Title page

Trade credit and access to finance: Evidence from Ethiopian retailers[1]

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Abstract:

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Trade credit and access to finance: Evidence from Ethiopian retailers

Using data on over 5,500 Ethiopian retailers, we document that there is lower use of trade credit in areas with more access to bank finance. Among firms within an area, although receiving trade credit increases the use of a bank loan by informal firms, it has no association with the use of bank loans for formal firms. This result suggests that financial relationships with other firms acts as a signal of creditworthiness for informal firms which are usually more credit constrained due to agency problems.

1. Introduction

In spite of high economic growth rates documented across many African countries over the recent years, credit market imperfections are still persistent in these economies resulting in limited access to formal bank credit for many firms, especially small and micro enterprises. Trade credit is a form of 'in-kind' business finance, which can be popular as an alternative to bank credit in locations with limited financial sector development. From this perspective, trade credit and bank credit are considered to be substitutes, as already highlighted by Petersen and Rajan (1997). From another perspective, the extension of trade credit by suppliers generates a credible signal to banks about the customers' creditworthiness (Biais and Gollier, 1997), which can make trade credit and bank credit complementary on the individual firm-level. In this paper, using firm-level data from Ethiopian retailers, we highlight the role of firms' formality status in understanding the relationship between trade credit and bank credit in the context of a developing county.

Most of the studies on trade credit are based on the data available from upper middle-income countries and focus on multinational firms. Our study focuses on Ethiopia, a country with a shallow financial market. Despite its high economic growth rates over the recent years (such as 10.3% in 2013-14), the financial sector of Ethiopia remains underdeveloped and isolated from the rest of the global economy, partly due to the official skepticism in the country towards financial liberalization (Kiyota et al., 2007). In comparison to its neighbor Kenya that provides 5.2 bank branches and 9.5 ATMs per 100,000 adults, Ethiopia offers only 2.0 branches and 0.3 ATMs (World Bank, 2013).

This limited access to finance also extends to private businesses. According to the IMF (2013), in fiscal year 2012/13, 79 percent of lending and investment by the banking sector of Ethiopia was allocated to the public sector. In addition, the 2012 World Bank Enterprise Survey highlights that access to finance in Ethiopia is a major growth constraint for 38 percent of small businesses, which compares to an average of 21 percent for other sub-Saharan African economies.

In order to study the link between access to bank finance and trade credit, we utilize two rounds of firm-level surveys on the trade sector of Ethiopia in 2009 and 2011 – covering more than 5,500 retailers all over the country. We also utilize two nation-wide welfare-monitoring surveys to measure the level of access to finance in different regions of Ethiopia. Our findings suggest that, from a regional point of view, bank finance and trade credit are substitutes in Ethiopia such that in locations with lower access to formal bank finance the use of trade credit is higher. At the same time though, at the business-level, for informal retailers, trade credit acts as a counterpart of bank credit in the sense that higher trade credit exposure is associated with more access to bank loans. For formal firms having more trade credit is not a significant explanatory factor for the use of bank loans. These results could imply that receiving trade credit increases the creditworthiness of the informal firms that have less transparent operations and reduces the agency problems between firms and banks. Formal firms, on the other hand, are more transparent and the level of obtaining trade credit is mainly restricted by the availability of such source of external finance in the location.

To the best of our knowledge, the role of informality in understanding the association between trade credit and bank credit has not been previously studied. In developing countries, informality is largely present, going as high as 70 percent – as documented by Schneider (2012). Informal firms feature (opaque) nontransparent operations and rely on cash-based transactions partly to hide from tax authorities and partly due to the unavailability of bank accounts. Transparency of the operation, on the other hand, is a major element for accessing external finance, because without transparent (formal) accounting standards creditors cannot determine the quality of borrowers. In this context, Beck and Hoseini (2014) show that access to a bank branch can make the operations of informal firms observable and thereby help them to join the formal sector. In a similar fashion, having a relationship with a bank can act as a signal for the creditworthiness of the firms to their suppliers as well and reduce the agency problems associated with trade credit.

Trade credit contracts have been studied in the literature from a variety of different angles. One branch of the theoretical literature on trade credit looks into the financial decisions by firms and considers trade credit as an alternative method of finance to substitute for bank credit. Two general cases are considered in this line of research: First, in the presence of credit constraints, trade credit can act as a trickle-down mechanism from firms with better access to credit markets to firms with limited access to credit markets (Petersen and Rajan, 1997). Second, some theories argue that even without credit constraints, trade credit may be preferable to bank credit. Fabbri and Menichini (2010), for instance, discuss that even though banks have lower costs in raising funds, suppliers can be better creditors than banks because they have a liquidation advantage – knowing better the resale market value in case of default – and an information advantage – because of the capacity to directly observe transactions. In this context, the authors show that financially unconstrained firms take trade credit to exploit the supplier's liquidation advantage. In addition, if inputs purchased on account are sufficiently liquid, the reliance on trade credit does not depend on credit rationing.

An important issue for studying trade credit as a form of financing is its substitutability versus complementarity with respect to bank credit. Cross-country data shows a positive correlation between trade credit and bank credit (Maksimovic and Demirguc-Kunt, 2001) that might mistakenly be interpreted as a complementarity between these two sources of financing. Both bank credit and trade credit, however, are positively correlated with institutional factors such as rule of law and contract enforceability. Wherever the enforcement is weak, firms cannot recover credit repayment, be it in the form of trade credit or bank credit. But there might still be some relative substitution happening; Fisman and Love (2003) find that firms in industries with higher dependence on trade credit exhibit higher rates of growth especially in countries with relatively weak financial institutions. Their results suggest substitutability of trade credit and bank credit based on the within-country variation of trade credit usage across industries.

A number of firm-level studies, however, suggest complementarity between trade credit and bank credit based on theories of signaling. Biais and Gollier (1997) argue that the extension of trade credit reveals favorable information to other lenders, thereby increasing their willingness to lend. Burkart and Ellingsen (2004) provide a model that shows that bank credit and trade credit are complements for firms whose overall debt capacity is constrained. By contrast, for firms with sufficient aggregate debt capacity, trade credit is a substitute for bank credit. Giannetti et al. (2011)

find that in the U.S., firms that are offered trade credit have shorter relationships with their banks, rely more on distant lenders, borrow from a larger number of banks, and pay lower fees when obtaining a bank loan. Based on this evidence they argue that trade credit can be seen as a complement to bank credit.

Another part of the literature highlights non-financial factors affecting trade credit. Market power is one of the main rationales in this regard, because powerful traders can impose their contract terms (Fisman and Raturi, 2004; Fabbri and Klapper, 2016). To control for this factor, we build an index of market power in each enumeration area, and consistent with the theory, we observe that in less competitive areas both supply and demand of trade credit are more prevalent. Finally, switching costs of customized inputs make buyers reluctant to break up relationships and default on the suppliers (Giannetti et al., 2011). By controlling for the type of the traded product, however, we do not find any significant relationship between the nature of the traded commodity and giving or receiving trade credit among Ethiopian retailers, which is at odds with the evidence from the developed world (Giannetti et al. 2011).

In this paper, we reconcile the different empirical findings in the literature. We show that trade credit usage is more prevalent in locations with lower access to finance, consistent with the substitutability hypothesis. We however also find that trade credit acts as a complement to bank credit for informal firms who lack transparency and suffer more from agency problems vis-à-vis financial intermediaries. Therefore, we jointly document interesting micro and macro level relations – highly relevant for financial development policy design.

2. Data and summary statistics

The main dataset utilized in this study comes from two rounds of firm-level surveys of the Ethiopian trade sector in 2008-09 and 2010-11, named as Distributive and Service Trade Enterprise Survey (DSTES). Each round of DSTES is a representative survey of wholesalers, retailers, and motor vehicle sale and repair shops in Ethiopia. We accessed the last two rounds of these surveys, which were carried out in 15 major urban centers and 106 other towns of Ethiopia in 2008-09 and 2010-11 by the Central Statistical Authority. In total, the surveys are stratified to cover 590 enumeration areas within urban Ethiopia and, 4,776 and 7,615 establishments were surveyed in 2008-09 and 2010-11, respectively. The survey data provide detailed information on

ownership structure, employment, wages, input commodities, total expenses, sales, revenues, investment, fixed assets, value of stocks, and accounts payable and receivables of the interviewed businesses as well as their access to formal bank finance. Using this information, we construct the firm-level variables that we describe below. Overall, there are 847 wholesalers, 388 motor vehicle sale and repair shops, and 5,530 retailers in the sample that have non-missing information on bank loans and trade credit. In order to work with a homogenous group of businesses, we concentrate on regressions with the sample of retailers only.[5]

In addition to DSTES, we also use two rounds of the Welfare Monitoring Survey (WMS) conducted in 2004-05 and 2011-12, in order to measure the level of access to finance in each enumeration area of DSTES. The first round of WMS covers 2,016 enumeration areas and 24,192 households. The second round covers 1968 enumeration areas and 28,032 households. Because the years of WMS do not coincide with DSTES, we impute the demographic variables for 2008-09 and 2010-11 by a linear interpolation.

