt period, despite the discount proposals received.

5. Concluding comments

Investigating the case of Italy, the world top user of trade credit. can provide useful insights to the empirical literature on the subject. Two are the main contributions of the paper.

A detailed univariate analysis is provided on a large set of contractual features, exploiting 1900 manufacturing firms' answers to a questionnaire. The most interesting information, to the best of my knowledge as yet missing in the literature, refers to the discount proposals received and offered, to the penalties for late payments and to the average debt period, separately for domestic and foreign counterparties. I find that there is no evidence of trade credit being more expensive than loans; this result is borne out also when comparing self-defined rationed and non-rationed firms. In addition, whereas discount terms are almost identical for domestic and foreign counterparties, credit periods are significantly different. This finding hints at some sort of "menu costs" in differentiating discount proposals across customers that firms could prefer to minimize, letting instead the actual credit periods to vary.

An econometric investigation on the determinants of trade credit shows that discounts offered have a minor role compared to customary credit periods; they have indeed the expected effect of quickening payments only for customers located abroad. The result is consistent with the poor significance or, if significant, with the wrong sign of the discount proposals received in equations explaining the trade debt period for domestic firms. Larger firms are able to exploit their market power, stretching debt periods and reducing credit periods. Who the buyer is and, above all, whether customers and suppliers operate in the same legal and institutional system do matter when trying to explain trade credit use across countries, consistent with the gist of Demirgűç-Kunt and Maksimovic (2001).

The policy implications I draw from these findings is that the key feature of the EC Directive is the setting of a standard 30 days credit period, with enhanced and less transactionally expensive creditors' rights protection. The legislated minimum penalty interest rate is not easy to be made effective, because of the fear of damaging customer relationships, as witnessed by the experiences with the 1998 UK and Italian laws (for the UK, see Bank of England 2002) and by the scattered

evidence on how common are and on the enforcement of penalties in customary practices. The implementation of a standard credit period, also for the public sector counterparties, dramatically shorter than what is now common in Italy and in other Mediterranean countries, could instead be more successful, because of the convergence process towards the quick payers' practices set in motion by the increase in cross-borders transactions in the EU single market.

Appendix 1. The data

Trade debt and credit questionnaire

1. What is the average period for commercial debt in 1994?

2. How many suppliers (per cent) that offered in 1994 payment delays proposed also a discount for quicker payments?

3. What is the average monthly discount for quicker payments, i.e. the percent price reduction a firm can obtain on average anticipating the payment by one month (e.g. cash instead of paying thirty days later)?

4. In 1994, what percentage of trade debt was paid by the firm beyond the agreed date and what was the average extra delay?

5. During 1994, what percentage of commercial debt, paid beyond the agreed date, implied a penalty?

6. What is the average penalty imposed by suppliers, as a percentage of price, for each month of delay?

7. What is the average monthly discount for quicker payments, i.e. the per cent price reduction the firm offers to its buyers if they pay one month earlier than agreed (e.g. cash instead of paying thirty days later)?

All the above questions have to be answered with a breakdown for three counterparties: firms belonging to the group, other Italian firms, other foreign firms.

Credit rationing

1. In 1994, has the firm applied for, but not obtained, more bank loans?

2. In 1994, would the firm have accepted tighter terms (higher interest rates or more collateral) to obtain more bank loans?

The dataset used

The information processed refers to a maximum of 1900 firms. Firms were selected if the 1994 accounts information were consistent and plausible (e.g. non-negative depreciation charges): violating this minimal criterion was considered to cast doubts on any other information collected on the firm. Variables, computed on account data, with extreme values were recoded to the 99° percentile.

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Table 1

Trade credit and debt of manufacturing firms with Italian and foreign contracting parties

