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The Italian depreciation suspension policy during the COVID-19 pandemic: consequences on private firms' borrowing capacity

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ABSTRACT We investigate the consequences of adopting a new accrual-based relief mechanism on private firms' borrowing capacity. During the COVID-19 pandemic, the Italian government implemented a temporary change in accounting rules that allowed firms to suspend up to the entire amount of their depreciation and amortisation charges. Using a sample of Italian firms from 2018 to 2021 and a difference-in-differences model, we show that the depreciation and amortisation suspension policy (DASP) adopters, compared to non-adopters, access larger loans and negotiate a lower cost of debt than in the pre-DASP period. Our results are robust to additional tests for potential endogeneity and confounding factors such as earnings management and the adoption of other accounting-based relief mechanisms. We provide evidence that accrual-based relief mechanisms have real economic effects and are effective measures to support firms in managing a systemic shock.

Keywords: COVID-19 relief mechanism; private firms; bank debt; cost of debt; depreciation policy

JEL Classifications: M40; M41; M48

1. Introduction

The outbreak of COVID-19 triggered a global economic crisis which is even worse than the 2007–2009 financial crisis and radically different from past crises in terms of cause, scope, and severity (Reinhart, 2020). Similar to the shock caused by natural disasters (Dal Maso et al., 2022), the rapid spread of the pandemic led to a dramatic change in people's behaviour and affected business activities. This has led to severe social and economic consequences (UNDRR, 2019)¹ and increased systemic risk, which seriously threatens financial stability (FSB, 2020).

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Our study empirically investigates the timeliness of the government interventions and the effectiveness of a non-cash aid mechanism in supporting firms' borrowing capacity during a pandemic. Specifically, we focus on a relief mechanism – the depreciation and amortisation suspension policy (DASP) – issued by the Italian government in August 2020 to support firms after the pandemic outbreak. DASP allows firms to suspend the recognition of depreciation and amortisation (D&A) charges for the 2020 fiscal year. Considering this setting, we assess the extent to which an emergency policy based only on a temporary change in accounting rules is effective in helping firms access bank financing and lower the cost of debt, thus mitigating systemic shocks.

During the pandemic, governments worldwide have attempted to timely alleviate the negative effects of the shock with health and economic policy interventions deployed to contain the spread of the virus, limit job losses, and support firms' survival (Porcher, 2020). Policymakers devised a set of both 'cash aids' and 'non-cash aids' (accrual-based relief mechanisms) to cushion the impacts of the pandemic shock. Cash-aids aim primarily to safeguard corporate liquidity by providing cash via wage payments (Alstadsæter et al., 2020), unemployment benefits, direct transfers (Ilzetzki, 2020), guarantee schemes (Gonzalez-Uribe & Wang, 2021), and temporary moratoria on debt. These measures appear to be effective in mitigating the risk of a potential liquidity crunch triggered by unprecedented drops in revenues², at least in the short-run (De Vito & Gómez, 2020). However, cash aid measures require significant resources and heavily impact government budgets. For instance, in 2020, the Italian government spent 35.3% of its GDP on liquidity support (IMF, 2021; OECD, 2021). Moreover, although cash aids cover firms' current financial needs, they may not be enough to support firms in making innovative investments, which require more consistent financial resources and are necessary to respond proactively to new consumers' demands.

Accrual-based relief mechanisms are non-cash aids that consist of temporary changes in accounting rules. These relief mechanisms use financial information and accounting regulations as strategic tools to help firms manage systemic shocks. Theoretically, accrual-based relief mechanisms are desirable to the extent that they allow financial reporting to fulfil its role of risk mitigation and responsiveness to perceived market imperatives (Bhimani, 2008). Buchetti et al. (2022) performed a simulation study showing that both cash aid measures and accrual-based relief mechanisms can be effective in increasing firms' reported performance and mitigating bankruptcy risk. However, the authors cast doubt on DASP's real effectiveness and draw attention to its possible negative effects on corporate transparency. In particular, Buchetti et al. (2022) warn that DASP, which allows firms to postpone non-financial costs to future periods, could worsen the comparability and quality of financial reporting. The effect of DASP on firms' financial reporting quality is important because it can hamper the effectiveness of this measure in mitigating the pandemic shock, especially concerning firms' borrowing capacity.

Furthermore, previous studies highlight the association between private firms' financial reporting quality and access to debt financing, providing evidence of the relevance of several determinants of disclosure quality, such as IFRS adoption (Balsmeier & Vanhaverbeke, 2018; Bassemir, 2018; Cameran & Campa, 2020) and auditor choice (Kim et al., 2011; Minnis, 2011). Indeed, the chances of attracting bank loan financing tend to increase with better earnings quality (Ding et al., 2016).

It is important to examine whether DASP has a positive effect on firms' borrowing capacity. Our analysis investigates the relevance of financial statements in lending decisions when they depart from GAAP by adopting an emergency and temporary limited legislative provision, that is, DASP. We jointly test the effectiveness, in terms of real economic effects, of a COVID-19 relief mechanism that is solely accrual-based and the lenders' willingness (or ability) to undo accounting choices that inflate reported earnings. Moreover, we shed light on

the effect of the DASP on financial reporting quality. We argue that if DASP is an effective aid measure, then it is an accounting choice that answers existing market imperatives and users' needs (Bhimani, 2008; Sunder, 2016). On the contrary, if DASP is an ineffective aid measure, then it may hamper the quality of financial reporting, even in the short-run (Buchetti et al., 2022), because lenders will undo DASP's effect on reported earnings.

To answer our research question, we employ a large sample of Italian private firms (109,535 firm-year observations) adopting local GAAP and with financial data available in AIDA Bureau Van Dijk for the period from 2018 to 2021. Our sample excludes micro firms and those operating in financial services. The choice to study the Italian empirical setting is driven by three main reasons. First, Italy was the first country outside China to be severely affected by COVID-19 (Davis et al., 2020) and showed the world that the virus spread was hard to contain. Interestingly, Ding et al. (2021) show that capital markets worldwide reacted negatively to the number of COVID-19 cases in Italy but not to the number of cases in China. They interpreted this finding as evidence that global markets reacted only when it was evident that the virus would have spread outside China, causing a real pandemic. Hence, the Italian context provides a unique opportunity to examine the timeliness of government interventions and the implications of accrual-based relief mechanisms based on a temporary halt in accounting regulation. Second, the Italian government was among the most active in responding to the emergency and adopted all types of measures, including temporary debt relief, targeted interventions, expansion of existing programmes, wage subsidies, and temporary tax relief (Zabai, 2020). Therefore, we test the effect of the DASP in a homogenous legal setting, where all firms benefit from a wide set of emergency aids. Third, the Italian economy is characterised by the massive presence of private firms which rely most on bank debt as the primary source of funding (Agostino et al., 2012; Beck et al., 2008); instead, only few firms are listed (Bonacchi et al., 2019). Consequently, preserving private firms' borrowing capacity is of paramount importance in countries like Italy, where the number and relevance of public firms are relatively low compared to private ones (Bar-Yosef et al., 2019). In this setting, the DASP provides an opportunity to a large number of firms that represent a relevant portion of the country's economy.

We estimate the impact of the DASP adoption on firms' borrowing capacity by performing a difference-in-difference (DID) analysis and defining those firms that fully suspended the D&A charges during 2020 as DASP Adopters (hence treated) and the rest of the sample as DASP Non-Adopters (hence controls). The analysis shows that in the post-DASP period, adopters increased their bank debt to total assets by 3% and lowered the cost of debt by 37 basis points relative to non-adopters. These change effects are economically significant; specifically, compared with non-adopters, DASP adopters were able to increase the difference in borrowings by 1.53 times (pre-DASP: 0.019 vs post-DASP: 0.029) and decrease the difference in cost of debt by 53% (pre-DASP: 0.687 vs post-DASP: \triangle 0.365).

Our results remain consistent even after using robust regression estimation, which generates less biased estimates than simple OLS (Leone et al., 2019). We perform four additional analyses to ensure the validity of our findings. First, we corroborate our main results by using propensity score-matching (PSM) to control for differences in firm characteristics between treatment and control groups (Lawrence et al., 2011) and reach similar conclusions after matching each DASP adopter with its nearest neighbour. Second, we check whether our findings could be biased by the prior years' bank loan (cost of debt) level; thus, we include the lagged bank loan (lagged cost of debt) variable in our main model. Third, we use a change analysis by replacing the dependent variable with the year-over-year change to test the potential increase in bank loans and the decrease in the cost of debt. Our findings confirm the effectiveness of policy adoption in enhancing firms' borrowing capacity. Finally, we rule out the alternative explanation that earnings management activity, rather than DASP adoption, is the main driver of the increase in

bank debt and the reduction in the cost of debt (Mafrolla & D'Amico, 2017). Lastly, we control for the adoption of alternative accounting-based relief mechanisms included in Law 126/2020, namely, the re-evaluation of fixed assets. However, the main findings remain unchanged and are statistically significant.

Our results contribute to the literature in several ways. First, we contribute to the recent debate on the economic impact of the pandemic (Belghitar et al., 2022; Buchetti et al., 2022; Carletti et al., 2020; De Vito & Gómez, 2020; Gourinchas et al., 2022) by assessing (ex-post) the real effects of new policy adoption, that enhance firms' liquidity using an accrual-based relief mechanism. Second, we enrich the literature by highlighting how a temporary change in accounting rules, which does not consist of any cash aid, serves as a policy tool to support firm survival during a systemic crisis (Buchetti et al., 2022; Sunder, 2016). Third, we contribute to the literature on the relationship between private firms' financial reporting quality and debt financing (Balsmeier & Vanhaverbeke, 2018; Cameran & Campa, 2020; Ding et al., 2016; García-Teruel et al., 2014; Hope & Vyas, 2017; Mafrolla & D'Amico, 2017; Van Caneghem & Van Campenhout, 2012). Prior literature suggests that introducing new policies that enhance accounting quality is positively related to the amount of (cost of) private debt borrowed. Our study contributes to this research stream by providing evidence of the real effects of a 'temporary' depreciation policy change on the firms' borrowing capacity, suggesting that lenders are unable or unwilling to undo an income-increasing accounting choice, at least in crisis periods.

