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Does Trade Credit Say Anything about Banking Credit?

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Abstract

Bank penetration in Mexico is one of the lowest in Latin America. Further, quarterly surveys carried-out by the Central Bank show that trade credit is used by a percentage of firms that is twice those that use credit from banks. Notwithstanding such result, there is no empirical work that may help understand what type of firms demand and use trade credit. Using data provided by a recent national survey, we find that the most likely firms to use trade credit are big, formal and with access to banking credit. While our results can not reject the likelihood that credit rationing may be present in the market for trade credit, the use of such financing may not necessarily be considered an indicator of whether some firms may have no access to banking credit.

Keywords: Trade-Credit, banks, Mexico

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Does Trade Credit Say Anything about Banks?

1. Introduction

According to surveys carried-out by the Central Bank of Mexico, during the period 2009-2013 an average of eighty-two percent of businesses reported having used trade credit to finance their expenses. Credit from domestic banks, in the meantime, only reached 32% of businesses and relative to GDP is known to be one of the lowest in Latin America (see graphs 1 and 2). Moreover, graph 3 shows that the importance of trade credit is independent of the size and type of firm. Furthermore, according to data released by the National Banking and Securities Commission of Mexico, trade credit financed sixty-seven percent of the total purchases made by firms who used such financing[1]. Finally, according to the World Bank's Investment Climate Survey (2010), trade credit was a more important source for financing investment in Mexico (15.6%) than in all Latin America and the Caribbean countries (7.5%) and it was also a more important source for financing working capital in Mexico (21.2%) than in Latin America (18.2%).

But, why is trade credit so important in Mexico?; is it a reaction to the relatively small penetration of banks?; is trade credit and banking credit substitutes?; who provides trade credit?; who demands it and who uses trade credit? An answer to these questions could provide information that may help understand better how firms finance their expenditures and provide some insights about the true size of the credit channel of monetary policy. Despite the importance of trade credit in Mexico we could not find papers that address these questions.

[1] ENAFIN: http://www.cnbv.gob.mx/Prensa/Paginas/Estudios.aspx

In particular, our paper seeks to answer two questions. First, what factors determine who demands and who uses trade credit and second, what determines the value of trade credit. By answering these questions we will be indirectly seeking to understand whether the existence of trade credit reflects: a demand for funding that is too small to be attractive for banks, a level of informality that prevents banks to efficiently measure credit risk, or maybe it exists just because some non-financial companies have enough liquidity and information that allows them to make a profit by providing funding to other non-financial companies.

To analyze what type of firms and of entrepreneurs use trade credit, we draw on the data provided by a national survey -*Encuesta Nacional de Competitividad Fuentes de Financiamiento y Uso de Servicios Financieros de las Empresas* (ENAFIN) - that was designed by the Inter-American Development Bank, the National Banking and Securities Commission of Mexico and the National Institute of Statistics and Geography. Considering the 2009 National Economic Census, the sample of the ENAFIN was delimited to those firms that were in operation in 2008, employing six or more workers and located in cities with more than fifty thousand inhabitants. Coverage of the sample allows nationally representative figures, by size of company, for more than 280,000 economic units. The survey was made in the last quarter of 2010 and the information collected is for the previous year.

With the use of a probit model in which a selection problem is considered, we find, among other results, that the decision to seek credit from suppliers' increases the smaller the firm is, but the granting of trade credit is positively correlated with the size of the firm. Further, controlling by size, the degree of firms' informality negatively affects the likelihood of using trade credit. On the other hand, with the use of a tobit estimation we

find that the delivery of formal invoices when selling goods and services, the use of banking credit products and the type of industry in which firms operate are the main factors that determine the average size of funding. Thus, the fact that trade credit is important does not necessarily imply the presence of some sort of credit rationing by banks.

To show these results, the paper is divided in four sections. The second one describes the different theories as for why trade credit is offered and demanded. Then in the third section, we describe the relevant questions used in the survey and the data that will be used to test the hypotheses provide in the former section. Then in the fourth section, we carry out our empirical examination of the data, explain the models used and present our results. In the fifth section we conclude.

2. A Literature Review

Trade credit is not unique to Mexico. According to Petersen and Rajan (1997) this was the main source of short-term financing in the United States and according to Rajan and Zingales (1997) it represented between eleven and fifteen percent of the total assets of non-financial firms of the seven most developed countries. Considering that a well develop capital market and financial sector exist in these countries, several theories have been developed to explain why non-financial companies may be doing financial intermediation.

First, the introduction of trade credit allows a separation of the exchange of goods from the delivery of money, thereby helping to lower the costs associated with periodic collection and storage of money. As suggested by Ferris (1981), Emery (1987) and Schwartz (1974), trade credit can reduce the transaction costs incurred by a provider, allow companies to have better management of their working capital and inventories, and help

borrowers to minimize liquidity problems. Furthermore, if buyers of goods do not have easy access to cheap means of payment (for example, not having banks ATMs close to the business), the offering of trade credit also carries an advantage for them.

