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The Role of Financial Reporting Quality in Accessing to Financial Debt: Evidence From Italy

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Abstract

This paper aims to assess whether financial reporting quality affect the access of Italian Non-SME firms to financial debt. In order to measure the financial reporting quality, we assume as proxy the accrual quality. We carried out a regression analysis, using financial statement data of firms sampled. The results reveal a positive association between financial reporting quality and the access to bank and financial institution debt. In addition, our findings also show no association between financial debt maturity and the accounting quality of firms.

Keywords: Financial debt, Accruals quality, Information asymmetry, Financial reporting quality, Accounting quality

1. Introduction

This paper investigates whether financial reporting quality affects the access to financial debt of Italian Non-SMEs**.** Our work derives from several studies dealing with the role of financial

reporting quality in determining cost of capital and debt (Francis *et al.*, 2005), debt maturity structure in Spain (Garcı́a-Teruel *et al.*, 2010) and in Belgium (De Meyere *et al.*, 2018), investment efficiency (Biddle *et al.*, 2009) (Chen *et al.*, 2011) and audit committee quality (Rainsbury *et al.*, 2009).

Because of the information asymmetry outstanding between financial institutions and firms, the quality of the financial reporting of firms can lower moral hazard phenomena and adverse selection in order to facilitate (and to negotiate) the access to financial loans.

Healy and Wahlen (1999) found that lower (higher) information quality increases (decreases) information asymmetry because financial reporting quality and disclosure can reduce adverse selection and moral hazard problems. Furthermore, Leuz and Verrecchia (2005) argued that a higher financial reporting quality increases expected cash flows by financial statement users. As a consequence, poor financial reporting quality of borrower can be used as mean for banks and financial institutions to limit the access of the firm to financial debt.

Therefore, this paper aims to investigate the association between financial reporting quality of Italian Non-SMEs and their access to financial debt, testing whether accounting quality affects the access to financial debt and the access to longer financial debt. As best of our knowledge, this paper explores for the first time the relation between financial reporting quality and access to financial debt in Italy. Previous studies (La Porta *et al.*, 1998) (Bianchi *et al.*, 2011) have considered Italy as a Civil law country featured by inefficient and weak investor protection, high concentration of ownership and undeveloped capital market. Moreover, Hung (2000, p.408) has revealed that Italy has the lowest degree to which the accounting system moves away from a cash method measure of performance and it indicates a lower use of accrual accounting. So, we believe that there is an association that evidences the informative role of accruals. We focus on accruals quality because earnings will be more descriptive of cash flows if accruals are of quality. It implies that poor accruals quality will make more difficult for banks and financial institutions to evaluating future cash flows (Garcı́a-Teruel *et al.*, 2010).

In order to test our hypotheses, we use a dataset containing 5.899 observations from 967 Italian Non-SMEs ranging from 2007 to 2017. Carrying out probit and logit regression analyses, we analyze the role of financial reporting quality in accessing to financial debt. In order to measure the financial reporting quality, we use the accrual quality. We employ Dechow and Dichev's (2002) model to measure the accrual quality variable (AQ_IM), which posit a relation between current period no-cash working capital and operating cash flows in the prior, current and future periods. As proxy of capability to get into financial debt, we use a dummy value for the dependent variable "FINDEBT" that takes the value equal to 1 if firms received financing from banks and other financial institutions and 0 otherwise.

Our findings suggest that firms with higher financial reporting quality have more likelihood in accessing to financial debts. As consequence, in a bank oriented financial system like Italian system, a higher financial reporting quality decreases the information asymmetry between the firm and the financial institutions.

Then, in our additional analysis, we explore the proportion of financial debt exceeding one year in total financial debt using a Tobit model and an OLS regression analysis. We find that the financial reporting quality does not affect the financial debt maturity.

The robustness tests confirm both results.

This paper contributes to the literature focusing on the role of accounting quality in decreasing information asymmetries and, generally, in getting into debts of Italian Non-SMEs. This study adds to literature (García-Teruel *et al.*, 2014b) on the association between financial reporting quality and access to financial debt. This work could be useful for proclaimers, banks and policy makers, since they have to set programmes aimed to get easier the access to external resources.

