

DO FIRMS TRY TO FOOL BANKS WHEN THEY APPLY FOR NEW LOANS?

RICCARDO PALUMBO

*University "G.d'Annunzio" of Chieti-Pescara
mail: r.palumbo@uncih.it*

PIERANGELO ROSATI

*Dublin City University Business School
mail: pierangelo.rosati@dcu.ie*

ABSTRACT

In this paper we investigate the impact of bank debt on firms' earnings management. Relying on a sample of 5,988 Italian SMEs and adopting a new metrics for bank debt, we show that, although the bank monitoring is still effective, firms engage in income-increasing earnings management to obtain larger financing. We also provide evidence supporting the informative view of earnings management, as we find that among the firms applying bank financing, distressed ones engage in earnings management more than non-distressed ones. and that such effect is stronger than the one associated with new bank debt.

KEYWORDS: Earnings Management, Bank Monitoring, Financial Reporting.

1. INTRODUCTION

In this paper we investigate the impact of bank debt on firms' earnings management. Past financial statements are a significant mechanism whereby a bank assesses a borrower risk (Fraser, Gup et al. 2001). Earnings management is a crucial misleading accounting practice, which a borrower can rely upon to influence the assessment process (Ahn and Choi 2009).

Earnings management has increasingly attracted the attention from accounting scholars (McNichols 2000), regulators (Ball 2006), and mass media. When applying for additional external financing, firms may have several incentives to misreport their earnings. These include obtaining better financing conditions - e.g. a lower interests rate, maximized funding (Fraser, Gup et al. 2001, Mishkin and Eakins 2003) -, avoiding debt covenant violations, renegotiating an outstanding debt (DeFond and Jiambalvo 1994, Sweeney 1994, Dechow and Dichev 2002, HassabElnaby, Mosebach et al. 2005, Franz, HassabElnaby et al. 2014).

Banks have higher monitoring capacity than any other lender, because of economies of scale and access to private information. By monitoring firms' transactions on their accounts, they have greater chances to detect earnings manipulation. This is likely to discourage managers from engaging in misleading practices (Ahn and Choi 2009). However, in bank-oriented economies, as well as in economies where small and medium enterprises (SMEs) have reduced access to the market, the need to obtain funds or better terms and conditions can outweigh such deterrents. Evidence on the relation between earning management and bank debt is controversial

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and the few studies casting light on such relation focus on the current stock of bank debt. However, the relation between earnings management and bank debt is more complex. Firms are more motivated to adopt certain misreporting² practices when applying for additional financing. Among firms in need of bank financing, distressed ones might have even stronger incentives to misreport their earnings. Therefore, a closer look at the firms' debt flow is needed. In this paper, we aim to fill this gap by developing a model that (a) includes the financial statements of the year prior to the application for additional financing, when the incentives to misreport earnings are higher (b) considers both distressed and non-distressed firms.

We rely on data concerning a sample of 5,988 Italian SMEs from 2005 to 2012. Italy provides a very good context for this analysis because: (a) being a bank-oriented economy, it presents a large number of firms (SMEs in particular) that rely on bank debt, (b) accounting regulation requires firms to report the level of bank debt due within and beyond the following fiscal year.

We find that, although bank monitoring still affects earnings management, (a) firms engage in income-increasing earnings management the year prior to the application for new bank debt in order to ensure their financial figures appear healthier and achieve best loan conditions; (b) distressed companies engage in income-decreasing manipulation; (c) the disincentives due to bank monitoring have stronger effect on earnings management than the incentives related to larger financing.

Our study contributes to the literature in three ways. First, we propose a new metrics for measuring the relation between bank debts and earnings management, which helps to highlight firm's motivations to manage earnings when applying for new loans. Second, we contribute to the debate on the effectiveness of bank monitoring in constraining misreporting. Third, unlike previous studies that focused mostly on Anglo-Saxon market-based countries³, we focus on a bank-based country.

The paper is organised as follows: section two presents previous literature; section three describes the sample and the methodology; section four reports some descriptive statistics; section five shows the results of the multivariate analyses; section six reports robustness tests, and section seven provides important concluding remarks.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Extant literature identifies three main categories of incentives to earnings management (Healy and Wahlen 1999). There are capital markets-related incentives: firms aim to influence the short-term stock price performance before management buyouts (DeAngelo 1988, Perry and Williams 1994, Chou, Gombola et al. 2006) and equity offers (Dechow, Sloan et al. 1996, Teoh, Welch et al. 1998, Teoh, Wong et al. 1998, Cohen and Zarowin 2010) as well as to meet financial analysts' expectations (Burgstahler and Eames 2006, Doyle, Jennings et al. 2013). A second category of incentives is represented by regulatory motivations. Firms may be willing to

² We use the terms "earnings management" and "misreporting" interchangeably following the definition provided by Healy and Wahlen (1999).

