

Trade Credit and Firm Performance: Evidence from Manufacturing Sector of Pakistan

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Abstract

The proposed research questions whether the application of the trade credit conditions novelty contributes to the ability of the company listed in the Pakistan Stock Exchange (PSX) to increase its profitability. The article explores the association between the trade credit; as an innovative and adaptable financing instrument and the organisational performance, and the significance of the management of receivables and payables to the financial health of enterprises. Creative trade credit management processes are particularly relevant in manufacturing organisations to keep growth and competitiveness afloat. The analysis will be based on the data of PSX-listed industrial businesses between 2014 and 2023. The theoretical framework based on Tobin Q is used to conduct the econometric study with the help of E-Views software, which makes use of both fixed and random effects model based on annual reports and company websites of accounts receivable and payable, and profitability. The statistics indicate that trade credit is a significant short term financial facility particularly in times of liquidity constraints. It is also shown in the findings that innovative management of trade credit receivables is crucial in enhancing profitability with the fixed effects model showing a long-run relationship between trade credit and business performance. Nevertheless, the effect of trade credit receivables on profitability can change over time in the short term.

Keywords: Pakistan Stock Exchange, Manufacturing Industry, Trade Credit Receivables (TCR), Trade Credit Payables (TCP), Trade Credit, Firm Performance, Trade Credit Receivables (TCR).

Introduction

Trade credit is also regarded as one of the most useful and conveniently used tools of corporate finance especially of firms in developing countries. Trade credit is integrated into business transactions directly, unlike formal credit raised by banks or other financial institutions: suppliers will accept firms to buy goods and services on credit, and firms themselves will frequently offer customers the same terms. Simply put, it allows businesses to purchase now and pay later or sell now and collect later and these networks of obligations propel business on. The issue of trade credit management may be life and death in manufacturing industries where business processes are capital intensive, and the supply chain is complex (Farooq et al., 2021).

The impact of trade credit becomes even greater in instances where formal finance is not very widespread. The commercial bank lending in most of the developing economies such as that of Pakistan has been the one that is usually characterized by high interest rates, stringent collateral requirements or red tape requirements which small and even medium sized firms cannot easily afford. This is where trade credit can be of salvation: a flexible and most accessible mode of short-term finance that does not have to have any direct connection with actual direct interest charges. In addition to keeping production on track, it assists the firms to streamline their cash

flows, working capital, and sustain their relationships with suppliers and customers. But it comes at a price. Over-extension of the trade credit can undermine the liquidity position, increase chances of default and ultimately undermine the firm's performance. This two-sidedness, advantage and disadvantage, is what contributes to the reason trade credit constitutes an important yet complex area in corporate finance (Ahmad et al., 2017).

The role of this matter is further elevated in Pakistan due to central role of manufacturing in the economy. The industry does not only contribute to industrial production, but also provides jobs and brings in a lot of income through exports. The growth of the industrial sector was also positive, though at a modest level: the Pakistan Economic Survey 2023-24 (Ministry of Finance, Government of Pakistan, 2024) reported that this sector achieved positive growth of 1.21 percent in the FY2024 and, to a great extent, this growth was contributed by the industrial activity. This strength can be identified against a backdrop of larger macroeconomic problems that Pakistan has encountered over the recent years, such as the inflationary pressures, the exchange rates volatility, or the energy scarcity. Trade credit is a useful financial management instrument in such a volatile environment, where the survival of firms is sometimes determined by the effectiveness of their financial management instruments. With Pakistani public companies, especially those listed on the Pakistan Stock Exchange (PSX), trade credit is especially crucial, since bank funding is available, but is of high cost and often rationed.

To fully appreciate trade credit, it is essential to appreciate that it is split into two portions, namely, accounts receivable and accounts payable. The credit the company owes to its customers is referred to as the accounts receivable and the credit the company owes to its suppliers is the accounts payable. The two terms on this equation have a direct impact on profitability and liquidity of a firm. On the one hand, it can provide trade credits to customers to stimulate sales, improve customer relations and guarantee future market share. Conversely, it slows down the cash inflows, subjects the firm to future defaults and brings about liquidity risks. Equally, supplier credit can be a salvage to the working cash flow, but it can also be costly, either in the form of an increase, or even more radical repayment conditions. This intersection of processes is what renders trade credit not just the agreement with creditful financial affairs, but the strategic decision, which defines not only the performance in the short term, but also the competitiveness in the long term.

