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Trade Credit and Bank Credit in SMEs in Cameroon: Substitute or Complement?

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Abstract

This article empirically examines the relationship between bank credit and trade credit in Cameroonian small and medium-sized enterprises (SMEs), in order to determine whether these two sources of financing operate as substitutes or complements. The study is based on data from 583 Cameroonian SMEs over the period 2020–2023 and employs a system of simultaneous equations to account for endogeneity issues and reverse causality between the two forms of financing. The results show that the relationship between bank credit and trade credit is not unidirectional. A contraction in bank credit leads to an increased reliance on trade credit, supporting the substitution hypothesis. Conversely, an expansion of bank credit is, in certain configurations, associated with an increase in trade credit, suggesting a complementary relationship. These findings highlight the role of trade credit as an adjustment mechanism in the presence of financial constraints and underscore the complexity of financing choices among Cameroonian SMEs.

Keywords: *Bank credit, cameroonian smes, Complementarity, substitution, trade credit*

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1. Introduction

In a global economic environment characterized by heightened competition and market volatility, firms must continually manage liquidity needs to ensure their day-to-day operations and support their growth (OECD, 2023). This challenge is particularly acute for SMEs, which frequently encounter performance obstacles stemming from bank credit rationing (Beck et al., 2018; Ayyagari et al., 2017). These constraints are explained by limited collateral, high informational opacity, and the frequent absence of audited financial reports, which amplify banks' risk perception and restrict access to formal financing (Benzizoun et al., 2023; Ngongang, 2015; Amadasun and Mutezo, 2022; Seema et al., 2023).

Given this reality, SME managers diversify their financing and commercial investment sources to secure their cash-flow and ensure business continuity. In this context, trade credit (most commonly used by these firms) positions itself as a key solution to their financing challenges. Defined as a mechanism enabling the exchange of goods and services without immediate settlement (World Bank, 2023), it represents a strategic alternative, particularly where access to bank credit is limited. It takes two distinct forms: granted trade credit, whereby the firm extends a payment deferral to its customers (typically ranging from 30 to 90 days) based on commercial trust between partners (Kuveya, 2020), and received trade credit, which refers to short-term supplier financing that enables the firm to defer payment for purchased goods or services after delivery (Petersen and Rajan, 1997). This mechanism not only addresses short-term liquidity needs but also strengthens commercial relationships, offering flexibility that traditional bank credit does not always guarantee (Steinerowska-Streb and Steiner, 2014).

Thus, in the context of Cameroonian SMEs, trade credit can play a dual managerial and strategic role: it acts as a substitute for bank credit when access to formal loans is limited, and as a complement when trust-based relationships and financial transparency help broaden overall access to financing. This dual function underscores the importance for managers of developing proactive financing management that combines formal and informal sources, in order to optimize firm performance and reduce the risks associated with exclusive reliance on bank credit.

Preliminary theoretical debates among scholars identify several sources that may motivate trade credit financing. Some present it as a substitute financing tool, used on the one hand by client firms to replace bank credit that is difficult to access (Chen et al., 2019; Couppey-Soubeyran et al., 2012; Myers and Majluf, 1984; Duca, 1986; Peterson and Rajan, 1997). On the other hand, it is used by supplier firms to grant payment deferrals in order to support their sales policies (García-Teruel and Martínez-Solano, 2010; Cheng and Pike, 2003; Van Horen, 2005; Palmatier et al., 2007; Tuli et al., 2010; Villena and Craighead, 2017; Wathne et al., 2018), or to build lasting commercial relationships (Evan, 1965; Harrison, 1997). Cash-rich firms thus transfer resources to cash-poor firms, mitigating the negative effects of bank credit contraction (Coricelli and Frigerio, 2019).

Conversely, other works present trade credit as a complementary financing tool (Koralun-Bereźnicka, 2023; Farooq et al., 2021; Ashiqur Rahman et al., 2018). In this view, it acts as a signal to ease credit constraints for firms struggling to obtain bank loans due to informational asymmetries. Similarly, Burkart and Ellingsen (2004), through an agency model, demonstrate that additional use of trade credit allows investment volumes to be adequately adjusted and

further prevents managers from engaging in liquidity diversion. Consequently, bank credit and trade credit are complementary in a context constrained by bank debt.