³ To the extent of our knowledge, the only exception is García-Teruel et al. (2014).

circumvent industry-specific regulations (Beatty, Chamberlain et al. 1995, Collins, Shackelford et al. 1995, Chen, Chen et al. 2011) or antitrust requirements (Cahan 1992, Makar, Alam et al. 2011). Finally, there are contract related incentives. Managers use accounting judgment to increase earnings-based bonuses (e.g. Healy (1985), Holthausen et al. (1995), Guidry et al. (1999), Bergstresser and Philippon (2006)). Debt contract is an important example of contracts that can create incentives to misreporting. However the effect of debt is anything but unambiguous.

According to the covenant-based hypothesis, firms are incentivised to meet debt covenants to avoid technical default. To this aim they (a) manipulate accounting results (Dichev and Skinner 2002) and (b) accelerate earnings one year before the covenant violation (DeFond and Jiambalvo 1994). Firms also use income-increasing discretionary accruals if they are able to obtain waivers for debt covenants violations and income-decreasing discretionary accruals when the debt restructuring occurs or when they have to renegotiate debts because waivers are denied (Jaggi and Lee 2002). However, in the cases in which violators make income-increasing accounting changes after the violation there might not be a clear intent to avoid the violation (Sweeney 1994).

The financial distress hypothesis predicts that earnings management are positively related to firm's debt level since it is possible that high leverage causes liquidity problems. Ghosh and Moon (2010) show that very high levels of debt are associated with more discretionary accruals, whereas there is a negative relationship for a sample of low creditworthy firms. The authors argue that this differential effect is due to lender monitoring. Both Gupta et al. (2008) and Fung and Goodwin (2013) argue that there is a positive relationship between short-term debt and earnings management. Borrowers attempt to "circumvent lender enforcement" (Gupta, Khurana et al. 2008, p. 619). However, firms manage earnings also to improve their bargaining position in the event of debt renegotiation (DeFond and Jiambalvo 1994, Sweeney 1994, Dichev and Skinner 2002, HassabElnaby, Mosebach et al. 2005, Franz, HassabElnaby et al. 2014).

Very few studies investigate the relationship between accounting quality and bank debt. Compared to individual lenders and other specialised agencies including auditors, banks have advantages in monitoring borrowers because of their low costs of delegation, economies of scale, access to private information (Ahn and Choi 2009) - e.g. a bank can monitor the transactions on a borrower's account to assess its liquidity. Banks are also able to design contracts according to the characteristics of the borrower (Bharath, Sunder et al. 2008). Notwithstanding these advantages in monitoring, banks rely mostly on accounting information to estimate the expected future cash flows of borrowers and assess their repayment capacity (Berger and Udell 1998). Therefore, financial statements are an important source of information for banks to mitigate the problems associated with borrower risk (García-Teruel, Martínez-Solano et al. 2014). In literature the effects of bank debt on misreporting are controversial. Bharat et al. (2008) argue that poorer accounting quality borrowers prefer private debt - i.e. bank debt - to public one. Ahn and Choi (2009) show that borrowing firms' earnings management generally decreases as the strength of banks' risk oversight increases due to bank

monitoring. García-Teruel et al. (2014) examine a sample of Spanish SMEs and find that accounting quality is positively related to bank debt.

Both Ahn and Choi (2009) and García-Teruel et al. (2014) develop a model to explain the effect of bank debt on quality accounting by considering the current stock of bank debt a firm has. However, managers may be increasingly motivated to adopt certain earning management behaviours when they apply for new loans. Therefore the higher level of misreporting should be found in the financial statement of the year prior to the application. For this reason we consider also the flow of bank debt in our model.

Empirical studies focus on Anglo-Saxon markets oriented economies, while continental European countries have a bank-based⁴ financial system. Italy is one them (Levine 2002). Italian accounting regulation, like the Spanish one, requires firms to report the amount of bank debt due within and beyond the following fiscal year. Moreover, Italian SMEs have no access to public debt market, therefore bank debt is the main source of external financing (Scellato and Ughetto 2010). In these conditions the incentives to manage earnings upwards in order to be funded are particularly high. They might exceed the disincentives due to bank monitoring. This gives rise to a positive relationship between firms' discretionary accruals and the amount of new bank debt raised the following year, as predicted in H1.

H1: Firms engage in higher income-increasing earnings management when they apply for new bank debt, *ceteris paribus*.