The issue of trade credit is a long standing academic debate. Not an unwanted by-product of trading activities, it is in the choice of financing, that stressed Rajan and Zingales determine the capital structure of firms (1995). This view has since been validated by later research, especially in the developing economies. The people in Pakistan have learned that manufacturing companies actively adjust their trade credit policy to respond to the liquidity pressures and competition pressures (Ahmad, Afza and Nafees, 2017). Farooq et al. (2021) have gone ahead to demonstrate that trade credit does not only close gaps formed under the low bank credit, but also directly influences the financial performance indicators. These results indicate that trade credit is a redistributing procedure in the economy: the stronger firms can use the trade credit to strategically apply market power to the weaker firms and the weaker firms can use the trade credit to survive.

The indicators normally employed to quantify this performance of the firms are Return on Assets (ROA), Return on Equity (ROE) and the Q of Tobin. Unlike measurement tools like ROA and ROE that give you an idea of the profitability, the use of Q is especially handy as it does not only give us the current financial performance but also the future growth prospects that the market holds. Tobin Q is a more detailed view of the relationship between the trade credit policies and firm value, as it considers the book values and market values (Rajan and Zingales, 1995). This is especially true when considering publicly listed firms where perceptions and market confidence to the investors is very crucial.

In spite of the significance of the problem, recent empirical data concerning the trade credit-performance relationship in Pakistan is rather limited. A lot of the available literature is obsolete or based on a few methodologies which are not sufficient to explain the dynamics of firm behavior in the dynamic financial markets. To illustrate the point, previous researchers tended to employ cross-sectional data, which are incapable of embracing change. Other people did not pay enough attention to structural changes in the Pakistani financial system, including the adoption of digital payments, the transformation of banking principles, and economic changes overall that have been implemented within the last decade. Similarly, the absence of compelling evidence that occurred recently leaves policymakers, managers, and investors without any clear image on whether trade credit is now a viable method of enhancing the performance of firms, or something that poses additional risks.

This is the gap that this paper tries to fill. It analyzes the impact of the trade credit in the manufacturing sector in Pakistan by analyzing a panel data within the duration 2014 to 2023 and where the factors receiving the impact are the receiving factors, the receiving payables, and the receiving receivables. There is nothing accidental about the fact that the interest to the given industry is so high: manufacturing businesses do not only become capital-consuming but also highly reliant on stable supplies chain cycles, which makes them highly sensitive to financial restrictions and credit facilities. The study is more rigorous and nuanced than a great deal of the previous literature because it uses the fixed and random effects models of the Q framework of Tobin. This, together with the true impacts of the trade credit policies on the profitability and valuation, can be identified by controlling the unobserved heterogeneity across firms.

This research has a great potential. It offers an academic input in the form of fresh empirical data that improves our knowledge of the correlation between trade credit and the performance of companies in the emerging markets. It also carries on the discussion on whether trade credit is more of a substitute of formal financing or a tool of competitive advantage or both. Practically the implications of the findings are obvious. Better insight into the optimal between extension and receipt of the trade credit can be provided to managers so that it could lead to better management of the liquidity and profitability maximization. Indicators of trade credit can be great indicators to investors who are seeking to know the riskiness of firms and their future worth. The findings of this can be leveraged by the policy makers to shape up financial changes to enhance access to credit, industrial growth and stabilization of the overall economy.

To the point, this paper will mention that trade credit is not a simple purchasing or selling of cash between businesses-it is a strategic financial tool, and it may allow any business to attract the future of any industry. The paper highlights the importance of receive and payable decisions in relation to the companies and the overall economic development taking into account the manufacturing sector, which is one of the pillars of the Pakistan national economy.

Literature Review

Firm Performance

One of the measures of firm performance is profitability metrics, which include net income, net profit margin, and the rate of return on assets (ROA) and are used to indicate how well the firm makes use of its assets and liabilities and can make use of its equity (Siraj, Mubeen, and Sarwat, 2019). This mix highly depends on the management of the short-term liabilities, in particular, the trade credit since the receivables and payables directly influence cash flow, liquidity, or profitability in the end analysis (Siraj et al., 2019). Trade credit is handled in a good manner; businesses can even out the working capital and cut the use of an expensive long-term debt.

