



The effect of financial constraints on accounting restatements: Spanish evidence

Cristina Martínez-Sola^{*}, Sonia Sanabria-García, Pascual Garrido-Miralles

Department of Financial Economics and Accounting, Universidad de Alicante, Alicante, Spain

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ABSTRACT

This paper studies the effect of financial constraints and financial distress on accounting restatements; specifically, we empirically analyse whether several firm-specific characteristics—namely, the level of leverage, the cost of debt, and the interest coverage ratio—influence the likelihood of an accounting restatement. To do so, we use a sample of Spanish listed companies in the period from 2000 to 2017. The results show that the level and cost of debt and financial distress are associated with a higher incidence of accounting restatements. Our evidence is consistent with the argument that financially constrained firms—that is, firms with higher levels of leverage, especially in the short-term, facing a higher cost of debt—and financially distressed firms probably engage in more aggressive accounting practices or opportunistic reporting to clean up their financial statements, leading to an increase in accounting restatements. Financially constrained firms could be motivated to manage financial statements in order to prevent a debt covenant violation, obtain new financing or obtain financing at a lower cost. In the case of financially distressed firms, the motivation could be to prevent bankruptcy costs. The findings are consistent with previous literature, which has shown that firms employ accounting restatement as an instrument for earnings management.

1. Introduction

The aim of financial reporting is to provide financial information about the reporting entity. Such information is useful for existing and potential investors, lenders, and other creditors, allowing them to make appropriate decisions about providing resources to the entity (OB2 FASB, 2010). Reading the resulting financial statements is the main way for external investors, creditors and other stakeholders to obtain information on a company. Users rely on financial statements to assess the financial health, profitability, and growth potential of a company, which in turn allows them to make informed investment decisions, evaluate the company's performance relative to competitors, and estimate the value of their investments. Therefore, the reliability of financial information in the financial reports will directly affect these users' decisions.

An accounting restatement occurs when a company, either voluntarily or prompted by auditors or regulators, revises public financial information that had previously been reported. According to the International Financial Reporting Standard (IFRS, 8), an accounting restatement must be prepared when there are alterations in financial statements which occur after the reporting period. Generally speaking,

announcements of firms' accounting restatements are published in the press or in relevant information provided by the National Securities Exchange Commission. A restatement means that some of the financial information provided in the previous financial statement is incorrect; therefore, accounting restatements can cast doubt on the reliability of financial statements. Correcting an accounting misstatement may alter investors' perception of the firm's past performance or prospects. In short, the accounting restatement reduces the perceived quality of financial reports, and low-quality information can mislead investors in their decision-making and reduce the effectiveness of capital market resource allocation.

Accounting restatements started to become common in the late 1990s and the number of restatements grew rapidly in the early 2000s (GAO, 2002; Wu, 2002). In the last decade, it has become even more commonplace for companies to restate financial statements because of misinformation or misleading information in previously published financial reports (Yu & Wang, 2016). The restatement of financial statements is a topic that has attracted the interest of many researchers and has become a matter of global concern (Olusola, 2020). Indeed, the prevalence of restatements has raised major concerns about the quality

^{*} Corresponding author.

E-mail addresses: mcristina.martinez@ua.es (C. Martínez-Sola), sonia.sanabria@ua.es (S. Sanabria-García), p.garrido@ua.es (P. Garrido-Miralles).

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of accounting information among regulators, legislators, creditors, auditors and investors.

Restatements to correct intentional or unintentional errors are the primary source of most investors' concerns about the manipulation of financial statements. Previous literature shows that firms apply the accounting restatement as an instrument for earnings management.

There is extensive research on the effect of accounting restatements on the stock market, especially in terms of changes in firm value. Most studies document the negative abnormal returns to the announcements of the restatements; that is, the restatement announcement is seen as bad news for investors. Moreover, we find several papers that analyse whether restatements of past accounting information affect other markets, such as the loan market. In this regard, these studies report that accounting restatement announcements increase costs: [Hribar and Jenkins \(2004\)](#) find this to be the case with the cost of equity capital, [Graham et al. \(2008\)](#) demonstrate such a link to the cost of bank loans, while [Park and Wu \(2009\)](#) focus on the secondary loan market. Although the previous literature has examined the effect of the accounting restatement on the cost of debt ([Richardson et al., 2002](#)), to the best of our knowledge there have been no studies of the effect in the opposite direction. Specifically, the question of how the cost of debt or the level of leverage influence accounting restatements has not been sufficiently explored. In this paper, we investigate whether this relationship exists in Spain, a civil law country.

The objective of this research is to examine whether financial constraints and financial distress are determinants of accounting restatements. Accordingly, this study addresses several research questions. Firstly, is the cost of debt a factor causing accounting restatements? What is the association between debt level and accounting restatement? Do firms with high levels of leverage, especially short-term debt, present more accounting restatements? Secondly, in addition to a firm's financial constraints, does financial distress also increase the incentive for accounting restatements?

This paper makes several contributions to the restatement literature and the literature on corporate financing. Firstly, we explore whether dealing with a higher cost of debt leads firms to make more accounting restatements; by analysing the impact of the cost of debt on restatement announcements, we provide evidence about the possibility that these companies are incentivized to prepare financial statements that are more attractive for lenders (among others financial entities) in view of possible future financing. Secondly, we examine the relationship between leverage and the likelihood of accounting restatement. Companies that have high volumes of financial debt and that are likely to have to refinance their projects in the future could have more problems obtaining this financing, especially in the long term, due to adverse selection problems ([Diamond & Verrecchia, 1991](#)); therefore, it is possible that these companies may try to improve their financial appearance. Furthermore, we empirically analyse whether accounting restatements are more likely to be made by companies with a high level of short-term debt, since the risk of financing grows exponentially as the short-term debt increases ([Jun & Jen, 2003](#)). Consequently, such firms have stronger incentives to clean up their financial statements, leading to an increase in accounting restatements. The third contribution is related to financial distress. Having an interest coverage ratio lower than one puts pressure on companies. By analysing the impact of low interest coverage ratios on accounting restatements, we provide evidence about the possibility that such companies are incentivized to adopt more aggressive accounting practices to prevent bankruptcy costs. Finally, this study also contributes to the extant literature by adding to the knowledge on civil law countries. We present empirical evidence for a sample of Spanish firms in the context of the continental model (civil law), unlike the majority of previous studies, which are focused on common law countries. Civil law countries are characterized by weaker investor protection and less-developed capital markets compared to common law countries ([La Porta et al., 1997](#)). The bank-based financial system of Spain and, therefore, the high dependence on bank debt makes

the study of the effect of financial constraints and financial distress on accounting restatement especially relevant. Moreover, in civil law countries, such as Spain, there is an increased reliance on accounting data in contractual agreements, which may mean that managers are more incentivized to manipulate accruals than in common law countries ([Arnedo et al., 2007](#); [Nabar & Boonlert-U-Thai, 2007](#)). In fact, the evidence indicates that earnings management is different and more pervasive in civil law institutional settings ([Leuz et al., 2003](#)). In the same vein, the incentive to use different tools for earnings manipulation could change depending on the institutional setting ([Campa & Camacho-Miñano, 2015](#)).

