Increase in Risk and Use of Trade Credit:

Empirical Study from Non-financial Firms of Pakistan

By

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MASTER OF SCIENCE IN MANAGEMENT SCIENCES (FINANCE)

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DEDICATION

I dedicate my dissertation work to my teachers and family. Special feelings of gratitude to my loving parents, whose words of encouragement made me to achieve my targets. My sister has never left my side and is very special.

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TCS	Trade Credit Supply
TCD	Trade Credit Demand
LEV	Leverage (Risk)
STB	Short Term Bank Loan
FA	Fixed Assets
ST	Assets Turnover
SZ	Size
TURN	Proxy of Turn
GDP	Gross Domestic Product

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First and foremost, I must acknowledge my limitless thanks to Allah, the Ever-Magnificent; the Ever-Thankful, for His helps and blesses. I am totally sure that this work would have never become truth, without His guidance.

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I also would like to express my wholehearted thanks to my family for their generous support they provided me throughout my entire life and particularly through the process of pursuing the master degree. Because of their unconditional love and prayers, I have the chance to complete this thesis.

ABSTRACT

The study investigates the behavior of non-financial firms towards the use of trade credit where they have borrowing constraints in a developing economy. In spite of tremendous change in trends, there is still a huge trading by the trade credit. Buyers and suppliers moved from traditional trading system to advance automated and sophisticated methods of business. Multidimensional aspect of business strategies includes trade credit as well. There is a huge modification in trade credit supply and demand. Trade credit is used in almost all parts of the world as a major source of short term financing. There are the world renowned companies that can get financial loans but however prefer the trade credit because it gives them an edge against the collateral held at the financial institutions. Current study consists of some of these factors like the trade credit systems. This is helpful in decision making for business schemes to occupy the risk factor in profit generation through the use of trade credit. Due to lack of funding's for the businesses there is increase in risk the borrower become unable to run the business and therefore want to get finance or goods from any external source that fulfills the objective of the business as the suppliers.

Financial sectors like the banks have a proper risk management system to keenly monitor the financial conditions of the buyers. Banks require the collateral against the loan offered, as the risky customer has unable to provide any security to be pledged, trade credit serves the best means of short term loan for the customer. The buyer already in risky position tries to find out the short term means that are convenient and less time consuming for the businesses. The working is applied on the Panel data which consisted of time series as well as the cross sectional data of the non- financial firms. The data on which the working is applied consisted of fifteen years i.e: from 2001-2015. The software used for the working is the renowned software of finance E-Views-8. The methodology used in the working is the Generalized Method of Moments (GMM) formalized by Lars Peter Hansen in (1982). GMM is helpful for the problem raised because of the correlation amount the independent variables and the error term

known as endogeneity problem as well as the heterogeneity of firms. J-statistics is applied which explains that the instruments applied in the model are significant to the model. The software used for the implementation of methodology GMM is E-Views 8.

As per the findings the results proves the positive and significant relationship between the risk and trade credit supply and demand. As the risk of buyer increases at certain level, the buyer to overcome the problem of default move towards some sort of short term financing. Supplier as already involved in the same business serves the purpose more effectively for the buyers. The research has implication in the sector of non-financial firms where the buyer firms are already in the risky position and have to overcome the problem of liquidation. Risk management is very important for the maximum utilization of resources to generate profits for the firms. To overcome the problem faced by risky firms, firms have to adopt the proactive as well as the reactive strategies for timely capturing the risk to overcome default.

Key Words: Trade credit supply, trade credit demand, risk, borrowing constraints.

CHAPTER 1

INTRODUCTION

This chapter explains the introduction of the study. Theoretical background of the study is explained. Trade credit regarding non-financial firms of Pakistan perspective is discussed. The types of agreement of trade credit are also explained in the chapter. The problem statement also explained in the chapter. Research questions and objectives have been explained. The significance of the study is discussed in the chapter.

Trade credit, the buyer supplier relationship become an integral part of today's businesses. The trade credit contract is the two way process in which the buyer and supplier both actively participates in the scenario to fulfill the contract. The customer when becomes risky due to shortages of the investments and fear of liquidity, becomes unable to get help, have much interest to move towards the other sources of financings as like trade credit to fulfill their mutual interests.

Trade credit is a form of contract in which the supplier issue goods on credit to the buyer on some terms and conditions, to pay at some later date. Trade credit is given for some specific number of days; however these agreements can be extended by mutual agreement of both the parties. Trade credit, the credit given to another firm for the purchase of goods or to render the services. These types of purchases do not require immediate payment. This sort of credit is issued to the customers not able to have enough resources to run the smooth working of the businesses.

Berger and Udell (1998) stated about small and medium sized firms faced many constraints in getting the external source of financing. As per theories, the owners of the small companies are well informed about the company as compared to outsiders such as banks as per (Storey 1994). According to the Storey (1994) the capital structure of UK's small sized firms suggested that trade credit is a source for finance in case of any size of the firms' preferably to small and medium sized firms. Many companies now a days are using trade credit. The companies collaboratively decide to make the efficient use of the

capital to fulfill various business objectives. According to Marotta, (1998) the importance of trade credit is different from country to country.

Trade credit users are mostly the industrial sectors of the countries. As per the survey the manufacturing companies of the Finland's receivables have on average 9.7 percent and payable have 6.1 percent of the balance sheet items. In United States trade credit has a major source of capital for many business companies, also the largest use of capital in business versus business (B2B) sellers. As discussed by Murfin & Njoroge (2012) the major utilizer of the trade credit contracts, the case suggested the world's largest mart, the Wal-Mart has largest source of transactions in their accounts as of trade credit. Wal-Mart prefers trade credit over the bank borrowings and suggested that as compared to already investment of the shareholders, the trade credit held by the company's accounts has much more than 8 percent of the capital.

Wal-Mart has the world largest company by revenue as $480 billion in 2016. All the firms which are in relation with Wal-Mart the trading relation are the significant driver of investment (Murfin & Njoroge 2012).Trade credit is used by Wal-Mart in case of delay payements till it receive all payments. As per Wal- Mart annual Report, Wal- Mart a high rate and statdardized large buyer has account payables of short term fundings three quarters of its total debt.

The trade credit is a two way process between buyer and supplier. As per the needs of the business buyers require the goods to run their businesses and suppliers on the other hand require the incentive to increase his sales also to increase the market share. Supplier already involved in the business knows the situation faced by the buyer. In trade credit cycle the buyer request for goods on credit from the supplier. By the mutual consent of both the parties, the supplier once agreed, delivers the goods on credit to the buyer upon some terms and conditions. The buyer then pays back to the supplier the due payment upon which both the parties have the deal.

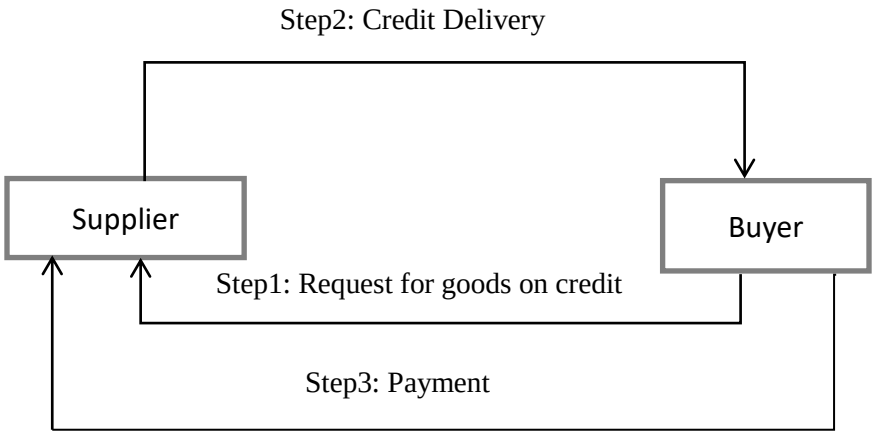

Figure 1.1 Trade Credit Cycle

1.1 Background of the Study

As per the study conducted by Ahmed & Khalid (2016) trade credit mostly provides capital to firms that unable to raise capital through traditional channels. Firms want to expand their businesses to generate profit and also to retain in business for future prospective. Trade credit generates incentive to both the parties to expand the business as well as to build the long lasting relations of businesses. Buyers are provided with the capital from supplier as they want to capture their business and expand their business. Also the supplier can better get information about the buyers and product as compared to that of financial institutions like banks. As compared to those of the financial institutions, suppliers used the information of monitoring and controlling for the repayment in a different way. Hence in trade credit the nature of credit differs from buyer to buyer.

Suppliers, on the other hand, have the ability to repossessed and sell the goods to generate credit. They have more specialized knowledge and skills of the market as compared to those of the financial institutions, in controlling the risk beard by the customers. Trade credit has reduced the cost attached to the transactions. Due to trade credit the goods delivered by the supplier indicates about the quality of the goods

delivered to the buyers. Trade credit can be issued in accordance of finance structure of the buyer firms depending upon the business organizations.

The countries like France, Germany and Italy have represented trade credit for a quarter of corporate assets. It has also importance where firms get limited help from banking sectors in many emerging economies like China as per (Ge and Qiu, 2007). Suppliers when deliver goods to the customers, customers often don't pay immediately on the spot instead suppliers offer credit terms to the buyer to pay later. Trade credit transactions normally required delayed payment of purchased goods that ultimately suppliers funded their clients with short term debts or loans. As per the Pakistan perspective, trade credit is different from corporate debts as: Firstly, Supplier mostly deals in "kind of product" not in cash transactions. Secondly, As compared to banks, trade credit is not specifically a formal contract between seller and buyer mostly depends on the personal relations of supplier and buyer. Thirdly, the non-financial firms of Pakistan mostly deal in trade credit. In many different types of firms and through many different economies the source of borrowing is mainly the trade credit at much individual level of firms.

It is a universal fact that nothing is certain. There are the chances that the actual scenario is quite different from the expected one. Risk can be determined by the likelihood of occurrence. The buyer can get the level of risk in the business. Ultimately there may arise the situation when the riskiness of buyer increased at certain level. Risk can be when a given product cannot be traded quickly in the market or there may be the situation where the buyer becomes unable to get the product because he has nothing against payment of loan. Investor basically follows the situations when they don't want to face risk but in a situation the buyer is unable to run his business due to lack of the funding has to find out the source of external financing. Therefore the buyer moved towards the supplier to attain the goods. As per Julan, Yi and Zhigang (2012), smaller firms have higher ratios as compared to those of big firms.

For all American firms in early 1990s trade credit is a significant part of balance sheet. Deloof & Overfelt, (2011) and Ge & Qiu, (2007) stated that relationship with banks and being a part of state owned firms can get the bank loan easily. As per the records the

firms of United Kingdom stated in the balance sheet, there has accounts payable up to 70 percent as short term debts. Also there in United Kingdom has short term debt of 50 percent of credit. According to García and Solano (2010); there are many non-cash related motives behind trade credit which serves the buyer and suppliers interests.

All the investments may contain certain level of risks as the investments return has not guaranteed. If the owner of the business might face the disappointing situation and has faced lack of investment situation, then he moved towards trade credit. The supplier willingly provides the credit transaction to the buyer as the supplier has complete knowledge of the market as well as the buyers financial and business situations. Trade credit hence suitable for both the buyer and supplier to serve their interests of businesses. As per study Ahmed & Khalid (2016) the firms when become credit constraints move towards trade credit to serve the purpose of the business and to improve the wealth of the firms to generate profit and to stand in the market.