The remainder of this paper is organised as follows. Section 2 reviews the relevant literature and develops the hypotheses. Section 3 discusses the research methodology. Section 4 presents our findings, and Section 5 presents the conclusions and limitations.

2. Literature review and hypotheses development

2.1. COVID-19 relief mechanism in Italy: law 126/2020 and the depreciation and amortisation suspension policy

The COVID-19 outbreak was first reported in China at the end of 2019, and it rapidly spread to Italy, which was not only the first country to be severely affected by the pandemic (Davis et al., 2020) but also among the most active ones in responding to the emergency.

Two main pandemic waves occurred, in which the infections peaked, and the public system risked falling apart in March 2020 and February 2021, respectively. Firms appeared to have learnt a lot from the first wave which, in terms of market reaction, was more harmful than the second one (Ahmad et al., 2021). Moreover, industry sectors were affected differently because of the dramatic change in customers' behaviours. Some sectors were severely hit (i.e. energy, equipment, and airlines), whereas others (e.g. food, staples, and retail) were positively affected, benefitting from the lockdown periods (Szczygielski et al., 2022).

The COVID-19 outbreak halted the global economy, hitting firms and pushing many of them towards bankruptcy (Didier et al., 2021). Thus, the Italian government committed to reduce the spillover effects of the pandemic through several health measures (i.e. lockdowns and restrictions on people's mobility) and policy interventions to support firms' liquidity and survival. Specifically, policymakers deployed a set of measures that included expansionary monetary policy, temporary debt relief, targeted interventions, expansion of existing programmes, wage subsidies, and temporary tax relief (Zabai, 2020).

In particular, Law 126/2020, also referred to as the 'August Decree', was issued to provide Italian-GAAP firms with the opportunity to choose whether to adopt two different accrual-based relief mechanisms: the depreciation and amortisation suspension policy (DASP) and the revaluation of the fixed asset policy. Under Italian-GAAP, firms cannot suspend D&A

charges, even if they do not use the fixed asset for the entire accounting period; similarly, firms cannot revalue any fixed asset unless to reverse a prior impairment loss. The logic behind the two accrual-based relief mechanisms is to reduce the impact of losses on firms' equity and to better cope with the pandemic shock. Thus, although the accounting channels through which they operate are essentially different, both relief mechanisms aim to maintain (or increase) firms' equity book value.

Specifically, the DASP allows Italian-GAAP firms to suspend up to 100% of their D&A charges in their 2020 financial statements. According to the Law, managers can voluntarily adopt this policy without the need to fulfil any particular conditions, such as pandemic-related sales reductions or earnings losses. This relief mechanism affects the income statement items by generating an increase in operating profit and net income, whereas the revaluation of fixed assets only affects the balance sheet in the year of revaluation.³

Firms adopting the DASP can avoid recording D&A charges in the current year and subsequently extend the original useful life by one year. However, when it is impossible to extend an asset's useful life due to its internal characteristics or contractual terms, firms are required to increase their D&A charges in the years following policy adoption.

With the issue of Law 15/2022 (namely, 'Decreto Milleproroghe'), the Italian government extended the opportunity to suspend D&A charges in the 2021 and 2022 fiscal years, thus allowing firms to adopt the same mechanism designed by Law 126/2020. However, although this accrual-based relief mechanism may help firms mitigate the negative effects of the pandemic, it generates a misalignment between the Italian accounting standards (ITA-GAAP) and the International Accounting Standards (IAS/IFRS). Furthermore, the temporary suspension of D&A charges introduces a high level of accounting discretion, with several consequences on the transparency and comparability of the financial statements (Buchetti et al., 2022).

2.2. Governmental policies and relief mechanisms during the COVID-19 pandemic

The pandemic shock led to temporary halts in several economic activities worldwide, dramatically decreasing firms' productivity and sales (Ozili & Arun, 2023). Governments attempted to mitigate the negative effects of the systemic shock by 'freezing the economy' (Atlantic, 2020a, b; Wall Street Journal, 2020). Several countries have applied a 'hibernation' strategy by releasing aid policies aimed at compensating for the general losses suffered by many firms and supporting them in maintaining valuable relationships with their stakeholders (Didier et al., 2021).

The 'hibernation' includes a liquidity injection to sustain the minimum expenses (i.e. wages, rental fees, and loan interests) that firms must cope with when they cease operations during the lockdown. Using a cross-country approach, De Vito and Gómez (2020) estimate that bridge loans and loan guarantee interventions are effective tools in levelling the risk of a firm cash crunch, which can occur during a macroeconomic event that forces businesses to stop their regular activities.

Among the advanced economies, Italy is not only the most distressed country outside China (Ding et al., 2021) but also the economy that has invested the most in liquidity support, reaching 35.3% of its gross domestic product (GDP). On the contrary, the US government provided lower liquidity support, equal to USD 510 billion and 2.4% of its GDP (IMF, 2021). The US government supported small businesses through several acts that designed loan guarantees and relief mechanisms (Bloom et al., 2021; OECD, 2021). Similarly, the UK government has issued several extraordinary measures, two of them being the Coronavirus Job Retention Scheme, which covers up to 80% of the costs related to wages, and the Bounce Back Loan Scheme, which provides liquidity to firms through state-guaranteed loans of up to £50,000. According

to Belghitar et al. (2022), the aforementioned schemes generate three main effects. First, the policies supported the labour market and prevented substantial job losses. Second, they decreased the number of firms that would have reported a negative EBITDA. Third, these policies extended firms' lifetimes by at least two months thanks to the liquidity injection.

Instead, the Italian government took a multi-perspective approach via both cash contributions (cash-based) and accrual-based relief mechanisms to support firms from the illiquidity risk (De Vito & Gómez, 2020) and potential corporate defaults (Buchetti et al., 2022). As Italy was the first country to be hit by the pandemic in February 2020, several scholars attempted to forecast the impact of the shock on firms' survival using the financial statement data available at that time (mainly related to the 2019 fiscal year). Carletti et al. (2020) estimated that a 3-month lockdown in Italy could cause a drop of approximately 10% of the Italian GDP in private firms' earnings and drive 17% of the firms included in their sample into distress. Similarly, using the 2019 financial data of a sample of private Italian firms, Buchetti et al. (2022) forecast the impact of the pandemic on profitability, equity shortfalls, and corporate default risk, suggesting that in the absence of government intervention, the number of distressed firms will reach one-quarter of their sample (comprising 586,086 unique firms) compared to the 10% that occurred in the pre-pandemic year.

Although cash-based interventions (e.g. paying employees' salaries, a one-off contribution to replace missed revenues, and supporting fixed costs) cover current financial needs, they only solve liquidity needs in the short term. Indeed, these measures may be inadequate to support firms in making innovative investments, which require more consistent financial resources to respond proactively to new consumers' demands.

An alternative solution proposed by governments exploits the role of corporate financial information and temporary changes in accounting regulations to help firms manage systemic shocks (Bhimani, 2008). Prior studies highlight the risk of liquidity shortage (De Vito & Gómez, 2020) and forecast the positive effects of accounting-based relief mechanisms to cope with potential bankruptcies (Buchetti et al., 2022). However, to the best of our knowledge, there is still a lack of empirical studies that test, *ex-post*, the effectiveness of accrual-based relief mechanisms in enhancing firms' borrowing capacity.

2.3. Private firms' reporting quality and borrowing capacity

In recent decades, international standard-setting bodies have made significant progress in increasing the comparability of the financial statements prepared by listed companies. However, the case of private firms is very different because their financial disclosure requirements are generally limited and depend on specific jurisdictions. In European countries (Beuse-linck et al., 2023), policymakers regulate private firms' disclosure by issuing local GAAP within an EU Directive framework (EU 2013/34), whereas in the US, these firms are not required to make public disclosures (Clatworthy et al., 2006). Thus, even if the amount of financial information is driven by the accounting standard requirements and the demand of stakeholders, that is, creditors, lenders, and others (Ball & Shivakumar, 2005; Hope & Vyas, 2017), 'valuable' internal information often remains undisclosed to outsiders.

Financial reporting is central to mitigating information asymmetry (Jensen & Meckling, 1976) and resolving potential disagreements between borrowers and lenders during debt contracting processes (Ding et al., 2016). This mechanism pertains to the role of high-quality reporting in lowering the risk associated with firms' valuation, and it is critical in forecasting future cash flows (Hope & Vyas, 2017; Minnis & Shroff, 2017). Consequently, corporate financial information serves as a strategic tool to attract bank financing, especially for private firms which rely mostly on this source of funding (Bar-Yosef et al., 2019; Berger & Udell, 1995; Kim et al., 2011). This relationship is particularly relevant in the Italian context, where most firms

are private (Bonacchi et al., 2019), and the primary funding source is bank debt (Agostino et al., 2012; Beck et al., 2008).