quintiles (assets)	% of suppliers offering credit		average debt period (days)		% of suppliers offering discounts		% discount for early payments		% of trade debt paid late		average delay in late payments (days)		% of suppliers imposing penalties		% average penalty per month		% discount for buyers' early payments	
	Italian	Foreign	Italian	Foreign	Italian	Foreign	Italian	Foreign	Italian	Foreign	Italian	Foreign	Italian	Foreign	Italian	Foreign	Italian	Foreign
1^ (no of firms)	384	375	382	187	383	208	122	30	382	205	70	20	70	20	15	3	378	384
average	97.1	48.7	78.2	74.3	8.1	5.1	3.1	2.3	4.7	2.4	30.0	32.8	4.3	0	2.3	1.3	1.7	1.1
median	99	15	75	75	0	0	3	2,25	0	0	30	30	0	0	1,5	1	1	0
2^ (no of firms)	383	378	383	256	380	264	113	33	382	265	73	24	76	24	17	3	379	385
average	97.8	64.5	83.0	74.2	7.2	4.4	3.0	2.4	5.1	2.6	28.8	25.2	2.8	0.0	2.6	1.3	1.3	1.0
median	100	100	90	75	0	0	3	2	0	0	30	30	0	0	1,37	1	1	0
3^ (no of firms)	385	379	382	301	380	310	127	44	381	309	77	29	78	27	19	6	381	385
average	97.0	74.6	85.5	75.1	5.9	3.0	2.6	2.1	5.4	2.0	31.0	26.9	2.8	3.8	2.1	1.3	1.2	1.0
median	100	100	90	80	0	0	2,5	2	0	0	30	30	0	0	1.5	1	0	0
4^ (no of firms)	385	379	384	322	380	326	126	48	382	328	104	40	104	45	14	1	379	385
average	97.4	81.0	86.6	77.6	6.2	3.5	2.4	2.1	9.1	4.6	22.9	22.0	1.7	0.2	1.8	1	1.2	0.9
median	100	100	90	80	0	0	2	2	0	0	21	30	0	0	1.4	1	1	0
5^ (no of firms)	385	381	380	351	379	353	132	50	381	356	135	62	135	62	25	5	382	385
average	97.6	86.9	89.1	75.5	6.6	3.5	2.3	2.1	13.1	6.4	29.9	28.5	2.8	0.3	1.9	1,5	1.1	0.8
median	100	100	90	75	0	0	2	2	0	0	30	17.5	0	0	1,5	1	1	0
total (no of firms)	1922	1892	1911	1447	1902	1461	620	205	1908	1463	459	175	463	178	90	18	1899	1924
average	97.4	71.2	84.5	75.5	6.8	3.8	2.6	2.2	7.5	3.8	28.3	26.8	2.8	0.8	2.1	1.4	1.3	0.9

Source: own calculations. (see Appendix 1 for the wording of the questionnaire) from Mediocredito Centrale (1997); Italian ed Foreign indicate, respectively, Italian, non belonging to the same group, suppliers/customers, and foreign ones.

Table 2

Manufacturing firms' non-null answers to selected questions

	discount offered (%)		discount received (%)		average debt period (days)	
	Italian	**Foreign**	**Italian**	**Foreign**	**Italian**	**Foreign**
no of firms	642		220		1691	
average	2.5	2.5	2.3	2.2	84	74.4
mode	3	3	2	2	90	90
median	3	3	2	2	90	75
1st decile	1	1	1	1	60	30
3rd decile	1.5	1.5	1.5	1.4	75	60
7th decile	3	3	3	3	90	90
9th decile	5	4	4	4	118.8	105
std. dev.	1.36	1.32	1.24	1.26	22.50	25.92

Source : see Table 1

Table 3

Indicators for rationed and non-rationed manufacturing firms

	rationed[1]				non-rationed			
	no of firms	*average*	*median*	*3rd quartile*	*no of firms*	*average*	*median*	*3rd quartile*
from questionnaire [2]								
average debt period (days)	116	86.6	90	90	1594	84.30	90	90
suppliers offering discount (%)	116	8.4	0	5	1585	6.59	0	5
discount proposal received (%)	40	2.7	3	3	520	2.6	2	3
late payments (% of trade debt)	115	13.8	0	12	1590	6.8	0	0
average delay in late payments (days)	42	30.3	30	33.7	366	26.7	30	30
suppliers imposing penalty (%)	41	1.7	0	0	370	2.2	0	0
penalty per month (%)	10	2.1	1.5	3.2	66	2.1	1.5	2
discount proposal offered (%)	115	1.6	1	3	1584	1.3	1	3
share of sales abroad (%)	116	38.7	35	61.7	1600	40.1	36.5	65
from 1994 accounts								
trade credit/sales (%)	116	33.2	35.1	43.5	1603	34.6	33.5	41.9
trade debt/purchases (%)	116	37.3	35.7	42.7	1603	35.5	34.3	41.2
debt/total assets (% points)	116	25.9	26.9	37.4	1603	25.6	24.8	36.7
trade debt/s.t. loans	114	4.1	1.4	2.5	1535	25.5	1.6	3.3
s.t. loans annual growth (%)	111	39.0	8.3	42.3	1533	154.0	3.7	40.5
implicit borrowing cost (%)[3]	116	21.2	17.5	22.7	1603	20.3	15.4	22.0
ROI (% points)	116	1.7	1.0	4.1	1603	3.8	2.3	6.7
sales growth rate (%)	116	16.0	11.6	28.6	1603	13.8	13.8	25.5
employees (average)	116	255	100	223	1601	202	106	203

Source: own calculations (see Appendix 1 for the wording of the questionnaire) from Mediocredito Centrale (1997). [1]Firms are rationed if answered yes to question 2 on credit rationing (see Appendix 1). Maximum 1994 sales for rationed firms sets as upper limit for non-rationed ones. [2]Italian non group counterparties. [3]Computed as ratio of financial charges to the average stock of loans and bonds.