Banks have a proper check and balance system to keenly monitor the financial condition of his customer. Banks have a proper risk assessment scenario to overcome the problem of default. The banks required some sort of security to be pledged in case of default. The investors already face the situation that being unable to provide any sort of guarantee, become unable to achieve bank loan. Therefore trade credit serves the best means of financing in case of risky customers. As per modern investment theory, the high level of intensity of risk in investments leads to more return and investment success. The potential losses in an investment make the business more risky. According to Beck et al., (2008) & Ge and Qiu., (2007) in underdeveloped countries, trade credit act a source of financing which gives the main services more conveniently better than those of financial sectors. There are two main sources of financing namely trade credit and bank finance as per Berger and Udell (1998) & Acharyaa (2009).

From supplier's view there is always some risk attached to the investment or product, but if this risk is not considered to take, it reduced the chances of more return. Suppliers know that the customer has faced risky situation, then still gave him the product and start the contract because he himself know the market conditions as well as that of the

products. Many businesses in Europe have closed down because of insolvency and other unpaid suppliers. Many managers have the motto ‘a sale is not a sale until it is paid for’ written on the desk as well as on the heart to actively participate their role. This has the negative case instead there should be ‘a sale is only a cost to us until it is paid for’. For many types of business, trade credit can be a source for growth in finances of companies.

Trade credit has allowed the buyers to take the supplies now and to pay for the product at the later date. The time span for which the credit has given, can determined by the company allowing credit as well as the receivers firms mutual understanding, it is necessary that both the parties should agree upon the terms and conditions. This type of credit is given to encourage sales. The bank loans are not entirely neglected or forbidden, however companies demand for less desirable alternatives as trade credit. The bank loan issued after prolong and complicated procedure. One can only receive bank loan after going through many difficult and time consuming terms and conditions which itself is not a simple scenario. This is the reason the small and medium sized companies prefer trade credit. Trade credit facilitates the companies to make new investment schemes and to make new markets which are more fruitful for the success of a company. It is time saving and beneficial for the new companies in a competitive environment to move towards trade credit. Trade credit debt in U.S. is the double in amount of any other amount of debt used. The ratio of trade credit in U.S. for the time 1990’s is $1.4 billion on average across all countries. As per Martinez-Sola et al. (2010) those firms that deal in trade credit are more profitable as compared to those that don’t provide trade credit. Discussed by Petersen & Rajan, (1994) also Saarani, Shahadan,(2013) & Molina & Preve, (2012) transactions mainly depends on the bank loan availability and in case the buyer becomes unable to get loan from financial institutions, the demand for trade credit increased up to certain limits.

In most developing countries like China the bank loan availability is not an easy task. There is difficulty to achieve the loan to the Non- state owned companies as compared to that of state owned firms. As per survey of the World Bank 2000 the developing country China has in late 1990’s received bank loan total of less than one percent to non-state

owned firms. State owned firms can easily get loan from bank but however the growth rate has much higher for that of the non-state owned firms. As a government firm has considered as a credit worthy firms whether they considered being financial or non-financial firms. The state owned firms however have advantage in getting loan from commercial banks in developing countries. According to records from 1989 to 1991 collected from 370 different cities of China, it has observed that state owned firms can obtain the bank loans more easily. The firms which can get funds contributed to the 20 percent of total industrial output in China, still the state owned banks are biased in lending towards the state owned firms.

1.2 Trade Credit in Pakistan

The trade credit in Pakistan has a situation where the non-financial firms have faced scare of financing. Hence there is a requirement for the external financing at most of the times. As per the study conducted by the Ahmed, Xiaofeng and Kalim (2015) the textile sector as in Pakistan is one of the largest/ biggest sectors of non-financial firms of Pakistan still financed by the trade credit as a major source of business. The other sectors like chemical sector, food industry like sugar industry, motor vehicle, cement etc all are mostly funded by the trade credit. The bank loan required security which, at times, becomes difficult for the customer to avail and trade credit becomes the important source of financing in Pakistan. Trade credit increases the market value of the firms, here sales has the basic indicator of growth and trade credit increased sales which results in increasing number of customers.

Buyers have the ability i.e. as in trade credit agreement; they can control the quality of the product. As buyers can sell the product in market and can monitor the quality of the product which is purchased by the customers. This leads to increase in product demand. Product itself has a security for seller as if the buyer is unable to sell, the seller himself can sell the product at any time. Trade credit has the real source of increasing revenue. Product quality is helpful for the future implication of the businesses of buyers and suppliers. For buyers to retain in the business the product quality is one of the major issues for their growth and establishment. If the product quality is not up to the standard

of the customers demand, there is decrease in the demand for the product and ultimately the risky condition becomes very harsh for the survival of the buyers firms.

Trade credit is considered as an expensive form of financing but still the non-financial firm's balance sheet contains the major portion of the trade credit as supplier and buyers have their interests towards the use and issuance of trade credit. It is considered that trade credit a tool of monitoring the product quality and serves the purpose to shorten the information asymmetry for the buyers. Also the issues of liquidity are resolved due to trade credit transactions between buyer and seller. Trade credit suppliers extend goods on credit which act as price discrimination for the buyer.

According to inventory management system the production of goods is done by the producer, he can either sell goods or he can retained the goods or the producer may extend the account and can play role in trade credit transaction. The supplier can generate discount to deprived customer so that buyer can retain his business and settle it from liquidity problems. The trade credit has become a popular source of financing as in case of the firms which are unable to get financial help and may face the liquidity issues. Also in Pakistan the non-financial firms have faced the problem of shortages and therefore more focused towards the trade credit agreements as it increased their utilization of resources and as well as the chances of their business expansions are enhanced by the way of mutual agreements of buyers and suppliers.

Supplier provides totally illiquid input on the other hand financial institutions like bank provides cash a totally liquid input. The trade credit transaction is for all firm sizes however it has more efficient use for small sized industries because they are more neglected by financial institutions. The risk hence the main factor for the junction of the buyer and supplier relation. The increase in risk of buyer forces the buyer to find the sources of financing that is convenient and less time consuming for the business. For supplier trade credit serves the means to expand the business.

Buyers who don't have any collateral or security against bank loan still can be financed by suppliers. Supplier provides the goods and buyer accepts those goods and makes payment at some specified time. In trade credit contracts the firm buy goods from

supplier on credit, the supplier has access to the market and thus they can arrange the credit for buyer. Suppliers arrange the credit based on the situation of the buyers firms and on the market standing of the buyers.

The financial institutions have to invest to gather information about their interested customers whereas suppliers do not spend anything for the collection of information about buyers. Trade credit is practically easy to implement as compared to that of bank loans. In case of no return of credit, suppliers just retained the supplies to him and no longer provide the goods to the buyer. In case of problem, the supplier holds the items back and resell them. Banks never do such tasks so easily.

1.3 Types of trade credit agreements

Supplier required the full payment for the delivery of goods. Length or the time period can be specified in the contract. “Net 30” means that the payment will be made within 30 days”. The supplier, if buyer was unable to pay him on time, will impose the penalty for paying late. And two part term: Supplier offered less amount of transaction as discount given to the buyer in case of early payment from the buyer. The early payment gave advantage to the buyer for getting early delivery of goods. If buyer does not avail the discount then he has to pay the full amount within the new period of 20 days.

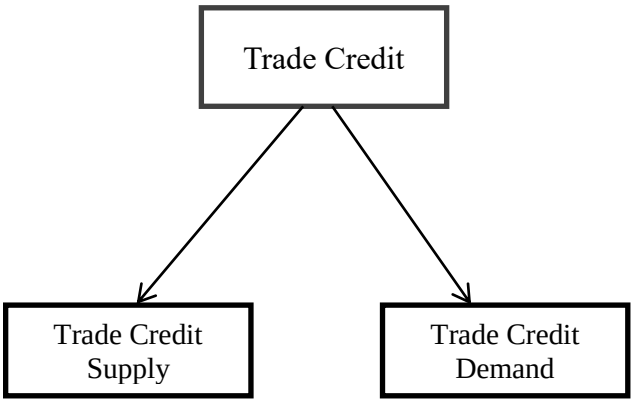

Figure 1.2 Agreements of trade credit

According to Figure 1.2, Trade credit is a two tier contract. When appears on balance sheet, it perform two functions together. According to Ahmed, Xiaofeng & Usman

(2015) when the trade credit is shown on the asset side, it has the account receivable properties and when trade credit is shown on balance sheet as liability side then it becomes accounts payable. The account receivables have been termed as trade credit supply. The accounts payable were termed as trade credit demand. Trade credit predicts the true picture of the contract as it has two scenarios from buyer and supplier side. Financial accounts of the companies contain account receivables as well as account payables. Account receivables constitute the major part of the assets. Account payable on the other side has the substantial part of outside funding like liabilities.

The trade credit is basically having a contract of demand and supply. Where supplier supplies the goods on request of buyer and buyer demands the goods. The relationship of the supplier firm, with that of the customer firm is explained in figure 1.2. The demand arise by the customer for the goods and the supplier when fulfill that demand, send the supply to the buyer firm. The firm has to pay in response to the goods occupied. It becomes the payable for the buyer and for supplier the amount become the receivable. Therefore, the trade credit relationship follows two relations on supplier and buyer side. At one point, the buyer firms get the goods from their suppliers on credit as accounts payable. At other point when firms grant goods on credit to customers and record the transaction as account receivables in balance sheet.

As per (1998) Survey of Small Business Finances (SSBF) there offered new schemes of discount for the customer to pay early. It is observed that in almost 90 percent of the firms, trade credit can be an essential short term debt for the businesses. The fact behind that are suppliers offered different terms and relatively stable terms for many different industries. For trade credit there are many alterations which can be implemented by the supplier to bring an ease for the buyer and are helpful for the industries as well. As to accommodate the change in demand, the suppliers prefer to change the price of goods rather than price of credit.

As per supplier’s point of view, trade credit has several advantages as compared to those of commercial financing as suppliers obtain information more easily on quality of buyer firms. Also buyer firms have to trade within the market sector. The suppliers closely

monitor the customers as discussed by Dell, Laevena, & Marquez. (2014). According to Ellingsen (2004) the transacted good itself is strong collateral for the supplier therefore supplier take less risk of liquidation. According to Barbara, Nicholas (2002) and García & Solano (2012) the problems of information asymmetry, moral hazard as well as the adverse selection have more impact on the commercial loan application as that of the trade credit transactions. Small firms are more concerned to increase their market share by granting more trade credit.

In case of trade credit the payment paid after the contracted date increased the real cost of trade credit, however the suppliers mostly not charge late payment fees and also gives extra time for payment because of personal relations with the buyers. However the late payment issue of the trade credit transactions differs across countries to countries and industries to industries. This features show extra degree of flexibility when the issue of repayment arise. Suppliers have the right to act legally against the buyers if the buyer do not repay at the stated maturity. Suppliers often decide to give buyers extra time for repayment. The long term relationship between buyer and seller has crucial to understand as late payment is concerned. The supplier usually being more concerned about the late payment as compared to that of buyers, as the supplier is more focused about the buyer as well as his retention in the business.

