

The Determinants of Trade Credit in Small and Medium Sized Firms in Kenya

Ruth Wambui Kang'ethe¹, Aquilars M. Kalio²

Jomo Kenyatta University of Agriculture and Technology, P.O Box 62000-00200, Nairobi, Kenya

Abstract: *Access to trade credit is hypothesized to be lower for Kenyan firms than for the developed countries. Despite the potential importance of trade credit, limited attention has been paid to its role and use, especially in developing countries. The main aim of the study was to find out the determinants of trade credit and moderating role age of the small and medium sized firms in Nakuru sub-county. The study was informed by Financial Motives and Commercial Motives models. This study adopted a descriptive survey. The population of study comprised of 6624 registered SMEs in Nakuru town. Simple random sampling was used to select a sample size of 197 SMEs. Documentary guide was used to collect secondary data. Descriptive statistics was used to test for normality of the data collected. Measures of central tendency were computed. Inferential statistics was used to draw implications from the data with regard to the regression model. Correlation analysis was utilized to test the hypothesis of the study. The study findings indicated that profitability, collateral, liquidity and inventory have a positive and significant effect on SME trade credit. The study concluded that SME, s need to establish a well-defined trade credit granting criteria so as to assess the creditworthiness of the buyers. Firms should be cautious while pledging an asset as collateral and should hold liquid assets to enable them meet their financial obligation.*

Keywords: Trade Credit, Profitability, Collateral, Liquidity, Inventory.

1. Introduction

Trade credit is one of the main sources of funding for worldwide companies (Van Horen, 2007). In all the economies, the volume of trade credit is higher than short-term loans received from banks (Blasio, 2005) and it results from payment intervals mutually agreed by non-financial companies. The importance of trade credit can also be seen from the proportion of investment that is financed through it. A study by Beck, Demirgüç-Kunt and Maksimovic (2008), using a survey that covers 48 countries shows that on average, 19.7% of all investment financed through external sources was done using trade credit. In fact, the authors found that in most countries, trade credit is the second most important source of external finance, preceded only by bank credit. As it may be observed, trade credit represents more than 30% of all external finance in developed economies such as France and the UK. Trade credit as measured by accounts receivable and accounts payable in the balance sheet of a firm, is an arrangement that allows firms to buy goods or services without making an immediate payment. It thus allows the separation of the exchange of goods and money over time. It is also well recognized that trade credit is likely to be a very expensive source of credit (Cunningham, 2004). Trade credit, with respect to both the amounts and terms, varies substantially across firms and industries and a substantial body of empirical research exists that attempts to explain this variation. Vaidya, (2012)

1.1 Problem Definition

Based on previous research, access to trade credit is hypothesized to be lower for Kenyan firms than for the developed countries. Most small and medium sized firms normally do not have access to capital market and often get financing problems in running their businesses. There may be several reasons for this. First, African owners may be subject to discrimination, that is, perceived as a group by

suppliers to be less reliable in repaying credit. This may be the case because African owners receive less credit in the first place and, therefore, have fewer possibilities to smooth cash-flow fluctuations. In a financially inefficient working environment, firms may have to seek alternative sources of external financing and trade credit constitutes such an alternative. SME in Kenya particularly in Nakuru County have been having problems in terms of trade credit as way of financing. In addition, most SMEs have not been able to make use of trade credit, hence resulting to failure or some using most costly terms of financing. Despite the potential importance of trade credit, limited attention has been paid to its role and use, especially in developing countries. Trade credit is one of the main sources of funding for worldwide companies. In all economies, the volume of trade credit is higher than short-term loans received from banks and it results from payment intervals mutually agreed by non-financial companies. Since a substantial number of studies have investigated the determinants of using trade credit. However, almost all of these studies are devoted to industrialized economies. Only a few researches have specifically been interested on developing countries' such as (McMillan and Woodruff, 1999; Fafchamps, 1997; Demirgüç-Kunt and Maksimovic, 2001; Fisman, 2001; Isaksson, 2002; Fisman and Love, 2003). It appears that companies operating in countries having underdeveloped and/or inefficient legal and financial system depend relatively more on trade credit (Johnson, McMillan and Woodruff, 2002; Beck, Demirgüç-Kunt and Maksimovic, 2008; Saito and Bandeira, 2010). There are many small and medium size firms with a great potential of growing if given the opportunity. There is therefore a need to research on the determinants of trade credit in order to know how this firms can alleviate this problem. This study therefore focused on examining the effect of inventory, collateral, liquidity and profitability on trade credit of firm.

