

# EARNINGS QUALITY AND THE COST OF DEBT FOR SMES UNDER SEVERE INFORMATION ASYMMETRY

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## Abstract

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The banking system has undergone substantial changes that boosted the relevance of transaction-lending technologies and the role of financial reporting in the bank-firm relationship. Due to the growing emphasis on accounting data, this study investigates the impact of earnings quality on the cost of debt for a sample of SMEs during the global financial crisis. Relying on a sample of Italian non-financial SMEs, empirical findings show a positive relationship between discretionary accruals and the cost of loans, highlighting the negative consequences of low-quality earnings. Further analysis reveals the different impacts that negative and positive abnormal accruals can have on the cost of debt: low values of the former can convey private information and positively affect the response variable, which shows a positive and quadratic relationship with the latter. These findings confirm the increasing importance of hard information in credit markets and point out the significant impact of the quality of the borrowers' earnings on the cost of debts. However, the distinctiveness of the study from the previous literature relies on evidence that, even during a credit crunch period, financial institutions weigh up the expected return from lending transactions, relying on both the sign and the magnitude of discretionary abnormal accruals as a vehicle to get firms' private information.

**Keywords:** Earnings Quality, Cost of Debt, Discretionary Accruals, SMEs, Information Asymmetry

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## 1. INTRODUCTION

The funding model of small and medium enterprises, particularly Italian ones, is strongly addicted to banks (Forestieri, 2014). In fact, as recently highlighted by the European Central Bank (ECB, 2015<sup>1</sup>), the use of credit (i.e., mortgages and bank loans) represents the main financial source for almost all SMEs on the continent, and its role is even more relevant for small and medium Italian

enterprises, that experiences a systematically lower capitalization compared with others economic entities operating in Europe (Panetta, 2014). Therefore, a thorough comprehension of factors, which are relevant in defining the relational dynamics between banks and firms, becomes a key issue to identify the main drivers for the economic growth of firms and their business environment. In this way, it is useful to analyze the role actually played by the borrowers' financial reporting in determining the contractual conditions of financing transactions, focusing on the potential impact

<sup>1</sup> “Bank-related products are the most relevant sources of finance for euro area SMEs. 54% of SMEs considered bank loans to be relevant, while 55% included bank overdraft” (ECB, 2015, p. 7).

exerted by the quality of accounting numbers on the pricing of lending transactions.

There is no doubt that during the last decade, the steady concentration process in the banking industry and the regulatory changes, introduced by Basel II and Basel III, have radically changed the relationships between banks and firms, emphasizing the importance of lending transaction technologies — based on hard information obtained from economic and financial quantitative data, which are easily actionable and codifiable — instead of qualitative information, or the so-called soft information, that are traditionally used in the relationship-based business models and are referred, for example, to the degree of confidence in the entrepreneur and the solidity of the relationships built over time between the firm and its suppliers (Rajan & Zingales, 2001; Berger, 2006).

Because of the recent financial crisis and the resulting credit crunch phenomenon, many studies have analyzed the impact of credit scoring and rating models on the effective ability of SMEs to get funding and on the costs related to loan transactions (Cattaneo & Modina, 2006; Berger & Frame, 2007; Savioli, 2008; Albareto, Benvenuti, Mocetti, Pagnini, & Rossi, 2008; Ricciardi, 2009).

Moving from findings highlighted by previous studies, the aim of this paper is to analyze the existence of a possible correlation between the quality of the annual report and the cost of debt, during the global financial crisis, for a sample of SMEs operating in a context (e.g., the South of Italy) historically characterized by high information asymmetry and a consolidated relationship lending system, extending the focus of the literature concerning the role of financial reporting in the bank-firm relationship. In other words, due to the greater attention paid to the accounting data during the customer's evaluation process, this study examines if the perceived reliability of annual reports and the related estimation risk, affect the pricing of lending transactions.

Findings show a clear association between the average annual cost of debt and the magnitude of discretionary accruals (or abnormal accruals) included in the reported income of borrowers. This means that lenders are able to weigh up the expected return from lending transactions, not only relying on results synthetically expressed by the main financial ratios, but also assessing the quality of accounting and financial data. Specifically, the cost of debt presents a positive quadratic correlation with positive discretionary accruals, while it shows a u-shaped trend in the case of negative abnormal accruals. Therefore, we detect an increase in the interest rates both for accounting policies aimed to unduly inflate income and in the case of significant negative shocks in the financial results.

These empirical findings are particularly relevant for managers and entrepreneurs since they show a strong banks' sensitivity to the estimation risk and to the uncertainties related to income items (both positive and negative) deemed as abnormal because they are not immediately related to the economic fundamentals of business management. Moreover, this paper contributes to the accounting literature highlighting that the changing regulatory framework in the bank industry and a depressed economic context have lowered the role of the relationship-based system supporting the lending transaction technologies,

even in a setting characterized by severe information asymmetry due to high level of underground economy and corruption.

The remainder of the paper proceeds as follows. Section 2 outlines the background on the relationship between discretionary accruals and the cost of debt. Section 3 describes the research design and illustrates the sample. Section 4 provides descriptive statistics and discusses the empirical results. Finally, Section 5 concludes.