Our research reveals that some firms are more prone to restatement than others, particularly those that have more leverage, a higher cost of debt and an interest coverage ratio lower than one (that is, operating income lower than interest expenses). That is, the results show a positive relationship between accounting restatements and financial constraints and financial distress. This evidence is consistent with the argument that financially constrained firms (namely, firms with higher levels of debt, especially short-term debt, and a higher cost of debt) are likely to undertake more aggressive accounting practices due to financial market pressures, while financially distressed firms are likely to do so to avoid or postpone bankruptcy costs. This could motivate them to manage their accounts, and thus make more accounting restatements. Our results support our hypotheses and show that the credibility of financial statements could be diminished in the case of firms with greater incentives to clean up/improve the appearance of their financial statements; that is, firms with higher leverage, higher cost of debt, and facing financial distress.

The findings have relevant implications for various different stakeholders. Examining the influence of firms' leverage and the cost of debt on accounting restatements is an important economic issue, given that bank loans are a major source of corporate financing, especially for firms in countries with bank-based financial systems. If the volume of restatements is positively influenced by the firm's leverage and/or the cost of debt, special attention should be paid to the current financial situation of the firm. A critical implication of this is the fact that the banks and institutional investors have an information advantage. Therefore, if the accounting restatement leads to an increase in perceived risk, lenders have the opportunity to incorporate in advance the information about possible accounting restatements into the cost of debt, or even decisions about the granting of credit.

From a management point of view, the previous literature has demonstrated that financially constrained firms are associated with more discretionary accruals (a commonly used proxy for earnings management) and higher restatement probabilities ([Bowen et al., 2018](#)). One possible reason why financial constraints are positively associated with the probability of restatements is that managers of financially constrained firms could have strong incentives to engage in aggressive accounting practices to improve their financial appearance and meet short-term goals relating to earnings, debt covenants or share prices ([Jensen, 2005](#)), which in turn could lead to accounting restatements. In this respect, [Linck et al. \(2013\)](#) find that financially constrained firms use higher levels of discretionary accruals around the time of equity and debt financing. Higher stock prices can reduce the cost of equity and facilitate equity financing. Further, higher accruals improve reported earnings, and may alleviate concerns of potential creditors. Managers may be more likely to practice earnings management, suggesting an intent to mislead, generally to create an appearance of relative success. Moreover, achieving financial goals is important for both investors and business managers, as compensation may be tied to meeting such goals. There is evidence to suggest that a majority of managers admit to engaging in earnings management at the cost of their firm's long-term prospects ([Graham et al., 2005](#)). Therefore, the existence of these objectives can create incentives for earnings management and aggressive accounting practices, which in turn can lead to breaches of generally accepted accounting principles and an increase in accounting

restatements.

In the next section, we conduct a literature review and develop the two hypotheses regarding the relationship between financial constraints and accounting restatements, and between financial distress and accounting restatements. Section 3 describes the sample, variables and research methodology. Empirical results from univariate and multivariate analyses are presented in Section 4. Finally, Section 5 concludes.

2. Literature review and hypotheses development

Restatements are the result of corrections of published financial data, on which users of this information have mistakenly relied to make their financial decisions. Therefore, accounting restatements increase the unreliability of the information for the investors, as well as the risk and information asymmetry (Ahmadi et al., 2013). In addition to casting doubt on the reliability and credibility of financial statements, accounting restatements damage management reputation (Palmrose et al., 2004).

Previous literature has examined the stock market effects of accounting restatements by analysing cross-sectional determinants of the stock market reaction, shareholder value loss, and the impact on the equity cost of capital (Bardos & Mishra, 2014; Burks, 2010; Chen et al., 2014; Desai et al., 2006; Efendi et al., 2007; Files et al., 2009; Hennes et al., 2008; Hribar & Jenkins, 2004; Palmrose et al., 2004; Srinivasan, 2005; Turner et al., 2001; Wilson, 2008; among others). The evidence shows that these effects include a reduction in firm value, higher cost of capital and negative stock price reactions. Similarly, Wu et al. (2016) find a positive effect of restatements on financial distress, due to the damage to a firm's reputation. Moreover, another line of research focuses on the consequences of accounting restatements in terms of cost of debt. In this respect, Graham et al. (2008) compare bank loans initiated before and after restatements, and find that loans initiated after restatements have significantly higher loan spreads, shorter maturities, higher likelihood of being secured, and more covenant restrictions than loans initiated before restatements. They also find that banks use tighter loan contract terms to overcome increased default risk and information asymmetry arising from accounting restatements. The evidence that accounting restatements are associated with increases in the firm's cost of capital is consistent with the claims that restatements lead to greater uncertainty about the credibility and competence of the managers, and may cause investors to question other aspects of the firm's financial statements, thus increasing the cost of external financing (Hribar & Jenkins, 2004).

On the other hand, Hennes et al. (2008) study the consequences of accounting restatements in terms of an increase in CEO/CFO turnover. From a corporate governance perspective, a recent paper by Rezaee et al. (2021) studies whether CEO experience and financial expertise is related to accounting restatements; the authors find a negative relationship between CEOs with financial expertise and accounting restatements, suggesting that accounting restatements may be a consequence of weakness in the firm's accounting and financial reporting system.