We have organized the paper as follows: Section 2 reviews the related literature and develops the research hypotheses. Section 3 describes the research design, describing the sample and variables employed. In Section 4, we present the results and following implications of the study and of the additional analysis and we test our findings by a robustness test. Finally, in Section 5 we discuss empirical findings, giving readers our conclusions of the study.

2. Literature Review

When banks and financial institutions grant credits, they have to constantly face up to information asymmetry between them and borrowers. The information asymmetry materializes in the uneven spreading of information between creditors and debtors which may involve the risk of non-payment by firms that have been granted. In this way, a firm could adopt opportunistic behaviours (moral hazard) aimed to withhold information to banks and financial institutions, concealing its risk of non-payment. To preserve themselves from this risk and to evaluate a firm's credit quality, creditors can get information by financial statement of the firms to predict their future cash flows because the cash flow represents the future reimbursement capacity of a firm (De Meyere *et al.*, 2018).

Healy and Wahlen (1999) have argued that lower (higher) financial reporting quality increases (decreases) information asymmetry because financial reporting quality can reduce adverse selection and moral hazard issues. Furthermore, Easley and O'Hara (2004) have revealed that the amount and the precision of information disclosed to banks can affect a firm's cost of capital. They found that firms could reduce their cost of capital by reducing the amount of private information. Related to these studies, Leuz and Verrecchia (2005) suggested that higher accounting quality increases expected cash flows implying a lower firm's cost of capital. Finally, Biddle *et al.* (2009) found that information asymmetries between firms and banks or financial institutions can reduce capital investment efficiency by giving rise to frictions such as moral hazard and adverse selection leading to produce over- and under-investment. They also argued that accounting quality can reduce these information asymmetries and can be associated with investment efficiency: the financial disclosure can alleviate both under- and over-investments problems.

As García-Teruel *et al.* (2014b) point out, financial statements play a fundamental role because of information cointained by them in mitigating the problems associated with

borrower risk and asymmetric information: "the higher the quality of this information, i.e., the more accurate the precision of earnings to capture future cash flows, the lower the information risk of the firm, because the lender can better estimate the future cash flows of the firm with which the loans will be repaid" (Garc á-Teruel *et al.*, 2014b, p.187).

According to previous studies, banks and financial institution focus on financial reporting quality to predict future cash flows of borrowers in order to decide if granting them loans or not and to reduce the asymmetry information.

Therefore, most of these studies use the financial reporting quality as proxy to evaluate the asymmetric information. According to these studies, we can state at some levels that banks and financial institutions may oppose to (or reduce) loan requests required by firms with lower accounting quality.

At the same time, previously the accrual quality measures have been employed as proxy for financial reporting quality. Francis *et al.* (2005) have found that poorer accrual quality is associated with larger costs of debt and equity capital. Studying how accounting quality has an effect on borrower's choice in debt contracting, Bharath *et al.* (2008) found that accounting quality affects the choice of the market, with poorer accounting quality borrowers preferring private loans, i.e. bank debts, in order to lower the adverse selection costs. In their model, Bharath *et al.* (2008, p.8) used accruals-based metrics in order to measure accounting quality. Furthermore, recent empirical studies have confirmed the use of accrual quality as a measure of financial reporting quality. Garc á-Teruel *et al.* (2014b) argued that higher precision of earnings reduces information asymmetries with banks and facilitates the access of firms to bank loans, showing a positive association between bank debt and accruals quality. In another study, Garc á-Teruel *et al.* (2014a) also found that higher accrual quality associated to higher precision of cash flow estimates guarantees an easier access to bank loans. Finally, the accrual quality has been also employed to study the association between debt maturity and financial reporting quality (De Meyere *et al.*, 2018). Analysing Belgian market, De Meyere *et al.* (2018) have found that information asymmetry affects the debt maturity structure of firms sampled, showing that accounting quality has a positive impact on the proportion of long-term debt in total debt and on the probability of having long-term debt.

However, as best of our knowledge, no empirical evidence is provided by the Italian market. So, our research aims to investigate the effect of financial reporting quality on the debt maturity structure of Italian Non-SMEs. We expect that information asymmetry will influence creditors in their choices to lending long-term debt because of two main reasons (De Meyere *et al.*, 2018). First, higher information asymmetry limits the estimating of future cash flows more as the time horizon of forecasting becomes longer. Second, Italy has a bank-based financial system with low developed capital market (Hardie & Howarth, 2013): an Italian firm can face difficulties in fundraising outside bank contest.