The firm-level variables used in this study include firm **age**, **gender** of owner, **major commodity** for sale, total **fixed assets**, and total value of **sales,** which are all readily available in the datasets. In addition, **labor productivity** is computed as total value-added over the number of workers. We measure trade credit received by firms by **accounts payable** over value of total sales, and trade credit extended by firms by **accounts receivable** over value of total sales. Using the information about the type of **input suppliers**, we construct the share of exporter, importer and wholesaler, and share of manufacturer in the input purchases of all firms. We also construct a dummy for **formality** status of the firm by checking if the firm is a taxpayer. In order to measure firm's use of **bank credit**, we divide its outstanding bank loans by the total value of sales in the respective year. In addition, we use two local variables to control for the retailer market structure and access to finance in each enumeration area. Market structure is gauged using Herfindahl index of **market power** ranging from 0 to 1, where zero represents perfect competition and one represents monopoly. Finally, to measure **access to finance** in a particular area, we compute the share of households using small scale loans from banks or microfinance institutions in each zone using information available from the WMS dataset, with the assumption that a higher share of

[5] As a robustness test, we repeat the estimations with the whole sample and obtain the same qualitative results with less significant coefficients than for the sample of only retailers, which we report among our robustness checks.

households with small scale loans proxies for better local access to formal bank services, including for our sample of retailers.

Table 1 Panel A shows the summary statistics of the key empirical variables. The total number of firms in the sample is 5,530. On average only 18.1% of the Ethiopian population use bank and micro-finance institutions for small-scale loans. There is a high variation in market power index of retailers in different areas of Ethiopia, with Herfindahl index ranging from 0.06 to 1. Accounts payable to sales ratio is on average 14.8% and nearly twice the average ratio between accounts receivable and sales, which is 8.1%. Bank loan to sales ratio is 4.1% on average and its usage thus is around 10 percentage points less than that of trade credit.[6] Looking into the detailed characteristics of the firms, the age of firms range from less than one year to 60 years averaging at 5.2 years. 33.1% of retailers in the sample have a female owner and around 46.3% of them are taxpayers. Finally, on average 54.9% of inputs of retailers come from exporter, importer, or wholesaler suppliers and 6.6% is from manufacturers.

In panels B and C of Table 1, we compare the distribution properties of formal and informal firms in the sample and observe that there is a substantial difference between financial access of formal firms and informal firms. We also note that formal firms are larger than informal firms – when measured in terms of the size of the fixed assets and sales.

3. Empirical strategy and results

We first examine how trade credit usage of retailers is correlated with the index of local access to finance. In this context, we estimate a regression specification of the following form

$$TCRD_{ist} = \alpha_0 + \alpha_1 FIN_{st} + \alpha_2 X_{ist} + C_i + S_s + Y_t + \varepsilon_{ist} \qquad (1)$$

where *TCRD* is trade credit usage or spread defined respectively by accounts payable to sales or accounts receivable to sales ratios of a firm *i*, in region *s*, in year *t*; *FIN* is the index of access to finance in region *s* and in year *t*; *X* is a vector of control variables including formality, female

[6] Unfortunately, we do not have data on the cost of trade or bank credit for the firms in this survey or for Ethiopia, more generally. However, cross-country evidence has shown that trade credit is an expensive method of input financing; specifically, Klapper, Laeven, and Rajan (2012) show that the average effective interest rate charged on trade credit is high at 54% - across the globe, thus substantially higher than interest rates on bank loans. This means that - throughout the world - businesses pay on average more than 50% interest rate for repaying the cost of items at a future due-date.

ownership, age, labor productivity, fixed assets, total sales, market power index, and type of suppliers. *C, S*, and *Y* are vectors of fixed effects for first commodity for sale, region, and year. To see how the correlation differs between formal and informal firms, we also estimate the regression (1) separately for the samples of formal and informal firms.

In the next step, we investigate the substitutability of trade credit and bank credit by testing the relationship between local access to finance, firm's own use of trade credit and the use of bank loans by running the following regression equation

$$LOAN_{ist} = \beta_0 + \beta_1 FIN_{st} + \beta_2 TCRD_{ist} + \beta_3 X_{ist} + C_i + S_s + Y_t + \varepsilon_{ist} \qquad (2)$$

where *LOAN* is the bank loans to sales ratio and all other variables are defined as in specification (1). All regressions are run with sample weights. It is important to stress that these regressions effectively unveil partial correlations and we thus avoid any causal inference.

Before we move on with the formal regression analysis based on the models specified at (1) and (2), we first present simple correlations between trade credit (both received and extended) and the share of the population using a bank loan (in the region of the producer) and between trade credit and bank-loans/sales ratio (at the level of individual producers) – separately for formal and informal firms. Figures 1 and 2 exhibit these key correlations.

First, as Figure 1A shows accounts payable and regional access to bank finance, measured as the share of population in a region with a bank-loan, exhibit a weak negative correlation. Additionally, as we also observe in Figure 1A this negative correlation between regional access to finance and accounts payable is largely driven by the strong negative association of the two variables for formal firms. In Figure 1B, we repeat the same empirical exercise for the case of accounts receivable and document similar patterns: accounts receivable and regional access to bank finance are negatively correlated (which is strongly negative unlike in the case with accounts payable), a relationship that is largely driven by the negative correlation of the two variables for formal firms.

In Figure 2 we present the correlations between trade-credit and bank-loans/sales ratio at the level of individual producers, where for accounts payable (Figure 2A), we capture a positive association with intensity of uses of bank loans by individual producers, a correlation that is largely driven by the positive correlation between accounts payable and bank-loan use of informal firms.

Figure 2B however shows a negative correlation between accounts receivable and bank loan use of informal firms.

Table 2 presents the results from estimating equation (1) separately for all firms in the sample as well as for the subsamples of informal and formal enterprises. We split Table 2 in two panels: Panel A presents the results on the association between accounts payable and regional access to bank finance while Panel B is on the relationship between accounts receivable and regional bank-finance access. In both panels of Table 2, we present the empirical findings in three blocks: Block (I), Block (II) and Block (III) respectively give the results for regressions with 'all firms', 'informal firms', and 'formal firms'. In each block, we introduce co-variates on the right-hand-side of regressions group-by-group to illustrate the extent of stability of our results.

Table 2A shows that access to bank finance in a geographic area is negatively and significantly associated with trade credit (accounts payable) usage for both formal and informal firms. Block (I) shows that one SD increase in the share of households with a bank loan is associated with a decrease in trade credit provided to retailers over their sales by 0.25 SD.[7] This result implies the potential substitutability of trade credit and bank credit in the sense that less local access to finance relates to the use of more trade credit. This is consistent with the finding of Fisman and Love (2003) who suggest that the use of trade credit is more prevalent where the formal finance is less accessible. In blocks (II) and (III), the estimations for the sub-samples of formal and informal firms, show that the negative relationship of local access to finance with receiving trade credit is more than three times larger in the sample of formal firms. In fact, formal firms seem to have easier access to formal finance and thus the substitution of trade credit with bank credit is stronger for such businesses.

Concerning the control variables, Block (I) of Table 2A shows that formal status is associated with an increase in trade credit to sales ratio by nearly 0.18 SD, which is substantial. The other key factor explaining trade credit usage is market power index which suggests in locations that are less competitive, firms are able to obtain more trade credit consistent with market power theories of trade credit (Fisman and Raturi, 2004; Fabbri and Klapper, 2016). Moving from perfect competition to monopoly is associated with an increase in the use of trade credit to sales

[7] From Table 1, the SD of bank use and accounts payable are respectively 0.0987 and 0.998, and thus the normalized coefficients becomes -2.498*0.0987/0.998 = -0.247.

by almost 0.6 SD. Female ownership, on the other hand, reduces trade credit usage to sales by 0.09 SD. Age and labor productivity are also positively associated with obtaining trade credit. In addition, firms receive more trade credit if their suppliers are importers, exporters, wholesalers, or manufacturers. This result can be explained by the fact that these suppliers are normally big and have larger enforcement capacity compared to small scale suppliers. Thus, they have less default risk and are more willing to give trade credit to their customers as highlighted by Fabbri and Menichini (2010). Finally, we do not find a significant coefficient for any of the commodity fixed effects and for simpler illustration we do not report them.