One of the instruments of money and liquidity buffer is trade credit. The receivables-payables ratio is higher, and the probability of being more liquid and not financially stressed increases the probability of companies. There are trade-offs in credit extension, however- default, sluggish collections and tied-up capital can decrease returns. It is therefore a delicate relationship between trade credit performance: excessive credit may stifle sales; excessive credit may stifle profitability.

This paradox is confirmed in empirical research. Trade credit-based companies are more likely to expand faster in markets with lower financial intermediation compared to loans based on banks (Fisman and Love, 2016). However, there is evidence that credit exposure leads to diminishing returns or adverse effects as the exposure grows high (Petersen and Rajan, 1997). All that leads to the possibility that the impact of trade credit on performance is not linear.

Trade Credit

Trade credit is a type of short-term credit (interest free) extended by suppliers to buyers (or the other way around) without interests, usually 30-90 days (Martinez, 2014). In most of the growing economies, it is an essential alternative to bank financing where it is more flexible and has fewer formal requirements (Hermes, Kihanga, Lensink, and Lutz, 2012).

Trade credit aids strategic relations besides financing. The suppliers who credit to them implicitly guarantee the quality of the products, the buyers who credit to them can create customer loyalty (Horne, 2011). Therefore, trade credit is not simply a tool of financing a component of a competitive and reputational policy in supply chains.

However, it is dangerous to assume that its impact is similar across the types of firms. Although the bulk of the evidence is dedicated to the case of small and medium enterprises (SMEs), the credit strategy of the large firms can vary. Hoang (2019) found that there was a nonlinear association between trade credit and profitability in SMEs: moderate credit is beneficial, and excess credit is negative. What is not known is whether big manufacturing companies are adhering to the same nature particularly in the markets where the financial systems are changing such as in Pakistan.

Trade Credit Receivables (TCR)

Trade Credit Receivables (TCR) refer to accounts receivable from customers who purchase on credit. These are key components of working capital and affect liquidity, cash flow, and risk (Lin & Chou, 2015). Effective receivables management—tight credit policies, monitoring ageing schedules, and efficient collections—helps firms maintain cash flow without overextending risk (Asimakopoulos, Fernandes, & Karavias, 2017). Firms often use TCR as quasi-financing. In China and Italy, firms have leveraged receivables as collateral to access bank funds, thus bridging short-term liquidity gaps (Asimakopoulos et al., 2017). This dual nature enhances their strategic value. But not all effects are positive. One view is that increasing receivables boosts sales and customer relationships (Lewellen, McConnell, & Scott, 1980; Hill, Kelly, & Highfield, 2012). The other is that excessive receivables increase default risk, collection costs, and opportunity costs (Pike & Cheng, 2001). In response, scholars propose that an *optimal* receivables level exists—beyond which returns decline (Kestens, 2012; Martinez, 2014).

In Pakistan, recent empirical work on trade credit dynamics highlights the importance of firm size, profitability, and capital structure in influencing net trade credit (Khan, Rehman, & Yamna, 2024).

Trade Credit Payables (TCP)

Trade Credit Payables (TCP) represent the short-term debts firms owe suppliers. This is a standard business practice—buy now, pay later, typically within one to three months (Bussoli & Conte, 2020). By deferring payments, firms conserve cash, maintain liquidity, and limit dependence on formal debt (Hermes & Lutz, 2012).

Advantages of TCP are clear: improved liquidity, flexibility, and the ability to redirect cash to other investments (Vaidya, 2011). Also, by managing payables well, firms may signal creditworthiness and build supplier trust. But there's a flip side. Heavy reliance on payables can damage supplier relationships, lower creditworthiness, and restrict future financing (Molina & Preve, 2009). In volatile economies, overuse of payables may lead to disputes or defaults (Salawu, 2007). The literature frequently cites a nonlinear effect: moderate use of payables helps, but overuse can hurt (Huyghebaert, 2006; Van Horne & Wachowicz, 2008). For firms with sound financial health, extending payables is strategic. But for distressed firms, payables often act as a short-term lifeline—sometimes at the cost of long-term performance.

To sum up, trade credit—via receivables and payables—plays a pivotal role in firm performance, especially in emerging markets. The literature shows that these credit mechanisms can drive sales, improve liquidity, and strengthen relationships. Yet, they carry risks: defaults, collection costs, and opportunity costs. Many studies suggest the relationship between trade credit and profitability is *nonlinear*, with an “optimal” level somewhere in the middle.

