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Research Article

Trade Credit Dynamics: Unveiling Key Determinants and Implications for Sustainable Business Growth

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Abstract

This study investigates the key determinants of net trade credit among firms in Pakistan, analyzing the influence of factors such as current assets, cash balance, collateral, equity, growth, stock, operating cycle, return on assets, return on equity, firm size, firm age, and leverage. Using an eight-year data set (2018-2023) from 35 leading companies listed on the Pakistan Stock Exchange, the study employs EViews for statistical analysis, including descriptive statistics, correlation analysis, and regression analysis. The heteroscedasticity test was applied to address data variability issues. The findings reveal that most of the determinants positively and significantly influence net trade credit, with a notable impact from current assets, stock, collateral, ROA, ROE, firm age, and firm size. However, cash balance demonstrated a significant and positive relationship with net trade credit. Conversely, other factors such as leverage showed negative, insignificant effects. This research offers valuable insights for managers, policymakers, and researchers by contributing to the understanding of trade credit dynamics and emphasizing the importance of strategic financial management for sustainable business growth. The study highlights the role of corporate financial practices in fostering long-term sustainability in emerging markets like Pakistan.

Keywords: Determinants Net Trade Credit, Financial Management, Sustainable Business Growth.

How to Cite this Work:

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1 INTRODUCTION

Trade credit is a cornerstone of corporate finance, serving as a vital mechanism for facilitating the flow of goods and services while addressing liquidity constraints (Abuhommous, 2019; Altunok et al., 2020). By allowing firms to defer payments to suppliers (accounts payable, AP) or extend credit to customers (accounts receivable, AR), trade credit enables businesses to optimize their working capital and sustain operations during periods of financial stress (Altunok et al., 2020; Bougheas et al., 2009). In emerging economies, where formal financial systems often lack depth and inclusivity, trade credit serves as a critical source of financing, particularly for small and medium-sized enterprises (SMEs) that face limited access to formal credit markets (Kestens et al., 2012; Kim, 2016). An essential metric for understanding trade credit dynamics is net trade credit (NTC), calculated as the difference between AR and AP. NTC reflects a firm's liquidity management practices and its role in the supply chain as either a net financier (positive NTC) or a net borrower (negative NTC) (Martínez-Sola et al., 2014). Despite its significance, the determinants of NTC remain underexplored in the literature, with most studies narrowly focusing on either AR or AP in isolation. Such a fragmented approach overlooks the complex interplay of financial variables that collectively influence NTC, particularly in resource-constrained environments like Pakistan.

In developed economies, the determinants of trade credit have been studied extensively, often emphasizing the roles of leverage, liquidity, and firm size (Yang, 2011). However, in emerging markets, the financial environment is characterized by higher levels of uncertainty, weaker institutional frameworks, and constrained access to formal credit channels (Ahmad et al., 2023; Aviral & Raveesh, 2015; Kim, 2016). These conditions make trade credit even more vital but also necessitate a deeper investigation into the unique factors shaping its usage. For instance, SMEs in Pakistan, which contribute significantly to the country's economic output, frequently rely on trade credit as their primary financing source due to their limited access to banking services (State Bank of Pakistan, 2021). Despite its importance, empirical research on the determinants of NTC in Pakistan remains sparse, with limited attention to the interaction of AR and AP alongside broader firm-specific characteristics.

This study builds on the trade-off theory (Campbell & Kelly, 1994) and pecking order theory (Myers, 1984) to analyze the determinants of NTC. The trade-off theory posits that firms strive to balance liquidity and profitability by optimizing their credit management practices, using AP to manage cash flows and AR to boost sales (Baños-Caballero et al., 2016). The pecking order theory further suggests that firms prefer internal financing, such as trade credit, over external sources due to the lower costs and risks associated with the former (Banerjee & Guha Deb, 2024; Ellram & Tate, 2016; Zheng et al., 2022). These theories provide a robust framework for understanding how firm-specific factors such as size, age, profitability, growth, leverage, and operating cycles influence trade credit dynamics. Existing literature has examined individual financial variables, such as liquidity or leverage, in isolation, often focusing on developed economies (Abuhommous, 2019; Altunok et al., 2020). However, there remains a conspicuous gap in research addressing the combined and interactive effects of these variables on NTC, particularly in the context of emerging economies like Pakistan. For example, while studies have shown that firm size and age enhance bargaining power with suppliers and customers, little is known about how these factors interact with profitability, leverage, and growth to shape NTC in a resource-constrained environment.