Table 2B presents the estimation of equation (1) for accounts receivable. There are two opposite channels through which local financial development can affect trade credit extension by firms. On the one hand, as column (4) of Table 2A reveals, in areas with higher access to bank finance, the demand for trade credit by clients is less. On the other hand, in more financially developed areas, firms can obtain bank credit and trickle it down as trade credit to their customers. The estimation results show that unlike accounts payable, we do not find a significant relationship of local access to finance and accounts receivable when we consider formal and informal firms together. For the sub-samples of informal and formal enterprises, however, the relationship becomes significant with opposite signs. The results in Block (II) of Table 2B imply that local financial development reduces the trade credit given by informal firms, whereas in Block (III), we see that it is positively and significantly associated with the trade credit given by formal retailers. This result suggests that as formal firms have better access to bank credit, the trickle-down channel is stronger for them. Among informal firms, however, credit constraints seem to reduce the ability to provide trade credit to their customers, although the coefficient only enters significantly and negatively in the specification with all control variables. In addition, Block (I) implies having a female owner in formal firms has an opposite relationship with accounts receivable compared to payables. This suggests that even though women are less successful in obtaining trade credit than men, they are more willing to give trade credit to their customers. Age, labor productivity, market power, having exporter/importer/wholesaler and manufacturer suppliers increase accounts receivable, similar to accounts payable. All of these factors can be associated with the liquidation advantage of the firm and may motivate firms to lend more trade credit. We do not find any significant coefficients of the commodities fixed effects and thus do not report them.

In the two panels of Table 3, we estimate equation (2) using specification with and without trade credit usage for the samples of all, informal, and formal firms. Panel A of Table 3 estimates the equation by including only accounts payable as a right-hand-side measure of trade credit, while Panel B estimates the equation with both accounts payable and accounts receivable on the right-hand-side. The drawback of including both accounts payable and accounts receivable at the same time is that we lose 26% of the sample, because accounts receivable is not reported by 26% of the enterprises in the data. Therefore, we provide our results in two separate panels.

Block (I) of Table 3A shows that bank loan to sales is positively associated with local access to finance and trade credit usage. One SD increase in the local access to finance is associated with an increase in bank loan to sales ratio by 0.06 SD. At the same time, if a firm is able to increase its trade credit usage by one SD, its bank loan to sales increases by 0.04 SD. This finding is consistent with Giannetti et al. (2011) who argue that obtaining trade credit reveals favorable information to other lenders. Among other control variables, formal status and the share of bank loans to sales ratio are positively related. Being formal is associated with an increase in the use of bank loans to sales ratio by 0.084 SD, consistent with the theoretical foundation that formality – by increasing transparency – could reduce the agency problems between firms and the creditors. Having a female owner, on the other hand, is related to a reduction in bank loans to total sales ratio by 0.05 SD. Unlike in the two panels of Table 2 the coefficients of fixed assets is positive and significant – potentially because fixed assets act as collateral for loans. In addition, market power and the type of the supplier (exporter/importer/wholesaler) have negative coefficient estimates. We do not find a significant association of age, labor productivity, total sales, share of manufacturer suppliers, and commodities fixed effects with the use of bank loans.

Since we have found the formality of a firm to be a crucial explanatory factor of trade credit demand usage, in blocks (II) and (III) of Table 3A, we split the sample based on the formality status of the firms. In fact, we want to examine whether the relationship of local access to finance and trade credit usage with bank loan differs among formal and informal firms. While in the sample of informal firms only trade credit usage is significant, in the sample of formal firms only the index of local access to finance appears with a significant sign. Block (II) suggests no significant relationship of local access to finance with bank loan usage of informal firms. In comparison, Block (III) shows that one SD increase in local access to finance relates to an increase in bank loan

/ sales ratio that are given to formal firms by 0.18 SD[8] – suggesting that higher access to formal finance is mainly effective for formal and not informal retailers. In addition, Block (II) suggests that one SD increase in trade credit usage of an informal firm is associated with an increase in its bank loan to sales ratio by 0.09 SD.[9] This potentially implies that obtaining trade credit can increase the creditworthiness an informal firm to obtain bank credit, consistent with Biais and Gollier (1997), but it is not an explanatory factor for formal firms' use of bank credit.

In the sub-sample regressions that we present in Table 3B, we do not find a significant effect of accounts payable on bank-loan/sales ratio in regressions with all firms, but other than that we continue to observe the key qualitative empirical pattern that accounts payable and bank-loan usage intensity are positively correlated for informal firms, while such a positive correlation is absent for formal firms.

4. Robustness Checks and Further Regressions

In this section we provide a set of robustness checks and illustrate the validity of our key empirical findings in some further regressions.

In Table 4 we repeat the benchmark analyses of Table 2 and Table 3 with the whole sample of firms that includes the previously excluded 847 + 388 firms, from wholesale and motor vehicle sale and repair industries. As the results of Table 4 indicate, the qualitative findings that we present in Tables 2 and 3 largely remain in this robustness check.

In Table 5, we provide a robustness analysis for the results that we obtain in Tables 2 and 3, in which we winsorise the distributions of 'accounts payable', 'accounts receivable' and 'sales' at the top and bottom 1%, and observe that the key empirical findings that we highlight in Tables 2 and 3 remain in Table 5: There is a negative association between access to trade credit (accounts payable) and share of population in a region with access to bank loans – largely driven by formal firms – and a positive association between access to trade credit (accounts payable) and the intensity of bank-loan usage – largely driven by informal firms.

[8] The effect is computed based on the SD of variables reported in panel C of Table 1.
[9] The effect is computed based on the SD of variables reported in panel B of Table 1.

In Table 6 we provide a robustness analysis, where we group product categories as 'differentiated products' (as proposed by Giannetti et al. 2011) and 'non-differentiated' (or standard) products. This robustness does not alter our key findings that there is a negative association between access to trade credit (accounts payable) and share of population in a region with access to bank loans – largely driven by formal firms – and that there is a positive association between access to trade credit (accounts payable) and the intensity of bank-loan usage – largely driven by informal firms. Additionally, in line with the findings of Giannetti et al. (2011), we find that – for formal firms – selling differentiated products is positively associated with the use of accounts payable vis-à-vis suppliers.

Our results are consistent with the hypothesis that trade-credit is likely to function as a signaling device in accessing bank-loans, consistent with Biais and Gollier (1997) – a relationship that we highlight to be the most relevant for informal firms. The question then becomes whether the empirical patterns that we capture for informal firms are simply driven by small firms. The answer that we obtain in Table 7 is that no. The empirical patterns that we observe in Table 7 (for small vs. large firms) are largely different than the patterns that we observe in Table 3 (for informal vs. formal firms). Specifically, while in Table 3 we find the positive and significant relationship between trade and bank credit only for informal but not formal firms, the results in Table 7 suggest a positive and significant relationship for both small and large firms with the effect being much larger for large firms. However, these relationships turn insignificant for both small and large firms once we control for accounts receivable, unlike in Table 3 for informal firms.

5. Conclusion

Using two representative surveys of Ethiopian retailers, this paper looks into the substitutability versus complementarity of bank credit and trade credit as two types of financing. Our empirical results highlight the significant role of firms' formality on the relationship between bank finance and trade credit. While we document that obtaining trade credit is positively associated with receiving a bank loan for informal firms, we do not find a significant link for the sample of formal firms. This finding suggests that receiving trade credit creates a signal for creditworthiness of the informal firms and increases the chance of obtaining credit from banks. This channel is however weaker for formal firms potentially because they have more transparent operations.

Although the link between trade credit and bank credit has been studied in the literature, our contribution is investigating the role of informality in this relationship in the context of a developing country with a low level of access to finance. The channel we uncover suggests an indirect impact of trade credit as a form of business financing to alleviate the agency problem between informal firms and formal lenders.

Finally, although we cannot identify deep channels that are likely to drive the signaling role that trade credit plays for access to finance (such as the relationship length with suppliers and terms of trade credit contracts) due to data limitations of the current analysis, we leave this as an important agenda for future research.