As private firms are the primary growth engine in many economies (Bar-Yosef et al., 2019; Prencipe et al., 2014), several studies investigate the determinants (Balsmeier & Vanhaverbeke, 2018) and consequences of private firms' reporting quality and its effect on bank-financing (Bassemir, 2018; Cameran & Campa, 2020). Private firms adopting IFRS experience greater loan amounts (Balsmeier & Vanhaverbeke, 2018) and lower cost of debt (Florou & Kosi, 2015; Kim et al., 2011).

Apart from the adoption of IFRS, banks are typically concerned about the trustworthiness, completeness, and reliability of borrowers' accounting documents. Therefore, private firms increase their opportunities for debt financing and lower their cost of capital when they provide 'reliable' financial information (Azzali & Mazza, 2017; Ding et al., 2016). García-Teruel et al. (2014) investigate whether a higher level of earnings quality, which better predicts future cash flows, reduces information asymmetries in the lending process and increases the amount of bank debt borrowed. Using a sample of Spanish small and medium-sized enterprises (SMEs), the authors find that accrual quality is positively related to the amount of bank debt obtained. Van Caneghem and Van Campenhout (2012) reach similar conclusions by examining the association between the presence of external auditors (i.e. Big 4 auditors) and the accounting quality of Belgian SMEs.

Prior studies on earnings management suggest that managerial discretion over accounting numbers gives firms an incentive to manipulate their earnings (Shivakumar, 2000), especially when borrowers aim to enhance their financial position to obtain greater financing (Dichev & Skinner, 2002; Shivakumar, 2013). Moreover, the extant literature examines managers' accounting choices when a high risk of violating debt covenants approaches (DeAngelo et al., 1994; DeFond & Jambalvo, 1994; Healy & Palepu, 1990) and the firm's operating environment changes (Skinner, 1993). Sweeney (1994) finds that managers engage in income-increasing practices by changing their depreciation methods to comply with covenants in debt agreements as firms approach a potential failure. Other studies show how changes in D&A policies can effectively increase reported earnings (Hermann & Inoue, 1996; Teoh et al., 1998).

Mafrolla and D'Amico (2017) investigate whether borrowers engage in earnings management in the periods before and after the year of lending. They find that firms managing accounting numbers not only obtain greater loans with lower interest rates but also avoid violating accounting-based debt covenants.

The release of the DASP by the Italian Government creates a unique opportunity for private firms to increase their reported net income without engaging in earnings management through the (temporary) suspension of D&A charges. Hence, firms reduce the negative impact of the pandemic and, by meeting lenders' financial expectations, they can enhance their borrowing capacity. However, it is worth mentioning that any accrual-based relief mechanism, such as the DASP, does not directly affect a firm's present and future cash flows. Consequently, it is not trivial that the DASP can be pivotal in bolstering a firm's borrowing capacity. Thereby, these two contrasting perspectives require further empirical investigation.

Following Buchetti et al. (2022), who suggest that accounting-based mechanisms are effective in contrasting exogenous systemic shocks, we argue that firms that adopt the DASP are granted larger loans and generally have a lower cost of debt than non-adopters in the post-DASP period. Thus, we hypothesise the following:

H₁: Private firms' access to bank financing increases following DASP adoption.

H₂: Private firms' cost of borrowing decreases following DASP adoption.

3. Research design

3.1. Determinants of DASP adoption

To test our hypotheses, we focus on the private Italian non-financial firms that, starting from the 2020 fiscal year, have the option (but not the obligation) to adopt the DASP included in Law 126/2020. Similar to prior studies on the voluntary adoption of the IFRS (Cameran & Campa, 2020), we first investigate the determinants of the voluntary adoption of the DASP by performing a first-stage probit regression⁴:

$$\begin{aligned}
 Adopters_{i,t} = & \beta_0 + \beta_1 Size_{i,t} + \beta_2 Sales\ Growth_{i,t} + \beta_3 ROA_{i,t} + \beta_4 Neg.Earnings_{i,t} + \\
 & + \beta_5 Cash\ Holdings_{i,t} + \beta_6 Leverage_{i,t} + \beta_7 Coverage\ ratio_{i,t} + \\
 & + \beta_8 Altman\ Z_{i,t} + \beta_9 Big4_{i,t} + \beta_{10} Audit\ Committee_{i,t} + \beta_{11} Age_{i,t} + \\
 & + \beta_{12} Capex_{i,t} + \beta_{13} Lag\ Dep.\ Ratio_{i,t} + \beta_{14} Lag\ Tangibility_{i,t} + \\
 & + Industry\ FE + Region\ FE + Year\ FE + \varepsilon_{i,t}
 \end{aligned} \quad (1)$$

where firms that suspended 100% of their D&A charges are classified as *Adopters*, while the rest of the private Italian firms are defined as *Non-Adopters*. Specifically, we identify the *Adopters* of the DASP in 2020⁵ (which represent our treatment group) as those firms that meet the following criteria: (i) reported zero D&A expenses in the 2020 income statement, (ii) reported either depreciable tangible or intangible assets as at the 2020 balance sheet, (iii) reported D&A expenses different from zero in the 2019 income statement, and (iv) reported either depreciable tangible or intangible assets as at the 2019 balance sheet.

Furthermore, we test whether the probability of adopting the DASP is associated with the firm's *Size*, computed as the natural logarithm of total assets, and *Sales Growth*, which is the annual change in net sales scaled by prior year sales. Moreover, we include *ROA*, as the operating income divided by the beginning total assets. *Negative Earnings* is an indicator variable equal to 1 if the lagged net income is negative and 0 otherwise. The latter condition could represent an incentive to manage earnings to increase reporting quality (DeGeorge et al., 1999; Marra et al., 2011) and, therefore, could be associated with the likelihood of suspending D&A charges. *Cash Holdings* is computed as the cash and cash equivalents divided by the beginning total assets. Other variables are included to examine whether the probability of adopting the DASP is associated with firms' financial health: *Leverage*, which is the total liabilities divided by total equity; *Coverage ratio*, which controls for the portion of interest and financial expenses covered by operating income; and *Altman Z* (Altman, 1993) for manufacturing firms, which has been added to verify potential bankruptcy.

Private firms are not required to have their financial statements audited by an accounting firm. However, external audits signal to lenders that the financial reports are of high quality, thus reducing information asymmetry between lenders and borrowers and facilitating debt financing (Ding et al., 2016). Following Marra et al. (2011), we include the dummy variables *Big 4*, which takes the value of 1 if the auditor is a Big 4 company and 0 otherwise, and *Audit Committee*, which is equal to 1 if there is an audit committee and 0 otherwise. As a further control variable, we compute the firm's *Age* as the difference between the current year t and the year of incorporation.

Finally, we control for some features related to the depreciation policy, namely, the amount of capital expenditures scaled by beginning total assets (*CAPEX*); the previous year's depreciation ratio (*Lag Dep. Ratio*); and *Lag Tangibility*, as the lagged property, plant, and equipment divided by the total assets at the beginning of the period. Similarly to Bergbrant and Hunter (2018), to minimise the likelihood that outliers will overly influence our results, we winsorise all firm-

level variables at the 5th and 95th percentiles. All variables definition are provided in Appendix A.

3.2. Test for bank financing and cost of borrowing

The Italian government released a set of interventions to prevent the negative impact of the outbreak and support firms in reducing potential liquidity crunch. Among others, the Italian policy-makers allowed firms to suspend D&A charges in their income statements. We posit that DASP adoption positively affects earnings and enhances the likelihood of obtaining larger bank loans and lower cost of debt.

To test the variation in borrowing capacity prior to the enactment of Law 126/2020, we examine two main aspects of debt contracting: the amount of bank financing and the cost of borrowing (Ding et al., 2016; Mafrolla & D'Amico, 2017). The governmental policy, in fact, provides firms with a unique opportunity to increase their reported net income, which can positively affect their creditworthiness without necessarily engaging in earnings management or, worst, in fraudulent accounting. We use a difference-in-differences (DID) design, similar to prior studies on the voluntary adoption of the IFRS (Cameran & Campa, 2020; Wu & Zhang, 2009) and compensation clawback provision (Chen & Vann, 2017; Dehaan et al., 2013; Lin, 2017). Thus, the dummy variable *Adopters* takes the value of 1 if the firm fits into the treatment group and 0 otherwise (as defined in Section 3.1). We denote the D&A suspension period using the dummy variable *POST*, which takes the value of 1 if the year is 2020, when Law 126/2020 entered in force, or beyond, and 0 otherwise. We identify the DID estimator from the interaction between *Adopters* and *POST*, which aims to capture whether DASP adoption affects the amount of bank debt borrowed and the cost of debt. Thus, the interaction term *Adopters*POST* takes the value of 1 from the year *t* when firm *i* has fully suspended its D&A charges and 0 otherwise.

We perform an ordinary least squares (OLS) regression using the following empirical models⁶ and test the effects of voluntary DASP adoption on private firms' amount of bank debt (Equation 2) and cost of borrowing (Equation 3):

$$\begin{aligned} \text{Bank Debt}_{i,t} = & \beta_0 + \beta_1 \text{Adopters}_{i,t} + \beta_2 \text{POST}_{i,t} + \beta_3 \text{Adopters*POST}_{i,t} + \\ & + \sum_i \beta_i \text{CONTROL}_{i,t} + \text{Industry FE} + \text{Region FE} + \text{Year FE} + \varepsilon_{i,t} \end{aligned} \quad (2)$$

$$\begin{aligned} \text{Cost of Debt \%}_{i,t} = & \beta_0 + \beta_1 \text{Adopters}_{i,t} + \beta_2 \text{POST}_{i,t} + \beta_3 \text{Adopters*POST}_{i,t} + \\ & + \sum_i \beta_i \text{CONTROL}_{i,t} + \text{Industry FE} + \text{Region FE} + \text{Year FE} + \varepsilon_{i,t} \end{aligned} \quad (3)$$

where *Bank Debt* is the total amount of bank debt scaled by total assets for firm *i* at the beginning of year *t* (Mafrolla & D'Amico, 2017), and the *Cost of Debt %*⁷ is measured as the ratio of the total financial expenses divided by the interest-bearing financial debt (in percentage) (Ding et al., 2016; Francis et al., 2005; La Rosa et al., 2018).

