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Examining the effects of the quality of financial reports on SME trade credit: An innovative approach

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Abstract

Following an innovative approach, the effects of financial report quality on the use of trade credit in small and medium-sized enterprises (SMEs) are examined. This effect is considered in a direct and indirect way. Firstly, we analyze whether SMEs with low-quality information are more likely to use trade credit as a financial resource. Secondly, we investigate whether the relationship between trade credit and bank credit in SMEs is moderated by the quality of financial reports. For the empirical analysis, we use a sample of Spanish SMEs over the period 2004 to 2011, and apply a panel data model with fixed effects. The findings suggest that firms with low-quality financial reporting use more trade credit. Furthermore, the influence of bank credit on trade credit is found to be partially moderated by audit opinion.

KEYWORDS
bank credit, financial report quality, SME, trade credit

JEL CLASSIFICATION
G32; M41

1 | INTRODUCTION

In general, small and medium-sized enterprises (SMEs) are informationally opaque. This causes problems of asymmetric information between SMEs and funding providers and explains the traditional difficulties of small businesses in accessing external finance (Berger & Udell, 1998). Quality in financial reporting, inter alia, can address the SME opacity problem and reduce constraints on obtaining financing (Berger & Udell, 2006).

Trade credit is a source of financing provided by suppliers when customers are allowed to pay for goods and services at a later date. This resource plays a major role in financing small and medium-sized enterprises (SMEs) (Love & Zaidi, 2010). Despite the importance of trade credit, no study has yet investigated the association between financial report quality and SME trade credit (Chen et al., 2017). Bearing this in mind, our research follows an innovative research approach and examines the direct and indirect effects of financial report quality on the level of trade credit in SMEs, by using audit opinion to measure the quality of financial reports and firm-level data from a sample of Spanish SMEs. An interesting context for our study is provided by the fact that SMEs play a preponderant role in the Spanish economy and that Spanish SMEs have limited access to financial markets, thereby causing companies to be more likely to seek out external financings such as trade credit and bank credit (OECD, 2015).

Firstly, the direct relationship between financial report quality and trade credit can be explained by two alternative approaches. On the one hand, suppliers, as other financial providers, such as financial institutions, rely on customers' financial statements to better screen the risk of borrowing and consequently firms with high-quality financial statements should receive more credit from their suppliers (Chen et al., 2017; Li et al., 2018; Raman & Shahrur, 2008). On the other hand, unlike financial institutions, suppliers present certain advantages obtained during the course of their close customer relationship in overcoming asymmetric information problems (Petersen & Rajan, 1997). Among these advantages, suppliers have access to soft information during the normal course of daily business with their customers; suppliers present greater control over the customers due to the potential threat of cutting off the supply (Cuñat, 2007); and suppliers can also recover unpaid customers' goods (Mian & Smith, 1992). Therefore, it could be expected that firms with low-quality financial reporting should receive more trade credit (Chen et al., 2017), since suppliers rely on other channels apart from financial reports from their customers to manage trade credit risk (Petersen & Rajan, 1997). Most empirical research regarding the direct relationship between financial report quality and trade credit is based on samples of large listed firms (Chen et al., 2017; Li et al., 2018) and has shown that a higher quality of financial reports leads to significant consequences in trade credit. However, the sign, positive or negative, of this relationship remains an open question. While Chen et al. (2017) find that suppliers are more likely to provide trade credit to customers with low accounting quality, Li et al. (2018) document that better financial reporting plays a role in facilitating trade credit.

Secondly, the relationship between financial report quality and trade credit could also be analyzed in an indirect way. The corporate finance literature suggests that the level of bank credit constitutes a significant determinant of trade credit in SMEs since these resources can substitute or complement each other (Biais & Gollier, 1997; McGuinness et al., 2018; Palacín-Sánchez et al., 2019). Previous empirical research also shows, in general, a significant relationship between the possibilities of access to bank financing and a common measure of the quality of financial reports, such as audit opinion (Duréndez Gómez-Guillamón & Sánchez-Vidal, 2008; Niemi & Sundgren, 2012; Palazuelos et al., 2018). Specifically, audit reports seem to present a stronger relationship with long-term debt than short-term debt because the latter, with its periodical credit renewal, enables financial institutions to monitor the borrowers more frequently and, if necessary, review the terms of the financing (Demirgüç-Kunt & Maksimovic, 1999; Diamond, 1993; Rajan, 1992). This leads us to analyze whether the influence of bank credit on trade credit in SMEs is moderated by the audit opinion.

