

Audit quality and debt restructuring: evidence from Italy

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Abstract

Purpose – This study aims to investigate the link between audit quality and in-court debt restructuring. The aim is to understand whether the confirmation of debt restructuring plans is affected by audit quality, which, in the light of agency theory, reduces information asymmetries between outsiders (creditors and the court) and insiders (shareholders and managers) of the debtor company.

Design/methodology/approach – A logistic regression is performed to test whether higher audit quality is associated with an increased probability of successfully completing a debt restructuring proceeding (RP). Consistent with the literature, audit quality is assessed ex ante based on auditor size, which is used as a proxy for independence. The analysis considers private Italian companies.

Findings – Audit quality positively affects debt restructuring. Among financially distressed companies, those audited by an audit company are more likely to succeed in RPs than those audited by a single practitioner. There is no evidence of a Big N effect.

Originality/value – This study fills a gap in literature as, in contrast to other financial and governance characteristics, audit quality has never been studied before as a determinant of efficient restructuring. It contributes to the literature on auditing and governance by highlighting the importance of audit quality in complex situations such as RPs, and it expands on debt restructuring literature by considering the importance of the information exchanged during RPs.

Keywords Audit quality, Information asymmetry, Restructuring proceeding, Insolvency

Paper type Research paper

1. Introduction

Recently, creditor-centric insolvency frameworks around the world have been reformed to partially restrict the decision-making power of creditors and protect the debtor from unnecessary persecution. Thus, insolvency frameworks have been adjusted to reflect a new “rescue culture;” an alternative to the former “punitive culture” (Nigam and Boughanmi, 2017). This new “rescue culture” is meant to allow economically viable companies that are in financial distress to renegotiate their debts to minimize the loss of value, compared with the more expensive and time-consuming filing for bankruptcy (Wessels and Madaus, 2020). Nevertheless, it is not unanimously recognized that debt restructuring can lead to value maximization (Verdoes and Verweij, 2018). Indeed, the difficulties in filtering restructuring petitions lead to inefficiencies when restructuring fails, with bankruptcy following. Thus, the controversy of debt restructuring continues to draw scholars’ attention, especially



considering the key role played by debt restructuring in addressing the macroeconomic consequences of excessive private debt (European Commission, Directorate-General for Economic and Financial Affairs, 2016).

Restructuring proceedings (RPs) have been promoted by the USA since the enactment of the Bankruptcy Reform Act of 1978 [1] when bankruptcy started to have a double meaning. In particular, filing bankruptcy under Chapter 7 implies liquidating the company, while filing under Chapter 11 involves the restructuring of the company (Kaiser, 1996). Chapter 11 has then influenced bankruptcy law reforms worldwide (Warren and Westbrook, 2009). Among the countries that followed the American example are Singapore (McCormack and Wan, 2019) and the Member States of the European Union that have reformed their insolvency regimes in accordance with the EU Directive on Restructuring and Insolvency of June 20, 2019 (European Directive) [2] (Ehmke *et al.*, 2019). The European Directive, in line with Chapter 11, requires the Member States to ensure a time span in which the debtor is protected from creditors' enforcement actions and to provide the debtor with control of its business during an RP while guaranteeing binding power to the majority of creditors in each class supporting the restructuring proposal (Clifford Chance, 2019).

Debt restructuring can be carried out either in or out of court when it is based on private agreements with creditors without judicial involvement. Out-of-court restructuring is preferable to in-court restructuring only when the number of creditors is small and the creditors are mostly financial institutions (Gilson *et al.*, 1990; Jostarndt and Sautner, 2010). In addition, there is evidence of a positive association between the presence of owners-managers and the decision to choose in-court rather than out-of-court restructuring (Kim and Kwok, 2009). Although private agreements have been boosted by growth in the distressed asset investment industry (Cumming and Fleming, 2015), out-of-court restructuring does not represent the easiest solution in complex situations.

In-court RPs usually share at least three main phases: filing a petition by the distressed company, formal authorization by the court and creditors' approval of the restructuring plan (plan). However, making it through all the phases of RPs is difficult. On the one hand, the debtor might be unwilling to start RPs in the absence of adequate legal protection; on the other hand, creditors may struggle to understand whether the debtor has the potential to thrive in the future or if it should directly declare bankruptcy. In sum, RPs often fail to succeed because of information asymmetries between the debtor and creditors (Wruck, 1990), which may lead to the confirmation of a plan proposed by nonviable companies or the rejection of a plan proposed by viable ones (Hotchkiss, 1995; Mooradian, 1994).

Previous literature has reported that a favorable outcome for RPs is more probable when restructuring companies are older (Kim and Kim, 1999), larger in size (Campbell, 1996), more profitable (Campbell, 1996) and more leveraged (Routledge and Gadenne, 2000). Moreover, existing research highlights that the success of RPs depends on management turnover (Collett *et al.*, 2014) and the presence of a control body (Paletta and Alimehmeti, 2022).

However, to the best of our knowledge, the link between audit quality and the outcome of RPs has never been investigated before, even though audit quality has been proven to reduce information asymmetries (Alzoubi, 2018; Gul *et al.*, 2013; Karjalainen, 2011; Majoor and Vanstraelen, 2006). Our study aims to fill this gap by hypothesizing the likelihood of the plan's confirmation to be positively associated with the quality of the audit engagement, which is proxied based on the size of the auditor, consistently with the literature (Barizah Abu Bakar *et al.*, 2005). Audit firms are used as a proxy for larger size and higher level of independence of the auditor. Indeed, according to existing research (Alvin Alleyne *et al.*, 2006) and theoretical considerations (Vera-Muñoz *et al.*, 2006) audit firms provide higher quality audit services than sole practitioners do. Italy is considered a good scenario because

of the high costs and lengths of insolvency proceedings (European Commission, 2016; Palumbo *et al.*, 2013) and the recent reform of the Italian insolvency framework [3], which was necessary to comply with the European Directive. The results obtained in Italy can be applied to other countries where there is a need to enhance the efficiency of debt restructuring, especially in those where the transition toward a “rescue culture” has only recently commenced.