## 2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Several theoretical models and empirical analyses emphasize the key role played by firms' disclosure in reducing information asymmetries between market players, highlighting an inverse relationship between the financial reporting quality and the cost of both equity and loan capital (Diamond & Verrecchia, 1991; Welker, 1995; Sengupta, 1998; Healy, Hutton, & Palepu, 1999; Leuz & Verrecchia, 2000; Brown & Hillegeist, 2007; Bharath, Sunder, & Sunder, 2008).

Since earnings are considered the most attractive performance indicator, it represents the key performance indicator of a firm's overall disclosure quality (Graham, Harvey, & Rajgopal, 2005; Dichev & Tang, 2008). Therefore, an increasing number of studies have focused on the relationship between earnings quality and the cost of both equity and loan capital, highlighting a negative association between the former and the latter (Graham et al., 2005; Dichev & Tang, 2008; Bhattacharya, Ecker, Olsson, & Schipper, 2012; Bhattacharya, Desai, & Venkataraman, 2013). Indeed, the estimation risk, associated with the quality of accounting data, cannot be debunked by market players through a diversification strategy and, therefore, it affects the costs of lending transactions (Easley & O'Hara, 2004; Leuz & Verrecchia, 2005).

Earnings quality strongly depends on the magnitude of discretionary items incorporated in the reported income (Jones, 1991; Dechow, Sloan, & Sweeney, 1995; Peasnell, Pope, & Young, 2000; DeFond & Park, 2001; McNichols, 2002; Kothari, Leone, & Wasley, 2005; Moscariello, Fera, & Cinque, 2020a). Furthermore, it is undisputed that abnormal accruals can be considered as a proxy for earnings management practices, which occur when "managers use judgment in financial reporting and in structuring transactions to alter financial reports to either misled some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers" (Healy & Wahlen, 1999, p. 368). Consequently, by affecting the extent to which accruals map into cash flows, earnings management is assumed to erode earnings quality and in turn to increase the information asymmetry between insiders and outsiders (Dechow, Ge, & Schrand, 2010). Specifically, as regards the focus of this paper, there is quite rich empirical evidence about the attempt to manage accounting data — with the consequent deterioration of earnings quality — in order to meet debt covenants (Healy & Palepu, 1990; DeAngelo, DeAngelo, & Skinner, 1992; DeFond & Jiambalvo, 1994; Sweeney, 1994; Jaggi & Lee, 2002; Jha, 2013; Franz, HassabElnaby, & Lobo, 2014).

For this reason, the recent legislative, competitive, and market changes, which have affected the banking and financial industry, may represent a powerful incentive — especially for small and medium enterprises — to undertake earnings management practices. Indeed, the increasing relevance assumed by lending transaction technologies and hard information in the bank-firm relationships may entice firms, especially those most affected by the credit scoring and ratings models' implementation, to engage in "window-dressing" activities with the purpose of beating banks' expectations and, consequently, making more likely the access to credit.

Prior literature underlined the existence of a possible relationship between earnings management phenomena and industry and legislation trends that, starting from Basel II, involved all financial intermediaries (Fiori, Tiscini, & di Donato, 2007). However, to date, nothing has been said about the potential impact of accounting policies on borrowing costs, especially with regard to Italy and, precisely, to the SMEs located in a particular area, like the South of Italy, characterized by firms that are heavily undercapitalized and with a strong relationship-based business model (which can also increase the amount of self-dealing operations — Pizzo, Moscardiello, & Vinciguerra, 2010). In fact, while it is possible that earnings management activities implemented to beat lenders' expectations allow borrowers to make access to credit more likely, it cannot be ruled out the hypothesis that *ceteris paribus*, lenders are able to assess the estimation risk associated with poor quality accounting numbers and, then, increase interest rates.

Therefore, the following empirical analysis aims to carry out a preliminary investigation on the relationship between earnings quality and the cost of capital borrowed by SMEs operating in the South of Italy, testing the following null hypothesis:

*H1: the cost of debt capital is not related to the magnitude of discretionary accruals.*

However, there is a quite rich literature that analyzes the role of financial reporting in the bank-firm relationship and has so far documented that lenders prefer a conservative disclosure, characterized by greater timeliness in

recognizing bad news (which will result in losses, even if potential) rather than good news (Basu, 1997; Watts, 2003a). Therefore, it is possible that the existence of negative discretionary accruals does not exercise any impact on the cost of debt or could even positively affect the cost of lending transactions. After all, the utility function of banks is definitely asymmetric with respect to the economic and financial results of borrowers, because the value of receivables is more sensitive to the firms' value decline (and their level of solvency) rather than to its increase (Ball, Robin, & Sadka, 2008). Indeed, there are several robust empirical shreds of evidence gathered so far about an inverse relationship between the cost of debt and the level of conservatism in the financial reporting (Ahmed, Billings, Morton, & Stanford-Harris, 2002; Beatty, Weber, & Yu, 2008; Li, 2015; Göx & Wagenhofer, 2010; Watts, 2003b). This is why greater prudence, during the evaluation of balance sheet items, anticipates the necessary information for a correct weighting of the risk of default, allowing banks to obtain an ex-post timely information about the "health status" of its customers, and on the other hand allow borrowers to benefit, *ex-ante*, from the resulting greater efficiency in the drafting phases of loan agreements, through a lower cost of debt capital (Zhang, 2008).

The above-mentioned reasons suggest that there could be a different relationship between the cost of debt and the sign of abnormal accruals, and justify a further empirical analysis in order to test the following hypothesis:

*H2: The positive or negative nature of accounting policies is relevant in the relationship between abnormal accruals and the cost of debt capital.*

### 3. RESEARCH DESIGN

This section describes the appropriate model specification, with the relative variable definition, and the sample selection process.

