Accounting conservatism and economic conditions: Evidence from the GIPS and the UK

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ABSTRACT

In this article we analyse whether the level of conservative accounting practice is associated with economic conditions in Greece, Ireland, Portugal, Spain (GIPS) and the UK. For that purpose, we study conditional conservatism surrounding the 2007/08 global financial crisis, using an approach that consists in examining two stages of the crisis, which we denote by the earlier stage of the crisis and the later stage of the crisis. Furthermore, we analyse the impact of the intensity of economic changes and institutional factors by comparing conservatism in the GIPS, which were more severely affected by the crisis, with the UK. The results are consistent with a conservative accounting practice in those countries over the sample period from 1998 to 2018. Besides, we find evidence of a decrease in conservative accounting in the earlier stage of the crisis and an increase in the later stage. In addition, the results suggest an incremental sensitivity of conservatism in countries that were more severely affected by financial crisis. Our findings are consistent with managers adjusting financial reporting in response to the economic environment, sometimes they appear to respond to the demand for a conservative practice from stakeholders, but other times they act as if they wanted to mislead outsiders. Therefore, this study brings some insights to the debate about the use of accounting conservatism and its relation to economic conditions.

Conservadurismo contable y condiciones económicas: evidencia en los países PIGS y en Reino Unido

RESUMEN

En este artículo se analiza si el nivel de práctica contable conservadora está asociado con las condiciones económicas de Portugal, Irlanda, Grecia y España (PIGS) y el Reino Unido. Para ello, se estudia el conservadurismo condicional en torno a la crisis financiera global de 2007/08, utilizando un enfoque que consiste en examinar dos etapas de la crisis, que denotamos como la etapa anterior a la crisis y la etapa posterior a la crisis. Además, se examina el impacto de la intensidad de los cambios económicos y de los factores institucionales comparando el conservadurismo en los países PIGS, que se vieron más afectados por la crisis, con el Reino Unido. Los resultados son consistentes con una práctica contable conservadora en esos países durante el periodo de muestra (de 1998 a 2018). Además, se encuentran evidencias de una disminución de la contabilidad conservadora en la primera etapa de la crisis y un aumento en la etapa posterior. Además, los resultados sugieren una sensibilidad incremental del conservadurismo en los países que se vieron más gravemente afectados por la crisis financiera. Los resultados son coherentes con el hecho de que los gestores ajustan la información financiera en respuesta al entorno económico; a veces parecen responder a la demanda de una práctica conservadora por parte de las partes interesadas, pero otras veces actúan como si quisieran engañar a los agentes externos. Por tanto, este estudio aporta algunas ideas al debate sobre el uso del conservadurismo contable y su relación con las condiciones económicas.

1. Introduction

In this study we analyse if changes in economic conditions affect conditional conservatism over time. To study this association, we use a long sample period and, in particular, we analyse in more detail the period surrounding the 2007/08 financial crisis. We propose that to examine this association it is necessary to analyse the impact in two specific stages which we denote by the earlier stage and the later stage of the crisis. In addition, to account for cross-sectional differences, we examine if the level of the impact varies across countries, depending on countries' institutional factors and on the intensity of the economic changes. For that purpose, we compare the UK with the group of countries that were more severely affected by the 2007/08 financial crisis, i.e. Greece, Ireland, Portugal and Spain (GIPS).

This study makes sense in the perspective of the positive accounting theory, which is concerned with explaining accounting practices as driven by economic factors. In this context, the firm is viewed as a nexus of contracts and accounting practice evolves to minimise contract costs. Consistently, much of prior literature provides contract-based explanations for conservatism, namely suggesting that conservatism is an efficient contracting mechanism (Ge et al., 2019; Gunn et al., 2018; Balakrishnan et al., 2016; Andre et al., 2015; Francis et al., 2013; Nikolaev, 2010; Zhang, 2008). Therefore, firms are likely to adjust accounting practices to the changes in economic conditions. To empirically study this association matters because accounting choices are not neutral and changes in accounting practice affect the informational content of financial statements, thus affecting financial statement users in equity and debt markets and corporate governance users (Ruch & Taylor, 2015).

We decided to include in the study the impact of the 2007/08 financial crisis because this event is characterized as the most serious economic downturn since the Great Depression (Gunn et al., 2018; Balakrishnan et al., 2016) and, for example, Trombetta & Imperatore (2014) report evidence that the impact of economic cycles on earnings management is non-monotonic and depends on the intensity of the changes. The importance of studying accounting conservatism instead of earnings management relies on the crucial role played by conservatism as an efficient contracting and governance mechanism that allows firms to achieve more permanent benefits (Ge et al., 2019).

Therefore, we aim to contribute to the ongoing debate regarding how firms change their accounting practices in response to the impact of the financial crisis. While some studies analyse the benefits of conservatism during financial crises, for example on investment (Balakrishnan et al., 2016), on market value (Francis et al., 2013), and on the cost of debt (Zhang, 2008), other studies analyse how financial crises affect managers' decisions regarding conservative practice. However, these last studies about the impact of the crisis on conservatism provide conflicting arguments. While some of them support a delay in the recognition of bad news, for example Kothari et al. (2010), other works suggest that this relationship may not be clearly defined, as documented by Gunn et al. (2018).

Our approach to analyse the impact of changes in economic conditions on conditional conservatism requires to account for managers' incentives to delay the recognition of bad news and for the demand for conservative accounting from stakeholders. We argue that in the earlier stage of the crisis, when there is greater uncertainty relative to its magnitude, duration and impact on firm performance, managers may use discretion and delay reporting bad news to outsiders, in the hope that the economy recovers. These arguments may justify a decrease in the level of conservatism in the earlier stage of the crisis. This is consistent with evidence reported by Kothari et al. (2010) on a delayed recognition of adverse economic news during the financial crisis. In a later stage of the crisis, when the negative impact of the economic downturn on the firm becomes more tangible, managers become more pessimistic and try to gain the confidence of outsiders, namely shareholders and creditors. In periods of economic downturn, internal cash flows in some firms become scarce, and firms may need external funding. In addition, during the crisis information asymmetry is likely to increase and lenders may lose confidence on the accuracy of information disclosed by the firm. As managers believe that conservative accounting is an efficient contracting and governance mechanism (Watts, 2003), and investors and creditors associate conservatism with high quality reported earnings (Gunn et al., 2018), then managers may resume conservative reporting, thus sending a positive signal to outsiders. In fact, conservative reporting is demanded by shareholders because it helps to mitigate information asymmetries (Goh et al., 2017; Garcia Lara et al., 2014; LaFond & Watts, 2008). Creditors also demand for conservatism because it is an efficient contracting mechanism (Byzalov & Basu, 2016; Nikolaev, 2010; Zhang, 2008).

To perform the empirical tests, we use two measures of conditional conservatism, the measure proposed by Basu (1997) and the measure used by Ball & Shivakumar (2005). These measures aim to capture the asymmetric timeliness in recognizing bad news relative to good news. We also use modified versions of these two models to account for economic changes and differences across countries. In the case of the Basu (1997) model, several studies provide evidence that the asymmetric timeliness measure suffers from considerable biases (Patatoukas & Thomas, 2011, Dietrich et al., 2007; Givoly et al., 2007). Ball et al. (2013a) propose an alternative explanation for those biases and suggest using an expectations model to control for expected earnings and expected returns or including firm fixed effects in regression estimations. Following their suggestion, we include firm fixed effects to estimate the asymmetric timeliness measure. Furthermore, we include interaction terms with return variance to control for the return variance effect (Badia et al., 2020; Billings et al., 2018). In addition, given prior literature documenting a significant impact of unconditional conservatism on future conditional conservatism we also include the beginning of period market-to-book ratio to control for this potential impact, (Roychowdhury & Martin, 2013; Beaver & Ryan, 2005). To empirically investigate the relationship between conditional conservatism and economic conditions we consider two four-year windows, the earlier stage of the crisis from 2005 to 2008 and the later stage of crisis from 2009 to 2012. We also examine differences across countries to account for institutional factors and the intensity of economic downturn.