Nevertheless, in the literature it has been stated that higher FRQ can reduce the information asymmetry, implying an easier access for the firms to long-term financial debt. Accordingly, we have developed the following hypotheses:

H1: There is a positive association between the FRQ of Italian Non-SMEs and their access to financial debt.

H2: The FRQ of Italian Non-SMEs affects positively the financial debt maturity.

3. Research Design

3.1 Sample and Data

In order to develop this study, we collected non-consolidated financial statements data over the 2008-2016 periods from AIDA database. We have only included Italian firms with limited liability and we have excluded financial statements data from public firms and firms operating in the financial, government and utility industries. The result is an initial database consisting of 804.672 firms.

Then, we have sampled only those firms that in 2016 were Non-SME. According to EU recommendation 2003/361 (European Commission, 2003), a firm is considered non-SME when (a) employs more than 250 persons, (b) has an annual turnover exceeding EUR 50 million or (c) an annual balance sheet total exceeding EUR 43 million. Firm-years that entail missing values for the dependent, independent and control variables have been discarded. The final sample counts 967 firms.

The computation of AQ_IM has necessitated non-missing data over multiple years on WCA and CFO. As the data for this study are circumscribed to 9 years (2008-2016), a company- and year-specific AQ_IM values can only be computed for the 2009-2015 period. This selection step implies a further drop in sample size to 5.904 firm-year observations.

3.2 Variables

In order to provide a concise idea of the impact of financial reporting quality in accessing to financial debt aligned with proxies already adopted by previous studies and cited in prior literature, we have dichotomous and ratio measurements for dependent, independent and control variables.

3.2.1 Dependent Variable

We have assigned a dummy value to the dependent variable “FINDEBT” in the Probit and in the Logit model. It takes the value equal to 1 if firms received financing from banks and other financial institutions and 0 otherwise. We test the second research hypothesis in the additional analysis, using as dependent variable the proportion of financial debt exceeding one year in total financial debt (FINDEBT_12).

3.2.2 Independent and Control Variables

We employed *ACCRUALQUALITY_INVERSEMEASURE* (AQ_IM) as proxy to measure the quality of financial reporting. In doing so, we followed Dechow and Dichev (2002) model that found that accrual adjust or shift the recognition of cash flow over time, so that the adjusted numbers (earnings) better measure firm performance. Dechow and Dichev (2002) have determined an empirical measure of accrual quality regressing current working capital

accruals (WCA_t) on past ($CFO_{i,\,t-1}$), present ($CFO_{i,t}$) and future ($CFO_{i,t+1}$) cash flows from operations. WCA_t stands for the working capital accruals (or *non-cash working capital*).

$$\Delta WCA_{i,t} = g0 + g1 * CFO_{i,t-1} + g2 * CFO_{i,t} + g3 * CFO_{i,t+1} + \varepsilon_{i,t}$$

where *ΔWCAt* is the change in working capital accruals from year t−1 to year t, calculated as the change in current asset, minus the change in cash and cash equivalent, minus the change in current liabilities, adding the short-term bank debt.

All variables are deflated by average total asset of year t.

Dechow and Dichev (2002, p.40) revealed that the residual reflects the accruals that are not related to cash flow generated in the current, following or previous year. We follow Garc á-Teruel *et al*. (2010, p.196) model, assuming that the absolute value of the residual for each firm-year observation represents an inverse measure of accruals quality so that to higher residual value corresponds a lower accrual quality value $AQ\_IM_{i,t} = |\varepsilon_{i,t}|$.