#### 3.1. Model specification

In order to test the *H1*, we set up the following regression model:

$$CD_{i(t+1)} = \beta_0 + \beta_1|AA|_{it} + \beta_2Size_{it} + \beta_3ROI_{it} + \beta_4IntCov_{it} + \beta_5Indeb_{it} + \beta_6FinDeb_{it} + \beta_7\%WC_{it} + \sum(Fixed\_Effects)_{it} + \varepsilon_{it} \quad (1)$$

where<sup>2</sup>,  $CD_{i(t+1)}$  = *i*-th firm's average cost of debt in the year  $t + 1$ ;  $|AA|_{it}$  = absolute value of *i*-th firm's abnormal accruals in the year  $t$ ;  $Size_{it}$  = *i*-th firm's sales in the year  $t$ ;  $ROI_{it}$  = *i*-th firm's return on investment in the year  $t$ ;  $IntCov_{it}$  = *i*-th firm's interest coverage ratio in the year  $t$ ;  $Indeb_{it}$  = *i*-th firm's indebtedness in the year  $t$ ;  $FinDeb_{it}$  = *i*-th firm's amount of financial debts in the year  $t$ ;  $\%WC_{it}$  = *i*-th firm's percentage of current assets on total assets in the year  $t$ ;  $(Fixed\_Effects)_{it}$  = dummy variables which control for the potential impact of the fixed effects represented by industry and geographic area;  $\varepsilon_{it}$  = regression error.

Model 1 is developed by exploring the impact of the quality of accounting data reported in 2009 on the average accounting cost of debt reported in the following year. The year of 2009 is identified as the reference year for assessing earnings management because it represents the time when the global financial crisis powerfully burst in Europe (particularly in Italy), causing the disruptive effects that stressed the information asymmetry between firms and banks. Naturally, it is expected that the impact of accounting policies, implemented during 2009, will be realized in the following months and will accrue in the annual report for 2010. For this reason, we exploit the 2010 cost of debt.

Moreover, Model 1 aims to emphasize the relationship between abnormal accruals and the cost of debt regardless of the impact that

<sup>2</sup> Please refer to Subsection 3.2 for a detailed analysis of the variables.

the former could have had on the reported income. Indeed, the main regressor of the model is represented by the absolute value of abnormal accruals ( $|AA|$ ) and, therefore, does not allow to appreciate the impact of positive accounting policies

(implemented to inflate income) rather than negative ones (that aim to underestimate earnings).

Therefore, to test  $H2$ , Model 1 is modified as follows:

$$CD_{i(t+1)} = \beta_0 + \beta_1|AA|_{it} + \beta_2Neg_{it} + \beta_3Neg|AA|_{it} + \beta_4(Neg|AA|)_{it}^2 + \beta_5Size_{it} + \beta_6ROI_{it} + \beta_7IntCov_{it} + \beta_8Indeb_{it} + \beta_9DebFin_{it} + \beta_{10}\%WC_{it} + \sum(Fixed\_Effects)_{it} + \varepsilon_{it} \quad (2a)$$

$$CD_{i(t+1)} = \beta_0 + \beta_1|AA|_{it} + \beta_2Pos_{it} + \beta_3Pos|AA|_{it} + \beta_4(Pos|AA|)_{it}^2 + \beta_5Size_{it} + \beta_6ROI_{it} + \beta_7IntCov_{it} + \beta_8Indeb_{it} + \beta_9DebFin_{it} + \beta_{10}\%WC_{it} + \sum(Fixed\_Effects)_{it} + \varepsilon_{it} \quad (2b)$$

The two proposed Models (2a) and (2b), besides including the variables already examined in Model 1, allow us to control for the different impacts that positive and negative abnormal accruals may have on the cost of debt.

The influence on the dependent variable caused by an earnings management activity aimed at reducing income is analyzed through Model 2a in which, compared to the previous Model 1, three new variables are included:  $Neg$ ,  $Neg|AA|$ , and  $(Neg|AA|)^2$ . The first one ( $Neg$ ) is a dummy variable that takes value 1 if abnormal accruals are less than zero and takes the value 0 otherwise. The second variable ( $Neg|AA|$ ) is an interaction variable given by the product between the dummy ( $Neg$ ) and the main regressor of the model ( $|AA|$ ). In this way, given the considerations about the relevance of conservatism in loan contracts, it is possible to single out the real impact that negative abnormal accruals could have on the cost of debt. Lastly, the regressor  $(Neg|AA|)^2$  allows us to analyze if there is a possible non-linear relationship between negative discretionary accruals and the cost of debt. Indeed, it seems reasonable to expect a positive relationship between negative abnormal accruals and the dependent variable when the former reaches levels that would significantly damage a firm's equity, with a great increase in the risk of default.

On the other hand, Model 2b allows us to analyze the effect of positive abnormal accruals on the cost of debt by including the dummy variable  $Pos$  (which takes value 1 if abnormal accruals are greater than zero and takes the value 0 otherwise) and the interaction variable  $Pos|AA|$  (which allows to single out the real impact that positive abnormal accruals could have on the cost of debt), also expressed in its quadratic form  $[(Pos|AA|)^2]$  in order to check for the existence of a non-linear relationship between the amount of positive discretionary accruals and the cost of debt capital.

