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Sustainable Finance through Trade Receivable Exchange: Evidence from Bangladesh

Md. Moniruzzaman[1], Dato Dr Mohd Padzil Hashim[2] and Annuar Md. Nassir[3]

Abstract

A large amount of money in the economy remains tied in the form of trade receivables that are created from the business to business (B2B) transactions among the firms. Firms have already invested their funds in the business activities that generate the invoices (trade receivables). Firms generally wait for 30 days, 60 days, 90 days and so on for the payment of the invoices. But most of the firms often cannot afford this long wait-time that leads to business losses, lost business opportunities and others. Particularly MCSMEs (micro, cottage, small and medium enterprises) cannot bear this lost opportunity cost. 51 percent of MCSMEs close business due to the lack of finance. However, this financial constraint can be catered with the help of the encashment of trade receivables through TRX (trade receivable exchange) digitally (not with conventional paper money). The large corporates may also avail this mode of financing. The study explores how firms may apply this innovative financing digitally to address their financial needs that may facilitate their sustainable development. The proxies include return on assets (ROA), return on equity (ROE), current ratio (CR), internal growth rate (IGR) and sustainable growth rate (SGR).

JEL classification numbers: G0, G2, G3, G30, G300, G32, O0, O1, O12.
Keywords: Encashment, Trade Receivables, B2B, TRX, Digital Financing, Sustainable Development, Sustainable Financing.

[1]College of Business Administration, IUBAT - International University of Business Agriculture and Technology, Uttara, Dhaka – 1230, Bangladesh.
[2]Putra Business School, Universiti Putra Malaysia, Malaysia.
[3]School of Economics and Management, Xiamen University Malaysia, Malaysia.

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1. Introduction

Problems lead to the solutions. Demand creates the supply. Firms supply the goods and services to the economy and the society, at large. In this supply-flow of goods and services, a trading chain emerges among the firms in the form of B2B (business to business) transactions that creates billion and trillion of trade receivables both in monetary value and quantity. These trade receivables remain unpaid for a lead time of 30 days, 60 days, 90 days and so on. That means, firms have invested money on the supply of goods and services but do not get the payment in cash immediately after the supply and receipt has been executed, particularly in B2B transactions. This creates a financial burden for the firms that are weak financially especially, MCSMEs (micro, cottage, small and medium enterprises) and large corporates. Their invested fund gets stuck in the invoices. But they need to pay their dues against regular business activities such as purchasing supplies (raw materials, business inputs), carrying out business operations, running factory operations, executing marketing operations, etc. The failure of these payments in or on time leads to: (i) loss of new business opportunities [because they cannot discharge the new delivery due to the lack of fund], (ii) inability to pay the existing loan-installments to the bank resulting in loss of goodwill, credit rating and image in the business community [even in the industry], (iii) loss of opportunity to buy raw materials at lower prices when the price level or the price of a particular business input declines in the market (that could lead to the firm making a hefty profit due to the lower production cost as a result of lower cost of raw materials), etc. This is strongly and intensely felt by the MCSMEs. It is true that MCSMEs represent 90 percent of business and more than 50 percent of employment in the world economy. The formal MCSMEs contribute 40 percent to GDP in the emerging economies. Around 51 percent of them close their business due to the lack of finance in the emerging economies like Bangladesh (OECD, 2015; Carson, Cromie, McGowan, & Hill, 1995; Hodgetts and Kuratko, 1995; Holmlund and Kock, 1998).

The study suggests an innovative solution for this acute financial problem. It explores the encashment of invoices (or trade receivables) through trade receivable exchange (TRX)[4]. TRX is an institutional set up designed to facilitate the financing of trade receivables of MCSMEs against their corporate buyers. It aims to solve the problems of cash flow due the delay in making the payment (Tian et al., 2020). This study examines the impact of such financing on the long-term financial growth of the firms that may use this alternative method of financing. It may also be termed as off-balance sheet financing. The study uses the data of 5400 firm year observations of the firms in Bangladesh that had been using this financing during 2014 – 2019.

On the basis of a critical evaluation of extent literature in this financing, four categories of payments are identified for financing the payments: (i) raw materials purchased, (ii) salaries and wages accrued, (iii) overhead expenses incurred, and (iv)

[4] The modus operandi of TRX is provided in the Annexure.

sales administration expenses due (Brealey et al., 2012). These four types of financing have been labelled in the study as P, SW, OH, and SA respectively and they worked as explanatory variables. There was a mediator in the study named current assets labelled as CA. There were two moderators in the study named equity and sales labelled as E and S respectively. This study has picked P, SW, OH, and SA to find the direct impact of financing (the payment of raw materials purchased, salaries and wages accrued, overhead expenses incurred, and sales administration expenses accrued) by the encashment of trade receivables through TRX on the long-term financial growth of the firms involved in manufacturing and/or providing goods, services and selling the same on credit in Bangladesh.

The study finds that financing purchases (P) of a firm by the encashment of trade receivables through factoring has positive effect on the long-term financial growth measured in return on assets (ROA), return on equity (ROE), internal growth rate (IGR). On the other hand, it has the negative effect on the other measures namely current ratio (CR) and sustainable growth rate (SGR). The negative effect on CR is statistically significant. However, the positive and negative impacts on other measures are statistically insignificant.

The study finds a positive effect of financing the payment of salary and wages (SW) by the encashment of trade receivables through factoring on ROE and SGR. On the other hand, it has the negative effect on ROA, CR, and IGR. The negative effect on CR is statistically significant. However, the positive and negative impacts on other measures are statistically insignificant.

The study also finds a positive effect of financing the payment of overhead (OH) expenses by the encashment of trade receivables through factoring on only CR and it is statistically significant. However, it has negative effect on ROA, ROE, IGR, and SGR and it is statistically insignificant.

The study finds a positive effect of financing the sales administration (SA) expenses by the encashment of trade receivables through factoring on ROA, ROE, IGR, and SGR. However, it has negative effect on CR. Both the positive and negative impacts are statistically insignificant.

The rest of the paper is organized as follows: section 2 provides literature review covering both underpinning theories and previous empirical research works, section 3 presents research method used in the study, section 4 describes the results found in the study, and section 5 interprets the results followed by the conclusion in section 6.

2. Literature Review

2.1 Theoretical Review

The theories that influence this study include: (i) Liquidity Preference Theory (Keynes, 1936); (ii) Pecking Order Theory (Donaldson, 1961), Myers & Majluf (1984); (iii) Trade-Off Theory (Myers,1984); (iv) Black-Scholes Option Pricing Model (Fischer Black and Myron Scholes,1973), and (v) M-M Theory (Modigliani and Miller, 1958).

Under liquidity preference theory, Keynes argued that people need money for three distinct motives: (i) transaction motive to meet daily needs such as buying groceries, paying rents, paying utility bills, etc.; (ii) precautionary motive to face any unforeseen costs such as car repair, buying houses, etc.; (iii) speculative motive to obtain capital gain through trading on assets (Stephenson, 1950; Jhingan, 2005). The objective of financing through TRX is to address the regular operational expenses of the enterprises. They also avail financing through TRX to purchase raw materials at the favorable prices (when the prices go down) to minimize their production costs to maximize their profit. TRX provides a venue for investors for making profit. In this way, the financing with TRX is explained by the liquidity preference theory.

The pecking order theory states that managers of the firms prefer to use internal source of fund. The financing through discounting invoices with TRX is the use of internal source of fund (Bhama, Jain & Yadav, 2015).

The trade-off theory strives for an optimum level of capital structure composed of equity and debt at which the marginal benefit and cost of debt financing are equal to each other (Haddad & Lotfaliei, 2019). Under financing with TRX, the firms trade-off the benefit of discharging the work orders or paying the urgent operating business expenses or paying the regular expenses such as office rent, rental of loan, etc. with the fees and interest to be paid. In reality, the firms sometimes avail financing with TRX even with higher fees and interest than the market rate for securing long-term business gains such as retaining good customers, expanding market share, etc.