As a proxy for size (LogSize), we implied the natural logarithm of total assets (Sogorb-Mira, 2005). We expect a positive coefficient of "LogSize" because larger firms may have less difficulties in accessing to financial debt. "LogAge" is defined as the natural logarithm of age in years (Davila *et al.*, 2003) (Agiomirgianakis *et al.*, 2006) (Van Caneghem & Van Campenhout, 2012). Berger and Udell (1995) found that older firms have lower level of information asymmetry and have better reputation on the market. So, we expect a positive sign of variable "LogAge". "AssetStructure" is calculated as net property, plant and equipment to total assets (Sogorb-Mira, 2005), (Van Caneghem & Van Campenhout, 2012) (Garc á-Teruel *et al.*, 2014b). "Profitability" is computed as ratio of operating income to total assets. Avallone and Quagli (2015) found that more profitable firms have better evaluations on the market, reflecting positive prediction of future cash flows. Garc à-Teruel *et al.* (2014b) have also argued that more profitable firms generate higher cash flows so that they can finance their activities by internal resources. Consequently, we would expect a negative association between "Profitability" and "FINDEBT". Then, García-Teruel *et al*. (2010) have argued that it is convenient adding as control variable a default risk score to measure the financial situation of firms and to control the effect of credit quality. Therefore, we used the default risk measured by EM-score (Note 1) (Altman *et al.*, 1998), classifying the firms sampled into three categories depending on their riskiness (De Meyere *et al.*, 2018): the healthy firms with a EM-score above 3.75 (i.e. the base case), the firms with a medium risk profile as determined by a EM-score in between 1.74 and 3.75 (indicated by Grey), and the weakest firms having an EM-score of below 1.74 (indicated by Distress). "Growth prospects" is defined as the ratio between intangibles assets to total assets (Sogorb-Mira, 2005) (Van Caneghem & Van Campenhout, 2012). Finally, consistent with Diamond's (1991) studies, we have added the control variable "Debt" that is measured as the average total debt to average total assets. We believe that highly leveraged firms likely prefer to support their activities by external financial debt (Garc à-Teruel *et al.*, 2014b). So, we expect a positive relationship between "Debt" and "FINDEBT".

4. Empirical Findings

4.1 Descriptive Statistics

The descriptive statistics of variables are presented in the Table 1. FINDEBT has a mean value of 92.1% that demonstrates that Italian Non-SMEs sampled have access to financial debt.

Table 1 also shows the distribution of the independent variable, i.e. the AQ_IM. The table reveals a mean (median) of 0,184 (0,076). Comparing our AQ_IM values with those one found in previous studies (Francis *et al.*, 2005) (Garc á-Teruel *et al.*, 2010) (De Meyere *et al.*, 2018), we can reach an interesting conclusion about the AQ of Italian Non-SMEs studied. The quality of financial reporting of Italian Non-SMEs sampled is lower than that one of US public firms. In fact, the mean and median AQ_IM values revealed in this study (0.184 and 0.076, respectively) are higher than those revealed by Francis *et al.* (2005) on a set of US-listed firms during the period 1970–2001 (0.044 and 0.031, respectively). Since higher AQ_IM values indicate a lower financial reporting quality, the financial reporting quality of Italian Non-SMEs is tending to be lower than that of US-listed firms. Leuz *et al.* (2003) stated that accounting quality has a propensity to be better in US and UK countries, so our results are in line with this study. Moreover, our findings demonstrate that the AQ_IM mean and median values of Italian Non-SMEs (0.157 and 0.067, respectively) are also lower than those of Belgian privately held firms reported by De Meyere *et al.* (2018) (0.052 and 0.042, respectively) and then than those of Spanish SMEs reported by Garc á-Teruel *et al.* (2014b) (0.028 and 0.024, respectively). Therefore, we can argue that the quality of financial reporting of Italian Non-SMEs sampled are low, especially compared to Spanish, Belgian and Anglo-Saxon firms.

Table 1. Descriptive statistics

	Mean	*Median*	*Max*	*Min*	*STDEV*
FINDEBT	0,921	1,000	1,000	0,000	0,707
AQ_IM	0,184	0,076	107,454	0,000	1,959
LogSize	11,871	11,717	17,001	1,338	1,159
LogAge	3,151	3,296	5,011	0,000	0,773
AssetStructure	0,209	0,166	0,928	0,000	0,182
Profitability	0,047	0,038	0,854	-2,089	0,083
EMGrey	0,168	0,000	1,000	0,000	0,374

EMDistress	0,027	0,000	1,000	0,000	0,162
Growth Prospects	0,065	0,017	0,884	0,000	0,122
Debt	0,588	0,611	3,677	0,000	0,206

Notes: N = 5.899; AQ_IM – see Section 3 for exact definition; FINDEBT = 1, if firm has financial debt, otherwise = 0; LogSize = ln (total assets); LogAge = ln (age in years); AssetStructure = net property, plant and equipment/total assets; Profitability = operating income/total assets; EMGrey = dummy variable taking 1 if 1.74 < EM-score <3.75 and 0 otherwise; EMDistress = dummy variable taking 1 if EM-score <1.74 and 0 otherwise; Growth prospects = intangible assets/total assets; Debt = average total debt/average total assets.

