

Towards Developing Trade Credit Policies in the Ghanaian Construction Industry: An Analysis of Constraints

DeGraft Owusu-Manu¹ Samuel K. Afrane² Kenneth Appiah Donkor-Hyiaman^{3*}

1. Department of Building Technology, Kwame Nkrumah University of Science and Technology, Ghana.

2. Department of Planning, Kwame Nkrumah University of Science and Technology, Ghana.

3. Department of Land Economy, University of Cambridge, UK, CB3 9EU, Cambridge

*Email of Corresponding author: kwakuhyiaman@gmail.com

Abstract

The excessively expensive and inaccessibility to bank finance by many contractors for financing the construction industry among other factors explains the underdeveloped nature of the construction industry in Ghana. Trade credits which have been recognized in extant literature as both a substitute and complement to bank financing is also experiencing a market failure; yet, little to nothing is known about the constraints faced by supplier in extending trade credits to their contractors. This may lead to a weak reliance on findings from other economies for policy trade credit formulation. Nonetheless, contradictions about the cost of trade credit compared with bank finance and its position in the pecking order indicate that country-specific evidence is imperative. By adopting the Relative Importance Index (RII) aided by Principal Component Analysis (PCA) in analysing data collected from 75 SME construction merchants within the Kumasi metropolis of Ghana, the study concludes that three interwoven principal components: (1) Asymmetric Information (2) Weak Legal Environment and (3) Weak Macroeconomic Variables are the constraints to trade credit supply in Ghana. Asymmetric information is characterised by poor accounting standards and little education on trade credit; while the difficulty in enforcing the terms of trade credit contracts expand creditors' risk constituting a weak legal environment. The high cost of financing materials acquisition underscored by high interest rates prices-out many buyers, which disincentivises the offering of trade credit. Theoretically, three trade credit models including the Agency Model, Financial/Liquidity Theory and the Marketing Theory are applicable in explaining the low levels of trade credit financing in Ghana. Practically, the paper provides a basis for budding appropriate trade credit policies and market in Ghana. Future research could concentrate on developing a framework for trade credit contracts in Ghana as well as developing mechanisms to overcome information asymmetry. We could further look at assessing the potential role of trade credit in the development of the Ghanaian construction industry, and how the establishment of a construction industry regulatory agency could promote the development of trade credit options.

Keywords: Legal Environment, Trade Credit, Contract Enforcement, Constraints, Asymmetric Information.

1. Introduction

Access to credit by construction contractors is a significant constraint in the construction industry in many developing economies, and SMEs are the major victims (Abor and Quartey, 2010). In Nigeria, Adams (1997) as cited in Laryea (2010) identified uncertainties in supplies and prices of materials, obtaining interim payment, procuring work, access to capital, negotiating variation and payment, access to plant and equipment, transporting materials and equipment and accounting of financial management as factors influencing the performance of indigenous contractors. The Ghanaian landscape is replete with numerous studies that acknowledge financing constraint as a major setback for the construction industry (Bondinuba, 2012; Karley, 2009; Owusu, Badu and Edwards, 2008). Consequently, most contractors in developing economies are unable to satisfy the financial requirements including bid and performance bonds needed to win major contracts often awarded to their foreign counterparts.

Most SMEs appear to be challenged in financing their business operations (Yeboah, Kumi and Awuah, 2012); as they face difficulties in accessing "*traditional bank finance*" from lenders. Bank financing is normally collateral-based, yet the legal and regulatory framework that guarantees lenders protection is adverse, amidst unfavourable macroeconomic fundamentals. This makes bank financing either unavailable to many SMEs or available at a high cost, which is not feasible sometimes. Although protracted, this is the situation in Ghana at a time when finance is needed to propel the recovering wheels of the economy from the global financial crisis. The search for alternative source of finance is prompting arguments in favour of trade credit financing; which was recognized as a major source of finance for firms with credit constraints during the crisis (Coulibaly, Sapriza,

Zlate, 2012; Levchenko et al., 2010). Trade credit – credit extended by a seller who does not require immediate payment for delivery of a product – is a very old practice, dating back to the Middle Ages. Thus, Couppey-Soubeyran and Héricourt, 2011) show that the difficulty in gaining access to bank credit positively influences the use of trade credit, demonstrating the substitutability of bank credit and trade credit (Li, 2011; Alphonse, Ducret and Séverin, 2006).

However, very little is practically and theoretical known about trade credit in the construction industry of Ghana. In fact, there is a desert of keen research on the dynamics of trade credit in Ghana, which renders the use of trade credit findings from other economies risky and misleading especially in trade credit policy formulation. This reveal considerable gap in the extant literature. For the purpose of pioneering and promoting TC channels as a very important form of funding for the Ghanaian construction industry alternate to bank financing, this study examined the constraints of SME construction merchants in supplying materials on credit to construction contractors in Ghana. This is necessary at this time due to the key role of trade credit in financial development (Couppey-Soubeyran and Héricourt, 2011). The study is presented in six parts: (1) an introduction to the study, (2) classification and characteristics of SME construction firms in Ghana, (3) constraints to TC supply, (4) methodology, (5) presentation and analysis of survey results and (6) practical observations for the development of TC policies and Market (7) conclusion.