Second, according to Emery (1987), providers offer trade credit because –relative to their customers- they may have access to liquidity at a lower cost, making such exchange mutually advantageous. Thus for example, trade credit may enable customers to continue their daily activities even though they may have a financial constraint. In this regard, trade credit could be seen as a mechanism to solve liquidity problems and as a substitute for bank credit. However, in a context in which potential borrowers are not well known to banks, Alphonse, Ducret and Séverin (2004) suggest that trade credit and bank credit could also be seen as complements since the use of trade credit could be taken by banks as a signal of borrowers' good reputation and in some cases even as a prerequisite for having access to bank financing.

Finally, the third reason found in the literature as for why trade credit exists is because such funding may help providers to increase their market share. According to Smith (1987), Long, Malitz and Ravid (1983) and Lee and Stowe (1983), providers offer trade credit to increase their market exposure and as an instrument to perform price discrimination at a low cost.

All these three hypotheses suggest that firms of small size, with liquidity problems and with low access to credit lines from banks, would demand trade credit. However, not all economic units are likely to receive an offer of trade credit by its suppliers. First, since the cost of using the legal system to recover goods if default occurs may be high enough, offering this kind of funding will depend on trust. In this regard, Woodruff (2001) suggests that the size of capital invested in the firm and the number of years it has been in place may

increase the confidence of the supplier of trade credit that debts will be paid. Thus, the bigger and older the firm is, the more likely that the entrepreneur will value its reputation and therefore the feasibility of receiving such funding will increase. Second, the use of formal accounting makes more likely that the credit supplier will trust the firm balance sheets, thereby raising the probability that trade credit will be provided. Third, the use of bank products and services by firms may allow trade credit suppliers to obtain some information regarding the credit history of the company and may reduce transaction costs since electronic transfers are more easily used. In this regard, firms with higher levels of assets (excluding inventories), operating at a fixed location, with a formal accounting system and making use of banking products could be more likely to receive offers of trade credit. Finally, it is also possible that bigger firms that buy merchandise for reselling could have more leverage to extract rents and thereby may demand to receive trade credit from their providers.

As the review shows, the literature may suggest that smaller firms, operating in an informal manner and excluded from the formal financial system would be more likely to request trade credit. However, once imperfections in information are considered it is possible that these type firms are the less likely ones to receive it. If this were the case, the presence of trade credit would not constitute a signal the some firms were credit rationed by banks.

3. The Data:

We used the data produced by the *Encuesta Nacional de Competitividad Fuentes de Financiamiento y Uso de Servicios Financieros de las Empresas* (ENAFIN) to analyze what type of firm uses trade credit. This survey is the result of collaboration between the

Inter-American Development Bank, the National Banking and Securities Commission of Mexico and the National Institute of Statistics and Geography. Taking into account the 2009 National Economic Census, the sample of the ENAFIN was delimited to those firms that were in operation in 2008, employing six or more workers in the manufacturing, construction, trade and services sectors and located in cities with more than fifty thousand inhabitants. In this regard, coverage of the sample allows, according to its authors, to obtain nationally representative figures, by size of company, for more than 280,000 economic units. The survey was made in the last quarter of 2010 and the information collected is for the previous year. Table 1 provides information of the sample of firms considered regarding the sector, employment size and whether they had use trade credit in 2009.

To define our first dependent variable we used the question 13.01 of the survey in which the entrepreneur is been asked "did you receive credit in cash or in merchandise from your suppliers during 2009?.[2]" Assuming the latter question was answered positively, the entrepreneur is then asked "how much did providers lend you?[3], being the answer to this question used to measure our second dependent variable -the value of trade credit.

As Table 2 shows, sixty percent of the sample said that they had used trade credit during 2009, being the median value of such financing equal to approximately twenty two thousand dollars. Regarding financing conditions, the results of the survey show that ninety-nine percent received trade credit in the form of goods given in advance and less than six percent had to pay a monthly interest rate for such financing, being the rate of

[2] The question was in Spanish and said: En 2009, ¿recibió crédito en dinero o en mercancía de sus proveedores?

[3] The question in spanish said: En 2009, ¿a cuánto ascendió el monto total de sus préstamos con proveedores?

interest of five per cent per month on average. Further, thirty-four percent of those who made use of trade credit stated that at least some of their suppliers offered discounts for prompt payment or would charge more for late payment of credit. On average, the threshold for such penalty was thirty days and respondents who had late payments -which were about six percent-said that the penalty was a rate of interest of ten percent on average.

As explained before, the economic literature suggests that the size of the economic unit, the use of formal invoices in their transactions, access to bank financing as well as to electronic payments means are factors that may influence the likelihood that a firm will use trade credit. In this regard, Table 2 shows that eighty-two percent of the firms gave invoices –a legal document that may be used for tax purposes- to their customers and a similar proportion had a deposit account at a bank. Further, thirty four percent of all companies that constitute our sample had bank loans, and/or credit line from banks and/or financing from external investors. Thus, the informality and lack of financial inclusion that characterizes the Mexican economy fades once economic units employing five workers or less and those located in areas with less than fifty thousand people are excluded.

Slightly more than half of the firms considered in the survey were family-owned (where owners and managers keep blood ties up to a third degree), with an average length in the business of twenty years and eighty percent of companies been surveyed bought merchandise for resale during 2009, an activity that could be correlated with the presence of trade credit.

A first approximation to the determinants of the probability of using trade credit can be found in Table 3. There we describe the correlation matrix and statistical significance of variables that -according to the literature review- should affect the likelihood of using trade credit.