### 3.2. Variables definition

This section defines proxies for the cost of debt, earnings quality, and other control variables.

#### 3.2.1. Proxy for the cost of debt

Prior literature suggests several methods for determining the cost of debt capital ( $CD$ ). In this

$$\frac{TA_{it}}{A_{i(t-1)}} = \alpha \left( \frac{1}{A_{i(t-1)}} \right) + \beta_1 \left( \frac{\Delta REV_{it}}{A_{i(t-1)}} \right) + \beta_2 \left( \frac{PPE_{it}}{A_{i(t-1)}} \right) + \varepsilon_{it} \quad (4)$$

where,  $TA_{it}$  =  $i$ -th firm's total accruals in the year  $t$ , obtained as the difference between EBIT and OCF;  $\Delta REV_{it}$  =  $i$ -th firm's change in sales in the year  $t$ ,

paper, we employ the "accounting cost of debt", defined as the ratio between the costs for interest expenses ( $IntExp$ ) and the average financial debt ( $FinDeb$ ) declared by firms in the reference year (Sengupta, 1998; Pittman & Fortin, 2004; Francis, Khurana, & Pereira, 2005a; Francis, LaFond, Olsson, & Schipper, 2005b; Liu & Wysocki, 2017; Kim, Song, & Zhang, 2011; Minnis, 2011; Sánchez-Ballesta & García-Meca, 2011; Kecskés, Mansi, & Zhang, 2012; Moscariello, Skerratt, & Pizzo, 2014):

$$CD_{it} = \frac{IntExp_{it}}{[(FinDeb_{i(t-1)} + FinDeb_{it})/2]} \quad (3)$$

where,  $i$  and  $t$  represent the firm and the year, respectively.

#### 3.2.2. Proxy for earnings quality

A key element that affects the cost of debt is represented by the degree of information asymmetry between firms and lenders. In this field, the quality of accounting information is one of the main vehicles through which influencing the information gap among market players, with a positive effect on the interest rates contractually defined (Francis et al., 2005a; Boubakri & Ghouma, 2008; Prevost, Rao, & Skousen, 2008).

Financial reporting quality is mainly affected by earnings quality which, as shown by the extant literature, can be analyzed by evaluating the extent to which earnings are manipulated (Francis et al., 2005b; Francis, Nanda, & Olsson, 2008; Dechow & Schrand, 2010; DeFond, 2010; Bhattacharya et al., 2012; Moscariello et al., 2020a; Moscariello, La Rossa, Bernin, & Fera, 2020b).

Since accruals represent the element that allows managers to exercise the greatest discretion, one of the most used approaches in assessing earnings management is accrual-based earnings management. Prior literature suggests several methods to gauge this kind of earnings management, through the estimation of abnormal accruals (Jones, 1991; Dechow et al., 1995; DeFond & Park, 2001; McNichols, 2002; Kothari et al., 2005). This study employs the cross-sectional variation of the Jones model (Jones, 1991; Peasnell et al., 2000):

$PPE_{it}$  =  $i$ -th firm's property, plant, and equipment in the year  $t$ ;  $A_{i(t-1)}$  =  $i$ -th firm's total assets in the year  $t-1$ .

Through a panel regression analysis for the years 2007 and 2008<sup>3</sup>, we obtained the 2009 expected accruals (*EstTA*) for each firm and, consequently, we detected the presence of abnormal accruals (*AA*) through the difference between the real accruals reported in the financial statements (*RealTA*) and the estimated ones:

$$AA_{it} = RealTA_{it} - EstTA_{it} \quad (5)$$

### 3.2.3. Control variables

In order to better test our hypotheses, we include several control variables which might affect the cost of debt, regardless of the magnitude of earnings management.

Company size (*Size*) — measured as the natural logarithm of sales — is certainly one of the factors which influence the cost of debt. However, as regards the sign of the relationship between company size and interest rates on debt, the literature does not follow a single direction. Indeed, some studies document a negative relationship between these two variables (Sengupta, 1998; Prevost et al., 2008; Kim et al., 2011), while others highlight a positive relationship between them (Petersen & Rajan, 1994; Van Binsbergen, Graham, & Yang, 2010). Therefore, this study does not make any prediction regarding the possible relationship between the cost of debt and the company size.

Other factors that may affect the cost of debt are represented by the operating profitability (*ROI*), and the degree of interest coverage (*IntCov*)<sup>4</sup>. According to previous literature, we expect a reverse relationship between these two variables and the cost of debt (Francis et al., 2005b; Prager, 1989; Petersen & Rajan, 1994; Piot & Missonier-Piera, 2007; Zou & Adams, 2008; Borisova & Megginson, 2011).

Apart from the aforementioned factors, it is necessary to consider some other aspects which play a very important role in determining the cost of debt. Therefore, the analysis includes variables related to the degree of the overall indebtedness (*Indeb*)<sup>5</sup>, the magnitude of financial debts (*FinDeb*), and the relative weight of current assets (*%WC*)<sup>6</sup>. Given the higher risk of default that marks companies heavily in debt, we expect a positive relationship between the cost of debt and the level of the overall indebtedness, while a negative association should emerge between the former and *%WC*. Indeed, for a higher proportion of current assets, companies should increase their ability to timely deal with changes in the competitive environment. In addition, firms that are structurally less rigid, enjoy an additional benefit related to a greater degree of liquidity. Finally, as regards the variable related to the magnitude of financial debts, we cannot predict its impact on the cost of debt: although it is true that a greater amount of financial debts can lead to an increase in the cost

of debt, it is equally true that an increase in financial loans intensifies the relationships between the firm and its lenders easing the information asymmetry related to a principal-agent relationship and so reducing in the cost of debt.