2. Small and Medium Construction Firms (SMCF) in Ghana: Classification and Characteristics

There is no single, uniformly acceptable index for the classification of small and medium construction firms; rather classifications vary in respect of country, sector, industry and even the purpose of the classification. This is because no two firms are the same; firms differ in their sales, employment and levels of capitalization; hence, classifications are normally a matter of convenience. For instance, Kayanula and Quartey (2000, p.9) observe that “*definitions which employ measures of size (number of employees, turnover, profitability, net worth), when applied to one sector, could lead to all firms being classified as small, while the same size definition, when applied to a different sector, like the construction sector could lead to a different result*” However, classifications are useful for management purposes especially at the national level.

For this reason, the number of employees, value of assets, value of sales and size of capital as well as turnover are some familiar criteria used (Eyiah *et al.*, 2003). Bondinuba (2012) acknowledges Bolton Committee (1971) as cited in Kayanula and Quartey (2000, p.7) as the maiden attempt to trounce this problem of definition by formulating an “*economic*” and “*statistical*” definition. Accordingly, a firm is regarded as small if it meets the following three criteria:

“(1) Has a relatively small share of their market place; (2) Is managed by owners or part owners in a personalized way, and not through the medium of a formalized management structure; and (3) Is independent, in the sense of not forming part of a large enterprise”.

Small firms therefore employ between 10 to 99 employees and medium firms between 100 and 200 employees. Using the value of fixed assets in the firm as an alternative criterion for defining SMCFs, Bondinuba (2012) indicates that small firms in industrialized countries employ 99 or less workers and medium firms employ between 100-499 workers. In developing economies, small firms employ between 5-19 workers and medium firms employ between 20-99 workers (ibid.).

In Ghana, The National Board for Small-Scale Industries (NBSSI) (1990) defines small and medium enterprise as one which employs not more than twenty-nine persons with plant and machinery value (excluding land, buildings and vehicles) not exceeding the equivalent of US\$100,000. It again applies both the “fixed asset and number of employees” criteria and defines a small-scale enterprise as a firm with not more than 9 workers, and has plant and machinery (excluding land, buildings and vehicles) not exceeding 1 million Ghana Cedis. In relations to the construction industry, construction contractors are classified by the Ministry of Water Resources, Works and Housing (MWWOH) based on a number of guidelines, including the following: plant equipment holding, financial standing, previous performance and technical expertise into two main categories: (1) 'D' for general building works and (2) 'K' for civil works. Each category is sub-divided into four classes, ranging from

class D1, D2, D3, D4 and K1, K2, K3, K4. Class D3/D4 and K3/K4 contractors are commonly referred to as the small-scale building contractors and D1/D2 and K1/K2 are typically referred to as big firms.

Adding, medium firms are registered as financial class 2 while small firms are financial class three (3). Financial class 2 firms are capable of undertaking projects up to US\$ 500,000, while the financial class 3 firms are also capable of undertaking projects up to US\$ 200,000 and class 4 to undertake projects up to US\$75,000. Therefore, SMCFs in the Ghanaian context as it applies to the construction industry could be defined as a business or enterprise which, though mainly owner managed, employ between 5-10 and 100-200 people respectively and are pre-qualified and classified by MWWOH as D4 to D2 and class 4 up to class two (2).

The construction industry was projected to grow at an unprecedented rate of 13.0% (ISSER, 2008). Typical in a modern society, around half of all physical assets are produced by the construction industry, engendering about 5 - 10% of national wealth (Lopes, 2012). This is the direct output of Small-Scale Building Contractors (SSBC) as this group constitute about 90% of the construction industry in Ghana (ibid.). Generally, Ganesan (1983) concurring note that small-scale firms account for over 90% of all construction firms in practically all countries. This suggests a dominance of SMCF in the construction industry in Ghana, which according to Wells (2007) is not a mishap. In fact, opine that construction is essentially a large industry of small firms in all construction economies (ibid.). Intrinsically, small-scale building contractors are a material part of the larger SMCF.

Ahadzie (2007) describes these SSBCs as one-man enterprises, having low financial and capital base and also lacking the requisite managerial skills to adequately face up to the numerous and difficult challenges they constantly have to encounter in a typical developing economy such as Ghana's. Their dominance according to Wells (2007) and Ganesan (1983) prescribe some special characteristics of the industry, such as the wide dispersion of the demand, flexibility in the scale of production, lack of standardization of materials, the effect of climatic controls on the use of materials, some of which can be very bulky; the low capital requirement for entry, especially for craft-based jobs. An issue of simultaneity is that the predominant business types determine the level of development of the industry. Perhaps, the dominance of SMCF in the Ghanaian construction industry is expected as the construction industry is underdeveloped and constrained by many factors which threaten growth and development.

2.1 Constraints to Trade Credit Supply: A Theoretical Overview

Suppliers face many constraints in extending TC. Bastos and Pindado (2009) recognized two dimensions of constraints to TC demand and supply. The first dimension being "the agency problem" and the second dimension, "countries' Specificities"; which are discussed subsequently.

The Agency Problem

Bastos (2010) posit that the TC extended by suppliers to clients is a result of two phenomena, adverse selection and moral hazard. The phenomenon has been proposed and supported by many research studies, such as Cuñat and Garcia-Appendini (2012) and Kouvelis and Zhao (2012). Bastos (2010) noted that adverse selection arises when clients do not know ex-ante the quality of the goods they are going to buy, hence hypothesize that "*the greater the presence of adverse selection in a relationship between sellers and buyers, the greater the trade credit offered*". From the suppliers end, when TC is extended, the risk of buyers not making the payment when it is due increases giving rise to the moral hazard phenomenon. *The greater the presence of moral hazard in a relationship between sellers and buyers, the less trade credit offered (ibid.)*. The fact that in most cases, the contractors' cashflow is unpredictable due to delays in honouring payment certificates (Laryea, 2010) makes construction firms more positive to the moral hazard phenomenon. Cuñat and Garcia-Appendini (2012) and Bastos (2010) concluded that, moral hazard and adverse selection are two phenomena that arise from sellers and buyers trading in conditions of asymmetric information.