Overall, the results in this study contribute in multiple ways to the literature on conditional conservatism and in particular on the association between conditional conservatism and real economic activity. Firstly, this article provides evidence consistent with prior studies that conditional conservatism is present in accounting practices in Greece, Ireland, Portugal, Spain and the UK, because of the finding that bad news is reflected in a timelier fashion than gains. Secondly, while the results suggest a more conservative accounting practice in the UK relative to the GIPS countries it may be due to un-

conditional conservatism or other factors such as the firm's scale. Thirdly, the results support a reduction in conservatism in the earlier stage of economic downturn, consistent with managers' incentives to delay reporting bad news to outsiders. Fourthly, the results show an increase in conservatism in the later stage of the crisis, consistent with managers sending a positive signal to stakeholders corresponding to their demand for conservatism, particularly in situations of more information asymmetry. Fifthly, we find evidence that the impact of the change in economic conditions on conservatism depends on the intensity of the change, because this impact is stronger for firms in more distressed countries.

Our results seem to be in line with the positive accounting theory, suggesting accounting conservatism as an efficient contracting and governance mechanism that allows to reduce information asymmetries and to mitigate agency problems. This may explain why conservatism has been present in accounting practice for a long time as reported for example by Augusta (2018), Ball et al. (2008) and Basu (1997).

The remainder of this article is organized as follows. Section 2 displays literature review and develops the hypotheses to be tested in the empirical study. Section 3 describes the empirical research design. Section 4 documents some descriptive statistics and reports the results of the empirical tests and Section 5 presents some concluding remarks.

2. Literature review and hypotheses development

This study about the impact of economic conditions on the characteristics of financial reporting builds on prior literature that investigates how business cycles affect earnings management and earnings quality (Navarro-Garcia & Madrid-Guijarro, 2016; Trombetta & Imperatore, 2014). Given the evidence reported by Trombetta & Imperatore (2014) that the impact of business cycles on earnings management depends on the intensity of the crisis we decided to study the impact of the 2007/08 financial crisis. The importance of studying accounting conservatism instead of earnings management relies on the crucial role played by conservatism as an efficient contracting and governance mechanism that may help firms to recover from the crisis.

For that purpose, we begin by analysing whether conservatism is present in accounting for the five countries that compose our sample, Greece, Ireland, Portugal, Spain (GIPS) and the UK.

Previous studies identify two types of accounting conservatism denoted by conditional conservatism and unconditional conservatism. These two types differ because conditional conservatism depends on a news event while unconditional conservatism does not. As an example of conditional conservatism, we have impairment recognition in the case of bad news and as an example of unconditional conservatism we have the immediate expensing of research and development expenditures. Because we aim to study the impact of economic downturn on accounting practice, we analyse conditional accounting conservatism, hereafter just conservatism, defined as bad news being reflected in earnings in a timelier fashion than gains, (Basu, 1997). However, prior literature, for example Roychowdhury & Martin (2013) and Beaver & Ryan (2005) argue that conditional conservatism is affected by prior unconditional conservatism, therefore in our test we control for the impact of unconditional conservatism. In addition, another line of research suggests that the Basu's proxy of conditional conservatism is biased by the effects of scale Patatoukas & Thomas, 2016 and 2011). Badia et al (2020) address this bias by controlling for the variance

of stock returns, a suggestion that we incorporate in our research design.

Prior research has provided mixed evidence on the costs and benefits of accounting conservatism. Arguments of accounting standards setters; for example, the Financial Accounting Standards Board (FASB), appear to be consistent with financial reporting moving towards fair value-based accounting and away from conservatism. The use of fair value aims to provide information useful for firm valuation, which is assumed to be the main objective of financial reporting (Kothari et al., 2010). In line with the above argument, conservatism is not included in the 2010 Conceptual Framework of International Accounting Standards Board (IASB), because of beliefs that conservatism biases accounting information and compromises neutrality. In this context, conservatism may compromise the efficiency of decision-making (Ruch & Taylor, 2015; Gigler et al., 2009).

However, the persistence of accounting conservatism over time may rely on its role in ensuring efficient contracting between shareholders, creditors and managers (Watts, 2003; Garcia Lara et al., 2014). In addition, conservatism plays an informational role by reassuring investors that the recognition of bad news in periodic reports has been complete and timely (Augusta, 2018). Prior literature suggests a number of benefits related to conservative reporting, for example mitigating information asymmetry between managers and investors in equity markets (LaFond & Watts, 2008; Ball & Shivakumar, 2005), mitigating shareholder litigation costs (Guay & Verrecchia, 2018; Garcia Lara et al., 2011; LaFond & Watts, 2008; Watts, 2003), reducing the cost of equity capital (Garcia Lara et al., 2011), reducing the cost of debt (Zhang, 2008), increasing the efficiency of executive compensation contracts (Iyengar & Zampelli, 2010), improving investment efficiency (Garcia Lara et al., 2016) and being an important mechanism of stewardship (Sodan et al., 2013).

The above arguments and evidence justify to test the hypothesis that conditional conservatism holds for this sample:

H1: Greek, Irish, Portuguese, Spanish and the UK listed firms exhibit a conservative accounting practice.

Despite prior research documenting that conservatism has been present in accounting for a long time, the demand for accounting conservatism is likely to vary across countries. For example, Givoly et al. (2010) suggest that managers' incentives when preparing financial reports depend on the demand for earnings quality by shareholders and creditors. While conservatism cannot necessarily be used to assess earnings quality, it is likely that managers are also influenced by the demand for conservative reporting by shareholders and creditors.

In addition, Ball et al. (2000) find that the demand for conservatism varies across countries in response to different institutional arrangements. For example, financial reporting is affected by several factors, such as accounting standards, the legal system, markets regulations and their enforcement (Andre et al., 2015; Ball et al., 2008). Specifically, in market-oriented common-law countries, for example the UK, there is a higher demand for conservative reporting because of the dispersed holdings of shares and bonds, in which information asymmetries tend to be resolved through public information disclosure and because of the monitoring role played by external shareholders (Givoly et al., 2010; Ball et al., 2003). By contrast, in code-law countries the demand for high quality public information is lower because firms tend to rely on bank financing, shareholding is concentrated in institutions and information asymmetries are more likely to be resolved by private information (Ball et al., 2003).

Therefore, in the case of countries with developed equity markets, with corporate dispersed ownership, there is a demand for high quality public information because financial statements play a crucial role in reducing information asymmetries between firm insiders and outside equity investors (Cerqueira & Pereira, 2017; LaFond & Watts, 2008). In this context, accounting conservatism is demanded by shareholders because it reduces managers' opportunities to manipulate accounting numbers and reduces information asymmetries (Francis et al., 2013; Givoly et al., 2010; LaFond & Watts, 2008; Ball & Shivakumar, 2005; Watts, 2003). In line with this argument, Givoly et al. (2010) and Ball & Shivakumar (2005) report evidence that private companies exhibit lower levels of accounting conservatism relative to public companies due to different market demand for earnings quality. Kim et al. (2013) analyse seasoned equity offerings and suggest that investors view conditional conservatism as a mechanism that reduces managers' opportunistic behaviour and mitigates agency problems arising from information asymmetry.