The remainder of this paper is organized as follows. Section 2 provides in-depth literature on the topic; in Section 3, we explain the background and the hypothesis development; Section 4 includes a description of our research methods; Section 5 presents the results of our analysis; and Section 6 provides the final discussion.

2. Literature review

Pre-bankruptcy research has largely studied efficient RPs by measuring their success based on the plan’s confirmation or survival after confirmation. The success of Chapter 11 filings has been positively associated with size (Campbell, 1996; Denis and Rodgers, 2007), profitability (Campbell, 1996), leverage (Denis and Rodgers, 2007) and management turnover (Barniv *et al.*, 2002; Hotchkiss, 1995); although there is some conflicting evidence as well (Barniv *et al.*, 2002; Casey *et al.*, 1986; Olsen and Tamm, 2017). Looking at companies in Australia, the success of RPs has proven to be positively influenced by short-term liquidity and leverage (Routledge and Gadenne, 2000). Kim and Kim (1999) demonstrate that free assets, existing period and size are determinants of efficient restructuring for Korean companies. Moreover, Collett *et al.* (2014) show a positive association between management change and successful restructuring in Finland, and Paletta and Alimehmeti (2022) highlight that the success of debt restructuring depends on the presence of a control body.

Fisher *et al.* (2019) and Camacho-Miñano and Campa (2014) show that the confirmation of a plan is inversely proportional to the level of earnings management used by restructuring companies. As earnings management is positively associated with the level of information asymmetry between managers and shareholders (Richardson, 2000), studies by Camacho-Miñano and Campa (2014) and Fisher *et al.* (2019) suggest that reducing information asymmetries is crucial in a restructuring context. Accordingly, the positive association between restructuring success and the presence of a control body (Paletta and Alimehmeti, 2022) is explained considering the role played by voluntary audit in reducing agency conflicts (Dedman and Kausar, 2012; Jensen and Meckling, 1976). Indeed, information asymmetry between principals and agents (Fama and Jensen, 1983b, 1983a; Jensen and Meckling, 1976) occurs not only in public companies, where the agents are managers and the principals the investors but also in private companies, where the principals are the lenders and creditors and the agents are the managers and owners, which often coexist (Hay *et al.*, 2014).

Several studies have focused on the impact of audit quality on agency conflict. Higher audit quality has been reported to reduce the level of earnings manipulation (Alzoubi, 2018; Maijoor and Vanstraelen, 2006; Van Tendeloo and Vanstraelen, 2008) and the cost of debt (Gul *et al.*, 2013; Karjalainen, 2011; Orzalin and Akhmetzhanov, 2019; Sanoran, 2020). Therefore, companies that aim to reduce agency costs resulting from information asymmetries (Fama and Jensen, 1983b, 1983a; Jensen and Meckling, 1976) appoint auditors deemed to provide the highest audit quality (Hope *et al.*, 2012; Lin and Liu, 2009). Among the few studies that analyze audit quality and agency conflicts in the context of financial distress, notably Sundgren (2009) reports a negative association between audit quality and the likelihood of liquidation bankruptcy. Moreover, Stunda (2017) focuses on debt restructuring by analyzing the switching of auditors after the completion of the RP.

Furthermore, Bryan *et al.* (2000) found that audit opinions containing going-concern modifications encourage stakeholders of listed companies to initiate debt RPs early enough to effectively address financial distress. There is also evidence of a negative association between the success of debt restructuring and auditor switch (Bryan *et al.*, 2000).

However, to the best of our knowledge, audit quality has not been studied as a determinant of successful debt restructuring. From the agency theory perspective (Fama and Jensen, 1983b, 1983a; Jensen and Meckling, 1976), audit quality might reduce information asymmetry between creditors and the debtor company, thereby improving the efficiency of RPs.

Audit quality is defined by DeAngelo (1981) as the “joint probability that a given auditor will both (a) discover a breach in the client’s accounting system, and (b) report the breach.” DeFond and Zhang (2014) “define higher audit quality as greater assurance of high financial reporting quality.” The pursuit of audit quality is driven by the need to protect brand reputation and lower litigation risk; thus, audit quality and fees are higher in countries with higher litigation regimes (Khurana and Raman, 2004; Venkataraman *et al.*, 2008).

The direct measurement of audit quality, which is based on audit output (i.e. the audit opinion), is difficult because audit opinions are mostly clear. Consequently, previous studies have often measured audit quality indirectly by considering the quality of the financial reporting, as proxied, for instance, by the level of earnings manipulation (Causholli *et al.*, 2014; Manry *et al.*, 2008). Moreover, audit quality is frequently measured *ex ante* based on audit input, which is the distinctive difference between one auditor and another (Aobdia, 2019; Francis, 2004). Auditor independence (Tepalagul and Lin, 2015), industry specialization (Carcello and Nagy, 2004; Rusmin, 2010) and training and expertise (Christensen *et al.*, 2016) are some of the main intrinsic features used to distinguish between one auditor and another.

There is no single definition of auditor independence; thus, different characteristics of auditors and audit engagement have been considered, such as auditor size, audit tenure and the provision of nonaudit services. Studies have reported that independence is negatively associated with the length of audit tenure (Abedalqader Al-Thuneibat *et al.*, 2011) and the amount of audit fees (Beck *et al.*, 2013), and positively associated with auditor size (Barizah Abu Bakar *et al.*, 2005; DeAngelo, 1981) and a joint audit mandate (Zerni *et al.*, 2012). Moreover, there is a reduction in independence and audit quality when auditors provide nonaudit services (Ahadiat, 2011; Francis, 2004; Lai, 2022). In line with the existing literature on the provision of nonaudit services, a study shows that the financial audit performed by Italian statutory auditors, who are already in charge of administrative audits, is of lower quality than that provided by external auditors (Mariani *et al.*, 2010).