Creditor Protection and Accounting Standards

Bastos and Pindado (2009) explained that differences in creditor protection and the quality of accounting standards are the two country characteristics that may distinguish financial patterns of firms from different legal environments. According to the following arguments, high levels of creditor protection may mitigate the moral hazard costs, and high quality accounting systems mitigate information asymmetries and, consequently, moral hazard costs. Fosu (2014) and Galindo and Micco (2011) found evidence to substantiate the explanation of the significance of creditor rights in credit used by firms. Their conclusion is that countries with high levels of creditor rights have a larger credit market and vice-versa. Explicitly, countries whose legal systems accentuate creditor rights and contract enforcements have better developed banks (Skosples, 2012) whilst those with lower creditor protection present a high credit risk to lenders.

Bastos and Pindado (2009) explained that asymmetric information between lenders and borrowers certainly influences the cost of the credit and its amount. The insufficiency of borrower's financial information or the existence of unreliable or inaccurate information about them can lead financial intermediaries to reject credit demands or to increase their cost to compensate the risk (ibid.). Fisman and Love (2003) find a negative relationship between the poor accounting standards in a country and credit financing, indicating that the weaker the accounting information the higher the risk of lending for financial intermediaries. Bastos and Pindado (2009) concluded that, as in the case of creditor's rights, the low quality of the accounting system will affect, with different intensity, both financial intermediaries and trade credit suppliers. Thus, the more information available about a borrower's or a buyer's financial situation, the cheaper the credit offered. Therefore, the quality in the accounting system will operate as a moderator in information asymmetries and, as a result, in the moral hazard phenomenon.

3. Methodology

Adopting quantitative methodology and a positivist approach, the study employs secondary data from the extant literature reviewed and primary data from survey questionnaire administration. The dataset obtained was limited to construction merchants in selected communities in the Kumasi metropolis via questionnaire survey. Kumasi is the capital of the Ashanti region of Ghana; which is centrally located in the middle belt of Ghana between longitudes 0.15°W and 2.25 W; latitudes 5.50 N and 7.46 N. With a population of about 2,035,064 (Kumasi Metropolitan Area), the study area is the second-largest city in the country. Employing a five-point closed-ended questionnaires and a snowball sampling technique, 75 construction merchants that have traded for more than three years were reached within four weeks. Out of which 67 representing 89% were fit for analysis.

The Relative Importance Index (RII) was used in analyzing the relative importance of the constraints facing the supply of trade credit (TC) in the construction industry. In principle, the RII technique is employed when the respondent is asked to rank a list of predetermined factors in order of importance and relevance indicating his/her opinion, attitude or preference. Following the studies by Bastos and Pindado (2009) and Fishman and Love (2003) on the potential constraints to TC extension, nine (9) constraints were derived from the extant literature namely: (1) Little/scanty information on TC; (2) Poor accounting standards; (3) Total volume of material in store; (4) Risk of non-payment; (5) Cost of financing; (6) Poor creditor protection; (7) Interest on TC materials; (8) TC contract enforceability and (9) Repayment terms. Hence, the RII allowed the surveyed construction merchants to rank these predetermined constraints of TC.

Based on similarities in the latent characteristics of the TC constraints identified as well as the need to reduce the relatively large size of variables for the purpose of easy analysis, the Principle Component Analysis (PCA), a statistical data reduction technique was subsequently used to establish which variables were measuring aspects of the same underlying dimensions. PCA is useful for finding clusters of related variables into more easily understood framework. Three (3) principal components were extracted as the constraints to TC extension in Ghana by applying the Guttman-Kaiser rule and the Cattell scree test, Guttman-Kaiser rule suggests that only those factors with an eigenvalue larger than 1 should be retained, whilst the Cattell scree test suggests that all further components after the one starting the elbow should not be included.

4. Survey Results and Discussion

4.1 Characteristics of Data

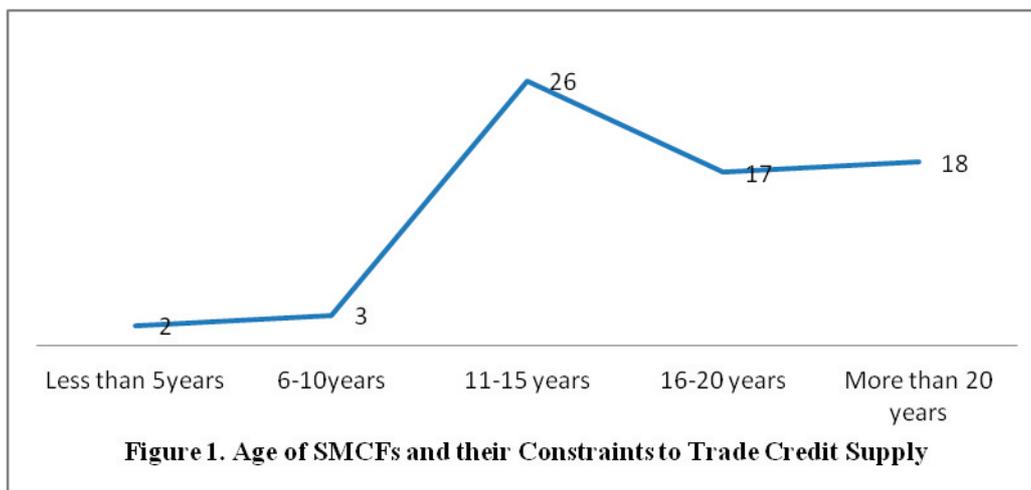
The survey reveals that a substantial number of SME construction merchants (suppliers), representing 98 percent of total respondents face considerable degrees of constraints that impede their supply of TC. The severity of these constraints is such that all the nine constraints extracted from extant literature are significant according to the Relative Importance Index (RII) in Figure 1. The RII indicates that the difference between the highest (0.964) and lowest (0.63) ranking constraints is about 0.334. These constraints as presented in Table 1; these include (1) little information on TC as an alternate to bank loans (2) poor book keeping records of contractors (3) total volume of the TC material in store (4) problem of contractor defaulting on the repayment (5) high cost of obtaining finance for material acquisition (6) low creditor protection on defaulting contractors (7) interest/implicit tax on materials purchased (8) difficulty in enforcing TC contracts and (9) difficulty of formulating TC repayment terms. This is further reduced into themes for easy inclusion into the RII chart as shown in Figure 1.