In addition, we include a variety of controls to consider firm-level factors which could affect bank financing and the cost of borrowing. We control for firm heterogeneity using *Size* (Cassar et al., 2015), *Sales Growth*, *ROA*, and *Neg. Earnings* (Marra et al., 2011). We also control for borrowers' liquidity and ability to finance their internal financial needs by including *Cash Holdings* (Ahn & Choi, 2009), *Leverage*, *Coverage ratio*, and other controls, such as *Altman Z*, *Big 4*, *Audit Committee* (Marra et al., 2011) and firm *Age*. Finally, we control for *Lag Tangibility*, as suggested by prior studies on the cost of debt and access to debt financing (La Rosa et al.,

2018), and add the previous year's depreciation ratio (*Lag Dep. Ratio*). We include the year fixed effects to capture common macroeconomic influences on bank debt (cost of debt), industry (at the 2-digit NACE level), and region fixed effects to control for potential differences across sectors and regions in Italy.⁸ Finally, to control for potential self-selection bias, we include the inverse Mills ratio (*IMR*) from Equation 1 as an additional independent variable in Equations 2 and 3.

3.3. Sample selection

We collect a sample of 185,192 firm-year observations and 46,298 unique private Italian (registered) firms with available nonconsolidated financial statements and other firm characteristics for all years between 2018 and 2021 from the AIDA database (Bureau Van Dijk). We include in the sample all firms that had the opportunity to adopt DASP in their 2020 financial statements, thus ending the fiscal year after the enactment of Law 126/2020. As reported in Table 1, our sample includes firms that meet the following criteria: (i) active firms in 2018, (ii) firms that are not operating in financial sectors (NACE codes different from 6400–6699), (iii) firms complying with the Italian GAAP, (iv) firms with sizes above the micro-firm definition⁹ (employees ≥ 10 ; turnover $> \text{€}2$ million; total assets $> \text{€}2$ million), and (v) firms with non-missing financial accounting data. As a result, our final sample comprises 109,535 firm-year observations (32,826 unique firms).¹⁰

4. Results

4.1. Descriptive statistics and univariate analysis

Table 2 provides the full sample descriptive statistics for the variables considered in this study. We find that 3.6% of the firms suspended the entire amount of their D&A charges in the first fiscal year following the enactment of Law 126/2020. The descriptive statistics reveal that the average amount of bank debt accounts for 20.3% of the firm's total assets, with a standard deviation of 0.174. On average, firms pay a cost of debt of 3.17%, with a standard deviation of 3.661.

Our sample reports average total assets of €46 million and a return on assets of 6.2%. Approximately 12.9% of firms reported losses in the year prior to the bank lending, and 17.3% are audited by a Big 4 company.

Panels A and B of Table 3 show the descriptive statistics and univariate analysis for both sub-samples of *Adopters* and *Non-Adopters*. Specifically, for each sub-sample, we compute the mean

Table 1. Sample selection.

	Firm-year obs.
Firms with limited liability and available non-consolidated financial statements for the fiscal years from 2018 to 2021	185,192
(–) Firm-year obs. with the 2020 fiscal year ending before the enactment of Law 126/2020 (i.e. August 15th, 2020)	(3,532)
(–) Firm-year obs. with non-active status	(5,856)
(–) Firm-year obs. in the financial industry (NACE codes: 6400 - 6699)	(8,024)
(–) Firm-year obs. adopting IAS-IFRS	(3,806)
(–) Firm-year obs. with micro-firm size	(41,504)
(–) Observations with missing values	(12,935)
Final sample	109,535

Table 2. Descriptive statistics.

Full sample	Variables	N	Mean	Std. Dev.	5th Perc	Q1	Median	Q3	95th Perc
455	<i>Adopters</i>	109,535	0.036	0.187	0.000	0.000	0.000	0.000	1.000
	<i>Bank Debt</i>	109,535	0.203	0.174	0.000	0.034	0.177	0.335	0.544
	<i>Cost of Debt %</i>	109,535	3.172	3.661	0.002	0.970	1.929	3.662	15.086
	<i>Size</i>	109,535	9.823	1.099	7.692	9.078	9.655	10.413	13.130
	<i>Sales Growth</i>	109,535	0.065	0.224	▲-0.313	▲-0.069	0.033	0.165	0.622
	<i>ROA</i>	109,535	0.062	0.070	▲-0.044	▲-0.017	0.043	0.094	0.246
460	<i>Neg. Earnings</i>	109,535	0.129	0.335	0.000	0.000	0.000	0.000	1.000
	<i>Cash Holdings</i>	109,535	0.119	0.129	0.000	0.018	0.070	0.178	0.467
	<i>Leverage</i>	109,535	3.140	3.423	0.215	0.858	1.838	3.948	13.506
	<i>Coverage Ratio</i>	109,535	56.019	122.526	▲-10.590	2.022	8.053	38.160	513.096
	<i>Altman Z</i>	109,535	2.048	1.008	0.581	1.308	1.876	2.605	4.612
	<i>Big4</i>	109,535	0.173	0.379	0.000	0.000	0.000	0.000	1.000
465	<i>Audit Committee</i>	109,535	0.692	0.462	0.000	0.000	1.000	1.000	1.000
	<i>Age</i>	109,535	27.659	14.815	5.000	16.000	27.000	38.000	58.000
	<i>CAPEX</i>	109,535	0.051	0.067	0.000	0.006	0.023	0.066	0.250
	<i>Lag Dep. Ratio</i>	109,535	0.179	0.128	0.031	0.079	0.142	0.249	0.500
	<i>Lag Tangibility</i>	109,535	0.200	0.183	0.003	0.040	0.147	0.315	0.614

Notes: This table presents the descriptive statistics of the key variables used in the empirical study for a sample of 109,535 firm-year observations from the 2018 to 2021 fiscal years. Continuous variables are winsorized at the 5th and 95th percentiles. See Appendix A for variables definition.

differences to examine all variables' changes in the period before and after the DASP's entry into force. We find significant differences in borrowing capacity proxies between the pre- and post-2020 periods for both the *Adopters* and *Non-Adopters* groups. The average bank debt for *Adopters* increases by 4% in the post-period, while for *Non-Adopters* the increase is only 1%. *Adopters* report a decrease in the average cost of debt of almost 1%, whereas the change in the cost of debt is less than 0.5% for *Non-Adopters*. These results suggest that the decision to adopt the DASP provides firms with higher borrowing capacity and lower cost of borrowing compared to firms that do not opt for this policy.

Moreover, we find that *Adopters* report a decrease in both sales growth and profitability of 6% and 2%, respectively, in the post-DASP period. *Non-Adopters* do not experience a change in sales growth or operating performance in the period of interest: *Sales Growth* change is equal to 0 and is not statistically significant, whereas the change in *ROA* is significant and unchanged in the pre- and post-period. Furthermore, in line with the estimation of Buchetti et al. (2022), the worsening of *Altman Z* suggests a general increase in the number of distressed firms among both *Adopters* and *Non-Adopters*. However, in the pre-DASP period, the average *Altman Z* value is equal to 1.62 for *Adopters*, whereas *Non-Adopters* report a higher average score (2.09), indicating a higher probability of the first group going bankrupt. Moreover, we find a significant, at the 1% level, and negative change of 0.28% in the *Altman Z* value between the pre- and post-DASP periods for *Adopters*, while this variation is only ▲-0.05 for *Non-Adopters*.

These results suggest that the effect of government intervention is unable to equally mitigate the negative consequences of the COVID-19 pandemic over the two sub-samples. In fact, despite the suspension of D&A charges, which hampers the comparability of accounting information between firms (Buchetti et al., 2022), *Adopters* face a stronger worsening of their performance in the post-DASP period.

Table 4 presents Pearson's correlation coefficients for the pooled sample among the variables tested in our multivariate regression models. *Bank Debt* is negatively correlated to firm size,

Table 3. Univariate analysis.