Auditor size is often measured based on the distinction between Big N and non-Big N auditors (Francis *et al.*, 1999; Jiang *et al.*, 2019). However, the literature does not unanimously agree on the effect of Big N auditors on audit quality in contexts characterized by a large number of private companies (Bauwhede and Willekens, 2004; Van Tendeloo and Vanstraelen, 2008). There is not always evidence of a Big N effect in public companies too (Kyriakou and Tsoktouridou, 2021; Romano and Guerrini, 2012). Moreover, recent studies have reported a self-selection bias (Campa, 2013; Lawrence *et al.*, 2011) derived from the use of Big N auditors as a proxy for audit quality because Big N auditors manage to select their clients based on their risk profile. Sundgren (2009) highlights the need to find new measures of auditor size other than Big N membership in private companies.

Considering that a single auditor can have a maximum number of clients that will always be smaller than the client portfolio of an audit firm, auditor size can also be measured based on the distinction between individual practitioners and audit firms.

Empirical evidence supports the assumption that audit firms are more independent than sole practitioners. Indeed, the presence of individual practitioners has been shown to negatively affect audit quality (Alvin Alleyne *et al.*, 2006). EU Directive 2014/56 grants sole practitioners the authority to audit the financial statements of both private and public companies. However, it is uncommon for sole practitioners to be involved in the audit of public companies [4], likely due to their limited organizational capabilities and resources, which hinder their ability to conduct highly complex audit engagements at the same level of quality as audit firms. In addition, even if sole practitioners might be supported by other auditors when performing their audit engagement, they do not benefit from team knowledge sharing and scale economies of knowledge, which are positively associated with audit quality (Vera-Muñoz *et al.*, 2006), as much as audit firms do.

3. Background and hypothesis development

Our study focuses on Italy, chosen as a reference for multiple reasons. First, special attention must be given to Italy because it is characterized by the durations of first-instance civil dispute trials that are 2.5 times higher than the OECD average (Palumbo *et al.*, 2013) and also by the costs of RPs that are the highest in the European Union (European Commission, 2016).

In addition, the Italian insolvency framework has been reformed to comply with the European Directive. Originally, the Italian insolvency law, regulated by the Royal Decree No. 267 of March 16, 1942 (“Royal Decree”), was based on the idea that the debtor represents a social threat that needs to be punished (Manganelli, 2010). Only recently, since 2005, has the Royal Decree started to be amended, with the aim to improve an outdated legal framework and “to make the Italian distressed market more appealing for potential domestic and international investors” (Manganelli, 2010). To comply with the European Directive, on July 15, 2022, the Code of Corporate Crisis and Insolvency, set forth in Legislative Decree 14/2019, was enacted after the postponements caused by the sanitary crisis. The Code of Corporate Crisis and Insolvency replaced the Old Royal Decree. Therefore, considering the recentness of the new Italian insolvency law, every analysis of the topic is particularly relevant, based on probable future amendments.

The Italian insolvency law currently provides distressed companies with two main debt restructuring options, an out-of-court debt RP, called “accordo di ristrutturazione del debito,” and an in-court debt RP, called “concordato preventivo” (Baker McKenzie, 2022), an expression that means preventive agreement with creditors (PAC). Moreover, under current Italian insolvency law, bankrupt companies might opt for liquidation or for an in-bankruptcy composition, called “concordato fallimentare” (Baker McKenzie, 2022).

As shown in Figure 1, PACs are characterized by extensive court involvement. The court initially assesses the debtor to verify the satisfaction of the admission requirements [5] and then appoints the judicial trustee (JT), a practitioner that oversees the entire process and

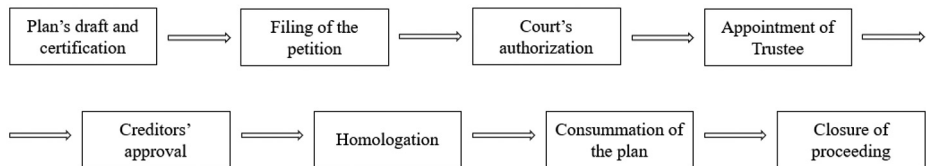


Figure 1.
Main phases of
preventive
agreements with
creditors

Source: Figure created by authors

supports the creditors in formulating an opinion on the plan. Eventually, after creditors' approval, the court homologates the plan if it is formally correct.

Creditors are supported in making their voting decisions by the JT and an independent expert (IE), a practitioner appointed by the debtor, who is mandated to certify the feasibility and accuracy of the plan. Moreover, the results of the auditor's periodic assessments of the accuracy of accounting records, specifically required by Italian standards on auditing (SA Italia 250 B), can be helpful to creditors, JT and IE. Therefore, as described in Figure 2, the success of PACs depends on the opinion of the creditors, which is not only directly affected by the opinions of the IE and JT but also directly and indirectly affected by the auditor's assessments. Therefore, increasing information exchange among the different parties involved in PACs could reduce information asymmetry between creditors and debtors. However, research has indicated that the exchange of information between the IE and the auditor is low, and is even lower if the audit is performed by statutory auditors when compared with external auditors (Provasi and Riva, 2013).

With reference to the auditing environment, one of the peculiarities of Italy is that the financial audit of private joint-stock companies ("S.p.A.") can be performed either by an external auditor or by statutory auditors (Jones and Melis, 2021; Matonti *et al.*, 2016). The board of statutory auditors was established in 1882 (Jones and Melis, 2021) and comprises three to five ordinary members and two alternate members [6]. Shareholders appoint statutory auditors [7] and determine their compensation [8]. The board of statutory auditors is always responsible for the administrative audit; that is, checking the compliance of the board of directors with law and corporate bylaws and with the "principles of correct administration" [9].

Statutory auditors are directly involved in the corporate decision-making processes of the board of directors (Jones and Melis, 2021). Thus, the independence of statutory auditors in charge of financial audit is undermined by their concurrent provision of administrative audit, based on theory (Francis, 2004) and empirical findings (Mariani *et al.*, 2010). In Italy, auditors organized in an individual form can be either external or statutory auditors, while audit firms are always external with respect to the auditee. Therefore, in Italy, the increased independence of audit firms first depends on their larger size, as is the case in other countries, and second, it depends on the fact that among sole practitioners, there are also statutory auditors who are less independent as they provide the administrative audit.