Stakeholders pay particular attention to distressed firms, since a significant and persistent decline in a company's financial performance may eventually result in insolvency, making investors and creditors suffer considerable financial losses (Habib, Uddin Bhuiyan et al. 2013). This has twofold implications: on the one hand, distressed firms might be discouraged to undertake misreporting behaviour, because of higher monitoring; on the other hand, they might decide to incur in higher misreporting to survive. According to Habib, Uddin Bhutan et al. (2013), there are two different views on the role of earnings management in distressed firms: the informative view and the opportunistic view. The former states that managers use discretionary accruals to convey private information about firm value, and such accruals are then perceived positively by the market (Guay, Kothari et al. 1996, Subramanyam 1996, Krishnan 2003, Chung, Ho et al. 2004). The opportunistic view states that discretionary accruals have lower predictability with respect to future cash flows, so investors attach a negative information value to this discretionary earnings component (Choi, Kim et al. 2011). Also in the case of distressed firms, both the objective and the direction (i.e. income-increasing vs income-decreasing) of earnings management are controversial. Distressed firms use income decreasing earnings management and discretionary write-offs (DeAngelo, DeAngelo et al. 1994). Firms not appearing distressed *ex-ante*, but that become bankrupt *ex-post*, have engaged in income-increasing earnings management (Rosner 2003). Managers of highly distressed firms shift earnings downwards prior to a bankruptcy filing (Charitou, Lambertides et al. 2007). As to listed firms, in cases of distress, managers adopt income-increasing earnings management to

⁴ "Austria, Belgium, France, Germany, Italy, Portugal and Spain are classified as bank-based" (Levine 2002).

avoid delisting threat, and special monitoring by the government (Chen, Chen et al. 2010). Habib et al. (2013) report that distressed firms engage more in income-decreasing earnings management practices than healthy firms do.

Given the mixed evidences on the effect of firm distress on earnings management, we state the research hypothesis in the following null form:

H2: Financial distress has no effect on earnings management.

3. DATA AND METHODOLOGY

To test our hypotheses we use the *AIDA* database from *Bureau Van Dijk*. It contains financial statement data of all Italian limited liability companies. The database codes financial statements into 180 fields describing items from the balance sheet, including the composition of total assets (*attivo*), equity (*patrimonio netto*), liabilities (*passivo*) as well as items from profit and loss statement (*conto economico*) (Capalbo, Frino et al. 2014). The database also contains the bank debt amount due within the following fiscal year and beyond, as well as other information on profitability, leverage and corporate governance. Our selection concerns all non-financial firms in the database from 2005 to 2012⁵, without any financial statement in a condensed set (*Bilancio in forma abbreviata*). This search results in 13,272 companies. Out of this selection we do not include companies that (a) report only the consolidated financial statement, (b) have no bank debt, (c) have errors⁶ or missing data and (d) that cannot not be classified as SMEs according to the European Commission recommendation 2003/361/EC⁷. We do not include either industries with less than 10 observations per year (Capalbo, Frino et al., (2014). The final sample counts 5,988 companies across 51 industries, corresponding to 22,602 firm-years. Table I reports the number of observations for each year.

Insert Table I here

To measure the extent of earnings management, we adopt the *Conditional Revenue Model* (Stubben 2010). This model presents three main benefit. First, Stubben (2010) shows that such model provides less biased accruals estimations than other accrual models i.e. Jones Model (Jones 1991), Modified Jones Model⁸ (Dechow, Sloan et al. 1995) and the Dechow and Dichev Model (Dechow and Dichev 2002). Second, it does not require either cash flow statement information -so it can be used to analyse earnings management practices in non-listed companies which are not required to report the cash flow statement - or cash flow estimation

⁵ The database provides data over the last ten years. Our model adopts lag and lead variables so we loose the first and the last year of data.

⁶ Negative or zero total assets or equity value are not included.

⁷ A company can be classified as SME if it has fewer than 250 employees, less than 50 million euros in revenues and the total value of its assets is less than 43 million euros.

⁸ We also estimate discretionary accruals using the Modified Jones Model and used them in our regression models. The results (not tabulated) are perfectly coherent with the one presented in Section 5.

through the balance sheet approach⁹. Third, it is based on the total change in account receivables and does not require a distinction between the first three and the last quarter changes, like the *Revenue Model* does.

We estimate the *Conditional Revenue Model* for each industry and year as follows:

$$\begin{aligned}\Delta AR_{it} = & \alpha + \beta_1 \Delta R_{it} + \beta_2 \Delta R_{it} \times SIZE_{it} \\ & + \beta_3 \Delta R_{it} \times AGE_{it} + \beta_4 \Delta R_{it} \times AGE_{SQ_{it}} \\ & + \beta_5 \Delta R_{it} \times GRR_{P_{it}} + \beta_6 \Delta R_{it} \times GRR_{N_{it}} \\ & + \beta_7 \Delta R_{it} \times GRM_{it} + \beta_8 \Delta R_{it} \times GRM_{SQ_{it}} + \varepsilon_{it}\end{aligned}\quad (1)$$

Δ is the annual change; AR is the accounts receivable; R is the total revenue; $SIZE$ the natural log of total assets; AGE refers to the natural log of the number of years since the firm's setting up; GRR_P is the industry median-adjusted change in revenues (R) multiplied by a dummy variable, which is equal to 1 if the industry median-adjusted change in revenues is higher than 0 for firm i in year t , otherwise it is equal to 0; GRR_N is the industry median-adjusted change in revenues (R) multiplied by a dummy variable, which is equal to 1 if the industry median-adjusted change in revenues for firm i in year t is lower than 0, otherwise it is equal to 0; GRM is the industry median-adjusted gross margin for firm i in year t ; and AGE_SQ and GRM_SQ are the square of the variables AGE and GRM , respectively.