As per the buyer, the late payment can be a source of the insurance against temporary liquidity shocks. The buyer utilized the late payment possibility even then the buyers are at the benefit as it saved the customer from liquidity issues. This type of liquidity is for SME's or the entrepreneurs where they have more need to increase sales. Young and new firms have already build relations with the supplier for their growth and for newly operated businesses. The future revenue that supplier expect to obtain from the buyer is high because of the nature of the transacted goods. Late payment is only profitable if supplier and buyer want to have future commercial relationship.

Supplier gives more concessions to customers as compared to that of the financial institutions like banks. According to Dell, Laevena & Marquez (2014) to find the right seller at right time has an issue, and to keep the relationship longer is another issue. It

becomes natural to let the buyer allow late payment as if linked to the long term relationship with them. Suppliers can distinguish among the buyers. The transaction between seller and good quality buyer is that at the probability of default, the goods sold by the supplier at cost price and at cheap credit terms.

According to Cunat (2007) if firms experience the liquidity issues and negative growth rates trade credit also have the effect on the growth process. As per Petersen & Rajan (1997) those firms which already face financial distress, more interested to extend trade credit as trade credit is the source for increase in the sales to generate the receivables for the company. This gives flexibility in payment to suppliers. Trade credit extends for many periods of agreement. At times, the supplier becomes the buyer and the buyer becomes the supplier of another good so the relationship between the parties is an ongoing process.

Explained by Smith (1987) and Maksimovic (2008) the buyers select the business related contracts more easily according to their financial position and nature of work, when they deal with trade credit contract. Trade credit can be a source to depict the position of the buyer and his financial standing in the business world. Suppliers to accommodate the adjustments in the demand, willingly accept to alter the price of commodities than that of the credit terms. The price of goods can be adjusted as the discount offer also varies the payment modes. To diversify the risk of the buyer it is necessary to distribute the earning of the buyers so that there has less chance of liquidity faced to the buyer. Trade credit gives more enhanced chance of diversification to the businesses as the buyer supplier maintains many businesses among them for their mutually business growth and expansion.

1.4 Problem Statement

Non-financial firms of Pakistan as to overcome the problem of default maintain relations with the financial sectors of the country. As per the study of Smith (1987) banks have decreased the credit constraints of firms in Germany. However bank loan availability is considered as a major problem to non-financial firms of Pakistan. As the buyer firms may

become unable to get the finance because of lack of funding's, therefore an increase in risk is observed. Due to increase in the risk the buyer has to find other external sources of financing that are convenient and less time consuming for the businesses. Trade credit serves the best means for the firms where supplier as already involved in business provides more help and support to the financially distress firms. Therefore raise problem statements as "increase in use of trade credit due to borrowing constraints and risk faced by the borrower of banks".

1.5 Research Questions

As per the study regarding trade credit demand and supply, there arise the questions which have to be answered as

- Does risk has any positive relation to the trade credit supply and demand?
- Does short term bank loan negatively relate to the trade credit supply and demand?

1.6 Research Objectives

As per the study regarding trade credit demand and supply, there have some objectives to be fulfilled

- To identify the relationship between risk and trade credit demand and supply.
- To identify the relationship among bank loan and other independent variables on trade credit demand and supply.

1.7 Significance of the study

The trade credit has a good source of short term financing as for buyer and supplier are concerned. To get the efficient use of the resources and to increase the sales of the business the trade credit acts as a source of financing. The buyer who bears risk and want to overcome the problem better use the other sources of funding as trade credit. In case of risky buyers the financing provided by the suppliers act as a source to eliminate the chance of default and to save the buyers businesses. Trade credit is largely used by the

non-financial businesses now a days as these businesses are more neglected by the financial institutions.

As per Khan, Tragar & Bhutto (2012) they have analyzed their study on the textile sector of the Pakistan listed firms, gathered the findings on textile sector of Pakistan. Their research has explained the existence of trade credit on textile sector of non-financial firms of Pakistan. Their findings on account receivables have incentives to use trade credit. However the risk impact has not discussed in their work. This study has an effort to capture the dynamics of risk of the borrower and the impact of the risk on the use of trade credit. The risk attached to the buyer, so that buyer moved towards the external source like trade credit. The potential of use of trade credit is discussed in the research.

Trade credit contract gave an ultimate way to run the working form of the businesses without hampering the issues involved in other loans. Buyers on the other hand have the advantage not to face the hassle of the loan and can directly deal with the supplier for the credit or goods on credit. The trade credit serves the purpose to promote the businesses and to enhance the market share of the companies.

The significance of the study has to test the impact of increase in the risk and its effect on the trade credit which can be helpful for the future practical execution of the managers of trades in making investment decisions of their businesses. The study has the financial significance for the investors while performing investment policies concerning the trade of goods and allocates the resources for the future enhancement of the businesses. The study can contribute to better understanding of risk and trade credit relationship. It is fascinating to see and gave empirical support of the research as in context of non-financial firms of Pakistan that can motivate further innovation of the research in the field.

CHAPTER 2

LITERATURE REVIEW

This chapter covers the literature review regarding the trade credit. The past theorists efforts and findings regarding trade credit have discussed. This chapter also discusses the theoretical background regarding the topic. The gap in the research is also discussed as it provides the imperial evidence for the research. The hypothesis have also discusses in this chapter.

2.1 Theoretical Background

Firms have various ways to generate the needs of their capital. As per theories there are two main ways to generate the funds: The long as well as short term financing. Long term method of financing is more profit generating but however it requires massive investment for the businesses. Short term financing is comparatively less profit generating but however it gives an edge against the down fall of the firms. If customer has faced the risk, he should surely move to the other ways of financing like short term financing and make it more attractive to get involved in. As per theory, the issues are due to asymmetric information within the market. The informational asymmetry arises because of the fact that some of the suppliers are well aware of the product to be circulated as compared to those of the other suppliers. This informational asymmetry at times creates an opportunity for some of the suppliers to motivate their businesses more than other suppliers in the same industry. There are alternative ways that solve the issues of the short term financing like trade credit. According to Martínez Sola et al. (2012) trade credit a contract between buyer and seller for the exchange of the goods at future payment terms and conditions. Hence trade credit has an important source for all the size of firms but especially small and medium sized firms. Trade credit can be used to discriminate the price; the interest rate paid by the buyer has been closely related to the interest rate of trade credit.

Different theories have been explained by Petersen & Rajan (1997) because stabilize firms can easily get help from the financial institutions however unstable firms have to

see other resources of financing that are convenient for the business. Trade credit increased efficiencies between buyer and seller and simplify the cash management. Trade credit supply has easily and efficiently evaluated the financial standings as well as the creditworthiness of the customers. Trade credit can be a mean that has used to reduce cost attached to the transactions as explained by Ferris (1981) in Transaction cost theory. As per study of Petersen & Rajan (1997) for all American firms trade credit is an important part of balance sheet in early 1990. Account receivables were recorded as 18 percent as per total assets. As for example, in United Kingdom, debts of short term nature has observed to be 70 percent account payable from balance sheet and 50 percent of debt has recorded as compile debt of the companies. It has discussed by Burkart & Ellingsen (2004) that France, Germany and Italy trade credit is observed as one fourth of all the corporate assets and also important where firm gets limited supports from the banks in emerging economies like China as per Ahmed, Xiaofeng & Khalid (2014). Discount offer has been an attractive option from firm's point of view because of this the cost attached to purchase goods or services have been reduced. In case to lend to other firms, the firms have financing advantages as to collect and gather the information more quickly and easily comparative to that of banks and financial institutions. Suppliers have informational benefits over other financial sectors.

Future is always uncertain, uncertainty related to time and cash flow is highly risky. Risk management being very important for the maximum utilization of the capital to generate profit and therefore has the critical determinant of profitability. Financial loss has the result of failure of processes, people and external events as well. Due to increase in risk faced by the borrower, as a result the use for trade credit increased. As per Petersen and Rajan, (1996) suppliers do not discriminate the prices if they work on price of credit or price of goods therefore the supplier may face low profitability.

According to Vadiya (2011) supplier also imposed power on buyer to pay on time otherwise buyer will no longer be served as a customer. Explained by Smith (1987) the discount given to buyer indicates as a weak financial standing by seller. As per Wilson & Summers (2002) as a tool the trade credit has fulfilled all the marketing aspects. In case

that a new owner entered in market, can gain reputation and success if involved in trade credit transactions instead of spending many years to stand alone trade credit build new business relations. SME's were not able to secure the enough amounts of finances and this caused the SME's to fail.

Suppliers hold advantage and power over their customers and know about the financial position of their customer very well by controlling goods supplied to the buyers as per Ono (2001). Smith (1987) suppliers when issued discount to their buyers ultimately represents those buyers have weak power of finances. Discussed by Petersen & Rajan (1996) when other resources have stopped their supply of credit then the firms have to see other ways and trade credit has extensively used by these firms.

There have numerous studies carried out for the use and existence of the trade credit as per Maksimovic (2008). According to Storey (1994) if a small portion of borrowing has required for the working of the businesses, it becomes the major obstacle in the way of progress of the businesses and for this borrowing mostly lot of interest has to be paid for. As per economic theories, these problems are because of the information asymmetries. The goods as they become more long lasting, they become more profit generating and ultimately the buyer is willing to pay more for the strong product as per Carbo, Rodriguez, Fernandez & Udell (2016) for non-financial firms in Pakistan the trade credit contract always serve the purpose of financing at most of the times.

Frank & Maksimovic (2008) buyer and supplier can avail the facility of relationship in case when there have instability in the financial market of the country. According to Maksimovic (2008) trade credit has made up of 55 percent of credit and 70 percent of debt. The nature of the debt is mostly short term debt. Non availability of finances always turns the buyers towards new and everlasting sources especially the trade credit contract serves the purpose.

As per Ahmed, Xiaofeng & Mujtaba (2014) has found that the use of trade credit is increased after 2008 due to financial crises in the country. Trade credit is more common among firms facing bank borrowing constraint as banks required security against the loans. Bank always issues loan to those customers where there have attached a less risk of

repayment. Due to increase in risk the customer is not able to run business therefore moves towards other short term trades. Trade credit thus serves as an edge to the buyer to sustain in the competitive market. This showed a strong and effective use of trade credit in developed as well as developing countries. As per Rajan and Zingales (1995) in early 1990, All American firms had total assets of 17.8 percent as a significant part of trade credit. Total credit received by the firms had recorded as 55 percent of trade credit as per the study of Kohler (2000).

According to Martínez-Solano, (2012) trade credit as well as on firm characteristics in different parameters and cultures, concluded that different cultures have different impact on the nature of trade credit. Firms with less interactive relationship with banks tend to move towards trade credit more and have more trade credit in their accounts as compared to those of the banks as per Petersen & Rajan (1994). As per theory trade credit act as a positive signal in the market as compared to banks which less liked to lend to the buyers. Giannetti et al. (2003) stated that trade credit act in a way to finance the company externally also it became cheaper at discount in early payments. As per Jain (2001) trade credit has the direct relation with business and the source of financing to the companies. According to Maksimovic (2008), trade credit is best for the buyer as well as for the supplier where both the parties mutually share their interests to expand the businesses, in case of inefficient financial markets. SME's can easily get trade credit financing as compared to bank loan because of small nature of businesses.