The development of our hypothesis is based on the following theoretical underpinnings. First, information asymmetries between principals and agents give rise to agency conflicts (Fama and Jensen, 1983a), even in private companies where the principals are represented

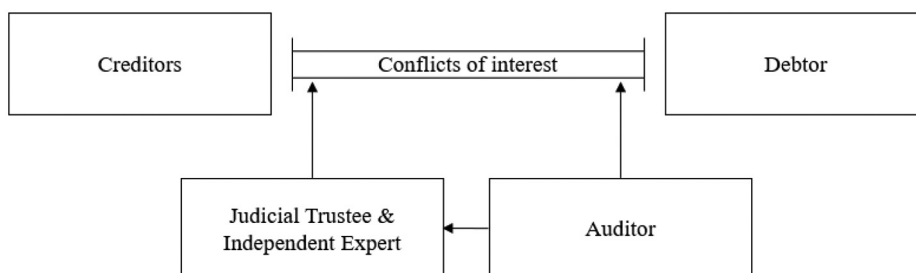


Figure 2.
Information
exchange during a
debt restructuring
proceeding

Source: Figure created by authors

by creditors and lenders and the agents are represented by owners and managers (Hay *et al.*, 2014). Second, according to the agency theory, an audit of financial statements is a monitoring mechanism (Jensen and Meckling, 1976), and the higher the audit quality, the greater the reduction in information asymmetry (Alzoubi, 2018; Van Tendeloo and Vanstraelen, 2008). Finally, the efficiency of RPs depends not only on the potential of the restructuring company but also on the quality and quantity of the information available to its creditors (Wruck, 1990). In this context, a higher-quality auditor might play a key role in assessing the quality of financial disclosures and exchanging direct information with creditors and JTs. Therefore, we formulate the following hypothesis:

H. Audit quality is positively associated with the favorable outcome of RPs.

4. Research methods

4.1 Sample selection

We collect data on RPs in Italy from the AIDA Bureau Van Dijk, which offers qualitative and quantitative information on Italian companies. The selection criteria include the following.

- Only joint-stock companies, as limited liability companies (“S.r.l.”) are not mandated to appoint a control body [10].
- Only companies that initiated a PAC in 2016, 2017 and 2018. In 2013 [11] and 2015 [12], [13] reforms partially improved the efficiency of PACs by introducing new requirements that acted as entry barriers for unsuitable companies. Indeed, research has indicated that the number of PACs started to decrease after 2016 (Danovi *et al.*, 2018). Moreover, we exclude companies starting a PAC after 2018 because considering that the average time to complete a PAC is approximately 10–14 months (Danovi *et al.*, 2018), the inclusion of PACs starting in 2019 would potentially cause a loss of information due to a lack of updates on recent proceedings. Additionally, we do not include proceedings that occurred during the height of the COVID-19 pandemic, as additional considerations would need to be made.
- Only private companies because listed companies follow distinct principles and are subject to different regulations. Moreover, there is only one public company among the companies that started PACs between 2016 and 2018.

The initial list from AIDA comprised 530 companies. Owing to the limitations in the selection criteria provided by AIDA, we had to manually check the starting date of each PAC to avoid misstated data. Indeed, companies that started a PAC before 2016 but entered another legal proceeding after 2016 were automatically included in the initial list. Moreover,

	Observations
Joint-stock private companies initiating a PAC from 2016 to 2019	530
Less: companies mistakenly selected by AIDA	(324)
Less: financial service companies	(1)
Less: companies with missing data	(14)
Final sample	191

Table 1.

Screening procedure

Source: Table created by authors

we excluded the only financial service company in the sample due to its unique regulatory obligations. The adjusted list consisted of 205 companies. Subsequently, based on annual reports, we analyzed all selected companies individually to check the accuracy of the information in relation to the outcome of the proceedings. Additionally, we used the annual reports to obtain information on the corporate body in charge during the proceedings. Due to missing data, the final sample comprises 191 companies (see [Table 1](#)). We must point out that our final sample represents a unique hand-collected data set. This includes 127 companies that successfully completed a PAC and 64 companies that did not. In the subsample of companies that managed to confirm their plans, the average completion time was 11 months.

4.2 Methodology

In line with previous studies on the determinants of efficient restructuring ([Campbell, 1996](#); [Casey et al., 1986](#); [Collett et al., 2014](#); [Ravid and Sundgren, 1998](#)), to test our hypothesis we used a logistic regression. Thus, the model is expressed as follows:

$$\begin{aligned} SUCCESS_i = & \alpha + B1(Aud_i) + B2(Big4_i) + B3(GC_i) + B4(Age_i) \\ & + B5(Currentratio_i) + B6(Roa_i) + B7(NI_growth_i) \\ & + B8(Size_i) + B9(Leverage_i) + \text{Industry FE} + \text{Year FE} \\ & + \varepsilon_i \end{aligned}$$

where the dependent variable is the favorable outcome of PACs (*Success*), which is equal to 1 when the plan is confirmed by creditors and 0 otherwise. Indeed, court's homologation is only a formality, while the creditors have the real power to decide whether to give or not a second chance to the debtor company. The main independent variable measures the quality of the financial audit (*Aud*), which is equal to 1 if the financial audit is performed by an audit firm and 0 if the financial audit is performed by a sole practitioner. Indeed, following the suggestion of [Sundgren \(2009\)](#), we decided to proxy the quality of the audit engagement based on a size parameter that differs from the Big N membership parameter, which does not fit well with the European context ([Bauwhede and Willekens, 2004](#); [Van Tendeloo and Vanstraelen, 2008](#)). Thus, relying on previous empirical findings ([Alvin Alleyne et al., 2006](#)) and theoretical considerations ([Vera-Muñoz et al., 2006](#)), the size of the auditor is measured based on the distinction between audit firms and sole practitioners.