2. Theoretical Framework

The study focuses on three main theories which are financial advantage theory, price discrimination theory and transaction cost theory. According to financial advantage theory, firms benefiting from an easy access to credit markets are able to use this borrowing capacity and act as financial intermediaries in favour of firms that suffer from limited access to credit (Marotta 2001). Suppliers may involve in credit activity as they hold a comparative advantage over traditional lenders in the resolution of information asymmetries. This triple advantage concerns information acquisition, enforcement of the contract, and liquidation process.

2.1 Empirical Reviews

Given that trade credit is extremely expensive this is as expected. Deloof and Jegers (1999) also report a negative relationship between net profits and accounts payable. Bougheas et al., (2009) find that profitability is positively related to both accounts receivable and accounts payable. This finding is interpreted as extra profit being channeled to accounts receivable and more profitable firms being more credit worthy receive more credit from their suppliers. On the relationship between profitability and trade credit, Nairobi Security Exchange (NSE) has emerged. Report negative relationship between profits and accounts receivable, but positive relationship between gross profits and accounts receivable. They equally show that net profits adversely affect accounts payable. This simply suggests that the urge to buy on credit decline as firm's capacity to generate funds internally is enhanced. In the same way, Deloof and Jegers (1999) find that net profits and accounts payable are inversely related. Vaidya (2011) shows that profits have significant negative effect on both accounts receivable, account payable and net trade credit supporting Burkart and Ellingsen (2009) contention that profitable but finance constrained firm would be tardy in offering trade credit.

Ho₁: Profitability has no significant effect on firm trade credit

2.1.1 Effect of Inventory on Firm's Trade Credit

Inventories have not been used as explanatory variable in empirical studies of trade credit very often. Mizen (2006) relate the ratio of finished goods inventories to total inventories in the regression analysis with respect to accounts payables and find a strong negative relationship between the two. They argue that the ratio of finished goods inventories to total inventories reflects the "supplier's advantage in liquidating the borrowers assets". If the ratio of finished goods inventories to total inventories is large this reflects a lowering of the supplier's advantage in repossessing and selling supplied goods because the buyer has transformed the raw material supplied into finished goods. Both banks and suppliers may face the same level of difficulty in selling repossessed finished goods. Thus accounts payable of firms with a high ratio of finished goods inventories to total inventories turn out to be lower. Cunat (2007) uses inventories as an explanatory variable while

explaining accounts payable of firms. He finds a significant and positive relationship. He argues that accounts payable are higher for firms with higher inventories because inventories act as collateral. Bougheas et al. (2009) relates finished and semi-finished goods inventories to both accounts receivable and accounts payable. They find a strong negative relationship between inventories and accounts receivables. They interpret this as providing strong evidence that firms use trade credit (i.e. allow buyers to delay payment) to increase sales and thus reduce inventories. Inventories turnout to be insignificant when related to accounts payable.

Ho₂: Inventory has no significant effect on firm trade credit

2.1.2 Effect of Liquidity on Firm Trade Credit

A number of studies have ascertained the role of liquid assets as determinant of trade credit. Such studies include Deloof and Jegers (1999); Bougheas, et al., (2009) and Cunat (2007). (Alphonse et al., 2003) opines that firms often finance short term needs with short term finance. Where such a matching approach is followed by firms, holding of liquid assets should positively impact trade credit. While Deloof and Jegers (1999) find that liquid assets are not related to account payable, Cunat (2007) reports that liquid assets negatively impacted accounts payable. Besides, the study shows that a fall in liquid assets will precipitate a rise in accounts payable. Bougheas et al. (2009) find that liquid assets have significant positive impact on accounts payable and significant negative impact on accounts receivable. Vaidya (2011) finds that liquid assets have significant positive influence on both account payable and accounts receivable contrary to the findings of (Bougheas, et al., 2009).