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Table 1 – Summary statistics. The sample includes retailers in Ethiopia. The observations are weighted by the sample multiplier.

Panel A: All firms

		Obs.	mean	SD	min	median	max
local	**Share of population using bank**	5530	0.181	0.0987	0	0.149	0.544
	Herfindahl index of market power	5530	0.406	0.288	0.062	0.319	1
firm-level	**Account payable / sales**	5530	0.148	0.998	0	0.000	35.11
	Account receivable / sales	4095	0.081	0.717	0	0.004	14.60
	Bank loans / sales	5530	0.041	0.499	0	0	14.63
	Being formal	5530	0.463	0.499	0	0	1
	Having female owner	5530	0.331	0.471	0	0	1
	Age	5530	5.236	5.331	0	4	60
	Labor productivity	5530	0.012	0.236	-3.234	0.001	15.70
	Fixed assets (log)	5530	7.022	2.566	-0.693	7.506	18.05
	Sales value (log)	5530	10.12	1.575	5.322	10.09	20.80
	Share of exporter/importer/wholesaler suppliers	5530	0.549	0.477	0	0.857	1
	Share of manufacturer for raw suppliers	5530	0.066	0.225	0	0	1

Panel B: Informal firms

	Obs.	mean	SD	min	median	max
Share of population using bank	2917	0.177	0.102	0	0.149	0.544
Herfindahl index of market power	2917	0.402	0.291	0.0618	0.290	1
Account payable / sales	2917	0.0797	0.348	0	0.000	7.136
Account receivable / sales	2185	0.0432	0.165	0	0.005	4.286
Bank loans / sales	2917	0.0240	0.245	0	0	7.560
Being formal	2917	0	0	0	0	0
Having female owner	2917	0.359	0.480	0	0	1
Age	2917	4.656	4.570	0	3	60
Labor productivity	2917	0.0154	0.312	-3.234	0.001	15.70
Fixed assets (log)	2917	6.782	2.609	0	7.421	18.05
Sales value (log)	2917	9.819	1.607	5.323	9.741	20.80
Share of exporter/importer/wholesaler suppliers	2917	0.503	0.479	0	0.610	1
Share of manufacturer for raw suppliers	2917	0.0453	0.182	0	0	1

Panel C: Formal firms

	Obs.	mean	SD	min	median	max
Share of population using bank	2613	0.187	0.095	0	0.145	0.544
Herfindahl index of market power	2613	0.410	0.284	0.0618	0.340	1
Account payable / sales	2613	0.228	1.414	0	0.000	35.11
Account receivable / sales	1910	0.125	1.030	0	0.003	14.60
Bank loans / sales	2613	0.0614	0.685	0	0	14.63
Being formal	2613	1	0	1	1	1
Having female owner	2613	0.299	0.458	0	0	1
Age	2613	5.908	6.027	0	4	59
Labor productivity	2613	0.0091	0.087	-0.961	0.002	3.192
Fixed assets (log)	2613	7.301	2.486	-0.693	7.636	14.69
Sales value (log)	2613	10.47	1.463	5.580	10.48	19.01
Share of exporter/importer/wholesaler	2613	0.602	0.468	0	1	1
Share of manufacturer for raw suppliers	2613	0.0898	0.265	0	0	1

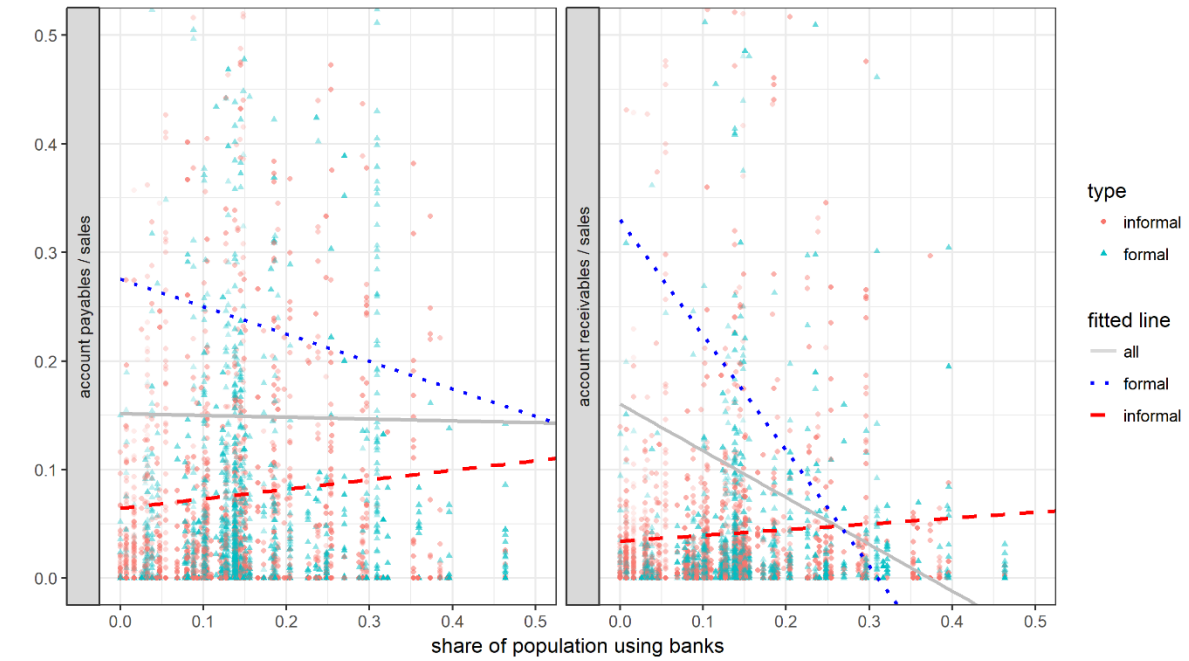

Figure 1- correlation between trade credit and regional access to finance. Each point represents a sample firm and its transparency is weighted by the sample multiplier. The lines are linear regressions estimated using sample weights. For better illustration, value outside [0, 0.5] are not shown here, but included in estimating lines. In the text we refer the left panel as Figure 1A and the right panel as Figure 1B.

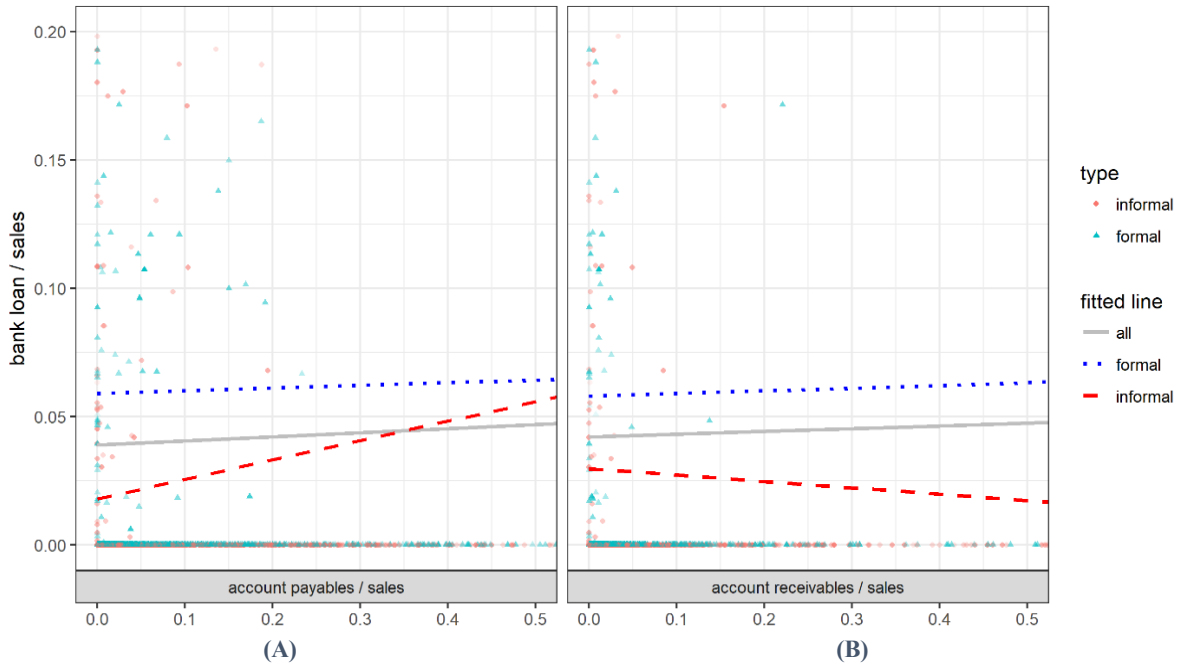

Figure 2- correlation between bank loan and trade credit. Each point represents a sample firm and its transparency is weighted by the sample multiplier. The lines are linear regressions estimated using sample weights. For better illustration, value outside the bounds are not shown here, but included in estimating lines. In the text we refer the left panel as Figure 2A and the right panel as Figure 2B.