### 3.3. Sample and data selection

The sample consists of manufacturing SMEs located in the South of Italy from 2007 to 2010, apart from firms that refer to the GICS 40 (financials) and GICS 60 (real estate) because of their peculiar financial reporting rules.

Data were collected from the database AIDA by Bureau van Dijk®, selecting firms whose sales, in the reference period, had a value between €/000 10,000 and 100,000. Firms that matched such criteria and, consequently, were originally included in the sample, were 1,163. However, in order to correctly assess the descriptive and inferential statistics, and obtain a greater data consistency, we implemented a further screening process, which leads to a basic sample composed of 690 firms, as shown in Table 1.

**Table 1.** Sample selection process

AIDA population	1,163
Firms with the financial market and accounting data not available	-247
Firms with abnormal data	-165
Winding-up firms	-43
Firms operating in the industry not adequately represented	-18
Basic sample	690

At last, with the intention of minimizing any transcription errors in the database and to avoid the distortive effects of outliers, data are winsorized at the upper and lowest 1% of the distribution.

## 4. EMPIRICAL RESULTS

This section presents the descriptive statistics, followed by the univariate correlation matrix and the discussion of the results from the multivariate analysis.

### 4.1. Descriptive statistics

Referring to Table 2 for a detailed analysis of the results from descriptive statistics, we can see that the average “accounting cost of debt” (*CD*) is about 6.93% (with a median value of 5%). As regards the main independent variable (*|AA|*), descriptive statistics show that its mean is about 0.025 (with a median of about 0.02) and that there is a clear preponderance of positive abnormal accruals (468 observations, approximately equals to the 68%).

<sup>3</sup> Without an adequate time-series, the analysis was performed setting up clusters related to the industries. The coefficients obtained represent, therefore, an average value of the sector which, applied to the firm's accounting data, allowed us to estimate the expected accruals for each observation.

<sup>4</sup> The interest coverage ratio results from the ratio between EBITDA and interest expenses.

<sup>5</sup> Computed as the ratio between total assets and equity.

<sup>6</sup> A firm's current assets are divided by its total assets.

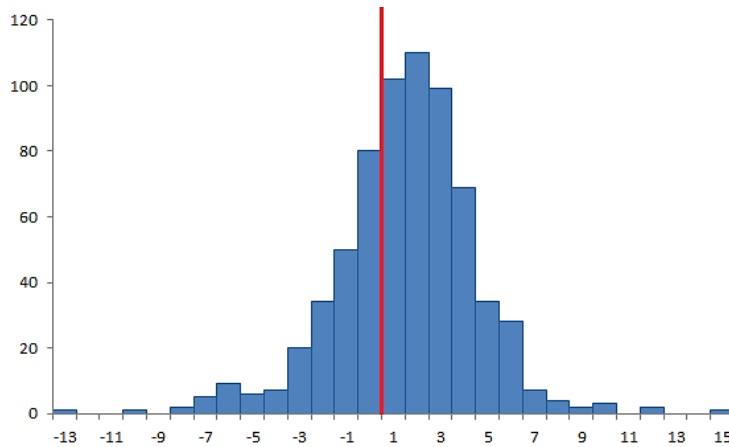
**Table 2.** Descriptive statistics

	<i>Obs</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Median</i>	<i>Std. Dev.</i>
<i>CD</i>	690	0.02000	0.29000	0.06930	0.05000	0.05123
<i> AA </i>	690	0.00006	0.14787	0.02458	0.01987	0.02057
<i>Pos AA </i>	468	0.00008	0.14787	0.02540	0.02201	0.01997
<i>Neg AA </i>	222	0.00006	0.13087	0.02286	0.01677	0.02173
<i>Size</i>	690	8.64582	10.87153	9.61114	9.50064	0.61771
<i>ROI</i>	690	-0.04000	0.14000	0.03665	0.03000	0.04189
<i>IntCov</i>	690	-0.02686	2.50461	0.11201	0.04695	0.23167
<i>Leverage</i>	690	1.19099	43.35056	4.79205	3.36832	4.60803
<i>BankLoans</i>	690	10.02826	14.50866	12.74688	12.83121	1.08362
<i>%WC</i>	690	0.11448	0.99105	0.65892	0.65492	0.16967

These findings are confirmed by Figure 1, from whence emerges that firms implemented accounting policies aimed at inflating the 2009 reported income. Not surprisingly, Figure 2 shows that the scaled earnings distribution is heavily asymmetric, with

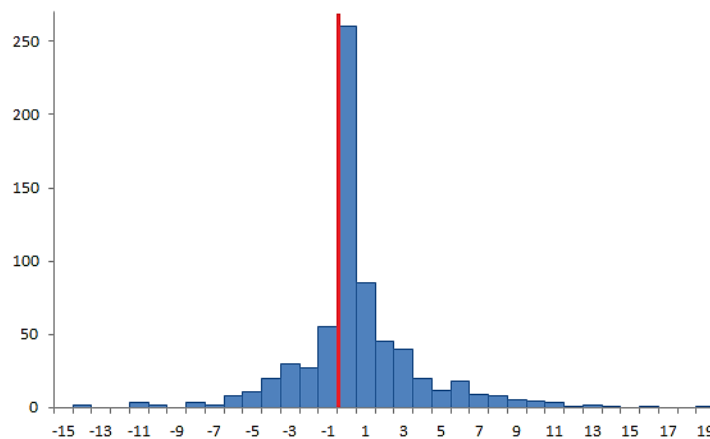
a sharp concentration of observations in the small profit area. This double irregularity in the accruals and earnings distributions can be interpreted as an intense practice of earnings management in the reference period (Burgstahler & Dichev, 1997).