Non-financial firms have their interest in issuance of trade credit because of the fact that knowing complete information of the market these firms have advantage over the other institutions and they efficiently utilize their resources to give maximum output to their companies. In working in same industry supplier knows very well about the near future aspects of the running companies and has complete knowledge to expand the needs and efforts of the business. As per Buch, Eickmeier & Prieto (2014), already existed firms are more interested in debt financing as developed countries are concerned.

As per financial institutions they have to spend money and utilize their efforts to find out about the financial position of their customers and the product they want to utilize however on the other hand the suppliers have more information as they have enrolled in

the same business and at some efforts can get the complete and up to date information about the buyers and their nature of work. The amount to be recovered in case of trade credit has an easy task as that of the financial institutions. Supplier have the stock and he can stop the delivery of material at any time if the buyer delay or don't pay the supplier the sated amount at due date agreed by both the parties. In case buyer becomes unable to pay the amount of contract, the supplier still has the benefit as the supplier gets back his goods and can hand it over to his other buyers for sale or sell them by himself. But bank couldn't perform the tasks so easily.

The buyers as they became unable to provide any collateral to get the loan still based on business relationship with supplier and got the financing from supplier to proceed in the business. Buyer could meet liquidity problems and could pay the supplier at some specified future date. Like financial institutions supplier buyer relationship doesn't require proper documentation to specify goods for their business transactions with suppliers. According to Jimeneze, Lopezb & Saurinaa (2013) and Maksimovic (2008) found two sources of financing as trade credit and bank loan has been a signal between supplier and buyer. As per Carbo, Rodriguez, Fernandez, & Udell (2016) supplier performed job of intermediate because of low monitoring cost. Non-financial firms face the problem of non-availability of short term financing from financial institutions.

Trade credit holds an important role in every corporate financing policy. Funds invested as trade credit financing served the purpose of an investment for the business. Carbo, Rodriguez, Fernandez, Gregory & Udell (2016) stated that in European firms in balance sheet items the total assets of the companies have trade credit supply items. According to Beck (2008) & Ge and Qiu (2007) trade credit served the purpose of external financing for the countries which are still underdeveloped as these countries have no excess towards the financial institutions and they are unable to meet the policies of financial institutions.

According to Niskanen & Niskanen (2006) & Petersen & Rajan (1997) have investigated the impact and use of trade credit in different countries. To extend finance, trade credit has best way of financing as per Meltzer (1960). Rajan & Zingales (1995) stated that for

balance sheet trade credit is considered as an integral part of balance sheet items for Americans at early 1990's. According to Petersen & Rajan (1994) stated that trade credit as essential parts but expensive part of the balance sheet stills the non- financial firms carried major financing through trade credit. Trade credit served the purpose of product quality for monitoring tools and served the tool for reduction of information asymmetry for the buyer as per the theorists Smith (1987), Long (1993). As per by Coleman (2000) SME's unable to secure enough resources of financing therefore they face the failure quiet often as compared to large firms.

From supplier point of view, in order to discriminate the price to the buyer, supplier extends goods on credit according to the researcher Emery (1987) and Petersen & Rajan (1997). As per Ferris (1981) as suggested in transaction cost theory, to reduce the transaction cost, trade credit served the best means. Wilner (2000) & Cunat (2007) for a deprived customer to maintain a long term relationship, the supplier's given discount as well as try to settle the liquidity problems of their customers.

According to Ge & Qiu (2007) countries like France, Germany and Italy as well as the developing countries which include China where companies used trade credit more of their total assets. As per Diamond (1984) better suggested handing over the monitoring to financially intermediaries. In developed countries the commercial banks get more alert about the financial corresponding's of the non-financial firms as per the theorists Cameron (1967) & Rajan & Zingales (2003). According to Rajan & Zingales (2003) found that on Belgian firms in the year of 1840-1914 the financial institutions including banks have important role on the Belgiam firms as finance and financer. According to Long (1993) those companies which are larger in size have good reputation as well as more storage cost for holding inventory but they don't face the liquidity problem like that of small companies as per inventory management model and can get finance from any other source as well. Importance of trade credit differs from country to country. Mostly users of trade credit have higher in those countries where the production of goods has an integral part of the economy as explained by Marotta (1998).

Small companies have more interest to issue trade credit as they have to be more interested to resolve their liquidity issues. According to Long et al. (1993) long firms get less involved in credit transactions also they don't need to provide the guarantee for their product. As per study Beck, Kunt & Maksimovic (2008) as per survey 19.7 percent total invested has been financed through trade credit as an external source in 48 countries of the world. Author argued that trade credit has the second largest source of external financing. In developed countries like France and UK more than 30% finance is external finance as trade credit. In U.S. 60% of small businesses used trade credit such a major use of financing than banks and financial institutions as per explained by Elliehausen & Wolken (1993). Firms at startup and newly younger firms rely more on external source of financing as trade credit as per the researcher Berger, Udell (1998) & Cunat (2007).

Supplier gave them a more helping hand and provides more working capital financing to these firms. These startups enable the buyer firms to start a new era of business and to create a new history of payments for their near future as per researcher Cook (1999) & Garcia (2010). The important role of trade credit for development of economy still there less studied in academic perspective in the field of trade credit than other types of corporate financing.

Supplier in many cases when they issue trade credit charge their buyer zero interest rate. Issuance of trade credit let the buyer pay amount after the delivery of goods, suppliers issue goods at fewer amounts or mostly at discounts to retain the buyers for longer time. According to the Schwartz (1974) trade credit has been extensively used globally and its importance is still much more as compared to other external sources of financing.

Seller managing cash inflow has incentives for a more predictable cash stream to manage liquidity. Trade credit has been an efficient way for cash required firms so that they minimize liquidity costs for gaining excess cash borrowing or for insolvency as per James, Zur (1987) & Emery (1987). Cash shortage has been managed by account receivables, offer trade credit instead of liquidity against demand deposits, loans or investment in liquid securities because of high returns gained through trade credit. Goods produced in the market are better to be used then the goods produced with in firms.

Survey of Small Business Finances (SSBF) provided many empirical evidences on the validity of the trade credit theories on sample of US firms on Federal Reserve Bank. Elliehausen & Wolken (1993) used the dataset which contains firms which have surveyed for trade credit and also the financial account data of the firms. The tests are made on the trade credit. It supports the transaction cost theory as per Ferris (1981) that has investigated that the account payable and the trade credit related to total purchases at the purchase time and time of delivery. The high level of risky firms use more trade credit and pay higher portion of trade purchase after the due date. Economically significant theories were transaction cost theory and informational asymmetry explained the demand for trade credit.

Buyers firms have faced credit constrained issues as these firms have faced investment opportunities and they can increase their inputs by expanding the business. Also the increased sales gave an easy to increase their market share and to prosper the business. The commercial banks have more lending channels as compared to those of supplier to fulfill contract requirements. The main reason of the existence of tax has to motivate the trade credit because different tax policies for buyer and supplier showed a way to protect against highest tax schedule as the case of financial institutions. As seller has to report the taxable income as per the installment of credit received. In case of cash management process, the trade credit serves the purpose to reduce the cost of firm resources.

2.2 Theories of Trade Credit

Motivational trade credit theories have been listed below.

2.2.1 Financial Models

Trade credit can be beneficial for the supplier in concerned product market. Competition exists when there have few seller of the same product in the market. This type of competition has real world competition as the seller has the monopoly over the product and buyers to survive in the market rush to have the product. Supplier can increase their product sales and maximize their profit by lower reservation prices required cash for wealthy firms. Trade credit enhances the marketability of the product. Deloof & Jagers

(1996) trade credit serves as a system to control the quality of the goods purchased (Smith 1987 & Long et al. 1993).

Buyer also differs in the credit quality offered by the supplier. Supplier offered different credit terms to the buyers as they reduced prices of goods for those customers who cannot pay much, get the credit from their own supplier at cheaper rates. In this way supplier managed the cash payments requirements by placing more sales as in form of trade credit or cash contract. According to Smith (1987) & Burkat & Ellingsen (2004) the supplier firms generated their own credit worthiness criteria of the buyer firms and therefor persistent to the theory of informational advantage over the banks.

Information asymmetry where the insiders of the firm are better informed as compared to that of the outsiders as suppliers, investors and shareholders. According to the Storey (1994) information asymmetry can be a source of discouragement for good and efficient buyers. In case when the price has already been paid for goods, that's become difficult to return them therefore the trade credit became costly if the product is not according to the buyer's expectations.

Supplier and buyer both parties choose the contract where they have maximized profit, the prices and quality of goods for trade credit has a major bond for the contract between the two parties. Small and medium firms have informational asymmetry as they don't have credit history or the track record as well as the low collateral tends to move them towards the alternative source as trade credit. As per Diamond (1989), Rajan, Zingales (1995), Akhtar, Javed, Maryam & Sadia (2012) these young and small firms have greater chance of getting the trade credit and lessen the chance to get the bank loan as compared to that of the large firms. According to Ahmed, Xiaofeng & Mujtaba (2014) in case of buyer's trade credit serves as a mechanism to control purchased product quality (Smith, 1987, Long et al. 1993). This leads towards quality of goods i.e. TURN which is not cording to the buyers requirements.

Maksimovic (2008) found that those firms having higher profit margins offered more trade credit comparative to financially less profit generating companies. There has

observed the higher account receivables in case of negative sales growth and negative income of the firms as discussed by James (2013) & Cuñat (2007).

2.2.2 Macroeconomic Conditions

Macroeconomic conditions have also an effect on trade credit usage and conditions which cannot be ignored and has highlighted by many researches. According to Smith (1987) & Walker (1991) receivables are settled on the circumstances of the economy. Trade credit has increased use in case of deteriorating gross domestic product (Niskanen & Niskanen 2006). As discussed by Ahmed, Xiaofeng & Mujtaba (2014) the relatioship amoung Gross Domestic Produt and economy is negativly related to each other. As per Smith (1987) & Benjamin (2000) stated that suppliers have information advantages as compared to that of banks. Trade credit has extended in case of the conditions of the country are not stable and increase in borrowings make trade credit a viable type of short term funding's.

Trade credit has been also a source of reputation for the young and small suppliers newly entered in the scenario. As per Smith (1987) uncertain product market can develop complete theory because suppliers have complete informational advantage as compared to those of banks in case of product quality as per standard of the buyer and customers. Supplier can screen the buyer from many types of risks attached because of the informational benefit. Credit screening has been processed by which the borrowers quality have screened by the lender by indicating liquidity or leverage ratio to reduce information asymmetries between lender and borrower.

2.2.3 Inventory Management Model

Explain by the inventory management model the liquidity issue is not faced by the large sized firms. The storage cost is also low in case of large size firms. As by Long et al. (1993) large firms have good reputation and due to this fact they have capacity to get finance easily. As per Ahmed, Xiaofeng & Mujtaba (2014) big firms have no need to provide guarantee for the product. Firms which have given discount indicated that the firms incurred late payment or penalty showed they have higher cost of credit.

The late payment has been an alert for the seller that the buyer may not be able to pay him next time the due payment and ultimately increased the risk of default. Sellers are much aware of the sunk cost in the relation with the buyer and gather somewhat financial standing of the buyers also about the supply of product in case of risky customers. Inventory management model as developed by Bougheas (2009) stated that those firms which face liquidity issues extend more trade credit to their customers to increase the account t receivables which are their assets.