The matrix is composed of eleven variables whose definitions are contained in Table 2. In this regard, our first dependent variable is described by a variable -denoted as TC- which takes a value of one if the company reported having used trade credit and zero otherwise. On the other hand, to measure how formal the firm is we used a variable –denoted by Invoice- which takes a value of one if the company delivers invoices, a value of two if it only provides receipts –an instrument not valid for tax purposes- and three if the firm does not provide any form of document describing that an exchange was done. To further analyze the organizational structure of firms we included a variable –denoted as "family" that takes the value of one if the firm was family-owned. Following Woodruff (2001), we expect a negative correlation between the variable trade credit (TC) and the variable denoted as Invoice. Having similar theoretical support we could also expect a negative sign between trade credit (TC) and the variable "family".

To measure the use of financial products -provided by financial institutions- and of electronic payment methods by firms and/or its owner, we consider three variables. The first one –denoted by Debt- seeks to measure whether the firm has a debt with a bank, and /or a revolving credit with a bank and/or funding from external investors. Considering the number of positive responses given by the respondent, this variable may take values between zero (which means not having any funding) and three. According to Emery (1987) trade credit and banking credit are substitutes and thereby a negative correlation between the variable TC and the variable "Debt" should be expected. However according to Alphonse, Ducret and Severin (2004) such correlation should be positive since trade credit should be seen as a signal of borrowers' good reputation. Further, the variable denoted by "BankAccount", takes the value of one if the firm has a bank deposit account. Following the transactional hypothesis, it is expected that companies that do not have an account of

this type are most likely to use trade credit as a mechanism to reduce their transaction costs. However, to reduce the costs of collection and storage, trade credit providers have greater incentives to offer financing to those companies that have the ability to make electronic transfers (which rises once you have a deposit account). In this regard, it is not clear what should be the sign of the correlation between the variable "bankaccount" and "tradecredit". Finally, the variable denoted by "CreditCard" takes a value of one if the owner of the firm uses his credit card to pay for business expenses and zero otherwise. Since suppliers of trade credit are unable to get records from credit bureaus, this variable is only useful in the sense that not having a credit card sends a bad signal. In this regard, the correlation between TC and CreditCard should be positive.

To characterize firms we used four variables. The first one, denoted by "size", measures the size of the company according to its employment level[4]. Following Woodruff (2001), we expect to find a positive correlation between the variable size and the variable TC, since bigger firms are likely to provide more reliable information regarding their financial situation. The variable denoted as "Age" is the logarithm of the number of years the firm has been in place. We expected a positive relationship between TC and Age since the latter may be a proxy of the firm stability and therefore the trade credit provider may have more confidence that the borrower will repay.

The third variable classifies the firm according to the industry where is located. For such purpose we made use of the classification system industry (Scian for its acronym in spanish). For empirical purposes, we group all firms considered in the sample survey in

[4] Considering that the sample was bounded to companies with at least six workers, the ENAFIN defines microenterprises as those that employed between six and ten workers; small businesses in the retail sector as those that had between eleven and thirty empoyees; and in the service and manufacturing sector, as those that had between eleven and fifty employees. For the retail sector, medium enterprises consisted of firms that had between 31 and 100 employees. On the other hand, in the service sector medium business were defined as those that employed between 51 and 100 workers and in manufacturing as those that employed between 51 and 250 employees.

two types. The first one is denoted as "Scian1" and brings together firms in the transport and communications sector as well as those offering financial, educational, health and recreational services. The second one denoted as "Scian2" brings together firms in the wholesale and retail trade, the manufacturing sector and the preparation of food and beverages services. Given the production technology of these goods and services, it is expected that those firms in Scian2 are the most likely to be engaged in trade credit since resale occurs more frequently. Thus, we expect a positive correlation between using trade credit and a value of one for Scian2 since the later brings together companies more likely to buy merchandise for resale –an activity that is measured by "Resell", a variable that takes the value of one if the company buys for resale and zero otherwise.

Table 3 suggests that our variable TC is correlated with the level of informality of the firm, the size of the firm, the firms' financial inclusion, the type of industry where the firm is located, whether it buys merchandise for resale and how old is the firm. However, such correlations may not reflect the true causality to the extent that the variable TC could take a value of zero because of the lack of supply of trade credit and/or because firms that were demanding such credit did not accept the terms of such trade. Given this apparent selection problem, we used probabilistic models that attempt to correct for this potential problem.

Regarding our second dependent variable – the value of trade credit, denoted by ValueTC- the literature suggests that three variables may help explain its behavior. First, size matters. Assuming there is a correlation between size of the firm and its sales, trade credit could be expected to be higher as size increases. Second, since the cost of default increases with the value of credit, we should expect a positive correlation between the value of trade credit and whether the firm provides invoices, being the latter a signal that suggests

a better accounting system. Finally, the use of banking credit products should be positively correlated with the size of trade credit since the latter could signal a customer with a good credit rating.

4. The Results

Following the literature review, five types of variables were used as determinants of the probability of using trade credit: the size of the firm, how formal it is, whether they use bank products to save and borrow, whether is a family-business and the type of industry in which they operate.