4.2 Analysis and Results

To examine the first hypothesis, we carried out a logit and probit regression analyses to estimate the effect of the independent variables *ACCRUALQUALITY_INVERSEMEASURE* (AQ_IM) on the dependent variable *FINDEBT*. Following De Meyere *et al.* (2018), independent and control variables have been lagged one period in the model to reduce potential endogeneity problems. To test H1, regression equation is estimated as follow:

$$FINDEBT_{i,t} = \alpha 0 + \alpha 1 * AQ\_IM_{i,t-1} + \alpha 2 * LogSize_{i,t-1} + \alpha 3 * LogAge_{i,t-1} + \alpha 4 * AssetStructure_{i,t-1} + \alpha 5 * Profitability_{i,t-1} + \alpha 6 * EMDistress_{i,t-1} + \alpha 7 * EMGrey_{i,t-1} + \alpha 8 * Debt_{i,t-1} + \alpha 9 * Growth\ prospects_{i,t-1} + \varepsilon_{i,t}$$

We expect a negative parameter for the independent variable AQ_IM would validate H1 because firms with higher value of AQ_IM (and poorer FRQ) have lower possibility to access to financial debt channel than firms with higher FRQ. Following De Meyere *et al.* (2018), we have carried out a Probit model and Logit model to estimate the impact of the independent variables AQ_IM on the variable "FINDEBT".

Table 2 shows the results of the regression equation, using logit model and probit models. Therefore, we estimate the regression equation using the dummy variable representing whether a firm has financial debt (FINDEBT=1, otherwise 0).

Table 2. Logit and probit regression results: accrual quality, financial debt and Italian Non-SMEs

	Logit		***Probit***	
FINDEBT	*α*	*(p)*	*α*	*(p)*
AQ_IM	**-8.86e-07*** **	**(0.000)**	**-4.68e-07*** **	**0.003**
LogSize	-.263***	(0.000)	-.119***	(0.000)

LogAge	.088	(0.199)	.047	(0.174)
AssetStructure	2.295***	(0.000)	1.176***	(0.000)
Profitability	-5.739***	(0.000)	-2.858***	(0.000)
EMGrey	-.348**	(0.043)	-.195**	(0.018)
EMDistress	-1.507***	(0.000)	-.784***	(0.000)
Debt	1.728***	(0.000)	.9333***	(0.000)
Growth Prospects	.610	(0.147)	.308	(0.143)
_cons	4.372***	(0.000)	2.158***	(0.000)
N.Observations	5.899		5.899	
R^2	0.0737		0.0728	

Notes: N = 5.899; AQ_IM – see Section 3 for exact definition; FINDEBT = 1, if firm has financial debt, otherwise = 0; LogSize = ln (total assets); LogAge = ln (age in years); AssetStructure = net property, plant and equipment/total assets; Profitability = operating income/total assets; EMGrey = dummy variable taking 1 if 1.74 < EM-score <3.75 and 0 otherwise; EMDistress = dummy variable taking 1 if EM-score <1.74 and 0 otherwise; Growth prospects = intangible assets/total assets; Debt = average total debt/average total assets. *P*-values (*p*) are reported between brackets ***, **, * denote significance at the 1%, 5% and 10% level, respectively.

We find that the coefficient for the AQ_IM variable is significant in both models used in this work. Particularly, in both models AQ_IM is significant at 1% level. These evidences support the idea of using AQ_IM as a proxy of FRQ. AQ_IM is able to explain the variation in the access to financial debt of firms tested.