In line with prior research ([Barniv et al., 2002](#); [Campbell, 1996](#); [Casey et al., 1986](#); [Kim and Kim, 1999](#)), we control for size (*Size*) under the assumption that the economies of scale that characterize large companies might result in lower bankruptcy costs. In addition, we control for leverage (*Leverage*) and short-term liquidity (*Current ratio*), following [Routledge and Gadenne \(2000\)](#). Based on the findings of [Kim and Kim \(1999\)](#), age (*Age*) is included in the model as a control variable. Finally, consistent with previous studies ([Barniv et al., 2002](#); [Campbell, 1996](#); [Routledge and Gadenne, 2000](#)), we control for profitability, measured as net income divided by total assets (*ROA*). We consider the annual change in net income as a control variable (*NI_growth*) to account for the loss of profitability, and we include the presence of Big4 auditors (*Big4*) to measure the potential Big N effect. [Brunelli et al. \(2021\)](#) demonstrated that investors react negatively to unqualified and qualified audit opinions with going concern modifications. According to the revised ISA 570, if the financial statements provide sufficient information regarding the auditee's ability to continue as a going concern, auditors must express their doubts in the emphasis of matter paragraph. Conversely, if the financial statements lack adequate disclosure, auditors should issue a qualified opinion that could take the form of an "except for" or adverse opinion. However, in

the case of multiple uncertainties, they should release a disclaimer of opinion even if the disclosure is adequate. Thus, we control for the positive effect that audit reports without going concern modifications might have on creditors' decision (*GC*). The set of variables is presented in [Table 2](#). In the regression analysis, all continuous variables have been winsorized at the 5th and 95th percentiles. Heteroscedasticity is accounted for in the model by using heteroscedasticity-robust standard errors.

Variable	Description
<i>Dependent variable</i>	
<i>Success</i>	A dummy variable where 1 = confirmation of the PAC and 0 = nonconfirmation of the PAC
<i>Independent variables</i>	
<i>Variable of interest</i>	
<i>Aud</i>	A dummy variable where 1 = financial audit performed by an audit firm and 0 = financial audit performed by a sole practitioner
<i>Control variables</i>	
<i>Size</i>	The natural logarithm of sale
<i>Leverage</i>	Total liabilities divided by equity
<i>Current ratio</i>	Current assets divided by current liabilities
<i>ROA</i>	Net income divided by total assets
<i>Age</i>	The natural logarithm of number of years the firm has been established
<i>NI_growth</i>	Change in net income compared to the year before initiating the PAC
<i>Big4</i>	A dummy variable where 1 = financial audit performed by a Big4 and 0 = financial audit performed by someone other than a Big4
<i>GC</i>	A dummy variable where 1 = audit report not containing a going concern modification and 0 = audit report with going concern modifications

Table 2.
Variables description **Source:** Table created by authors

5. Results

5.1 Descriptive statistics and correlations

[Table 3](#) provides the descriptive statistics of the continuous variables. Panel A of [Table 3](#) shows that the companies in the sample are leveraged, as the mean of *Leverage* is higher than one, and illiquid, as the mean of *Current ratio* is lower than one. Moreover, the mean of *Leverage* is negative, which means that, on average, the companies in the sample have negative equity. These results are not surprising, considering that only troubled companies are included in the sample. At the same time, [Table 3](#) Panel A highlights that, on average, the companies in the sample are not profitable because the mean of *ROA* is negative, and they have also experienced a profitability decline because the change in net income takes a negative value (*NI_growth*). Panel B of [Table 3](#) shows the descriptive statistics of the continuous variables for the subsample of companies that successfully completed the PAC (*Success* = 1) and for the subsample of companies that did not manage to complete the PAC (*Success* = 0). [Table 3](#) Panel B highlights that the subsample of companies successfully completing PACs is, on average, older, more leveraged, more profitable, more liquid and larger than the other subsample, although the differences are minimal.

[Table 4](#) reports the frequencies of *Aud* and *Big4* matched with the frequencies of the dependent variable (*Success*). As shown in [Table 4](#), only 26% of the companies in the sample

<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
<i>Panel A</i>					
Age	191	3.29	0.66	1.09	4.71
Current ratio	191	0.82	1.13	0.02	9.60
ROA	191	-0.53	0.76	-7.00	0.39
NI_growth	191	-78.69	445.17	-5,143.84	493.77
Size	191	8.21	2.88	0	13.63
Leverage	191	-3.55	27.93	-252.06	88.65
<i>Panel B</i>					
<i>Success = 1 Variable</i>					
Age	127	3.42	0.60	1.09	4.61
Current ratio	127	0.83	1.08	0.02	7.50
ROA	127	-0.51	0.77	-7.00	0.39
NI_growth	127	-99.27	520.95	-5,143.84	493.77
Size	127	8.23	2.97	0	13.63
Leverage	127	-4.52	31.66	-252.06	88.65
<i>Success = 0 Variable</i>					
Age	64	3.04	0.72	1.09	4.71
Current ratio	64	0.80	1.24	0.02	9.60
ROA	64	-0.56	0.75	-3.46	0.02
NI_growth	64	-37.87	228.80	-1,798.24	78.71
Size	64	8.18	2.74	0	12.00
Leverage	64	-1.62	18.51	-104.83	60.24

Notes: Table 3 presents the mean (Mean), standard deviation (SD), minimum (Min) and maximum (Max) of the continuous variables used in the analysis. Panel A reports the descriptive statistics of the continuous variable for the whole sample and Panel B reports the descriptive statistics for two subsamples that vary depending on the dependent variable (*Success*). Variable definitions are reported in Table 2

Source: Table created by authors

Table 3.
Descriptive statistics
for continuous
variables

<i>Aud</i>		<i>Success</i>		
	0		1	Total
0	51		91	142
1	13		36	49
Total	64		127	191
Pearson $\chi^2 = 1.44$ Prob = 0.2301				
<i>Big4</i>		<i>Success</i>		
	0		1	Total
0	58		118	176
1	6		9	15
Total	64		127	191
Pearson $\chi^2 = 0.31$ Prob = 0.5789				

Notes: Table 4 presents the frequencies of *Aud* and *Big4* matched with the frequencies of the dependent variable (*Success*). Variable definitions are reported in Table 2

Table 4.
Composition of
dummy variables

are audited by an audit firm. Moreover, among the subsample of companies audited by an audit firm, only 31% appointed a Big 4 firm. Approximately 66% of the companies managed to successfully complete the RP; thus, it seems likely that the reforms of 2013 and 2015, which reduced the annual number of PACs, have been effective in limiting nonviable companies' access to PACs (Danovi *et al.*, 2018).