The results shown in the left panel of Table 4 suggest that the probability of using trade credit diminishes as firms become smaller, a fact that supports Woodruff hypothesis since bigger firms may provide more reliable information to trade credit suppliers. Further, the negative sign (and statistically significance) for the estimated parameter of invoice suggests that as businesses become more informal the likelihood of using trade credit declines. Regarding financial inclusion, the results supports the hypothesis of Alphonse et al (2004) as the probability of using trade credit is positively correlated with having debts with banks. As explained before, the correlation between the firm having a bank account and the use of trade credit is ambiguous. On the one hand, those firms without a bank account would benefit most from having trade credit since they could reduce the frequency of payments. On the other hand however, to reduce the costs of collection and storage, firms that offer trade credit would prefer those who have a bank account. As results in table 4 suggest, this second argument appears to be more important since the estimated parameter exhibits a positive sign. Finally, results suggest that firms belonging to the

service sector (Scian 2) were more likely to use trade credit. All these results hold –as the panel in the right hand side of Table 4 shows- if we restrict our sample to micro and small firms.

In sum, bigger firms, firms using invoices accepted by the tax authority and with links to banks appear to be the most likely to use trade credit. Thus, the gap between trade credit and bank credit that is described in graph 1 can not necessarily be used to explain whether small firms are rationed or not from banking credit.

As explained in the previous section, the data shows that the vast majority of firms that used trade credit paid a zero rate of interest and did not lose any discount, provided they pay such funding in less than thirty days. However, for six percent of the sample that did receive trade credit, an explicit interest rate of five per cent per month was charged. This means that we cannot discard the possibility that some firms could have been interested in trade credit but did not accept it because it was too expensive[5]. Further while there is no question in the survey regarding uncompetitive requests by trade credit suppliers, it is possible that trade credit was sometimes offer provided firms were willing not to sell goods produced by competitors. Thus, trade credit may not necessarily be free.

For such reasons, next we resorted to a probit model in which the dependent variable tells us whether the firm had used trade credit and seeks to correct the potential selection problem through a dummy variable (denoted by *Resell*) that describes whether the firm had purchase goods for resale. The implicit assumption is that we observe the use of trade credit if firms were in the business of buying raw material or merchandise for reselling.

[5] It is noteworthy that in the microfinance market in urban areas, the average interest rate on loans was four percent per month, being this rate one of the highest amongst microfinance firms in the Latin America.

Results in Table 5 shows that it is not possible to disregard the need to correct for selection problems. Our estimation shows the use of trade credit is higher as firms become larger, an outcome that is consistent with our hypotheses. Following Woodruff (2001), issuing invoices leads to a higher probability of using trade credit since it provides a higher level of trust; a fact that is empirically validated by the negative values of the parameters for the different values of invoice. Further, variables measuring financial inclusion and the use of electronic payments[6], also help explain the use of trade credit. Thus, the hypothesis made by Alphonse, Ducret and Séverin (2004) regarding the possible complementarily of both types of financing cannot be discarded.

On the other hand, the estimation for the participation equation suggests that smaller firms, belonging to the service sector and whose owner used its credit card to pay for business expenses were more likely to be in the business of buying raw material or merchandise for reselling -an activity in which trade credit is more likely to be offered and demanded[7].

Once selection is considered we obtain that bigger firms, firms using invoices accepted by the tax authority and using banking products appear to be the most likely to use trade credit. However, the data also suggests that the likelihood of demanding this type of financing will be greater, the smaller the firm is. Once the sample is restricted to micro and small firms, the results are very similar. Thus, once sample selection is considered, results suggest that some sort of credit rationing may be present in the market of trade credit.

[6] During 2009 there was in Mexico a 3% monthly tax on cash deposits that exceed 1,100 dollars. To the extent that such tax is paid by the recipient of the deposit, debtors' net profit will be higher if they have a deposit account.

[7] To analyze how robust are our results, we excluded from the selection equation those variables describing the size of the firm and whether it had some financial debt. The results of such exclusion did not change the signs and statistical signficance of all variables reported in table 5.

However, the evolution of trade credit can not necessarily be used to measure whether small firms are increasingly rationed from banking credit.

To find the determinants for the value of trade credit, we used two dependent variables as proxy for the size of the credit granted. One is the amount of funding received and the second one is the average value of such funding. As explained in the last section, the literature suggests the use of five variables that describe the firm characteristics: size, age, whether the firm is in the services sector, how formal is the firm and its use of banking products.

To measure the absolute of trade credit, we used the variable ValueTC. This variable is always greater than zero since only firms who used trade credit answered it. In this regard, the left panel of Table 6 shows the marginal impact from three Tobit estimations that differ by which financial variables were included as explanatory variables. Results are consistent with the both, the transaction, financial and trust hypothesis. First, as hypothesized, the size of the firm –measured by the number of its employees- does matter, a fact that may signal that size and sales of the firm are positively correlated. In this regard, is not surprising that the variable that measures the amount of money spend by the firm to buy raw material or merchandise for reselling –denotes as ValueResell- has also a positive correlation. Second, the variable that measures how many different bank-credit products the firm has (labeled Debt) is positively related to the value of the trade credit. This could be a result that supports Alphonse, Ducret and Séverin (2004) hypothesis regarding the complementarity of trade credit and bank credit. This type of information-related variable is further shown by the variable showing that the use of invoices farther away from those recognized by the tax authority is negatively correlated –once bank-credit related variables are not considered- with the dependent variable. So among firms receiving trade credit -

and controlling for the firm size-, those whose financial information was more easily verified were the ones that got a credit from their suppliers.