We add to the stream of literature that examines the association between corporate financing and restatements. Unlike most of the previous literature, we do not focus on analysing the consequences of accounting restatements but rather on their causes or determinants. In particular, we contribute to the literature by studying whether companies that a priori may have financial difficulties are more likely to issue an accounting restatement. Prior research indicates that it is important to control for firms' financial situation when analysing accounting restatements (DeFond & Jiambalvo, 1991). There is evidence that restatement firms have more frequent external financing needs than non-restatement firms (Richardson et al., 2002). This evidence supports the argument that financial market pressures could be motivating firms to undertake aggressive accounting practices that result in accounting restatements. Indeed, Campa and Camacho-Miñano (2015) lend support to the idea that situations that put managers under pressure affect

earnings management. There is ample evidence that financially distressed companies show higher levels of earnings management than healthy companies (Beneish et al., 2012; Campa & Camacho-Miñano, 2015; García Lara et al., 2009; Jones, 2011; Kallunki & Martikainen, 1999; Lilién et al., 1998; Ohlson, 1980; Rosner, 2003; Smith et al., 2001). Similarly, previous literature finds that managers have a greater incentive to manage earnings upwards when firms are financially constrained (Bowen et al., 2018; Farrell et al., 2014; He & Ren, 2023; Iatridis & Kadorinis, 2009; Kurt, 2018; Teoh et al., 1998).

In a similar vein, Bermpei et al. (2022), in an empirical study about economic policy uncertainty and financial reporting quality for listed firms in the US, find that the positive relationship between economic policy uncertainty and earnings management is stronger for financially constrained firms and financially distressed firms. They argue that firms with higher default risk have more incentives to present an improved financial position in order to signal a favourable outlook to outsiders such as investors, creditors, and analysts. Similarly, managers of financially constrained firms have greater motivation to manage earnings in order to facilitate access to external financing. Therefore, we posit that financial constraints can influence firms' likelihood of issuing an accounting restatement; specifically, we believe that more indebted firms, in terms of both total and short-term debt, facing a higher cost of debt are more likely to reformulate their accounts. The argument is that financial market pressures could motivate financially constrained firms to undertake aggressive accounting practices in an effort to present a healthier image and thereby secure debt financing on acceptable terms; this situation results in an accounting restatement. Likewise, we expect that companies in financial difficulties or financial distress are more likely to reformulate their accounts. In this case, the pressure of possible bankruptcy could influence accounting management and therefore accounting restatements.

Accordingly, we propose two hypotheses to test the influence of different manifestations of financial constraints and financial distress, drawn from the financial literature, on a firm's likelihood of issuing an accounting restatement.

First, we analyse whether being more financially constrained due to having high leverage can affect the probability of reformulating financial statements. Prior literature finds that firms with higher leverage face higher risk of bankruptcy, leading to a higher probability of financial distress (Wu et al., 2016). Therefore, we analyse high leverage as a proxy for financial constraints, understood as an antecedent of potential financial difficulties or financial distress. Regarding bank debt, there is evidence that restatement firms have higher debt levels than non-restatement firms (see, for instance, Kinney & McDaniel, 1989). Also, Zhang et al. (2018) find that firms with higher leverage are more likely to restate financial statements. In this vein, Richardson et al. (2002) and Dechow et al. (1996) find that restating firms have high debt levels and are subject to abnormally high earnings growth expectations, and they infer that managers' prime motivation for manipulating earnings is to attract low-cost external financing. In this sense, Bowen et al. (1995) point out that one of the incentives for managers to report higher earnings is that lenders offer better terms if they believe that the firm is less likely to either default or delay loan payments. Similarly, there is evidence that restatement firms have higher levels of outstanding debt, more frequent external financing needs, and raise large amounts of cash (Efendi et al., 2007). As Efendi et al. (2007) argue, firms that increase their capital could have further incentives to artificially promote financial health through financial misreporting.

On the other hand, a common covenant in financial agreements establishes a maximum limit in the debt-to-equity ratio or limitation on indebtedness, which limits the amount of new debt a firm can take on; therefore, highly leveraged companies would have an incentive to manipulate accounts in order to avoid violating the covenant. In fact, Badertscher and Burks (2011) employ leverage as a proxy for the manager's incentives to avoid violating covenants. In this vein, DeFond and Jiambalvo (1994) argue that debt covenant restrictions influence

accounting choices, while [Sweeney \(1994\)](#) finds that managers of firms approaching debt-covenant violation respond with income-increasing accounting changes. We expect that highly leveraged firms (a proxy for financial constraints since this may restrict access external financing,) are more likely to make discretionary adjustments, which could prompt an accounting restatement.

Moreover, we empirically analyse whether accounting restatements are more likely to be made by companies with a high level of short-term debt, since, as we mentioned previously, the risk of financing grows exponentially as the short-term debt increases ([Jun & Jen, 2003](#)). We expect that the shorter the maturity of the debt, the greater the probability of restatement, as these firms have greater refinancing risk, in addition to the aforementioned issues with covenant violation. Also, a high level of short-term debt may negatively affect the company's credit rating, which could result in increased borrowing costs and difficulties in accessing new financing. Consequently, such firms have stronger incentives to clean up their financial statements, leading to an increase in accounting restatements.

Another dimension of financial constraints is the cost of debt, since it represents a barrier to raising external financing. Along these lines, [Burns and Kedia \(2006\)](#) argue that firms with a greater need to access external capital markets are more likely to misreport in order to reduce the cost of external financing (see [Dechow et al., 1996](#)). Similarly, [Richardson et al. \(2002\)](#) find that a primary motivation for earnings manipulation is to obtain external financing at a lower cost; therefore, we expect that firms which are financially constrained in terms of the cost of financing could have incentives to adopt aggressive accounting policies, resulting in accounting restatements.

[Beatty et al. \(2002\)](#) find that accounting flexibility is so important that firms (borrowers) prefer to pay higher interest rates so as not to exclude voluntary accounting changes and mandatory accounting changes from debt contracts. The reason for this is that accounting flexibility reduces the probability of covenant violations, which would imply even higher costs. A failure to comply with the loan agreement could mean the firm has to repay the loan before the established maturity date, which could aggravate the firm's financial constraints, as well as sending a negative signal to lenders. In this vein, financially constrained firms can opportunistically introduce voluntary accounting changes (or exercise accounting discretion); for instance, they can change their accounting policies to use a different depreciation method or to switch from FIFO to weighted average cost as an inventory valuation method, or they can modify an estimation to allocate costs and revenues differently. In such a case, the company must restate the comparative year. The motivation for financially constrained firms to exercise accounting discretion is clear: to prevent debt covenant violation, obtain new financing or obtain financing at a lower cost. We expect that firms with a higher cost of debt are more likely to make restatements, since voluntary accounting changes would require a restatement of the financial statements. This prediction is in line with the results of [Beatty et al. \(2002\)](#).