Ho₃: Liquidity has no significant effect on firm trade credit.

2.1.3 Collateral on Firm Trade Credit

As in Ruckes & von Rheinbaben (2004), if such information is disseminated through voluntary or unintentional leaks to third parties (such as competitors and suppliers), this can be highly detrimental to the borrower as well as to the customers. There is an additional reason, closer in spirit to the analysis by Boot and Thakor (2003), why information disclosure can represent a cost for the borrowing firm and for its customers. Boot and Thakor (2003) suggest that pledging an asset as collateral entails a loss of flexibility, which may represent the other side of its financial advantage. Trade credit is usually a highly flexible form of credit, which relies mostly on informal mechanisms of enforcement, based on 'reputation' and long-term relationships and often without any written contract. For example, suppliers are often willing to accept late payments without charging interest, or to allow customers to take unearned cash discounts, especially when they have a long-standing relationship (Ng, Smith & Smith, 1999; Summers and Wilson, 2002; Cannari, Chiri and Omiccioli, 2004). Besides being an obvious advantage for the buyer, this flexibility can also benefit the supplier, when he has an interest in relaxing ex post trade credit terms, for example in order to help customers overcome a temporary financial difficulty, thereby protecting his long-term investment. In this case suppliers can be seen as liquidity insurance providers (Cuñat, 2002).

Ho₄: Collateral has no significant effect on firm trade credit

3. Methodology

This study adopted explanatory because the research is a cause-effect relationship. The population of study comprised of 6624 SMEs registered as companies in Nakuru town which is located in Nakuru County. Taro Yamane (1973) sample size formula was used to select a sample size of 197 SMEs . The study used stratified random sampling technique to select the SMEs where owners/managers were picked from. The study used documentary guide which were used to collect secondary data. Reliability was determined by use of cronbach alpha which resulted to above 0.7. Since the data collected was quantitative in nature and sought to determine the degree of association and cause-effect relationship between the variables. Descriptive, inferential, correlation and multiple regressions was used in analyzing the data. The multiple regression model used in this study is given as;

$$y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + e$$

y Trade credit (Dependent Variable)

β_0 Is the constant of the equation x_1 = Profitability, x_2 = Collateral, x_3 = Liquidity, x_4 = Inventory, e= error

4. Findings

In table 1 findings on profitability, collateral, inventory, liquidity and firm size for all sectors were illustrated. Results from the table reported that ROA for all sectors comprised of 8.03%. In addition, collateral within all sectors was at a mean ratio of 1.3796. Findings showed that liquidity was 1.9752 current assets over current liabilities (mean=1.7952) and a firm size of 6.6235. Firms in all sectors sampled had inventory at a mean ratio of 0.8028.

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Profitability	203	-0.31	0.47	0.0803	0.09548	-0.274	4.351
Collateral	203	0.31	4.83	1.3796	1.07602	1.242	0.899
Liquidity	203	0	12.41	1.9752	1.58327	3.318	13.833
Inventory	203	0	3.16	0.8028	0.58371	1.023	1.371
Firm size	203	3.11	9.96	6.6235	1.8128	-0.364	-0.898

4.1 Correlation Results

Table 2 presents Pearson correlation results of the relationship between dependent and independent variables to assess the degree/strength between the variables. The findings revealed that profitability was positively and significantly associated with trade credit (r = 0.618, p<0.01). Further, collateral was positively and significantly correlated to trade credit (r = 0.420, p<0.01). Liquidity was positively correlated with trade credit (r = 0.659, p<0.01) an indication of 65.9% positive relationship with trade credit. Additionally, inventory was indicated to positively relate with trade credit(r = 0.552, p<0.01). This implies that profitability, collateral, liquidity and inventory are expected to influence trade credit.