Table 2 – Trade credit and local access to finance. Standard errors are in parenthesis. The observations are weighted by sample multiplier. Region and commodity fixed effects are included in columns (4), (8), and (12). Fixed effects of 18 commodities are insignificant in all specification and not reported here.

Panel A: account payable/sales

Sample	**Block I: all firms**				**Block II: informal firms**				**Block III: formal firms**			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
share of population using bank	-0.017	-0.544***	-0.730***	-2.498***	0.088	-0.075	-0.158**	-1.201***	-0.253	-0.965***	-1.161***	-3.842***
	(0.136)	(0.137)	(0.135)	(0.238)	(0.063)	(0.065)	(0.064)	(0.112)	(0.293)	(0.289)	(0.283)	(0.528)
formal		0.148***	0.208***	0.175***								
		(0.026)	(0.027)	(0.028)								
market power (0=PC 1=Monopoly)		0.689***	0.620***	0.607***		0.201***	0.151***	0.220***		1.254***	1.204***	1.021***
		(0.047)	(0.047)	(0.049)		(0.023)	(0.022)	(0.023)		(0.096)	(0.095)	(0.104)
having female owner			-0.052*	-0.090***			0.007	-0.022*			-0.033	-0.113*
			(0.028)	(0.028)			(0.013)	(0.013)			(0.057)	(0.059)
age			0.007***	0.006***			0.002	0.001			0.013***	0.012***
			(0.002)	(0.002)			(0.001)	(0.001)			(0.004)	(0.004)
Labor productivity			0.139**	0.168***			0.063***	0.075***			0.423	0.455
			(0.055)	(0.054)			(0.020)	(0.019)			(0.305)	(0.304)
Fixed assets (log)			-0.002	-0.003			-0.001	0.002			-0.002	-0.011
			(0.005)	(0.005)			(0.002)	(0.002)			(0.011)	(0.011)
sales value (log)			-0.149***	-0.150***			-0.066***	-0.063***			-0.272***	-0.278***
			(0.009)	(0.010)			(0.004)	(0.004)			(0.019)	(0.021)
Share of exporter, importer,			0.232***	0.203***			0.117***	0.117***			0.328***	0.224***
wholesaler as suppliers			(0.029)	(0.030)			(0.013)	(0.013)			(0.060)	(0.064)
share of manufacturer as suppliers			0.152**	0.244***			0.094***	0.082**			0.322***	0.498***
			(0.060)	(0.061)			(0.034)	(0.033)			(0.108)	(0.110)
Year effect				0.009				0.058***				-0.075
				(0.030)				(0.014)				(0.064)
Constant	0.151***	-0.101***	1.304***	2.458**	0.064***	0.012	0.626***	1.071*	0.275***	-0.105	2.511***	4.740***
	(0.028)	(0.032)	(0.098)	(0.991)	(0.013)	(0.014)	(0.048)	(0.550)	(0.061)	(0.066)	(0.205)	(1.700)
Observations	5530	5530	5530	5530	2917	2917	2917	2917	2613	2613	2613	2613
R-squared	0.000	0.043	0.096	0.133	0.001	0.027	0.122	0.237	0.000	0.061	0.139	0.181
Commodity and region FE	No	No	No	Yes	No	No	No	Yes	No	No	No	Yes

Panel B: accounts receivable/sales

Sample	**Block I: all firms**				**Block II: informal firms**				**Block III: formal firms**			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
share of population using bank	-0.431***	-0.671***	-0.760***	-0.031	0.053	0.068*	0.024	-0.295***	-1.062***	-1.595***	-1.632***	1.036**
	(0.113)	(0.115)	(0.113)	(0.199)	(0.036)	(0.036)	(0.036)	(0.064)	(0.236)	(0.240)	(0.238)	(0.424)
formal		0.078***	0.108***	0.136***								
		(0.022)	(0.023)	(0.024)								
market power (0=PC 1=Monopoly)		0.337***	0.236***	0.195***		-0.034**	-0.047***	-0.016		0.709***	0.552***	0.499***
		(0.041)	(0.043)	(0.045)		(0.014)	(0.014)	(0.015)		(0.082)	(0.083)	(0.093)
having female owner			0.059**	0.053**			-0.043***	-0.043***			0.250***	0.246***
			(0.024)	(0.024)			(0.008)	(0.007)			(0.049)	(0.050)
age			0.007***	0.009***			0.002***	0.002**			0.013***	0.019***
			(0.002)	(0.002)			(0.001)	(0.001)			(0.004)	(0.004)
Labor productivity			0.082*	0.087*			0.032***	0.034***			0.227	0.295
			(0.046)	(0.046)			(0.011)	(0.011)			(0.287)	(0.284)
Fixed assets (log)			0.009**	0.005			0.007***	0.005***			0.006	-0.001
			(0.004)	(0.004)			(0.001)	(0.001)			(0.009)	(0.009)
sales value (log)			-0.077***	-0.088***			-0.020***	-0.016***			-0.167***	-0.201***
			(0.008)	(0.008)			(0.002)	(0.003)			(0.018)	(0.019)
Share of exporter, importer, wholesaler as suppliers			0.102***	0.085***			0.031***	0.037***			0.184***	0.056
			(0.024)	(0.025)			(0.007)	(0.008)			(0.051)	(0.055)
share of manufacturer as suppliers			0.260***	0.291***			0.135***	0.128***			0.488***	0.406***
			(0.054)	(0.054)			(0.018)	(0.018)			(0.102)	(0.103)
Year effect				-0.030				-0.032***				0.135**
				(0.026)				(0.008)				(0.057)
Constant	0.160***	0.038	0.655***	0.578	0.034***	0.044***	0.182***	0.169	0.330***	0.140**	1.607***	1.025
	(0.023)	(0.027)	(0.085)	(0.391)	(0.007)	(0.008)	(0.027)	(0.272)	(0.051)	(0.055)	(0.192)	(0.703)
Observations	4095	4095	4095	4095	2185	2185	2185	2185	1910	1910	1910	1910
R-squared	0.004	0.023	0.054	0.096	0.001	0.004	0.073	0.148	0.010	0.048	0.114	0.190
Commodity and region FE	No	No	No	Yes	No	No	No	Yes	No	No	No	Yes

Table 3 - Bank credit, local access to finance and trade credit usage. Standard errors are in parenthesis. The observations are weighted by sample multiplier. Region and commodity fixed effects are included in columns (4), (8), and (12). Commodity fixed effects are insignificant in all specification and not reported here. Panel A presents without accounts receivable (with more observations) and Panel B presents the results with accounts receivable.