The main contribution of this study toward the literature on finance research is that it facilitates a better understanding of the unexplored relationship between trade credit and quality of financial reporting and to help complete the relationship between bank credit and trade credit. This knowledge could be highly relevant for the management of SMEs when designing their relationship with financial providers, including suppliers, and for policy-makers when designing reporting practices.

2 | DATA AND METHOD

Unbalanced panel data from audited Spanish manufacturing SMEs[1] has been used, which is obtained from the SABI (Sistema de Análisis de Balances Ibéricos) database. Data were collected for the period 2004 to 2011,[2] and finally consisted of 11,165 firm-year observations. With regards to the variables, on the one hand, the dependent variable is trade credit (*TCPAY*), and is defined as the ratio of accounts payable to total assets (García-Teruel & Martínez-Solano, 2010); on the other hand, there are two key independent variables. The first, QUALITY, is related to the financial report quality and is measured using a dummy variable (Duréndez Gómez-Guillamón & Sánchez-Vidal, 2008), which takes the value of 0 when SME financial statements receive a clean audit opinion and 1 otherwise (i.e., the audit report has either a qualified or adverse opinion or has a disclaimer opinion). This is in line with Huang et al. (2011) and Liu et al. (2020), who uses audit opinion as a proxy of the reputation of the firm. The second is related to bank credit and is divided into two indicators: *LTDEBT*, which is long-term bank debt to total assets (Deloof & La Rocca, 2015); and *STDEBT*, which is short-term bank debt to total assets (Love et al., 2007).

In order to test the direct and indirect influence of quality of financial reports on trade credit, the dummy variable QUALITY and the interaction between the two proxies of bank credit and QUALITY respectively, are included in the following equation model.

$$TCPAY_{it} = \beta_0 + \beta_1 QUALITY_{it} + \beta_2 LTDEBT_{it} + \beta_3 QUALITY_{it} \times LTDEBT_{it} + \beta_4 STDEBT_{it} + \beta_5 QUALITY_{it} \times STDEBT_{it}$$
$$+ \beta_{controls} \sum Control\ variables_{it} + time\ dummies + \mu_{it} + \xi_{it}$$

where *i* is the firm, and *t* is the time period, μ_i represents the firm-specific effects, and ε_{it} represents the measurement errors. In the equation, the QUALITY variable is lagged over a one-year period because audited financial statements become publicly available the year after the reporting period. Moreover, time dummies are included in the regression to take into consideration the economic situation during the period studied. Finally, our control variables have been defined in the Appendix (Table A1).

The equation model is estimated by using estimators of fixed and random effects to take the individual effects into account. In order to ascertain whether the individual effects are fixed or random, the Hausman test is performed. If the null hypothesis is not rejected, the correlation between the explanatory variables and the individual unobservable effects exists and the random effects model cannot be considered as a good estimator since it is inconsistent. In the analysis, the Hausman test confirms that the fixed effects model is better than the random effects model.

Panel A of Table 1 presents the means and the *SD* of all the variables studied for the whole sample, and for the two groups of SMEs defined in terms of the dummy variable QUALITY: first group, SMEs with low-quality financial reports (QUALITY = 1); and second group, SMEs with high-quality financial reports (QUALITY = 0). Panel A shows the relevance of trade credit as a financial resource in Spanish manufacturing SMEs. Bank credit also plays a major role in financing the SMEs analyzed. Furthermore, the mean values of trade credit in the two groups of SMEs defined above show significant differences according to the variance analysis (ANOVA) performed. These preliminary results suggest that SMEs with low-quality financial reports make more use of trade credit than SMEs with high-quality reports. The results of Panel B show the correlations between all the variables of the study. The correlations between the independent variables are relatively low, which shows that multicollinearity is not a concern.