**Figure 1.** Abnormal accruals distribution for 2009 (1%)



Source: Authors' elaboration.

**Figure 2.** Earnings distribution for 2009 (1%)



Source: Authors' elaboration.

Table 3 provides the pairwise correlations matrix for all defined variables. Consistent with prior microstructure literature, we observe that there is a positive and significant correlation between the cost of debt (*CD*) and the absolute value of abnormal accruals (*|AA|*). However, by decomposing the variable *|AA|* according to the sign of discretionary accruals, we notice that lenders perceive a lower risk estimation for firms with a higher conservatism. Indeed, findings show

a positive and significant correlation between positive abnormal accruals (*Pos|AA|*) and the cost of money (*CD*) and, at the same time, there is a negative association (although not significant) between the latter and the group of negative abnormal accruals (*Neg|AA|*). The correlation matrix also shows another noteworthy association. Particularly, we identify a negative and significant relationship between the cost of debt (*CD*) and the total amount

of financial debts (*FinDeb*). This means that a possible increase in the cost of debt, associated with a higher risk stemming from a greater debt exposure, could be more than offset by the benefits associated with the lower information asymmetry

due to the consolidated relationships between banks and borrowers. Finally, for those variables which are significantly related to the cost of debt, we obtained the expected results, consistent with prior microstructure literature.

**Table 3.** Pairwise correlations matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) <i>CD</i>	1.0000									
(2) $ AA $	0.1053*	1.0000								
(3) $Pos AA $	-0.0054	0.4140*	1.0000							
(4) $Neg AA $	0.1112*	0.6816*	-0.3839*	1.0000						
(5) <i>Size</i>	-0.1042*	-0.0310	0.0259	-0.0523	1.0000					
(6) <i>ROI</i>	0.0068	0.2507*	-0.1164*	0.3478*	0.1817*	1.0000				
(7) <i>IntCov</i>	0.1182*	0.1898*	0.1280*	0.0897*	0.0681*	0.4521*	1.0000			
(8) <i>Leverage</i>	0.0282	-0.0569	-0.0624	-0.0075	-0.0236	-0.1399*	-0.1688*	1.0000		
(9) <i>BankLoans</i>	-0.4737*	-0.0946*	-0.0439	-0.0606	0.5245*	-0.1709*	-0.4207*	0.0161	1.0000	
(10) %WC	-0.0070	-0.0757*	-0.0709*	-0.0198	0.1286*	0.2054*	0.0253	0.2274*	-0.1316*	1.0000

Note: \* Significance at the 0.10

#### 4.2. Empirical findings

The estimation results for Model 1 are presented in Table 4. Findings show a positive and significant relationship (0.140, con  $P > |t| = 0.042$ ) between the dependent variable (*CD*) and the absolute value of abnormal accruals ( $|AA|$ ). Therefore, this outcome confirms previous findings from the univariate analysis and allows to reject *H1*, because the positive relationship between the quality of SMEs' financial reporting and the cost of debt highlights that banks seem to be able to assess the quality of firms' accounting numbers and, consequently, to weight the required return on loans, which is based on the perceived estimation risk.

**Table 4.** Relationship between the cost of debt and abnormal accruals

Dependent variable: <i>CD</i>	Coefficient	t-stat	P >  t
Intercept	0.1633113	7.62	0.000
$ AA $	0.1401142	2.03	0.042
<i>Size</i>	0.0085706	2.96	0.003
<i>ROI</i>	-0.0344703	-0.99	0.324
<i>IntCov</i>	-0.0454824	-4.25	0.000
<i>Indeb</i>	0.0007266	2.64	0.009
<i>FinDeb</i>	-0.0148045	-6.50	0.000
%WC	-0.0165822	-1.93	0.054
Fixed_Effects	Included		
R <sup>2</sup>	0.18260		
Root MSE	0.03074		
F-value	6.14		
Prob. > F	0.0000		
No. of observation	690		

Regarding the other variables included in the model, results show that, except for the operating profitability (*ROI*), all regressors have a statistically significant effect on the response variable (*CD*). Particularly, consistent with prior microstructure literature, %WC and *IntCov* have a positive effect on the cost of the debt, while a negative impact is detected with regard to the degree of the overall indebtedness (*Indeb*). Moreover, we also obtained a negative and significant correlation between the dependent variable and the total amount of financial debts (*FinDeb*). It is interesting to notice that this last result supports the idea according to which banks can have greater control of their main clients and, consequently, reduce the magnitude of

information asymmetry. Finally, firms size seems to be positively correlated with the cost of financial debt.

Even if results from Model 1 have shown a positive and significant relationship between abnormal accruals and the cost of debt, it has been not possible to investigate the different impacts that could arise according to the abnormal accruals' sign. However, prior microstructure literature highlighted an asymmetrical behavior of banks towards the accounting numbers, by preferring firms that implement more conservative financial reporting practices.