To empirically test the importance of this demand for conservatism on the part of shareholders we compare conservatism between the UK and the remaining countries. Given that we are analysing listed firms and that the UK has the largest stock market by number of firms in the sample, with dispersed ownership and strong investors rights and enforcement (Leuz et al., 2003; LaPorta et al., 2000; Nobes, 1998), we formalize the hypothesis:

H2: Listed firms in the UK exhibit a more conservative accounting practice than listed firms in the GIPS countries.

To further develop the research questions, we examine the change in accounting conservatism related to the 2007/08 financial crisis. In periods of economic downturn, managers may have incentives to delay reporting bad news to stakeholders in the hope that economic conditions will improve. For example, Vichitsarawong et al. (2010) find that conservatism and timeliness of earnings during the Asian financial crisis are low but improve in the post-crisis period. In the same line, Gunn et al. (2018) and Sodan et al. (2013) argue that accounting conservatism is expected to decrease when economic conditions begin to deteriorate and during the crisis period. Specifically, using a sample of listed companies from Central and Eastern Europe, Sodan et al. (2013) find empirical evidence that the level of conservatism is even lower during the financial crisis than before the crisis.

Given the mixed findings in prior literature described above, our contribution consists in assuming that managers' incentives regarding conservative reporting depend on the stage of the crisis. We argue that in an earlier stage of an economic downturn managers may use discretion and delay the recording of bad news in the hope that conditions will improve. Such practice is likely to decrease the level of conservatism. This use of discretion by managers to delay the recognition of bad news in the context of a financial crisis is reported in prior studies. For example, Gunn et al. (2018) suggest the use of discretion by managers to delay asset writedowns in the hope that economic conditions will improve and Kothari et al. (2010) report a delay in the recognition of adverse economic news in the financial statements of financial institutions. Such practice of delaying the recognition of bad news of poor performing firms is consistent with the results of the survey developed by Graham et al. (2005) in which executives admit sacrificing long term value to smooth earnings.

In a later stage of the crisis, when the negative shock to cash flows caused by the crisis becomes more tangible, managers have incentives to report more conservatively to send outsiders a positive signal about the quality of reported earnings. For example, the degradation in economic conditions is likely to cause a decrease in the firm's ability to generate cash-flows and, because of that, the firm may need to obtain external financing in a situation where financing availability is limited (Balakrishnan et al., 2016; Nikolaev, 2010). With debt covenants based on financial indicators, debt holders demand conservative reporting because it anticipates the violation of debt covenants, thus increasing the likelihood of recovering their loans (Balakrishnan et al., 2016). Assuming that managers are aware of that demand from creditors, they have incentives to change to a conservative reporting (Francis et al., 2013; Ball & Shivakumar, 2005). Another reason to use conservative reporting, particularly in periods of crisis, are litigation costs. During crises, equity markets tend to fall and investors may experience considerable losses, therefore the risk of litigation tends to increase (Gunn et al., 2018; Jenkins et al., 2009). Conservative reporting reduces the risk of litigation because makes more difficult for investors to use the argument that managers have deliberately overstated earnings. In addition, Francis et al., (2013) provide empirical evidence from the financial crisis that conservatism is an efficient governance mechanism to mitigate information risk and to reduce information asymmetry, consistent with the arguments of LaFond & Watts (2008). Besides, Gunn et al. (2018) argue that if managers engage in conservative accounting because of contracting incentives and agency concerns, then they have incentives to continue conservative accounting during the financial crisis.

Overall, we analyse the potential reduction in conservatism for the earlier stage of the crisis (2005 to 2008) and the increase in conservatism for the later stage of the crisis (2009 to 2012). Therefore, we formalize the following hypotheses:

H3: The level of conservative accounting practice decreases in the earlier stage of the crisis.

H4: The level of conservative accounting practice increases in the later stage of the crisis.

To deepen this research, we analyse if the association between conservatism and economic changes depends on the intensity of the crisis. To account for the intensity of the crisis, we consider two types of countries, one group is formed by the GIPS countries, which were more severely affected by the crisis. The other type of country is represented by the UK. Verney (2009) also includes Greece, Ireland, Portugal and Spain among countries worse affected by the crisis. We expect a stronger change in the level of conservatism for the GIPS countries relative to the UK for the following reasons. In the earlier stage of the crisis UK firms, which were more conservative before the crisis, tend to report more conservatively during the crisis (Gunn et al., 2018) than GIPS firms. In addition, firms in the GIPS countries have higher incentives to hide bad news because of the assumption that they were more affected by the crisis. In the later stage of the crisis, firms in the GIPS countries, which experienced a more negative shock in internal cash flows and faced severe financial constraints, tend to change to a more conservative reporting because conservatism is an efficient contracting mechanism (Balakrishnan et al., 2016).

While not directly studying the effect of financial crises on conservatism, prior studies provide evidence that changes in accounting practices depend on the intensity of economic downturns. For example, Trombetta & Imperatore (2014) in a study, at the firm-level, report evidence of non-monotonic effects of financial crises on earnings quality and Agrawal & Chatterjee (2015) find an association between the degree of distress at the firm level and the intensity of earnings man-

agement.

Following our approach of using two sub-periods and the study of Trombetta & Imperatore (2014) reporting an increase in earnings management for more distressed firms, we expect a higher decrease in the level of conservatism in the GIPS countries relative to the UK, in the earlier stage of the crisis. However, once the negative effects of the crisis become more tangible, firms in more distressed countries need to send a stronger signal to outsiders about how faithful are reported earnings in reflecting true firm performance. Thus, in the later stage of the crisis, we expect a stronger increase in conservatism in the GIPS countries relative to the UK. Then, we posit the following hypothesis:

H5: *The impact of the financial crisis on conservatism is stronger for listed firms in the GIPS than for the UK listed firms.*

To test the previous hypothesis, we split the hypothesis into two:

H5.a): *In the earlier stage of crisis, the decrease in conservatism is stronger for the GIPS countries than for the UK.*
H5.b): *In the later stage of crisis, the increase in conservatism is stronger for the GIPS countries than for the UK.*

3. Empirical research design

This section describes the sources of data used to run the empirical tests, sample selection procedures, measures of conditional conservatism and the specifications of the regressions to test the relation between the level of conditional conservatism and changes in economic conditions. This research is based on the hypotheses that firms exhibit a conservative accounting practice and that the level of conservatism varies across countries depending on institutional factors and on economic conditions.

3.1. Data and Sample Selection

Our sample consists of annual data for listed firms from five countries: Greece, Ireland, Portugal, Spain and the UK. Data was collected from Thompson Reuters Datastream over the period from 1998 to 2018. Furthermore, our approach to analyse the impact of the 2007/2008 financial crisis requires to distinguish two sub-periods, which are the earlier stage of the crisis (2005–2008) and the later stage of the crisis (2009-2012).

The initial sample consists of 5,046 firms, where 389 firms are from Greece, 542 from Ireland, 131 from Portugal, 309 from Spain and 3,675 from the UK. Then we exclude firms without SIC code available on the database and financial firms, SIC code 6000 to 6999. In addition, for a firm to be included in the final sample it must have at least seven years with complete data. To minimize potential bias in estimations due to the influence of extreme outliers, we winsorize the continuous variables at the 1st and 99th percentiles. After applying the selection procedures there were 2,187 firms remaining, where 288 firms are from Greece, 238 from Ireland, 59 from Portugal, 121 from Spain and 1,481 from the UK.