Panel A ***bank loans / sales***

Sample	**Block I: all firms**				**Block II: informal firms**				**Block III: formal firms**			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
share of population using bank	0.182***	0.198***	0.175**	0.304**	0.114***	0.183***	0.182***	0.009	0.244*	0.234	0.366**	1.308***
	(0.068)	(0.070)	(0.071)	(0.126)	(0.044)	(0.046)	(0.047)	(0.089)	(0.142)	(0.145)	(0.146)	(0.270)
account payable/sales	0.016**	0.017**	0.018**	0.019***	0.075***	0.086***	0.080***	0.063***	0.011	0.010	0.013	0.014
	(0.007)	(0.007)	(0.007)	(0.007)	(0.013)	(0.013)	(0.014)	(0.014)	(0.009)	(0.010)	(0.010)	(0.010)
formal		0.033**	0.030**	0.042***								
		(0.014)	(0.014)	(0.015)								
market power (0=PC 1=Monopoly)		-0.035	-0.054**	-0.062**		-0.086***	-0.080***	-0.070***		0.019	-0.024	-0.003
		(0.025)	(0.025)	(0.026)		(0.016)	(0.017)	(0.018)		(0.050)	(0.051)	(0.054)
having female owner			-0.024*	-0.025*			-0.017*	-0.018*			-0.048	-0.036
			(0.015)	(0.015)			(0.010)	(0.010)			(0.030)	(0.030)
age			0.001	0.001			-0.002	-0.002*			0.003	0.005**
			(0.001)	(0.001)			(0.001)	(0.001)			(0.002)	(0.002)
Labor productivity			-0.007	-0.012			-0.005	-0.004			0.004	-0.094
			(0.029)	(0.028)			(0.015)	(0.015)			(0.157)	(0.154)
Fixed assets (log)			0.018***	0.019***			0.002	0.003			0.037***	0.034***
			(0.003)	(0.003)			(0.002)	(0.002)			(0.006)	(0.005)
sales value (log)			-0.007	-0.002			-0.003	0.001			-0.013	-0.016
			(0.005)	(0.005)			(0.003)	(0.004)			(0.010)	(0.011)
Share of exporter, importer,			-0.041***	-0.041***			0.022**	0.037***			-0.130***	-0.152***
wholesaler as suppliers			(0.015)	(0.016)			(0.010)	(0.011)			(0.031)	(0.033)
share of manufacturer as suppliers			0.010	0.013			0.019	0.026			-0.042	-0.075
			(0.032)	(0.032)			(0.025)	(0.026)			(0.056)	(0.056)
Year effect				-0.007				-0.015				0.052
				(0.015)				(0.011)				(0.032)
Constant	0.006	0.002	-0.013	-0.045	-0.002	0.020**	0.032	0.184	0.013	0.008	-0.054	-0.261
	(0.014)	(0.017)	(0.052)	(0.518)	(0.009)	(0.010)	(0.037)	(0.428)	(0.030)	(0.033)	(0.109)	(0.862)
Observations	5530	5530	5530	5530	2917	2917	2917	2917	2613	2613	2613	2613
R-squared	0.002	0.004	0.013	0.054	0.014	0.023	0.027	0.065	0.002	0.002	0.025	0.104
Commodity and region FE	No	No	No	Yes	No	No	No	Yes	No	No	No	Yes

Panel B	**bank loans / sales**											
Sample	**Block I: all firms**				**Block II: informal firms**				**Block III: formal firms**			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
share of population using bank	0.131	0.132	0.135	0.108	0.139**	0.185***	0.171***	-0.034	0.086	0.055	0.155	0.890***
	(0.087)	(0.090)	(0.090)	(0.157)	(0.058)	(0.059)	(0.061)	(0.112)	(0.175)	(0.182)	(0.184)	(0.329)
account payable/sales	0.003	0.004	0.009	0.007	0.076***	0.094***	0.084***	0.071***	-0.005	-0.007	0.006	0.005
	(0.009)	(0.009)	(0.009)	(0.009)	(0.014)	(0.015)	(0.016)	(0.016)	(0.013)	(0.013)	(0.013)	(0.013)
account receivable/sales	0.009	0.009	0.004	0.007	-0.046	-0.059*	-0.081**	-0.087**	0.016	0.015	0.013	-0.002
	(0.014)	(0.014)	(0.014)	(0.014)	(0.035)	(0.035)	(0.036)	(0.037)	(0.020)	(0.020)	(0.020)	(0.020)
formal		0.028	0.013	0.028								
		(0.017)	(0.018)	(0.019)								
market power (0=PC 1=Monopoly)		-0.023	-0.043	-0.091**		-0.113***	-0.113***	-0.127***		0.040	-0.026	-0.003
		(0.033)	(0.034)	(0.035)		(0.023)	(0.024)	(0.025)		(0.064)	(0.066)	(0.072)
having female owner			-0.021	-0.022			-0.023*	-0.019			-0.040	-0.038
			(0.019)	(0.019)			(0.013)	(0.013)			(0.038)	(0.038)
age			0.001	0.001			-0.002	-0.003**			0.003	0.004
			(0.002)	(0.002)			(0.001)	(0.001)			(0.003)	(0.003)
Labor productivity			-0.021	-0.029			0.001	0.000			-0.130	-0.289
			(0.036)	(0.036)			(0.018)	(0.018)			(0.219)	(0.215)
Fixed assets (log)			0.022***	0.022***			0.003	0.004*			0.047***	0.042***
			(0.003)	(0.003)			(0.002)	(0.002)			(0.007)	(0.007)
sales value (log)			0.001	0.010			-0.008*	-0.002			0.018	0.007
			(0.006)	(0.007)			(0.004)	(0.005)			(0.014)	(0.015)
Share of exporter, importer, wholesaler as suppliers			-0.024	-0.019			0.035***	0.064***			-0.086**	-0.144***
			(0.019)	(0.020)			(0.013)	(0.013)			(0.040)	(0.042)
share of manufacturer as suppliers			0.049	0.047			0.036	0.047			0.012	-0.063
			(0.043)	(0.043)			(0.031)	(0.031)			(0.079)	(0.078)
Year effect				0.019				-0.027*				0.097**
				(0.020)				(0.014)				(0.044)
Constant	0.018	0.013	-0.132*	-0.177	-0.001	0.030**	0.089*	0.219	0.042	0.032	-0.445***	-0.593
	(0.018)	(0.021)	(0.068)	(0.307)	(0.012)	(0.013)	(0.047)	(0.462)	(0.038)	(0.041)	(0.152)	(0.536)
Observations	4095	4095	4095	4095	2185	2185	2185	2185	1910	1910	1910	1910
R-squared	0.001	0.002	0.014	0.068	0.016	0.026	0.034	0.091	0.000	0.001	0.030	0.129
Commodity and region FE	No	No	No	Yes	No	No	No	Yes	No	No	No	Yes

Table 4- Robustness test by including sample of wholesalers and retailers. The observations are weighted by sample multiplier. Region and commodity fixed effects are included in all columns.

	account payable/sales			***account receivable/sales***			***bank loans / sales***					
sample	**all**	**informal**	**formal**	**all**	**informal**	**formal**	**all**	**informal**	**formal**	**all**	**informal**	**formal**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
share of population using bank	-2.428***	-1.198***	-3.706***	0.017	-0.275***	1.057**	0.281**	-0.012	1.218***	0.101	-0.043	0.873***
	(0.230)	(0.115)	(0.494)	(0.217)	(0.059)	(0.459)	(0.112)	(0.081)	(0.232)	(0.141)	(0.102)	(0.283)
account payable/sales							0.016***	0.049***	0.013	0.005	0.070***	0.003
							(0.006)	(0.012)	(0.008)	(0.008)	(0.015)	(0.010)
account receivable/sales										0.005	-0.089***	-0.002
										(0.010)	(0.034)	(0.014)
formal	0.151***			0.133***			0.039***			0.027*		
	(0.026)			(0.025)			(0.013)			(0.016)		
market power (0=PC 1=Monopoly)	0.523***	0.211***	0.814***	0.204***	-0.011	0.491***	-0.056**	-0.061***	-0.010	-0.084***	-0.111***	-0.019
	(0.045)	(0.022)	(0.091)	(0.046)	(0.013)	(0.093)	(0.022)	(0.016)	(0.043)	(0.030)	(0.022)	(0.057)
having female owner	-0.047*	-0.017	-0.031	0.054**	-0.040***	0.218***	-0.025**	-0.018**	-0.030	-0.023	-0.021*	-0.031
	(0.027)	(0.013)	(0.053)	(0.026)	(0.007)	(0.052)	(0.013)	(0.009)	(0.025)	(0.017)	(0.012)	(0.032)
age	0.008***	0.001	0.013***	0.008***	0.002***	0.015***	0.001	-0.002*	0.004**	0.001	-0.002**	0.004*
	(0.002)	(0.001)	(0.004)	(0.002)	(0.001)	(0.004)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)
Labor productivity	0.019*	0.007	0.041*	0.003	0.003	0.004	-0.000	0.000	0.000	-0.001	0.000	-0.003
	(0.011)	(0.005)	(0.022)	(0.010)	(0.002)	(0.020)	(0.006)	(0.004)	(0.010)	(0.006)	(0.004)	(0.012)
Fixed assets (log)	0.006	0.003	0.008	0.010**	0.005***	0.010	0.016***	0.003	0.027***	0.019***	0.004*	0.034***
	(0.005)	(0.002)	(0.009)	(0.005)	(0.001)	(0.009)	(0.002)	(0.002)	(0.004)	(0.003)	(0.002)	(0.006)
sales value (log)	-0.130***	-0.054***	-0.224***	-0.078***	-0.013***	-0.163***	-0.002	-0.001	-0.012	0.007	-0.002	0.003
	(0.009)	(0.004)	(0.018)	(0.009)	(0.002)	(0.018)	(0.004)	(0.003)	(0.009)	(0.006)	(0.004)	(0.011)
Share of exporter, importer, wholesaler as suppliers	0.194***	0.103***	0.250***	0.082***	0.036***	0.054	-0.036***	0.036***	-0.132***	-0.016	0.060***	-0.125***
	(0.028)	(0.014)	(0.058)	(0.027)	(0.007)	(0.058)	(0.014)	(0.010)	(0.027)	(0.018)	(0.012)	(0.035)
share of manufacturer as suppliers	0.220***	0.054*	0.434***	0.218***	0.112***	0.256**	0.003	0.026	-0.076*	0.029	0.040	-0.069
	(0.053)	(0.031)	(0.093)	(0.054)	(0.015)	(0.100)	(0.026)	(0.022)	(0.044)	(0.034)	(0.026)	(0.061)
Year effect	0.019	0.065***	-0.029	-0.022	-0.031***	0.171***	-0.005	-0.015	0.053*	0.021	-0.026**	0.098***
	(0.028)	(0.014)	(0.059)	(0.028)	(0.007)	(0.061)	(0.014)	(0.010)	(0.028)	(0.018)	(0.012)	(0.037)
Constant	2.361*	1.262**	2.436	0.545	0.130	0.682	-0.096	0.172	-0.400	-0.194	0.235	-0.640
	(1.429)	(0.504)	(1.929)	(1.191)	(0.224)	(1.607)	(0.691)	(0.351)	(0.899)	(0.763)	(0.380)	(0.976)
Observations	6765	3405	3360	5000	2564	2436	6765	3405	3360	5000	2564	2436
R-squared	0.106	0.199	0.141	0.069	0.138	0.129	0.051	0.065	0.098	0.064	0.094	0.120