To address these gaps, this study systematically examines the determinants of NTC within Pakistani firms, integrating multiple financial variables into a cohesive framework. By considering the joint influence of AR, AP, and firm-specific characteristics, this research offers a comprehensive perspective on trade credit dynamics in Pakistan's evolving economic landscape. The findings aim to advance theoretical understanding while providing actionable insights for corporate managers and policymakers. The contributions of this study are twofold. First, it enhances the theoretical discourse by developing an integrative model of NTC determinants, incorporating diverse financial variables to address the fragmented nature of prior research (Kestens et al., 2012; Martínez-Sola et al., 2014). Second, it offers practical implications for managers and policymakers. For SMEs, which heavily rely on trade credit, understanding the determinants of NTC is crucial for optimizing liquidity management and strengthening supplier-customer relationships. Policymakers can use these insights to design targeted interventions that enhance financial accessibility, supporting business growth and economic development in Pakistan.

The paper is structured as follows: Section 2 presents a detailed review of relevant literature, synthesizing theoretical and empirical findings on trade credit determinants. Section 3 outlines the research methodology, including data sources, variable definitions, and econometric models. Section 4 discusses the empirical results in relation to prior studies. Finally, Section 5 concludes with key findings, policy recommendations, and directions for future research.

2 LITERATURE REVIEW AND THEORETICAL BACKGROUND

The trade-off theory, which emphasizes balancing liquidity and profitability, posits that firms aim to optimize their credit management policies to sustain operations while maximizing financial performance. Firms strategically use accounts payable to manage liquidity by deferring payments, ensuring they have sufficient cash to meet operational needs ((Myers, 1984). Similarly, accounts receivable policies are designed to foster customer loyalty and boost sales without compromising financial stability. The pecking order theory complements this perspective by suggesting that firms prioritize internal financing sources over external ones, thereby heavily relying on trade credit as a flexible financing tool (Campbell & Kelly, 1994). This theory explains why more profitable firms exhibit lower leverage and greater control over their AR and AP, as they are less dependent on external financing. These theoretical underpinnings align with the roles of firm age, size, profitability, asset growth, and leverage in shaping working capital decisions. Older and larger firms tend to have stronger reputations and bargaining power, allowing for more favourable AP terms, while profitable firms rely on AR management to strengthen customer relationships and support sales growth. These insights provide a robust basis for examining the hypothesis.

2.1 Determinants of Accounts Payable

Accounts payable (AP) plays a crucial role in corporate financial strategy, serving as both a financing mechanism and a tool for managing liquidity. The relationship between AP and firm-specific factors such as age, size, profitability, asset growth, and leverage has been widely studied, offering rich insights into how firms strategically manage their liabilities (Ali, 2021). Firm age has consistently emerged as a significant determinant of accounts payable. Older firms, with their established market reputation and reliability, are more likely to secure favourable credit terms from suppliers. Power et al. (2022) highlighted that mature firms use AP not merely as a financing tool but as a strategic asset to preserve liquidity and optimize working capital. This aligns with findings by Jaworski and Czerwonka (2022) who argued that longevity enhances supplier trust, allowing firms to negotiate extended payment terms.

Firm size, often reflected in sales, also influences AP policies. Larger firms typically possess greater bargaining power, enabling them to delay payments without significant repercussions. Ahmad (2024) noted that these firms use their market dominance to optimize cash flow by stretching payables, a practice that enhances their operational flexibility. This is consistent with the resource-based view, suggesting that size reflects resource abundance, which firms leverage to manage their liabilities strategically. Profitability demonstrates a nuanced relationship with AP. While traditionally associated with reduced reliance on external financing, profitable firms may still use supplier credit to reinvest capital in higher-return projects (Ahmad, 2024). Briones et al. (2024) found that financially robust firms strategically delay payments to suppliers as part of their liquidity optimization strategies, while Petersen and Rajan (1997) reinforced that trade credit can serve as a cost-efficient alternative to conventional financing.