Most studies showing the impact of the substitution or complementarity of trade credit with bank credit on performance focus on advanced economies (Jin et al., 2025; Afrifa et al., 2023; McGuinness et al., 2018; Yazdanfar and Öhman, 2017; Illueca-Munoz et al., 2016; McGuinness and Hogan, 2016; Engemann et al., 2014). To our knowledge, no study has yet been dedicated to Central African countries, and to Cameroon in particular, even though trade credit remains highly demanded as a significant fraction of external financing (Chaari and Couppey-Soubeyran, 2008). Moreover, there is considerable contradictory evidence regarding the relationship between trade credit and bank credit (Palacín-Sánchez et al., 2019; Yang, 2011). These conflicting findings underscore the need to address a central question in the literature: are trade credit and bank credit substitutable or complementary instruments for Cameroonian SMEs?

Our contribution is relevant for three reasons. First, due to the scarcity of research on this topic in the Cameroonian context. Second, it will provide the scientific community with a theoretical contribution on a more targeted choice of alternative financing in Cameroonian SMEs. Finally, our study simultaneously addresses both forms of trade credit, an approach that is rare in the existing literature.

The article is structured in three parts. First, we present the literature review examining the relationship between trade credit and bank credit. Next, we present the sample and the main methodological aspects adopted. Finally, we present and discuss the results of our research.

2. The relationship between trade credit and bank credit: literature review

2.1. Trade credit and bank credit: a substitution relationship

Several prior studies indicate that firms subject to bank credit rationing resort to trade credit to mitigate the financial difficulties they face (Meltzer, 1960; Fisman and Love, 2003). The substitution relationship here can be explained by the financial pecking order theory (Myers and Majluf, 1984). According to this theory, managers prioritize financing preferences in the following sequence: internal financing, risk-free debt, risky debt, and capital increase. Firms thus first resort to a financing policy aimed at minimizing the costs associated with information asymmetry, preferring internal to external financing (Adair and Adaskou, 2011). Indeed, to maximize profit while preserving their informational independence vis-à-vis external actors, firms will choose to substitute trade credit for bank credit.

Along these lines, numerous studies highlight the role of trade credit as a substitute for bank credit. McGuinness et al. (2018) support the substitution hypothesis in the European Union context during recent economic crises. In Ireland, McGuinness and Hogan (2016) demonstrate the substitution effect both during periods of growth and crisis. Nilsen (2002), based on U.S. manufacturing firms, shows that during monetary tightening, firms increase their demand for trade credit. Similarly, Atanasova and Wilson (2003), using a panel dataset of 639 UK firms, show that during periods of monetary tightening, firms are constrained to replace bank credit with trade credit. Mateut et al. (2006), studying UK manufacturing firms, suggest that bank credit declined relative to trade credit following monetary policy tightening. Rose Cunningham (2005), after a study of 28,000 Canadian firms, finds that firms with average profitability substitute trade credit for bank credit, presumably to mitigate the impact of bank credit limitations.

Atanasova (2007) argues that trade credit is used by British firms as a marginal substitute for institutional financing when they face credit constraints. Gama et al. (2008), through a study of Spanish and Portuguese SMEs in the food and beverage manufacturing sector, confirm that firms maintaining an exclusive relationship with one bank signal a higher degree of substitution between bank credit and trade credit as financing sources, indicating greater severity of adverse selection. Ying Ge and Jianping Qiu (2007) find that Chinese non-public firms with limited bank support make greater use of trade credit to sustain their growth.

In contrast, Norden and Van Kampen (2015) find that substitutability between bank credit and trade credit tends to weaken during crisis periods. Also, during crises, trade credit is a source of financial shock contagion through the supply chain, generating an important amplification mechanism (Boissay and Gropp, 2013; Raddatz, 2010). Additionally, Du et al. (2012) in China suggest that trade credit cannot effectively substitute for bank loans. Based on these analyses, the following hypothesis is formulated:

Hypothesis H1: A decrease in bank credit leads to an increase in the use of trade credit, and vice versa.

2.2. Trade Credit and Bank Credit: a Complementarity relationship

The complementarity of trade credit with bank credit can be explained by two theories. According to signaling theory in a context of information asymmetry, better-informed agents can send a costly but credible signal to reveal their true quality to investors in the market (Spence, 1973). Along the same lines, Ross (1977) goes further by asserting that any financial decision (such as a change in credit policy or debt level) constitutes a signal of future performance, transmitted by the manager. Thus, trade credit helps mitigate banks' adverse selection problem by identifying firms with good investment prospects (Cunningham, 2005). In other words, the history of trade credit use constitutes a credible signal of client reliability, which during a tightening period serves as a key element on which the bank can rely to make a financing decision.

Furthermore, according to inter-organizational relations theory, organizations do not operate in isolation but maintain mutually dependent relationships with other actors in their environment (Evan, 1965). These relationships structure exchanges of resources, information, skills, and financing, and significantly influence organizational performance. Thus, trade credit can be used as a strategic lever based on lasting supplier-client relationships, capable of stabilizing cash flow and complementing short-term bank credit.