However, gaps remain. Most empirical studies focus on SMEs or firms in developed markets. There is limited research on large manufacturing firms in developing economies like Pakistan. Some Pakistani work touches on trade credit access (Bhutta, Sheikh, Saif, Munir, & Naz, 2019), net trade credit and growth (Younis & Khan, 2025), or credit rating mediation (Kashif, Ahmed, & Islam, 2019). But none directly examine how TCR and TCP interplay with performance in large manufacturing firms listed on the Pakistan Stock Exchange. Hence, this study aims to fill that void by investigating how trade credit receivables and payables impact firm performance in the Pakistani manufacturing sector, and whether nonlinear effects or optimal levels exist.

Research Methodology

Deductive technique was selected because the current study will be grounded on the hypotheses that will be generated as a result of a literature review. Survey Questionnaires will be used to get the data, which is based on Panel data. The study was done based on panel data of Pakistan Stock Exchange (PSX), TCR and TCP data of all listed businesses and firm performance.

Research Design

The research design expounds on the research paradigm, methods, methodology, data collection and analyses techniques. The research philosophy that we shall employ in the current study is epistemology since it is theoretical and aims at advancing the limits of knowledge. The subject of epistemology is the continuation of knowledge using the available facts and theories. The research approach is the Panel Data Analysis, pure quantitative research using second hand data. The data will be collected from the Pakistan Stock Market and organizational annual reports regarding the Trade Credit and Firm Performance.

Data and Sources

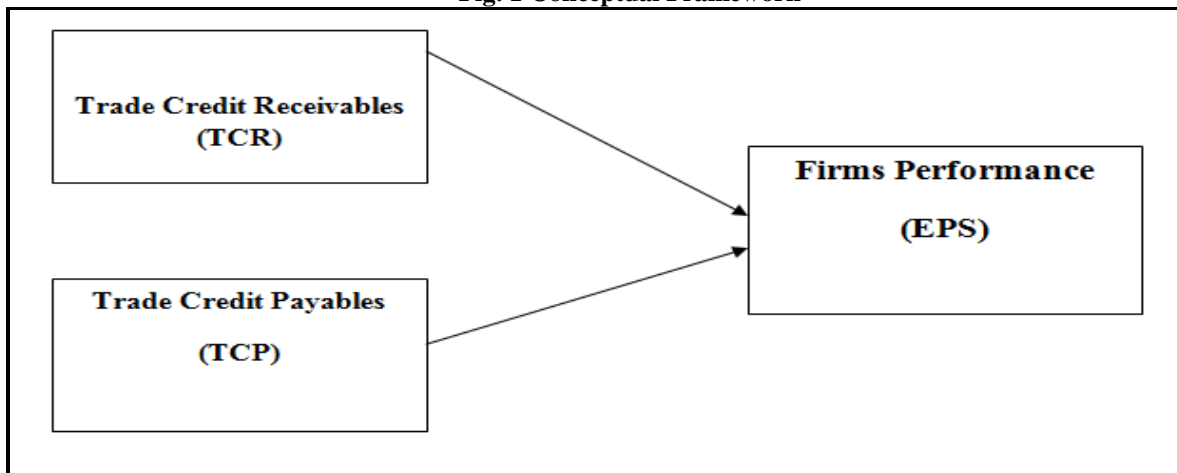
The research data conducted of last 10 years annual data figures of Trade Credit Receivables (TCR) and Trade Credit Payables (TCP) are independent variables and Firm Performance (Earning Per Share EPS) is the dependent variable. The data sources are Pakistan Stock Market pool of manufacturing PSX listed companies from 2010 to 2019.

Theoretical Framework

The Research evaluates the relationship of Trade Credit and Firm Profitability. The research conducted based on Tobins Q, the analysis of money circulation in the economy and organizations. The Tobins Q elaborates the refers the management of assets of organization is based on economic conditions. The Trade Credit is referred to management of receivables and payables and that is based on organizational capacity and management of financial structure (Tobins, 2006). The research is also based on empirical studies includes the as trade credit affects the organizational performance and profitability of the firms. Baker, Pattnaik, & Kumar (2020), conducted study in India explained the receivables and payables are significant relationship and affect the profitability of the organization in Stock exchange.

Conceptual Framework

Fig. 1 Conceptual Framework



Source: Adapted by: (Baker, Pattnaik, & Kumar, 2020).