Further, we assumed a negative parameter for the independent variable AQ_IM because firms with higher value of AQ_IM (and poorer FRQ) have lower likelihood of having access to financial debt. Our findings are coherent with it has been hypothesized. In fact, the coefficient regarding the variable AQ_IM is negatively associated to FINDEBT both in the probit model (p<.001) and in the logit model (p<.001). Therefore, Italian Non-SMEs with higher financial reporting quality (so higher accruals quality and lower AQ_IM values) have more possibility to access to resources provided by financial actors than those firms with lower accrual quality. This is consistent with previous studies (Healy & Wahlen,1999) (Francis *et al.*, 2005) (De Meyere *et al.*, 2018) (Garc á-Teruel *et al.*, 2010) that have revealed that accounting quality reduces information asymmetry between the firms and financial institutions because financial reporting quality and disclosure can reduce moral hazard and

adverse selection issues. Therefore, these results reveal that Italian Non-SMEs with higher value of AQ_IM have lower possibilities to access to financial debt than those with higher information quality.

Table 2 also shows that in both models there is a positive and significant (p<.001) association between variable AssetStructure and FINDEBT, indicating that Italian Non-SMEs with more tangible assets usually have easy access to external financing channels. This result is in line with evidence provided by Almeida and Campello (2007). Then, as hypothesised and tested by García-Teruel *et al.* (2014b), the variable "Profitability" has a negative coefficient that demonstrates that Italian No-SMEs rely on external resources provided by banks or financial institutions to finance their activities when they are not profitable or do not generate cash flow.

Regarding the variable Debt, the coefficient is positive and significant at 1% level in both models adopted. This result reveals that firms that use the leverage choose financial debt to support their activities. This is in line with what hypothesised (García-Teruel *et al.*, 2014b), since banks are the main providers of external funds for firms sampled.

4.3 Additional Analysis

Then, we have modelled the proportion of financial debt exceeding one year in total financial debt (FINDEBT_12) using a Tobit model and an OLS regression analysis. On this ground, we test the second research hypothesis, running the same longitudinal estimation model.

We examine whether the financial reporting quality can affect the financial debt maturity. Table 3 shows the results of computation regression equation.

Table 3. OLS regression and Tobit regression results: accrual quality, financial debt exceeding 1y and Italian Non-SMEs

	OLS Regression		***Tobit***	
FINDEBT_12	*α*	*(p)*	*α*	*(p)*
AQ_IM	**5.82e-07*** **	(0.000)	**6.55e-07*** **	**(0.000)**
LogSize	-.031***	(0.000)	-.035***	(0.000)
LogAge	-061***	(0.000)	-.083***	(0.000)
AssetStructure	-.037	(0.216)	.001	(0.967)
Profitability	.183***	(0.000)	.151	(0.116)
EMGrey	-.004	(0.790)	-.021	(0.328)

EMDistress	.147***	(0.000)	.158***	(0.001)
Debt	-.491***	(0.000)	-.577***	(0.000)
Growth Prospects	.041	(0.324)	.052	(0.432)
_cons	1.243***	(0.000)	1.119***	(0.000)
N.Observations	5.456		5.456	
R^2	0.0819		0.0381	

Notes: N = 5.456; AQ_IM – see Section 3 for exact definition; FINDEBT_12 = Financial debt exceeding one year/total financial debt; LogSize = ln (total assets); LogAge = ln (age in years); AssetStructure = net property, plant and equipment/total assets; Profitability = operating income/total assets; EMGrey = dummy variable taking 1 if 1.74 < EM-score <3.75 and 0 otherwise; EMDistress = dummy variable taking 1 if EM-score <1.74 and 0 otherwise; Growth prospects = intangible assets/total assets; Debt = average total debt/average total assets. *P*-values (*p*) are reported between brackets ***, **, * denote significance at the 1%, 5% and 10% level, respectively.

The results provided in the Table 3 show that the parameter for the AQ_IM variable is significant (p<.001), validating again the idea that the accrual quality can be used as a proxy to measure the financial reporting quality of a firm.

However, we assumed a negative coefficient for the independent variable AQ_IM because firms with higher value of AQ_IM (and poorer FRQ) have lower likelihood of having access to financial debt, especially to long financial debt (financial debt exceeding one year). Our results (Table 3) are not able to validate with we hypothesized. In fact, the parameter regarding the variable AQ_IM is now positively associated to FINDEBT both in the OLS regression model (p<.001) and in the tobit model (p<.001). Therefore, Italian Non-SMEs with higher accruals quality (so higher financial reporting quality and lower AQ_IM) have more difficulties to get into financial debts to support their business. This is in evident contrast with it has been hypothesized.