Since information regarding total income or total expenses of firms was very incomplete, we decided to use as proxy for the average value of trade credit the ratio of the absolute value of such financing divided by the number of employees. With this in mind, the results shown in the right hand side panel of Table 6 suggest the average value of trade credit was higher among formal firms (since the marginal impact was negative), among those in the service sector and those with debts with banks. Further, similar to the results shown in left hand-side panel of table 6, informality appears to be costly since it reduces the value of trade credit.

5. Some Concluding Remarks

Quarterly surveys carried out by the Central Bank of Mexico suggest that trade credit is preeminent among the various sources of business financing. Whenever results of new surveys are out, discussion arises regarding what we may conclude regarding the trend followed by trade credit vis-à-vis banking credit and whether this could be used as a signal of banking credit becoming scarcer.

Based on data obtained from the *Encuesta Nacional de Competitividad Fuentes de Financiamiento y Uso de Servicios Financieros de las Empresas* (ENAFIN), this paper attempts to show which are the determinants of the use and worth of trade credit. Correcting for a potential selection problem, we find, that bigger firms, using invoices accepted by the tax authority and using banking products appear to be the most likely to use trade credit. In this regard, our data seems to support the transaction-cost reduction and trust hypothesis regarding which type of firm is more likely to use trade credit. Further,

once sample selection is considered, results suggest that some sort of credit rationing may be present in the market of trade credit. However, given the features of firms most likely to use trade credit, the evolution of such financing can not necessarily be linked to measure whether small firms are increasingly rationed from banking credit.

For those sixty percent of firms that obtained financing from suppliers, the size of the company does not determine the average amount of funding. Rather, the delivery of formal invoices when selling goods and services, its use of banking credit products and the type of industry in which they operate are the main factors that determine the average size of funding. Taking this into consideration, the data suggest that the use of trade credit can not necessarily be used as anecdotal evidence of low bank financing. Instead, trade credit appears to be used –even if firms have access to bank loans- because it's a cheap financial product that it is not offered by any other institution. But a requisite for using such type of financing is that firms use invoices recognized by the tax authority.

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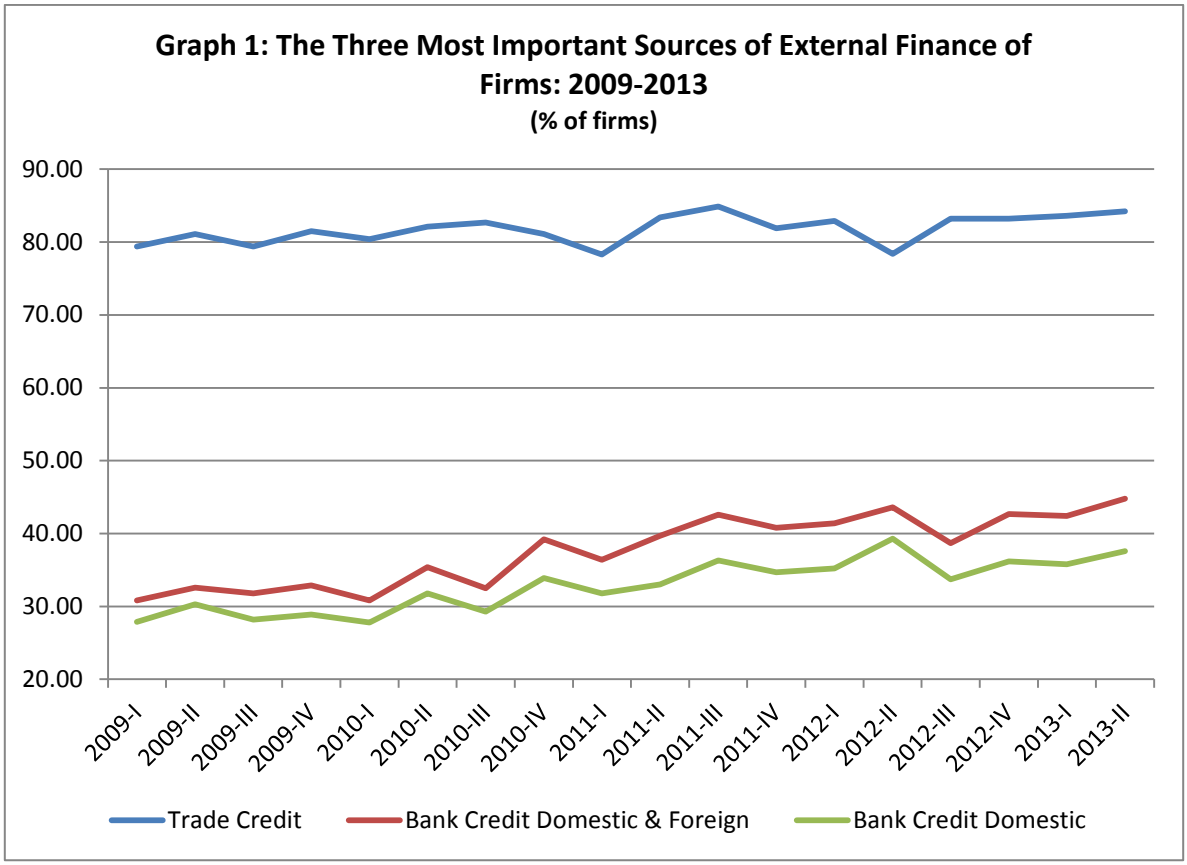