From an empirical perspective, Koralun-Bereźnicka (2023) highlights complementarity relationships between net trade credit and short-term bank loans for SMEs, thereby contradicting the initial substitution hypothesis. Similarly, Yazdanfar and Öhman (2017) reveal that trade credit complements bank credit. In the European Union context, Illueca-Munoz et al. (2016) further demonstrate a complementarity relationship between trade credit and bank credit. Based on a sample of 1,140 firms, Ashiqur Rahman et al. (2018) show that firms benefiting from a bank overdraft facility make greater use of trade credit, confirming the complementarity between bank credit and trade credit. Cook (1999) demonstrated that trade credit can serve as a signal, as firms using it have a high probability of obtaining bank credit.

However, controversially, Petersen and Rajan (1997) note that excessive trade credit could send a negative signal to a bank,

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indicating that a firm cannot obtain credit from any bank. Biais and Gollier (1997) argued that trade credit acts as a credible means for the supplier, which can be combined with bank information to reduce information asymmetry and prevent credit rationing, thereby obtaining financing for a positive-NPV project. Conversely, the supplier, acting on private information about the client, is willing to grant trade credit and thus bear the default risk. The bank can then use trade credit as additional information to mitigate credit rationing due to adverse selection. They concluded that trade credit and bank credit are two complementary financial resources. Based on these analyses, the following hypothesis is formulated:

Hypothesis H2: An increase in bank credit is accompanied by an increase in trade credit use by Cameroonian SMEs, and vice versa.

3. Data and sample distribution

The data used in this work come from the National Institute of Statistics of Cameroon (INS) and cover the end-of-year balance sheets and income statements of Cameroonian firms, belonging to several sectors and sub-sectors of activity over the period 2021–2023.

These data allowed us to assess the financial situation of the firms concerned through the calculation of ratios commonly used in the literature (Chartou et al., 2004) within the framework of financial statement analysis. To ensure econometric robustness, we subsequently applied a rigorous sample-filtering and data-cleaning protocol. Specifically, we first excluded large enterprises to focus exclusively on SMEs. Next, using listwise deletion, we eliminated observations with missing values or accounting anomalies (such as non-positive total assets, sales, or purchases) while retaining only firms with at least three consecutive years of complete data. Finally, to mitigate the distorting impact of extreme outliers, all continuous variables were winsorized at the 1st and 99th percentiles. Ultimately, this procedure yielded a final sample of 697 firms.

Table 1. Sample Distribution by Firm Type

Firm Size	*Number of Firms*	*Percentage*
SMEs	583	83.64%
Large Enterprises	114	16.36%
Total	697	100%

Source: Stata14 Software

This table highlights the structure of the sample. Two main categories of firms are distinguished: small and medium-sized enterprises (SMEs) and large enterprises (LEs). SMEs constitute the majority in this sample with 583 firms, representing 83.64% of the total. This figure reflects strong SME representation in the sample, consistent with Cameroon's economic structure, where SMEs constitute the main driver of economic activity, employment, and local innovation. Large enterprises, numbering 114, represent only 16.36% of the total.

Table 2. Sample Distribution by Sector of Activity

Size	*Primary*	*Secondary*	*Tertiary*	*Total*
SMEs	49	161	373	583
LEs	0	94	20	114
Total	49	255	393	697

Source: Stata14 Software

This table crosses two dimensions: firm size (SME/LE) and sector of activity (primary, secondary, tertiary). The primary sector accounts for only 49 firms, all of which are SMEs. The secondary sector (industry, construction, processing) holds an intermediate position with 255 firms (36.58%), comprising 161 SMEs and 94 LEs. The tertiary sector, which groups service activities (trade, transport, finance, education, health, etc.), is largely predominant with 393 firms (56.38% of the total), of which 373 are SMEs.

Table 3. Sample Distribution by Sub-sector of Activity

Size	*Primary*	*Agri-food & Other Industries*	*Construction*	*Trade*	*Services*	*Total*
SMEs	*49*	*111*	*50*	*54*	*319*	*583*
Les	*0*	*3*	*91*	*2*	*18*	*114*
Total	*49*	*114*	*141*	*56*	*337*	*697*

Source: Stata14 Software

This table also crosses two dimensions: firm size (SME/LE) and their distribution across six sub-sectors of activity (primary, construction, agri-food industries, other industries, trade, services). The analysis reveals a significant concentration of SMEs in certain key areas. Of the 583 SMEs, the majority is in the services sub-sector (319 firms), followed by agri-food and other industries (111), construction (50), and primary (49). Large enterprises are predominantly present in construction (91 firms), reflecting the greater financial and organizational requirements of this sector. This sectorial distribution highlights structural disparities between SMEs and large enterprises and underlines the need to tailor financing and support policies according to sectorial specificities and firm size.