The Black-Scholes model; though it was developed to explore the underlined factors influencing the price of derivatives such as forwards, futures, options, and swaps; it has the relevance with the financing through TRX. The financial instrument in TRX is the invoice. The discounting percentages, fees, interest, etc. are influenced by factors such as the financial strength of the debtor to whom the invoice has been drawn, brand of the debtor, maturity period of the invoice, kind of goods[5] or services provided, etc.

The M-M theory indicates that debt in the capital structure of a firm does not impact on its value. It states that the value of a firm depends on the capitalization of its earning power called earnings before interest and taxes (EBIT). The financing

[5] For instance, the invoice on perishable goods are less demanding for being discounted by the investors.

through discounting invoices do not create external debt burden for the firm. The firm uses its current assets (trade receivables) to get liquidity. The balance sheet remains the same. As a result it does not create extra risk for the firm. The opportunity of getting money quickly with TRX may enhance the earning power of and market share for the firm. It leads to increasing market value of the firm. Briefly this way, the M-M theory influences financing with TRX.

2.2 Empirical Literature Review

Prior studies in relation to TRX have been consulted with the studies conducted in the fields such as FinTech, digital finance**.** It touches the off-balance sheet financing mechanisms or alternative mode of financing such as factoring, supply chain financing (or reverse factoring), etc. Research on trade receivable exchange is scarce (Vannoni, 2020; Ozili, 2018). The work of Dorfleitner et al. (2017) is probably the first evidence in the area of financing through trading trade receivables. They worked on how the price of an invoice is determined in the online market where trade receivables (invoices) are traded.

There is a gap between the conventional ways of financing and the emergence of new business models as well as technologies. Business models have become complex increasingly that cannot match always the requirements of conventional financing. As a result, new modes of financing with trade receivable exchange (TRX), FinTech, digital finance, etc. have emerged. Ketterer (2017) states that current context of finance is moving through a transformative developments that have given the birth of this kind of financing: the financing through discounting trade receivables with the help of an exchange. It indicates that financing through trade receivable exchange has a connotation with (i) FinTech and (ii) digital finance. Financial Technology commonly known as FinTech refers to companies or representatives of companies that provide financial services by applying modern and innovative technologies. These financial services are internet based and application oriented. FinTechs usually try to attract the customers with more user-friendly, efficient, transparent, automated products and services than the ones that are currently available (Dorfleitner et al., 2017a).

Dorfleitner et al. (2017a) has shown the divisions of FinTech industry. They have divided the FinTech industry into major four segments in accordance with the business models applied in each segments. The segments are (i) financing, (ii) asset management, (iii) payments, and (iv) other FinTechs. This study is mostly related to the sub-segment, credit and factoring. This is why, a brief of credit and factoring is given here.

FinTechs in credit and factoring works with a single partner bank or a number of banks. In cooperation with bank(s), FinTechs provide credit facilities to the individuals and businesses without recourse[6]. Loans are sometimes given for a

[6] Without recourse refers to the credit agreement in which the beneficiary (the supplier or the owner of the trade receivables) is not liable for the repayment of the loan taken by discounting the trade receivables (invoices).

short-time period such as few days, weeks, months via mobile phone. Here, FinTechs provide innovative factoring solutions such as selling claims online, offering factoring solutions without minimum requirements. Companies under credit and factoring automate their business processes to be cost effective, transparent, innovative, fast, and efficient in discharging their services (Dorfleitner et al., 2017a).

Digital finance represents the digitalization of the financial industry. It covers all the electronic products and services in the financial sector such as credit cards, electronic exchange systems, home banking, home trading services, automated teller machines (ATMs), etc. (Gomber, 2017). It also includes all mobile and app services. The Digital Finance Institute (2015) describes Digital Finance start-ups as "companies that are creating innovation for integrating distributed digital banking, mobile solutions and delivery platforms, micro-finance, payment solutions, peer-to-peer lending and crowd-funding". Digital Finance has widened the coverage of banking services in the less developed economies where bank infrastructure is not efficient. Payment systems such as the concept of "prepaid" and credits have been easily accessible here due to digital finance (Gomber, 2017; Rizzo, 2014).

Zhang et al. (2016) and Dorfleitner et al. (2017b) state that the practice of digital financing is immense in terms of volume and growth. The market for online based invoice trading has increased substantially in recent years. In the UK, this market has tripled between 2013 and 2015. The volume of this market was £97 million in 2013 while the same was £325 million in 2015. From the global perspective, the market is also growing increasingly.

Baeck et al. (2014), Ketterer (2017), and Dorfleitner et al. (2017b) state that innovative and technology based financing has improved the access to finance for both individuals and organizations. Academics are consistent in the opinion that this kind of alternative mode of financing has expanded the access of the firms and individuals to the finance. Both small and large firms get more access to firms. In addition to traditional factoring and other forms of financing such as bank loans and overdraft facilities, the liquidation program of invoices through trade receivable exchange (TRX) can enhance the working capital base of CMSMEs.

Gomber et al., (2017) mention that now-a-days various kinds of platforms have been formed in the area of factoring, crowdfunding, supply chain financing to offer financing services through digitized format. The underlined transaction, i.e., the disinvestment of trade receivables or trading on invoices is akin to factoring. It is an evolution of the traditional (off line) factoring and a hybrid version of factoring.

Vannoni (2020) states that trading of commercial invoices provides an opportunity to avail cash in advance, just after the delivery of goods, instead of waiting for a credit period. It also facilitates the supply chain financing (or reverse factoring) under which the large corporates take financing to pay their suppliers' bills. This is a kind of selling a loan made on the part of a buyer (debtor) created for the delivery (selling) of goods or services on credit by a supplier or producer.

Klapper (2006) and Dorfleitner et al. (2017b) state that this financing has similarity with factoring in which the invoices are assigned to a single or multiple factors

(financers/investors). If at the beginning of the service (factoring service) all the invoices are assigned to a single factor, invoices are discounted with a single factor (financer/investor). However, this fixed policy with a single factor is amendable. Sometimes, the invoices can also be discounted with multiple factors with the consent from the debtor (the concern on which the bill is drawn), and the client (the supplier or the beneficiary of finance, i.e. the factoring client). On the other hand, under financing through discounting with the help of TRX is open to many financers/investors that lead to lowering financial cost on the part of the beneficiary, i.e. the CMSMEs.

Chemla and Tinn (2020) as well as Belleflamme et al. (2013) state that financing through trade receivable exchange is akin to *crowdfuding* in which multiple investors can participate. Crowdfunding is a financing in which many contributors called backers provide financial resources to achieve a common goal: generally providing capital for a firm. So, as many investors can participate under crowdfunding; similarly many financers (investors) can participate under TRX to provide capital to a firm.

Chatnani (2018) finds that under the mechanism of discounting an invoice through trade receivable exchange, an invoice is offered openly to all kind of investors (individual or institutional) for purchasing at a discount price and the full amount (of the invoice) is received at the maturity date [the due date of payment of the invoice]. In this sense, this financing works as like as a stock exchange where a share is offered openly to the investors for bidding a price and the dividend is paid based on the face value of the share.

Ozili (2018) finds that there is a relation between financing through trade receivable exchange and promoting economic growth of the state. Arranging finance with trade receivable exchange increases the volume of financial transactions in the economy that accelerates the production of goods and services in the economy. It also addresses the issues like inclusive financing, poverty reduction, cost of finance for intermediation (on the part of both the finance providers and users), government revenue, governance of business, access to finance for poor entrepreneurs, etc.