Table 1. Constraints to Trade Credit Supply

VARIABLES	CONSTRAINTS TO TRADE CREDIT SUPPLY
1. Little information on TC	There is little information on TC as an alternate to bank loans
2. Poor accounting standards	There is poor book keeping records of contractors
3. Total volume of material in store	The total volume of the TC material in store
4. Risk of non-payment	There is the problem of contractor defaulting on the repayment
5. Cost of financing	The high cost of obtaining finance for material acquisition
6. Poor creditor protection	There is low creditor protection on defaulting contractors
7. Interest on TC materials	The interest/implicit tax on materials purchased
8. TC contract enforceability	The difficulty in enforcing TC contracts
9. Repayment terms	The difficulty of formulating TC repayment terms

Source: Authors' Description

The data also shows that the number of construction merchants facing these constraints is positively correlated on average with the number of years in operation. In other words, as the number of years in operation increases, the number of construction merchants also increases. It is worthy to note that, the data in no way suggests a positive relationship between “degree” of constraint face by vendors and the years of operation or the number of vendors within a particular age range. Rather, this finding could be attributed to the snowball sampling technique adopted for this survey. That is, most of the vendors surveyed have operated in the construction industry for more than ten (10) years. Thus, the distribution of the data is no indication of normality as would have been if the sampling technique was random. Figure 1 is a diagrammatic representation of the above discussion.



Source: Survey (2014)

4.2 Constraints to Trade Credit Supply in Ghana

The nine identified constraints to trade credit supply in Ghana were reduced to three (3) principal components for easy analysis based on the similarities in their latent characteristics as per the Principle Component analysis (PCA) adopted; illustrated in Tables 2 and 3 below. The component names arrived at reflects aspects of all the variables classified under them. These are Component (1) – “*Asymmetric Information*”, Component (2) – “*Weak Legal Environment*” and Component (3) – “*Weak Macroeconomic Variables*”. The total variance explained by each component extracted is as follows: The first principal component (component 1) accounted for 34.542% of the total variance whilst the second principal component (component 2) explained 19.063% of the remaining variation not explained by the first component. The third component (component 3) accounted for 13.188%, of the remaining variation not explained by the first two components. Together, the 3 extracted components cumulatively explained 66.793% of the variation in the data set, and this meets the cumulative proportion of variance criterion, which says that the extracted components should together explain at least 50% of the variation. Table 2 and 3 below presents a snapshot of extraction process.

Table 2. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.109	34.542	34.542	3.109	34.542	34.542	2.422	26.915	26.915
2	1.716	19.063	53.605	1.716	19.063	53.605	1.860	20.663	47.577
3	1.187	13.188	66.793	1.187	13.188	66.793	1.729	19.216	66.793
4	.980	10.892	77.685						
5	.606	6.728	84.414						
6	.490	5.450	89.863						
7	.429	4.769	94.633						
8	.307	3.412	98.045						
9	.176	1.955	100.000						

Extraction Method: Principal Component Analysis.

Source: Authors’ Survey Estimation (2014)

Table 3: Component Matrix^a

Variable	Component		
	1	2	3
01.Little information on TC	.744	.105	-.331
02.Poor accounting standards	.716	.401	-.047
03.Total volume of material in store	.690	.037	-.497
04.Risk of non-payment	.086	.832	.223
05.Cost of financing	.304	.728	.194
06.Poor creditor protection	.644	.261	.304
07.Interest on TC materials	.701	-.347	-.096
08.TC contract enforceability	.689	.331	.289
0.9.Repayment terms	.292	.151	.745

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Source: Authors' Survey Estimation (2014)

Component 1 - Asymmetric Information

Asymmetric information as identified by this study as a constraint to SMEs is consistent with Ackah and Vuvor (2011). The phenomenon exists when there is an unequal degree of information to parties in a transaction, which may result in unfair exchange particularly in this case between construction merchants and construction firms due to adverse selection and moral hazards. Adverse selection in the purview of this study is the situation where construction merchants (vendor) engage in wrong (adverse) transactions based on wrong or inadequate information which could increase costs to them; while moral hazards results from default risk. In the first instance, the risk of non-payment (RII of 0.964) is the major constrain to TC extension. This is not mutually exclusive of the other factors as a closer look at the variables shows relationships. For instance, the risk of non-payment is linked with the difficulty in formulating TC terms (RII of 0.919), poor accounting standards (RII of 0.824) and little information on TC (0.719), which rank second and fifth respectively.