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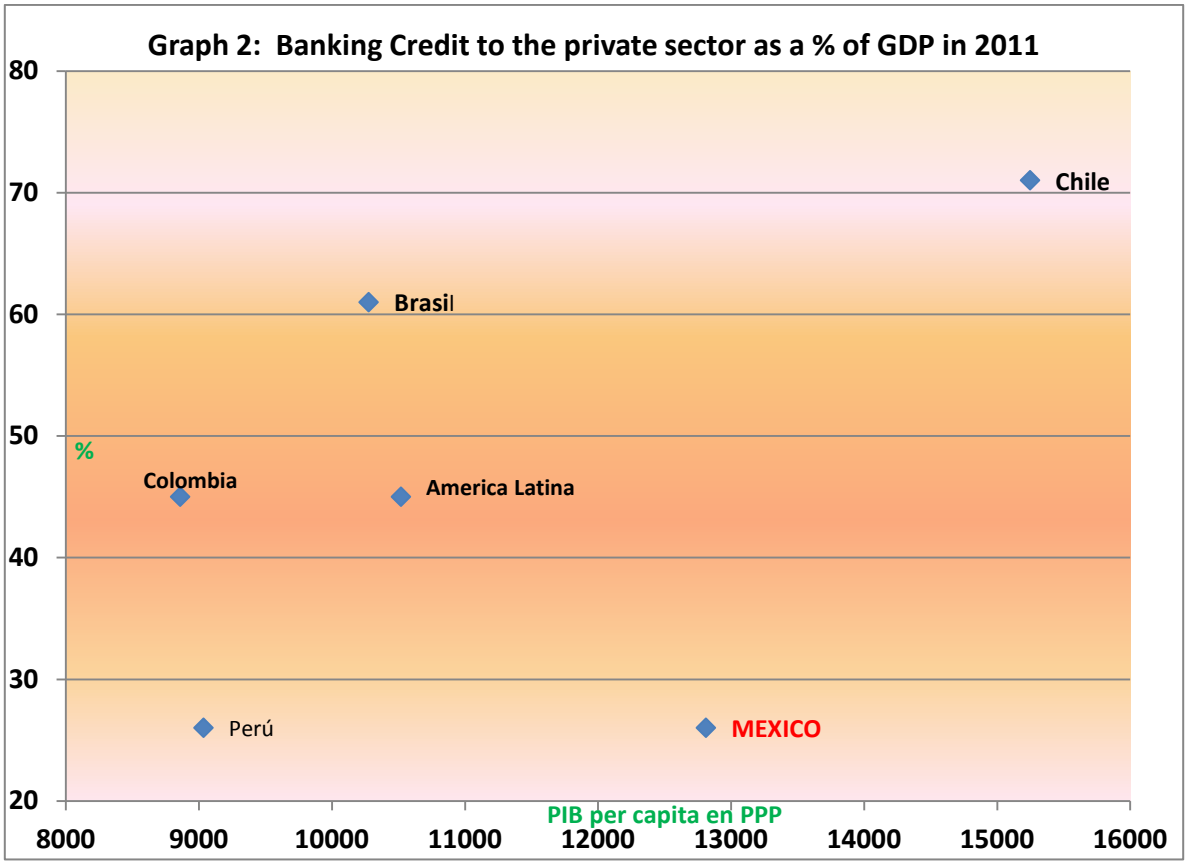
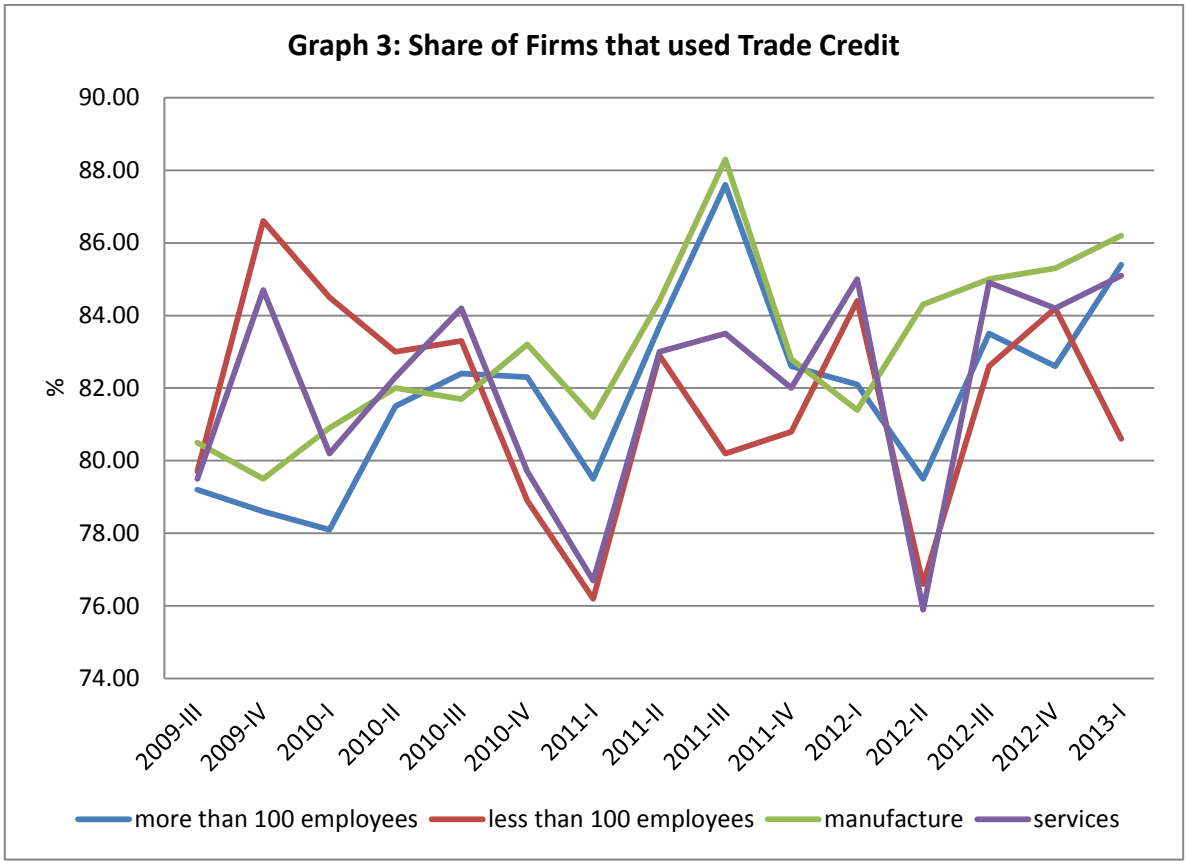