Asset growth further shapes AP practices. Firms undergoing rapid expansion often face heightened cash flow pressures, relying on supplier credit to bridge operational funding gaps. (Ahmad et al., 2023; Bougheas et al., 2009) emphasized that high-growth firms prioritize internal cash retention for investments, leading to increased accounts payable balances as a natural consequence of their expansion strategies. Leverage, representing the financial risk of a firm, significantly affects its reliance on AP. Coricelli and Frigerio (2019) argued that firms with higher leverage depend more on trade credit to compensate for restricted access to conventional financing. Suppliers, recognizing this dependency, may extend credit cautiously but accommodate these firms to maintain long-term relationships (Abuhommous, 2019; Altunok et al., 2020; Amir et al., 2024; Martínez-Sola et al., 2014). Based on the discussion above, we proposed the following hypotheses.

H1a: Firm age positively influences accounts payable.

H1b: Firm size positively influences accounts payable.

H1c: Profitability positively influences accounts payable.

H1d: Asset growth positively influences accounts payable.

H1e: Leverage positively influences accounts payable.

2.2 Determinants of Accounts Receivable

Accounts receivable reflects a firm's ability to extend trade credit to customers, balancing the pursuit of revenue growth with liquidity management (Kestens et al., 2012; Li & Tang, 2016). The influence of firm age, size, profitability,

asset growth, and leverage on AR policies underscores the strategic importance of credit extension in achieving competitive advantage. Firm age significantly affects AR practices, as older firms are more likely to offer favorable credit terms to strengthen customer loyalty and maintain their market position. (Ball et al., 2016) argued that mature firms leverage AR to build trust and foster long-term customer relationships. This perspective is echoed by Ball et al. (2016), who noted that established firms use trade credit strategically to outcompete rivals and maintain customer satisfaction.

Firm size, often associated with operational stability, is another key driver of AR policies. Larger firms have greater financial flexibility, allowing them to offer generous credit terms to expand their customer base. García-Teruel and Martínez-Solano (2010) observed that large firms utilize AR as a competitive tool, prioritizing market share and customer retention over immediate cash flow needs. (Bougheas et al., 2009; Kajirwa & Katherine, 2019; Yazdanfar & Öhman, 2015) also highlighted that firm size positively correlates with AR, as larger firms are better equipped to absorb the risks associated with extended credit. Profitability plays a dual role in influencing AR. Profitable firms are more likely to extend credit to customers, leveraging their financial strength to attract and retain clients. Altunok et al. (2020) emphasized that profitable firms often adopt more flexible AR policies as a deliberate strategy to drive sales and enhance customer satisfaction. However, financially constrained firms may adopt conservative AR practices to safeguard liquidity, highlighting the complex interplay between profitability and credit extension.

Asset growth is intricately linked to AR, as expanding firms use credit terms to penetrate new markets and attract customers. Jaworski and Czerwonka (2022) argued that high-growth firms view AR as an investment in sales and customer acquisition, despite the associated risks of delayed payments. This aligns with the pecking order theory, which suggests that firms prioritize internal financing, such as trade credit, during periods of growth. Leverage also shapes AR practices, often constraining a firm's ability to extend credit. Highly leveraged firms, sensitive to liquidity risks, tend to adopt conservative AR policies to mitigate financial instability. Altunok et al. (2020) noted that such firms prioritize financial prudence, reflecting their heightened aversion to credit defaults and cash flow disruptions. Based on the discussion above, we proposed the following hypotheses.

H2a: Firm age positively influences accounts receivable.

H2b: Firm size positively influences accounts receivable.

H2c: Profitability positively influences accounts receivable.

H2d: Asset growth positively influences accounts receivable.

H2e: Leverage positively influences accounts receivable.

3 METHODOLOGY

3.1 Population and Sample Selection

The study focuses on the companies listed on the Pakistan Stock Exchange (PSE), specifically targeting sectors with significant contributions to the national GDP. The population includes these top-listed sector, from which a sample of 35 companies was selected. This sample was chosen based on the availability of complete financial data required for the study, specifically data from 2016 to 2023. The firms in the sample were chosen due to their comprehensive financial statements are available on their website, which provide accurate and reliable data for the analysis.

3.2 Data Collection

The data for this study was collected from secondary sources, primarily the audited annual reports of the companies listed on the Pakistan Stock Exchange. These reports include balance sheets, income statements, and cash flow statements for the years 2018 to 2023. The use of secondary data ensures the reliability and accuracy of the information, as these reports are subject to independent audits. Data collection focused on key financial metrics relevant to the study's research questions, including account receivable, account payable, return on equity, return on assets, sales, leverage, and firm age.