2.3 Motivation for this Study

Firstly, this method of financing is a new one. In the very few countries, this off-balance sheet financing is found such as USA, UK, India, Slovenia, United Arab Emirates (UAE). This deserves a further study. *Secondly*, fintech is popular in current times. This financing operates with fintech that also draws the attention of researchers to conduct such a time-relevant study. *Thirdly*, prior studies have mostly focused on the modus-operandi of this financing. But the present study evidences the possible impact of this financing. Because, every financing decision aims at maximizing wealth of the shareholders or owners of the firm (Graham, Smart, & Megginson, 2010). *Fourthly*, conventionally prior studies acknowledge this kind of alternative funding as an ideal source of finance for MCSMEs. However, Klapper (2006) states that large corporates also may use this financing as a good option to

cater their regular and bullet payment. *Fifthly*, this is an established source of finance in the developed countries, though the number of these countries is very few: USA, UK. But this can also be an ideal source in the developing and emerging economies (FCI, 2018) and the present study is based on an emerging economy: Bangladesh.

3. Research Methodology

3.1 Conceptual Framework

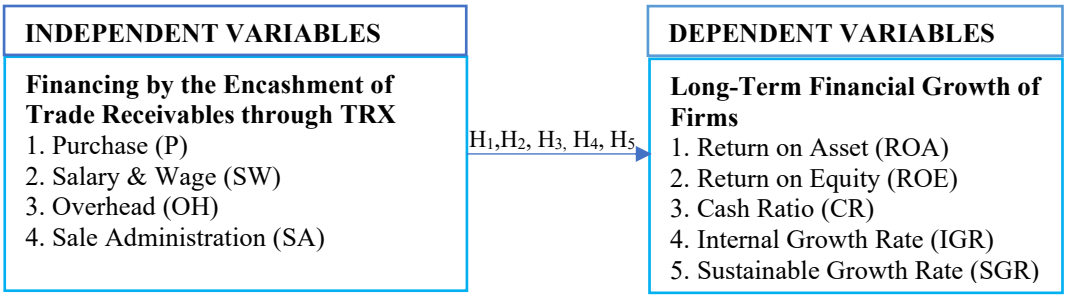

Figure 1: Research Framework

Source: The Author(s)

Figure 1 depicts the overall framework of the study. Millions of small bricks, bars, blocks, slabs frame the skyscrapers. Financing by the encashment of trade receivables is a small pie in thousands, millions, billions of dollars (money) necessary for a small or medium or large firms. But it (financing by the encashment of trade receivables) helps the firms to operate smoothly towards a gigantic revenue. Big revenues are generated depending on the regular circulation of financing. The study focuses on the basic financing-needs of the firms which triggers the continuous revenue generation. The study has treated these revenue generating activities as like as land of a farmer. If the land is properly addressed (cultivated) with necessary costs (truly it is investment) for plowing, seeding, fertilizing, planting, etc.; it yields crops in the desired amount. Similarly every firm moves through these basic economic/business activities: (i) inputs, raw materials, resources are purchased for production; (ii) employees and workers exert their skills and efforts in the company; (iii) rent is paid periodically (say monthly) for using the premises, space, equipment, to conduct business; (iv) expenses are incurred for selling and sending finished goods and/or services to the buyer's office.

3.2 Empirical Models

The general model followed in the study is as follows:

$$Y_{it} = \alpha + X_{it}\beta + u_{it} \quad (3.1)$$

where:

Y_{it} is the dependent variable representing the value of ith firm at time t. i refers to firms, in the study i varies from 1st firm to 75th firm, i.e. i = 1 ……..75. t refers to the time period, in the study t = 2014 ……2019. X_{it} is the vector of independent variables. βs are the slope coefficients estimated, α is an intercept or a constant term, and u_{it} is disturbance or error term.

3.3 Effect Measurement Models

The general econometric model was expanded to measure the effect covering all explanatory variables. The present study has focused on the explanatory variable SW. The equations were as follows:

$$ROA = \alpha + \beta_1 P_{it} + \beta_2 SW_{it} + \beta_3 OH_{it} + \beta_4 SA_{it} + \beta_5 E_{it} + \beta_6 S_{it} + u_{it} \quad (3.2)$$
$$ROE = \alpha + \beta_1 P_{it} + \beta_2 SW_{it} + \beta_3 OH_{it} + \beta_4 SA_{it} + \beta_5 E_{it} + \beta_6 S_{it} + u_{it} \quad (3.3)$$
$$CR = \alpha + \beta_1 P_{it} + \beta_2 SW_{it} + \beta_3 OH_{it} + \beta_4 SA_{it} + \beta_5 E_{it} + \beta_6 S_{it} + u_{it} \quad (3.4)$$
$$IGR = \alpha + \beta_1 P_{it} + \beta_2 SW_{it} + \beta_3 OH_{it} + \beta_4 SA_{it} + \beta_5 E_{it} + \beta_6 S_{it} + u_{it} \quad (3.5)$$
$$SGR = \alpha + \beta_1 P_{it} + \beta_2 SW_{it} + \beta_3 OH_{it} + \beta_4 SA_{it} + \beta_5 E_{it} + \beta_6 S_{it} + u_{it} \quad (3.6)$$

Where:

ROA = Return on Assets of firm i at time t
ROE = Return on Equity of firm i at time t
CR = Current Ratio of firm i at time t
IGR = Internal Growth Rate of firm i at time t
P = Amount of Purchases of firm i at time t
SW = Amount of Salary and Wages of firm i at time t
OH = Amount of Overhead Expenses of firm i at time t
SA= Amount of Sales Administration Expenses of firm i at time t
E = Equity Position of firm i at time t
S = Sales Turnover of firm i at time t
α = Constant term
βs = Coefficients of explanatory variables
Subscript i = Firms (cross-section dimensions) ranging from 1 to 75
Subscript t = Years (time-series dimensions) ranging from 2014 to 2019
u_{it} = Disturbance or error term of the model

3.4 Research Hypotheses

The research hypotheses that have been framed through literature review are listed below based on *null* approach to answer the research questions:

H_{01}: There is *no* significant relationship between financing the payment of purchases (procurement) of raw materials (or inputs) by the encashment of trade receivables through TRX and long-term financial growth of the firms involved in manufacturing and/or providing goods, services and selling the same on credit in Bangladesh.

H_{02}: There is *no* significant relationship between financing the payment of salary and wages by the encashment of trade receivables through TRX and long-term financial growth of the firms involved in manufacturing and/or providing goods, services and selling the same on credit in Bangladesh.

H_{03}: There is *no* significant relationship between financing the payment of overhead expenses by the encashment of trade receivables through TRX and long-term financial growth of the firms involved in manufacturing and/or providing goods, services and selling the same on credit in Bangladesh.

H_{04}: There is *no* significant relationship between financing the payment of sales administration expenses by the encashment of trade receivables through TRX and long-term financial growth of the firms involved in manufacturing and/or providing goods, services and selling the same on credit in Bangladesh.