Table 5 shows that most companies in the sample operate in the consumer goods industry.

The results of the Pearson correlation matrix, as reported in Table 6, make it possible to conclude that the independent variables are uncorrelated.

60

Industry	Obs	%
<i>Consumer services</i>	34	18
<i>Industrials</i>	29	15
<i>Utilities</i>	12	6
<i>Health care</i>	1	1
<i>Technology</i>	5	3
<i>Consumer goods</i>	88	46
<i>Oil and gas</i>	1	1
<i>Real estate</i>	11	6
<i>Transport and logistics</i>	10	5

Table 5.
Industry
classification

Notes: Industry classification is based on the ATECO code used by the Italian Chambers of Commerce
Source: Table created by authors

Table 6 shows a moderate correlation between the variables *Aud* and *Big4*, which primarily derives from the fact that both variables take a value equal to zero when sole practitioners are in charge of the financial audit. There is also a moderate and negative correlation between the variables *Aud* and *GC*, suggesting that audit firms might be less likely to issue an opinion without a going concern modification. Furthermore, the moderate positive correlation between *Aud* and *Size* indicates that large companies tend to prefer audit firms over sole practitioners. Table 7 shows that the VIF of all the variables used in the analysis falls within the range of values above 1 and below 3 (Hair et al., 2010), thus indicating that the model is not affected by multi-collinearity.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) <i>Aud</i>	1.000								
(2) <i>Big4</i>	0.497*	1.000							
(3) <i>GC</i>	-0.393*	-0.147*	1.000						
(4) <i>Age</i>	-0.087	-0.207*	0.081	1.000					
(5) <i>Current ratio</i>	-0.063	-0.055	-0.079	-0.052	1.000				
(6) <i>ROA</i>	0.003	0.078	0.071	0.051	0.107	1.000			
(7) <i>NI_growth</i>	-0.076	0.054	0.076	-0.026	0.012	0.071	1.000		
(8) <i>Size</i>	0.356*	0.182*	-0.258*	0.142	-0.151*	-0.001	-0.088	1.000	
(9) <i>Leverage</i>	0.064	0.040	0.052	0.015	0.053	0.003	0.028	-0.040	1.000

Table 6.
Pearson correlation
matrix

Notes: Table 6 reports the Pearson correlations between the independent variables. *Indicates significance at the 5% level or less using two-tailed tests

Source: Table created by authors

Table 7.
Variance inflation
factors

	VIF	1/VIF
<i>Aud</i>	1.79	0.559969
<i>Big4</i>	1.45	0.691495
<i>GC</i>	1.29	0.773913
<i>Age</i>	1.19	0.837968
<i>Current ratio</i>	1.09	0.918017
<i>ROA</i>	1.14	0.874544
<i>NI_growth</i>	1.08	0.929486
<i>Size</i>	1.36	0.733110
<i>Leverage</i>	1.04	0.965216
Mean	1.29	

Notes: Table 7 reports the VIF for each variable used in the analysis. Because the VIFs do not take values below 1 and above 3 (Hair *et al.*, 2010), we can conclude that the model is not affected by multicollinearity

Source: Table created by authors

5.2 Regression results

Table 8 presents the results of the multivariate logistic regression analysis (Column 1), after controlling for heteroscedasticity by using heteroscedasticity-robust standard errors. For the sake of completeness, we have also tested our hypothesis by bootstrapping the multivariate logistic regression model (Column 2) and by using a multivariate probit regression model (Column 3).

<i>Success</i>	(1)	(2)	(3)
<i>Aud</i>	1.51** (0.61)	1.51* (0.91)	0.87*** (0.33)
<i>Big4</i>	-0.54 (0.87)	-0.54 (1.21)	-0.36 (0.47)
<i>GC</i>	0.89** (0.38)	0.89* (0.46)	0.54** (0.23)
<i>Age</i>	1.37*** (0.35)	1.37*** (0.43)	0.81*** (0.20)
<i>Current ratio</i>	0.14 (0.31)	0.14 (0.38)	0.09 (0.19)
<i>ROA</i>	0.00 (0.38)	0.00 (0.46)	0.02 (0.22)
<i>NI_growth</i>	-0.00* (0.00)	-0.00 (0.00)	-0.00** (0.00)
<i>Size</i>	-0.05 (0.06)	-0.05 (0.08)	-0.03 (0.04)
<i>Leverage</i>	-0.02 (0.02)	-0.02 (0.02)	-0.01 (0.01)
<i>Constant</i>	-3.85*** (1.26)	-3.85** (1.50)	-2.26*** (0.72)
Industry fixed effects	YES	YES	YES
Year fixed effects	YES	YES	YES
Pseudo R^2	0.15	0.15	0.15
Number of obs	191	191	191
VIF (mean)	1.29		

Notes: Column 1 presents the results of the logistic regression model, after accounting for heteroskedasticity. Column 2 shows the results of the logistic regression model, where standard errors have been bootstrapped for 1,000 repetitions with replacement. Column 3 presents the results of the probit estimation of the regression model, after accounting for heteroskedasticity. The coefficient of the main independent variable (*Aud*) is positive and significant at the 5% level (Column 1), at the 10% level (Column 2) and at the 1% level (Column 3), which means that the results confirm the positive association between the success of debt restructuring proceedings and audit quality. All continuous variables have been winsorized at the 5th and 95th percentiles: *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

Source: Table created by authors

Table 8.
Regression results

Column 1 indicates that the coefficient of the main independent variable (*Aud*) is positive and significant at the 5% level, supporting the hypothesized positive association between the favorable outcome of debt RPs and audit quality. Therefore, we can conclude that among the companies initiating debt RPs, those that are audited by an audit firm are more likely to have their restructuring plan confirmed.