Source: The World Bank



Source: Banco de México

Table 1: Some basic characteristics of the sample

Sector	# of firms	Average (and median value) of employment	% of firms that had trade credit in 2009
Construction	144	34.2 (10.0)	79.8
Manufacture	211	140.0 (10.0)	60.7
Wholesale trade	70	46.2 (19.0)	75.7
Retail trade	150	61.7 (15.0)	72.7
Transport, mail and storage	30	93.8 (37.0)	60.0
Mass media information	5	36.6 (30.0)	40.0
Real estate	17	41.1 (9.0)	52.9
Professional services	57	71.2 (12.0)	45.6
Support in waste services	35	482.0 (90.0)	48.6
Educational services	39	35.0 (24.0)	28.2
Health services	23	117.8 (10.0)	39.1
Recreational services	9	6.4 (6.0)	33.3
Accommodation, food and beverage services	127	32.8 (7.0)	49.6
Other (repair and maintenance service, personal services, etc.)	69	29.1 (7.0)	53.6
TOTAL	986	83.1 (12.0)	59.9

Source: own.

Table 2: Definitions and Statistics of Some Variables

Name of Variable	Definition	Number of obs.	Mean	Stand. Dev.	Min	Max
TC	¿Did you received trade credit? Yes=1; No=0.	986	0.59	0.49	0	1
Resell	¿do you buy raw material or merchandise for reselling? Yes=1; No=0.	986	0.80	0.39	0	1
CreditCard	¿Did the owner use its credit card to pay business expenses? YeSi=1; no=0.	986	0.19	0.39	0	1
BankAccount	¿Does the firm has a bank account? Yes=1, No=0.	986	0.84	0.36	0	1
Family	¿Is the firm family-owned? Yes=1; No=0	986	0.55	0.49	0	1
Name of variable	**Definition**	**Number of obs.**	**Lowest 25%**	**median**	**Upper 75%**	**Upper 95%**
ValueTC	Total Value of Trade Credit received in 2009 (in millions of pesos)	592	0.03	0.30	2.5	50.0
ValueResell	How much did you spend buying raw material or merchandise for reselling? (in millions of pesos)	986	0.005	0.046	0.40	10.00
Employees	Number of employees	986	8	16	56	463
Age	¿How many years has the firm been operating?	986	7	12	22	49
		Number of obs.	**Number of observations for each type**			
			1	2	3	4
Invoice	Type of invoice delivered when selling goods or services: 1. Receipts accepted for tax purposes. 2. simple receipts 3. none.	986	805	94	87	n.a.
Debt	1+ number of times the entrepreneur answered positively: i. did you borrow money from a bank? ii. do you have a revolving credit line from a bank? iii. did external investors finance you?	986	645	222	113	6
Size	Size of the firm: 1. micro 2. small 3. medium 4. big	986	367	328	148	143

Source: own.

Table 3: Correlation Matrix

	TC	Invoice	CreditCard	Bankaccount	Size	Debt	Resell	Family	age	Scian2
TC	1									
Invoice	-0.15*	1								
CreditCard	0.09*	-0.01	1							
Bankcount	0.19*	-0.45*	0.06	1						
Size	0.16*	-0.24*	-0.10*	0.25*	1					
Debt	0.27*	-0.15*	0.14*	0.14*	0.20*	1				
Resell	0.11*	0.05	0.06*	-0.03	-0.14*	0.11*	1			
Family	0.01	0.14*	0.07*	-0.15*	-0.20*	-0.009	0.11*	1		
Age	0.06*	-0.08*	-0.10*	0.05	0.16*	0.04	-0.02	0.02	1	
Scian2	0.16*	-0.06*	-0.03	0.02	-0.02	0.09*	0.25*	0.15*	0.09*	1
The (*) implies that the correlation is statistical significant at the 5% or better.										