Specifically, Model 2a focuses on negative abnormal accruals and highlight consistent results with the expectation, as shown in Table 5.

**Table 5.** Relationship between the cost of debt and negative abnormal accruals

Dependent variable: <i>CD</i>	Coefficient	t-stat	P >  t
Intercept	0.1587924	7.37	0.000
$ AA $	0.2615931	2.88	0.004
<i>Neg</i>	0.0035108	0.75	0.453
$Neg AA $	-0.6450070	-2.71	0.007
$(Neg AA )^2$	3.5885710	1.89	0.060
<i>Size</i>	0.0094010	3.25	0.001
<i>ROI</i>	-0.0811801	-2.12	0.035
<i>IntCov</i>	-0.0416468	-3.89	0.000
<i>Indeb</i>	0.0006476	2.34	0.020
<i>FinDeb</i>	-0.0151192	-6.68	0.000
%WC	-0.0152043	-1.81	0.070
Fixed_Effects	Included		
R <sup>2</sup>	0.1991		
Root MSE	0.0305		
F-value	6.19		
Prob. > F	0.0000		
No. of observation	690		

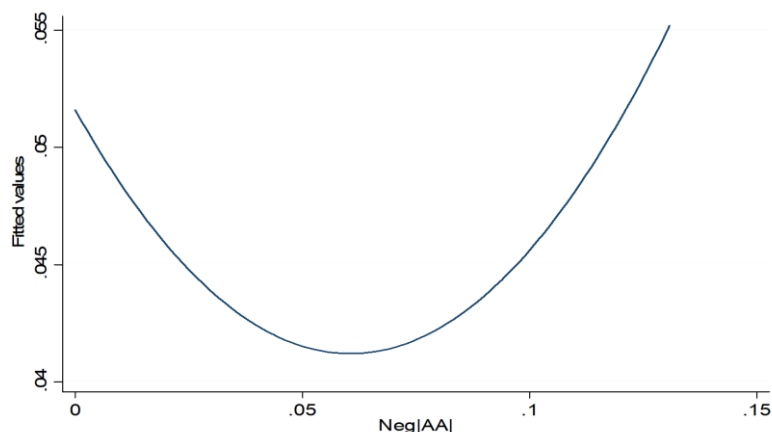
All findings from Model 1 are confirmed: the cost of debt (*CD*) is positively correlated with earnings management ( $|AA|$ ), company size (*Size*), and the degree of the overall indebtedness (*Indeb*), while it is inversely related to the interest coverage (*IntCov*), the amount of financial debt (*FinDeb*) and with the relative weight of current assets (%WC). Moreover, *ROI* becomes negatively and significantly correlated with the cost of debt (-0.081,  $P > |t| = 0.035$ ).

However, as regards the main explanatory variables added to this model, we identify that the variable  $Neg|AA|$  is negatively and significantly

correlated with the cost of debt (-0.645,  $P > |t| = 0.007$ ), while the latter has a positive and significant correlation (3.589,  $P > |t| = 0.060$ ) with the variable  $(Neg|AA|)^2$ . Therefore, the cost of financial debt tends to shrink when the negative

abnormal accruals are lower, but — as expected — the relationship is reversed when the same kind of abnormal accruals (negative ones) assume considerable values (Figure 3).

**Figure 3.** Relationship between the cost of debt and negative abnormal accruals



Source: Authors' elaboration.

On the other hand, as shown in Table 6, Model 2b emphasizes the positive and significant relationship between the variable  $(Pos|AA|)^2$  and the dependent one (3.478,  $P > |t| = 0.058$ ). This means that the cost of financial debt tends to increase more than proportionally to the growth of positive abnormal accruals, as also shown by Figure 4.

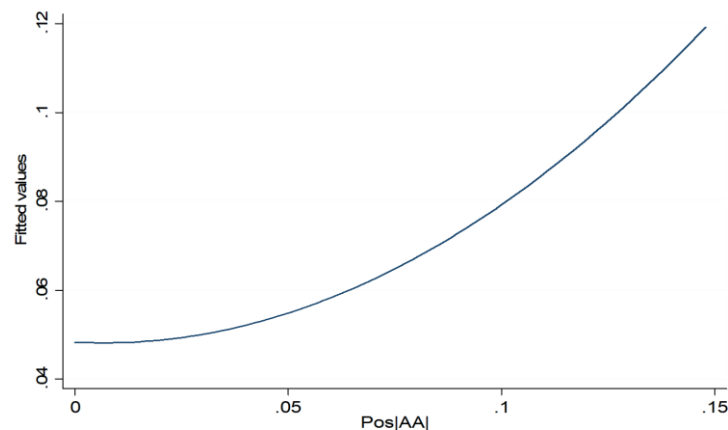
**Table 6.** Relationship between the cost of debt and positive abnormal accruals

Dependent variable: CD	Coefficient	t-stat	$P >  t $
Intercept	0.1595594	7.45	0.000
AA	-0.0767941	-0.84	0.400
Pos	0.0033194	0.72	0.472
Pos AA	0.0352593	0.16	0.870
$(Pos AA )^2$	3.4782210	1.90	0.058
Size	0.0089979	3.10	0.002
ROI	-0.0712954	-1.90	0.058
IntCov	-0.0422713	-3.94	0.000
Indeb	0.0006287	2.25	0.025
FinDeb	-0.0148857	-6.56	0.000
%WC	-0.0141826	-1.71	0.070
Fixed_Effects	Included		
R <sup>2</sup>	0.20190		
Root MSE	0.03045		
F-value	6.91		
Prob. > F	0.0000		
No. of observation	690		