We estimate Equation (1) after deflating all revenue and accrual variables by total assets (Stubben 2010) and winsorizing at 5 per cent each model input variable (Capalbo, Frino et al. 2014). We run the regression per industry and year; residuals from the Equation (1) provide an estimate of the abnormal accounts receivables - i.e. discretionary accruals -, which is the variable of primary interest in this study, since it is our estimate of earning management. We next use both the absolute and the signed values of discretionary accruals, labelled $|DA|$ and DA respectively. While the former provides information about the overall level of misreporting, the latter allows to assess the direction of the manipulation - i.e. income increasing or income decreasing earnings management.

We also estimate the bank debt flow in the following fiscal year ($\Delta Bank$) as follows:

$$\Delta Bank_{i,t+1} = \frac{[StockBank_{i,t+1} - (StockBank_{i,t} - BankWY_{i,t})]}{TotAssets_t}\quad (2)$$

where $StockBank$ is the total amount of bank debt at the end of fiscal year t , $BankWY$ is the amount of bank debt that has to be repaid within the following fiscal year ($t+1$).¹⁰

We test H1 with the models presented in Equation (3) and Equation (4).

⁹ Hribar and Collins (2002) states that, when researchers adopt the balance sheet approach "the measurement error in total accruals and the resulting coefficient bias for various partitions could lead the researcher to conclude that significant earnings management exists, when in fact there is none".

¹⁰ A numeric example might be useful to better understand the estimation model. If a company had 100.00€ of bank debt in year t (where 80.00€ to be repaid within the following fiscal year and 20.00€ beyond the following fiscal year) and 120.00€ of bank debt at the end of year $t+1$, the change in bank debt in year $t+1$ would result in $(120-(80-20))=100$.

$$|DA_{i,t}| = \lambda_0 + \lambda_1 \Delta Bank_{i,t+1} + \lambda_2 TotBank_{i,t} + \lambda_3 Distress_{i,t} + \lambda_4 Lev_{i,t} + \lambda_5 Size_{i,t} + \lambda_6 ROA_{i,t} + \lambda_7 NOI_{i,t} + \varepsilon_{i,t} \quad (3)$$

$$DA_{i,t} = \lambda_0 + \lambda_1 \Delta Bank_{i,t+1} + \lambda_2 TotBank_{i,t} + \lambda_3 Distress_{i,t} + \lambda_4 Lev_{i,t} + \lambda_5 Size_{i,t} + \lambda_6 ROA_{i,t} + \lambda_7 NOI_{i,t} + \varepsilon_{i,t} \quad (4)$$

TotBank is the stock of bank debt at the end of year t scaled by total assets, *Distress* is a dummy variable equal to 1 if firm i in year t has a negative working capital (McKeown, Mutchler et al. 1991), *Lev* is the debt-equity ratio to control for firms' leverage, *ROA* is the return on assets to control for company profitability and *NOI* is the non-operating income to sales to control for the incidence of non-operating activities.

To test H2, we add an interaction variable (*HBank*Distress*) to the models in Equations (3) and (4). It is equal to 1 if the firm i in year t has a bank debt flow higher than the median value for year t and firm i is in distress. The models are presented in Equation (5) and Equation (6).

$$|DA_{i,t}| = \lambda_0 + \lambda_1 \Delta Bank_{i,t+1} + \lambda_2 TotBank_{i,t} + \lambda_3 Distress_{i,t} + \lambda_4 HBank * Distress_{i,t} + \lambda_5 Lev_{i,t} + \lambda_6 Size_{i,t} + \lambda_7 ROA_{i,t} + \lambda_8 NOI_{i,t} + \varepsilon_{i,t} \quad (5)$$

$$DA_{i,t} = \lambda_0 + \lambda_1 \Delta Bank_{i,t+1} + \lambda_2 TotBank_{i,t} + \lambda_3 Distress_{i,t} + \lambda_4 HBank * Distress_{i,t} + \lambda_5 Lev_{i,t} + \lambda_6 Size_{i,t} + \lambda_7 ROA_{i,t} + \lambda_8 NOI_{i,t} + \varepsilon_{i,t} \quad (6)$$

We estimate Equations (3) to (6) adopting the Generalised Least Square (GLS) random effect (RE) estimator (Baltagi and Wu 1999). This technique is robust to first-order auto-regressive disturbances within unbalanced-panels and cross-sectional correlation and heteroskedasticity across panels. We adopt the RE instead of the fixed effect (FE) for three reasons. First, FE estimation requires significant variation of the variable values within panel to produce consistent and efficient estimates, whereas the variables included in our model do not change significantly over years; according to Wooldridge (2010), the FE estimates are imprecise when the important variables on the right-hand side do not vary much over time. Second, FE estimates may aggravate the problem of multicollinearity (Baltagi 2008). Finally, for large 'N' and fixed small 'T', like in our study, FE estimation is inconsistent (Baltagi 2008).