4.4 Robustness

We subject our results to a robustness check in order to address potential concerns with empirical biases in our estimations. This additional check involves Ball and Shivakumar (2006) model to calculate the accruals quality measure. Ball and Shivakumar added three variables in Dechow and Dichev (2002) model:

$$\Delta WCA_{i,t} = g0 + g1 * CFO_{i,t-1} + g2 * CFO_{i,t} + g3 * CFO_{i,t+1} + g4 * \Delta CFO_{i,t} + g5*D + g6*D*\Delta CFO_{i,t} + \varepsilon_{i,t}$$

where $\Delta CFO_{i,t}$ is the change in the cash flow from operations employed as a proxy for gain or loss, D is a dummy variable that takes the value equal to 1 if $\Delta CFO_{i,t}$ is negative and 0 otherwise, $D*\Delta CFO_{i,t}$ is the interaction between these two variables. Ball and Shivakumar

(2006) tried to integrate the asymmetry that can be recognized between gain and losses into conventional linear accruals models, showing that nonlinear accruals models incorporating the asymmetry in gain and loss recognition offer a substantial specification improvement. As in Dechow and Dichev (2002) model, the Ball and Shivakumar (2006) model is computed in its cross-sectional version for each industry-year combination. The absolute value of residuals for each firm-year combination is an inverse measure of accruals quality ($AQ\_BS_{i,t} = |\varepsilon_{i,t}|$).

Table 4 reveals the results of reckoning regression equation, using logit and probit models and employing the Ball and Shivakumar (2006) model in order to calculate the accrual quality measure.

Table 4. Logit and probit regression results: accrual quality (AQ_BS), financial debt and Italian Non-SMEs

	Logit		***Probit***	
FINDEBT	*α*	*(p)*	*α*	*(p)*
AQ_BS	**-9.10e-07*** **	**(0.000)**	**-4.84e-07*** **	**0.000**
LogSize	-.263***	(0.000)	-.106***	(0.000)
LogAge	.088	(0.196)	.048	(0.164)
AssetStructure	2.304***	(0.000)	1.178***	(0.000)
Profitability	-5.614***	(0.000)	-2.786***	(0.000)
EMGrey	-.338**	(0.048)	-.188**	(0.023)
EMDistress	-1.549***	(0.000)	-.816***	(0.000)
Debt	1.699***	(0.000)	.909***	(0.000)
Growth Prospects	.530	(0.203)	.253	(0.223)
_cons	4.101***	(0.000)	2.002***	(0.000)
N.Observations	5.899		5.899	
R^2	0.0691		0.0681	

Notes: N = 5.899; AQ_BS – See Ball and Shivakumar (2006) model; FINDEBT = 1, if firm has financial debt, otherwise = 0; LogSize = ln (total assets); LogAge = ln (age in years); AssetStructure =

net property, plant and equipment/total assets; Profitability = operating income/total assets; EMGrey = dummy variable taking 1 if 1.74 < EM-score <3.75 and 0 otherwise; EMDistress = dummy variable taking 1 if EM-score <1.74 and 0 otherwise; Growth prospects = intangible assets/total assets; Debt = average total debt/average total assets. *P*-values (*p*) are reported between brackets ***, **, * denote significance at the 1%, 5% and 10% level, respectively.

The results presented in Table 4 show that the accrual quality measure is significant at the 1% level. This confirms that accrual quality can be easily used to measure the quality of financial reporting of a firm. In addition, AQ_BS has negative coefficient in both logit (p<.001) and probit (p<.001) model that proves that Italian Non-SMEs with higher financial reporting quality (so higher accruals quality and lower AQ_BS values) have more possibility to access to financial debt than those firms with lower accrual quality. These results are in line with evidence provided in the previous estimation and what we have hypothesised. In general, the significance and coefficient sign of the other variables are consistent with previous assessment.

Furtherly, in order to assess the robustness of the additional analysis results, we have also applying our model using FINDEBT_12 as the ratio of financial debt exceeding one year to total financial debt using a Tobit model and an OLS regression analysis (Table 5).