The Trade Credit organization has to pay its short term liability organization need to pay to suppliers of organizations. The short-term liability is referred to as Trade Credit payable they need to pay within the month or maximum of three months without any financial cost or interest rates (Bussoli & Conte 2020).

The Profitability of an organization on a monthly or yearly basis after paying all the taxes is referred to as profit for the organization. There are many ways to analyze the Profitability of a company, through Net income, Increase in Net Profit Margin Income, and Gross Profit income as well (Bussoli & Conte 2020).

The research clarifies the Trade Credit and Firm execution, as it seen that association are accepting monetary help as exchange credit for more limited timeframe if there should be an occurrence of a liquidity deficiency, and they pick up the benefit of account and paid on month to

month premise. Without working capital, association may not endure and they need to assume acknowledgment in wording on stock and buying of resources and paid on month to month premise to hold its position and they offer credit to different clients, so proceed with the pattern of business.

Hypothesis Development

H1: There is significant impact of extending trade credit receivables (TCR) by large with Firms Performance in manufacturing sector organizations PSX-listed companies in Pakistan.

H2: There is significant impact of extending trade credit payables (TCP) by large with Firms Performance in manufacturing sector organizations PSX-listed companies in Pakistan.

Statistical Techniques applied for Data Analysis

The Collected data will be processed in Eview 9.5 Software for data analysis. The Panel data analysis performed through Eviews software and model of analysis are Fixed Effect Mode, Random Effect Model, Hausman Tests applied to evaluate the results for short term and long term impact of variables.

Econometric Model

Y = Depended variables (EPS)

α = Constant

β = coefficient of independent variables (TCR and TCP)

X = independent variables

Panel regression equation (Pooled Regression Model)

$$EPS_{it} = \alpha + \beta_1 TCR_{it} + \beta_2 TCP_{it} + \varepsilon_{it}$$

Fixed Effect Model

$$EPS_{it} = (\alpha + F_i) + \beta_1 TCR_{it} + \beta_2 TCP_{it} + \varepsilon_{it}$$

Random Effect Model

$$EPS_{it} = \alpha_i + \beta_1 TCR_{it} + \beta_2 TCP_{it} + \varepsilon_{it}$$

Empirical Analysis

This section discusses the econometric findings to determine the connection between trade credit and firm performance in Pakistani manufacturing industry. Both fixed effect and random effect model were estimated using panel data of 43 listed firms that spanned a period of 2011-2020. The proxy variable was earnings per Share (EPS) that measured the performance of the firm, whereas trade credit receivables (TCR) and trade credit payables (TCP) were independent variables. After that, Hausman test was used to find the most proper specification.

Fixed Effects Model

To take into account the long-term firm-specific effects across the panel, the fixed effects model (FEM) was used. The findings are described in Table 1

Table 1. Fixed Effects Model Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.0883	0.5638	14.3467	0.0000
TCR	0.0685	0.0180	3.7987	0.0002
TCP	0.0025	0.0029	0.8589	0.3911

Dependent variable: EPS; $R^2 = 0.69$; $F = 15.7$; $Prob(F) = 0.000$

The outcome of FEM indicates that TCR positively and significantly affects the performance of firms ($p < 0.01$), which confirms the first hypothesis (H1). In particular, every unit of change in TCR corresponds to a growth in the EPS, on average, by 0.07 units, which means that the receivables improve the profitability by driving sales and retaining customers. On the other hand, TCP is not statistically significant ($p > 0.05$), which indicates that supplier credit has no significant impact on long-term earnings. The overall effectiveness of the model is proved by the fact that it explains 69 percent of the variation in firm performance.

Random Effects Model

The random effects model (REM) was estimated to capture the variation in the short term. Results are shown in Table 2.

Table 2. Random Effects Model Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.9181	1.2503	6.3329	0.0000
TCR	0.0751	0.0171	4.4019	0.0000
TCP	0.0023	0.0029	0.7760	0.4382

Dependent variable: EPS; $R^2 = 0.05$; $F = 10.13$; $Prob(F) = 0.000$

TCR once again is found to be positive and significant ($p < 0.01$) in the short run. Nevertheless, the model is weak in the explanatory power ($R^2 = 0.05$), and this aspect suggests that receivables explain only a minor segment of the shifts in profitability in the short-term. The TCP is insignificant, which demonstrates that supplier credit is not contributing to better performance of firms even in short term.