Models 1, 2, and 3 aim to explore the relationships of study variables. In Model 1, AR is explained by factors such as sales (LNSALE), company age (LNAGE), asset growth (ASSETGR), leverage (LEVERAGE), sales volume (SALE), and profitability indicators like Return on Assets (ROA) and Return on Equity (ROE). Similarly, Model 2 examines how these same variables affect AP. In Model 3, the same set of independent variables is used to explain a

general dependent variable (DV). The coefficients (β values) for each variable indicate the strength and direction of their relationship with the respective dependent variable, providing insights into how factors like sales, asset growth, and profitability influence AR, AP, or other outcomes

Model 1: $$AR = \beta_0 + \beta_1(LNSALE) + \beta_2(LNAGE) + \beta_3(ASSERTGR) + \beta_4(LEVERAGE) + \beta_6(SALE) + \beta_6(ROA) + B_7(ROE) + e$$

Model 2: $$AP = \beta_0 + \beta_1(LNSALE) + \beta_2(LNAGE) + \beta_3(ASSERTGR) + \beta_4(LEVERAGE) + \beta_6(SALE) + \beta_6(ROA) + B_7(ROE) + e$$

Model 3: $$DV = \beta_0 + \beta_1(LNSALE) + \beta_2(LNAGE) + \beta_3(ASSERTGR) + \beta_4(LEVERAGE) + \beta_6(SALE) + \beta_6(ROA) + B_7(ROE) + e$$

3.3 Measurement of Variables

The study uses both dependent and independent variables to analyse the determinants of trade credit in Pakistani firms. Below are the descriptions and formulas for each variable in Table 1.

Table.1 Measurement of Variables

Variable Name	Description	Formula
Dependent Variables:		
Account Receivable	Account Receivable divided by the Net Assets	$AP = \frac{Account\ Receivable}{Net\ Total\ Assets}$
Account Payable	Account Payable divided by the Net Assets	$AP = \frac{Account\ Payable}{Net\ Total\ Assets}$
Independent Variables:		
LNAGE	Natural logarithm of years from 2011 to date of establishment	Natural logarithm of years from 2011 to date of establishment
LNSALE	Natural logarithm of Sale	Natural logarithm of Sale
Profit	Earnings before interest & tax divided by Net Assets	$Profit = \frac{EBIT}{Net\ Assets}$
ASSETGR	Net Assets t year less 1 from net Assets and divided by Net Assets	$ASSETGR = \frac{(Net\ Assets\ t\ year - 1) - Net\ Assets}{Net\ Assets}$
LEVERAGE	Total Debts divided by Net Assets	$Leverage = \frac{Total\ Debt}{Net\ Assets}$
Control Variables:		
ROA	Total Assets divided by Net income	$ROA = \frac{Total\ \ Assets}{Net\ Income}$
ROE	Net Income divided by Shareholder Equity	$ROE = \frac{Net\ \ Income}{Shareholder\ Equity}$

(Source: Authors Own Work)

3.4 Analysis Technique

To estimate the relationships between the variables and identify the determinants of corporate trade credit, we will employ Ordinary Least Squares (OLS) regression with fixed effects. This method is appropriate for panel data as it accounts for time-invariant characteristics of each firm that could influence the dependent variables. By using fixed effects, we control for unobserved heterogeneity between firms, allowing us to focus on within-firm variations over time. The fixed effects model was chosen because it allows us to control for unobserved, time-invariant factors that could bias our results. These firm-specific effects, such as industry characteristics or management style, are assumed to be constant over time and could otherwise lead to omitted variable bias. By focusing on the within-firm variation, the fixed effects model isolates the impact of changes in the independent variables on trade credit. Additionally, a Hausman

test will be conducted to confirm the appropriateness of the fixed-effects model over the random-effects model. The Hausman test helps determine whether the individual effects are correlated with the independent variables. If the test indicates that the fixed effects model is preferred, it confirms that unobserved heterogeneity between firms must be considered.

4 RESULTS AND ANALYSIS

Before proceeding any hypothesis or model testing, it is crucial to check the descriptive characteristics of data in order to ensure the adequacy and normality of data. For this purpose, the descriptive analysis of the data is performed first of all, and it is assessed whether the descriptive features of the data are appropriate or not. In this regard, the mean values along with the minimum and maximum values of all variables are assessed to ensure that there is no outlier present in the study. For this purpose, the statistics for all these indicators are calculated through quantitative analysis against each variable and then values found are compared with the standard or threshold values of these indicators to analyze them. The results provided by current descriptive analysis have been displayed in table 4.1 where the values of mean, minimum and maximum statistics have been clearly stated.