Adverse selection leads the supplier towards the more risky buyer and ultimately towards lower sales. Suppliers are more aware of their buyers in operations of normal course of business, as they personally investigate the buyers business and gather the information about the investment opportunities of the buyers as the order of goods placed by them. According to Biais & Gollier (1997) stated that the supplier has the monetary advantage in trade credit over the bank proposed a model in which credit rationed buyer got relief from bank credit economy by the introduction of trade credit contracts.

Suppliers have good opportunity to pledge future cash flows as collaterals. From the seller point of view credit quality has also extended by the buyer. As per Biais & Gollier (1997) suppliers has not assumed to be better screener of buyers but however they have retained in business and due to advantage they better perform as compared to that of the financial sectors.

2.2.4 Short term bank loan

The supplier also gets information from the others suppliers and also controls the buyer as well. As the seller is in the market and has the complete knowledge of the market so he knows that the supplies are a productive input for the buyer. Supplier gets the information about the firm activities free of cost. Insiders have no benefit to provide the information to those outsiders. SME's may have financial problems and their projects may be denied because of the high interest rates. Bank target to the higher quality and highly financed firms where the risk of default is quiet low. Banks have a proper check and balance system for the issuance of loans to the buyers. Financial institutions cannot issue loan to any risky customer because the customer cannot pays back the amount. Availability of

trade credit from suppliers decrease the effect of unavailability of financing from other sources. Firm value of those firms have been increased which have used trade credit as a second source of finance during 2008 financial crisis Ahmed et al. (2014).

Therefor the supplier can easily lend to those firms which are credit constraints and cannot run their businesses. According to Biais and Gollier (1997) banks also observe that there is a credit transaction between the sellers and the buyers and can incurred the transactions. A model has been represented by Burkart and Ellingsen (2004), Cuñat (2007) showed that suppliers has been better than banks who better controlled the functions of the buyers. Ahmed, Xiaofeng & Kalim (2015) financial institutions have to force the buyers for timely debt payments. The risky customer has become unable to have any finances therefore trade credit serves the best means of financing.

If buyers were unable to find the proper substitute for their supplies either because they were unable to find the proper supplier for them or the product is very costly or because of the sunk cost attached to the business relations, then the buyer will prefer the trade credit as the last resort. The relationship between the supplier and the buyer has closely linked better than the commercial banks as in case of temporary shock of liquidity the relationship still remains and enforce the business terms to prosper better than that of the commercial banks where they have to force the buyer to pay for the debt payment.

As per Maksimovic (2008) suppliers assumed to have input advantage as in case of default of buyers, supplier has liquidating advantage. As supplier deals with many buyers so in case that one of the buyer has been at default and not able to pay the supplier can easily take back his supplies and quickly resell them in the market to his other buyers as well. The trade credit mechanism has emerged as a natural system between buyer and seller who privately get informed about their creditworthiness. Trade credit acted in a way to discriminate the price for buyer. The seller is the sole responsible for the settlement of the price according to the quality of the product therefor the trade credit act for the supplier the product quality as warrantee according to Lee & Stowe (1993), Long, Malitz & Ravid (1993). The supplier has the potential to give the discount to the buyers who pay early and also to those who pay at some later time.

Supplier got assistance and provides lending's to the buyers who are already risky and likely to default. When supplier has interest to choose the goods according to his willingness, the relationship between seller and buyer is not as stronger but the value of good has been improved. According to Sarkar., & Saren (2014) however if the goods have been of buyer specific nature, goods have low collateral value but they have tighten the relationship between buyer and seller. There will be long sales and transformation rotation for the collateral value of the delivered goods, easily identifiable to the supplier. Price discrimination serves an important scale for the buyer to enhance the business and trade credit worthiness among the supplier buyer relationship. As per study Ahmed & Khalid (2016) the firms when become credit constraints move towards trade credit to serve the purpose of the business and to improve the wealth of the firms to generate profit and to stand in the market.

Suppliers act to control the buyer if the buyers unable to pay on the due time and date, the supplier cut the supplies and force the buyer to pay. This threat enforced the buyer to act rationally and to meet the deadlines as offered by the supplier. On the other hand the financial institutions cannot do the task so easily. However if there will be no supplies the buyer can be threatened. According to Maksimovic (2008) supplier also offer credit to the firms which have low finished goods to inventory ratio supporting the theory of highly liquidating collateral.

Timely and up-to-date information on seller side and short term nature of trade credit has a noticeable advantage on financially distressed buyers. If the sale has not completed until payment has been made then the seller has a legal right to take the goods back. The delivery of the specific goods showed as the contract has been guarantee for trade credit with little or no transaction cost, this sort of transactions were of value for the small and medium enterprises as they were often lack or short of collateral or cash. It seemed that trade credit contract has easy to start up but however the goods delivered made the collateral value a lot across industries.

Smith (1987), Jorion & Zhang (2005) if the goods return increased and has quiet fast as compared to that of the level of the trade credit contract then it act as a source of finance

for the important part of the fixed assets of the firms. The interaction leads to the collateral level and growth rates of the firms. According to Burkart, Ellingsen & Giannetti (2003) stated that trade credit has been directly related to the goods held for the transaction as well as on the buyer as well. Trade credit also acts as tools to foster sales as seller are less financially constrained as compared to that of the buyer. Seller has better access to the financial markets. Trade credit given (trade credit supply) and trade credits obtain (trade credit demand) have been strongly correlated to each other. Buyer who received the goods on one side may become the supplier of other goods on the other hand hence trade credit becomes payables and receivables at the same time.

As per Wilner (2000) argued the buyer firms themselves also like to get involve in credit transactions as trade as loans held due to the riskiness of the transactions. According to Daripa & Nielsen (2005) stated that trade credit agreements act as a way to foster the sales as well. According to Smith (1987) & Long, Malitz & Ranid (1993) buyer can check the quality of the goods delivered and can foster the sales before final payment is made to the supplier.

There has observed the drop in performance of the financially distressed firms if they used more expensive bank loans as a source to finance their companies. According to Petersen & Rajan (1997) stated that there have been an increase in the use of trade credit by small firms when they face weaker financial conditions. As per Stulz (1992) financial unstable firms have difficulty obtaining loans from financial institutions therefor other sources like trade credit can be beneficial for the business. According to Jorion & Zhang (2005) stated that firms which have instability regarding their financial structure might face problems with their suppliers and there has been a larger drop in performance when there has a significant increase in the achievement of credit or financing as trade credit.

Burkart and Ellingsen (2004) suggested that the goods supplied in form of trade credit were more deployed therefore served as better collateral and ultimately increased trade credit financing to their clients. Suppliers as their nature of work gave them the advantage to screenshot the conditions of the buyer firms also the environment of their work.

2.3 Contribution

The research has the gap in which the risk analysis on trade credit has not discussed. The analysis still has not unfolded in case of the increase in risk and its effects on use of trade credit supply and demand.

2.4 Hypotheses Development

Literature has tried to find the motives behind the work of supply and demand of trade credit. The addressed theories of these motives have explained below.

2.4.1 Leverage (Risk)

Firms with high level of variations in operations have high returns as high risk has been associated with them. According to Stulz, (1992) increased the level of leverage leads to increase in credit transactions of the company. Debt increased the likelihood for financial distress and debt also provides tax benefit. According to Memon., Ahmed, & Abbas (2015) those managers who not control the risk factor ultimately resulted in higher expected costs of financial distress as well as bankruptcy or liquidation. Studied showed that despite of tax benefit the increased level of risk caused the decrease in the firms performance and ultimately firms moves towards other sources of financing as that of trade credit. The gap of literature has been still not discussed as in case of Pakistan environment. Up till now there haven't observed the analysis of the risk and its impact on the trade credit demand and supply.

When the different firms have different perspective to use the debt and equity situation for them to make their capital financing stabilize, managers make more effective strategies to improve the working performances of the firms as per Andrieua., Staglianoa. & Zwanb. (2015). Increase in risk leads to decrease firm's performance and ultimately firm's performance demands some source of financing which leads to increase in trade credit. According to Saarani & Shahadan (2013) suggested that liquidity also raised the credit transactions. Due to increase in the level of the debt results the buyer will be unable to get the finance to run the company. Buyer will move towards other sources of financing and in such a way able to get the trade credit. The supplier has been already

wanted to lend the goods to increase his sales and hence go for the trade credit transactions.

Hence postulate the hypotheses regarding risk faced by the firms with respect to trade credit supply and demand as follows:

H1a: There is positive and significant relationship between risk and trade credit supply.

H1b: There is positive and significant relationship between risk and trade credit demand.

2.4.2 Short Term Bank Loan (STB)

Non-availability of short term financing reduced sales and ultimately reduced cash flows of the businesses. Short term bank borrowing leads to increase the working cycle of the companies, however the availability of short term loan as trade credit reduce the other borrowings like that of bank borrowing or other high interest commercial loans. The management of the company has to follow the two processes together. One is termed as the planning stage and the other is the controlling process. In case anyone process doesn't work properly then the management and whole working scenario got affected. To meet the short term obligations these both processes should act properly also to reduce the resource waste as in the form of increased level of current assets. Trade credit has been a source of short term financing therefor the bank loan included in the working has also of short term nature. According to Ahmed & Khalid (2016) the relationship between the short terms bank loan and trade credit demand has been negative significant.

Hence postulate the hypotheses regarding short term bank loan with respect to trade credit supply and demand as follows

H2a: There is negative and significant relationship between short term bank loan and trade credit supply.

H2b: There is negative and significant relationship between short term bank loan and trade credit demand.

2.4.3 Asset turnover (ST)

Asset turnover is an important ratio used to achieve purpose of management efficiency. Asset turnover has been used to measure the revenue generated through the use of assets. It shows the firm's ability to generate more revenue. According to Koh & Amherst (2017) Assets turnover show that how much of the assets have been utilized by the company for revenue generation. Higher value of the asset turnover depicts that the firm has effectively utilized the assets against sale. Assets turnover showed that the assets produced have a solid impact on the trade credit contracts both on receivable and payable side. More the asset turnover depicts that more will be supply for trade credit. According to Fairfield. & Yohn (2001) the change in asset turnover forecast the future profitability of the company. Author also argued that the investors and analysts have to monitor the change in assets turnover as it indicates the future profitability of the businesses.

Hence postulate the hypotheses regarding asset turnover with respect to trade credit supply and Demand as follows

H3a: There is positive and significant relationship between assets turnover and trade credit supply.

H3b: There is negative and significant relationship between asset turnover and trade credit demand.

2.4.4 Sales Turnover (TURN)

According to Smith (1987), Long (1993) trade credit has been a helpful measure of the quality of the goods contracted also reduced the asymmetry among the information spread among buyers and the quality of the goods delivered. As per Smith (1987) to verify the product quality, it takes longer time period than usual therefor the trade credit guarantee for the quality of the product offered by the suppliers also as per Long (1993), Deloof (2011). Buyers could manage product quality as the way of trade credit has been discussed by Smith (1987) & Long (1993). A long term relationship between buyer and supplier therefor can exist because of the fact due to trade credit as per Buch., Eickmeier, & Prieto (2014). Product quality that is TURN has therefor been used for the investigation. Sales turnover indicates that quality of the goods has reduced standard or

lesser as per the requirement of the market. According to Ahmed (2014) if there has an increase in the sales turnover, it reduced the supply for the trade credit.

Hence postulate the hypothesis regarding TURN with respect to Trade Credit Supply as follows

H4: There is a negative and significant relationship between TURN and trade credit supply.