Given all of the above, the first hypothesis we propose is as follows:

H₁: There is a positive relationship between financial constraints, in terms of leverage and cost of debt, and accounting restatements.

Secondly, we focus on financial difficulties or distress and their possible relationship with accounting restatement. As [Campa and Camacho-Miñano \(2015\)](#) point out, there is a body of research which analyses the motivation of managers to manipulate earnings. The incentives to manipulate are stronger during situations of financial distress such as when firms are approaching bankruptcy ([Burgstahler & Dichev, 1997](#)) and the empirical evidence shows that such firms do indeed manipulate earnings more than healthy firms ([Campa & Camacho-Miñano, 2014](#); [Rosner, 2003](#)). In the same vein, [Jiang et al. \(2015\)](#), focusing on China, find that financial distress increases the likelihood of management engaging in opportunistic reporting, which in turn leads to restatement.

[Beaver \(1966\)](#) argues that financial distress takes many different

forms; the term is usually applied to situations involving high debt, high interest rates, losses or bankruptcy. Although there are several indexes to measure financial distress based on multiple criteria, we opted for a more intuitive and simple measure, following [Fich and Slezak \(2008\)](#) and [Campa and Camacho-Miñano \(2015\)](#). We consider that an indication of financial distress may be when companies are not able to generate sufficient profits from their operations to cover their financial expenses. If the company does not cover interest expenses with its operating profits, it is likely that, if the situation does not improve, the company will delay payments or will not be able to meet its debt obligations, which could lead to bankruptcy. We expect that the positive relationship posited above between the different proxies of financial constraints and restatements is stronger for firms in financial distress, since these firms are closer to bankruptcy.

In light of the above explanation, we propose the following hypothesis:

H₂: There is a positive relationship between financial distress and accounting restatements.

3. Sample and methodology

Our initial sample consists of an unbalanced panel of 282 Spanish companies with 4409 firm-year observations over the 2000–2017 period. The information used in this study has been obtained from the SABI database (Iberian Balance Sheet Analysis System), produced by Bureau Van Dijk, and the CNMV (*Comisión Nacional del Mercado de Valores*- National Securities Market Commission). Then, to obtain the final database to be used in the analysis, we apply a series of filters: we select (i) listed companies and (ii) audited financial statements, as this accounting information can be considered more reliable, and (iii) we eliminate micro firms (firms with fewer than 10 employees, an annual turnover of less than €2 million, and total assets of less than €2 million). In the process of cleaning the sample data, we eliminate 1% of the extreme values, percentiles 1 and 99, for all the variables employed in the analysis, in order to reduce the impact of outliers. The final sample, after eliminating the missing values of the variables, includes 2086 firm-year observations.

3.1. Methodology and definition of variables

This section presents the methodology used to estimate the effect of financial constraints and financial distress on companies' accounting restatements. We estimate a logit model in which the dependent variable is Accounting Restatements (RESTAT); it is a dummy variable which takes the value 1 if the company has restated its financial statements in the year in question, and 0 otherwise.

Based on the previous literature described in the preceding section, the explanatory variables are: total leverage, short-term leverage, the cost of debt and financial distress (dummy variable that takes the value 1 if the interest coverage ratio is lower than one, that is, the operating profit is lower than interest expenses, and 0 otherwise). We focus on firm-specific characteristics that a priori may be potential incentives for firms to engage in aggressive accounting practices or motivate managers to manipulate earnings, in turn leading to accounting restatement.

Control variables are based on firm characteristics which have been found to be related to accounting restatements. For example, [Olusola \(2020\)](#) finds that there are differences in size, return on assets, and leverage between restatement and non-restatement firms. Likewise, [Ahmed and Goodwin \(2007\)](#) report differences in profitability, growth and size between restatement and non-restatement firms. [Alyousef and Almutairi \(2010\)](#) argue that accounting restatements are more likely to occur in smaller, older, more profitable firms. Variables commonly used in the restatement literature include firm size, age, growth opportunities, profitability, as well as time and industry dummies.

Previous literature has demonstrated a relationship between firm size and the likelihood of accounting restatement, in particular, larger

firms have less incentive for earnings management, and are therefore less likely to issue an accounting restatement (Zhang et al., 2018). We also include firm age, since Beasley (1996) argues that firm age is negatively associated with reporting problems, because young firms face problems that could lead to more accounting restatements. Consistent with this, Rezaee et al. (2021) find a significant negative association between firm age and the incidence of accounting restatements. We also expect that growth opportunities could be related to accounting restatements; for example, Beasley (1996) claims that firms' desire to maintain a certain rate of growth can create an incentive to manipulate earnings. In line with this, Abbott et al. (2004) report a positive relationship between growth and accounting restatements. Finally, we include profitability since previous studies have shown that a poor financial performance provides an incentive to misstate earnings (Scholz, 2008).

The different variables are calculated as follows: Leverage, LEV, is the ratio between total liabilities and equity. Short-term leverage, STLEV, is the ratio between short-term liabilities and equity. The proxy for cost of debt is KD, and it is calculated as financial expenses divided by long-term creditors plus financial debts. The last explanatory variable is financial distress, FD, proxied by DCOV, which takes the value 1 if the firm's operating profit is lower than interest expenses (that is, if the interest coverage ratio, calculated as operating profits divided by interest expenses, is lower than one) and 0 otherwise. Regarding control variables, company size, SIZE, is the natural logarithm of total assets; AGE is the logarithm of years since the company's foundation; and profitability is the return on assets (ROA), calculated as operating income divided by total assets. Due to the scarcity of information on market capitalization in the SABI database, our proxy for growth opportunities, GROWTH, is sales growth.