Table 2: Correlation Results

	Trade Credit	Profitability	Collateral	Liquidity	Inventory
Trade Credit	1				
Profitability	.618**	1			
Collateral	.420**	.382**	1		
Liquidity	.659**	.663**	.308**	1	
Inventory	.552**	.467**	.374**	.492**	1

** Correlation is significant at the 0.01 level (2-tailed).

4.2 Hypothesis Testing

The results from table 3 show that the study multiple regression model had a coefficient of determination (R2) of about 0.555. This means that 55.5% variation of trade credit is explained/predicted by joint contribution of profitability, collateral, liquidity and inventory Durbin–Watson statistic is within the thumb rule value of 1 to 2, thus from the table, Durbin Watson statistics value was 1.942 indicating lack of serial correlation. Table 3 reveals that the F-value of 46.776 with a p value of 0.00 significant at 5% indicate that the

overall regression model is significant, hence, the joint contribution of the independent variables was significant in predicting trade credit. The study revealed in Table 3 was used to test the hypothesis (Ho₁) that profitability has no significant effect on trade credit. Research findings showed that profitability had coefficient estimate which was significant basing on β_1 = 0.224 (p-value = 0.004 which is less than α = 0.01) implying that we reject the null hypothesis stating that profitability has no significant effect on trade credit. This indicates that for each unit increase in profitability, there is 0.224 units increase in trade credit. This means the more profitable firms get more credit and therefore operators of the SME’S should enhance profitability. Contrary to the results, Deloof and Jegers (1999) report a negative relationship between net profits and accounts payable. In a similar vein, Vaidya (2011) shows that profits have significant negative effect on account payable and net trade credit. This is in support of contention that profitable but finance constrained firms would be belated in offering trade credit. As much as trade credit is a source of financing for a buyer through accounts payable, while for the seller, trade credit is an investment in accounts receivable, This is due to the fact that provision of trade credit entails negative Burkart and Ellingsen (2009) effects such as default risk or late payment, which may damage firm profitability. In this case, granting trade credit enhances firm’s sales, and consequently may result in higher profitability. According to Bougheas et.al. (2009) profitability is positively related to accounts payable. More profitable firms are more credit worthy hence they receive more credit from their suppliers.

Hypothesis 2 (Ho₂) stated that collateral has no significant effect on trade credit. Findings showed that collateral had coefficient of estimate which was significant basing on β_2 = 0.143 (p-value = 0.02 which is less than α = 0.01) hence we

reject the null hypothesis, and conclude that collateral has significant effect on trade credit. This implies that for each unit increase in collateral, there is 0.143 unit increase in trade credit. Therefore, those with more collateral enhance their chance of attaining greater credit hence the SME owners should strive to get at least some collateral.

Hypothesis 3 (Ho₃) postulated that liquidity has no significant effect on trade credit. However, study findings showed that liquidity had coefficient of estimate which was significant based on $\beta_3 = 0.36$ (p-value = 0.000 which is less than $\alpha = 0.01$) hence reject the null hypothesis and conclude that liquidity has a significant effect on trade credit. This indicates that for each unit increase in liquidity, there to 0.36 units increase in trade credit. Therefore the more liquid one is, the more they are likely to get access to trade credit and thus the SME owners need a level of liquidity at any time in order to access trade credit. It is evident that liquid assets in form of cash and other short term securities held by firms have been used as a determinant of trade credit.

Hypothesis 4 (Ho₄) stated that inventory has no significant effect on trade credit. Findings showed that inventory had coefficient of estimate which was significant based on $\beta_4 = 0.216$ (p-value = 0.001 which is less than $\alpha = 0.01$) thus we reject the null hypothesis and conclude that inventory has a significant effect on trade credit. This suggests that there is 0.216 unit increase in trade credit for each unit increase in inventory. According to this, one ought to have inventory in order to get trade credit which also signifies that it's important for the SMEs owners to strive to attain inventory in order to access trade credit. Thus, firms use trade credit (allow buyers to delay payment) so as to increase sales and reduce inventories. The rule of thumb was applied in the interpretation of the variance inflation factor. From Table 4.9.3, the VIF for all the estimated parameters was found to be less than 4, which indicates the absence of multicollinearity among the independent factors. This implies that the variation contributed by each of the independent factors was significant independently and all the factors should be included in the prediction model.