Source: own.

Table 4: Probit Estimations

(Dependent variable: use of Trade Credit)

	Sample: all firms (n=986)			**Sample: Micro and Small firms (n=695)**	
	Coef	**Marginal Effect**		**Coef**	**Marginal Effect**
i.Invoices					
.Receipt	**- 0.64*** **	**- 0.22**		**- 0.63*** **	**-0.22**
.None	0.09	0.03		0.09	0.03
i. size					
.Small	0.09	0.03		0.08	0.03
.Medium	**0.29*** **	**0.10**		**--**	**--**
.Big	0.22	0.07		**--**	**--**
i.Debt					
.Bank loan	**0.50*** **	**0.18**		**0.52*** **	**0.19**
.and Credit Line	**0.95*** **	**0.30**		**1.07*** **	**0.34**
.and External investor	0.78	0.26		0.59	0.21
Bankccount	**0.48*** **	**0.16**		**0.45*** **	**0.16**
Familyowned	0.12	0.04		0.05	0.01
Scian 2	**0.34*** **	**0.11**		**0.34*** **	**0.12**
Constant	**- 0.71*** **	**---**		**- 0.65*** **	
1. * p < 0.1; ** p < 0.05; ***p < 0.01 2. Omitted variables were: size=1 (microenterprises); scian1=sectors 48 & 49 & 51 through 54 & 56 & 61& 62 & 71 & 81); debt=0 (zero bank debt); invoice=1 (use of invoices accepted for tax purposes).				1. * p < 0.1; ** p < 0.05; ***p < 0.01 2. Omitted variables were: size=1 (microenterprises); scian1=sectors 48 & 49 & 51 through 54 & 56 & 61 & 62 & 71 & 81); debt=0 (zero bank debt); invoice=1 (use of invoices accepted for tax purposes).	

Source: own.

Table 5: Probit Estimations corrected by selection

(Dependent variable: use of Trade Credit)

	Sample: all firms (n=986)			**Sample: micro and small firms (n=695)**	
	Coef	**Marginal Effect**		**Coef**	**Marginal Effect**
i.Invoices					
.receipts	**- 0.72*** **	**- 0.25**		**- 0.72*** **	**- 0.26**
.none	- 0.06	- 0.02		- 0.06	- 0.02
i. size					
.small	0.13	0.04		0.11	0.03
.medium	**0.38****	**0.12****		--	
.big	**0.36****	**0.11*** **		--	
i.Debt					
.bank loan	**0.30****	**0.09****		**0.36****	**0.12****
.+ bankcredit line	**0.78*** **	**0.22*** **		**0.96*** **	**0.28*** **
.+external investor	0.46	0.14		0.25	0.09
Bankccount	**0.45*** **	**0.14**		**0.42*** **	**0.14*** **
Familyowned	0.11	0.03		0.06	0.02
Constant	- 0.15	----		- 0.12	--
Resell					
i.Invoice					
.receipts	0.17			0.21	
.none	0.30			0.28	
i. size					
.small	**- 0.32*** **			**- 0.30**	
.medium	**- 0.37*** **			--	
.big	**- 0.69*** **			--	
i.Debt					
.bank loan	**0.66*** **			**0.50*** **	
.+ bankcredit line	**0.33****			0.34	
.+external investor	0.45			5.31	
Bankccount	0.03			0.08	
Familyowned	0.12			0.10	
SCIAN2	**0.72*** **			0.79***	
CreditCard	**0.20***			0.19	
Constant	**0.37***			0.30	

1. * p < 0.1; ** p < 0.05; ***p < 0.01 2. The independence hypothesis may be discarded: Rho= - 0.69; Prob>chi2=0.078.		1. * p < 0.1; ** p < 0.05; ***p < 0.01 2. The independence hypothesis may not be discarded: Rho= - 0.60; Prob>chi2= 0.09.

Source: own.

Table 6: Marginal Impacts from Tobit estimations

	Dependent Variable: Value of Trade Credit in millions of pesos (n=986)			**Dependent Variable: Average Value of Trade Credit in pesos (n=986)**		
	Mg Impact Est 1	**Mg Impact Est. 2**	**Mg Impact Est. 3**	**Mg Impact Est 1**	**Mg Impact Est. 2**	**Mg Impact Est. 3**
	Coef.	**Coef.**	**Coef.**	**Coef.**	**Coef.**	**Coef.**
Employees	**0.01*** **	**0.11*** **	**0.011*** **	-9.27	-2.62	- 0.42
Value resell	**1.6e-08*** **	**1.6e-08*** **	**1.6e-08*** **	0.000	0.000	0.000
Invoice	- 0.79	**-3.08** **	**-3.04*** **	-14,792	**-35,640*** **	**-35,352*** **
Debt	**5.08*** **			**46,294*** **		
Bankaccount	**5.09** **			**45,961*** **		
Creditcard	1.12		**2.81***	6657		22,227*
Age	**2.81***	**2.89** **	**3.18** **	9313	10,664	12,948
Scian2	**3.59** **	**4.25*** **	**4.35*** **	**37,710*** **	**43,882*** **	**44578*** **

Source: own.