The risk of non-payment increases moral hazards; the greater the presence of moral hazard in a relationship between sellers and buyers, the less trade credit offered (Bastos and Pindado, 2009). Standard credit assessment requires prospective borrowers to satisfy the five (5) lending criteria of capital, character, capacity, collateral and condition. The qualities of a good borrower therefore is that; (1) a person of good character who will pay back the loan; (2) has capacity to pay; (3) demonstrate capital and wealth to have a financial stake in the property; (4) show evidence of collateral security; (5) and be able to honour the mortgage agreement in all conditions under the terms. The character and capacity of a construction firm to repay a given trade credit is a function of its accounting records. Hence, a poor accounting standard is an indication of poor character and capacity; and vice versa. The survey reveals that poor accounting standards (ranked 5th) by construction firms is a major constrain to vendors' desire to extend trade credit; as the degree of poor accounting could influence substantially vendors' costs due to adverse selection. This could result from the difficulty of vendors in assessing default tendencies (the risk of non-payment). There is therefore a negative correlation between the weak accounting standards in Ghana and trade credit financing, which reinforces the finding of Fisman and Love (2003).

The difficulty in formulating TC terms presupposes the non-existence of TC standards, which is closely linked with the fact that there is little information on TC in Ghana. Both construction merchants and borrowers technically know little about TC as a substitute and/or complement for bank loans and also a cash flow management technique tool. For this reason, the market for TC is underdeveloped. There is a lack of a TC assessment process as well as a specific legal environment to support TC transactions. A standardized TC assessment process would determine the necessary documentation, the credit worthiness of the construction firm, repayment term and discount rate required for TC extension. The determination of these parameters requires some level of technical expertise; yet, most of the construction merchants are illiterates or semi-literates. The lack of a certain environment expands TC risk. Moreover, since TC is based on a contract, it comes with transaction costs in the form of legal fees. When TC is extended and the buyer defaults, the supplier will support all costs generated by the sales, hence the higher the percentage of variable costs of the goods sold. Consequently, the decision to extend TC depends on whether the marginal profitability is greater than the

associated marginal opportunity cost (Bastos and Pindado, 2007). Therefore, when a firm decides to extend its credit policy it is probably expecting a sales increase and, hence, the firm is prepared to assume new costs such as collection costs, bad debt losses and variable costs. Thus, the credit policy decision involves a trade-off between profits from marginal sales and their marginal costs.

Consequently, the substantial uncertainties involved in extending TC as a result of excessive asymmetric information, construction merchants ultimately face high adverse selection in assessing potential cost in extending TC to SMCs; subsequently making the determination of possible profit complicated. Hence, many construction merchants face excessive adverse selection, which could ultimately result in unanticipated costs upon borrowers' default. Cost may manifest in three forms: (1) bad debts (2) opportunity cost of capital involved in purchasing the construction materials. That is, the possible interest that could have been earned should the seller have put the capital in another investment of equal risk (3) interest payment on loans used in purchasing the construction materials, which is applicable if debt was involved.

Total volume of materials in store (inventory size) held by merchants is also a potential barrier to TC extension (ranked 7th). To fully explain TC provision by firms, the product characteristics theory and the inventory management model of trade credit are necessary. Though suppliers facing an uncertain demand for their products face an incentive to extend trade credit to their financially constrained customers in order to promote sales rather than accumulate costly inventories of finished goods; this incentive is only limited by the need to obtain liquidity to meet their own obligations, hence producers might readily offer trade credit on appropriate terms only to enhance cash sales and boost demand. According to Kot, Grondys and Szopa (2011), the location of maintaining main stock in the supply chain depends on a number of factors, including in particular the (1) sector, (2) character of the product and (3) the market environment (competitors, customers).

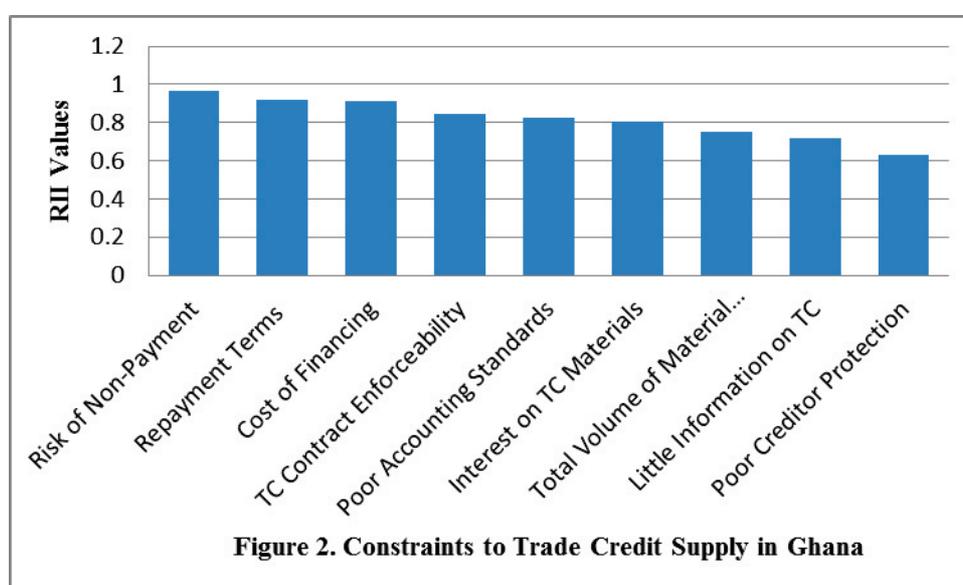
In terms of sector and product characteristics, the construction sector usually deals in “durable” and “non-perishable goods”. In a way, the very nature of these goods allows construction merchants to keep inventory for a relatively longer period of time if there is no immediate effective demand, thereby restricting the extension of TC. This is normally in anticipation that subsequent purchasers would provide the needed liquidity or better terms than giving goods out on TC basis, especially when the risk of non-payment and difficulty in determining TC terms exist. Moreover, the construction merchants surveyed are fairly old and large and therefore are able to hold higher volumes of stock as compared to their younger counterparts. This means that, suppliers are able to hold a certain limit of inventory and once this limit is not attained, they might not extend TC to firms when there is no urgency to promote sales. In other words, the size of inventory a merchant can hold is a basis for extending TC.