Table 2. Descriptive Statistics

Statistic	AP	AR	ASSETGR	LEVERAGE	LNAGE	LNSALE	PROFIT	ROA	ROE
Mean	0.29	0.10	63.02	3.10	3.57	17.44	0.08	10.69	18.55
Median	0.09	0.05	0.10	0.51	3.76	17.34	0.03	5.02	16.81
Maximum	32.16	1.00	16292.29	653.18	5.06	24.12	0.47	395.83	218.44
Minimum	0.00	0.00	-0.99	0.00	0.00	5.13	-0.38	-15.72	-396.78
Std. Dev.	2.01	0.14	979.25	39.28	0.76	2.17	0.11	26.56	48.07
Skewness	14.74	3.05	16.47	16.40	-1.13	-1.22	0.88	11.37	-4.50
Kurtosis	229.23	16.12	273.35	271.84	5.43	11.65	4.47	161.40	42.57
Jarque-Bera	602874.3	2423.95	859196.1	849662.7	127.90	934.79	60.83	296623.2	19076.41
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum	81.67	27.46	17519.83	861.99	992.18	4848.62	23.04	2972.72	5156.49
Sum Sq. Dev.	1122.88	5.43	266000000	427365.70	158.19	1308.80	3.42	195331.50	640150.60
Observations	280	280	280	280	280	280	280	280	280

(Source: Authors Own Work)

Table 2 demonstrated the descriptive results of current study variables; the mean value of account payable is .2919 and the value of minimum and maximum is .00 and 32.15 respectively. The figure show that data of account payable is normal and there is no outlier exist. The minimum value for account receivable is 0.0 and maximum value is 1, whereas mean value is .046, which is central value between 0 and 1. Therefore, the data of account receivable is also normal and there is not extreme value exist. The means value for ASSETSGR, leverage, age, sale, profit ROA and ROE are 63.02, 3.10, 3.56, 17.44, 0.08, 10.6 and 18.54 respectively. Minimum values for ASSETSGR, leverage, age, sale, profit ROA and ROE are -.99, .003, .00, 5.12, -.38, -15.72, and -396.78 correspondingly. Furthermore, the maximum values for ASSETSGR, leverage, age, sale, profit ROA and ROE are 16292.29, 653.17, 5.06, 24.99, .46, 395.83 and 218.44 respectively. These mean, minimum and maximum value for all indicators stated that data of current study is normal and can be used for further analysis. There is no hushed or extreme value exist in the data.

4.1 Regression Analysis

The regression analysis depicts the relationship between two variables. Although the relationship of variables is also measured through Pearson correlation test, but the correlation is unable to determine the dependency of variables and it does not become clear through correlation test that which variable is reliant variable, and which is independent variable. The regression test and its results make clear that which variable in the model is causing change in another variable and what is the direction and extent of this impact of one variable on other. But in panel data simple liner regression is not enough to justify the results of hypothesis testing, according to econometricians there are two techniques which can be used to check the impact of one variable on another in panel data, one is fixed effect approach and second is the random effect approach. Housman test is used to check either fixed effect approach is appropriate for current study or random effect.

4.2 Housman Test

The Hausman test is used to specify the model for panel regression analysis, "the Hausman test is sometimes described as a test for model misspecification. In panel data analysis (the analysis of data over time), the Hausman test can help you to choose between fixed effects model or a random effects model. The null hypothesis is that the preferred model is random effects; The alternate hypothesis is that the model is fixed effects. Essentially, the tests look to see if there is a correlation between the unique errors and the regressors in the model. The null hypothesis is that there is no correlation between the two". Results of Housman test for current study regression model, the value of Chi Square is 19.00 whereas degree of freedom is 7. The probability value of Housman test is 0.0082 which is less than 0.05 and demonstrated that result is significant. On the base of p-value we reject null hypothesis and accepted alternative hypothesis which stated that fixed effect model is appropriate. Therefore, in current study to check the impact of ASSETSGR, leverage, age, sale, profit ROA and ROE on account receivable and payable fixed effect model was applied.