Table 4. Descriptive Statistics

Variables	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*
BC	583	0.1817	0.2602	0	0.9994
CCR	583	0.1244	0.2865	0	0.9962
CCF	583	0.3940	0.3958	0	0.9999
Invent	583	0.0709	0.0841	0	0.1999
LG	583	0.9916	0.6393	0	1.9996
Liquidity	583	0.2438	0.3728	0	1
Debt_ratio	583	0.6275	0.2966	0	0.9000
Asset_Growth	583	0.0807	0.3505	-0.9997	0.9999
Asset_Tang	583	0.2652	0.2794	0	0.9996
Size	583	20.432	3.229	0	27.085
Rent_sales	583	-0.1321	0.3701	-0.9968	0.7995
Rent_Assets	583	-0.0443	0.2070	-0.9997	0.9664
Rent_expl	583	0.1248	0.1430	0	0.4999
Current	583	0.4702	0.2406	0	0.6999
rot_cc	583	141.85	140.24	0	359.92
Invest_RD	583	0.0028	0.0134	0	0.0999
QL_Ratio	583	0.0817	0.0972	0	0.2999
Fin_Cost	583	0.0090	0.0393	0	0.3996
Stfinan	583	0.0907	0.1346	0	0.3998
Ltfinan	583	0.0519	0.1144	0	0.6988
NPM_lag1	583	-0.0387	0.1955	-0.4997	0.4990
QM_lag1	583	0.2880	1.2692	0	25.600
QM_lag2	583	0.3091	1.1884	0	24.556

Source: Authors

The table presents descriptive statistics for the variables used in the analysis, calculated from a sample of 583 Cameroonian SMEs. The results indicate marked heterogeneity in financial structures and financing modes. On average, bank credit (*BC*) represents 18.2% of total assets, while received trade credit (*CCR*) and granted trade credit (*CCF*) amount to 12.4% and 39.4% respectively. The high standard deviations observed for these variables reflect a strong dispersion of financing behaviors, with some firms not relying on any of these sources while others depend on them heavily. This heterogeneity suggests the existence of differentiated financial choices within the sample.

Other variables highlight significant financial constraints. Inventories represent on average 7.1% of total assets, while the liquidity ratio remains low (0.24). The average debt ratio is relatively high (62.8%) and asset tangibility remains limited (26.5%), which is likely

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Table 5. Correlation Matrix

	BC	CCR	CCF	Invent	LG	Liquidity	Debt_ratio	Asset_Growth	Asset_Tang	SeizeCA	Rent_Sales	Rent_Act	Rent_exp	Current	rot_cc	Invest_RD	QL_Ratio	Fin_Cost	Stfinan	Ltfinan	NPM_lag1	QM_lag1	QM_lag2
BC	1																						
CCR	0,01	1																					
CCF	0,01	-0,02	1																				
Invent	0,03	0,17	-0,15	1																			
LG	0,23	-0,01	0,14	0,18	1																		
Liquidity	0,39	0,03	0,04	0,02	0,15	1																	
Debt_ratio	0,02	0,10	0,23	0,11	-0,29	0,09	1																
Asset_Growth	0,14	-0,00	0,07	0,00	0,09	0,11	-0,18	1															
Asset_Tang	0,18	0,05	-0,17	-0,12	-0,28	0,05	-0,08	-0,14	1														
SeizeCA	0,09	0,03	0,10	0,16	0,14	0,20	0,03	0,09	0,04	1													
Rent_Ventes	-0,00	0,06	-0,24	-0,06	0,17	0,07	-0,26	0,03	-0,06	0,06	1												
Rent_Actifs	-0,01	0,03	-0,08	-0,07	0,12	0,08	-0,25	0,12	-0,04	0,04	0,58	1											
Rent_expl	0,00	-0,04	0,05	-0,28	-0,01	0,08	-0,15	0,03	0,23	0,15	0,30	0,26	1										
Current	-0,06	0,03	0,21	0,30	0,43	-0,012	0,17	-0,13	-0,63	-0,00	0,02	-0,05	-0,29	1									
rot_cc	0,02	-0,01	0,97	-0,14	0,12	0,05	0,23	0,06	-0,17	0,09	-0,24	-0,09	0,03	0,21	1								
Invest_RD	-0,04	-0,00	-0,06	0,00	-0,07	0,09	-0,00	0,00	0,04	0,04	0,01	-0,00	0,08	-0,08	-0,06	1							
QL_Ratio	-0,17	-0,09	-0,14	-0,18	-0,06	-0,04	-0,15	0,00	-0,12	0,07	0,12	0,07	0,07	-0,13	-0,14	0,04	1						
Fin_CostTD	0,16	0,02	-0,13	-0,00	0,12	0,04	-0,12	0,05	0,03	-0,03	0,10	0,04	0,03	0,01	-0,13	-0,02	0,03	1					
Stfinan	0,68	-0,00	0,00	0,00	0,06	0,47	0,17	-0,03	0,26	0,03	-0,09	-0,10	0,04	-0,10	0,01	0,04	-0,1	0,08	1				
Ltfinan	0,44	0,07	-0,02	0,09	0,10	0,01	0,14	-0,01	-0,05	0,00	-0,02	-0,09	-0,14	0,13	-0,03	-0,06	-0,21	0,14	0,07	1			
NPM_lag1	-0,00	-0,05	-0,01	-0,13	0,16	0,11	-0,17	-0,01	-0,02	0,07	0,37	0,20	0,26	-0,04	-0,01	0,00	0,16	-0,00	-0,04	-0,10	1		
QM_lag1	-0,03	0,04	-0,12	0,10	0,04	-0,05	-0,07	0,07	-0,06	0,01	0,09	0,11	-0,06	0,06	-0,13	-0,01	0,08	0,07	-0,05	0,01	0,03	1	
QM_lag2	-0,02	0,02	-0,14	0,09	0,05	-0,04	-0,08	0,09	-0,07	-0,01	0,09	0,08	-0,06	0,07	-0,14	-0,01	0,08	0,12	-0,04	0,04	0,03	0,90	1