4. DESCRIPTIVE STATISTICS

Table II presents descriptive statistics for selected firms characteristics for the full sample (Panel A) and across years (Panels B-I). The average value of accruals is almost constant during the analysed period; it is much lower than it is in Capalbo et al. (2014), though the difference is probably due to different sampling criteria since authors study only state-owned enterprises. Bank financing (*TotBank*) is very important for Italian SMEs since it represents 29% percent of total assets. Bank debt flow drops in 2008. This reflects the implementation of the higher standards for risk management and stricter capital requirements, introduced by the Basel II regime which lead to a decrease in bank financing (Kolev, Tanayama et al. 2013). Firms' leverage (*Lev*) decreases over the analysed period. These results are probably related to both the

global financial crisis (GFC) and credit crunch. On the one hand, during recession periods, firms attempt to pay off all non-useful assets to raise liquidity and repay loans to lower the risk of bankruptcy. On the other hand, banks are more reluctant to provide risky borrowers with loans. GFC affects also firms' profitability, as the decreasing return on assets over time shows. Finally the average value of non-operating income is always negative showing that it is not profitable for SMEs to carry out activities other than operational.

Insert Table II here

Table III reports the correlation matrix among variables. Not surprisingly the correlation coefficient between $\Delta Bank$ and $TotBank$ is positive and significant. The coefficients denote a strong correlation between the bank debt stock and flow, which might cause multicollinearity problems. To address this issue we run the regressions including only one of these variables or both in order to check for a possible results' bias.

Insert Table III here

5. RESULTS

We report the results for both absolute value (Panel A) and signed value of earnings management (Panel B) using Generalised Least Squares random effect regressions (see Table IV). In Panel A we show that the coefficient of bank debt flow is positive but non-significant. Firms do not change their manipulation behaviour when they apply for new bank loans. The other results are coherent with previous studies. The coefficient of bank debt stock is negative and statistically significant, which confirms the effectiveness of bank monitoring (Ahn and Choi 2009, García-Teruel, Martínez-Solano et al. 2014). The coefficient of *Distress* is negative and statistically significant, confirming the informative view of earnings management (Habib, Uddin Bhuiyan et al. 2013). The effect of company leverage (*Lev*) on earnings management is positive thus firms with larger debt tend to engage in higher earnings management (Capalbo, Frino et al. 2014). The coefficient of *Size* is negative and significant confirming that larger companies engage in lower earnings manipulation (Capalbo, Frino et al. 2014, García-Teruel, Martínez-Solano et al. 2014). The coefficient of return on total assets is positive and significant (Ahn and Choi 2009, Capalbo, Frino et al. 2014, García-Teruel, Martínez-Solano et al. 2014). The coefficient of non operating income is positive but not significant, which means that operational activities do not have a significant effect on earnings management.

In Panel B we presents the results concerning the direction of earnings manipulation. The coefficient of bank debt flow is positive and significant. This means that companies, which are about to apply for bank loans, engage in income-increasing earnings management. In other words, they push their incomes upwards in order to appear healthier to banks and gain better conditions or to maximise financing. The coefficient of bank debt stock is negative and significant also in this case; it confirms the bank monitoring effectiveness in constraining incentives to manage earnings. The coefficient of *Distress* is negative and significant; it

suggests that distressed firms engage in income-decreasing earnings management more than non-distressed firms do - i.e. informative role of earnings management (Habib, Uddin Bhuiyan et al. 2013). The effect of leverage is not significant in this case. The results also indicate that larger (more profitable) firms engage in more income-increase (income-decreasing) manipulation.

We do not report the results of the regressions run without $\Delta Bank$ or $TotBank$, since they are not altered in any case.

Relying on the results reported in Table IV we can confirm H1 and reject H2.

Insert Table IV here

We obtain evidence of opposite effects for bank debt flow and company crisis on earnings management. In order to establish which effect has the major impact, we run the regression models presented in Equation (5) and Equation (6).

In Table V we present the estimation results for both absolute value (Panel A) and signed value of earnings management (Panel B). We find that the (negative) effect of company distress - i.e. informative view of misreporting - is stronger than the (positive) effect of bank debt flow $HBank*Distress$ is the variable of interest in this case. In Panel A its coefficient is positive but statistically non-significant. This means that distressed firms that apply for new large bank loans do not behave differently from all other firms. The coefficient in Panel B, instead, is negative and statistically significant. It indicates that distressed firms that apply for large bank loans engage in more income-decreasing earnings management than other firms.

Insert Table V here

6. ROBUSTNESS TEST

The results of this study partly contradict García-Teruel et al. (2014). The authors study a sample of Spanish SMEs and find that firms with higher accruals quality, i.e. lower manipulation, have higher access to bank funding. Given that (a) both Spain and Italy have bank-oriented economies (Levine 2002), (b) both samples include SMEs and, (c) to our knowledge, detailed data on bank debt are available only for these two countries¹¹, we run the same regression model on a sample of 2,679 Spanish SMEs from 2009 to 2013¹² corresponding to 6,722 firm years.