Panel A: Adopters in the Pre- vs. Post- DASP									
Variables	Pre			Post			[Post – Pre]		
	N	Mean	Median	N	Mean	Median	Diff.in means	t-stat.	
<i>Bank Debt</i>	2,116	0.26	0.26	1,852	0.30	0.32	0.04	7.89	***
<i>Cost of Debt %</i>	2,116	4.07	3.16	1,852	3.29	2.48	↗0.78	↗7.62	***
<i>Size</i>	2,116	9.49	9.39	1,852	9.56	9.48	0.08	2.52	**
<i>Sales Growth</i>	2,116	0.05	0.02	1,852	↗0.01	↗0.09	↗0.06	↗7.56	***
<i>ROA</i>	2,116	0.03	0.02	1,852	0.01	0.01	↗0.02	↗13.96	***
<i>Neg. Earnings</i>	2,116	0.20	0.00	1,852	0.39	0.00	0.19	13.25	***
<i>Cash Holdings</i>	2,116	0.06	0.02	1,852	0.08	0.04	0.02	7.58	***
<i>Leverage</i>	2,116	5.45	4.04	1,852	5.31	3.81	↗0.13	↗0.98	
<i>Coverage Ratio</i>	2,116	9.34	1.89	1,852	4.23	1.13	↗5.11	↗3.83	***
<i>Altman Z</i>	2,116	1.62	1.46	1,852	1.34	1.13	↗0.28	↗10.39	***
<i>Big4</i>	2,116	0.08	0.00	1,852	0.10	2.13	0.01	1.37	
<i>Audit Committee</i>	2,116	0.65	1.00	1,852	0.60	3.13	↗0.05	↗3.35	***
<i>Age</i>	2,116	24.98	23.00	1,852	26.21	4.13	1.23	2.57	**
<i>CAPEX</i>	2,116	0.05	0.02	1,852	0.05	5.13	0.00	2.12	**
<i>Lag Dep. Ratio</i>	2,116	0.16	0.12	1,852	0.11	6.13	↗0.05	↗12.20	***
<i>Lag Tangibility</i>	2,116	0.20	0.14	1,852	0.21	7.13	↗0.02	↗3.06	***
Panel B: Non-Adopters in the Pre- vs. Post- DASP									
Variables	Pre			Post			[Post – Pre]		
	N	Mean	Median	N	Mean	Median	Diff.in means	t-stat.	
<i>Bank Debt</i>	55,607	0.20	0.17	49,960	0.20	0.14	0.01	9.04	***
<i>Cost of Debt %</i>	55,607	3.37	2.07	49,960	2.90	0.00	↗0.47	↗20.83	***
<i>Size</i>	55,607	9.77	9.59	49,960	9.90	0.18	↗0.13	↗19.62	***
<i>Sales Growth</i>	55,607	0.07	0.04	49,960	0.07	1.72	0.00	0.63	
<i>ROA</i>	55,607	0.06	0.05	49,960	0.06	9.74	0.00	↗2.26	**
<i>Neg. Earnings</i>	55,607	0.11	0.00	49,960	0.14	0.03	0.03	↗16.62	***
<i>Cash Holdings</i>	55,607	0.10	0.05	49,960	0.14	0.04	0.04	54.45	***
<i>Leverage</i>	55,607	3.33	1.97	49,960	2.75	0.00	↗0.58	↗27.89	***
<i>Coverage Ratio</i>	55,607	53.61	8.20	49,960	62.60	0.10	↗8.99	↗11.75	***

<i>Altman Z</i>	55,607	2.09	1.93	49,960	2.04	1.60	0.05	8.43	***
<i>Big4</i>	55,607	0.17	0.00	49,960	0.19	9.43	0.02	8.19	***
<i>Audit Committee</i>	55,607	0.71	1.00	49,960	0.68	1.86	0.03	10.09	***
<i>Age</i>	55,607	27.07	26.00	49,960	28.48	0.00	1.41	15.49	***
<i>CAPEX</i>	55,607	0.04	0.02	49,960	0.06	1.00	0.01	34.21	***
<i>Lag Dep. Ratio</i>	55,607	0.18	0.14	49,960	0.18	28.00	0.00	4.23	***
<i>Lag Tangibility</i>	55,607	0.20	0.14	49,960	0.20	0.02	0.01	6.23	***

Notes: This table presents the descriptive statistics of the key variables used in the study for the sub-samples of DASP *Adopters* and *Non-Adopters*. Panel A (B) reports the *t-test* to compare the mean differences of each variable between the Post- and Pre-DASP period for the *Adopters* (*Non-Adopters*) sub-sample. Continuous variables are winsorized at the 5th and 95th percentiles. See Appendix A for variables definition. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 4. Pearson correlation matrix.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) <i>Adopters</i>	1								
(2) <i>Bank Debt</i>	0.087***	1							
(3) <i>Cost of Debt %</i>	0.028***	↗0.235***	1						
(4) <i>Size</i>	↗-0.053***	↗0.050***	↗-0.132***	1					
(5) <i>Sales Growth</i>	↗-0.036***	0.030***	↗-0.008***	0.022***	1				
(6) <i>ROA</i>	↗-0.119***	↗-0.155***	0.073***	↗-0.065***	0.284***	1			
(7) <i>Neg. Earnings</i>	0.092***	↗-0.022***	↗-0.006*	0.028***	0.044***	↗-0.296***	1		
(8) <i>Cash Holdings</i>	↗-0.075***	↗-0.134***	0.049***	↗-0.103***	0.065***	0.355***	↗-0.121***	1	
(9) <i>Leverage</i>	0.127***	0.238***	0.033***	↗-0.142***	0.061***	↗-0.267***	0.156***	↗-0.181***	1
(10) <i>Coverage Ratio</i>	↗-0.078***	↗-0.368***	↗-0.058***	0.044***	0.083***	0.503***	↗-0.141***	0.274***	↗-0.237***
(11) <i>Altman Z</i>	↗-0.107***	↗-0.361***	0.169***	↗-0.146***	0.105***	0.516***	↗-0.206***	0.276***	↗-0.249***
(12) <i>Big4</i>	↗-0.043***	↗-0.184***	↗-0.072***	0.423***	↗-0.003	↗-0.016***	0.112***	↗-0.081***	↗-0.055***
(13) <i>Audit Committee</i>	↗-0.028***	↗-0.050***	↗-0.074***	0.388***	↗-0.056***	↗-0.072***	0.034***	↗-0.046***	↗-0.158***
(14) <i>Age</i>	↗-0.028***	↗-0.021***	↗-0.052***	0.177***	↗-0.091***	↗-0.086***	0.000	↗-0.027***	↗-0.247***
(15) <i>CAPEX</i>	0.001	0.155***	↗-0.067***	0.050***	0.043***	0.079***	↗-0.041***	0.057***	↗-0.058***
(16) <i>Lag Dep. Ratio</i>	↗-0.064***	↗-0.181***	0.035***	↗-0.133***	↗-0.016***	0.138***	↗-0.025***	0.160***	0.057***
(17) <i>Lag Tangibility</i>	0.005*	0.152***	↗-0.079***	0.117***	↗-0.016***	↗-0.135***	0.063***	↗-0.173***	↗-0.163***
Variables	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
(10) <i>Coverage Ratio</i>	1								
(11) <i>Altman Z</i>	0.423***	1							
(12) <i>Big4</i>	0.077***	↗-0.020***	1						
(13) <i>Audit Committee</i>	0.016***	↗-0.037***	0.175***	1					
(14) <i>Age</i>	0.016***	↗-0.030***	↗-0.016***	0.214***	1				
(15) <i>CAPEX</i>	↗-0.028***	↗-0.117***	0.014***	↗-0.022***	↗-0.038***	1			
(16) <i>Lag Dep. Ratio</i>	0.143***	0.207***	0.081***	↗-0.036***	↗-0.137***	↗-0.042***	1		
(17) <i>Lag Tangibility</i>	↗-0.125***	↗-0.262***	↗-0.028***	0.042***	0.165***	0.196***	↗-0.545***	1	

Notes: Continuous variables are winsorized at the 5th and 95th percentiles. See Appendix A for variables definition. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

profitability, and probability of bankruptcy. In contrast, *Cost of Debt %* is negatively correlated to both the amount of bank debt and firm size. The correlation between *Bank Debt* (*Cost of Debt %*) and the other variables adopted in the model is generally significant and in line with the previous literature (Mafrolla & D'Amico, 2017).

4.2. Multivariate regression results

4.2.1. Determinants of the adoption of the DASP

Table 5 shows the results of the probit regression model that investigates the determinants of depreciation suspension policy adoption. Consistent with our expectations, the model indicates that smaller firms are associated with a greater likelihood of adopting the DASP, as well as those with lower profitability and sales growth. Additionally, firms not being audited by a Big 4 company and reporting a higher level of leverage are also more likely to suspend their D&A charges. The likelihood of adopting the suspension policy is positively associated with a lower cash holding behaviour (the coefficient of *Cash Holdings* is equal to -1.089 , and the p -value < 0.01), reported losses in the year prior to the bank lending (the coefficient of *Neg. Earnings* is 0.232), and higher bankruptcy risk (with the coefficient of *Altman Z* equal to 0.164).

4.2.2. Consequences of DASP adoption on bank financing

Table 6 shows the results of the test of H_1 examining whether private firms' access to bank financing is higher for *Adopters* than for *Non-Adopters* after the release of Law 126/2020. Consistent with H_1 , in both Columns (1) and (2), we find a positive and statistically significant coefficient on the DID estimator (*Adopters*POST*) for *Bank Debt*. The interaction term coefficient in Column (1) is 0.029 , and it is significant at the 1% level. Thus, the results suggest that firms suspending D&A charges are granted larger bank loans compared to the period before the enactment of Law 126/2020. The results in Column (1) are robust after controlling for industry and region fixed effects, whereas Column (2) includes also the year fixed effects.

Similarly, Columns (3) and (4) report the estimation of Equation 3, with *Cost of Debt %* as a dependent variable. Coefficient β_3 provides useful information for assessing the impact of DASP adoption on the cost of borrowing based on a DID approach. The coefficient of the interaction term is negative and significant at the 1% level in both models ($\beta_3 = -0.366$, p -value < 0.01 in Column (4)). Therefore, the DASP significantly reduces the cost of borrowing for *Adopters* compared to the period before the policy issue. Consequently, our H_2 is confirmed.¹¹

Consistent with previous studies (Mafrolla & D'Amico, 2017), most control variables included in our models are highly statistically significant, suggesting that we control for factors that are relevant to the amount of bank financing and its cost. Specifically, we find that bank financing is positively associated with a firm's profitability and growth. The amount of *Bank Debt* is negatively associated with the presence of *Negative Earnings* reported in the financial statements of year $t-1$ and positively related to *Altman Z*, and *Cash Holdings* (at the 1% level). Symmetrically and in line with our expectations, *Cost of Debt %* is negatively associated with the firm's *Size* and *Altman Z* and positively associated with *Negative Earnings* reported in the previous year's financial statements.