We develop the following models that relate several proxies of financial constraints and financial distress to accounting restatements:

$$\text{RESTAT}_{it} = \beta_0 + \beta_1 \times \text{LEV}_{it} + \beta_2 \times \text{SIZE}_{it} + \beta_3 \times \text{AGE}_{it} + \beta_4 \times \text{ROA}_{it} + \beta_5 \times \text{GROWTH}_{it} + \lambda_t + I_s + e_{it} \quad (1)$$

$$\text{RESTAT}_{it} = \beta_0 + \beta_1 \times \text{STLEV}_{it} + \beta_2 \times \text{SIZE}_{it} + \beta_3 \times \text{AGE}_{it} + \beta_4 \times \text{ROA}_{it} + \beta_5 \times \text{GROWTH}_{it} + \lambda_t + I_s + e_{it} \quad (2)$$

$$\text{RESTAT}_{it} = \beta_0 + \beta_1 \times \text{KD}_{it} + \beta_2 \times \text{SIZE}_{it} + \beta_3 \times \text{AGE}_{it} + \beta_4 \times \text{ROA}_{it} + \beta_5 \times \text{GROWTH}_{it} + \lambda_t + I_s + e_{it} \quad (3)$$

$$\text{RESTAT}_{it} = \beta_0 + \beta_1 \times \text{FD}_{it} + \beta_2 \times \text{SIZE}_{it} + \beta_3 \times \text{AGE}_{it} + \beta_4 \times \text{ROA}_{it} + \beta_5 \times \text{GROWTH}_{it} + \lambda_t + I_s + e_{it} \quad (4)$$

λ_t , which controls for time effects, are year dummy variables that change in time but are equal for all firms in each of the periods considered; I_s controls for the industry in which the firm operates, and e_{it} is the error term.

To avoid multicollinearity problems, we estimate models 1 to 4 separately.

4. Empirical results

This section presents the empirical results of our analysis of the influence of financial constraints and financial distress on accounting restatements in Spanish listed companies from 2000 to 2017. We analyse firm-specific characteristics—namely, leverage (total and short-term leverage), the cost of debt, and the interest coverage ratio—to determine their relationship with the likelihood of accounting restatements.

4.1. Descriptive analysis

First, we start with a descriptive analysis of variables that could determine the probability of a company restating its accounts. Next, we compare the mean of our explanatory variables, as well as control variables, for companies that restate their financial statements versus those

that do not issue a restatement. The preliminary analysis of Table 1 shows a higher cost of debt in the group of firms that announce an accounting restatement compared to the group that do not. Specifically, the average cost of debt in the subgroup of restatement firms (RESTAT dummy variable takes the value 1) is 11.52%, while the mean for non-restatement firms (RESTAT variable takes value 0) is 8.09%. The difference is 3.42 percentage points. The test of equality of means (*t*-test) reveals that there are statistically significant differences between the reported mean values, so we reject the null hypothesis of equality of means (significant at the 1 percent level). Furthermore, we compare short-term leverage (current liabilities to equity) in both groups, and the findings show that restatement firms have higher level of short-term leverage (current liabilities are 1.61 times the equity) than non-restatement firms (in this case, current liabilities are 1.31 times the equity). We reject the null hypothesis of equality of means, as the differences are statistically significant at the conventional levels. When we consider total leverage instead of short-term leverage, there are still differences, although quantitatively smaller. The average leverage for companies that have restated their accounts is 2.54 versus 2.33 for companies that have not. However, we cannot affirm that the differences are statistically significant at the conventional levels.

For financial distress, we perform a test of proportions. The mean of a binary variable is mathematically equivalent to a proportion; therefore, we perform a test on the equality of proportions. The test checks for a difference between one sample and a hypothesized population value or, as in our case, for a difference in population proportions estimated from two samples. Specifically, we test whether the proportion of financial distress (dummy variable DCOV takes the value 1) is equal between restatement firms and non-restatement firms. The results obtained show that the proportion of companies whose operating income is less than interest expenses in the group of restatement companies is significantly higher than in the group of non-restatement companies. The difference is statistically significant at the 1 percent level.

In sum, from a descriptive point of view, we find that restatement firms are more financially constrained, that is, they have higher leverage (especially in the short term), as well as a higher cost of debt than non-restatement firms. Moreover, the proportion of companies with financial difficulties is higher in the group of restatement firms. Furthermore, we find that restatement firms are smaller, younger and have lower profitability and growth compared to non-restatement firms, although the differences are only statistically significant for size and profitability. This may be because the small sample size can diminish the statistical power of difference of means tests, making it harder to detect true differences between groups. This can give rise to non-statistically significant results, even if there are in fact differences in the population.

To complete this preliminary analysis, we perform a sectoral analysis by comparing accounting restatements across sectors of activity. In absolute values, the manufacturing and hospitality sectors register the highest numbers of reformulations. This is to be expected because they provide more observations. In relative terms, the sector with the most restatements is agriculture and mining (this may not be very reliable given the small number of observations for this sector), followed by wholesale and retail trade, and manufacturing, while the sector with the lowest percentage of accounting restatements is construction and transport. However, the differences in percentage terms are not very high. As such, we do not observe a clear sectoral pattern (see Table 2).

Finally, we test the correlation between the independent (continuous) variables. We do not find large and statistically significant correlations that could indicate multicollinearity problems. In Table 3 below, we observe that the correlation between total leverage and short-term leverage is positive and very high, as is to be expected, but these variables are not included simultaneously in the model.

4.2. Multivariate analysis

In this section, we estimate models 1 to 4 to analyse whether

Table 1
Descriptive statistics: Comparison of means.

| VARIABLES | RESTATEMENT FIRMS | NON-RESTATEMENT FIRMS | DIFFERENCE OF MEANS | T-STATISTICS/ Z-STATISTICS |
|----------------------|-------------------|-----------------------|---------------------|-------------------------------|
| LEV _{it} | 2.5385 | 2.3301 | -0.2083 | -0.85 |
| STLEV _{it} | 1.6124 | 1.3094 | -0.3030* | -1.88 |
| KD _{it} | 0.1152 | 0.0809 | -0.0342*** | -3.21 |
| DCOV _{it} | 0.5833 | 0.3691 | -0.2142*** | -3.97 |
| SIZE _{it} | 11.4891 | 13.1864 | 1.6972*** | 6.83 |
| AGE _{it} | 3.4804 | 3.5620 | 0.0815 | 0.89 |
| ROA _{it} | 0.0309 | 0.0457 | 0.0147* | 1.91 |
| GROWTH _{it} | 0.2030 | 0.4132 | 0.2102 | 0.24 |
| Observations | 84 | 2002 | | |

*** Indicates significance at the 0.01 level, ** indicates significance at the 0.05 level, and * indicates significance at the 0.10 level. For the continuous variables, we perform a test of equality of means (*t*-test) between the reported mean values, under the null hypothesis of equality of means. For the financial distress dummy variable (DCOV), we perform a test of proportions; therefore, we provide Z-statistics.