3.5 Operationalization and Measurement of Variables

The measurement models of determining the value of the variables used in the study are shown in Table 1:

Table 1: Operationalization and Measurement of the Variables of the Study

Category	Variables	Operationalization	Measurement Formula	Expected Hypothesized Direction
Dependent Variable	Long-Term Financial Growth	Return on Assets (ROA)	ROA = Earnings Before Interest and Taxes (EBIT) / Total Assets	Positive or Negative
		Return on Equity (ROE)	ROE = Earning Before Interest and Taxes (EBIT) / Total Equity	Positive or Negative
		Current Ratio (CR)	CR = Total Currest Asstes / Total Current Liabilities	Positive or Negative
		Internal Growth Rate (IGR)	(Retained Earnings / Net Income) X (Net Income / Equity) X (Equity / Assets)	Positive or Negative
		Sustainable Growth Rate (SGR)	Plowback Ratio X Return on Equity	Positive or Negative
Independent Variables	Financing by the Encashment of Trade Receivables through Factoring	Purchase (P)	P = Total Yearly (12 Months) Purchase Amount	Positive or Negative
		Salary and Wage (SW)	SW = Total Yearly Salary and Wage Paid	Positive or Negative
		Overhead (OH)	OH = Total Yearly Overhead Costs Paid	Positive or Negative
		Sales Administration Expenses (SA)	S = Total Yearly Sales Administration Expenses Paid	Positive or Negative
Mediating Variable	Current Assets	Current Assets (CA)	CA = Total Current Assets Held at the End of the Year	Positive or Negative
Moderating Variable	Firm Characteristics	Equity Size (E)	E = Equity Position at the End of the Year	Positive or Negative
		Sales Turnover (S)	S = Yearly Sales Turnover	Positive or Negative

3.6 Data

The study has followed the approach suggested by Zikmund, Babin, Carr, Adhikari, and Griffin (2013) and thereby firstly it takes the view on total firms that had been enjoying the financing by the encashment of trade receivables through factoring for at least five to six years in Bangladesh that have comprised the sampling frame of the study. The factoring industry is still in nascent stage as seen from meager-volume in the country though it is growing increasingly in recent time. In this context, approximately 100 firms were targeted to be visited to collect the required data. Finally, 75 firms were found feasible with reference to the objectives of the study. The study period is from 2014 to 2019. The data were collected from the financial statements of the selected firms. The data are cross sectional and time series in nature. The rate of missing data was expected to be zero. The number of firm-year observations stood 5400. The reason of choosing six years is that the industry has been robust, since 2016, after some banks have joined the industry. And most of this financing was done through online banking, fund transfer, financial apps, etc. that have been taken as the synonyms of fintech and the data to measure the effect of TRX have been taken this fintech application.

3.7 Data Analysis Techniques

The study has conducted the relevant ratio analyses based on the data. The study has conducted both descriptive statistics and inferential statistics with SPSS. Excel worksheets have also been used for computing necessary calculations such as financial ratios, summary of the data, etc. The study has taken the help of multiple regression analysis to execute the models developed in the study. To establish the statistical significance of the respective hypotheses, the regression analysis is conducted at 95% confidence level.

4. Results

As shown in Table 2, the firms engaged in the businesses of manufacturing, trading, and services used this financing on average BDT 5.37 million[7], 5.12 million, and 12.26 million respectively for the payment of salary and wage. The overall average usage of this financing was BDT8.31 million for the same payment. The average return on assets (ROA) of the firms involved in the business of manufacturing, trading, and services stood 21.79%, 44.82%, AND 39.00% respectively. The same for ROE stood 34.57%, 55.24%, and 57.59% respectively. Similarly CR stood 2.70 times, 4.88 times, and 6.05 times respectively. On the other hand IGR registered

[7] BDT is the currency of Bangladesh. At the time of data being collected, the exchange rate between BDT and USD was 1 USD = BDT 83.2736. Currently as of April 30, 2024; this rate stands 1 USD = BDT 110.00.
Source: https://www.poundsterlinglive.com [Accessed 28 February , 2020];
https://www.bb.org.bd/en/index.php/econdata/exchangerate [Accessed 01 May , 2024];

24.23%, 50.84%, and 44.36% respectively. The SGR emerged at 39.14%, 63.46%, and -7.99% respectively.

Table 2: Financing by the Encashment Trade Receivables through TRX and Long-Term Financial Growth (As Per Nature of Business)

BDT (Million)

NB	P	SW	OH	SA	ROA	ROE	CR	IGR	SGR
M	27.811	5.367	3.652	2.838	21.790	34.573	2.696	24.228	39.141
T	56.704	5.120	4.576	4.388	44.822	55.238	4.884	50.840	63.457
S	43.962	12.257	6.501	6.724	38.995	57.590	6.046	44.361	-7.988
Overall	43.358	8.307	5.169	4.996	36.116	50.762	4.807	40.858	25.484

Source: Study Data (2020).
Note: NB: Nature of Business, M: Manufacturing, T: Trading, S: Service.

4.1 Descriptive Statistics

Table 3 shows that the sample consisted of 449 observations. Out of 75 firms, one firm started operation in November, 2014. The average payment of salary and wage stood BDT 8.31 million, with standard deviation of BDT 15.17 million indicating low variability from the actual values. The range of financing for this expense varies from minimum amount of BDT 0.00 to the maximum amount of BDT 90.25 meaning that some firms did not use this financing for the payment of salary and wage. On the other hand, some firms used this financing up to maximum BDT 90.25 million during the study period.

Table 3: Descriptive Statistics of All Variables (Overall)

Variable	Observation	Minimum	Maximum	Mean	Std. Deviation
ROA	375	0.61	629.50	36.12	46.50
ROE	375	-1111.25	1102.42	50.76	139.83
CR	449	0.05	249.00	4.81	14.64
IGR	378	0.58	683.76	40.80	54.01
SGR	378	-7779.08	1094.06	25.80	448.30
P	449	0.00	735.09	43.36	86.64
SW	449	0.00	90.25	8.31	15.17
OH	449	0.00	90.25	5.17	11.15
SA	449	0.00	90.25	5.00	9.97
CA	449	0.77	2116.21	119.01	286.84
S	449	3.07	2671.73	294.15	496.94
E	449	-83.00	1465.18	102.53	223.56

Source: Study Data (2020)

4.2 Data Diagnostic Tests

The data-diagnostic tests were conducted to ensure that the postulations of Classical Linear Regression Model (CLRM) that include tests of multicollinearity, heteroscedasticity, autocorrelation, and Hausman specification (fixed effects model or random effects model). The VIF (variance inflation factors) results of all predictors is below 10 except SA[8]. The results of heteroscedasticity test show the homoskedasticity or homogeneity in proxy (or Y value) through ROE and SGR ($p > 0.05$). The Durbin-Watson results (test for autocorrelation) show the value between 1.5 and 2.5 through ROE, CR, and SGR meaning that the data are not auto-correlated.

4.3 Effect

Tables 4, 5, 6, 7, and 8 show the effect of financing P, SW, OH, and SA by the encashment of trade receivables through TRX. The results are presented in the proxies of ROA, ROE, CR, IGR, and SGR.

4.3.1 Effect through ROA

Table 4 presents the results of regression model 3.2 on the direct effect of the encashment of trade receivables through factoring on return on assets (ROA).

Table 4: Regression Results with ROA

Variable	Coefficient	Standard Error	t-Value	P
Constant	39.963302	2.872939	13.910250	0.000
P	0.007729	0.053924	0.143335	0.886
SW	-0.123427	0.201223	-0.613383	0.540
OH	-0.833218	0.552803	-1.507258	0.133
SA	0.855462	0.739112	1.157419	0.248
S	0.008584	0.006444	1.332014	0.184
E	-0.052423	0.013502	-3.882445	0.000
R Square =0.059; P = 0.001				

Source: Study Data (2020)

The results presented in Table 4 state that the financing of purchases (P) by the encashment of trade receivables has positive (0.007729) effect on the return on assets (ROA) but not statistically significant ($p = 0.886 > 0.05$). The results also show that financing the payment of sales administration (SA) expenses by the

[8] This was unavoidable due to the data given from the respondents. Most of the firms are of SME categories. They do not maintain financials in standard format of financial statements. Sometimes, they gave data in the same amount under more than one variable. For instance, "total financing amounts of the payments of overhead expenses and sales administration expenses through factoring were given as 5% and 5% respectively of the total factoring facility availed in the year. That is, the payments of both overhead expenses and sales administration were in the same amount in a year.

encashment of trade receivables and yearly turnover measured by sales (S) have positive (0.855462, 0.008584 respectively) impact on ROA but not statistically significant (p = 0.248, 0.184 respectively and both > 0.05). On the other hand, financing the payment of salary and wages (SW), overhead (OH) expenses with the aid of the encashment of trade receivables through factoring has negative (-0.123427, -0.833218 respectively) impact on ROA but not statistically significant (p = 0.540, 0.133 respectively and both > .05). Further it is noticed from the results that equity (E) position of the firms has negative (-0.052423) impact on ROA and it is statistically significant (p = .000 < 0.05). The results also show that R square (0.059) is statistically significant (p = 0.001 < 0.05).