Finally, in Columns (1) to (4) of Table 6 we include *IMR* as an additional control variable of Equations 2 and 3. Hence, we mitigate the potential self-selection bias that could arise from our identification strategy and ultimately affect our main variable of interest (*Adopters*POST*). The *IMR* coefficient is statistically significant in all the models, suggesting that unobserved factors that may contribute to the firm's decision to suspend D&A charges are negatively (positively) related to *Bank Debt* (*Cost of Debt %*). The significance of *IMR* indicates that we correct for selectivity bias, as suggested by prior studies (Cameran & Campa, 2020; Wu & Shen, 2013).

Table 5. Determinants of the DASP adoption

Variables	Predicted Sign	Adopters
<i>Size</i>	-	-0.1245*** (0.010)
<i>Sales Growth</i>	-	-0.1802*** (0.041)
<i>ROA</i>	-	-2.6821*** (0.214)
<i>Neg. Earnings</i>	+	0.2317*** (0.021)
<i>Cash Holdings</i>	-	-1.0888*** (0.089)
<i>Leverage</i>	+	0.0313*** (0.002)
<i>Coverage Ratio</i>	-	-0.0010*** (0.000)
<i>Altman Z</i>	-	-0.1640*** (0.012)
<i>Big4</i>	-	-0.2654*** (0.029)
<i>Audit Committee</i>	-	0.0281 (0.019)
<i>Age</i>	-	-0.0020*** (0.001)
<i>CAPEX</i>	+	0.5333*** (0.125)
<i>Lag Dep. Ratio</i>	-	-1.7095*** (0.083)
<i>Lag Tangibility</i>	-	-0.8576*** (0.058)
<i>Constant</i>		0.6264*** (0.144)
Industry FE		YES
Region FE		YES
Year FE		YES
Observations		109,535
Pseudo R-squared		0.162

Notes: This table reports the results of the probit regression (Eq. 1) estimating the determinants of the DASP adoption, which is also the first-stage procedure of the Heckman model (1979). We define the dependent variable *Adopters* as equal to 1 if the firm suspends the depreciation and amortisation charges in the first financial statement following the issue of the policy. Continuous variables are winsorized at the 5th and 95th percentiles. See Appendix A for variables definition. We include the industry (at the 2-digit level of the NACE code), region and year dummies. The standard errors are reported in parentheses. Standard errors are heteroscedasticity robust and clustered by firm. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

After including the *IMR* control variable, the DID estimator (*Adopters*POST*) remains statistically significant at the 1% level and is positively (negatively) associated with *Bank Debt* (*Cost of Debt %*).

4.3. Sensitivity analyses

In this section, we report the results of several sensitivity checks to assess the robustness of our main findings. First, our descriptive analyses reveal that several observable firm characteristics

Table 6. Consequences of the DASP adoption on borrowing capacity

Variables	Bank Debt		Cost of Debt %	
	(1)	(2)	(3)	(4)
<i>Adopters</i>	0.019*** (0.004)	0.019*** (0.004)	0.687*** (0.093)	0.683*** (0.093)
<i>POST</i>	0.016*** (0.001)	-	-0.323*** (0.020)	-
<i>Adopters*POST</i>	0.029*** (0.004)	0.029*** (0.004)	-0.365*** (0.082)	-0.366*** (0.082)
<i>Size</i>	0.053*** (0.002)	0.057*** (0.002)	-0.909*** (0.043)	-0.947*** (0.045)
<i>Sales Growth</i>	0.092*** (0.003)	0.107*** (0.004)	-1.578*** (0.069)	-1.723*** (0.081)
<i>ROA</i>	1.563*** (0.041)	1.643*** (0.043)	12.713*** (0.889)	13.479*** (0.923)
<i>Neg. Earnings</i>	-0.144*** (0.004)	-0.150*** (0.004)	1.763*** (0.081)	1.823*** (0.083)
<i>Cash Holdings</i>	0.452*** (0.017)	0.486*** (0.018)	-5.823*** (0.367)	-6.148*** (0.382)
<i>Leverage</i>	-0.004*** (0.001)	-0.005*** (0.001)	0.210*** (0.011)	0.219*** (0.011)
<i>Coverage Ratio</i>	0.000*** (0.000)	0.000*** (0.000)	-0.011*** (0.000)	-0.011*** (0.000)
<i>Altman Z</i>	0.015*** (0.003)	0.021*** (0.003)	-0.088 (0.061)	-0.142** (0.063)
<i>Big4</i>	0.057*** (0.005)	0.065*** (0.005)	-1.757*** (0.096)	-1.840*** (0.100)
<i>Audit Committee</i>	-0.010*** (0.002)	-0.011*** (0.002)	0.013 (0.038)	0.020 (0.038)
<i>Age</i>	0.001*** (0.000)	0.001*** (0.000)	-0.012*** (0.001)	-0.013*** (0.001)
<i>Lag Dep. Ratio</i>	0.641*** (0.026)	0.696*** (0.028)	-10.514*** (0.552)	-11.044*** (0.578)
<i>Lag Tangibility</i>	0.403*** (0.014)	0.431*** (0.015)	-5.530*** (0.283)	-5.794*** (0.296)
<i>IMR</i>	-0.482*** (0.017)	-0.519*** (0.018)	6.595*** (0.362)	6.941*** (0.379)
<i>Constant</i>	0.515*** (0.012)	0.537*** (0.012)	0.649** (0.264)	0.360 (0.268)
Industry FE	YES	YES	YES	YES
Region FE	YES	YES	YES	YES
Year FE	NO	YES	NO	YES
Observations	109,535	109,535	109,535	109,535
Adjusted R-squared	0.329	0.330	0.108	0.108

Notes: This table presents the impact of DASP adoption on the amount of bank debt (the cost of) borrowed. The dependent variable in both models (1) and (2) is the amount of bank debt scaled by lagged total assets (*Bank Debt*). The dependent variable in models (3) and (4) is the ratio between the total financial expenses scaled by the interest-bearing financial debt in percentage (*Cost of Debt %*). We define *Adopters* equal to 1 if the firm *i* suspended the depreciation (amortisation) charges in the 2020 financial statements, and 0 otherwise. *POST* is an indicator variable equals 1 if the year is 2020, or above, and 0 otherwise. Continuous variables are winsorized at the 5th and 95th percentiles. See Appendix A for variables definition. We perform OLS regressions using the Eq. 2 in models (1) and (2), and Eq. 3 in models (3) and (4). Models (1) and (3) include the industry (at the 2-digit level of the NACE code) and regional dummies, models (2) and (4) include additional region and year dummies. The standard errors are reported in parentheses. Standard errors are heteroscedasticity robust and clustered by firm. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

differ between the *Adopters* and *Non-Adopters* samples. These differences suggest that the decision to adopt the DASP is not random (e.g. Berger, 2005; Lougee & Marquardt, 2004), which could result in a potential endogeneity problem. To circumvent this bias, we perform propensity score matching (Lawrence et al., 2011; Shipman et al., 2017) between each DASP adopter and non-adopter firm to ensure differences in observable firm characteristics can be considered random. We use nearest neighbour matching with replacement based on pre-treatment firms' characteristics. Firm i 's nearest neighbour is a non-adopter firm with the most similar propensity score. We also impose the condition that the propensity score must lie within a 0.01 range (*caliper*) of firm i 's propensity score. Using a 1:1 matching strategy, the matched sample pairs one DASP *Adopter* firm with one propensity-score-matched *Non-Adopter* firm of a very similar size, performance, and default risk, resulting in a sample with 7,300 observations. The matching produces a sample with similar firm characteristics (untabulated), such as *Size* values of 9.44 (treatment group) and 9.38 (control group), with a t -statistic of -1.40 .

In Columns (1) to (4) of Table 7, we replicate the results from Table 6 (baseline model) and reach similar conclusions after matching each DASP adopter with its nearest neighbour (the most similar control firm). Therefore, the coefficient of the interaction term *Adopters*POST* remains statistically significant, suggesting that firms adopting the DASP borrow a higher amount of bank debt ($\beta_3 = 0.027$, p -value < 0.01 in Column (1)) and are charged a lower cost of debt ($\beta_3 = -0.270$, p -value < 0.05 in Column (3)).

Second, we assume that borrowing capacity in year t could be influenced by the previous year's level. Thus, we include the lagged values of bank debt (*Lag Bank Debt*) and cost of debt (*Lag Cost of Debt %*) as control variables in Equations 2 and 3 and perform an OLS regression analysis. Table 8 presents the results of this additional test. In columns (1), (2), (5), and (6) the interaction term of the DID model (*Adopters*POST*) is statistically significant and positive (negative) when using *Bank Debt* (*Cost of Debt %*) as the dependent variable. Furthermore, we employ a change analysis in Columns (3), (4), (7), and (8) of Table 8, using the current changes in bank debt (Δ *Bank Debt*) and cost of debt (Δ *Cost of Debt %*) as dependent variables. The analysis aims to test whether the adoption of the DASP could result in a change over time, consistent with our primary findings. In this way, we mitigate concerns that the relationship between our interaction term and the borrowing capacity proxies is caused by time-invariant, unobservable factors (Kim et al., 2015). The results of the change analysis remain robust and consistent with our predictions.

Finally, to further validate our results, we perform two additional analyses. Specifically, we consider whether our main findings, reported in Table 6, remain unchanged after controlling for the potential earnings management activity (Mafrolla & D'Amico, 2017; Mafrolla & Nobili, 2017) and the revaluation of fixed assets (Buchetti et al., 2022).