4.3 Fixed Effect Model

Fixed effect model usually refers as a regression model in which means of group are fixed. "Fixed effects models are used to determine optimal values for inputs to estimation processes when random factors are judged not to be present in the process or determined not to have an effect on the process output." In simple words, fixed effect model is a model in which the quantities of parameters are non-random are fixed. Therefore, on the base of Housman test fixed effect model is chosen for the current study and following are the results of current study;

Table 3. Fixed Effect Model (DV=AP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNSALE	-0.081978	0.026044	-3.147655	0.0018
LNAGE	0.298135	0.075302	3.959187	0.0001
ASSETGR	0.000100	5.77E-05	1.737124	0.0835
PROFIT	-1.061657	0.569246	-1.865023	0.0633
LEVERAGE	0.001460	0.001398	1.044671	0.2971
ROA	0.066680	0.002039	32.70537	0.0000
ROE	-0.002246	0.001177	-1.909251	0.0573
C	0.065271	0.502895	0.129791	0.8968

R-squared	0.816271	Mean dependent var	0.293772
Adjusted R-squared	0.806490	S.D. dependent var	2.013389
S.E. of regression	0.885684	Akaike info criterion	2.647534
Sum squared resid	206.3068	Schwarz criterion	2.843269
Log likelihood	-353.0072	Hannan-Quinn criter.	2.726061
F-statistic	83.46098	Durbin-Watson stat	0.618490
Prob(F-statistic)	0.000000		

(Source: Authors Own Work)

The results of the above Table 3 show the impact of independent variables on account Payable. The value of adjusted R squared show that all independent variables have 80.64 percent positive and significant impact on account payables. The value of F-Cal is 83.46 which is greater than 4.0 and value of probability is less than .05 which prove that overall model is significant. LNAGE has a significant and positive relationship with AP and value of coefficient 0.29 which means if one-unit increase in LNAGE it will bring 29% increase in AP. P-value of LNSALE shows its significance but it has negative relationship with AP, because coefficient value is -0.081 which means if one-unit decrease in LNSALE it will consider an increase in AP. LEVERAGE has insignificant impact on AP, value of coefficient is 0.0014 which mean that it has positive impact, LEVERAGE not significant with AP because of collection average period and payables deferral period. ASSETGR has positive relationship and not significant with AP as p value greater than 0.005. Value of coefficient 0.00010 which means if one-unit increase in ASSETGER with will negatively change of cause in AP by 0.00010. PROFIT has negative impact on AP and this effect is insignificant because p-value is less than .05. Coefficient value is -1.061. ROA has significant and positive impact on AP and its value of coefficient gives indication if one-unit of ROA increased it will bring change in AP by 6.6%. the effect of ROE on AP is not significant not significant because p value is less than .05 and coefficient value is -0.002.

The results of fixed effect model in Table 4 show the relationship between AR and independent variables. Results show that overall model has only 6 percent positive and significant impact on account receivable. LNAGE has insignificant and positive impact on AR, value of coefficient is 0.062 which gives indication if one-unit increase of

LNAGE, it will bring change in AR by 6.2%. LNSALE has insignificant and positive impact on AR, this results consistent with. LEVERAGE has insignificant and negative influence on AR. Value of coefficient gives indication if one-unit increase in LEVERAGE it will bring positive change in AR by .02% but due to insignificancy we cannot rely on this result. ASSETGER have insignificant and positive relationship with AR and ROA have positive and significant because of t-statistics are less than the value of t-tabulated. Value of coefficient are 6.9, and 0.0001 respectively which are clearly mentioned. PROFIT has negative and insignificant relationship with AP. ROE has insignificant effect on AR because p-value is less than .05

Table 4. Fixed Effect Model (DV=AR)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNSALE	0.011275	0.004105	2.746791	0.0065
LNAGE	0.062081	0.042263	1.468927	0.1432
ASSETGR	6.91E-06	6.66E-06	1.038965	0.2999
PROFIT	-0.135171	0.056760	-2.381441	0.0180
LEVERAGE	-0.000102	0.000103	-0.988746	0.3238
ROA	0.000841	0.000214	3.930005	0.0001
ROE	0.000106	0.000149	0.707834	0.4797
C	-0.318526	0.154406	-2.062910	0.0402
R-squared	0.712007	Mean dependent var		0.099461
Adjusted R-squared	0.662395	S.D. dependent var		0.139787
S.E. of regression	0.081222	Akaike info criterion		-2.045790
Sum squared resid	1.570073	Schwarz criterion		-1.500572
Log likelihood	328.4106	Hannan-Quinn criter.		-1.827102
F-statistic	14.35144	Durbin-Watson stat		1.221816
Prob(F-statistic)	0.000000			