2.4.5 Size (SZ)

The different sized firms have different composition of the capital structure determinants. As per Long et al. (1993) there has been good reputed firms mostly were firms which get credit worthiness also they have capacity to get financed by any other source therefor these firms move towards trade credit supply and demand.

Firms as they already in credit transactions doesn't require to guarantee the product also the reputation between supplier and buyer make the business more stronger than before and leads to the scenario that larger the size of firm the more credit they can have as per Long (1993). According to Petersen and Rajan (1997) trade credit has been more given by the large firms as these firm hold large value of account payables.

Larger the firm, the more are the chances for better management and proper governance for the mechanism and hence more reliable transaction and records by the analysts, also large number of the transactions on trading floor. These aspects lead to the fact of great financing of the firms. As per Shepherd large firms have an effect on the profitability as they leverage their market power. Large firms have lowest bankruptcy cost attached as well as the liquidation attached in the operations in also very low there for the firm size had positive impact on the performance and trade credit.

As per Petersen and Rajan (1997) firms having better quality obtained more trade credit. Dell, Laevena & Marquez (2014) stated that large firms have more diversified portfolios and less risky in nature. Small firms do not have any collateral and therefore not able to repay their debt and faced the problem of solvency. The size of the company has a direct

relation with the trade credit supply. Greater the size of the buyer firm has the more the company demand for the supply of goods.

Hence postulate the hypothesis regarding size of the firm's as follows

H5: There is a positive and significant relationship between firm size and trade credit supply.

2.4.6 Macroeconomic Factor (GDP)

A macroeconomic factor gross domestic product (GDP) as per Smith (1987) the conditions of an economy act as a depicter of the economy. The economic conditions describe about the stability of the market conditions of the country as a whole. Trade credit contracts works better on destabilize economy. According to Rajan and Zingales (1995) there existed the positive relationship of GDP on size of the firms. Fewer sales have been a major failure for the firms and become the source of reduced Gross Domestic Product (GDP). Firms increased their use of trade credit under decreased gross domestic product as per explained by Niskanen & Niskanen (2006). According to Ahmed & Xiaofeng, (2015) there existed negative and significant relationship between GDP and trade credit. Author also argued that these results have difficult to be explained under the case.

Therefore, postulated the hypotheses regarding macroeconomic factor GDP as under

H6a: There is a negative and significant relationship between gross domestic product and trade credit supply.

H6b: There is a negative and significant relationship between gross domestic product and trade credit demand.

2.4.7 Fixed Assets (FA)

The more the assets are, more will be the ability to issue trade credit. Fixed assets show the firms capacity to arrange the finances by the way of trade credit. If kept these fixed assets the firm can be in a position to arrange more credit for their company. Large sized

firms having more fixed assets also borrow the credit at lower interest rates as it can provide these assets as collateral. According to Domeika (2008) firms which possessed fixed assets have better borrowing cost, and smallest cost of financial distress ultimately moves towards trade credit demand.

Hence postulated hypothesis regarding the Fixed Assets and Trade Credit Demand as

H7: There is positive and significant relationship between fixed assets and trade credit demand.

CHAPTER 3

DATA DESCRIPTION & RESEARCH METHODOLOGY

This chapter explains the source from where the data has been collected for the research. It also explains the data has been collected for non-financial firms of Pakistan. The sample size selected for the working includes complete data of the companies, those which provide incomplete or half yearly accounts is not included in the work. For detailed study it also provides the list of variables used to complete the research. The methodology used for the study has been discussed herein.

3.1 Data Description

Due to the constraints in receiving data, the study has focused data of every non-financial firm located in Pakistan. The non-financial firms listed at Pakistan Stock Exchange (PSX) which has been the largest stock exchange of Pakistan, the total number of firms listed include 443.

Major part of data consisted of Balance Sheet Analysis (BSA) and Financial Statement Analysis (FSA) which were published by The State Bank of Pakistan (SBP). The financial statements of non-financial firms also provide the data listed at Pakistan Stock Exchange (PSX). Due to trade credit deals in non-financial sector, the financial sector of Pakistan weren't included in the working. Both time series and cross sectional data is included. Data collected for fifteen years from the year 2001 to 2015.

3.2 Sample Size

According to year 2015, 443 companies which were listed on the Pakistan Stock Exchange (PSX) provided their non-financial firms data. The incomplete data from the firm's financials has been excluded from the working. The remaining non- financial firms, (on which the working was made) had a total of 352 firms in case of trade credit.

The following Table 3.1 presented contribution of industrial frequency distribution of overall sample selected for the analysis. Non-financial firms are divided into ten main

economic groups. Different industries were used for the data collection including textile industry, sugar industry, cement industry, automobile industry, etc. These firms were primarily heterogeneous to each other. The frequency distributions along with the total number of firms show the percentage of each sector.

Table 3.1 Industrial Frequency Distribution

No.	Sector	Total No. of Firms	Frequency	Percentage
1	Textile	178	141	40.06%
2	Motor vehicles, trailers and auto parts	29	52	14.77%
3	Food, Sugar	57	51	14.49%
4	Cement	29	21	5.68%
5	Chemicals, Chemical Products, Pharmaceuticals	48	32	9.09%
6	Other Manufacturing	39	25	7.10%
7	Coke and refined petroleum products	15	9	2.56%
8	Electrical machinery and apparatus	19	9	2.56%
9	Paper, paperboard and products	15	7	1.99%
10	Other non-metallic Mineral Products	14	6	1.70%
	Total	**443**	**352**	**100.00%**

According to Table 3.1 the total number of non-financial firms at Pakistan Stock Exchange (PSX) was 443 out of which 352 firm's data was used for trade credit. There were 40.06 percent firms belong to the major textile sector of Pakistan. As per the frequency distribution table, it concludes that the textile sector is the largest sector of non-financial firms of Pakistan. According to Memon, Ahmed, Abbass (2015) the textile sector has the maximum users of the trade credit. The groups of Motor/vehicle and Food Companies stood the second with percentage of 14.77 percent and third position with percentage of 14.49 percent respectively. Cement companies belong to 5.68 percent. Chemical sector belong to percentage of 9.09 percent. Other manufacturing products belong to percentage of 7.10 percent. Coke and refined petroleum products and electrical

machinery apparatus both groups belong to 2.56 percent. Paper and paper product groups belong to 1.99 percent. Other non-metallic mineral products sectors belong to the smallest economic group with percentage of 1.70 percent of the above mentioned distribution.

Table 3.2 explains the descriptive statistics of the trade credit. The table has divisions of different subparts, which indicate the overall volume of the non-financial firms of Pakistan. From the results of trade credit it was observed that non-financial listed companies have an interest towards obtaining the goods as compared to those to provide the goods. Measures of the central tendency of variables include the value of mean. Mean is calculated as the average value. Min. stands to explain the minimum level and Max. explain the maximum level. Ranges indicate the difference of Max. and Min. Standard deviation, the measure of variability; determines the dispersion of data. However the descriptive statistics provide the useful summary of the risk when performing the empirical and analytical analysis.

According to Table 3.2 of descriptive statistics, Trade credit supply has 68 percent account receivables from sales with 89.59 and 9.42 maximum and minimum respectively. Std. dev. demonstrates that every fourth sale is credit sale. Trade credit demand has 63 percent accounts payables from total liabilities with 74.56 maximum and 0.00 minimum. Std. dev. demonstrates that almost every third liability arises of payables. Lev with maximum 6685.70 and -960.10 minimum is the measure of debt to equity so its increase indicates that more of the debt 163.47 percent as compared to that of the equity used by the non-financial firms of Pakistan. Std. dev. 302.43 demonstrates the more use of debt in capital structure of firms. Also the Leverage has increased values indicate that the more of the debt as trade credit has been used by the non-financial firms of Pakistan as compared to that of the equity. Hence the ratio of debt user has increased in the context as compared to equity funded companies.

Table 3.2 Descriptive Statistics

	Mean	Max.	Min.	Range	Std. Dev.
TCS	0.68	89.59	9.42	99.01	4.00
TCD	0.63	74.56	0.00	74.56	3.46
LEV	163.47	6685.70	-960.10	7645.80	302.43
FA	0.92	401.63	0.00	401.63	6.03
ST	1.22	23.76	0.00	23.76	1.12
STB	0.14	2.37	0.00	2.37	0.18
SZ	6.67	12.20	-3.17	15.37	1.77
GDP	15.75	16.18	15.11	1.07	0.40
TURN	-3094.44	14095.10	-848121.40	862216.50	28177.86

Fixed assets were 92 percent of the total assets with maximum 401.63 and minimum 0.00. Std. Deviation was 6.03 demonstrates that every six assets has fixed asset. The Assets turnovers demonstrate the sales of 12.2 percent of the total assets with maximum 23.76 and minimum 0.00. Std. Deviation demonstrates that almost sale of every 1 asset. The short term bank loan was found 14 percent of the total assets with maximum 2.37 and minimum 0.00. Std. Deviation demonstrates 18 percent of assets held by short term bank loan. Size was the natural log of book value of assets which is 66.7 percent with

maximum 12.20 and minimum -3.17. Std. Deviation demonstrates 1.77 percent book value of assets.

GDP was the natural log of annual GDP which was 15.75 percent with maximum 16.18 and minimum 15.11. Std. Deviation demonstrates 40 percent of gross product. Sales turnover was -3094 of the sales to assets less receivables with maximum 14095.10 and minimum -848121.40. Std. Deviation was 28177.86 indicate that TURN has maximum deviation. Sales turnover has increased values. The greater minimum and maximum values exist for the TURN and this has because of the fact that TURN indicates the product quality according to the buyer's requirements. More the sales turnover lesser would be the trade credit. It can be stated that trade credit was less used in short term bank loan economic group.

3.3 Econometric Methodology

Statistics is about to collect the data and to summarize and analysis the data for further implementation of the models. Collection of information is really helpful in the way to expand research. The econometric model applied in this research is Generalized Method of Moments (GMM).

Panel data was implemented in cross sectional analysis. Many cross sections and each cross section is different from the other therefore panel system is helpful for application of heterogeneity of firms. Panel data increases the degree of freedom and give the researcher a large number of data units to be observed. This gives more clarity while addressing combines cross sectional and time series data. Econometric problems get resolved by the help of panel data. Panel data provides the simplicity in case of analysis. Balanced panel data used where every cross-section unit has observed for the same time period.

The research of the Balestra and Nerlove (1966) gave the research world a new and quantify economic relationship of pooling the cross section and time series data. Error term has to be uncorrelated to the regressor. This is termed as exogenous variable. If this correlation occurs there arises the problem of endogeneity. Endogeneity is the problem in which the explanatory variables correlate with the error term. The product of observed

explanatory variable and unobserved error term must equal to zero, if this violated then there raised the problem of endogeneity. As per Anuara., & Othman (2016) if lagged dependent variables become an explanatory variable, as well as the problem of endogeneity occur or explanatory variables do not remain strictly exogenous.

The model allowed for the possibility that some or all of the elements may be correlated with the error term. Endogeneity has been the problem of causal effect of variables. Independent variable will be correlated with the error term because of some reasons as: omitted variable bias, lag dependent variable & correlation with error term, errors in variables. According to Rodriguez – Rodriguez (2006) in case of endogeneity, the results become biased. In econometrics the model for time series data used to predict current value of dependent variable based on explanatory variable and lagged values as explanatory variables. The equation contains a lagged dependent variable as an explanatory variable. This is called an autoregressive model or a dynamic model. Lag value represents the previous value of the lagged variable as in the study trade credit demand and supply.