Table 3: Coefficient of Estimate

	Unstandardized	Standardized	Collinearity				
	Coefficients	Coefficients	Statistics				
	B	Std. Error	Beta	T	Sig.	Tolerance	VIF
(Constant)	-0.049	0.246		0.199	0.842		
profitability	0.236	0.08	0.224	2.938	0.004	0.512	1.952
collateral	0.143	0.061	0.143	2.355	0.020	0.805	1.242
liquidity	0.313	0.066	0.36	4.761	0.000	0.518	1.93
inventory	0.265	0.08	0.216	3.29	0.001	0.685	1.46
R Square	0.555						
Adjusted R Square	0.543						
F	46.776						
Sig.	.000b						
a Dependent Variable: trade credit							

5. Conclusion and recommendation

The more profitable a firm is, the more easier it becomes for such a firm to be able to get supplies in credit as it is deemed to be able to repay. Granting trade credit heightens firm's sales and results in higher profitability. The SMEs owners should thrive to attain some assets so as when required as collateral, they may stand a better chance to get the credit. However, long term investments for suppliers are protected when there is interest in relaxing ex post trade credit terms so as to aid customers meet their financial obligation. Liquidity had a positive and significant effect on trade credit. Specifically, liquid assets (cash and other short term securities) have an impact on trade credit. Due to the fact that firms finance short term needs with short term finance, there is a positive relationship between accounts payable and holding of liquid assets. However, liquid assets have a negative impact on accounts payable. Thus, a decline in liquid assets is accompanied by a rise in accounts payable. Accounts payable are higher for firms with higher inventories since inventories act as collateral. However,

whenever firms use trade credit to increase sales, inventories are reduced. There is evidence from the study results, that profitability has a positive effect on trade credit. As a result, firms need to establish a well-defined trade credit granting criteria so as to assess the creditworthiness of the buyers so as to avoid default risk or late payment by buyers. Further, for firms to enhance gross profits and sales there is also need to discriminate between buyers

There is also evidence that collateral has a positive and significant effect on trade credit. However, firms should be cautious while pledging an asset as a collateral since the bank has exclusive access to pertinent information and such information can be harmful to both the borrower and customer if it disseminated to third parties. Similarly, liquidity was also found to have a positive and significant effect on firm trade credit. Therefore, firms with a high share of short term assets tend to use more trade credit as a form of short-term financing. There is need for firms to mitigate the effects of firms' financial constraints through trade credit. Also firms should hold liquid assets so that they can be able to meet their financial obligation. Moreover, through trade

credit, credit constrained firms can afford to insure their customers because they are themselves insured by their suppliers. Finally, inventory was shown to have a positive and significant effect on trade credit. Thus, there is need for firms to enhance their level of inventories since it can be used as a collateral and thereby enhance trade credit. There is also need for firms to transform the raw materials supplied into finished goods so that suppliers' advantage in repossessing and selling supplied goods is reduced.

5.1 Recommendations for Further Studies

This study has looked at determinants of trade credit among small and medium sized firms in Nakuru sub-county. This study recommends that another study be done to augment finding in this study; it therefore recommends a study be done to establish the reason as to why firms that face liquidity shocks prefer trade credit rather than bank loans. The findings were also limited to profitability, collateral, liquidity and inventory. There could be other factors that could influence trade credit. For instance, volume of purchases, frequency of transactions and product characteristics. With these considerations, there will be conclusive results on determinants of trade credit. Other researches could also be done on other towns to find out the determinants of trade credit.