Table 5. Fixed Effect Model (DV=AR-AP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNSALE	0.087513	0.025179	3.475611	0.0006
LNAGE	-0.247527	0.072802	-3.400008	0.0008
ASSETGR	-9.63E-05	5.58E-05	-1.725391	0.0856
PROFIT	0.914371	0.550346	1.661449	0.0978
LEVERAGE	-0.001395	0.001352	-1.032321	0.3029
ROA	-0.066788	0.001971	-33.88316	0.0000
ROE	0.002516	0.001137	2.211602	0.0279
C	-0.235748	0.486197	-0.484881	0.6282
R-squared	0.825139	Mean dependent var		-0.194984
Adjusted R-squared	0.815830	S.D. dependent var		1.995287
S.E. of regression	0.856277	Akaike info criterion		2.580001
Sum squared resid	192.8344	Schwarz criterion		2.775736
Log likelihood	-343.6202	Hannan-Quinn criter.		2.658529
F-statistic	88.64634	Durbin-Watson stat		0.660619
Prob(F-statistic)	0.000000			

The results mention in the above Table 5 gives indication dependent variable (difference of AR and AP) has significant relationship with independent variables. LNAGE has negative but significant relationship as p-value is less than .05 with (DV=AR-AP). Value of coefficient is -0.24 which means that one-unit increase in LNAGE, will bring decease in DV by 21.5%. There is a positive and significant relationship between LNSALE and DV as value of p less than 0.005. coefficient is 0.087 which means if one-unit increase in LNSALE it will be increased in DV by 0.87. LEVERAGE has insignificant and negative relationship with DV. Value of coefficient is -0.0013 that means if one-unit increase, it will bring decrease in DV by -0.0013**.** ASSETGER has negative and insignificant impact on DV because p-value is greater

than 0.005. value of coefficient is -9.63. PROFIT has a positive but insignificant effect on DV, value of t-statistics less than t-tabulated. ROA has negative but significant impact on DV as value of p is less than 0.006 and value of coefficient is -0.066 which indicated that if one-unit increase of ROA, it will bring 66% negative change in DV. Moreover, the impact of ROE also has positive and insignificant impact on DV and result show that p-value is greater than .05 and beta value is 0.0025. The collective impact of all independent variables on DV is 81.5 percent (adj R Square) which mean that all independent variable has positive and significant impact on DV, the F-Cal value is 88.64 which is greater than F-Tabulated, and p-value is less than .05.

5 DISCUSSION

As per the objectives of the study to find the determinants of AR and AP as well as their impacts on the dependent variables, the application of all the tests for the determination of association among the variables has brought the results. As per the test of "Housman", it has been determined that "fixed effect model" is suitable for the further analysis through "Eviews" for the sake of relation based and hypotheses testing. The overall impact of the variables has been positive as well as significant relationships among all the dependent, independent and control variables. Such as, there has been positive and significant influence of the independent variables on the AP, AR and their difference with the ratio of 80.43%, 6.0%, and 81.59%.

Overall findings have been consistent with the previous studies on the basis of results. In hypothesis one of Accounts receivable model, sale has positive impact on the AR but in an insignificant manner. The other variable "age" has also positive impact on the AR of the firms but it is not significant so, as per the positivity of relation, results are consistent with the past studies (Afrifa & Padachi, 2016) and Prasad, Sivasankaran, and Shukla (2019) . Furthermore, leverage and profit have negative relationships amongst them however asset growth carries positive relationship. The control variable ROA has proven positively significant, and this results in consist with the study of (Girma, 2019) in terms of profitability as it will increase the cash inflows of the companies. On the other hand, ROE has been positive but insignificant with the AR in the current study (Ahmad et al., 2023; Amir et al., 2021; Briones et al., 2024; Chaudhry et al., 2021).

The second hypothesis is based on the AP. In this model, overall result has been positively significant. Sale is an independent variable and significant relationship with the AP. The other variable is age which has found a significantly positive association with the AP variable and result has been consistent with the past studies of (Sarwat et al., 2017) and (Yazdanfar & Öhman, 2016). However, the variable such asset growth has found insignificant relationship with the AP and result has been inconsistent with the study of (X. Wang, Wu, Yin, & Zhou, 2019). The relationship of profit and leverage has been found insignificant but the variables of ROA and ROE has found significantly positive association with the variable AP (Ahmad, 2024; Banerjee & Guha Deb, 2024; Power et al., 2022).