Source: Authors

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to restrict access to bank credit. Profitability indicators show low or even negative average values for sales and asset returns, while operating profitability remains positive on average. Furthermore, R&D expenditures are marginal and short-term financing dominates long-term financing. Overall, these descriptive statistics justify the use of econometric methods that account for endogeneity and the complexity of the relationships between bank credit and trade credit.

This correlation matrix reveals the linear relationships between the various financial variables of the firms studied. Correlations range between −1 and +1, where a value close to 0 indicates the absence of a linear relationship, while a value close to +1 or -1 signals a strong positive or negative correlation respectively.

Analysis of the correlation matrix of Cameroonian SMEs reveals contrasting relationships between different financing sources and performance. Bank credit (*BC*) shows moderate positive correlations with liquidity (0.397), firm size measured by turnover (0.092), short-term financing ($Stfinan$: 0.680), and long-term financing ($Ltfinan$: 0.446). These results suggest that access to bank credit remains closely linked to the overall financial capacity and financing structure of firms, confirming that banks favor more liquid and better-structured firms. By contrast, the correlations between received trade credit (CCR) and granted trade credit (CCF) with bank credit are very weak or even negative, indicating a relative independence between these sources of financing. This observation supports the coexistence of distinct financing mechanisms, where trade credit plays a specific, potentially alternative role, particularly in contexts of constrained access to bank credit.

Second, the analysis reveals interesting relationships between trade credit, performance, and management variables. The near-perfect link between CCF and trade credit rotation (*rot_cc*: 0.975) confirms the internal consistency of the measures and underscores that granting credit to clients is strongly associated with the dynamics of payment terms. Profitability indicators (sales, asset, and operating profitability) are strongly and positively correlated with each other, reflecting a robust economic logic of overall performance. However, these same indicators display negative correlations with the debt ratio (*Debt_ratio*), suggesting that excessive recourse to debt may weigh on performance. Finally, the very high correlations between the lagged management quality indicators (QM_lag1 and QM_lag2: 0.905) confirm their strong temporal persistence, justifying their use in a dynamic approach. To formally evaluate multicollinearity, variance inflation factors (VIF) were computed for all model specifications; all individual VIF values remain well below the standard threshold of 5 (with a mean VIF below 2.0), ruling out severe multicollinearity concerns. Furthermore, although the correlation between QM_lag1 and QM_lag2 is high (0.905), these two lagged dynamic indicators are never entered concurrently in any single structural equation: QM_lag1 enters exclusively in the received trade credit system (System 1), whereas QM_lag2 enters only in the granted trade credit system (System 2), thereby eliminating potential collinearity between dynamic regressors. Overall, the absence of excessive correlations between the majority of key variables limits the risk of multicollinearity and reinforces the relevance of the econometric model designed to analyze the interactions between trade credit, bank credit, and SME performance.