Table 5. OLS regression and tobit regression results: accrual quality (AQ_BS), financial debt exceeding 1y and Italian Non-SMEs

	OLS Regression		***Tobit***	
FINDEBT_12	*α*	*(p)*	*α*	*(p)*
AQ_BS	**4.78e-07*** **	(0.000)	**5.30e-07** **	**0.003**
LogSize	-.032***	(0.000)	-.037***	(0.000)
LogAge	-.062***	(0.000)	-.083***	(0.000)
AssetStructure	-.039	(0.190)	-.000	(0.996)
Profitability	.141**	(0.036)	.099	(0.293)
EMGrey	-.005	(0.725)	-.023	(0.285)
EMDistress	.144***	(0.000)	.156**	(0.002)
Debt	-.492***	(0.000)	-.577***	(0.000)
Growth	.044	(0.341)	.050	(0.448)

Prospects				
_cons	1.262***	(0.000)	1.333***	(0.000)
N.Observations	5.456		5.456	
R^2	0.0808		0.0375	

Notes: N = 5.456; AQ_BS – See Ball and Shivakumar (2006) model; FINDEBT_12 = Financial debt exceeding one year/total financial debt; LogSize = ln (total assets); LogAge = ln (age in years); AssetStructure = net property, plant and equipment/total assets; Profitability = operating income/total assets; EMGrey = dummy variable taking 1 if 1.74 < EM-score <3.75 and 0 otherwise; EMDistress = dummy variable taking 1 if EM-score <1.74 and 0 otherwise; Growth prospects = intangible assets/total assets; Debt = average total debt/average total assets. *P*-values (*p*) are reported between brackets ***, **, * denote significance at the 1%, 5% and 10% level, respectively.

Table 5 shows the results, revealing the same findings obtained using the Dechow and Dichev (2002) model to measure the accrual quality. In fact, the parameter of the variable AQ_BS is positively associated to FINDEBT_12 both in the OLS regression model (4.78e-07***) and in the tobit model (5.30e-07**). So, contrary to what it has been hypothesized, these results confirm again that Italian Non-SMEs with higher financial reporting quality (and lower AQ_BS) have more complications to get into financial debts.

5. Discussion and Conclusions

In this study, we used a dataset of 967 firms and 5.899 observations over the 2007-2017 periods in order to assess the association between the financial reporting quality of Italian Non-SMEs and their access to financial debt. We used accruals quality as inverse proxy of financial reporting quality, because this latter can reduce the information asymmetry between banks and other financial institutions and firms.

The results of this study suggest that firms with higher financial reporting quality have more likelihood of accessing to financial debts. Therefore, our empirical findings support the idea that firms with higher financial quality can easily get into financial debts than those firms with lower accrual quality. Consistent with previous literature, our findings reveal and confirm that accounting quality reduces information asymmetry and adverse selection problems. As a consequence, banks and other financial institutions are more willing to grant loans if the asymmetry information between them and firms is lower. We also find that that Italian Non-SMEs rely on bank loans to finance their activities when they are not profitable or do not generate cash flow and when they use the leverage.

Given our findings, the policy implications of the research could bring policy makers towards a new corporate transparency measurement and thus an alternative risk size of an Italian Non-SME. Hence, an additional standard measurement of information asymmetry in firms' fundraising upon accrual quality could be developed basing on our empirical evidence, aiming at providing a new regulatory perspective for policy makers.

Moreover, this topic could be dealt with from a stakeholder view, since the lower is information asymmetry of moneylenders as firms' stakeholder category, the lower would be the transaction costs in fundraising as well as the higher would be firms' financial elasticity. This scenario could be framed as an economic incentive from policy makers on behalf of Non-SMEs in accessing to further financial resources because of their high solvency rate due to a good accrual quality.

This paper adds to literature in different ways. First, this paper contributes to the literature on Italy financial system that it is bank-based financial system where bank loans represent the main source of external funds.

Then, this study contributes to the literature regarding accounting quality, financial reporting quality and accrual quality, revealing and highlighting the relevance of these means to reduce the information asymmetry between firms and banks, favouring the access of firms to financial debts channel. Finally, this study is, to best of our knowledge, the first that show the role of financial reporting quality in the access to financial debt in Italy.

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Note

Note 1. The resulting model, which is the foundation for our EMS model approach, is of the form: EM score = 6.56(X1) + 3.26(X2) + 6.72(X3) + l.05(X4) + 3.25. where Xl = working capital/total assets, X2 = retained earnings/total assets, X3 = operating income/total assets, X4 = book value equity/total liabilities." (Altman *et al.*, 1998, p. 393)

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