In Column 1, most control variables are not significantly associated with the dependent variable, which is not surprising considering the mixed results of previous studies (Barniv *et al.*, 2002; Casey *et al.*, 1986; Kim and Kim, 1999; Routledge and Gadenne, 2000). The significant association between *Age* and *Success* (Column 1) not only confirms the evidence of Kim and Kim (1999) but is also in line with the results of Åstebro and Winter (2012), who demonstrate that age is positively and significantly associated with the probability that a distressed company exits financial distress. Column 1 shows that the coefficient of *GC* is positive and significant at the 5% level, indicating that audit opinions without going concern modifications are associated with a higher probability of confirmation, in line with the findings of Brunelli *et al.* (2021). Moreover, the coefficient of *NI_growth*, as reported in Column 1, is negative and slightly significant.

Results of the regression model (Column 1) are robust to a battery of tests. Indeed, the positive association between audit quality and debt restructuring efficiency is also confirmed by the results of the logistic regression reported in Column 2 of Table 8, where standard errors are bootstrapped for 1,000 repetitions with replacement. Moreover, the main results (Column 1) are confirmed also after the probit estimation, as shown in Column 3 of Table 8. The positive and significant associations between *Success* and both *Age* and *GC* remain unchanged also after bootstrapping the multivariate logistic regression model (Column 2) and after using a multivariate probit regression model (Column 3).

Based on the regression model results, we can conclude that audit quality increases the probability of obtaining approved plans. The former result expands on the study of Paletta and Alimehmeti (2022), who highlight the relevance of the control body for the confirmation of PACs, and the study by Camacho-Miñano and Campa (2014), who show a positive association between the quality of financial reporting and the success of RPs. Confirmation of the underlying hypothesis makes it possible to validate the theoretical underpinnings of our study, meaning that audit quality represents an effective mechanism in the reduction of agency costs, not only in the going-concern scenario but also in more complex situations such as RPs. Consequently, empirical evidence confirms the applicability of agency theory to the information asymmetries that characterize restructuring, in particular, the asymmetries between creditors and the debtor company.

5.3 Additional analysis

In the main analysis, we measure the success of debt restructuring based on the confirmation of the restructuring plan, consistently with the literature (Barniv *et al.*, 2002; Collett *et al.*, 2014; Routledge and Gadenne, 2000). Previous literature has also considered the survival after three years since the plan's confirmation to proxy for the success of debt restructuring (Casey *et al.*, 1986; Denis and Rodgers, 2007). Thus, we have decided to perform an additional analysis where the dependent variable (*Survival*) is a dummy variable that takes a value equal to 1 if the company has avoided bankruptcy after three years since the confirmation. The results of the additional analysis are reported in Table 9. In the additional analysis, we use a multivariate logistic regression model after controlling for heteroscedasticity by using heteroscedasticity-robust standard errors. All continuous variables have been winsorized at the 5th and 95th percentiles.

<i>Survival</i>	(1)
<i>Aud</i>	2.17*** (0.64)
<i>Big4</i>	-0.91 (0.90)
<i>GC</i>	1.16*** (0.40)
<i>Age</i>	1.66*** (0.37)
<i>Current ratio</i>	0.30 (0.33)
<i>ROA</i>	0.34 (0.37)
<i>NI_growth</i>	-0.01*** (0.00)
<i>Size</i>	-0.09 (0.07)
<i>Leverage</i>	-0.03 (0.02)
<i>Constant</i>	-4.78*** (1.32)
Industry fixed effects	YES
Year fixed effects	YES
Pseudo R^2	0.22
Number of obs	191

Notes: Column 1 presents the results of the additional analysis. In the additional analysis we perform a multivariate logistic regression where the dependent variable (*Survival*) is a dummy variable that takes a value equal to 1 if the company is still in business after three years since the confirmation. The coefficient of the main independent variable (*Aud*) is positive and significant at the 1% level, which means that a higher audit quality is associated to a higher likelihood of survival at three years. All continuous variables have been winsorized at the 5th and 95th percentiles. All variable definitions are in [Table 2](#); *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

Source: Table created by authors

Table 9.
Results of the
additional analysis

[Table 9](#) underscores that the coefficient of the main independent variable (*aud*) is positive and significant at the 1% level. This indicates that higher audit quality is associated with a greater probability of not being bankrupt within three years after plan confirmation. Thus, the underlying hypothesis is further supported by the findings of the additional analysis.

6. Discussion and conclusions

The world is shifting toward a “rescue culture,” with the aim of reducing the direct and indirect costs of bankruptcy ([Nigam and Boughanmi, 2017](#)). However, RPs are often inefficient because of information asymmetries ([Wruck, 1990](#)), thus the identification of the determinants of efficient restructuring is an attractive topic for international scholars. Surprisingly, the role played by audit quality in reducing information asymmetries, which is already widely recognized in going-concern situations (e.g. [Alzoubi, 2018](#); [Maijoor and Vanstraelen, 2006](#); [Van Tendeloo and Vanstraelen, 2008](#)), has not yet been considered in the context of debt restructuring.

The literature demonstrates that audit quality is associated with higher financial reporting quality ([Alzoubi, 2018](#)), improved internal control systems ([Blokdijk et al., 2006](#)) and an enhanced exchange of financial information among stakeholders ([Provasi and Riva, 2013](#)). Thus, we assume that audit quality is particularly relevant in a complex situation, such as debt restructuring. Indeed, the final decision on a restructuring plan is usually made by creditors and external stakeholders who have a lower understanding of the company than managers and owners. The information asymmetries between creditors and distressed companies fall within the definition of information asymmetries between principals and agents provided by [Fama and Jensen \(1983a\)](#). The aim of an audit is to reduce the agency costs derived from information asymmetries by improving the quality of financial reporting ([Jensen and Meckling, 1976](#)). Thus, we hypothesize that audit quality would be effective in

reducing the information asymmetries that characterize RPs. Our findings make it possible to confirm our underlying hypothesis that audit quality plays a key role in reducing the information asymmetries between creditors and the debtor company.