4. Empirical model

To analyze the interdependence between bank credit and trade credit among Cameroonian SMEs, we use a structural simultaneous equations model capturing the interdependence between bank credit and both forms of trade credit, namely received trade credit (CCR) and granted trade credit (CCF). The general model is specified as follows:

General Model

$$Y_1 = \alpha_1 + \beta_1 Y_2 + \gamma_1 X_1 + u_1 \quad \text{(E1)}$$

$$Y_2 = \alpha_2 + \beta_2 Y_1 + \gamma_2 X_2 + u_2 \quad \text{(E2)}$$

Where: Y_1, Y_2 are endogenous (dependent) variables in the system; X_1, X_2 are exogenous variables (determined outside the system); α, β, γ are coefficients to be estimated; u_1, u_2 are random error terms.

More specifically, the model rests on two alternative systems, each centered on an equation explaining the level of bank credit granted to the firm.

System 1: Interaction between Bank Credit and Received Trade Credit

The first system is defined by equations (1) and (2):

$$CCR_i = \beta_0 + \beta_1 BC_i + \beta_2 X_i + \varepsilon_{2i} \quad (1)$$

$$BC_i = \alpha_0 + \alpha_1 CCR_i + \alpha_2 X_i + \varepsilon_{1i} \quad (2)$$

Equation (1) models bank credit (BC_i) as a function of received trade credit (CCR_i) and a vector of control variables X_i capturing the financial and structural characteristics of the firm. The coefficient α identifies the nature of the relationship between bank credit and received trade credit, in terms of substitution or complementarity. Equation (2) describes received trade credit as depending on bank credit, reflecting the existence of reverse causality between these two financing sources. This specification captures the fact that access to bank credit can influence the firm's ability to obtain supplier credit, notably through signaling or liquidity effects.

System 2: Interaction between Bank Credit and Granted Trade Credit

The second system combines equations (3) and (4):

$$CCF_i = \theta_0 + \theta_1 BC_i + \theta_2 Z_i + \varepsilon_{3i} \quad (3)$$

$$BC_i = \alpha_0 + \alpha_1 CCF_i + \alpha_2 X_i + \varepsilon_{1i} \quad (4)$$

In this second system, equation (3) models granted trade credit (CCF) as a function of bank credit (BC) and a set of specific variables Z_i reflecting particularly the commercial policy, client structure, or bargaining power of the firm. Coefficient θ evaluates the influence of bank credit on the firm's ability to grant payment deferrals to clients, while coefficient α in equation (4) measures the reverse impact of granted trade credit on bank credit demand.

To address simultaneity bias under 3SLS estimation, identification relies on strict exclusion restrictions satisfying the order and rank conditions (Wooldridge, 2010), with each structural equation containing a single endogenous right-hand-side variable ($M - 1 = 1$). In the first system (equations (1) and (2)), the BC equation excludes nine operational, growth, and managerial quality determinants from vector Z ($Asset_Growth$, $Size$, $Rent_Assets$, rot_cc, $Invest_RD$, $Stfinan$, $Ltfinan$, NPM_lag1, QM_lag1), whereas the CCR equation excludes four collateral, liquidity, and debt-cost indicators from vector X ($Asset_Tang$, $Current$, QL_Ratio, Fin_Cost). In the second system (equations (3) and (4)), while controlling for firm size ($Size$) and asset tangibility ($Asset_Tang$), equation (4) excludes five commercial and operational variables from vector Z ($Invent$, $Rent_sales$, $Rent_expl$, $Current$, QM_lag2), while equation (3) excludes three specific bank-borrowing determinants from vector X (LG, $Asset_Growth$, QL_Ratio). Because the number of excluded exogenous variables in every equation (4 and 9 in System 1; 3 and 5 in System 2) strictly exceeds the single included endogenous regressor, all equations are over-identified and satisfy the rank condition.

4.1. Variables

1. Dependent Variable

The dependent variable is represented alternately by bank credit (BC) and trade credit, distinguished as received trade credit (CCR) and granted trade credit (CCF). Bank credit (BC) is measured by the ratio of bank debt to total debt, while received trade credit (CCR) is measured by the ratio of accounts payable to total firm purchases at year-end. Whereas most studies use total assets as a measure of CCR (Kojo-Dary and Issahaku, 2019; Fang Xiaohong, 2019; Afrifa et al., 2023), we use total purchases instead of total assets because the latter may contain elements not necessarily stemming from trade. Total purchases equal cost of goods sold plus change in inventories. Granted trade credit (CCF) is measured by the ratio of trade receivables to total firm sales at year-end.

2. Independent Variable

The main independent variable is bank credit (BC) when explaining recourse to trade credit, or conversely received (CCR) or granted (CCF) trade credit when explaining access to bank credit. This bidirectional approach allows the nature of the link between these two financing instruments to be empirically examined.