As Table VI shows, coherently with the results obtained on the Italian sample, the effect of bank debt flow (bank debt stock) on the absolute value of discretionary accruals (Panel A) is positive (negative) and non-significant (significant). The results also confirm the informative role of earnings management since the coefficient of *Distress* is negative and significant.

¹¹ *SABI* database is provided by *Bureau Van Dijk* as well as *AIDA*. It reports accounting and corporate governance information on Spanish and Portuguese firms. However detailed data for bank debt are available only for part of the Spanish companies.

¹² A change in accounting regulation occurred in 2007. In order to avoid possible errors in matching data pre and post event we keep the most recent subsample.

The results presented in Panel B confirm that bank debt flow (bank debt stock) has a positive (negative) and significant effect on the signed value of discretionary accruals. Interestingly, the coefficient of *Distress* is positive and not statistically significant; this means that company distress has no significant effect on the direction of manipulation and that the balance between informative and that opportunistic view of earnings management might be context dependent.

We also run the regression excluding $\Delta Bank$ or *TotBank* and the results (not tabulated) do not change.

Insert Table VI here

Table VII reports the results of the comparison between the effect of bank debt flow and company distress on the absolute (Panel A) and signed values of earnings management (Panel B). Results are perfectly coherent with the ones reported in Table V, confirming that the effect of company distress is stronger than the one associated with bank debt flow.

Insert Table VII here

7. CONCLUSIONS AND LIMITATIONS

In this paper we examine the effect of bank debt on earnings management. Unlike previous studies, which rely mainly on the current stock of bank debt, we consider the flow of new bank debt. Financial statements represent the main source of information banks rely upon when assessing the borrower risk. To overcome the limitations of current measures, such as bank debt stock, which do not take into account management intentions, we investigate the relationship between actual discretionary accruals and bank debt flow during the following fiscal year. Firms deciding to apply for new bank loans engage in income-increasing manipulation. Although bank monitoring is effective in limiting the total amount of earnings manipulation, when firms need new funding, monitoring plays a less crucial role in shaping firms' misreporting behaviour. We also provide evidence supporting the informative role of earnings management and that such effect is stronger than the positive one associated with bank debt flow. Our results are valuable because detailed data for bank debt are available for Italian and Spanish companies and the robustness test on Spanish data confirms our results. Unlike previous study that take part in the debate on the effect of bank debt on earnings management, we can better isolate such effect and consider management intentions. We also provide a deep insight in a bank-based country which is definitely different from the market-based ones that have been widely considered in the literature.

Our results are interesting for academics, regulators and for the banking industry. Researchers can benefit from a new measure of bank debt, which affects earnings management and provides different results than previous studies. Both regulators and the banking industry can benefit from the opportunity to develop more effective audit and monitoring mechanisms to assess credit risk.

Our study, however, has also some limitations. Financial statement data are made available once a year, so we cannot capture whether short-term bank debts are drawn and repaid within the

fiscal year. Our robustness test shows differential effects about the impact of company distress; this raises country-related issues, which this study does not cover. Further research is needed to investigate whether significant differences exist in market-oriented countries and in larger companies.

Table I

Number of observations per year

This table reports the number of observations in the sample for each year.

Year	No. of Obs.	Percentage
2005	2628	11.63
2006	2984	13.20
2007	3189	14.11
2008	3021	13.37
2009	1808	8.00
2010	3146	13.92
2011	3351	14.83
2012	2475	10.95
Total	22602	100

Table II
Descriptive statistics

This table reports descriptive statistics for the full sample (Panel A) and for each year (Panels B-I). The table reports the mean, 1st and 3rd quartiles and median for the following variables: absolute value of discretionary accruals ($|DA|$), change in bank debt ($\Delta Bank$), the total amount of bank debt scaled for total assets ($TotBank$), debt to equity ratio (Lev), natural log of total assets ($Size$), return on assets (Roa), non-operating income to sales ratio (Noi).