Hausman Test

Hausman specification test was conducted as a way of seeing which one, FEM or REM gives a more consistent estimation. The findings are stated in Tables 3 and 4.

Table 3. Hausman Test Summary

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1.1859	2	0.5527
Period random	0.2719	2	0.8729
Cross-section & period random	1.6175	2	0.4454

Table 4. Hausman Test: Variable-Level Results

Variable	Fixed Effect	Random Effect	Var(Diff.)	Prob.
TCR	0.0695	0.0751	0.000032	0.3208
TCP	0.0024	0.0023	0.000000	0.7792

Hausman test is in favor of the fixed effects model since the random effects is not very consistent in estimates. Thus the fixed effects model is retained as more accurate model in depicting the relationship between trade credit and profitability.

Discussion

The findings indicate that the trade credit receivables have a significant positive impact on the firm performance and trade credit payables have no significant or measurable impacts. These findings are consistent with the literature on the beneficial effect of receivables on promoting sales and profitability (e.g., Ahmad et al., 2017; Degryse and Ongena, 2017). They also resonate with Farooq et al. (2021) who discovered that receivables are a significant financing alternative in the emerging economies that face constraints in bank credit.

In comparison, the ineffectiveness of payables challenges the views of supplier's credit as a low cost financing source (Petersen and Rajan, 1997). This can also be indicative of low willingness of suppliers to give favorable credit conditions in the Pakistani context, or the comparatively high transaction costs due to delays in payments. It is preferable that companies enhance their receivables management controls, through the application of restrictive credit policy and efficient collection procedures rather than relying on supplier financing to this degree.

The increased explanatory power of FEM is a pointer to the fact that receivables are more crucial in long-term profitability, but not in short-term profitability. This implication on the long run would mean that the companies who have already adopted the use of trade credit as one of the sales strategies will be in a position to have a more stable business performance.

Concluding Remarks

The empirical evidence stresses the asymmetry of the role played by the contribution of the role of the receivables and payables to the conclusion of the performance of the firms in the manufacturing sector in Pakistan. The power of receivables is a strong driver of profitability in both the short and long term where payables have no quantifiable effects whatsoever. Not only does this affirm the previous research, but it also progresses the discussion by determining the structural characteristics of new markets such as lack of bank funding, reliance on suppliers and unreliable credit structures, which shape the credit-performance nexus. Its outcomes are significant

to managers as it demonstrates that managing receivables is a strategic growth tool and to policymakers as the trade credit may be considered an expansion of the financing tool to enhance corporate liquidity and resilience.

Implications

Findings of this study have important implications to managers, investors, and policymakers of emerging markets. First of all, the fact that the positive influence of trade credit receivables was high and positive, is a sign of the strategic place of an effective management of customer credit. Firms should develop efficient credit policies, which they interchange between sales growth, and credit risk since the capacity of firms to finance their accounts in the most optimal way not only improves liquidity, but also profitability over the long run. Second, due to insignificance of trade credit payables, excessive reliance on supplier financing will not result in apparent profitability increase. This can give a signal to the managers that extending payables is not an effective growth measure and in reality it may destroy supplier relationships.

To the investor, the implication of these findings is that well-managed policies on receivables may put the company better positions to expand long-term than those that depend on supplier credits. On policy front, the findings recommend policies that would facilitate trade credit facilities such as strengthening legal frameworks of debt collection and facilitating transparency in the business-to-business credit transactions. Theoretically, the study contributes to the debate on the trade credit-performance nexus which demonstrates that the effectiveness of credit mechanisms is context-dependent and it is predetermined by the financing constraint specific to the emerging economies like that in Pakistan.

Areas for Further Research

This research has its value, but still, there are several research opportunities. First, the relationship between trade credit and the performance, perhaps, would be different between larger listed corporations and smaller business with stricter financing, perhaps, when the sample is made larger, including small and medium-sized enterprises (SMEs). Second, other measures of performance such as returns on assets (ROA), returns on equity (ROE), or the Q of Tobin may be used in the future study to represent other broader aspects of firm performance. Third, comparisons across the emerging and the developed markets would help to assess whether the asymmetric impact of the receivables and payables is limited to Pakistan or can be generalizable across the settings. Finally, the quantitative data may be complemented with the qualitative studies of managerial traditions, associated with credit policy, which should allow getting additional data regarding the use of trade credit as a financial tool and a competitive practice.

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