3. Control Variables

The study incorporates several control variables, classified as financial, structural, and operational characteristics of SMEs, calculated on the basis of financial statements and prior empirical works (Kent Baker et al., 2020; Atanasova, 2007; Kojo-Dary and Issahaku, 2019; Jun Sun and Yuenfen Sun, 2014), as summarized in the table below:

Table 6. Variables

Code	*Variable Name*	*Calculation Method*
Invent	Inventory	Inventories / Total Assets
LG	Current Ratio	Current Assets / Current Liabilities
Liquidity	Financial Autonomy Ratio	Long-term Debt / Equity
Debt_ratio	Debt Ratio	(ST Debt + LT Debt) / Total Assets
Asset_Growth	Growth Opportunity	(Total Assets(n) - Total Assets(n-1)) / Total Assets(n-1)
Asset_Tang	Asset Tangibility	Tangible Assets / Total Assets
Size	Size	Ln (Turnover)
Rent_sales	Return on Sales	Turnover / Total Assets
Rent_Assets	Return on Assets	Net Income / Total Assets
Rent_expl	Operating Profitability	Gross Operating Surplus / Turnover
Current	Current	Current Assets / Total Assets
rot_cc	Receivables Turnover	(Trade Receivables / Turnover incl. VAT) × 360
Invest_RD	R&D Investment	(R&D Costs + Patents, Licenses & Software) / Total Assets
QL_Ratio	Quick Ratio	Cash / Total Assets
Fin_Cost	Financial Charges Coverage Ratio	Financial Charges / Value Added
Stfinan	Short-term Debt Ratio	Short-term Debt / Total Assets
Ltfinan	Long-term Debt Ratio	Long-term Debt / Total Assets

Source: Authors

4. Lagged Variables

The introduction of lagged variables — namely the lags of net profit margin (NPM_lag1) and management quality (QM_lag1; QM_lag2) — allows, on one hand, the dynamic and persistent dimension of firms' financing decisions to be captured, and on the other hand, contributes to reducing endogeneity issues, thereby enhancing the robustness of the econometric estimates.

5. Results

The joint estimates of the bank credit (BC) and received trade credit (CCR) equations reveal a significant and primarily substitutive bidirectional relationship between these two financing modes among Cameroonian SMEs. On the one hand, the coefficient of received trade credit in the bank credit equation is positive and highly significant ($\beta = 1.527$; $p < 1\%$), suggesting that increased recourse to supplier credit is associated with improved subsequent access to bank credit, which may reflect a signaling or informational learning effect for banks. On the other hand, and most importantly, bank credit exerts a negative and significant effect on received trade credit ($\beta = -1.693$; $p < 1\%$), indicating that improved access to bank credit reduces the need to resort to payment deferrals granted by suppliers. This asymmetry of effects confirms that, facing external financing constraints, Cameroonian SMEs substitute trade credit

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Table 7. Regression Results

	Variables	BC	CCF	CCR	Invent	LG	Asset_Growth	Asset_Tang	Size	Rent_Sales	Rent_Assets	Rent_exp	Current	rot_cc	Invest_RD	QL_Ratio	Fin_Cost	Stfinan	Ltfinan	NPM_lag0	QM_lag1	QM_lag2	RMSE	R-sq	Chi2
Equation 1	CCR	(-1,69)*** 0,57					(0,27)*** 0,68		(0,01)*** 0,01		(0,18)*** 0,05			(0,01)** 0,01	(-2,66)*** 0,76			(2,90)*** 0,71	(2,18)*** 0,51	(0,16)*** 0,05	(-0,01)* 0,01		0,39	-0,94	425,2
	BC			(1,53)*** 0,18									(-0,116)*** 0,04			(-0,19)** 0,08	(0,941)*** 0,26						0,49	-1,44	188,6
Equation 2	CCF	(1,18)***0,16			(-1,07)*** 0,17			(-0,51)*** 0,07	(0,012)*** 0,01	(-0,26)*** 0,04		(0,32)*** 0,10										(-0,03)*** 0,01	0,45	-0,3	210,9
	BC		(0,08)** 0,04			(0,10)*** 0,01	(0,09)*** 0,02	(0,25)*** 0,05								(-0,36)*** 0,07							0,24	0,42	453,4

*Note: *p<0.10, **p<0.05, ***p<0.01. Standard errors in the second row of each cell.*

for bank credit when the latter becomes scarcer. Control variables reinforce this interpretation: short- and long-term financing, asset growth, and asset profitability significantly increase recourse to trade credit, while R&D investment reduces it, reflecting internal financial tradeoffs. Thus, regarding Hypothesis H1 — which posits that a decrease in bank credit leads to an increase in trade credit use and vice versa — the empirical results allow the hypothesis to be validated, supporting the idea that, in the context of Cameroonian SMEs, received trade credit primarily constitutes a substitute for bank credit.