Table 5- Robustness test with 1% winsorized sample for the variables 'accounts payable', 'accounts receivable', and 'sales'. The observations are weighted by sample multiplier. Region and commodity fixed effects are included in all columns.

	account payable/sales			***account receivable/sales***			***bank loans / sales***					
sample	**all**	**informal**	**formal**	**all**	**informal**	**formal**	**all**	**informal**	**formal**	**all**	**informal**	**formal**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
share of population using bank	-1.898***	-0.187***	-3.603***	0.043	-0.215***	0.773*	0.423***	0.018	1.302***	-0.014	-0.018	0.065
	(0.241)	(0.058)	(0.522)	(0.193)	(0.063)	(0.396)	(0.131)	(0.089)	(0.273)	(0.066)	(0.114)	(0.062)
account payable/sales							0.017**	0.410***	0.014	0.006	0.467***	-0.004
							(0.007)	(0.029)	(0.010)	(0.004)	(0.033)	(0.003)
account receivable/sales										-0.011	-0.193***	-0.002
										(0.007)	(0.040)	(0.004)
formal	0.199***			0.127***			0.042***			-0.017**		
	(0.027)			(0.022)			(0.015)			(0.008)		
market power (0=PC 1=Monopoly)	0.328***	-0.021*	0.526***	-0.092**	-0.010	-0.154*	-0.035	-0.031*	0.038	-0.057***	-0.079***	-0.046***
	(0.051)	(0.012)	(0.107)	(0.044)	(0.015)	(0.090)	(0.028)	(0.018)	(0.056)	(0.015)	(0.027)	(0.014)
having female owner	-0.087***	-0.013**	-0.125**	0.059***	-0.040***	0.206***	-0.018	-0.011	-0.035	0.003	-0.014	0.029***
	(0.028)	(0.006)	(0.059)	(0.022)	(0.007)	(0.046)	(0.015)	(0.010)	(0.030)	(0.008)	(0.012)	(0.007)
age	0.008***	0.001*	0.014***	0.006***	-0.001	0.016***	0.001	-0.002**	0.004*	-0.001*	-0.003***	-0.000
	(0.002)	(0.001)	(0.004)	(0.002)	(0.001)	(0.004)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Labor productivity	0.382**	0.050*	0.543	0.105	0.028	0.175	0.003	-0.007	-0.016	0.022	-0.001	0.066
	(0.154)	(0.030)	(0.431)	(0.137)	(0.037)	(0.338)	(0.083)	(0.046)	(0.223)	(0.047)	(0.067)	(0.052)
Fixed assets (log)	-0.001	0.002	-0.003	0.008**	0.005***	0.007	0.019***	0.003	0.033***	0.005***	0.005**	0.005***
	(0.005)	(0.001)	(0.011)	(0.004)	(0.001)	(0.009)	(0.003)	(0.002)	(0.006)	(0.001)	(0.002)	(0.001)
sales value (log)	-0.150***	-0.026***	-0.309***	-0.096***	-0.024***	-0.187***	-0.007	0.004	-0.015	-0.009***	-0.000	-0.008***
	(0.010)	(0.002)	(0.023)	(0.009)	(0.003)	(0.018)	(0.006)	(0.004)	(0.012)	(0.003)	(0.005)	(0.003)
Share of exporter, importer, wholesaler as suppliers	0.160***	0.027***	0.214***	0.074***	0.040***	0.042	-0.046***	0.035***	-0.151***	0.039***	0.069***	0.005
	(0.029)	(0.007)	(0.064)	(0.024)	(0.007)	(0.052)	(0.016)	(0.010)	(0.033)	(0.008)	(0.013)	(0.008)
share of manufacturer as suppliers	0.198***	0.020	0.493***	0.142***	0.145***	0.116	0.010	0.026	-0.072	0.020	0.065**	-0.006
	(0.059)	(0.016)	(0.109)	(0.050)	(0.017)	(0.096)	(0.032)	(0.025)	(0.057)	(0.017)	(0.030)	(0.015)
Year effect	0.025	-0.028***	-0.016	0.010	-0.036***	0.207***	-0.007	0.003	0.047	-0.010	-0.012	0.019**
	(0.029)	(0.007)	(0.063)	(0.024)	(0.007)	(0.053)	(0.016)	(0.011)	(0.033)	(0.008)	(0.013)	(0.008)
Constant	2.264**	0.299**	5.113***	0.720**	0.300**	1.420	-0.028	-0.036	-0.292	0.182	0.098	0.056
	(0.962)	(0.126)	(1.674)	(0.360)	(0.134)	(1.215)	(0.520)	(0.195)	(0.868)	(0.123)	(0.244)	(0.187)
Observations	5468	2886	2582	4041	2160	1881	5468	2886	2582	4041	2160	1881
R-squared	0.100	0.081	0.170	0.097	0.191	0.174	0.060	0.128	0.105	0.064	0.174	0.095

Table 6- Robustness test with differentiated goods dummy based on Giannetti et al. (2011). The observations are weighted by sample multiplier. Region and year fixed effects are included and commodity fixed effect are excluded in all columns.