4.3.2 Effect through ROE

Table 5 presents the results of FGLS regression model 3.3 on the direct effect of the encashment of trade receivables through factoring on return on equity (ROE).

Table 5: Regression Results with ROE

Variable	Coefficient	Standard Error	t-Value	P
Constant	47.536135	8.819525	5.389875	0.000
P	0.047466	0.165539	0.286734	0.774
SW	0.930672	0.617726	1.506610	0.133
OH	-1.516727	1.697030	-0.893754	0.372
SA	1.055375	2.268972	0.465134	0.642
S	0.017590	0.019783	0.889157	0.374
E	-0.093959	0.041451	-2.266755	0.024
R Square =0.019; P = 0.318				

Source: Study Data (2020)

The results show that financing the payment for purchases (P) with the help of the encashment of trade receivables by factoring has positive (0.047466) effect on the performance of firms expressed in return on equity (E) but it is not statistically significant (p = 0.774 > 0.05). Similarly, financing the payment of the expenses like salary and wages (SW), sales administration (SA) by the encashment of trade receivables through factoring has positive (0.930672, 1.055375 respectively) impact on ROE but it is not statistically significant (p = 0.133, 0.642 respectively and both > 0.05). On the other hand, financing the payment of overhead (OH) expenses by the encashment of trade receivables through factoring and the equity position of the firms have negative (-1.516727, -0.093959 respectively) impact on ROE. This negative impact is not statistically significant under OH (p = .372> 0.05) but under E it is statistically significant (p = 0.024 < 0.05). The results also show that R square (0.019) is not statistically significant (p = 0.318 > 0.05).

4.3.3 Effect through CR

Table 6 presents the results of FGLS regression model 3.4 on the direct effect of the encashment of trade receivables through factoring on current ratio (CR).

Table 6: Regression Results with CR

Variable	Coefficient	Standard Error	t-Value	P
Constant	5.449704	0.796506	6.842009	0.000
P	-0.046710	0.016189	-2.885273	0.004
SW	-0.151545	0.060040	-2.524047	0.012
OH	0.708794	0.165358	4.286433	0.000
SA	-0.049366	0.222455	-0.221916	0.824
S	-0.002392	0.001908	-1.253863	0.211
E	-0.000704	0.003929	-0.179268	0.858
R Square = 0.108; P = 0.000				

Source: Study Data (2020)

The results presented in the table reveal that financing the payment for purchases (P), payment for the expenses of salary and wages (SW), and sales administration (SA) by the encashment of trade receivables with factoring has negative (-0.046710, -0.151545, -0.049366 respectively) impact on the position of current ratio (CR) of the firms. This negative impact under P and SW is statistically significant ($p = 0.004, 0.012$ respectively and both < 0.05) and under SA it is not statistically significant ($p = 0.824 > 0.05$). On the other hand, financing the payment of overhead (OH) expenses with the help of the encashment of trade receivables though factoring has positive (0.708794) impact on CR and it is statistically significant ($p = 0.000 < 0.05$). The position of firms in terms of sales (S) and equity (E) has also negative (-0.002392, -0.000704 respectively) impact on their level of CR and it is not statistically significant ($p = 0.211, 0.858$ respectively and both > 0.05). The results also show that R square (0.108) is statistically significant ($p = 0.000 < 0.05$).

4.3.4 Effect through IGR

Table 7 presents the results of FGLS regression model 3.5 on the direct effect of the encashment of trade receivables through factoring on internal growth rate (IGR).

Table 7: Regression Results with IGR

Variable	Coefficient	Standard Error	t-Value	P
Constant	44.826116	3.320108	13.501404	0.000
P	0.001590	0.062656	0.025376	0.980
SW	-0.193631	0.233782	-0.828254	0.408
OH	-1.027601	0.642333	-1.599794	0.110
SA	1.165113	0.858802	1.356672	0.176
S	0.011812	0.007485	1.578219	0.115
E	-0.060555	0.015689	-3.859714	0.000
R Square = 0.058; P = 0.001				

Source: Study Data (2020)

The results in the table show that financing the payment for purchases (P) by the encashment of trade receivables with factoring has positive (0.001590) impact on the internal growth rate (IGR) of the firms but it is not statistically significant (p = 0.980 > 0.05). Similarly, financing the payment of the expenses of sales administration (SA) by the encashment of the trade receivables through factoring has the positive (1.165113) impact on IGR but it is not statistically significant (p = 0.176 > 0.05). On the other hand, financing the payment of salary and wages (SW), overhead (OH) expenses by the encashment of trade receivables with factoring has negative (-0.193631 and -1.027601 respectively) impact on IGR but it is not statistically significant (p = 0.408, 0.110 respectively and both > 0.05). The position of firms in terms of sales (S) and equity (E) has positive (0.011812) and negative (-0.060555) (respectively) impact on the performance of the firms measured in IGR and it is not statistically significant under S (p = 0.115 > 0.05) but under E, it is statistically significant (p = 0.000 < 0.05). The results also show that R square (0.058) is statistically significant (p = 0.001 < 0.05).

4.3.5 Effect through SGR

Table 8 presents the results of FGLS regression model 3.6 on the direct effect of the encashment of trade receivables through factoring on sustainable growth rate (SGR).

Table 8: Regression Results with SGR

Variable	Coefficient	Standard Error	t-Value	P
Constant	6.448192	28.303128	0.227826	0.820
P	-0.078372	0.534123	-0.146730	0.883
SW	2.173651	1.992933	1.090679	0.276
OH	-1.915460	5.475739	-0.349808	0.727
SA	2.143813	7.321085	0.292827	0.770
S	0.034522	0.063805	0.541051	0.589
E	-0.077616	0.133745	-0.580330	0.562
R Square = 0.006; P = 0.895				

Source: Study Data (2020)

The results in the table state that financing the payment of purchases (P) and overhead (OH) expenses by the encashment of trade receivables with the help of factoring has negative (-0.078372, -1.915460 respectively) impact on the sustainability of the firms measured in sustainable growth rate (SGR) and this negative impact is not statistically significant (p = 0.883, 0.727 respectively and both > 0.05). On the other hand, financing the payment of salary and wages (SW) and sales administration (SA) expenses by the encashment of trade receivables with the aid of factoring has positive impact (2.173651, 2.143813 respectively) on SGR but it is not statistically significant (p = 0.276, 0.770 respectively and both > .05).

The position of firms in terms of their sales (S) and equity (E) has positive (0.034522) and negative (-0.077616) impact respectively and both are not statistically significant ($p = 0.589$, 0.562 respectively and both > 0.05).

5. Discussion of Findings

5.1 Effect of Financing P

The regression results presented in Table 4, 5, 6, 7, and 8 reveal that the effect of financing the payment of purchases (P) is positive on the financial growth under the proxies of ROA, ROE, IGR but it is not statistically significant. However the impact is negative under the proxies of CR and SGR and it is statistically significant under CR but insignificant under SGR meaning that financing P with does not have significant impact on the firms' growth that can be maintained without increasing financial leverage (Brealey et al., 2012).

The results under ROA, ROE, IGR, and SGR support hypothesis 1 which states that there is no significant relationship between financing purchases (P) by the encashment of trade receivables through TRX and the long-term financial growth of the firms that are involved in manufacturing and/or providing goods and services and selling the same on credit in Bangladesh.

The positive results reveal that the more financing of the purchases (P) by the encashment of trade receivables through factoring, the more growth of the firms in terms of ROA, ROE, and IGR. It is consistent with the findings of Sindani (2018); Paul, Guerma and Devi (2018).