A contrary argument is that small scale merchants with low volumes of inventory may not be attracted to the TC market. Their small sizes suggest that inventory could be cleared within short intervals of time all things equal. It is also possible that such low volumes of inventory could be cleared by few transactions either by immediate cash sales or TC. Extending TC may result in selling a chunk of their inventory on credit; and in extreme cases 100% of their inventory could be on credit. The problem with this situation is that, within the short-term waiting period, these merchants may be out of business (probably not open the shops) because of the short-term liquidity problem. This is against the backdrop of enormous difficulty in accessing bank finance by these small-scale construction merchants. Liquidity to construction merchants is therefore a very useful decision tool in extending TC to borrowers, a clear indication that the Financial/ Liquidity Theory of TC is applicable in explaining the low levels of TC in Ghana. That is firms with better access to the capital market or external financing are most likely to advance TC to clients facing credit constraints and vice versa. Undoubtedly, almost all construction merchants in Ghana do not have access to the capital market and external financing is limited. Hence, extending TC to clients is not attractive without certainty of repayment.

In addition, the low levels of TC as it relates to inventory size could be attributed to the market environment in Ghana, which could be described as adverse. Two principles, scarcity of construction materials and the lack of competition among suppliers of construction materials explain this phenomenon. Some studies report about the reliance of the construction industry especially the real estate sector on import raw and finished materials. Harsh

macroeconomic indicators mean that only a few construction merchants could participate in this market; hence, creating possible shortages and limited choices for buyers, which could lead to preferential sales like non-extension of TC. This is worsened by the lack of competition among construction merchants. For this reason, sellers are not motivated to put in measures such as offering TC in order to protect their customer base; thus, confirming the Market Theory of TC.

In summary, the constrain of asymmetric information supports the Agency Model of TC extension (Bastos and Pindado, 2007). According to this model, TC policies are defined by a trade-off between two agency costs: adverse selection and moral hazard. They concluded that “Trade credit demanded and extended by firms is a result of the influence of internal factors (such as the moral hazard, the adverse selection, the bargaining power and the investment opportunities presented by the customer firm) and is also influenced by some external factors that characterize the legal and the economic environment (such as the level of creditor protection, the accounting standards and the economic situation)”, which factors have been discussed above.



Sources: Survey (2014)

Component 2 - Weak Legal Environment

Two main constraints to TC supply, (1) TC contract enforceability and (2) poor contract protection are discussed under the weak legal environment. It should be noted that Levine (2002) finds a correlation of creditor protection to contract enforcement and hence one of these variables cannot exist in isolation. By this reason, little difference was anticipated between the two variables with reference to the RII. However, the difficulty in enforcing TC contracts ranked 4th with RII of 0.845 while poor creditor protection ranked 9th with an RII of 0.63. By the ranking, the difference is quite striking but the actual RII values depict quite a small difference, which supports their correlation.

Schwartz (1974) argues that the exploitation of TC by both buyers and sellers centers on the aim to reduce the cost of doing business. The supply of TC could be improved in an environment with strong contract enforceability rights; as such environments enhance creditors' protection. Hence, the high moral hazards and adverse selection costs resulting from the high asymmetric information in the TC market could be salvaged in an environment with strong contract enforceability rights. According to Bastos and Pindado (2007) high levels of creditor protection may mitigate the moral hazard costs. However, the legal regime in Ghana is adverse coupled with bureaucracies that increase the cost of enforcement as against potential benefits.

The complexity in enforcing TC contracts could emerge from the “difficulty of formulating TC repayment terms” – ranked second with an RII of 0.919; as it is these terms that binds and validates the relationship that a seller would normally evoke the powers of the law courts to enforce. This difficulty may therefore emanate from the complexity of what constitutes a valid, binding and enforceable contract; which most of the construction merchants surveyed are not privy to. This would not be a problem but for the high cost involved in engaging the services of lawyers. High TC transaction volumes means more work for the legal expert, hence, the impetus to negotiate reduction in legal, and for that matter a reduction in the average legal cost in documenting TC contracts below possible sales and revenue. Nonetheless, TC transaction volumes are low, increasing average legal cost above possible sales and revenue.