Lag value is given in the study to investigate the effect of previous period. Lag value term belongs to statistical analysis of time series data. The value of the variable at the same time but before one year explained as the lagged variable. Lag effect is helpful when to investigate the treatment of previous period is important to understand the outcome of the current period. Since there exists more than one cross section so these give advantage to control the unobserved heterogeneity among variables.

3.1.1 Generalized Method of Moments (GMM)

Generalized Method of Moments (GMM) became very popular tool among empirical researchers. Lars Peter Hansen (1982) formalized the GMM estimation and then this method was mostly applied in the fields of finance and economics. For estimating panel data models, established by Blundell & Bond (1998) the method termed as Generalized Method of Moments (GMM) became a popular method. Generalized Method of Moments (GMM) was previously used in numerous studies in order to serve purpose of dealing with non-linearity models and unified estimation technique as per Garcia-Teruel and

Martinez-Solano, (2010), Cunat, (2007), & Bougheas (2009). There were so many practical and theoretical applications regarding GMM. Consistencies basically cover the sufficient number of observations. Moment estimation was the well-known process to estimate the population moment sample. Hence the GMM was suitably applied. Therefor GMM was selected as a better option to be utilized in research.

Generalized Method of Moments (GMM) began with economic theory and the data were used to produce estimates of the model parameters. GMM being very flexible, since it only required some assumptions about moment conditions therefore it was reliable estimation procedure for many models in economics and finance. To get appropriate results, Generalized Methods of Moments (GMM) have been used. GMM demanded specification of moment conditions to satisfy the model. GMM implementation was implemented and extended in a variety of literature from, linearity to non-linearity models. According to Garcia- Teruel & Martinez – Solano (2010), Cunat (2007) & Bougheas (2009) the issues related to correlation and endogeneity has been fully addressed by GMM. GMM also controls the problem of endogeneity.

Ahmed, Xiaofeng & Mujtaba (2014) Panel data has been proposed of trade credit to elude the problems of endogeneity and heterogeneity. As in case of trade credit, the data consisted of heterogeneous firms and at stated time interval. Panel data have lagged level of dependent variable as regressors because the correlation exists between the lagged dependent variable (explanatory variables) and error term. Regressors cannot run independent of the error term. As per Han & Philips (2007) & Cunat (2007) Generalized Method of Moments (GMM) has been the best approach to be opted to take care of the problem and helpful to resolve the issues arise of the correlation between observed independent variable and unobserved error term. GMM is applied in E-Views 8 helpful for the practical implementation of the methodology.

GMM has been more applicable on minimum 5 years data and many cross sections. Trade credit may depend on some firm specific characteristics. Panel data method pedals this distinct heterogeneity and problem of heterogeneity may lead towards biased estimates. This indicates that the causal relation among variables has not done, Least

Square Dummy Variable proofs deficient to get the results so, Generalized Method of Moments (GMM) used to solve the issue.

It was found that the misspecifications related to estimated model, Sargan-Hansen J-Statistic was used to check the non-existence of correlation among error terms and instruments. J-statistics indicate that the instruments used in the estimation are valid or not. Instrument used includes the explanatory variables and the lag value of the explanatory variables. J-statistics proves that the instrument used in the study has been correctly applied for the model. A fixed effects regression has importance because data often fall into categories such as different industries, sectors as well as different countries. Fixed effect models have applicable if omitted factors have to be discussed that may be correlated with predictors. As the firms used in the study are heterogeneous, each and every firm has been different from the other firm as α_i for giving fixed effect model because of the heterogeneity of the firms, fixed effect model has been applied.

General panel data model for linear regression is as follows

$$Y_{it}=\beta_0 + \sum_{j=1}^{n} \beta_j X_{jit} + \varepsilon_{it} \quad (1)$$

Generally the model for the linear regression can be expressed as above.

General dynamic panel GMM model is as follows

$$Y_{it}=\beta_0 + \beta_1 Y_{it-1} + \sum_{j=1}^{n} \beta_j X_{jit} + \varepsilon_{it} \quad (2)$$

As the dependent variable depends on the previous value or the lag value of the dependent variable, also there arose the problem of endogeneity so generally the statement can be written as above.

As the firms used in the study are heterogeneous, as each and every firm has been different from the other firm which include the textile industry, sugar industry, cement industry, and chemical industry as well as other non-financial firms have been included so because of the heterogeneity of the firms, fixed effect model has been applied.

As in our case specifically the model for trade credit can be written as follows

$$TC_{it} = \alpha_i + \beta_1 Risk_{it} + \beta_2 STB_{it} + \beta_3 ST_{it} + \beta_4 SZ_{it} + \beta_5 TURN_{it} + \beta_6 GDP + \beta_7 FA_{it} + \varepsilon_{it} \quad (3)$$

Further the trade credit has two parts as trade credit supply and trade credit demand so both can be written separately as below.

Equation of Trade Credit Supply can be written as

$$TCS_{it} = \alpha_i + \beta_1 TCS_{it-1} + \beta_2 LEV_{it} + \beta_3 STB_{it} + \beta_4 TURN_{it} + \beta_5 ST_{it} + \beta_6 SZ_{it} + \beta_7 GDP + \varepsilon_{it} \quad (4)$$

Trade credit has two parts; from trade credit supply side the statement has the independent variables as lag value of trade credit supply, risk, short term bank loan, sales turnover, asset turnover, size and gross domestic product and the error term.

Equation of Trade Credit Demand can be written as

$$TCD_{it} = \alpha_i + \beta_1 TCD_{it-1} + \beta_2 LEV_{it} + \beta_3 FA_{it} + \beta_4 ST_{it} + \beta_5 STB_{it} + \beta_6 GDP + \varepsilon_{it} (5)$$

Trade credit has two parts; from trade credit demand side the statement has the independent variables as lag value of trade credit demand, risk, fixed assets, asset turnover, short term bank loan, and gross domestic product and the error term.

Where,

yit dependent variable like account receivables and accounts payables. *xjit* independent variables. *X* explanatory variables as risk, short term bank loan, sales turnover, asset turnover, size, GDP, fixed assets. *i* represented different firms at time *t.* ε error term. Equation one based on the postulation that β_0 represents intercept and equal for all cross sections and is constant. αi is used because of heterogeneity of the firms as all the firms are heterogeneous to each other in respect to size, nature of business and workings therefore to give them fix effect the fixed effect model has been applied. *j* stand for the different vector of explanatory variables and its values ranges from 1 to onwards.

3.4 Variables Used in Study

The lists of variables used for the study of trade credit are mentioned as follows.

Table 3.3 List of Variables

Variables	Names	Abbreviations	Sources
Dependent Variable	Trade Credit Supply	TCS	Petersen & Rajan (1997)
	Trade Credit Demand	TCD	
Independent Variables	Risk	LEV	Hasliyawani & Othman (2016)
	Short Term Bank Loan	STB	Ahmed & Xiaofeng (2016)
	Asset Turnover	ST	Patricia, Fairfield & Teri (2001)
	Fixed Assets	FA	Ahmed, Xiaofeng & Kalim (2015)
	Size	SZ	Bougheas et al. (2009)
	Sales Turnover	TURN	Garcia & Solano (2010a)
	Gross Domestic Product	GDP	Niskanen & Niskanen (2006)

Trade Credit Supply (TCS) is a measure of Accounts Receivable to Sales. Trade Credit Demand (TCD) is measured by Accounts Payable to Total Liabilities. These two dependent variables are explained by Petersen & Rajan. As per the study Jaleel, Xiaofeng & Mujtaba (2014) dependent variables may depends on some of its own lag values therefore lag dependent variables also used as independent variables as TCS(-1) & TCD(-1). Risk (LEV) is measured by Debt to Equity Ratio applied by Hasliyawani & Othman. Short Term Bank Loan (STB) is measured by Short Term Bank Loan to Total Assets used by Ahmed & Xiaofeng. Assets Turnover (ST) is a measure of Sales to Total Assets applied by Patricia, Fairfield & Teri. Fixed Assets (FA) is measure by Fixed Assets to Total Assets applied by Ahmed, Xiaofeng & Kalim. Size (SZ) is measured by Natural logarithm of Book Value of Assets Bougheas et al. Sales Turnover (TURN) is measured by Sales to Assets deducting Receivables applied by Garcia & Solano. Gross Domestic

Product (GDP) is measured by log of annual figures of GDP applied by Niskanen & Niskanen.

CHAPTER 4

RESULTS & DISCUSSIONS

In this chapter the results of the implementation of the GMM model are generated which provide significant relationship of the risk (Leverage) on trade credit supply and demand. Table 4.1 and 4.2 show the effects of risk on trade credit supply and demand. Most of the results are in line with the previous findings of different studies on trade credit. However the impact of risk is recently implemented and discussed.

4.1 Effect of Leverage (Risk) on Trade Credit Supply

In this study the dependent variable was Trade Credit Supply (TCS), the hypothesis was related to the risk of borrower and trade credit supply show significant relationship. As the trade credit supply depends on the previous lag so, the first independent variable was the lag of trade credit supply which showed the positive and significant relationship that trade credit supply depends on previous lag. The value of t-statistics is above 2 which indicate that the variable used is significant. P-value is less than 0.05 so we reject the null hypothesis.

Trade Credit Supply (TCS) has been significantly related to the risk of borrower which proves our hypothesis of increase in risk lead the increase in use of trade credit supply. As the risk faced by the buyer increased the other sources of financing especially trade credit. As discussed by Stulz, (1992) the increase in level of risk leads to increase the credit transaction of the company. Non- financial firms lead towards more trade credit supply due to increase in risk. The risk has significant positive relation with that of the trade credit supply. The value of t-statistics is approximately 2 which indicate that the risk variable used is significant to the trade credit supply. P-value is 0.05 so we reject the null hypothesis and accept the alternate hypothesis.

Table 4.1 Leverage and Trade Credit Supply

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	22.86131	2.819669	8.107800	0.0000
TCS(-1)	0.227443	0.017709	12.84343	0.0000
LEV	0.000329	0.000168	1.955306	0.0507
STB	-0.633547	0.297360	-2.130572	0.0332
TURN	-0.000104	3.64E-06	-28.64419	0.0000
ST	0.315015	0.111904	2.815053	0.0049
SZ	0.004872	0.136346	0.035736	0.9715
GDP	-1.477338	0.200698	-7.360993	0.0000
R-squared	0.704460			
Adjusted R-squared	0.651978			
J-statistic	476.1449			
Prob(J-statistic)	0.000000			

The dependent variable is Trade Credit Supply (TCS), the result shows the negative significant relationship between the short term bank loan and trade credit supply. Hence proved second hypothesis regarding the short term bank loan and trade credit supply has negative significant which has discussed by Ahmed, Xiaofeng & Abdullah (2015). Hence prove our hypothesis regarding short term bank loan and trade credit supply. As we have stated that the value of t-statistics is above 2 which indicate that short term bank loan used is significant to trade credit supply. P-value is below 0.05, so we go to our alternative hypothesis.