The third fixed effect model has found the impact of independent variables on the difference of the AR and AP. The impact and relation of sale and age has been found significant with the credit difference variable and in terms of trade credit the result is consistent with the study of (Y. Wang & Kong, 2019). Although, asset growth, profit and leverage have found insignificant relation with trade credit difference which is inconsistent with the past studies however, ROA has found significant relationship with the difference but not positive (Ahmad et al., 2023; Kajirwa & Katherine, 2019). In addition to these, ROE has revealed a positively significant association with the dependent variable which is the difference between AR and AP.

6 CONCLUSION

This study has examined the determinants of NTC in Pakistani firms, offering a comprehensive understanding of how accounts receivable, accounts payable, and firm-specific characteristics interact to influence trade credit dynamics. The results demonstrate the importance of factors such as firm size, age, profitability, growth, and leverage in shaping trade credit decisions. Specifically, sales and age were found to have significant relationships with both AR and AP, aligning with existing literature, while profitability and ROA had notable effects on liquidity management. Furthermore, the relationship between AR and AP differences revealed that firm-specific characteristics significantly influence a company's role as a net financier or borrower, providing insights into how trade credit can be optimized for better financial performance. The study makes an essential contribution to the literature by integrating multiple financial variables into a single framework, addressing the gap in research concerning the joint effects of these variables on trade credit, particularly in the context of emerging markets like Pakistan. The findings suggest that trade credit plays a crucial role in supporting SMEs, which are key to economic development in emerging economies. Therefore, understanding

the determinants of NTC can help businesses manage liquidity more effectively, while also offering valuable insights for policymakers aiming to enhance financial accessibility.

6.1 Implications

This research holds significant theoretical and practical implications for both academic scholars and practitioners. From a theoretical perspective, the study expands on existing trade credit theories, particularly the trade-off theory and the pecking order theory. By integrating firm-specific characteristics such as size, age, profitability, and growth into the analysis of trade credit determinants, this research provides a more holistic understanding of how businesses manage liquidity. Unlike previous studies that focused on isolated financial variables, this study presents a comprehensive model that reflects the complexity of trade credit decisions in emerging markets. This integrated approach can serve as a foundation for future research, encouraging scholars to explore the combined effects of these variables in other resource-constrained environments. From a practical standpoint, the study offers valuable insights for corporate managers, particularly those in SMEs. The findings highlight the importance of optimizing trade credit management, which is often a key source of liquidity for firms in developing economies. By understanding the factors that influence AR and AP, businesses can adopt strategies to improve cash flow, manage risks, and strengthen supplier-customer relationships. For example, firms with higher profitability or larger size may be able to negotiate better trade credit terms, thus improving their working capital and sustaining operations during periods of financial stress.

The research also has important implications for policymakers. In countries like Pakistan, where SMEs face limited access to formal credit markets, promoting an understanding of trade credit dynamics can help create policies that support financial inclusion. Policymakers can design targeted interventions to facilitate better access to trade credit, which in turn could stimulate economic growth and reduce inequalities. Moreover, fostering stronger relationships between SMEs and financial institutions can enhance the overall financial ecosystem, contributing to sustainable development. Finally, the study contributes to the literature on financial management in emerging economies, providing insights that can be used by firms, financial institutions, and government bodies to create a more supportive environment for business growth. Understanding the determinants of trade credit and their interaction with firm-specific factors can inform better financial practices and policies, fostering a more resilient and sustainable economy.

6.2 Limitations and Future Suggestions

Despite its contributions, this study has several limitations that should be addressed in future research. First, the focus on Pakistani firms may limit the generalizability of the findings to other emerging economies with different financial environments. Future studies could compare trade credit determinants across multiple countries or regions to gain a broader understanding of the factors influencing NTC in different contexts. Second, the study primarily relied on secondary data, which may have limitations in terms of accuracy and comprehensiveness. Future research could incorporate primary data, such as surveys or interviews with business managers, to gain deeper insights into the decision-making processes behind trade credit management.

Additionally, the study focused on a specific set of firm-specific characteristics, such as size, age, profitability, and growth, while excluding other potentially relevant factors such as industry-specific characteristics or macroeconomic conditions. Future research could expand the model to include these factors, providing a more nuanced understanding of trade credit dynamics. Lastly, the study did not explore the long-term impact of trade credit management on business sustainability. Future research could examine the effects of trade credit on the long-term financial health and sustainability of SMEs, offering further insights into how effective credit management can contribute to sustainable business practices.

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