First, we compute *abs_DACC* using the Modified Jones model (Dechow et al., 1995), which is the absolute value of the predicted residuals of the following model (Equation 5) and represents the magnitude of discretionary accruals, as suggested by Dechow et al. (2010). Traditionally, *abs_DACC* is adopted to detect the presence of firms' earnings management.

$$\frac{TACC_{i,t}}{TA_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{TA_{i,t-1}} + \beta_2 \frac{(\Delta Rev_{i,t} - \Delta Rec_{i,t})}{TA_{i,t-1}} + \beta_3 \frac{PPE_{i,t}}{TA_{i,t-1}} + \varepsilon_{i,t} \quad (5)$$

We perform an OLS regression using Equation 5 for each year in each industry, and the coefficients estimated are used to compute the residuals from the firm-level regression.

Table 7. Sensitivity analysis. The effects of DASP adoption on borrowing capacity using PSM.

Variables	Bank Debt		Cost of Debt %	
	(1)	(2)	(3)	(4)
<i>Adopters</i>	0.026*** (0.007)	0.026*** (0.007)	0.721*** (0.132)	0.722*** (0.132)
<i>POST</i>	0.024*** (0.004)	-	-0.365*** (0.093)	-
<i>Adopters*POST</i>	0.027*** (0.005)	0.026*** (0.005)	-0.270** (0.117)	-0.275** (0.118)
<i>Size</i>	-0.001 (0.004)	-0.001 (0.004)	-0.256*** (0.075)	-0.257*** (0.075)
<i>Sales Growth</i>	0.040*** (0.009)	0.042*** (0.010)	-0.976*** (0.161)	-0.882*** (0.187)
<i>ROA</i>	0.698*** (0.061)	0.697*** (0.061)	4.854*** (1.270)	4.874*** (1.272)
<i>Neg. Earnings</i>	-0.049*** (0.006)	-0.049*** (0.006)	0.331*** (0.110)	0.347*** (0.111)
<i>Cash Holdings</i>	0.017 (0.027)	0.017 (0.027)	-1.414*** (0.545)	-1.416*** (0.545)
<i>Leverage</i>	0.007*** (0.001)	0.007*** (0.001)	0.045*** (0.017)	0.045*** (0.017)
<i>Coverage Ratio</i>	-0.001*** (0.000)	-0.001*** (0.000)	-0.004*** (0.001)	-0.003*** (0.001)
<i>Altman Z</i>	-0.061*** (0.004)	-0.061*** (0.004)	0.598*** (0.108)	0.599*** (0.108)
<i>Big4</i>	-0.052*** (0.011)	-0.052*** (0.011)	0.123 (0.186)	0.124 (0.186)
<i>Audit Committee</i>	0.009 (0.006)	0.009 (0.006)	-0.139 (0.119)	-0.137 (0.120)
<i>Age</i>	0.000* (0.000)	0.000* (0.000)	0.003 (0.004)	0.003 (0.004)
<i>Lag Dep. Ratio</i>	-0.071*** (0.026)	-0.072*** (0.026)	-0.853* (0.518)	-0.907* (0.528)
<i>Lag Tangibility</i>	0.052** (0.022)	0.051** (0.022)	-0.843** (0.389)	-0.851** (0.390)
<i>Constant</i>	0.289*** (0.039)	0.300*** (0.040)	4.818*** (0.757)	4.662*** (0.762)
Industry FE	YES	YES	YES	YES
Region FE	YES	YES	YES	YES
Year FE	NO	YES	NO	YES
Observations	7,300	7,300	7,300	7,300
Adjusted R-squared	0.291	0.291	0.115	0.115

Notes: This table reports the results of the model presented in the Eqs. 2 and 3 after matching 1:1 the two groups, *Adopters* and *Non-Adopters*, during the pre-treatment period. The propensity score matching reduces significant differences between the treatment and control group. Continuous variables are winsorized at the 5th and 95th percentiles. See Appendix A for variables definition. The standard errors are reported in parentheses. Standard errors are heteroscedasticity robust and clustered by firm. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Second, we incorporate the earnings management proxy (*abs_DACC*) as an explanatory variable in both Equations 2 and 3. To this extent, we avoid any estimation bias that could arise from the two-step procedure where the predicted residual of a first-step regression is computed in a second regression (Chen et al., 2018).

Table 8. Sensitivity analysis. The effects of the DASP adoption on borrowing capacity after controlling for lagged dependent variables and performing a change analysis.

Variables	Bank Debt		Δ Bank Debt		Cost of Debt %		Δ Cost of Debt %	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Adopters</i>	0.006*** (0.002)	0.007*** (0.002)	0.002 (0.002)	0.003** (0.002)	0.276*** (0.054)	0.268*** (0.054)	0.025 (0.040)	0.017 (0.040)
<i>POST</i>	0.010*** (0.001)	-	0.008*** (0.000)	-	\nearrow 0.192*** (0.017)	-	\nearrow 0.107*** (0.013)	-
<i>Adopters*POST</i>	0.024*** (0.003)	0.024*** (0.003)	0.018*** (0.002)	0.018*** (0.002)	\nearrow 0.195*** (0.075)	\nearrow 0.195*** (0.075)	\nearrow 0.134** (0.062)	\nearrow 0.135** (0.062)
<i>Lag Bank Debt</i>	0.772*** (0.002)	0.774*** (0.002)						
<i>Lag Cost of Debt %</i>					0.584*** (0.005)	0.585*** (0.005)		
<i>Constant</i>	0.237*** (0.006)	0.268*** (0.006)	0.109*** (0.004)	0.138*** (0.004)	\nearrow 0.851*** (0.165)	\nearrow 1.196*** (0.166)	\nearrow 1.334*** (0.111)	\nearrow 1.636*** (0.112)
Controls	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	NO	YES	NO	YES	NO	YES	NO	YES
Observations	106,199	106,199	106,199	106,199	106,199	106,199	106,199	106,199
Adjusted R-squared	0.758	0.761	0.058	0.072	0.429	0.430	0.017	0.019

Notes: This table shows the results of the robustness checks after using lagged dependent variables (as explanatory variables) and performing a change analysis. Both *Lag Bank Debt* and *Lag Cost of Debt %* have incorporated in the models to control that the current year's borrowing capacity is not biased by the amount of debt and cost of debt at the year $t-1$. Models (3), (4), (7) and (8) report the results of the change analysis to test the effects of DASP adoption on the change of the *Bank Debt* (*Cost of Debt %*). Continuous variables are winsorized at the 5th and 95th percentiles. See Appendix A for variables definition. Models (1), (3), (5) and (7) include the industry (at the 2-digit level of the NACE code) and regional dummies, models (2), (4), (6) and (8) include also region and year dummies. The standard errors are reported in parentheses. Standard errors are heteroscedasticity robust and clustered by firm. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 9. Sensitivity analysis. Consequences of the DASP adoption on borrowing capacity after controlling for Earnings Management and Revaluation of Fixed Assets.

Variables	Bank Debt			Cost of Debt %		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Adopters</i>	0.019*** (0.005)	0.018*** (0.005)	0.018*** (0.005)	0.681*** (0.095)	0.666*** (0.095)	0.666*** (0.095)
<i>POST</i>	-	-	-	-	-	-
<i>Adopters*POST</i>	0.030*** (0.004)	0.030*** (0.004)	0.030*** (0.004)	↗0.346*** (0.084)	↗0.346*** (0.084)	↗0.346*** (0.084)
<i>abs_DACC</i>	↗0.001 (0.000)		↗0.001 (0.000)	0.003 (0.010)		0.003 (0.010)
<i>REVAL Dummy</i>		0.011*** (0.002)	0.011*** (0.002)		0.282*** (0.035)	0.282*** (0.035)
<i>Constant</i>	0.536*** (0.012)	0.524*** (0.012)	0.525*** (0.012)	0.317 (0.269)	0.020 (0.275)	0.017 (0.275)
Controls	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	108,048	108,048	108,048	108,048	108,048	108,048
Adjusted R-squared	0.331	0.331	0.331	0.107	0.108	0.108

Notes: This table reports results for the potential confounding factors that may bias the analysis of the relationship between the DASP adoption and the amount of bank debt (the cost of borrowed). We test whether the results of the main analysis are robust after controlling for earnings management and other accounting-based relief mechanisms during the pandemic. The dependent variable in models (1) to (3) is the amount of bank debt scaled by lagged total assets (*Bank Debt*). The dependent variable in models (4) to (6) is the ratio between the total financial expenses scaled by the interest-bearing financial debt (*Cost of Debt %*). We control for the magnitude of earnings management (*abs_DACC*) computed as the absolute value of the discretionary accruals determined using the Modified Jones model (Dechow et al., 1995), and the revaluation policy adoption (*REVAL Dummy*) equals 1 if the firm *i* has revaluated its fixed assets, and 0 otherwise. Continuous variables are winsorized at the 5th and 95th percentiles. See Appendix A for variables definition. All the regressions include the industry (at the 2-digit level of the NACE code), regional and year dummies. The standard errors are reported in parentheses. Standard errors are heteroscedasticity robust and clustered by firm. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 9 shows that our results are robust to this further analysis. In Columns (1) and (4), the *Adopters*POST* coefficient remains significant at the 1% level, even after controlling for the potential earnings manipulation activity in the year of lending. In other words, a larger *Bank Debt* is still strongly and positively associated with DASP adoption, and *Cost of Debt %* remains statistically significant and negatively associated with the decision of the firm to suspend the D&A charges.