3.2. Measures of conservatism

In this work, the primary proxy of conditional conservatism is the measure developed by Basu (1997) that uses the regression of earnings per share on stock returns to capture the asymmetric timeliness of earnings to news. Stock returns may explain earnings because stock prices reflect information from different sources and thus returns are expected to lead

earnings. Basu (1997) assumes that stock returns reflect all available news (good and bad). To capture the asymmetric timeliness of earnings to bad news the regression includes a dummy variable that identifies bad news.

$$\frac{X_{it}}{P_{i,t-1}} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 D_{it} R_{it} + e_{it}$$

Where X is earnings per share, P is stock price, R is stock return and D is a dummy variable that is set to one if the stock return is negative and zero otherwise.

The coefficient of stock returns (β_2) measures the sensitivity of earnings to positive stock returns. The coefficient (β_3) measures the differential sensitivity of earnings to negative stock returns. When bad news is recognized in a timelier fashion than good news the coefficient ($\beta_3 > 0$). The total sensitivity of earnings to bad news is given by the sum ($\beta_2 + \beta_3$).

However, prior research provides evidence that the Basu's regression yields biased asymmetric timeliness measures (Breuer & Windisch, 2019; Dutta & Patatoukas, 2017; Patatoukas & Thomas, 2016 and 2011). For example, returns are endogenously determined by earnings and the model truncates the distribution of earnings based on returns (Dietrich et al., 2007). Givoly et al. (2007) argue that the estimations of the asymmetric timeliness measure may be biased because they use aggregate data rather than separating good news from bad news in each information event arriving over time. Patatoukas & Thomas (2011) associate a substantial bias in the asymmetric timeliness measure to two empirical regularities related to scale: firms with low stock prices tend to have a high probability of reporting a loss and exhibit relatively large magnitudes in the dependent variable (loss effect). In addition, firms with low stock prices tend to exhibit higher variance in stock returns (variance effect). Both effects lead to an upward bias in the asymmetric timeliness measure. However, Ball et al. (2013a) provide another interpretation of the biased measure reported by Patatoukas & Thomas (2011), by arguing that the bias in the Basu (1997) estimator is in fact caused by the correlation between the expected values of earnings and return. They suggest using an expectations model to control for expected earnings and expected returns or including firm fixed effects in regression estimations. Following their suggestion, we include firm fixed effects to estimate the asymmetric timeliness measure. Furthermore, we include interaction terms with return variance to control for the return variance effect (Badia et al. 2020; Billings et al., 2018).

In addition, some researchers argue that unconditional conservatism is negatively related to future conditional conservatism because unconditional conservatism reduces the proportion of assets subject to conditional conservatism (Roychowdhury & Martin, 2013; Beaver & Ryan, 2005). Those researchers use the market-to-book (MTB) ratio as a proxy of unconditional conservatism because asset write-downs increase the MTB. Therefore, the beginning-of-period MTB is negatively associated with conditional conservatism over the period, as measured by Basu asymmetric timeliness coefficient. When assessing conditional conservatism, the above arguments justify the inclusion of MTB ratio in the Basu regression to control for unconditional conservatism. In the same line, Lawrence et al. (2013) explain the relation between MTB and conditional conservatism using non-discretionary conservatism, which they define as conservatism resulting from the unbiased application of accounting rules. Therefore, given prior literature documenting a significant impact of unconditional conservatism on future conditional conservatism we also include the beginning of period

market-to-book ratio to control for this potential impact (Roychowdhury & Martin, 2013; Beaver & Ryan, 2005).

Then, the original Basu regression with controls for MTB and the variance of stock returns becomes:

$$\frac{X_{it}}{P_{i,t-1}} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 D_{it} R_{it} + \beta_4 MTB_{it-1} + \beta_5 MTB_{it-1} D_{it}$$
$$+ \beta_6 MTB_{it-1} R_{it} + \beta_7 MTB_{it-1} D_{it} R_{it} + \beta_8 VAR_{it}$$
$$+ \beta_9 VAR_{it} D_{it} + \beta_{10} VAR_{it} R_{it} + \beta_{11} VAR_{it} D_{it} R_{it} + e_{it}$$

Where X is earnings per share, P is stock price, R is stock return, D is a dummy variable that is set to one if the stock return is negative and zero otherwise, MTB is the beginning-of-period market-to-book ratio and VAR is the variance of stock returns.

The coefficient that captures de asymmetric timeliness, after controlling for the impact of market-to-book ratio and variance of stock returns is β_3. If conditional conservatism still holds after controlling for the impact of unconditional conservatism and effects of scale, then we expect β_3 to be positive and significant.

As a robustness test, we use the asymmetric timeliness of earnings developed by Basu (1997) using the implementation of Ball & Shivakumar (2005). This approach is based on the asymmetric persistence of earnings changes. Specifically, after bad news, current earnings decrease, but this decrease reverses in the next period, while after good news current earnings increase and remains higher in future periods (Basu, 1997). Thus, negative changes in earnings in current period tend to be negatively correlated with next period change in earnings. Such tendency can be captured by the following regression,

$$\Delta NI_{i,t} = \beta_0 + \beta_1 D\Delta NI_{i,t-1} + \beta_2 \Delta NI_{i,t-1}$$
$$+ \beta_3 D\Delta NI_{i,t-1} * \Delta NI_{i,t-1} + \varepsilon_{i,t}$$

Where (ΔNI) represents the change in net income scaled by the beginning of year total assets and ($D\Delta NI$) is a dummy variable that takes the value one when the change in net income in prior year is negative and zero otherwise. Under the asymmetric timelines of news recognition, the coefficient β_2 is expected to be zero because of the persistent impact of good news. In the case of bad news, the dummy variable ($D\Delta NI$) is equal to one so the coefficient that accounts for the reversal is the sum ($\beta_2 + \beta_3$). Therefore, timely loss recognition implies this sum to be negative: $\beta_2 + \beta_3 < 0$ and that $\beta_3 < 0$.

3.3. Regressions Specification

In this study we argue that changes in economic conditions affect conservatism over time. In addition, such changes affect in a different way the cross-section of countries, depending on countries' institutional factors and on the intensity of the economic changes.

In our tests, we begin by estimating the original Basu (1997) and Ball & Shivakumar (2005) regressions to investigate if the five countries in our sample exhibit a conservative accounting practice. In addition, we compare the level of conservatism in the UK to that in the GIPS countries and we test changes in conservatism in sub-periods surrounding the 2007/08 financial crisis. To perform those comparisons, we modify the original models mentioned before by including specific dummy variables and the corresponding interaction terms. The generic regression below includes the dummy variable V1 that can represent, for example, GIPS countries or a particular sub-period within the sample period.

The modified version of the Basu (1997) regression is,

$$\frac{X_{it}}{P_{i,t-1}} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 D_{it} * R_{it}$$
$$+ V1 * (\beta_4 + \beta_5 D_{it} + \beta_6 R_{it} + \beta_7 D_{it} * R_{it}) + e_{it}$$

Where the variables have already been described above. The coefficient of interest regarding changes in conservatism between the GIPS and the remaining countries is (β_7). For example, a negative coefficient means that the GIPS are less conservative than UK firms.