3 | EMPIRICAL FINDINGS

Table 2, column 1 reports the results of the relationship between financial report quality and trade credit (TCPAY) using a baseline model that includes our dummy variable QUALITY with the remaining firm variables as control variables. Table 2, column 2, apart from the same variables shown in the baseline model, also incorporates the

TABLE 1 Descriptive statistics

Panel A: Descriptive statistic of variables							
	Full sample		SMEs with QUALITY = 1		SMEs with QUALITY = 0		
Variables	Mean	SD	Mean	SD	Mean	SD	Anova F statistic
TCPAY	0.185	0.115	0.190	0.118	0.182	0.113	13.88***
LTDEBT	0.124	0.117	0.129	0.123	0.120	0.113	
STDEBT	0.152	0.125	0.159	0.127	0.147	0.124	
AGE	3.122	0.569	3.094	0.585	3.141	0.558	
SIZE	9.385	0.620	9.368	0.629	9.396	0.613	
NETPROF	0.051	0.071	0.045	0.074	0.055	0.068	
CURRAS	0.622	0.177	0.612	0.179	0.629	0.175	
GROWTH	0.051	0.240	0.053	0.257	0.050	0.227	
Observations	11,165		4574		6591		

Panel B: Correlation matrix of all variables								
Variables	TCPAY	AGE	SIZE	NETPROF	CURRAS	GROWTH	STDEBT	LTDEBT
TCPAY	1							
AGE	−0.1338***	1						
SIZE	−0.2219***	0.0951***	1					
NETPROF	0.0318***	−0.0809***	−0.004***	1				
CURRAS	0.4283***	−0.0165***	−0.1682***	0.137***	1			
GROWTH	0.1238***	−0.1024***	0.0675***	0.1768***	0.0492***	1		
STDEBT	−0.0673***	−0.06***	−0.0105*	−0.1437***	0.1857***	−0.0068	1	
LTDEBT	−0.2655***	−0.0631***	0.1498***	−0.1732***	−0.4903***	0.0003	−0.046***	1

Note: This table shows the descriptive statistics of variables in the current paper. All the variables are defined in Table A1. Panel A shows the summary statistics of all variables and the Anova analysis performed for TCPAY variable. Panel B shows the correlations between all variables. *, **, and ***, indicate significance at the 10%, 5%, and 1% levels, respectively.

interaction between bank credit (both long-term and short-term) and the dummy variable QUALITY. The coefficient of QUALITY is statistically significant and positive. This finding shows the direct effect of the quality of financial reports on trade credit and indicates that SMEs with low-quality financial reports use more supplier financing. This result is in line with previous studies on large firms, such as that by Chen et al. (2017), which suggests that suppliers depend less on customers' financial reports to evaluate their creditworthiness.

On the other hand, the negative and significant coefficients of long-term debt (LTDEBT) and short-term-debt (STDEBT) show a substitutive relationship between trade credit and bank credit, which is consistent with extant empirical evidence (Palacín-Sánchez et al., 2019). Our remaining innovative question is whether this relationship differs according to the quality of financial reporting (Table 2, column 2). Firstly, the coefficient on the interaction term, QUALITY X LTDEBT, is negative and statistically significant. Therefore, the relationship between trade credit and long-term bank credit is moderated by the quality of financial reports. Secondly, the interaction term, QUALITY X STDEBT is not significant.[3]

Overall, these findings partially verify the indirect effect of audit opinion on trade credit and are consistent with existing empirical evidence on monitoring lender roles and on the quality of financial reports (Liu et al., 2020; Rajan & Winton, 1995). With regard to long-term bank credit, the monitoring role is less relevant and therefore financial reports play a major role in the evaluation by financial institutions of borrowers' risk, which is in line with our result that in SMEs with low-quality financial reports, trade credit substitutes long-term bank credit to a lower degree.