Extra cost is generated from evoking the right to resort to the courts of law to enforce TC transactions upon borrowers’ default. These particular cost only given the unnecessary bureaucracy in the Ghanaian legal system could be very high above possible sales and revenue; subsequently making it uneconomical to enforce a TC contract. Delays in the court system could increase the accrued interest on capital and cost of financial distress (i.e. moral hazard cost), if borrowed as well as increase the likelihood of bankruptcy of construction merchants. Given the likelihood of non-payment, high average cost involved in documenting TC transactions and the adverse legal system, TC is not attractive because it is more cost saving not to engage the legal system because of TC transactions. In other words, the cost of extra-legality; that is, not resorting to the courts of law is less expensive than engaging the courts. The situation could be more strenuous for invalid, non-binding and unenforceable contracts; which is the likely scenario because of the difficulty in determining the terms of TC contracts. Therefore, the adverse and expensive legal system in Ghana subsequently provides no or little guarantee for creditor protection; thus, a disincentive to the extension of TC.

Further, one of the ways to mitigate trade creditor’s risk is to seize the goods and sell them upon buyers default to pay for them. However, a weak legal environment makes this difficult thereby affecting the trade creditor’s risk (Bastos and Pindado, 2007). Therefore, adding a new argument to the proposed trade-off between adverse selection and moral hazard; depending on the level of creditor protection in a country, the cost of moral hazard can oscillate. It is consequently expected that trade credit would be lower in countries with lower creditor protection, endangering a positive relation between TC financing and creditor rights protection because the latter could moderate the moral hazard phenomenon.

This explanation has theoretical support in La Porta et al., (1997), Levine, (2002), Galindo and Micco (2007), and Djankov et al., (2007) who point out that the low level of creditor protection becomes more relevant in the development of credit markets during bankruptcy. Naturally, we can broaden this reasoning to a trade credit relationship between firms in the case of buyers presenting a high risk of bankruptcy. Thus, the level of creditors’ protection will be more important to the development of trade credit markets along the supply chain when buyers’ risk of bankruptcy is high. The inclusion of the level of creditor protection as a moderator of the moral hazard phenomenon and consequently as an indirect determinant of the trade credit extended also finds support in Pindado et al. (2008), who find that insolvency codes play a crucial role in investment decisions.

Consequently, the Ghanaian credit market is relatively small, supporting the observation that countries with high levels of creditor rights have a larger credit market (including better developed banks) and vice-versa (La Porta et al., 1997; Levine, 2002; Galindo and Micco, 2007; and Djankov et al., 2007).

Component 3 - Weak Macroeconomic Indicators

The “high cost of financing material acquisition” and “interest/implicit tax on TC provided” are the two variables underpinning the weak macroeconomic environment as a reason for the low levels of TC in Ghana. High cost of borrowed funds is not necessarily the restrictor but excessive cost of debt above borrowers’ ability to afford. Excessive interest rates averaging 30% per annum on borrowed funds used in acquiring construction materials in Ghana could reduce the supply of TC indirectly. First, the high cost of debt financing reduces expansion potential as construction merchants can afford to purchase a few materials, which rolls in the early

submission about small-scale construction merchants. Small-scale construction merchants usually have low volumes of inventory which could be cleared in short intervals of time by cash sales or TC transactions. Extending TC could lead to liquidity problems and consequent asset-liability gaps, which could restrict the supply of TC.

Excessive cost of debt financing also limits the ability of construction merchants to access the capital market and for that matter other sources of debt financing both internal and external; hence, confirming the Financial/Liquidity Theory of TC. This is the particular case of construction merchants in Ghana in the face of an underdeveloped capital market and little sources of capital. Emery (1984) postulated that credit rationed firms use more trade credit than those with normal access to financial institutions. Bastos and Pindado (2007) explain that the central point of this notion is that when a firm is financially constrained the offer of TC can make up for the reduction of the credit offer from financial institutions. In accordance with this view, those firms presenting good liquidity or better access to capital markets can finance those that are credit rationed, they conclude. Hence, from the supplier's point of view, the financing theory suggests that firms having access to internal (cash flows) and/or external finance (e.g. bank loans) may be more inclined to offer TC to their customers (Giannetti et al., 2008; Petersen and Rajan, 1997).

Financial scholars including Nadiri (1969); Petersen and Rajan (1997); Wilner (2000); Isaksson (2002); and Cunat (2007) establish that these suppliers (construction merchants) may offer TC to financially constrained customers if they expect future benefits from increasing sales to these customers. Since the absence of an evidence-based to support the profits of higher sales, construction merchants are unlikely to extend TC. While the high risk of non-payment exist as identified earlier, construction merchants are likely to sustain a high cost of financial distress and moral hazard costs. Therefore supporting the assertion that the more extensive the credit granted, the greater the amount of bad debt losses the seller is likely to sustain and vice versa (Marotta, 2005). In this case, instead of debt enhancing investment returns in line with corporate finance principles, such debts accrue more debt to the seller; the case is even worse in high interest rate economies like Ghana.

Further, macroeconomic instability increases the interest/implicit tax on TC extended to buyers; when buyers choose the two-part payment model; which may price-out buyers and hence reduce the supply of TC. The two-part payment model involves the offering of a 'goodwill' discount if payment is made within the discount period, or full payment is made at the end of the net period. A common variant of the latter is "2/10 net 30". The "2/10" means that buyer gets 2% discount for payment within 10 days. The "net 30" means that, in case the buyer does not take the 2% in 10 days, the full payment is due in 30 days. Empirical analyses by Petersen and Rajan (1997), Ng et al (1999) and Wilner (2000) reveal that the fact that the buyer in some cases prefers to delay payment extra 20 days rather than to take the 2% discount, defines an implicit annual interest rate of 43.9% making TC in this case more expensive than bank loans.