In addition, following Lawrence et al. (2013) and Roychowdhury & Martin (2013), the Basu regression with controls for MTB and the variance of stock returns becomes:

$$\frac{X_{it}}{P_{i,t-1}} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 D_{it} R_{it} + \beta_4 MTB_{it-1}$$
$$+ \beta_5 MTB_{it-1} D_{it} + \beta_6 MTB_{it-1} R_{it} + \beta_7 MTB_{it-1} D_{it} R_{it}$$
$$+ \beta_8 VAR_{it} + \beta_9 VAR_{it} D_{it} + \beta_{10} VAR_{it} R_{it} + \beta_{11} VAR_{it} D_{it} R_{it}$$
$$+ V1(\beta_{12} + \beta_{13} D_{it} + \beta_{14} R_{it} + \beta_{15} D_{it} R_{it} + \beta_{16} MTB_{it-1}$$
$$+ \beta_{17} MTB_{it-1} D_{it} + \beta_{18} MTB_{it-1} R_{it}$$
$$+ \beta_{19} MTB_{it-1} D_{it} R_{it} + \beta_{20} VAR_{it} + \beta_{21} VAR_{it} D_{it}$$
$$+ \beta_{22} VAR_{it} R_{it} + \beta_{23} VAR_{it} D_{it} R_{it}) + e_{it}$$

The coefficient that captures the incremental asymmetric timeliness for the GIPS, after controlling for the impact of market-to-book ratio and variance of stock returns is β_{15}. Therefore, if the GIPS are less conservative then this coefficient is expected to be negative.

The modified Ball & Shivakumar (2005) regression is:

$$\Delta NI_{i,t} = \beta_0 + \beta_1 D\Delta NI_{i,t-1} + \beta_2 \Delta NI_{i,t-1} + \beta_3 D\Delta NI_{i,t-1} * \Delta NI_{i,t-1}$$
$$+ V1 * (\beta_4 + \beta_5 D\Delta NI_{i,t-1} + \beta_6 \Delta NI_{i,t-1}$$
$$+ \beta_7 D\Delta NI_{i,t-1} * \Delta NI_{i,t-1}) + \varepsilon_{i,t}$$

Where the variables have already been described above. The coefficient of interest regarding changes in conservatism between countries or sub-samples is (β_7). For example, an increase in conservatism may result in a negative estimated (β_7).

To test for example, the incremental conservatism of the GIPS in a particular sub-period we include a new dummy V2 that takes the value 1 for the sub-period and the corresponding interaction terms. To examine the differential change in conservatism in the later stage of the crisis (V2) for GIPS (V1) we modify the original Basu (1997) regression as follows,

$$\frac{X_{it}}{P_{i,t-1}} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 D_{it} * R_{it} + \beta_4 V1 + \beta_5 V1 * D_{it}$$
$$+ \beta_6 V1 * R_{it} + \beta_7 V1 * D_{it} * R_{it}$$
$$+ V2 * (\beta_8 + \beta_9 D_{it} + \beta_{10} R_{it} + \beta_{11} D_{it} * R_{it} + \beta_{12} V1$$
$$+ \beta_{13} V1 * D_{it} + \beta_{14} V1 * R_{it} + \beta_{15} V1 * D_{it} * R_{it}) + e_{it}$$

If there is an increase in conservatism in the later stage of the crisis and if such increase is stronger for firms in the GIPS countries then the estimated coefficient (β_{15}) is expected to be positive.

Including the dummies V1 and V2, the Basu regression with controls for MTB and the variance of stock returns, becomes:

$$\frac{X_{it}}{P_{i,t-1}} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 D_{it}R_{it} + \beta_4 MTB_{it-1}$$

$$+ \beta_5 MTB_{it-1}D_{it} + \beta_6 MTB_{it-1}R_{it} + \beta_7 MTB_{it-1}D_{it}R_{it}$$

$$+ \beta_8 VAR_{it} + \beta_9 VAR_{it}D_{it} + \beta_{10} VAR_{it}R_{it} + \beta_{11} VAR_{it}D_{it}R_{it}$$

$$+ V1(\beta_{12} + \beta_{13}D_{it} + \beta_{14}R_{it} + \beta_{15}D_{it}R_{it} + \beta_{16}MTB_{it-1}$$

$$+ \beta_{17}MTB_{it-1}D_{it} + \beta_{18}MTB_{it-1}R_{it} + \beta_{19}MTB_{it-1}D_{it}R_{it}$$

$$+ \beta_{20}VAR_{it} + \beta_{21}VAR_{it}D_{it} + \beta_{22}VAR_{it}R_{it} + \beta_{23}VAR_{it}D_{it}R_{it})$$

$$+ V2(\beta_{24} + \beta_{25}D_{it} + \beta_{26}R_{it} + \beta_{27}D_{it}R_{it} + \beta_{28}MTB_{it-1}$$

$$+ \beta_{29}MTB_{it-1}D_{it} + \beta_{30}MTB_{it-1}R_{it} + \beta_{31}MTB_{it-1}D_{it}R_{it}$$

$$+ \beta_{32}VAR_{it} + \beta_{33}VAR_{it}D_{it} + \beta_{34}VAR_{it}R_{it} + \beta_{35}VAR_{it}D_{it}R_{it}$$

$$+ V1(\beta_{36} + \beta_{37}D_{it} + \beta_{38}R_{it} + \beta_{39}D_{it}R_{it} + \beta_{40}MTB_{it-1}$$

$$+ \beta_{41}MTB_{it-1}D_{it} + \beta_{42}MTB_{it-1}R_{it} + \beta_{43}MTB_{it-1}D_{it}R_{it}$$

$$+ \beta_{44}VAR_{it} + \beta_{45}VAR_{it}D_{it} + \beta_{46}VAR_{it}R_{it}$$

$$+ \beta_{47}VAR_{it}D_{it}R_{it})) + e_{it}$$

If there is an increase in conservatism in the later stage of the crisis and if such increase is stronger for firms in the GIPS countries then the estimated coefficient (β_{39}) is expected to be positive.

In the case of the modified Ball & Shivakumar (2005) model, the regression is:

$$\Delta NI_{i,t} = \beta_0 + \beta_1 D\Delta NI_{i,t-1} + \beta_2 \Delta NI_{i,t-1} + \beta_3 D\Delta NI_{i,t-1} * \Delta NI_{i,t-1}$$

$$+ \beta_4 V1 + \beta_5 V1 * D\Delta NI_{i,t-1} + \beta_6 V1 * \Delta NI_{i,t-1}$$

$$+ \beta_7 V1 * D\Delta NI_{i,t-1} * \Delta NI_{i,t-1}$$

$$+ V2 * (\beta_8 + \beta_9 D\Delta NI_{i,t-1} + \beta_{10} \Delta NI_{i,t-1}$$

$$+ \beta_{11} D\Delta NI_{i,t-1} * \Delta NI_{i,t-1} + \beta_{12} V1 + \beta_{13} V1 * D\Delta NI_{i,t-1}$$

$$+ \beta_{14} V1 * \Delta NI_{i,t-1} + \beta_{15} V1 * D\Delta NI_{i,t-1} * \Delta NI_{i,t-1}) + \varepsilon_{i,t}$$

If there is an increase in conservatism in the later stage of the crisis and if such increase is stronger for firms in the GIPS countries then the estimated coefficient (β_{15}) is expected to be negative.