According to results from Model 2a and Model 2b, the second step of analysis leads to accepting the second hypothesis since it demonstrates the different impacts that negative

abnormal accruals and positive ones can have on the cost of financial debt. Specifically, credit institutions, because of their specific utility function, tend to recognize as more relevant the negative abnormal accruals, considered as a vehicle for information about the future evolution of the economic and financial position of the firm. This is why greater prudence, during the evaluation of balance sheet items, anticipates the necessary information for a correct weighting of the risk of default, allowing banks to obtain an ex-post timely information about the “health status” of its customers. However, this informative power (i.e., the ability of accounting numbers to convey private information about the future evolution of a firm’s economic and financial position) decreases when negative abnormal accruals assume considerable values, since they are interpreted as a mere manipulation of accounting data and not as an effort aimed to reduce the information gap between firms and financial institutions or, alternatively, they are perceived as a clear indicator of economic and financial instability probably followed by a future default. On the other hand, when we analyze the case of positive abnormal accruals, the situation is completely different. Indeed, managerial discretion in evaluating financial statement items is just interpreted as lower quality of accounting data, which involves a more than a proportional boost in the cost of debt associated with an increase in positive abnormal accruals.



**Figure 4.** Relationship between cost of debt and positive abnormal accruals

Source: Authors' elaboration.

There is no doubt that these findings are related to the credit institution regulation changes that have radically changed the relationships between banks and firms, emphasizing the importance of lending transaction technologies (based on hard information) instead of qualitative or soft information used in the relationship-based business models. In addition, because of the recent financial crisis and the resulting credit crunch phenomenon, the credit scoring and rating models have even boosted the credit institution preference for conservatism in the financial reporting of borrowers, contributing to the empirical evidence of this paper.

## 5. CONCLUSION

Over the last decade, substantial changes have affected the banking industry (with the introduction of more stringent regulation and with a higher industry concentration) and have definitely altered the role of financial reporting in the relationship between banks and firms. In particular, because of the required application of credit scoring models and credit rating ones in the drafting phases of loan agreements, accounting data have acquired an ever more central role, with a consequent greater emphasis on lending transaction technologies (hard information) than on soft information traditionally used in relationship-based models.

Therefore, it is possible to assume that — especially during the recent global financial crisis — managers have had incentives for the implementation of reporting policies aimed at reaching economic and financial results, which had allowed to ease tensions with banks, and consequently to reduce the cost of loans. About this, the previous literature has already highlighted a possible link between information quality, banking industry concentration, and the implementation of Basel agreements, identifying an increasing earnings management in the borrowers' accounting numbers.

Clearly, this relationship implies that borrowers could aim to manage accounting numbers — abusing of the discretion embedded in the accounting standards — in order to show, *ex-ante*, a robust financial position and to comply, *ex-post*, with the contractual terms based on financial data

(the so-called accounting-based contract). However, the effective impact of such activities on the annual financial and economic results must not be taken for granted. Indeed, it can be true that, at least in the short term, “window-dressing” activities may likely ease access to financial services with better contractual terms but, on the other hand, banks could perceive a higher estimation risk, related to the lower quality of accounting numbers due to *ad-hoc* financial reporting policies, increasing the overall costs of borrowing.

Findings from this study primarily confirm that the industrials SMEs, located in the South of Italy, implement *ad-hoc* reporting policies. Indeed, it has been shown an abnormal distribution of both earnings and discretionary accruals (scaled by lagged total assets) in 2009: both variables follow an asymmetrical trend with a clear preponderance of firms with small profit and positive discretionary accruals during the worst year of the global financial crisis. This trend can be solely justified with the implementation of earnings management activities implemented by the managers/entrepreneurs in order to foster relations between the firm and its stakeholders (above all the lenders) in a context characterized by high uncertainty and volatility.

However, further analyses highlighted the negative consequences related to the poor quality of accounting numbers, improperly affected by *ad-hoc* reporting policies. Thereby, the cost of financial debt is positively associated with the magnitude of abnormal accruals. In addition, banks and other financial institutions seem to be able to assess the quality of the reported accounting numbers and charge borrowers with the related estimation risk through an increase in the average interest rates.

A positive association between the cost of debt and abnormal accruals appears particularly intense (with a trend more than proportional) in the case of positive abnormal accruals: this means that reporting policies designed to increase earnings appear detrimental for firms. Therefore, managers, entrepreneurs, and practitioners should be aware of the consequences related to improper earnings management activities: if, on the one hand, they can lead to an increase in short-term profits, on

the other hand, they can also cause a sharp boost in the costs for the main source of funding of their companies, with noticeable negative implications for the long-term financial and economic equilibrium.

However, we recognize that our results come with some potential caveats. Since we investigate the southern Italian context, our findings might not be necessarily generalizable, except for those settings characterized by high information

asymmetry and a consolidated relationship lending system, (e.g., Northern England, Portugal, Greece, and so on). Additional limitations of this study could be the relatively small sample size as well as potential missing explanation variables that could have an impact on the analyzed relationship. These limitations surely demand further analysis to deepen knowledge of a topic that still needs to be explored.

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