Furthermore, the results from the simultaneous estimation of the bank credit (*BC*) and granted trade credit (*CCF*) equations reveal a clear and statistically significant complementarity relationship between these two financing modes among Cameroonian SMEs. Indeed, the coefficient of granted trade credit in the bank credit equation is positive and significant ($\beta = 0.086$; $p < 0.05$), indicating that firms granting more payment deferrals to their clients have better access to bank credit, probably due to a more dynamic commercial activity and enhanced financial reputation. Reciprocally, bank credit exerts a strong and highly significant positive effect on granted trade credit ($\beta = 1.186$; $p < 1\%$), suggesting that access to banking resources enables SMEs to have sufficient liquidity to support their accounts receivable policy. These results confirm the existence of a mutual reinforcement mechanism between bank credit and trade credit, reflecting a logic of complementarity rather than substitution. Thus, regarding Hypothesis H2 — which posits that an increase in bank credit is accompanied by an increase in trade credit use and vice versa — the hypothesis is empirically validated in the context of Cameroonian SMEs, supporting the idea that these two forms of financing coexist and mutually support each other in the financial strategy of firms.

6. Conclusion

The capacity of SMEs to finance themselves largely conditions their sustainability and performance level, particularly in developing economies where access to formal financial resources remains limited. In Cameroon, SMEs face significant structural constraints, notably bank credit rationing, insufficient collateral, information asymmetry, and the volatility of the economic environment. In this context, trade credit appears as an alternative or even complementary source of short-term financing and commercial investment. This article aimed to empirically analyze the nature of the link between bank credit and trade credit in Cameroonian SMEs, in order to determine whether they operate within a logic of substitution or complementarity.

Based on a sample of Cameroonian SMEs and using econometric methods that account for endogeneity problems, the results show that the relationship between bank credit and trade credit is neither univocal nor uniform. Empirical analyses reveal, firstly, that a contraction in bank credit is associated with an increase in trade credit use. This result confirms the substitution hypothesis (H1) and aligns with works highlighting the role of trade credit as a mechanism for bypassing bank credit rationing. When access to bank credit deteriorates, SMEs turn more to their suppliers to meet their liquidity needs and ensure business continuity.

However, the results also reveal the existence of a complementarity relationship between these two forms of financing. Indeed, an increase in bank credit is accompanied, in certain configurations, by an increase in trade credit use, thereby validating Hypothesis H2. This result suggests that bank credit can play a positive signaling role for the solvency and financial credibility of SMEs, thus facilitating the granting of payment deferrals by suppliers. From this perspective, bank credit and trade credit are not mutually exclusive but can mutually reinforce each other in financing the operating cycle of SMEs.

Thus, the trade-off between substitution and complementarity depends closely on the financial characteristics of firms, their level of access to bank credit, and the institutional context in which they operate. For the most financially constrained SMEs, trade credit primarily constitutes a substitution solution. By contrast, for those with more stable access to bank credit, trade credit is more aligned with a complementarity logic, contributing to more flexible treasury management and the optimization of inter-firm relationships.

On a practical level, these findings hold concrete implications for public authorities, banking institutions, and business leaders operating within the CEMAC monetary zone and the OHADA legal framework. First, the Central African Banking Commission (COBAC) prudential standards and high collateral requirements currently restrict SME bank borrowing; our evidence indicates that facilitating partial credit guarantees (such as through the African Guarantee and Economic Cooperation Fund — FAGACE, or national guarantee funds) can alleviate bank credit rationing and diminish excessive reliance on costly informal supplier credit. Second, regarding the commercial legal framework governed by the Uniform Acts of OHADA, securing trade credit transactions requires strengthening the implementation of the Uniform Act Organizing Securities (notably the simplified pledge of movable property, inventories, and receivables, as well as the retention-of-title clause) and the Uniform Act on Simplified Recovery Procedures and Enforcement Measures (injunction to pay). Promoting formal factoring and reverse-factoring mechanisms under OHADA would bridge supplier credit and banking liquidity, enabling Cameroonian SMEs to optimize cash flows while mitigating inter-firm default contagion.

Finally, this study opens several avenues for future research. It would be relevant to examine the moderating role of management quality, governance, or sectorial structure in the relationship between bank credit and trade credit. Similarly, a dynamic analysis incorporating the effects of macroeconomic shocks or financial reforms would allow a better understanding of the evolution of these financing mechanisms over time. In a Cameroonian context characterized by strong financial constraints, a thorough understanding of the interactions between bank credit and trade credit remains essential to promoting the development and resilience of SMEs.

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