Table 4

Dependent variable: trade credit as a per cent ratio of sales (*cre*)

Firms answering whether they have received a discount proposal from Italian independent and foreign counterparties, except for firms with the public sector as a unique customer. OLS; t-statistics in brackets; coefficients of constant, sales breakdown by customers and dummies for group, Pavitt sectors and location regressors are not reported

Regressors	(1)	(2)	(3)	(4)	(5)	(6)
implied borrowing cost (%)	-0.132	-0.153	-0.093	-0.113	-0.143	-0.138
	(6.57)	(5.24)	(3.36)	(4.06)	(4.97)	(7.15)
early payment weighted average discount (%)	-0.458	-0.290	-0.547	-0.723	-0.223	-0.369
	(2.19)	(0.90)	(1.99)	(2.10)	(0.85)	(1.84)
ROI (%)	-0.412	-0.335	-0.514	-0.366	-0.431	-0.303
	(7.49)	(3.91)	(7.09)	(3.93)	(6.26)	(5.61)
profits to sales ratio (two years average; %)	0.479	0.400	0.611	0.292	0.569	0.266
	(4.32)	(2.36)	(4.20)	(1.52)	(4.17)	(2.48)
sales growth if positive, zero otherwise (%)	0.006	0.038	0.003	0.003	0.041	0.003
	(0.91)	(1.51)	(0.53)	(0.41)	(1.76)	(.50)
sales growth if non-positive, zero otherwise (%)	-0.240	-0.276	-0.227	-0.117	-0.317	-0.161
	(5.60)	(3.91)	(4.26)	(1.540)	(5.88)	(3.93)
export to sales ratio (%)	-0.125	-0.052	-0.140	-0.173	-0.089	-0.125
	(10.76)	(1.03)	(6.01)	(9.69)	(5.69)	(11.13)
size: log (end-1993 assets)	1.133	1.046	1.565	0.974	1.420	1.307
	(4.21)	(2.58)	(4.32)	(2.28)	(4.04)	(5.08)
trade debt to purchases ratio (%)						0.289
						(13.63)
no of observations	1889	903	986	767	1122	1889
mean of dependent variable	34.69	37.92	32.13	35.60	34.08	34.90
adjusted R^2	0.21	0.18	0.21	0.22	0.21	0.28
DW	1.93	1.89	1.91	1.91	1.81	1.96

Test on joint zero restrictions for buyers' breakdown $F_{(6,1867)}=7.53$***

Chow test on equality of coefficients $F_{(21,1867)}=2.35$*** $F_{(21,1867)}=1.98$***

Columns (2) and (3): export to sales less than/equal or more than median value; columns (4) and (5): percent of sales to other manufacturers or to order larger than/less or equal to 70%. In italics, regressors from the questionnaire (see Appendix 1).
*** statistically significant at the 1% confidence level.

Table 5

Dependent variable: trade credit as a per cent ratio of sales (*cre*)

Firms with more than 70% of sales to other manufacturers and to order. OLS; t-statistics in brackets; coefficients of constant, sales breakdown by customers and dummies for group, Pavitt sectors and location regressors are not reported.

Regressors	(1)	(2)	(3)
implied borrowing cost (%)	-0.113	-0.135	-0.086
	(4.06)	(3.37)	(2.23)
early payment weighted average discount (%)	-0.723	-0.490	-0.966
	(2.10)	(0.96)	(2.05)
ROI (%)	-0.366	-0.232	-0.443
	(3.93)	(1.70)	(3.42)
profits to sales ratio (two years average; %)	0.292	0.184	0.424
	(1.52)	(0.64)	(1.62)
sales growth if positive, zero otherwise (%)	0.003	0.003	0.002
	(0.41)	(0.11)	(0.27)
sales growth if non-positive, zero otherwise (%)	-0.117	-0.06	-0.175
	(1.540)	(0.44)	(1.94)
export to sales ratio (%)	-0.173	-0.194	-0.176
	(9.69)	(2.50)	(4.66)
size: log (end-1993 assets)	0.974	1.218	0.958
	(2.28)	(1.87)	(1.67)
no of observations	767	377	390
mean of dependent variable	35.60	39.38	31.94
adjusted R^2	0.22	0.14	0.22
DW	1.91	2.10	1.85

Test on joint zero restrictions for buyers' breakdown $F_{(6,745)}=3.52^{***}$ $F_{(6,355)}=3.06^{***}$ $F_{(6,368)}=2.91^{***}$

Chow test on equality of coefficients $F_{(21,724)}=1.75^{**}$

Column (1) reports column (4) in Table 4; columns (2) and (3): export to sales less than/at least equal to median value.*** statistically significant at the 1% confidence level.