Our study contributes to the existing literature as follows. First, it highlights that the appointment of a high-quality auditor represents an agency cost that is worth bearing, especially in difficult situations, as is the case with RPs. Second, it contributes to the literature on debt restructuring by demonstrating the importance of the quality of the information exchanged between the auditor and other parties involved in the RP. Third, the literature on audit quality is extended as the auditor's organizational form, instead of the more frequently used Big N membership, is considered to account for audit quality. In general, our study fills a gap in the literature because, to the best of our knowledge, audit quality has never been studied before in relation to the success of RPs.

This study presents several implications for international-level practice. Indeed, our findings might benefit professionals, legislators and regulatory authorities dealing with the challenges of inefficient debt restructuring. This is especially relevant in countries where recent bankruptcy reforms have been implemented, such as the European Union (Ehmke *et al.*, 2019), Singapore (McCormack and Wan, 2019), China (Zhang and Tomasic, 2016) and several countries in North Africa and the Middle-East (Kilborn, 2020). Our findings suggest that shareholders and directors of financially troubled companies should select high-quality auditors. Indeed, a high-quality audit is pivotal in ensuring the accuracy of financial reporting (DeFond and Zhang, 2014), which, in turn, serves as the foundation of an accurate restructuring plan. High-quality auditors can offer valuable guidance to the debtor company during the financial-disclosure process and effectively exchange information with the involved professional advisors, such as the JT and the IE (Provasi and Riva, 2013), ultimately enhancing the credibility of the plan. Moreover, when an audit opinion is issued before the plan confirmation, creditors are more likely to consider it as an additional factor on which to base their decision regarding the plan, especially when it is expressed by high-quality auditors.

Furthermore, based on our results, auditing professionals should place greater emphasis on their roles within the restructuring context and exchange increased information with the involved parties, as prompted by Provasi and Riva (2013). International legislators and regulators are advised to enhance the quality and quantity of information available to creditors during RPs by regulating the exchange of information and mandating evidence of such exchange. In addition, legislators and regulators should ensure that auditors of restructuring companies are perceived externally as high-quality auditors. This may entail setting specific criteria, such as minimum size or prohibiting the provision of nonaudit services. In addition, sanctions could be imposed on auditors that fail to exercise their professional judgement adequately in forming their opinions, with the aim to enhance the credibility of the audit report.

While this study offers valuable insights, it does not come without limitations. First, the analysis is limited to a single country, which means it does not account for the disparities and commonalities among different cultures and legal frameworks as cross-country analyses typically do. Additionally, the uniqueness and specificity of the data set have limited our data collection, preventing us from adopting the approach of Huang *et al.* (2015), who use multiple proxies to assess audit quality. Nevertheless, our study explores an innovative topic and opens the door to several opportunities for future research. For instance, future studies might investigate whether other corporate governance mechanisms also play a role in reducing information asymmetry during RPs. Moreover, scholars could address the link between audit quality and out-of-court restructuring to understand whether

the association between audit quality and debt restructuring remains unchanged also in the absence of a court. Future studies might repeat the analysis by focusing on specific entities, such as family firms or by covering a longer time span. Further work is needed to deepen our understanding of an innovative and under-researched topic, especially given its significance at a macroeconomic level (European Commission, Directorate-General for Economic and Financial Affairs, 2016).

Notes

1. The U.S. Bankruptcy Reform Act (Pub.L. 95–598, 92 Stat. 2549, November 6, 1978) was enacted in 1978 and became effective in 1979. It has replaced the former Bankruptcy Act of 1898 (Act of July 1, 1898, ch. 541, 30 Stat. 544) and has been amended many times since 1978.
2. Directive (EU) 2019/1023 of the European Parliament and of the Council of June 20, 2019 on preventive restructuring frameworks, on discharge of debt and disqualifications and on measures to increase the efficiency of procedures concerning restructuring, insolvency and discharge of debt and amending Directive (EU) 2017/1132 (Directive on Restructuring and Insolvency).
3. On July 15, 2022, the Code of Corporate Crisis and Insolvency set forth in Legislative Decree 14/2019, recently amended by Legislative Decree No. 83 of June 17, 2022, was enacted after postponement by the sanitary crisis. The Code of Corporate Crisis and Insolvency replaced the Bankruptcy Law of 1942.
4. In 2021, the number of sole practitioners engaged in the audit of public-interest companies accounted for 0% of the total in Italy (www.consob.it/web/area-pubblica/societa-di-revisione#_ftn1) and 15% in Belgium (www.fsma.be/fr/liste-des-cabinets-de-revision-eip); while in 2022 the same number accounted for 13% in Spain (www.icac.gob.es/listaconforme).
5. Article 85 of the Code of Corporate Crisis and Insolvency states that to be authorized to access a PAC, the debtor must be involved in a business activity, must not be too small, and must be insolvent.
6. Article 2397 of the Italian Civil Code.
7. Article 2400 of the Italian Civil Code.
8. Article 2402 of the Italian Civil Code.
9. Article 2403 of the Italian Civil Code.
10. Article 2477 of the Italian Civil Code requires limited liability companies to appoint a control body when they control a company that is subject to mandatory external audit, when they must prepare consolidated financial statements and when they meet certain financial conditions (for two years in a row, at least two of the following conditions: assets higher than €4m, sales higher than €4m and average number of employees higher than 20).
11. Italian Legislative Decree 69/2013.
12. Italian Legislative Decree 83/2015.
13. Italian Legislative Decree 39/2010 amended by Legislative Decree 135/2016.

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