	account payable/sales			***account receivable/sales***			***bank loans / sales***					
sample	**all**	**informal**	**formal**	**all**	**informal**	**formal**	**all**	**informal**	**formal**	**all**	**informal**	**formal**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Selling differentiated goods	0.119***	-0.055***	0.314***	-0.078***	-0.021***	-0.212***	0.059***	0.028***	0.104***	0.115***	0.040***	0.186***
	(0.030)	(0.014)	(0.062)	(0.026)	(0.008)	(0.053)	(0.016)	(0.011)	(0.033)	(0.021)	(0.014)	(0.042)
share of population using bank	-2.396***	-1.110***	-3.643***	-0.053	-0.282***	0.864**	0.177	-0.014	1.102***	0.043	-0.047	0.689**
	(0.236)	(0.110)	(0.521)	(0.199)	(0.063)	(0.419)	(0.127)	(0.087)	(0.274)	(0.158)	(0.111)	(0.331)
account payable/sales							0.014*	0.060***	0.010	-0.002	0.065***	-0.004
							(0.007)	(0.015)	(0.010)	(0.009)	(0.016)	(0.014)
account receivable/sales										0.013	-0.079**	0.009
										(0.014)	(0.037)	(0.021)
formal	0.172***			0.143***			0.040***			0.021		
	(0.028)			(0.024)			(0.015)			(0.019)		
market power (0=PC 1=Monopoly)	0.627***	0.225***	1.088***	0.254***	-0.024*	0.651***	-0.060**	-0.059***	-0.050	-0.059*	-0.090***	-0.053
	(0.048)	(0.022)	(0.098)	(0.044)	(0.014)	(0.087)	(0.026)	(0.018)	(0.052)	(0.035)	(0.025)	(0.070)
having female owner	-0.090***	-0.022*	-0.078	0.067***	-0.042***	0.284***	-0.022	-0.019*	-0.032	-0.023	-0.024*	-0.027
	(0.028)	(0.013)	(0.058)	(0.024)	(0.007)	(0.049)	(0.015)	(0.010)	(0.030)	(0.019)	(0.013)	(0.039)
age	0.006**	0.001	0.011**	0.008***	0.002***	0.016***	0.001	-0.002	0.003	0.001	-0.002*	0.003
	(0.002)	(0.001)	(0.004)	(0.002)	(0.001)	(0.004)	(0.001)	(0.001)	(0.002)	(0.002)	(0.001)	(0.003)
Labor productivity	0.158***	0.074***	0.387	0.085*	0.034***	0.406	-0.003	-0.001	0.015	-0.018	0.004	-0.157
	(0.054)	(0.019)	(0.302)	(0.046)	(0.011)	(0.282)	(0.029)	(0.015)	(0.157)	(0.036)	(0.018)	(0.219)
Fixed assets (log)	-0.002	0.003	-0.010	0.009**	0.006***	0.002	0.016***	0.002	0.034***	0.021***	0.003	0.041***
	(0.005)	(0.002)	(0.011)	(0.004)	(0.001)	(0.009)	(0.003)	(0.002)	(0.006)	(0.003)	(0.002)	(0.007)
sales value (log)	-0.143***	-0.062***	-0.257***	-0.083***	-0.017***	-0.184***	-0.006	-0.002	-0.013	0.003	-0.007	0.019
	(0.009)	(0.004)	(0.019)	(0.008)	(0.002)	(0.018)	(0.005)	(0.003)	(0.010)	(0.007)	(0.004)	(0.015)
Share of exporter, importer, wholesaler as suppliers	0.207***	0.122***	0.256***	0.091***	0.034***	0.087	-0.045***	0.034***	-0.160***	-0.030	0.054***	-0.140***
	(0.030)	(0.013)	(0.064)	(0.026)	(0.008)	(0.055)	(0.016)	(0.011)	(0.033)	(0.020)	(0.013)	(0.043)
share of manufacturer as suppliers	0.205***	0.095***	0.420***	0.249***	0.118***	0.393***	0.024	0.030	-0.059	0.067	0.050	-0.017
	(0.060)	(0.033)	(0.108)	(0.054)	(0.018)	(0.103)	(0.032)	(0.026)	(0.057)	(0.043)	(0.031)	(0.080)
Constant	0.016	0.052***	-0.061	-0.015	-0.030***	0.152***	-0.006	-0.016	0.066**	0.015	-0.032**	0.113**
	(0.029)	(0.014)	(0.064)	(0.026)	(0.008)	(0.057)	(0.016)	(0.011)	(0.033)	(0.020)	(0.014)	(0.045)
Observations	2.122***	1.104***	3.671***	0.444***	0.222***	0.834***	0.011	0.137***	-0.314**	-0.090	0.192***	-0.645***
R-squared	(0.119)	(0.053)	(0.264)	(0.102)	(0.030)	(0.230)	(0.065)	(0.045)	(0.143)	(0.083)	(0.056)	(0.186)

Table 7- Robustness test by splitting sample based on sales value. Small and large respectively represent the sample of firms below and above the median of sales value. The observations are weighted by sample multiplier. Region and commodity fixed effects are included in all columns.

	account payable/sales			***account receivable/sales***			***bank loans / sales***					
sample	**all**	**small**	**large**	**all**	**small**	**large**	**all**	**small**	**large**	**all**	**small**	**large**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
share of population using bank	-2.498***	-3.490***	-0.024	-0.031	-0.351	0.140***	0.304**	0.354***	0.863***	0.108	-0.051	0.775**
	(0.238)	(0.421)	(0.051)	(0.199)	(0.368)	(0.038)	(0.126)	(0.112)	(0.258)	(0.157)	(0.117)	(0.309)
account payable/sales							0.019***	0.012**	0.309***	0.007	0.001	-0.014
							(0.007)	(0.005)	(0.097)	(0.009)	(0.005)	(0.114)
account receivable/sales										0.007	0.002	1.849***
										(0.014)	(0.008)	(0.186)
formal	0.175***	0.377***	-0.003	0.136***	0.283***	0.001	0.042***	0.032**	0.055*	0.028	-0.008	0.061*
	(0.028)	(0.049)	(0.006)	(0.024)	(0.043)	(0.004)	(0.015)	(0.013)	(0.028)	(0.019)	(0.014)	(0.036)
market power (0=PC 1=Monopoly)	0.607***	0.969***	-0.004	0.195***	0.367***	0.012	-0.062**	-0.112***	0.005	-0.091**	-0.123***	-0.012
	(0.049)	(0.089)	(0.010)	(0.045)	(0.083)	(0.009)	(0.026)	(0.024)	(0.052)	(0.035)	(0.027)	(0.069)
having female owner	-0.090***	-0.143***	-0.003	0.053**	0.124***	-0.008*	-0.025*	-0.032**	-0.045	-0.022	-0.003	-0.058
	(0.028)	(0.048)	(0.006)	(0.024)	(0.042)	(0.005)	(0.015)	(0.013)	(0.030)	(0.019)	(0.013)	(0.038)
age	0.006***	0.016***	0.001**	0.009***	0.012**	0.002***	0.001	-0.003*	0.004*	0.001	-0.003**	-0.000
	(0.002)	(0.006)	(0.000)	(0.002)	(0.005)	(0.000)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)
Labor productivity	0.168***	1.191	0.010	0.087*	-0.979	0.022***	-0.012	-0.059	-0.041	-0.029	0.076	-0.090**
	(0.054)	(0.979)	(0.007)	(0.046)	(0.738)	(0.006)	(0.028)	(0.256)	(0.035)	(0.036)	(0.232)	(0.045)
Fixed assets (log)	-0.003	-0.019**	0.003***	0.005	0.004	0.004***	0.019***	0.004*	0.038***	0.022***	0.002	0.043***
	(0.005)	(0.010)	(0.001)	(0.004)	(0.008)	(0.001)	(0.003)	(0.002)	(0.005)	(0.003)	(0.003)	(0.006)
sales value (log)	-0.150***	-0.325***	-0.002	-0.088***	-0.147***	-0.001	-0.002	-0.033***	0.008	0.010	-0.006	0.005
	(0.010)	(0.026)	(0.003)	(0.008)	(0.022)	(0.002)	(0.005)	(0.007)	(0.013)	(0.007)	(0.007)	(0.018)
Share of exporter, importer, wholesaler as suppliers	0.203***	0.335***	0.005	0.085***	0.134***	-0.007	-0.041***	0.017	-0.123***	-0.019	0.066***	-0.131***
	(0.030)	(0.051)	(0.006)	(0.025)	(0.045)	(0.005)	(0.016)	(0.014)	(0.031)	(0.020)	(0.014)	(0.040)
share of manufacturer as suppliers	0.244***	0.297**	0.003	0.291***	0.660***	-0.002	0.013	-0.007	-0.036	0.047	0.029	-0.022
	(0.061)	(0.128)	(0.010)	(0.054)	(0.116)	(0.009)	(0.032)	(0.034)	(0.052)	(0.043)	(0.037)	(0.069)
Year effect	0.009	0.086	-0.002	-0.030	-0.027	0.003	-0.007	-0.032**	0.051*	0.019	-0.009	0.085**
	(0.030)	(0.053)	(0.006)	(0.026)	(0.046)	(0.005)	(0.015)	(0.014)	(0.030)	(0.020)	(0.015)	(0.039)
Constant	2.458**	4.236	0.044	0.578	0.960	-0.075	-0.045	0.391	-0.580	-0.177	0.195	-0.387
	(0.991)	(2.919)	(0.084)	(0.391)	(2.517)	(0.100)	(0.518)	(0.764)	(0.421)	(0.307)	(0.789)	(0.809)
Observations	5530	2765	2765	4095	2035	2060	5530	2765	2765	4095	2035	2060
R-squared	0.133	0.231	0.027	0.096	0.184	0.082	0.054	0.079	0.111	0.068	0.078	0.192