This positive effect can be explained with the help of the theories of: (i) liquidity preference theory (Stephenson, 1950; Jhingan, 2005); and (ii) pecking order theory (Bhama, Jain & Yadav, 2015). The study finds that firms use the encashment of trade receivables mostly to finance their buying needs as postulated by liquidity preference theory. Firms also use this financing as a preferred option from among their available internal sources of funds which is supported by pecking order theory.

The negative finding is contradictory with hypothesis 1 under CR which is also statistically significant that supports this significant findings (relationship) of Dekesi and Ozogbuda (2019). Dekesi and Ozogbuda (2019) found that maintaining high level of trade receivables brings lower current ratio (CR). The study also finds that paying purchases (P) in cash with liquidating trade receivables brings down the liquidity position. The study also finds similarity with Kozarević and Hodžić (2016) that found positive result to solve liquidity crisis of firms. But this resulted into lowering liquidity level of the firms meaning that use of high volume cash in purchasing raw materials leads to both lower level of cash balance and the lower amount of cash equivalent assets like trade receivables, cheques, etc. in the firms.

The sustainable growth rate (SGR) is the highest growth rate a firm can maintain without increasing its financial leverage (Brealey et al., 2012). The negative impact under SGR reveals that more use of financing the payment of purchases (P) by the encashment of trade receivables brings down the debt-free growth of the firm. It means that one unit of financing of purchases (P) equivalent to BDT 1 by the

encashment of trade receivables leads to the decrease in sustainable growth capacity by BDT 0.078.

5.2 Effect of Financing SW

The regression results presented in Tables 4, 5, 6, 7, and 8 reveal that the effect of financing the payment of salary and wages (SW) is positive under the proxies of ROE and SGR but it is not statistically significant. However the impact is negative under the proxies of ROA, CR, and IGR and it is statistically significant under CR but insignificant under ROA and IGR.

The results under the proxies of ROA, ROE, IGR, and SGR support hypothesis 2 which states that there is no significant relationship between financing the payment of salary and wages (SW) by the encashment of trade receivables through factoring and the long-term financial growth of the firms that are involved in manufacturing and/or providing goods and services and selling the same on credit in Bangladesh.

The positive results reveal that the more the financing of the payment of salary and wages (SW) by the encashment of trade receivables through factoring, the more the growth of firms in ROE and SGR. The positive rates of intercept of ROE and SGR are 0.930672 and 2.173651 respectively.

The sustainable growth of a firm depends on the plowback rate and the return on equity (Brealey et al., 2012). So, as ROE is positively influenced by this financing, similarly SGR is also harnessed positively. This finding is consistent with the interest of Darabos and Martha (2017) who sought further study in finding the long-term growth of firms with the help of factoring in Hungary. The positive coefficient is also supportive by the results of Fiordelisi (2011) who found positive impact on the growth of the firms in two ways: direct benefits (such as betterment of employees, borrowers, investors, etc.); and (ii) induced benefits (such as betterment of the families through consumption and savings, tax revenue for the government, increasing deposits of the firms and investing the same, etc.).

This positive effect can be explained with the help of M-M theory. This theory proposes to use that fund that may sharpen further the edge of earning power of a firms disregarding the proportion of equity and debt in the capital structure (Koh, Ang, Brigham, & Ehrhardt, 2014). In support of this theory, Sule, Amuni, Obasan, Banjo, & Hassan (2015) mention that swift, regular, and in-time payment of salary and wages (SW) influences the continuous survival of a firm which is enhanced by the encashment of trade receivables. Quick payment of compensation is a positive image of a firm towards an employee or a worker (Muo, 2007).

The negative finding is contradictory with hypothesis 2 under CR which is also statistically significant and it is contradictory to the findings of Dekesi and Ozogbuda (2019). Dekesi and Ozogbuda (2019) found that maintaining high level of trade receivables brings lower current ratio (CR). It means that if the firms could have liquidated the trade receivables, they would not suffer from liquidity crisis. In the study, the firms take cash with the help of factoring and use the same for immediate payments such as payments for purchases (P), salary and wages (SW)

and consequently they (firms) lack cash.
The negative results under ROA and IGR are supportive to the findings of Salaberrios (2016) who found that high profit making companies can afford factoring cost. Martines-Sola et al. (2013) also found that liquidity position always does not enhance the value of a firm. They stated that liquidity after a certain level, rather, declines the value of the firm.

5.3 Effect of Financing OH

The third objective of the study is to find out the effect of financing the payment of overhead (OH) expenses by the encashment of trade receivables through factoring on the long-term financial growth of the firms involved in manufacturing and/or providing goods, services and selling the same on credit in Bangladesh.
The regression results presented in Tables 4, 5, 6, 7, and 8 reveal that the effect of financing the payment of overhead (OH) expenses is positive under the proxy of CR and it is statistically significant. However the impact is negative under the proxies of ROA, ROE, IGR, and SGR and it is not statistically significant.
The results under ROA, ROE, IGR, and SGR support hypothesis 3 which states that there is no significant relationship between financing the payment of overhead (OH) expenses by the encashment of trade receivables through factoring and the long-term financial growth of the firms that are involved in manufacturing and/or providing goods and services and selling the same on credit in Bangladesh.
However, the positive results under CR rejects the hypothesis 3. The result is statistically significant. The positive results reveal that the more financing the payment of overhead (OH) expenses by the encashment of trade receivables through factoring, the more growth of the firms measured in current ratio (CR). It is consistent with the findings of Klapper (2006), Greater London Enterprise Ltd. (2003). These studies state that the use of financial technology, factoring, enhances the liquidity position of firms. Czternasty and Mikolajczak (2013) state that factoring finance does not impact inversely debt-ratio of a firm since it is an off-balance sheet source of finance. Shuzhen, Liang, and Zheng (2014) found factoring as a hybrid solution for firms in China to address liquidity crisis.
This positive effect on CR can be explained with the help of the trade-off theory. The firms may use the financing by the encashment of trade receivables to pay overhead (OH) expenses as much as possible to get positive financial benefit. But, as per the trade-off theory, the firms should use this financing until the marginal cost of financing is equal to the marginal benefit of financing.
The negative results indicate that more use of financing by the encashment of trade receivables through factoring to pay the overhead (OH) expenses decreases the growth of firms in terms of return on assets (ROA), return on equity (ROE), internal growth rate (IGR), and sustainable growth rate (SGR). The negative results are supportive to the findings of Hartmann-Wendels and Stöter (2010) who found also negative relationship between the use of factoring finance and the growth of the firms. They found that higher the amount of net income and equity position of firms,

the lower the dependency on the encashment of trade receivables. The negative findings are also similar to those of Salaberrios (2016) who suggested factoring for those firms that are highly profitable to ensure financial growth. Because, Salaberrios (2016) found factoring as an expensive option of finance.

5.4 Effect of Financing SA

The fourth objective of the study is to find out the effect of financing the payment of sales administration (SA) expenses by the encashment of trade receivables through factoring on the long-term financial growth of the firms involved in manufacturing and/or providing goods, services and selling the same on credit in Bangladesh.

The regression results presented in Tables 4, 5, 6, 7, and 8 reveal that the effect of financing the payment of sales administration (SA) expenses is positive under the proxies of ROA, ROE, IGR, and SGR and but it is not statistically significant. However the impact is negative under the proxy of CR and is not statistically significant.

The results under ROA, ROE, IGR, and SGR support hypothesis 4 which states that there is no significant relationship between financing the payment of sales administration (SA) expenses by the encashment of trade receivables through factoring and the long-term financial growth of the firms that are involved in manufacturing and/or providing goods and services and selling the same on credit in Bangladesh.

The positive findings show that financing the payment of sales administration (SA) expenses by the encashment of trade receivables through factoring increases growth of firms in ROA, ROE, IGR, and SGR. It is consistent with the findings of Dekesi and Ozogbuda (2019), Sindani (2018), Salaberrios (2016), Milenkovic-Kerkovic and Dencic-Mihajlov (2012). They found that quick payment of the expenses like sales promotion, advertisements, insurance, shipping costs, loading-unloading costs, etc. induces profitability of firms. The encashment of trade receivables helps in quick payments. Borgia, Swaleheen, Jones, and Weeks (2010) found that factoring contributes positively to the development of firms including overall GDP-indicators of a country.