	$ DA $	$\Delta Bank$	$TotBank$	Lev	$Size$	Roa	Noi
Panel A: Full sample							
Mean	0.026	0.292	0.269	0.022	10.033	0.035	-0.022
Q1	0.015	0.142	0.137	0.005	9.626	0.015	-0.038
Median	0.033	0.281	0.266	0.011	9.965	0.033	-0.025
Q3	0.062	0.419	0.390	0.023	10.360	0.054	-0.014
Panel B: 2005							
Mean	0.029	0.320	0.260	0.023	10.012	0.040	-0.028
Q1	0.008	0.173	0.134	0.005	9.598	0.022	-0.040
Median	0.022	0.299	0.254	0.012	9.933	0.037	-0.029
Q3	0.042	0.461	0.391	0.025	10.378	0.055	-0.020
Panel C: 2006							
Mean	0.025	0.331	0.269	0.025	10.069	0.038	-0.032
Q1	0.001	0.171	0.137	0.005	9.625	0.023	-0.044
Median	0.019	0.339	0.269	0.013	10.003	0.038	-0.033
Q3	0.038	0.475	0.388	0.027	10.410	0.052	-0.022
Panel D: 2007							
Mean	0.023	0.349	0.282	0.028	10.081	0.039	-0.029
Q1	0.001	0.185	0.142	0.005	9.649	0.024	-0.047
Median	0.016	0.358	0.283	0.015	9.970	0.037	-0.033
Q3	0.036	0.511	0.413	0.030	10.412	0.054	-0.021
Panel E: 2008							
Mean	0.031	0.292	0.268	0.022	10.067	0.039	-0.029
Q1	0.007	0.155	0.141	0.004	9.640	0.022	-0.043
Median	0.022	0.291	0.263	0.011	10.016	0.037	-0.030
Q3	0.046	0.417	0.391	0.021	10.398	0.053	-0.020
Panel F: 2009							
Mean	0.026	0.279	0.262	0.172	10.131	0.035	-0.017
Q1	0.003	0.137	0.128	0.004	9.708	0.016	-0.036
Median	0.016	0.256	0.259	0.010	10.053	0.032	-0.024
Q3	0.039	0.398	0.380	0.021	10.485	0.050	-0.013
Panel G: 2010							
Mean	0.022	0.302	0.269	0.019	10.198	0.027	-0.025
Q1	0.003	0.172	0.139	0.004	9.744	0.014	-0.038
Median	0.014	0.300	0.268	0.010	10.142	0.026	-0.024
Q3	0.034	0.042	0.391	0.021	10.590	0.038	-0.013
Panel H: 2011							
Mean	0.026	0.279	0.267	0.021	10.124	0.031	-0.016
Q1	0.007	0.148	0.139	0.004	9.697	0.016	-0.038
Median	0.018	0.280	0.267	0.010	10.027	0.029	-0.026
Q3	0.036	0.393	0.389	0.021	10.494	0.044	-0.016
Panel I: 2012							
Mean	0.029	0.264	0.266	0.017	10.103	0.031	-0.021
Q1	0.009	0.131	0.136	0.004	9.714	0.013	-0.031
Median	0.022	0.254	0.265	0.010	10.036	0.028	-0.019
Q3	0.041	0.372	0.380	0.020	10.463	0.046	-0.010

Table III
Correlation matrix
This table reports Pearson correlation coefficients, and their p-values in parentheses, for the following variables: absolute value of discretionary accruals (DA), signed discretionary accruals (DA), change in bank debt the following year (Δ Bank), the total current amount of bank debt (TotBank), dummy variable equal to 1 if the firm i in year t is classified as distressed, 0 otherwise (Distress), debt to equity ratio (Lev), natural log of total assets (Size), return on assets (Roa), non operating income to sales (Noi).

Variables	DA	DA	Δ Bank	TotBank	Distress	Lev	Size	ROA	NOI
Absolute DA	1.000								
Signed DA	0.047 (0.000)	1.000							
ΔBank	-0.007 (0.302)	0.065 (0.000)	1.000						
TotBank	-0.021 (0.000)	0.040 (0.000)	0.837 (0.000)	1.000					
Distress	-0.028 (0.000)	-0.035 (0.000)	0.161 (0.000)	0.174 (0.000)	1.000				
Lev	0.016 (0.016)	0.012 (0.062)	0.135 (0.000)	0.160 (0.000)	0.095 (0.000)	1.000			
Size	-0.059 (0.000)	-0.006 (0.382)	-0.024 (0.000)	-0.035 (0.000)	0.056 (0.000)	-0.011 (0.107)	1.000		
ROA	0.047 (0.000)	-0.033 (0.000)	-0.035 (0.000)	-0.098 (0.000)	-0.165 (0.000)	-0.055 (0.000)	-0.144 (0.000)	1.000	
NOI	0.002 (0.778)	0.001 (0.824)	-0.018 (0.007)	-0.022 (0.000)	0.007 (0.299)	-0.008 (0.248)	0.032 (0.000)	-0.041 (0.000)	1.000

Table IV**Impact of bank debt and financial distress on earnings management**

This table reports the results of the analysis conducted on 5,988 Italian SMEs using data from 2005 to 2012. Equation (3) shows the estimation model adopted for Panel A. Equation (4) shows the estimation model adopted for Panel B. The independent variables are: change in bank debt the following year (Δ Bank), the total current amount of bank debt (TotBank), a dummy variable equal to 1 if firm i in year t is classified as distressed, 0 otherwise (Distress), debt to equity ratio (Lev), the natural log of total assets (Size), return on assets (Roa) and non-operating profit to sales ratio (Noi). We estimate the model using a panel data regression. *, **, ***Significance at 10, 5 and 1 per cent levels, respectively.