The study of trade credit during economic crisis periods is also an important topic (Bastos, 2010), particularly when the global economy is going through a credit shock. Regarding the recent 2008 global crisis, Kazmin, et al. (2008) argues that the reluctance of commercial banks to lend caused a liquidity shock at every level of the system. This liquidity shock caused a shift in trade credit use levels because on the one hand, trade credit may act as a substitute source of funds and thus increase, but on the other hand, trade credit may complement bank credit and decrease (Bastos, 2010). The actual situation in Ghana during the global financial crisis was critically dependent on the effect of contagion; arguable minimal. In this vein, TC was not necessarily a substitute as the banks were still lending. Rather, TC was likely to serve as a complement to bank finance and decrease as reported by Owusu-Manu, Edwards and Donkor-Hyiaman in an independent study in 2013 and thus, explains the low levels of TC in Ghana.

In conclusion, the inventory effect is independently minimal in explaining the low levels of TC in Ghana. This is because, a mixture of other factors including the high risk of non-payment, scarcity, illiquidity and the lack of competition among on construction merchants are important tools in extending TC notwithstanding the size of inventory.

4.3 Some Practical Observations for Developing the Trade Credit Market and Policies in Ghana

In term of cost, both construction merchants and borrowers are highly likely to sustain substantial cost if TC is extended. This is largely because, there is greater uncertainty regarding TC financing compared with bank financing; as the latter has relatively better lending processes and infrastructure supported by specific legislative instruments and better corporate governance beside others; which makes it correspondingly less risky to TC financing. For this reason, TC in Ghana is better considered a complement and not necessarily a substitute to bank financing. Moreover, the low levels of TC is a signal about the poor quality of firms as implied from Alphonse, Ducret and Séverin (2006). Therefore trade credit is a tool for improving borrowers' reputation.

In developing the TC market, TC market infrastructure that largely seeks to bridge and improve asymmetric information should be developed. This would include borrowers adopting better accounting standards and building stronger relationships with construction merchants. This study did not examine the relationships between construction merchants and construction firms; and how this relationships could influence the supply of TC – a possible weakness of the study. Trade relationships has been recognized by Couppey-Soubeyran and Héricourt (2011) as a primary driver of trade credit for financial development, and does not appear any more as a palliative solution when bank credit access is difficult.

Further development of the capital market has the potential of increasing the funding options for SME construction merchants. An improved access to the capital market and external financing according to the financial/liquidity theory of TC would enhance the extension of TC. Access to the capital market would also require some level of expansion of construction vendors (merchants). As they grow in capitalization and size, their liquidity position would be enhanced, which would improve the possibility of supplying TC to relatively smaller construction firms. The current situation suggests that construction merchants are probably smaller than borrowers (construction firms), hence the difficulty in extending TC as implied from Marotta (2005).

Last but not the least, developing the TC legal environment by standardizing TC contracts would make it easy for construction merchants to determine the terms of TC contracts. Such a document should be developed and made easy understandable to these merchants who are predominantly illiterates or semi-literates; as well as administered by them. By allowing them to administer this lending contracts, legal cost could be eliminated or substantially reduced. This would inject some certainty and clarity into TC transactions; perhaps, reduce high legal costs associated with TC documentation. This is possible by registering construction merchants with the Bank of Ghana as lenders, who may operate under the Lenders and Borrowers Act and/or a special legal instrument for TC transactions.

4.4 Conclusion

Marotta (2005) opine that older and larger firms provide higher TC limit than their younger and smaller counterparts. Coincidentally, construction merchants in Ghana are predominantly SMEs who provide little to no TC to their customers. Trade credit is a useful innovation in the financing of the construction industry world-wide. It is a viable alternative to the traditional industry financing technique which holds substantial potential in de-stressing the use of bank financing, usually priced on the high side to the detriment of industry in Ghana. In addition, TC is an instrument for retaining customers; securing future cash flow; sharing risk; clearing old stock; trading policy; interest charges; transaction charges; and building relationship. However, the use of TC is yet to prove as a viable alternative to bank financing because of three principal constraints to TC supply: (1) Asymmetric information, (2) weak legal environment and (3) weak macroeconomic variables.

Asymmetry information manifests in the form of poor accounting standards and scanty information on TC which makes the assessment of TC default risk inaccurate and unreliable, disincentivizing sellers to engage in TC. There is somewhat difficulty in determining what constitutes a valid, binding and enforceable terms of TC contracts. Subsequently, enforcement becomes problematic, exposing sellers to credit risk and less protection for TC creditors. Lastly, the weak macroeconomy underpinned by the high cost of financing material acquisition expands credit risk. This is particularly true in the face of poor accounting standards making the assessment of

buyers' creditworthiness difficult. These constraints explain the low levels of TC in Ghana. In summary, the analysis made in this study support the two dimensions of the constraints to TC demand and supply: (1) agency problem and (2) country specificities as theorized by Bastos and Pindado (2007).

The study provides enough empirical evidence to support three TC theories: (1) Agency Model (2) Financing/Liquidity theory and (3) Marketing Theory. There is however, not enough evidence from the data to support the Transaction Cost and Tax Theories of TC. For instance, we need data on the size of sellers and buyers, the tax brackets of sellers and buyers, and the frequency of transaction between sellers and buyers to make reasonable conclusions about the applicability of the Tax and Transaction theories respectively in Ghana. Nonetheless, this is not to say that, these theories do not apply to Ghana. Until tested, the findings provide an evidence to support the assertion that all TC theories are not applicable to all economies and therefore heighten the need for country-specific evidence of the applicability of TC theories for the formulation of TC policies. Future research could concentrate on developing a framework for trade credit contracts in Ghana as well as developing mechanisms to overcome information asymmetry.

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