Table 2
Sectoral analysis.

| Sector | Total observations | Accounting restatements | Restatements by sector |
|-----------------------------------|--------------------|-------------------------|------------------------|
| 1. Agriculture and mining | 24 | 4 | 16,67% |
| 2. Manufacturing | 584 | 27 | 4,62% |
| 3. Supplies | 90 | 4 | 4,44% |
| 4. Construction | 188 | 5 | 2,66% |
| 5. Wholesale and Retail | 127 | 7 | 5,51% |
| 6. Transport | 103 | 3 | 2,91% |
| 7. Hospitality and other services | 970 | 34 | 3,50% |

financial constraints and financial distress have any influence on the probability of issuing an accounting restatement.

In models 1 to 3 we test whether there is any relationship between different proxies of financial constraints—total leverage, short-term leverage and cost of debt—and accounting restatements. In the first column of Table 4, we estimate model 1, in which the explanatory variable is total leverage. As we report in Table 4, we find a positive and statistically significant coefficient for this variable, indicating that more indebted companies are more likely to restate their financial statements. We are also interested in short-term leverage, since companies with more short-term debt will generally have greater refinancing needs and therefore be more exposed to financial constraints. In the second column of Table 4, we show a positive and statistically significant relationship between short-term leverage and the probability of accounting

Table 3
Correlation matrix.

| | LEV | STLEV | KD | COV | SIZE | AGE | ROA | GROWTH |
|--------|---------|---------|---------|---------|---------|---------|--------|--------|
| LEV | 1 | | | | | | | |
| | 0.0000 | | | | | | | |
| STLEV | 0.8610 | 1 | | | | | | |
| | 0.0000 | 0.0000 | | | | | | |
| KD | 0.0119 | 0.1019 | 1 | | | | | |
| | 0.5857 | 0.0000 | 0.0000 | | | | | |
| COV | -0.1195 | -0.0407 | 0.0033 | 1 | | | | |
| | 0.0000 | 0.0630 | 0.8810 | 0.0000 | | | | |
| SIZE | 0.2280 | 0.0798 | -0.0305 | -0.0302 | 1 | | | |
| | 0.0000 | 0.0003 | 0.1642 | 0.1674 | 0.0000 | | | |
| AGE | 0.0219 | 0.0459 | 0.0356 | 0.0002 | 0.1861 | 1 | | |
| | 0.3181 | 0.0360 | 0.1037 | 0.9910 | 0.0000 | 0.0000 | | |
| ROA | -0.1131 | -0.0905 | 0.0041 | 0.4203 | 0.1614 | -0.0385 | 1 | |
| | 0.0000 | 0.0000 | 0.8519 | 0.0000 | 0.0000 | 0.0785 | 0.0000 | |
| GROWTH | -0.0140 | -0.0168 | -0.0087 | 0.0200 | -0.0253 | -0.0423 | 0.0605 | 1 |
| | 0.5232 | 0.4423 | 0.6912 | 0.3610 | 0.2477 | 0.0532 | 0.0057 | 0.0000 |

This table reports the correlation coefficients of the continuous variables employed in the paper: leverage (LEV), short-term leverage (STLEV), cost of debt (KD), interest coverage ratio (COV), natural logarithm of total assets (SIZE), logarithm of years since the company’s foundation (AGE), return on assets (ROA), and annual sales growth (GROWTH). T-statistics are reported below coefficients.

Table 4
Financial constraints and accounting restatements.

| | RESTAT (1) | RESTAT (2) | RESTAT (3) |
|----------------------|--------------------------|---------------------------|----------------------------|
| LEV _{it} | 0.0839* (1.93) | | |
| STLEV _{it} | | 0.1462** (2.26) | |
| KD _{it} | | | 2.2319*** (2.89) |
| SIZE _{it} | -0.3851*** (-6.08) | -0.3759*** (-5.94) | -0.3714*** (-5.91) |
| AGE _{it} | 0.0913 (0.54) | 0.0744 (0.44) | 0.0255 (0.15) |
| ROA _{it} | -0.3048 (-0.20) | -0.3764 (-0.24) | -0.5681 (-0.37) |
| GROWTH _{it} | -0.0100 (-0.27) | -0.0096 (-0.26) | -0.0091 (-0.28) |
| Constant | 1.2922 (1.47) | 1.2503 (1.43) | 1.4497* (1.65) |
| Observations | 1940 | 1940 | 1940 |
| Prob > chi2 | 0.0000 | 0.0000 | 0.0000 |
| R-Squared | 0.1045 | 0.1062 | 0.1096 |

All estimations have been carried out using logistic regressions. In column (1) we estimate model 1 including LEV_{it} as our independent variable of interest. In column (2) we estimate model 2 including STLEV_{it} as our independent variable of interest. In column (3) we estimate model 3 including KD_{it} as our independent variable of interest. The dependent variable is RESTAT_{it} which takes the value 1 if the company has restated its financial statements in year t, and 0 otherwise. Control variables are SIZE_{it}, AGE_{it}, ROA_{it}, and GROWTH_{it}. Time and sector dummies are included in all regressions, although coefficients are not presented. Z statistics are reported below coefficients. Significant at ***1 percent, **5 percent, *10 percent.

results are consistent with previous literature, which finds that managers have a greater incentive to manage earnings when firms are financially constrained (Bowen et al., 2018; Farrell et al., 2014; He & Ren, 2023; Iatridis & Kadorinis, 2009; Kurt, 2018; Teoh et al., 1998). Financial market pressures could motivate financially constrained firms to undertake aggressive accounting practices to present a healthier image, in an attempt to secure debt financing on acceptable terms, or to avoid debt covenant violation, and this may result in accounting restatements. This is in line with the findings of Bermpei et al. (2022), who report that managers of firms with increased financial constraints have greater motivation to manage earnings to facilitate access to external financing.