Additionally, we test the robustness of our findings by controlling for further accounting mechanisms that could affect the borrowing ability of the firms. Together with the DASP, Law 126/2020 allows firms to selectively revalue one or more fixed assets and, therefore, increase their equity book value throughout the ‘revaluation reserve’. We define *REVAL Dummy* as a dummy variable that takes the value of 1 if the change in the revaluation reserve is positive and 0 otherwise. Thereafter, we include *REVAL Dummy* in Equations 2 and 3 to control whether the financial position improved by the revaluation of fixed assets affects firms’ bank financing and cost of borrowing.

In Table 9, Columns (2) and (5) show that the coefficient of our DID estimator remains unchanged after controlling for the revaluation of fixed assets. Finally, Columns (3) and (6) test the robustness of our findings, verifying the simultaneous presence of alternative explanations, earnings management activity, and revaluation policy adoption, while confirming the previous findings.

5. Conclusions and limitations

This study examines the consequences of a temporary change in accounting rules to support private firms in managing a pandemic shock. The Italian government was the first to devise a set of cash aids and accrual-based relief mechanisms to mitigate firms’ losses and reduce their insolvency risk. The adoption of the DASP, which allows firms to suspend up to 100% of their depreciation and amortisation charges, provides a unique opportunity to assess the real economic effects of an accrual-based relief mechanism and its effectiveness in helping private firms borrow the required financial resources at a sustainable cost.

Our descriptive statistics show that DASP adopters reported lower levels of profitability and a higher distress risk in the pre-pandemic period than non-adopters. Nevertheless, multivariate DID analysis provides evidence that, compared to non-adopters, firms that suspend D&A charges are granted more private debt and at lower cost than in the pre-DASP period. These results suggest that managers of DASP firms effectively exploit the accrual-based relief mechanism to improve their accounting numbers and access new borrowings at a lower cost. Depreciation and amortisation suspension represents an effective tool to increase the reported net income and improve balance sheet values, making a firm look financially healthier.

This study makes several contributions to the literature. First, regarding the COVID-19 literature, we provide evidence that an accrual-based relief mechanism, which consists of an income-increasing change in accounting rules, can safeguard firm survival by improving borrowing capacity. Second, we contribute to the literature that investigates the relationship between managers’ accounting choices and reporting quality in a debt-contracting process. We find that lenders are unable or, more likely, unwilling to undo the accounting effects of the DASP, even though such accrual-based relief mechanisms might reduce the informativeness and comparability of private firms’ financial statements. This suggests that, at least in the short-run and during a pandemic crisis, the DASP answers to the existing market imperatives and interest groups’ information needs (Bhimani, 2008; Sunder, 2016). Finally, from a regulatory perspective, the findings suggest that governments can effectively support firms during crises by modifying accounting rules. From the government’s perspective, one of the main advantages of this

type of relief mechanism is that such a policy does not require a budget to be implemented. However, policymakers should carefully adopt these mechanisms since they may significantly hamper financial statements' informativeness, transparency, and comparability in the long-run (Buchetti et al., 2022). Moreover, the long-term effect on capital allocation efficiency needs to be further investigated since DASP adopters were financially constrained before the COVID-19 outbreak, and their long-run performance after DASP is not yet observable.

Our study has some limitations. First, the consequences of the Italian relief mechanisms may not be generalisable to other local settings. Second, we are unable to capture whether firms opt for a partial suspension of the D&A charges; hence, we classify only firms that suspended 100% of their D&A charges as adopters. Although the collection of the explanatory notes of financial statements could be useful for capturing some details about the exact percentage of D&A suspension charges, the absence of specific regulations about the format of the explanatory notes, as well as the large size of our sample, does not allow us to measure a partial suspension of the D&A charges.

Notes

¹ Although lockdown rules and social distancing requirements saved lives, they also contributed to the collapse of economic activity, with a dramatic drop in GDP growth by 3.3% (data retrieved from the World Bank website, <https://data.worldbank.org/>).

² According to a recent survey (Facebook/OECD/World Bank, 2020), even the majority of small and medium enterprises that remained open during 2020 experienced a decline in sales, and almost half of them reported a decrease of more than 40%.

³ If the revalued asset is subject to the depreciation (amortisation) process, the depreciation (amortisation) expenses may increase in the following reporting periods.

⁴ We use the Heckman (1979) two-step procedure to correct for potential self-selection bias of our non-random sample.

⁵ The sample criteria applied allows us to follow the evolution of firms' borrowing capacity for two fiscal years post-DASP adoption (2020 and 2021 fiscal years). Hence, our analysis does not consider the suspension of D&A charges in the 2021 financial statements. For the sake of completeness, we find that only 146 unique firms fit the definition of *Adopters* in the 2021 fiscal year, compared to 1,144 *Adopters* in 2020.

⁶ Moreover, to confirm whether our results remain consistent, we run our models using robust regression estimation that produces less biased estimates than OLS regressions (Leone et al., 2019). We reach similar findings (available upon request) as those presented in the main analysis reported in Table 6.

⁷ Extreme observations have been found, especially for the *Cost of Debt* %, as also suggested by the prior literature (Pittman & Fortin, 2004; Sánchez-Ballesta & García-Meca, 2011). Thus, we winsorised continuous variables at the 5th and 95th percentiles.

⁸ Additionally, we assess the potential multicollinearity among the variables by estimating the variance inflation factor (VIF) coefficients for each regression model; all of them remain below the threshold of 10 (Kennedy, 2008), hence confirming that our analyses are not affected by multicollinearity.

⁹ We use the European Commission's recommendation of May 6, 2003 (2003/361/EC), in which they define micro, small, and medium-sized enterprises, and we apply this definition consistently with prior studies on European firms (Vander Bauwhede et al., 2015).

¹⁰ The sample contains a lower number of unique firms in the last year (2021) due to the lack of available data in AIDA (Bureau Van Dijk) at the time of the export.

¹¹ Additionally, we corroborate our results by using a more restrictive sample selection criterion which keeps only firms closing the fiscal year on December 31st, 2020. Our findings remain robust and qualitatively unchanged from those reported in Table 6.

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Appendix A. Variables Definition

1220	List of Variables Variable	Definition
	<i>Bank Debt</i>	= is the amount of firm i 's bank debt in year t divided by the total assets at the beginning of the year.
	<i>Cost of Debt %</i>	= is measured as the ratio between the total financial expenses scaled by the interest-bearing financial debt. The cost of debt is then computed in percentage.
1225	<i>Adopters</i>	= is a dummy variable which takes the value of 1 if the firm fits into the treatment group, and 0 otherwise.
	<i>POST</i>	= is a dummy variable which takes the value of 1 if the year is equal to 2020 or 2021, and 0 otherwise.
	<i>Size</i>	= is the natural logarithm of total assets.
	<i>Sales Growth</i>	= is the annual change in net sales scaled by prior year sales.
1230	<i>ROA</i>	= is computed as the operating income (EBIT) deflated by the beginning total assets.
	<i>Neg. Earnings</i>	= is an indicator variable equal to 1 if the lagged net income is negative and 0 otherwise.
	<i>Cash Holdings</i>	= as the cash and cash equivalents divided by beginning total assets.
	<i>Leverage</i>	= is the total liabilities divided by total equity.
	<i>Coverage Ratio</i>	= is the operating income (EBIT) divided by the amount of interest and financial expenses.
1235	<i>Altman Z</i>	= is the Z' score model (Altman, 1993) for manufacturing firm determined with the following equation: $Z' = 0.717(X1) + 0.847(X2) + 3.107(X3) + 0.420(X4) + 0.998(X5)$ where: X1 = working capital/total assets, X2 = retained earnings/total assets, X3 = earnings before interest and taxes/total assets X4 = book value equity/total liabilities, X5 = sales/total assets.
1240	<i>Big4</i>	= is an indicator variable which takes the value of 1 if the auditor is a Big 4 company, and 0 otherwise.
	<i>Audit Committee</i>	= is an indicator variable which takes the value of 1 if the firm has an Audit Committee (<i>collegio sindacale</i>), and 0 otherwise.
1245	<i>Age</i>	= is the difference between the year t and firm i 's year of incorporation.
	<i>CAPEX</i>	= is the amount of capital expenditures divided by beginning total assets. We determine capital expenditures as the sum of total fixed assets and depreciation and amortisation at the year t , minus the total fixed assets at the beginning of the period.
1250	<i>Lag Dep. Ratio</i>	= is the previous year average depreciation ratio computed as the ratio between the depreciation and amortisation (D&A) and the sum of tangible and intangible assets.
	<i>Lag Tangibility</i>	= is computed as the lagged property, plant and equipment (PPE) divided by beginning total assets.
	<i>IMR</i>	= is the inverse Mills ratio determined using Equation (1).
1255	<i>abs_DACC</i>	= is the absolute value of the discretionary accruals (DACC), determined using Modified Jones model (Dechow et al., 1995).
	<i>REVAL Dummy</i>	= is a dummy variable equals 1 if the firm i reported a positive change in the revaluation reserve during year t , and 0 otherwise.
	<i>Lag Bank Debt</i>	= is the <i>Bank Debt</i> at year $t-1$.
	<i>Lag Cost of Debt %</i>	= is the <i>Cost of Debt %</i> at year $t-1$.
1260	Δ <i>Bank Debt</i>	= is the change in <i>Bank Debt</i> , computed as the bank debt at year t minus the bank debt at year $t-1$.
	Δ <i>Cost of Debt %</i>	= is the change in <i>Cost of Debt %</i> , computed as the cost of debt at year t minus the cost of debt at year $t-1$.