Table 6

Dependent variable: trade debt as a per cent ratio of purchases (*debt*)

Firms acknowledging discount proposals from Italian independent suppliers. OLS; t-statistics in brackets; coefficients of constant, sales breakdown by customers and dummies for Pavitt sectors and location regressors are not reported

Regressors	(1)	(2)	(3)	(4)	(5)	(6)	(7)
implied borrowing cost (%)	0.048	0.070	0.056	0.111	..	0.094	0.084
	(1.50)	(1.69)	(1.11)	(2.52)		(1.73)	(2.68)
expected early payment discount (%) [2]	1.237	0.610	2.915	1.852	0.373	3.411	1.111
	(2.33)	(0.97)	(2.79)	(2.27)	(0.61)	(3.22)	(2.16)
ROI (%)	-0.185	-0.187	-0.103	-0.091	-0.083	-0.452	-0.132
	(2.75)	(2.12)	(0.97)	(1.11)	(1.08)	(3.18)	(2.01)
revealed average debt period (%) [3]	0.555	0.440	0.770	0.606	0.609	0.391	0.509
	(6.54)	(3.92)	(5.94).	(5.42)	(6.10)	(2.43)	(6.19)
purchases per supplier (log; 1993 purchases)	-2.066	-2.612	-1.205	-1.820	-1.572	-2.126	-1.846
	(4.09)	(3.61)	(1.74)	(2.82)	(2.65)	(2.21)	(3.77)
sales growth if positive, zero otherwise (%)	0.048	0.077	0.027	0.054	0.027	0.070	0.050
	(1.80)	(1.97)	(0.77)	(1.33)	(0.86)	(1.41)	(1.94)
sales growth if non-positive, zero otherwise (%)	-0.379	-0.348	-0.506	-0.370	-0.297	-0.413	-0.304
	(5.99)	(4.59)	(4.00)	(4.32)	(3.73)	(3.87)	(4.90)
size:log (end-1993 assets)	0,803	2.890	0.287	-0.064	0.612	0.398	0.161
	(1.64)	(2.98)	(0.29)	(0.10)	(1.02)	(0.45)	(0.335)
trade credit to sales ratio (%)							0.256
							(7.54)
no of observations	828	496	332	420	568	258	828
mean of dependent variable	35.91	36.66	34.80	34.67	34.09	39.92	35.91
adjusted R^2	0.21	0.23	0.23	0.23	0.17	0.29	0.26
DW	1.95	1.96	1.92	1.96	2.02	2.18	1.95

Chow test on the equality of coefficients $\qquad$ $F(20,788)=1.94^{***}$ $\qquad$ $F(20,788)=2.40^{***}$

Columns (2) and (3): firms below and above total assets 60th quantile; column (4): firms offering discounts; columns (5) and (6): firms without/with aknowledged late payments. In italics, regressors from the questionnaire (see Appendix 1).
*** statistically significant at the 1% confidence level.

Table 7

Regressors' summary statistics

	Trade credit: total sample of 1889 firms				Trade debt: total sample of 828 firms			
	average	*median*	*99th percentile*	*std. dev.*	*average*	*median*	*99th percentile*	*std. dev.*
Regressors								
trade credit to sales ratio (%)	34.89	33.60	84.47,	15.10				
trade debt to purchases ratio (%)					35.85	33.97	99.29	16.96
log (end-1993 assets)	10.03	9.94	13.96	15.11	9.86	9.82	13.40	1.36
r (%)	20.55	15.65	88.49	15.64	21.07	15.67	100.42	16.96
disc (%)	1.22	0.75	5.0	1.51				
edisc (%)					0.65	0.20	5.0	1.08
ROI (%)	3.43	2.06	26.83	7.57	3.24	1.90	31.84	8.19
profits to sales (%)	5.46	5.07	17.14	3.71				
sales abroad (%)	39.23	35.00	97.0	27.77				
average debt period					22.50	25	41.47	6.45
1993 purchases per supplier					3.57	3.47	7.50	1.44
sales breakdown (%):								
consumers	0.86	0	30	7.36	1.62	0	66.30	9.84
retailers	14.66	0	100	14.66	16.29	0	100	31.30
firms	41.34	20	100	44.47	38.56	10	100	31.30
public sector	3.09	0	80	13.36	4.58	0	100	16.88
wholesalers	23.12	0	100	34.25	23.30	0	100	34.24
sales to order	5.77	0	100	20.65	7.48	0	100	23.82
others	11.16	0	100	27.72	8.18	0	100	23.06
Pavitt sectors (%):								
traditional	42.82				45.16			
scale	33.95				32.74			
specializzation	18.95				19.00			
high technology	4.28				3.10			
Location (%):								
North-West	47.78				41.70			
North-East	33.69				32.86			
Centre	14.04				16.61			
South	4.49				8.83			
group (%)	37.80							

Source: own calculations from Mediocredito Centrale (1997). In italics, questionnaire answers.