4. Empirical results

4.1. Descriptive statistics

Table 1 provides summary statistics for the continuous variables in the sample. These variables are used to estimate the regressions of Basu (1997) and Ball & Shivakumar (2005). The number of observations is substantially larger for the UK reflecting the dimension of the respective stock market. In addition, the sample parameters tend to be dominated by observations from the UK as expected, given that the UK accounts for about 65% of the total number of observations.

Table 1 displays negative mean values for deflated earnings per share in all the countries, while the corresponding median values are positive. This may be the result of extreme negative values in the sample, even after winsorizing at 1st and 99th percentiles. The explanation is that the mean is a measure of central tendency that is much more sensitive to extreme values than the median. These extreme values are likely to be associated for example with the two main crisis that occurred in the sample period, those of 2003 and 2007-09. While using a different sample of European countries and a different sampling period (2000 to 2010), Andre et al. (2015) report negative summary statistics regarding the mean deflated earnings per share and stock returns and standard deviations that are similar to ours.

Table 1. Descriptive Statistics

This table reports the descriptive statistics for the continuous variables used in the regressions of Basu (1997) and Ball & Shivakumar (2005) for Greece, Ireland, Portugal, Spain and the UK for sample period: 1998-2018. To obtain the statistics all continuous variables are winsorized at the 1st and 99th percentiles.

Variable	Obs	Mean	Std	Median	Q1	Q3
Greece						
EPS/price	4,171	-0.150	0.489	0.015	-0.095	0.067
Stock return	4,171	0.051	0.735	-0.104	-0.401	0.242
ChgNetInc/Assets	4,170	0.003	0.095	0.001	-0.020	0.020
Ireland						
EPS/price	3,381	-0.030	0.271	0.036	-0.034	0.074
Stock return	3,381	0.034	0.461	-0.024	-0.245	0.225
ChgNetInc/Assets	3,499	0.004	0.109	0.002	-0.016	0.020
Portugal						
EPS/price	899	-0.079	0.460	0.047	-0.037	0.106
Stock return	899	0.040	0.513	-0.027	-0.265	0.216
ChgNetInc/Assets	904	0.005	0.115	0.002	-0.013	0.015
Spain						
EPS/price	1,818	-0.018	0.297	0.051	-0.006	0.086
Stock return	1,818	0.068	0.485	0.010	-0.219	0.260
ChgNetInc/Assets	1,851	0.007	0.134	0.003	-0.017	0.021
UK						
EPS/price	18,998	-0.046	0.291	0.033	-0.081	0.082
Stock return	18,998	0.087	0.637	-0.002	-0.309	0.311
ChgNetInc/Assets	19,206	0.015	0.240	0.006	-0.040	0.046
Pool						
EPS/price	29,267	-0.058	0.333	0.033	-0.071	0.080
Stock return	29,267	0.073	0.623	-0.018	-0.306	0.286
ChgNetInc/Assets	29,630	0.011	0.204	0.004	-0.029	0.034

Source: authors.

4.2. Regression analysis

4.2.1. Testing conservative accounting practice

This study adopts a panel data structure to estimate the level of earnings conservatism in the countries that make up our sample. We estimate the regressions with a feasible GLS, which controls for heteroscedasticity and serial correlation in the data. In addition, we include firm fixed effects to control for the expected components of earnings and returns as suggested by Ball et al. (2013a).

Table 2, Panel A, shows the results for the Basu regressions. Regarding the timely recognition of gains, the coefficient of interest is β_2, which measures earnings sensitivity to good news. This coefficient is positive and significant for all the countries, GIPS and pool of countries. The total sensitivity to bad news, measured by ($\beta_2 + \beta_3$), is positive and significant at the one percent level for all countries and groups of countries, as confirmed by the Wald test performed to the sum of the two coefficients.

The coefficient of the interaction term (β_3) is positive and statistically significant at the one percent level for each country separately, for the GIPS and pool of countries, except for Ireland, implying that earnings are more sensitive to bad news than to good news. Therefore, the results support the hypothesis of conditional conservatism because the incremental sensitivity to bad news relative to good news is positive and significant.

The last column of Table 2, Panel A displays the proxy for conditional conservatism that results from estimating a modified version of the Basu regression following the approach proposed by Lawrence et al. (2013), Roychowdhury & Martin (2013) and Badia et al. (2020). This modified version includes the market-to-book ratio to control for unconditional conservatism and the variance of stock return to account for

the effects of scale-related biases. The coefficient of asymmetric timeliness (β_3) remains positive and statistically significant at the one percent level for each country separately, the GIPS and for the pool of countries, except for Greece and Ireland, implying that earnings are more sensitive to bad news than to good news. While not reported in the table, for the pool of countries, the estimated coefficient of the interaction term MTB(-1)*D*R is negative and significant at the 5% level, suggesting a negative association between unconditional conservatism and future conditional conservatism, consistent with Roychowdhury & Martin (2013) and Beaver & Ryan (2005).

Table 2. Accounting conservatism in the GIPS countries and the UK

This table reports the results for the regressions of Basu (1997) and Ball & Shivakumar (2005) for the GIPS countries and the UK using the sample period from 1998 to 2018. The Basu (1997) regression, estimated with firm fixed effects is:

$$\frac{X_{it}}{P_{i,t-1}} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 D_{it}*R_{it} + e_{it}$$

The table also displays the coefficient β_3 (MTB,VAR) obtained by estimating the following Basu regression with firm fixed effects and control variables market-to-book (MTB) and variance of stock returns (VAR):

$$\frac{X_{it}}{P_{i,t-1}} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 D_{it} R_{it} + \beta_4 MTB_{it-1} + \beta_5 MTB_{it-1} D_{it}$$
$$+ \beta_6 MTB_{it-1} R_{it} + \beta_7 MTB_{it-1} D_{it} R_{it} + \beta_8 VAR_{it} + \beta_9 VAR_{it} D_{it}$$
$$+ \beta_{10} VAR_{it} R_{it} + \beta_{11} VAR_{it} D_{it} R_{it} + e_{it}$$

Where X is earnings per share, P is stock price, R is stock return, D is a dummy variable that is set to one if the stock return is negative and zero otherwise, MTB is the beginning-of-period market-to-book ratio and VAR is the variance of stock returns.
The Ball & Shivakumar (2005) model is,

$$\Delta NI_{i,t} = \beta_0 + \beta_1 D\Delta NI_{i,t-1} + \beta_2 \Delta NI_{i,t-1} + \beta_3 D\Delta NI_{i,t-1} * \Delta NI_{i,t-1} + \varepsilon_{i,t}$$

Where ΔNI represents the change in net income scaled by the beginning of year total assets and $D\Delta NI$ is a dummy variable that takes the value one when the change in net income in prior year is negative and zero otherwise. All continuous variables are winsorized at the 1st and 99th percentiles.

Notes: ***, **, * indicate significance at the 1 percent, 5 percent and 10 percent levels, respectively. t-statistics are presented in parentheses.