This positive effect can be explained with the help of the theories of: (i) liquidity preference theory developed by John Maynard Keynes (Stephenson, 1950; Jhingan, 2005); (ii) pecking order theory developed by G. Donaldson (1961); S. C. Myers, and N.S. Majluf (1984) (Bhama, Jain & Yadav, 2015); and (iii) M-M theory developed by Franco Modigliani and Marton H. Miller (Koh, Ang, Brigham, & Ehrhardt, 2014). According to these theories, firms address their sales-supporting expenses in time with liquidating invoices to ensure their financial growth.

The negative results indicate that more use of financing by the encashment of trade receivables through factoring to pay sales administration (SA) expenses decreases the growth of firms in terms of current ratio (CR). The negative results are supportive to the findings of Salaberrios (2016) who recommended factoring for

high profit making companies. Similarly, Martines-Sola et al. (2013) found that factoring rather brings negative value to the firm after a certain level of cash position.

5.5 Summary of Hypotheses Tests

Table 9 provides the results of the tests of hypotheses. It provides the decisions (reject or fail to reject) null [H_0] hypotheses categorically.

Table 9: Results of Hypotheses Tests

Hypotheses	Statement Hypothesis	Reject H_0 /Fail to Reject H_0
H_{01}	There is *no* significant relationship between financing the payment of purchases (procurement) of raw materials (or inputs) (P) by the encashment of trade receivables through TRX and long-term financial growth of the firms involved in manufacturing and/or providing goods, services and selling the same on credit in Bangladesh.	Fail to reject H_{01} (P:ROA) Fail to reject H_{01} (P:ROE) Reject H_{01} (P:CR) Fail to reject H_{01} (P:IGR) Fail to reject H_{01} (P:SGR)
H_{02}	There is *no* significant relationship between financing the payment of salary and wages (SW) by the encashment of trade receivables through TRX and long-term financial growth measured of the firms involved in manufacturing and/or providing goods, services and selling the same on credit in Bangladesh.	Fail to reject H_{01} (SW:ROA) Fail to reject H_{01} (SW:ROE) Reject H_{01} (SW:CR) Fail to reject H_{01} (SW:IGR) Fail to reject H_{01} (SW:SGR)
H_{03}	There is *no* significant relationship between financing the payment of overhead (OH) expenses by the encashment of trade receivables through TRX and the long-term financial growth of the firms involved in manufacturing and/or providing goods, services and selling the same on credit in Bangladesh.	Fail to reject H_{01} (OH:ROA) Fail to reject H_{01} (OH:ROE) Reject H_{01} (OH:CR) Fail to reject H_{01} (OH:IGR) Fail to reject H_{01} (OH:SGR)
H_{04}	There is *no* significant relationship between financing the payment of sales administration (SA) expenses by the encashment of trade receivables through TRX and the long-term financial growth of the firms involved in manufacturing and/or providing goods, services and selling the same on credit in Bangladesh.	Fail to reject H_{01} (SA:ROA) Fail to reject H_{01} (SA:ROE) Fail to reject H_{01} (SA:IGR) Fail to reject H_{01} (SA:IGR) Fail to reject H_{01} (SA:SGR)

6. Conclusion and Policy Recommendations

The study has examined the relationship between financing by the encashment of trade receivables through TRX and long-term financial growth of the firms involved in producing and/or providing goods, services, and selling the same on credit in Bangladesh. In other words, how the long-term financial growth responds to financing by the encashment of trade receivables through TRX for the firm that have been using the same financing for a long-time, particularly from 2014 to 2019.

The study is explanatory in nature. The financials of 75 firms have been studied. Five measures namely return on assets (ROA), return on equity (ROE), current ratio (CR), internal growth rate (IGR), and sustainable growth rate (SGR) have been used to estimate the impact of financing by the encashment of trade receivables through factoring. The variables under this mode of financing have been categorized based on the previous research findings and working experience in the industry, the factoring industry. The variables have been selected as the major headings being financed. These include financing the payments of purchases (P), salary and wages (SW), overhead (OH) expenses, and sales administration (SA) expenses.

The study finds a significant impact on the long-term financial growth of the firms and that has been expressed in the proxy of CR. The CR measures the liquidity health of a firm that results from the cash flows of a firm. The cash flows are generated from the business performance of a firm. And the business performance indicates the survival scale of a firm. In this way, the study gives a mileage of a firm's long-term financial growth.

The study has made some contribution. Firstly, the study synthesizes the impact to measure more specifically the contribution of financing by the encashment of trade receivables. The study has used two more non-traditional proxies namely internal growth rate (IGR) and sustainable growth rate (SGR). The study considers that these two parameters are more relevant to measure the long-term financial growth of a firm (Brealey et al., 2012). Secondly, the empirical study is scarce the industry. The study endeavors to contribute to the industry providing a real-life findings of the firms using this financing for a long-time. Thirdly, the gives a measure for the emerging fintech industry. It gives a direction towards the digital financing that is also essential for the green and/or sustainable development.

The study has shown how preference to meeting the financial needs in carrying out continuous business activities influence the financial decision making in the firm. From this ground, the study has linked the underpinning theories namely Liquidity Preference Theory, Pecking Order Theory, and M-M Theory with the direct relationship between financing by the encashment of trade receivables through factoring and long-term financial growth of the firms.

The exceptional novelty of the study is the mediating influence of Black-Scholes Options Pricing Model between financing by the encashment of trade receivables through factoring and long-term financial growth of the firms. The financing by factoring is influenced in terms of amount, interest rate depending on the quality of invoices which are controlled by the creditworthiness of debtors, credit period or

payment period, nature of goods or services supplied, etc.

The financing from TRX is also influenced by the cost-benefit analysis. The Trade-Off Theory finds that the optimum level of a financing is determined by its marginal cost and benefit. The optimum level of factoring is determined at the intersection where its cost and benefit are equal each other. The bargaining power of this cost and benefit of the firm is influenced by firm specific characteristics such as sales turnover, equity size, and asset size of the firms. From this ground, the study found moderating relationship of the Trade-Off Theory with financing by the encashment of trade receivables and long-term financial growth of the firms.

The study provides some policy implications. Firstly, the study shows that financing the payment of purchases by the encashment of trade receivables through TRX has a positive effect on return on assets, return on equity, internal growth rate. Corporate managers, owners of the businesses (since a significant number of the firms studied are of sole proprietorship) may give more attention to heighten the use of factoring to fund the payment of purchases of the business essentials like raw materials, business inputs, resources that are necessary to produce finished goods and services to maximize sales. The reflection of the growth of a firm commonly is reflected through return on assets, return on equity. The internal growth rate shows the earning power of a firm such as plowback ratio, return on equity, proportion of assets financed by equity fund. The study finds that such growth of a firm can be harnessed by financing the payment of purchases through factoring. On the other hand, it has the negative effect on the financial growth such as current ratio and sustainable growth rate. This is reasonably expected that more cash outflow generates a negative impact on the liquidity position. The sustainable growth rate reflects the strength of plowback ratio and return on equity. The finance managers or the persons responsible for financial decision making in the firms need to ensure the use of factoring to finance the payment of purchases in such amount so that liquidity position and sustainable growth are not disturbed.