Sales turnover has significant negatively related with trade credit supply showed that due to increase in trade credit supply and ultimately increase in assets. Non- financial firms lead towards more trade credit supply and hence towards more sales due to production of more goods. Negative significant relationship show increase in trade credit supply and decrease in sales turnover as well. The increase in the sales turnover leads to decrease

supply of trade credit. Sales turnover showed that the product quality as required by the customers of the businesses argued by Wilner (2000). Also proved by Ahmed, Xiaofeng & Khalid (2014) turn as an indicator for determining the quality of the product being offered on credit transactions as per by Garcia-Teruel & Martinez, Solano (2010a). Hence prove hypothesis regarding sales turnover and trade credit supply. As per the results of t-statistics indicating that sales turnover used is significant. Also P-value is below 0.05 so we reject the null hypothesis.

Assets turnover has significant positive relationship with trade credit supply showed that due to increase in trade credit supply the assets produced are in higher quantity because of high production of goods. Fairfield, & Yohn (2001) the change in asset turnover forecast the future profitability of the company. Hence prove hypothesis regarding asset turnover and trade credit supply. Non- financial firms leads towards more trade credit supply and hence towards more sales of assets or goods. t-statistics is above 2 indicating the significance of asset turnover. P-value is below 0.05 so we reject the null hypothesis and go to our alternative hypothesis.

Size has not significant relationship with trade credit supply as trade credit has less applicable to the firms which have large sized industries. Due to increase in size of the companies, they can easily move towards other financial sources as well. But however the big firms are not so attracted towards the trade credit supply. Long et al., (1993) & Wilson and Summers (2002) that small firms prefer trade credit supply as a means for quality and reputation as compared to those of large size firms which already have built their quality so these large firms offer less credit to customers. Size is not significant to trade credit supply as proved by Ahmed, Xiaofeng & Mujtaba (2014). t-statistics explains that the size variable is not significantly used in case of trade credit supply and Prob. not significant so accept the null hypothesis.

Macroeconomic factor Gross Domestic Product (GDP) gives the negative significant relationship explain that the trade credit supply has been negatively related with the gross domestic product. Negative significant relation indicated that companies in Pakistan have less interest in trade credit especially the case of non-financial firms when the economic

conditions stabilized in the country. Smith (1987) the condition of an economy has the predictor of the economy. If the economy is stable then trade credit has been less implemented and in case that economy is facing instability then it also positively affects the trade credit. Niskanen & Niskanen (2006) in case when the economy has facing the deteriorating GDP, the contracts or the agreements of trade credit rise. As per Ahmed, Xiaofeng & Usman (2015) there exist negative and significant relationship between GDP and trade credit. Hence, it proved the hypothesis regarding GDP and trade credit supply. As it has stated that t-statistics is above 2 indicating that GDP used is significant to the dependent variable. P-value is below 0.05 so we reject the null hypothesis.

The value of R-square has found 70 percent indicates that the 70 percent of the variation in trade credit supply has been explained by these explanatory variables. Prob. J-statistics is below 0.05 indicating that the explanatory variables used in model have influence on trade credit supply.

4.2 Effect of Leverage (Risk) on Trade Credit Demand

In this study, the dependent variable has been Trade Credit Demand (TCD), the hypothesis related to the increase in risk of borrower so buyer moves towards demand for trade credit. The result shows the significant relationship between the risk of borrower and increase in demand for trade credit. As, the trade credit demand depends on the previous lag of trade credit demand which show the positive and significant relationship that trade credit demand depends on previous lag. As we have stated that t-statistics is above 2 indicating that variable used is significant to the dependent variable trade credit demand. P-value is below 0.05 so we reject the null hypothesis and accept the alternative hypothesis.

Table 4.2 Leverage and Trade Credit Demand

Variable	Coefficient	Std. Error	t-statistic	Prob.
TCD(-1)	0.347858	0.023537	14.77947	0.0000
C	7.236896	2.844319	2.544333	0.0110
LEV	0.000513	0.000191	2.686176	0.0073
FA	0.512528	0.228168	2.246271	0.0248
ST	-0.327735	0.120603	-2.717473	0.0066
STB	-1.277858	0.451193	-2.832177	0.0047
GDP	-0.434546	0.181477	-2.394496	0.0167
R-squared		0.444842		
Adjusted R-squared		0.351645		
J-statistic		14.09845		
Prob (J-statistic)		0.049458		

According to the Table 4.2 the study the dependent variable, Trade Credit Demand (TCD) is positively significantly related to the risk of borrower which proves hypothesis that there is relationship between risk and demand for trade credit. As the risk increased the customer moves towards other sources of financing including trade credit which fulfilled the objective of the study. As discussed by Stulz, (1992) the increase in level of risk leads to increase the credit transactions of the company. The increase in risk tends to move the customer towards other sources of financing like trade credit. Increase in risk leads to decrease firm's performance and ultimately firm's performance demands some source of financing which leads to increase in trade credit Anuara & Othman. (2016). The firms which have less financials like non-financial moved more towards demand for trade credit due to increase in risk. As we have stated that t-statistics is above 2 indicating that risk used is significant to the dependent variable trade credit demand. P-value is below 0.05 so we reject the null hypothesis and accept the alternative hypothesis. Hence the result is also found according to the hypothesis.

Trade Credit Demand (TCD), the result show the positive significant relationship between the fixed assets and demand for trade credit showed that increase in demands for

trade credit leads to increase in fixed assets. The firm when possess the more fixed assets, greater will be the chances that the ability of the firm has been increased because of the secured level of the credit. If the firm has high level of fixed assets, the company has the advantage to take the fixed assets as collateral and get the loan. According to Niskanen & Niskanen (2006) & Ahmed, Xiaofeng & Kalim (2015) the theory of product quality supported the results of the fixed assets. Increased level of requirement for the assets more will be the trade credit demand. As per the results of t-statistics indicates that variable fixed assets used is significant. P-value is below 0.05 so we accept the alternative hypothesis. Hence proves hypothesis of there is relationship between fixed assets and demand for trade credit.

Assets turnover has significant negative relationship with trade credit demand showed that due to increase in trade credit demand, the assets produced not sold at that mark.

The demand for assets is quiet less in regard of sale. The firms have not utilized the product according to the skill and efficiency of the firms. Fairfield, & Yohn (2001) the change in asset turnover forecast the future profitability of the company. Hence proves our hypothesis of there is relationship between assets turnover and demand for trade credit. The results of t-statistics indicate that variable asset turnover used is significant. P-value is below 0.05 so we reject the null hypothesis and accept the alternative hypothesis.

Short term bank loan has negative relationship with trade credit demand. Negative and significant results of short term bank loan indicated that firms in Pakistan especially non-financial firms have less interest in short term bank loan as compared to trade credit. Buyers have to arrange resources and if one of the sources has become unable to provide the finance, the buyer will move towards other sources for the grant of loan. According to Petersen & Rajan (1994) if the buyer will no longer have financing, trade credit facility serves the best purpose. Therefor the short term bank loan reduced to a certain level. As per relationship between loan from bank and trade credit has been observed, if at certain pointy of time the trade credit going to increase then then short term bank loan will decrease. Therefore an inverse relation exists between the two. According to Ahmed & Khalid (2016) the relationship between the short terms bank loan and trade credit demand

has been negative significant. Hence relates to the hypothesis of there was relationship between short term bank loan and demand for trade credit. Result show that t-statistics is above 2 so short term bank loan used is significant. P-value is below 0.05 so we go to alternative hypothesis.

Macroeconomic factor, Gross Domestic Product (GDP) gives the negative significant relationship indicate that the trade credit demand has been negatively related with the gross domestic product. The increase in the GDP leads to the lesser demand for the trade credit. Negative significant relation indicate that firms in case of better and improved economic condition move less towards the trade credit contracts. As discussed by Smith (1987) the economy has been an indicator to control the level of trade credit in country. As per (Niskanen and Niskanen 2006) in case when the economy has facing the deteriorating GDP, the contracts or the agreements of trade credit raised. As the results have negative but significant impact on the GDP and contract of trade credit, the researcher indicate that the relationship of the GDP has been unable to be discussed. Hence proves our hypothesis of there was negative significant relationship between GDP and demand for trade credit. As per the results of t-statistics indicate that GDP variable used is significant. P-value is below 0.05 so we reject the null hypothesis.

The value of R-square has found 44 percent indicates that the 44 percent of the variation in trade credit demand has been explained by the explanatory variables. Prob. J-statistics is approximately 0.05 indicating that the explanatory variables used in model have influence on trade credit demand.

CHAPTER 5

CONCLUSIONS & FUTURE RECOMMENDATIONS

5.1 Conclusion

Trade credit, the buyer and supplier contract, the trade credit serves the best purpose of short term financing. The importance of the trade credit has extended in the new Era. The businesses get the best out of resources to get the best potential of the working system, trade credit serves the purpose efficiently and effectively for the businesses. As the customers become risky and become unable to smoothly run the business due to lack of the finances, moved to the supplier for trade credit agreement. Short term businesses avail the trade credit financing as it serves their best interest.

This research study has an effort to capture the dynamics of risk and the impact of the risk on the use of trade credit supply and demand. There past research explained a lot of study on trade credit however there has no such working as in the case where the buyer's risk involve in the working business as per non-financial firms of Pakistan are concerned. Therefor the study has carried out on risk and the impact of risk on use of trade credit to provide the enhanced picture of the risk faced by the buyer firms. The hypothesis regarding this study has explained the use of trade credit and its effect on borrowing constraints as the risk faced by the borrower. Trade credit contract gave an ultimate way to run the functioning of the businesses. Buyers on the other hand have the advantage not to face any discomfort can directly avail the facility of credit from the supplier as the supplier already involved in the same business. The commercial loans have been achieved after much complicated scenario and the collateral held against the loan create the hassle for the buyer. Risky buyers have a better opportunity to avail the discounted loan from the same supplier who already involved in the supply of goods.

The study is to test the impact of increase in the risk as the buyer becomes unable to run business due to lack of financing and capital and its effect on the use of trade credit which can be helpful for the future practical execution of the investors in making

investment decisions. The study has the financial significance for the investors while performing investment policies and allocates the resources for the future enhancement of the businesses. The study can contribute to better understanding of risk and trade credit relationship of buyer and supplier. It is appealing to see and gave empirical support of the research as in context of the Pakistan that can motivate further innovation of the research in the field.

According to the study it is concluded that the buyer when faced the risky position in the busienss and has been unable to arrange the working capital for the business, tried to find out the source of short term financing. The buyer move towards the supplier for the trade agreement. The supplier agreed to provide credit to the buyer at certain terms and conditions also there has the discount facility on early payment to the buyer which gives him the edge against the payment. Hence trade credit serves the purpose of risky customers. The result are inline with the hypotheisis which proves that there is positive and significant relationship in risk and the use of trade credit in non-financial firms of Pakistan. The non-financial firms of Pakistan however face difficulty due to borrowing constraints and trade redit as the second main source of external financing helps to solve the problem of liquidity for the buyer firms. Therefore trade credit serves the best means of short term financing as well as the source to solve the liquidity problems of the risky firms.

5.2 Future Recommendations

The study contributes to the use and implementation of trade credit for the future. First, the study used 7 explanatory variables instead different or other variables may be used for more better interpretation of the dependent variables. Second, the time period which is selected for the reasearch work comprises of the 15 years from 2001-2015 which can be increased for more accurate results. Third, empirical support of the research as in context of the Pakistan has given however to motivate further innovation of the research in the field it can be applied to other countries and economies as well.

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