TABLE 2 Regression results for trade credit

Variables	Baseline model	Model with interactions between variables
QUALITY	0.002**	0.007**
	(0.001)	(0.002)
LTDEBT	−0.232***	−0.165***
	(0.006)	(0.011)
QUALITY X LTDEBT		−0.048***
		(0.011)
STDEBT	−0.317***	−0.233***
	(0.006)	(0.010)
QUALITY X STDEBT		0.016
		(0.011)
AGE	−0.032***	−0.004
	(0.004)	(0.006)
SIZE	0.020***	0.006**
	(0.002)	(0.003)
NETPROF	−0.130***	−0.111***
	(0.08)	(0.011)
CURRAS	0.138***	0.114***
	(0.005)	(0.008)
GROWTH	0.029***	0.046***
	(0.001)	(0.003)
Constant	0.155***	0.170***
	(0.021)	(0.038)
Year dummy	Yes	Yes
Hausman test	293.73	296.83
R-square	0.413	0.4142
F-stat	450.79	399.61
Observations	11,165	11,165

Note: This table shows the results of the regression analysis carried out with the fixed effects panel model. These regressions estimate the direct and indirect influence of financial report quality on trade credit. The dependent variable is trade credit (*TCPAY*), which is defined as the ratio of accounts payable to total assets. All other variables are defined in Table A1. Standard errors are given in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

However, in short-term financing, financial institutions seem to present certain advantages regarding monitoring borrowers, and therefore the financial report quality is less significant as an indicator of credit risk, which is in line with our result that the relationship between trade credit and short-term debt is not moderated by the quality of the financial reporting.

4 | CONCLUSIONS

In this study, we examine the direct and indirect influence of financial reporting quality on trade credit in SMEs using the opinion issued by the auditor as proxy of information quality. Our results show a direct effect which indicates

that SMEs with low-quality financial reports present higher levels of trade credit. This relationship is in line with the financial approach that suppliers enjoy advantages in financing firms with low-quality financial information, thanks to the availability of other channels apart from financial reports, to assess the credit risk of a customer firm. In addition, our findings also partially show an indirect effect of financial report quality on trade credit. SMEs with low-quality financial reports present a weaker substitutive relationship between trade credit and long-term bank credit, which suggests that these SMEs experience greater difficulties in obtaining financing.

Our study contributes to the corporate finance literature on the determinants of trade credit received from suppliers. Our results indicate that it is convenient to introduce the quality of the firm's financial reports as a variable that determines the level of trade credit received, not only for large companies but also for SMEs. Consequently, by ascertaining the financial report quality of a firm, financial theories can better explain its level of trade credit. Our findings also present practical implications. On the one hand, the management of SMEs should ensure that a close relationship with their suppliers is maintained since these informal channels can facilitate access to trade credit thanks to their ability to overcome any asymmetric information problems with their suppliers. On the other hand, before introducing changes to reporting practices, policy-makers should carefully consider the potential benefits and costs involved, not only for financial institutions but also for other financial providers such as suppliers. The promising implications of our study indicate the need for future research on this topic.

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ENDNOTES

[1] Those SMEs have been selected whose parameters lie within the European Commission definition for every year under consideration: number of employees between 10 and 250, sales between 2 million and 50 million euros, and total assets ranging from 2 million to 43 million euros.

[2] In 2011, a reform of the Spanish Audit Law (Law 1/2011) was undertaken, which implied substantial changes in the law, and therefore the study period is not expanded beyond 2011.

[3] For control variables, the results in Table 2 show that they are significant in explaining trade credit and present a positive relationship of supplier financing with the size (SIZE), current assets (CURRAS), and growth (GROWTH) of the firm. However, this relationship is negative with self-financing (NETPROF).

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APPENDIX A.

TABLE A1 Definition of all variables

	Variables	Definition	Data source
Trade credit	TCPAY	The ratio of accounts payable to total assets	SABI
Financial report quality	QUALITY	Dummy variable which equals 0 if a firm receives a clean audit opinion, 1 otherwise	SABI
Long-term bank credit	LTDEBT	The ratio of long-term bank debt to total assets	SABI
Short-term bank credit	STDEBT	The ratio of short-term bank debt to total assets	SABI
Age	AGE	The logarithm of years of life	SABI
Size	SIZE	The logarithm of total assets	SABI
Self-financing	NETPROF	The ratio of net profit to total assets	SABI
Current assets	CURRAS	The ratio of current assets to total assets	SABI
Growth	GROWTH	The annual sales growth percentage	SABI