Secondly, the study finds that financing the payment of salary and wages through the encashment of trade receivables through TRX has a positive effect on return on equity and sustainable growth rate. Human resources are the key input for driving a firm. They play a strategic role in inculcating the growth of a firm. Their payments for compensation, bonus, benefits, overtime, training and development, safety, performance rewards, etc. can be enhanced through factoring modality of financing. The motivation of human beings in the organization influences its (organization's) prosperity (West III & Bernhardt, 2009). On the other hand, such payment through TRX has negative impact on return on assets, current ratio, and internal growth rate. It represents that more cash outflows through this mode brings a negative impact on the use of the assets of the firm. It also diminishes the liquidity position of the firm. Similarly, the equity position, retained earnings, amount of net income are adversely impacted. So, the business managers, owners should cautiously use the fund from this source: the conversion of trade receivables into liquidity.

Thirdly, the study finds that financing the payment of overhead expenses through the encashment of trade receivables through TRX has a positive effect on current

ratio. The overhead cost keeps running the business. It is the most crucial heading for meeting its payment immediately. It helps the company support profit-making activities. Expectedly, this payment through factoring enriches the liquidity position of the firms. So, managers and the business owners may be motivated to pay the overhead costs through factoring in higher amount. On the other hand, it has negative effect on the basic outlook of the growth of the firms: on return on assets, return on equity, internal growth rate, and sustainable growth rate. The pace of these growths is slower than the same in current ratio. So, managers and the business owners may be reluctant to use factoring in respect of the growth of return on assets, return on equity, internal growth rate, and sustainable growth rate.

Fourthly, the study finds positive effect on return on assets, return on equity, internal growth rate, and sustainable growth rate for financing the payment of sales administration expenses by the encashment of trade receivables through factoring. The components of such expenses are related to sales support activities such as discharging purchase orders, compilation of sales reporting, preparing sales materials, sample processing, managing retail sales activities, insurance expenses, etc. These are directly related to the utilization of assets, equity, internal financial resources (retained earnings), business expansion, etc. So, managers and business owners may concentrate on paying such expenses through factoring to get positive results on return on assets, return on equity, internal growth rate, and sustainable growth. On the other hand, it has negative effect on the current ratio.

The cash outflow for paying such activities reduces the liquidity position of the firms. The managers and business owners may select the preference between the growths in return on assets, return on equity, internal progress, sustainable development in one side; and the liquidity growth, in other side. As per the preference, they can manage the payment of sales administration expenses through the encashment of trade receivables.

The results of the study are subject to some limitations. This study is limited to non-financial firms. The number of firms using this financing is still limited. Finally, 75 firms were found feasible meeting the objective of the study. The firms vary abruptly in the magnitude of sales turnover, profit margin, use of financing through factoring, etc.

Most of the responding firms are unorganized in maintaining their financials. Sometimes, they provided the figures in percentage forms, such as “total financing amount of the payment of annual salary and wages through factoring 60 percent of the total factoring facility availed in the year”. This type of information has led some unavoidable difficulties for analysis, such as exceeding VIF tolerance level 10.00 in one variable in testing the multicollinearity of the data.

Future research may consider these limitations. In the market, the penetration of factoring is increasing. It is expected that the number of the firms using factoring will rise in the coming years. Further research may be conducted covering firms varied widely in nature of business, size of business, legal entity of business, geographical concentration, nature of industry and/or business, etc.

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ANNEXURE

Modus Operandi of Trade Receivable Exchange (TRX): How Does TRX Work?

TRX is deemed to bring buyers, suppliers, and financers together in one place allowing CMSMEs to post their receivables, buyers to approve invoices, and financers to bid on them. The objective of the bidding model is to enable CMSMEs to access funds at lower rates than the ones available to them conventionally. A due fraud-checking mechanism ensures that the invoices are legitimate, have been approved accordingly by the buyer and have not already been used before to obtain financing from another lender (Wass, 2019).

In a brief way, as per step by step procedure, the modus operandi of TRX is as follows (Invoice Trading Explained, 2021):

A supplying firm applies online to become an approved member of the invoice trading exchange.
Once approved, a client bank account is set up and the supplying firm can sell an invoice. The monetary value of the invoice may vary from a minimum amount to a maximum amount.
The due process of the exchange verifies the invoice. Once verified, it is sold on the exchange, where multiple investors buy slices of the invoice.
The firm (supplying firm) receives funds in its account as an advance up to a certain percentage of the invoice value (say, 90%) within 24-48 hours.
When the end debtor (the buyer) pays its invoice into the client bank account, the exchange makes the remaining balance available to the firm, minus their fees.

A comprehensive functional definition of TRX is as follows (Reserve Bank of India, 2014):

(i) Buyer corporate sends purchase order to CMSME.
(ii) CMSME delivers the goods or services as per the requirements along with *bill* to be paid by due date.
(iii) Buyer corporate accepts the goods or services and based on instruction received from CMSME, posts the accepted *bill* on the Trade Receivables Exchange (TRX).
(iv) Receivables of CMSME from buyer corporate become available to the financiers for bidding and financiers submit their online bids to the TRX.
(v) Various bids submitted by financiers become available to the CMSME.
(vi) CMSME evaluates the options and accepts a bid. If it does not exercise its option, the auction closes at the expiry of specified period.
(vii) When CMSME accepts the bid of a financier, an online intimation is sent by the TRX to all concerned parties viz, CMSME, buyer corporate and financier about the discounting of bill through the TRX.

(viii) Payment is made by the financier to CMSME and intimation is given by financier and CMSME about the same to TRX.
(ix) On due date, buyer corporate directly pays to the financier.

Based on the practices of different invoice trading platforms in different countries, a functional definition of TRX has been provided above and a graphical presentation of the same is given in Figure 2.

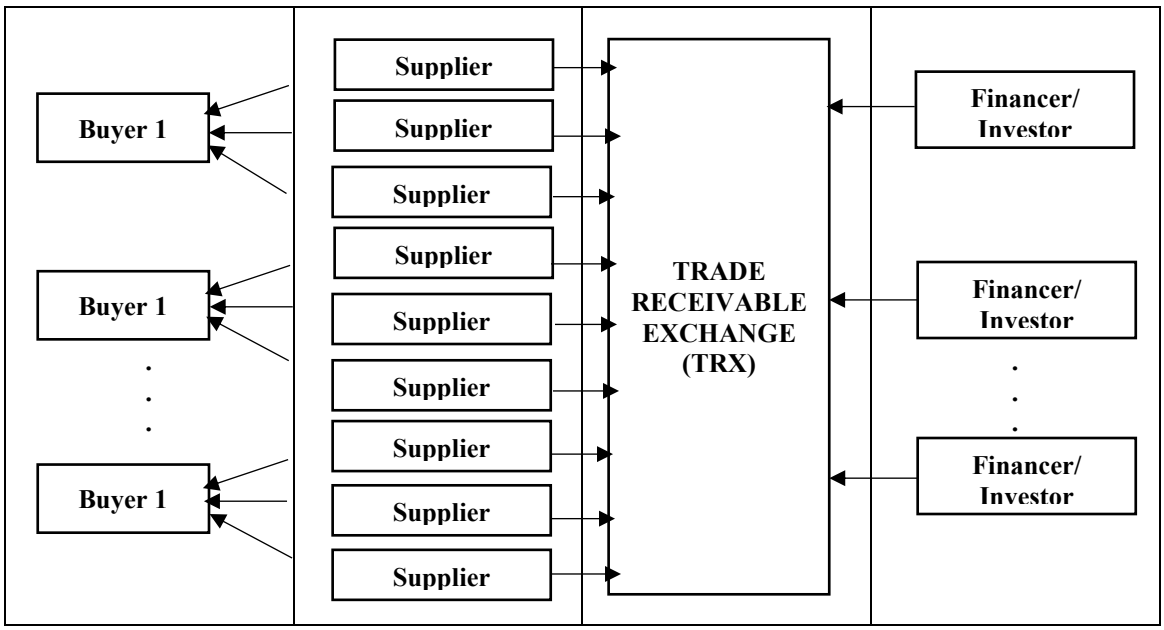

Figure 2: Modus Operandi of TRX

Source: The Author (2021) with the Aid of TReDs Platform, India (2017)