References

- [1] Alphonse, P., Ducret, J., and E. Severin (2003). 'When Trade Credit Facilitates Access to Bank Finance: evidence from US small business data.' Mimeograph, University of Lille 2
- [2] Boot, A. W. A. and Thakor, A. V. (2003), 'The Economic Value of Flexibility When There is Disagreement', CEPR, Discussion Paper 3709.
- [3] Bougheas S., Mateut, S. and Mizen. P. (2009) Corporate trade credit and inventories: evidence of a trade-off from accounts payable and receivable. *Journal of Banking and Finance*, 33,2:300-307.
- [4] Burkart M. and Ellingsen, T. (2004) In-kind finance. A theory of trade credit. *American Economic Review*, 94,3:569-590
- [5] Cannari, L., Chiri, S. and Omiccioli, M. (2004), 'Condizioni del creditocommerciale e differenziazione del l a client el a', *Bancad'Itali a, Te midi discussion*, n. 495.
- [6] Cunat V. (2003), "Trade Credit: Suppliers as Debt Collectors and Insurance Providers", *Mimeo*, 44 pages.
- [7] Cunat, V. (2007) Trade credit: suppliers as debt collectors and insurance providers, *Review of Financial Studies*, 20,2:491-527
- [8] Cunningham, R. (2004) Trade credit and credit rationing in Canadian firms, Bank of Canada Working Paper 49.
- [9] Deloof M. and M. Jegers (1999) "Trade Credit, Corporate Groups and the Financing of Belgian Firms" *Journal of Business Finance and Accounting*, 26(7):945-966.
- [10] Deloof, M. and Jegers, M. (1996) Trade credit, product quality, and intragroup trade: some European evidence, *Financial Management* 25:33-43.
- [11] Demirgüç-Kunt, A. and V. Maksimovic (2001). 'Firms as financial intermediaries: evidence from trade credit data.' Working paper No. 2696, The World Bank
- [12] Fisman, R. and Raturi, M. (2004) Does competition encourage credit provision? evidence from African trade credit relationships, *Review of Economics and Statistics*, 86:345-352.
- [13] Fisman, R., and I. Love. 2003. "Trade Credit, Financial Intermediary Development, and Industry Growth." *The Journal of Finance* 58 (1): 353-74
- [14] Frank M. and Maksimovic V. (2001), "Trade Credit, Collateral and Adverse Selection", *Mimeo*.
- [15] Garcia-Appendig, Emilia (2007), "Trade Credit and Information Spillovers," UPF thesis, September.
- [16] Giannetti, M., Burkart, M. and Ellingsen, T. (2008) What you sell is what you lend? explaining trade credit contracts, *Review of Financial Studies*, 24,4:1261-1298.
- [17] Giannetti, Mariassunta (2003), "Do Better Institutions Mitigate Agency Problems? Evidence from Corporate Finance Choices," *Journal of Financial and Quantitative Analysis* 38 (1):185- 212.
- [18] Isakson, A. (2002) Trade credit in Kenyan manufacturing: evidence from plant-level data, SIN Working Paper No. 4
- [19] Kohler, M., Britton, E., and T. Yates (2000). 'Trade credit and the monetary transmission mechanism.' *Bank of England Discussion Paper*.
- [20] Marotta G. (2001), "Is Trade Credit More Expensive than Bank Loans? Evidence from Italian firm-level data", University of Modena
- [21] Meltzer, A. (1960). 'Mercantile credit, monetary policy, and the size of firms.' *Review of Economics and Statistics*, 42: 429-437
- [22] Mester, L. J., Nakamura, L. I. and Renault, M. (2002), 'Checking Accounts and Bank Monitoring', *Wharton Financial Institutions Center, Working Paper* 99-02-C.
- [23] Miwa, Y. and Ramseyer, J. M. (2005) Trade credit, bank loans and monitoring: evidence from Japan, CARF Working Paper F-054
- [24] Summers, B. and Wilson, N. (2001), 'Trade Credit and Customer Relationships', *University of Leeds, Credit Management Research Center, mimeo*.
- [25] Vaidya, R. J. (2011) The determinants of trade credit; evidence from Indian manufacturing firms, *Modern Economy*, 2:707-716
- [26] Van Horen, N. (2005) Trade credit as a competitive tool: evidence from developing countries, World Bank, mimeograph

Author Profile



Ruth Wambui Kang'ethe has done MBA finance option (Jomo Kenyatta University of Agriculture and Technology- Kenya), Bachelor of Commerce finance (Kabarak University -Kenya), Certified Public Accountant of Kenya (CPAK), Currently working at Kenya power and lighting Company.