Finally, in Table 5, we estimate the Financial Distress model (4) in which the independent variable is DCOV; a dummy variable that takes the value 1 if the firm's operating profit is lower than interest expenses, and 0 otherwise.¹ We empirically analyse the effect of financial distress on the likelihood of restatement, finding a positive relationship between the two variables. One reason for this could be that financially distressed firms are more likely to make accounting restatements because they have greater incentives to adopt more aggressive accounting practices to prevent bankruptcy costs. Our results are in line with those of Burns and Kedia (2006) and Rezaee et al. (2021), who find that firms with larger expected costs of financial distress are more likely to restate.

¹ A less severe form of distress may be that the company reports losses (Appiah et al., 2015). In this regard, the literature shows that managers, through earnings management, opportunistically avoid reporting earnings decreases and losses (Bowen et al., 1995). Furthermore, as prior literature on accounting restatements has shown that firms that restate their earnings experience losses (Palmrose et al., 2004), for a robustness check, we also include losses (negative net income). Results show a positive relationship between losses and accounting restatements, that is, companies with losses are more likely to make accounting restatements, consistent with the idea that companies with losses have more incentives to manipulate their accounts (Burgstahler & Dichev, 1997). Results are available upon request.

Table 5
Financial distress and accounting restatements.

| | RESTAT |
|----------------------|----------------------------|
| FD _{it} | 1.0014*** (3.42) |
| SIZE _{it} | -0.3720*** (-5.87) |
| AGE _{it} | 0.0886 (0.53) |
| ROA _{it} | 3.1944* (1.65) |
| GROWTH _{it} | -0.0147 (-0.30) |
| Constant | 0.8494 (0.94) |
| Observations | 1940 |
| Prob > chi2 | 0.0000 |
| R-Squared | 0.1169 |

All estimations have been carried out using logistic regressions. We estimate model 4 including FD_{it} as our independent variable of interest. The dependent variable is RESTAT_{it} which takes the value 1 if the company has restated its financial statements in year t, and 0 otherwise. Control variables are SIZE_{it}, AGE_{it}, ROA_{it}, and GROWTH_{it}. Time and sector dummies are included in all regressions, although coefficients are not presented. Z statistics are reported below coefficients. Significant at ***1 percent **5 percent, *10 percent.

The findings confirm hypothesis 2 and are consistent with previous empirical evidence showing that companies in periods of financial distress, approaching bankruptcy, exhibit higher levels of earnings manipulation in order to avoid or postpone bankruptcy (Beneish et al., 2012; Campa & Camacho-Miñano, 2015; García Lara et al., 2009; Jones, 2011; Kallunki & Martikainen, 1999; Lilien et al., 1998; Ohlson, 1980; Rosner, 2003; Smith et al., 2001). Our results are also in line with Bermpei et al. (2022), who argue that firms with higher default risk have more incentives to provide an improved financial position to signal a favourable outlook to outsiders such as investors, creditors, and analysts.

Regarding the results for the control variables, we find a negative relationship between accounting restatements and the variables firm size, profitability and sales growth; however, the only one that is statistically significant in all models is firm size.² Similarly, Kinney and McDaniel (1989) show that companies that restate their accounts tend to be smaller, less profitable, have relatively more debt, and have lower growth than the mean for their industry, indicating financially weaker firms. Moreover, the results reflect those of Scholz (2014), who asserts that restatement companies tend to be smaller and unprofitable. Regarding the age of the company, this variable is positive but not statistically significant at conventional levels. All the models include time and sector dummies.

As a robustness check of the results, we incorporate the variable of interest lagged by one period to control for potential endogeneity. Results remain unchanged. As illustrated in Tables 6 and 7, the debt level (leverage) in a given year (both total and short-term), as well as the cost of debt, are positively associated with the probability of the company restating its accounts the following year. The same occurs for the interest coverage ratio (operating profit to interest expenses); having a ratio below 1 increases the likelihood of restating the accounts in the subsequent year.

² Additionally, to address the possible existence of multicollinearity, we re-estimate model (4) by eliminating ROA as a control variable, since it has a high correlation with the independent variable DCOV (-0.5846). The results remain unchanged.

Table 6
Robustness Financial constraints and accounting restatements.

| | RESTAT (1) | RESTAT (2) | RESTAT (3) |
|------------------------|-----------------------|-----------------------|-----------------------|
| LAGLEV _{it} | 0.1420*** (2.78) | | |
| LAGSTLEV _{it} | | 0.2286*** (2.97) | |
| LAGKD _{it} | | | 2.2210** (2.10) |
| SIZE _{it} | -0.4011*** (-5.56) | -0.3872*** (-5.35) | -0.3862*** (-5.35) |
| AGE _{it} | 0.1065 (0.52) | 0.0666 (0.33) | 0.0417 (0.20) |
| ROA _{it} | -0.5299 (-0.29) | -0.7240 (-0.40) | -0.4760 (-0.27) |
| GROWTH _{it} | -0.0081 (-0.22) | -0.0079 (-0.22) | -0.0066 (-0.25) |
| Constant | 1.0604 (0.99) | 1.0912 (1.02) | 1.3206 (1.22) |
| Observations | 1559 | 1559 | 1559 |
| Prob > chi2 | 0.0000 | 0.0000 | 0.0000 |
| R-Squared | 0.1180 | 0.1196 | 0.1127 |

All estimations have been carried out using logistic regressions. As a robustness check of the results, we incorporate the variable of interest lagged by one period to control for potential endogeneity. In column (1) we estimate model 1 including LAGLEV_{it} as our independent variable of interest. In column (2) we estimate model 2 including LAGSTLEV_{it} as our independent variable of interest. In column (3) we estimate model 3 including LAGKD_{it} as our independent variable of interest. The dependent variable is RESTAT_{it} which takes the value 1 if the company has restated its financial statements in year *t*, and 0 otherwise. Control variables are SIZE_{it}, AGE_{it}, ROA_{it}, and GROWTH_{it}. Time and sector dummies are included in all regressions, although coefficients are not presented. Z statistics are reported below coefficients. Significant at ***1 percent, **5 percent, *10 percent.