Independent variables	Panel A: DA		Panel B: DA	
	Coefficient	Z-Statistics	Coefficient	Z-Statistics
Intercept	0.085	12.36 ***	-0.064	-7.22 ***
Δ Bank	0.004	1.54	0.036	9.31 ***
TotBank	-0.006	-2.00 **	-0.018	-3.80 ***
Distress	-0.002	-3.00 ***	-0.008	-7.31 ***
Lev	0.006	2.24 **	0.005	1.40
Size	-0.004	-5.83 ***	0.006	7.08 ***
Roa	0.038	4.73 ***	-0.062	-5.46 ***
Noi	0.001	0.56	0.000	0.00

Table V**Impact of bank debt and financial distress on earnings management**

This table reports the results of the analysis conducted on 5,988 Italian SMEs using data from 2005 to 2012. Equation (5) shows the estimation model adopted for Panel A. Equation (6) shows the estimation model adopted for Panel B. The independent variables are: change in bank debt the following year (Δ Bank), the total current amount of bank debt (TotBank), a dummy variable equal to 1 if firm i in year t is classified as distressed, 0 otherwise (Distress), a dummy variable equal to 1 if firm i has high change in bank debt in year $t+1$ and is classified as distressed in year t , 0 otherwise (HBank*Distress), debt to equity ratio (Lev), the natural log of total assets (Size), return on assets (Roa) and non-operating profit to sales ratio (Noi). We estimate the model using a panel data regression. *, **, ***Significance at 10, 5 and 1 per cent levels, respectively.

Independent variables	Panel A: DA		Panel B: DA	
	Coefficient	Z-Statistics	Coefficient	Z-Statistics
Intercept	0.085	12.34 ***	-0.064	-7.25 ***
Δ Bank	0.004	1.67 *	0.037	9.46 ***
TotBank	-0.006	-1.94 **	-0.017	-3.67 ***
Distress	-0.002	-1.48	-0.006	-3.61 ***
HBank*Distress	-0.001	-0.80	-0.003	-1.68 ***
Lev	0.006	2.25 **	0.005	1.41
Size	-0.004	-5.84 ***	0.006	7.06 ***
Roa	0.038	4.75 ***	-0.062	-5.39 ***
Noi	0.001	0.55	-0.000	-0.03

Table VI
Robustness Test

This table reports results of the analysis conducted on 2,679 Spanish SMEs using data from 2009 to 2013. Equation (3) shows the estimation model adopted for Panel A. Equation (4) shows the estimation model adopted for Panel B. The independent variables are: change in bank debt the following year (Δ Bank), the total current amount of bank debt (TotBank), a dummy variable equal to 1 if firm i in year t is classified as distressed, 0 otherwise (Distress), debt to equity ratio (Lev), the natural log of total assets (Size), return on assets (Roa) and non-operating profit to sales ratio (Noi). We estimate the model using a panel data regression. *, **, ***Significance at 10, 5 and 1 per cent levels, respectively.

Independent variables	Panel A: DA		Panel B: DA	
	Coefficient	Z-Statistics	Coefficient	Z-Statistics
Intercept	0.096	11.18 ***	0.000	0.03
Δ Bank	-0.000	-0.06	0.178	20.78 ***
TotBank	-0.016	-2.83 ***	-0.169	-20.88 ***
Distress	-0.018	-5.77 ***	0.003	0.78
Lev	0.000	8.96 ***	-0.000	-2.56 ***
Size	-0.006	-7.02 ***	-0.000	-0.03
Roa	0.000	3.17 ***	0.000	0.09
Noi	-0.001	-0.10	-0.002	-0.26

Table VII
Robustness Test

This table reports results of the analysis conducted on 2,679 Spanish SMEs using data from 2009 to 2013. Equation (5) shows the estimation model adopted for Panel A. Equation (6) shows the estimation model adopted for Panel B. The independent variables are: change in bank debt the following year (Δ Bank), the total current amount of bank debt (TotBank), a dummy variable equal to 1 if firm i in year t is classified as distressed, 0 otherwise (Distress), a dummy variable equal to 1 if firm i has high change in bank debt in year $t+1$ and is classified as distressed in year t , 0 otherwise (HBank*Distress), debt to equity ratio (Lev), the natural log of total assets (Size), return on assets (Roa) and non-operating profit to sales ratio (Noi). We estimate the model using a panel data regression. *, **, ***Significance at 10, 5 and 1 per cent levels, respectively.

Independent variables	Panel A: DA		Panel B: DA	
	Coefficient	Z-Statistics	Coefficient	Z-Statistics
Intercept	0.096	11.18 ***	-0.000	-0.03
Δ Bank	-0.001	-0.10	0.180	20.88 ***
TotBank	-0.016	-2.83 ***	-0.169	-20.91 ***
Distress	-0.019	-4.85 ***	0.009	1.85 *
HBank*Distress	0.002	0.41	-0.015	-2.00 **
Lev	0.000	8.96 ***	-0.000	-2.60 ***
Size	-0.006	-7.02 ***	-0.000	0.00
Roa	0.000	3.19 ***	-0.000	0.00
Noi	-0.000	-0.06	-0.003	-0.44

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