Panel A: Basu Regression

	β_0	β_0	β_1	β_2	β_3 (MTB,VAR)
Greece	-0.148***	0.001	0.029***	0.020***	-0.002
	(-68.368)	(0.451)	(10.878)	(2.631)	(-0.134)
Num. Observ.	4,171				3,878
Adjusted R-squa.	0.388				0,455
Ireland	-0.023***	0.002	0.049***	0.010	-0.012
	(-4.000)	(0.233)	(5.367)	(0.362)	(-0.232)
Num. Observ.	497				462
Adjusted R-squa.	0.403				0.396
Portugal	-0.071***	0.009	0.035***	0.099***	0.104**
	(-11.126)	(1.065)	(2.604)	(3.293)	(2.110)
Num. Observ.	899				838
Adjusted R-squa.	0.289				0.342
Spain	-0.016***	0.009***	0.037***	0.068***	0.076***
	(-6.792)	(2,983)	(7.219)	(5.544)	(3.576)
Num. Obs.	1,818				1,695
Adjusted R-squa.	0.336				0.319
UK	-0.035***	-0.003**	0.015***	0.063***	0.060***
	(-37.530)	(-2.284)	(10.533)	(15.272)	(11.750)
Num. Obs	18,998				17,445
Adjusted R-squa.	0.430				0.469
GIPS	-0.097***	0.003	0.030***	0.032***	0.050***
	(-72.913)	(1.467)	(14.430)	(5.452)	(5.033)
Num. Obs	7,385				6,873
Adjusted R-squa.	0.386				0.495
POOL	-0.052***	-0.002*	0.018***	0.055***	0.052***
	(-69.882)	(-1.749)	(16.138)	(15.564)	(12.149)
Num. Obs	26,383				24,318
Adjusted R-squa.	0.419				0.486

Panel B: Ball & Skivakumar Regression

	β_0	β_0	β_1	β_2	β_3 (MTB,VAR)
Greece	-0.002**	-0.009***	-0.146***	-0.397***	
	(-2.275)	(-7.439)	(-6.402)	(-9.508)	
Num. Obs	3,857				
Adjusted R-squa.	0.057				
Ireland	-0.019***	-0.001	0.169***	-0.982***	
	(-4.009)	(-0.158)	(3.251)	(-8.361)	
Num. Obs	468				
Adjusted R-squa.	0.135				
Portugal	0.001	-0.008***	-0.141**	-0.371***	
	(0.281)	(-2.970)	(-2.431)	(-4.134)	
Num. Obs	840				
Adjusted R-squa.	0.055				
Spain	-0.002	-0.015***	-0.087***	-0.668***	
	(-1.210)	(-8.841)	(-2.930)	(-10.493)	
Num. Obs	1,726				
Adjusted R-squa.	0.095				
UK	-0.015***	-0.005***	-0.020**	-0.632***	
	(-13.501)	(-6.919)	(-2.303)	(-35.882)	
Num. Obs	17,613				
Adjusted R-squa.	0.133				
GIPS	-0.002***	-0.010***	-0.098***	-0.513***	
	(-2.827)	(-11.241)	(-5.882)	(-16.396)	
Num. Obs	6,891				
Adjusted R-squa.	0.071				
POOL	-0.011***	-0.007***	-0.032***	-0.606***	
	(-13.964)	(-12.206)	(-4.292)	(-40.251)	
Num. Obs	24,504				
Adjusted R-squa.	0.117				

Source: authors

Panel B, Table 2 shows the results of the estimations of the Ball & Shivakumar (2005) regressions. A timelier recognition of losses implies ($\beta_2 + \beta_3 < 0$) and $\beta_3 < 0$. As we can see in this table, the estimated coefficient β_3 is negative which is consistent with a conservative accounting practice for all individual countries, the GIPS and the pool of countries. In the case of Ireland, we consider that the evidence supports a conservative accounting because the Ball & Shivakumar (2005) coefficient β_3 is negative and significant at the 1% level, while the evidence provided by the Basu (1997) model is not statistically significant.

These results support our hypothesis (H1) that conservatism is present in corporate accounting practice confirming previous evidence in Giner & Rees (2001) and Garcia Lara & Mora (2004). Furthermore, these results are robust to the use of the two different measures of conditional conservatism and different regression specifications and are in line with the results reported in prior literature. For example, Andre et al. (2015) develop a detailed study of conditional conservatism and they report a positive and significant coefficient of conditional conservatism, when using the Basu regression.

4.2.2. Comparing Accounting Conservatism between the UK and the GIPS countries

Although the results reported above show that all countries exhibit a conservative accounting practice, the arguments presented in the development of our second hypothesis suggest a more conservative accounting in the UK relative to the GIPS countries. To compare conservatism in the GIPS countries with the UK, we estimate modified versions of the regressions of Basu (1997). For that purpose, we include a dummy variable denoted by GIPS which is set to one for listed firms in Greece, Ireland, Portugal and Spain. We also include the interaction terms of the dummy variable with the remaining explanatory variables, as displayed in Table 3.

Because of the conservative accounting practice in all the countries, we expect the coefficients β_3 to be positive and this expectation is confirmed by the estimations displayed in Table 3. In addition, we also estimate the regressions with the control variables MTB and VAR. Under the assumption of a more conservative accounting practice in the UK, the coefficients β_6 and β_{14} (MTB,VAR), which capture the incremental sensitivity to bad news, are expected to be negative.

Table 3. Comparing accounting conservatism in the GIPS countries to the UK

This table reports the results for a modified version of the Basu (1997) and Ball & Shivakumar (2005) regressions for Greece, Ireland, Portugal, Spain and the UK using the sample period from 1998 to 2018. The modified Basu (1997) regression, estimated with firm fixed effects is:

$$\frac{X_{it}}{P_{i,t-1}} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 D_{it} * R_{it} + \beta_4 GIPS * D_{it} + \beta_5 GIPS * R_{it}$$
$$+ \beta_6 GIPS * D_{it} * R_{it} + e_{it}$$

The table also displays the coefficients β_3 (MTB,VAR) and β_{14} (MTB,VAR) obtained by estimating the following Basu regression with firm fixed effects and control variables market-to-book (MTB) and variance of stock returns (VAR):

$$\frac{X_{it}}{P_{i,t-1}} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 D_{it} R_{it} + \beta_4 MTB_{it-1} + \beta_5 MTB_{it-1} D_{it} + \beta_6 MTB_{it-1} R_{it}$$
$$+ \beta_7 MTB_{it-1} D_{it} R_{it} + \beta_8 VAR_{it} + \beta_9 VAR_{it} D_{it} + \beta_{10} VAR_{it} R_{it} + \beta_{11} VAR_{it} D_{it} R_{it}$$
$$+ GIPS(\beta_{12} D_{it} + \beta_{13} R_{it} + \beta_{14} D_{it} R_{it} + \beta_{15} MTB_{it-1} + \beta_{16} MTB_{it-1} D_{it}$$
$$+ \beta_{17} MTB_{it-1} R_{it} + \beta_{18} MTB_{it-1} D_{it} R_{it} + \beta_{19} VAR_{it} + \beta_{20} VAR_{it} D_{it}$$
$$+ \beta_{21} VAR_{it} R_{it} + \beta_{22} VAR_{it} D_{it} R_{it}) + e_{it}$$

Where X is earnings per share, P is stock price, R is stock return, D is a dummy variable that is set to one if the stock return is negative and zero otherwise. The dummy variable GIPS alternatively represents each one of the countries, Greece, Ireland, Portugal and Spain or the pool of these four countries. MTB is the beginning-of-period market-to-book ratio and VAR is the variance of stock returns.

The modified Ball & Shivakumar (2005) regression is:

$$\Delta NI_{i,t} = \beta_0 + \beta_1 D\Delta NI_{i,t-1} + \beta_2 \Delta NI_{i,t-1} + \beta_3 D\Delta NI_{i,t-1} * \Delta NI_{i,t-1} + \beta_4 GIPS$$
$$+ \beta_5 GIPS * D\Delta NI_{i,t-1} + \beta_6 GIPS * \Delta NI_{i,t-1}$$
$$+ \beta_7 GIPS * D\Delta NI_{i,t-1} * \Delta NI_{i,t-1} + \varepsilon_{i,t}$$

Where ΔNI represents the change in net income scaled by the beginning of year total assets and $D\Delta NI$ is a dummy variable that takes the value one when the change in net income in prior year is negative and zero otherwise. The dummy variable GIPS alternatively represent each one of the countries, Greece, Ireland, Portugal and Spain or the pool of these four countries.