Table 7
Robustness Financial distress and accounting restatements.

| | RESTAT |
|----------------------|-----------------------|
| LAGFD _{it} | 0.6440** (2.14) |
| SIZE _{it} | -0.3775*** (-5.22) |
| AGE _{it} | 0.0448 (0.22) |
| ROA _{it} | 1.5863 (0.77) |
| GROWTH _{it} | -0.0097 (-0.34) |
| Constant | 1.0240 (0.93) |
| Observations | 1559 |
| Prob > chi2 | 0.0000 |
| R-Squared | 0.1147 |

All estimations have been carried out using logistic regressions. As a robustness check of the results, we incorporate the variable of interest lagged by one period to control for potential endogeneity. We estimate model 4 including LAGFD_{it} as our independent variable of interest. The dependent variable is RESTAT_{it} which takes the value 1 if the company has restated its financial statements in year *t*, and 0 otherwise. Control variables are SIZE_{it}, AGE_{it}, ROA_{it}, and GROWTH_{it}. Time and sector dummies are included in all regressions, although coefficients are not presented. Z statistics are reported below coefficients. Significant at ***1 percent, **5 percent, *10 percent.

In short, our findings show that accounting restatements are more likely to occur among financial constrained firms and financially distressed firms, because managers of these firms are under greater pressure to present a healthier financial situation, which could lead to management of the accounts. This can have negative consequences for the company, since inaccurate financial information, and the consequent appearance of accounting restatements, undermines the credibility of a company and its management, even if the errors are unintentional. Lenders may consider applicants with financial reporting errors to be riskier and charge them higher interest rates or even refuse to lend them money. Investors become cautious when they lose confidence in a company's financial information.

5. Conclusion

The restatement of financial statements is a topic that has attracted the interest of many researchers. However, the main body of the accounting literature is focused on the effects of accounting restatements in terms of stock market reaction in common law countries. There is also a line of research analysing the consequences of accounting restatements for the cost of debt. In this paper, we employ a different approach; specifically, we investigate whether financial constraints and financial distress determine the likelihood of issuing an accounting restatement. To do so, we focus on several firm characteristics: leverage (total and short-term), the cost of debt and an interest coverage ratio lower than one (interest expenses greater than the operating profit).

The findings show that both financial constraints and financial distress are connected with the likelihood of restatement. In particular, the evidence shows that firms with higher levels of debt, especially short-term debt, facing a higher cost of debt and in financial distress are associated with a higher incidence of accounting restatements. These firms probably engage in more aggressive accounting practices due to financial market pressures, which could motivate them to manage their accounts, and thus make more accounting restatements. From a theoretical point of view, this paper has important implications. Financially constrained companies use higher levels of discretionary accruals at the time of equity and debt financing. Higher share prices can reduce the cost of capital and make equity financing easier. Additionally, larger accruals improve reported earnings and can ease the concerns of potential creditors. If the success of future financing depends, at least partially, on investor confidence in the company's management, a financially constrained company may opt for earnings management.

The evidence is in line with the previous literature, which has shown that firms employ accounting restatement as an instrument for earnings management. For instance, [Agrawal and Chadha \(2005\)](#) suggest that accounting restatement is an indicator of earnings management practices. Our results support our hypotheses and show that the credibility of financial statements may be diminished in firms with greater incentives to restate their financial statements; that is, firms with a higher cost of debt, more leverage and in financial distress.

Therefore, these firm characteristics could be used to predict restatement. Errors in financial information, leading to the appearance of accounting restatements, call into question the credibility of a company even when the errors are unintentional. Lenders may consider applicants with financial reporting errors to be riskier and therefore charge them higher interest rates or even refuse to lend them money. The findings have relevant practical implications for banks and institutional investors, providing them with an information advantage, since lenders have the opportunity to incorporate in advance the information about potential accounting restatements into the cost of debt or the decision of whether or not to grant credit.

A notable implication for management is that although firms may restate their financial statements to obtain more debt financing or financing at a lower cost, this can lead companies into a vicious cycle, since, as previous literature reports, accounting restatements raise the cost of debt for firms ([Graham et al., 2008](#); [Park & Wu, 2009](#)). Therefore,

firms that have issued accounting restatements could face greater financial constraints. What is more, as we state above, banks might even charge a higher rate of interest to these companies in anticipation of potential problems. Although accounting restatement may allow a firm to achieve its financial targets in the short-term, in the long-term this only aggravates the poor financial situation of the company. In line with other authors in the management literature, such as Wu et al. (2016), we propose that, in order to restore the reputation of the company, restatement firms should undertake remedial actions such as changing the managers involved and enforcing stronger corporate governance and internal control mechanisms.

Moreover, we are concerned with the question of whether, following a restatement, companies may be at higher risk of future misstatements. Therefore, our results should be taken into account by agents involved in the debt market, especially financial entities and investors.

In addition, it is critical to take into account that managers' achievement of the company objectives is important for both investors and the managers themselves, as their compensation may be tied to meeting some type of financial goal. Therefore, such objectives can create incentives for earnings management, which in turn can lead to breaches of generally accepted accounting principles, and thus an increase in accounting restatements. Consequently, we believe that the relationship between financial constraints and reformulations is likely to be stronger for poorly performing firms, as they lack the physical and financial resources to meet or exceed targets through normal operations. This would be worth exploring in a future line of research.

A potential limitation of this study is the small number of restatement observations. This is due to the small capital market in Spain and the fact that Spanish companies reformulate their financial statements less than firms in other countries. In this sense, Srinivasan et al. (2015) find that the restatement rate of US-listed foreign firms is significantly lower than that of comparable US firms. However, despite this limitation, we believe that this topic is of scientific interest. As mentioned earlier, this study contributes to improving our knowledge of a civil law country characterized by weaker legal protection and less developed financial markets (La Porta et al., 1997). Additionally, Spain has a bank-based financial system with high dependence on bank debt, making the study of the effects of financial constraints and financial distress on accounting restatements particularly relevant.

Given the aforementioned limitation, it would be interesting to conduct further cross-country research to analyse the impact of different legal and economic systems on the probability of issuing accounting restatements, using data from a large sample of countries. In addition, it is worth exploring a number of audit-related questions that arise from this study: Is there a relationship between having a report with qualifications and the probability of restatements? Could a change of auditor predict a restatement? Does being audited by one of the Big Four constitute a guarantee, thus leading to a lower probability of reformulation?

CRedit authorship contribution statement

Cristina Martínez-Sola: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. **Sonia Sanabria-García:** Conceptualization, Investigation, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. **Pascual Garrido-Miralles:** Conceptualization, Formal analysis, Investigation, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

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