All continuous variables are winsorized at the 1st and 99th percentiles.

Notes: ***, **, * indicate significance at the 1 percent, 5 percent and 10 percent levels, respectively. t-statistics are presented in parentheses.

Panel A	Basu Regression			
	β_3	β_6	β_3 (MTB,VAR)	β_{14} (MTB,VAR)
Greece vs. the UK	0.063*** (15.227)	-0.043*** (-5.035)	0.059*** (11.879)	-0.061*** (-3.295)
Num. Obs	23,169		21,323	
Adjusted R-squa.	0.424		0.494	
Ireland vs. the UK	0.063*** (15.295)	-0.053* (-1.878)	0.059** (11.8771)	-0.070 (-1.270)
Num. Obs	19,495		17,907	
Adjusted R-squa.	0.429		0.467	
Portugal vs. the UK	0.063*** (15.339)	0.036 (1.070)	-0.059*** (11.806)	0.045 (0.819)
Num. Obs	19,897		18,283	
Adjusted R-squa.	0.426		0.465	
Spain vs. the UK	0.063*** (15.351)	0.005 (0.356)	0.059*** (11.845)	0.018 (0.749)
Num. Obs	20,816		19,140	
Adjusted R-squa.	0.425		0.460	
GIPS vs. the UK	0.063*** (15.243)	-0.031*** (-4.439)	0.059*** (11.935)	-0.010 (-0.854)
Num. Obs	26,383		24,318	
Adjusted R-squa.	0.419		0.483	

Panel B	Ball & Shivakumar Reegression	
	β_3	β_7
Greece vs. the UK	-0.507*** (-34.293)	0.187*** (4.641)
Num. Obs	21,470	
Adjusted R-squa.	0.100	
Ireland vs. the UK	-0.507*** (-34.265)	-0.327*** (-3.062)
Num. Obs	18,081	
Adjusted R-squa.	0.105	
Portugal vs. the UK	-0.507*** (-34.279)	0.167** (2.062)
Num. Obs	18,453	
Adjusted R-squa.	0.104	
Spain vs. the UK	-0.507*** (-34.295)	-0.039 (-0.660)
Num. Obs	19,339	
Adjusted R-squa.	0.105	
GIPS vs. the UK	-0.507*** (-34.360)	0.091*** (2.870)
Num. Obs	24,504	
Adjusted R-squa.	0.099	

Source: authors.

The coefficients that give the incremental sensitivity of the conservative accounting practice in each GIPS country and the pool of countries relative to the UK are statistically significant and have the sign consistent with a more conservative accounting practice in the UK, supporting our second hypothesis (H2) and confirming previous evidence in Giner & Rees (2001) and Garcia Lara & Mora (2004). However, when we include the control variables MTB and VAR and their interactions with all variables in the regression the coefficients are not statically significant and this may be due to the decrease of degrees of freedom.

Testing the second hypothesis with the Ball & Shivakumar regressions, the reported evidence supports a higher level of conservatism in the UK, except for the case of Spain.

4.2.3. Testing the impact of economic conditions on conservative accounting practice

To study the effect of the change in economic conditions on conservatism we use data from the 2007/08 financial crisis and we consider two sub-periods each one encompassing a four-year window. The period denoted by earlier stage of the crisis includes years from 2005 to 2008 and the later stage of the crisis includes years from 2009 to 2012. To analyse the difference in the level of conservatism in each sub-period relative to the remaining sample period, we modify the original Basu (Ball & Shivakumar) model by adding a new dummy variable and the corresponding interaction terms with the explanatory variables in the original models. This means that for each model we make two estimations, one for each sub-period.

Estimations in Table 4, Panel A, allow to compare conservatism in the earlier stage of the crisis (2005 to 2008) with the remaining sampling period. The dummy variable that identifies this period is EAR. In the estimations displayed in Table 4, Panel B, we use a similar approach to compare conservatism in the later stage of the crisis (2009 to 2012) with the remaining sampling period. This implies to substitute EAR by a new dummy that identifies the later stage of the crisis. We must emphasize that in Panel A we compare the earlier stage of the crisis with the remaining seventeen years of the sample period, while in Panel B we compare the later stage of the crisis with the remaining sample period.

Table 4. Impact of change in economic conditions on conservatism: early vs. later stages of the crisis

This table reports the results for the modified versions of the Basu (1997) and Ball & Shivakumar (2005) regressions for the GIPS countries and the UK, to test changes in conservatism in the earlier stage of the crisis. The modified Basu (1997) regression, which includes firm fixed effects, is:

$$\frac{X_{it}}{P_{i,t-1}} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 D_{it} * R_{it} + \beta_4 \text{EAR} + \beta_5 EAR * D_{it}$$
$$+ \beta_6 EAR * R_{it} + \beta_7 EAR * D_{it} * R_{it} + e_{it}$$

The table also displays the coefficients β_3(MTB,VAR) and β_{15}(MTB,VAR) obtained by estimating the Basu regression with control variables market-to-book (MTB) and variance of stock returns (VAR), including firm fixed effects:

$$\frac{X_{it}}{P_{i,t-1}} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 D_{it} R_{it} + \beta_4 MTB_{it-1} + \beta_5 MTB_{it-1} D_{it} + \beta_6 MTB_{it-1} R_{it}$$
$$+ \beta_7 MTB_{it-1} D_{it} R_{it} + \beta_8 VAR_{it} + \beta_9 VAR_{it} D_{it} + \beta_{10} VAR_{it} R_{it} + \beta_{11} VAR_{it} D_{it} R_{it}$$
$$+ EAR(\beta_{12} + \beta_{13} D_{it} + \beta_{14} R_{it} + \beta_{15} D_{it} R_{it} + \beta_{16} MTB_{it-1} + \beta_{17} MTB_{it-1} D_{it}$$
$$+ \beta_{18} MTB_{it-1} R_{it} + \beta_{19} MTB_{it-1} D_{it} R_{it} + \beta_{20} VAR_{it} + \beta_{21} VAR_{it} D_{it}$$
$$+ \beta_{22} VAR_{it} R_{it} + \beta_{23} VAR_{it} D_{it} R_{it}) + e_{it}$$

Where X is earnings per share, P is stock price, R is stock return, D is a dummy variable that is set to one if the stock return is negative and zero otherwise, EAR is a dummy variable that takes the value one for observations in the earlier stage of the crisis (2005 to 2008) in panel A and zero otherwise. The estimations for the later stage of the crisis, Panel B, require to replace the dummy EAR by another dummy that takes the value one for observations in the later stage of the crisis (2009 to 2012) and zero otherwise. MTB is the beginning-of-period market-to-book ratio and VAR is the variance of stock returns.

The modified Ball & Shivakumar (2005) regression is,

$$\Delta NI_{i,t} = \beta_0 + \beta_1 D\Delta NI_{i,t-1} + \beta_2 \Delta NI_{i,t-1} + \beta_3 D\Delta NI_{i,t-1} * \Delta NI_{i,t-1}$$
$$+ \beta_4 EAR + \beta_5 EAR * D\Delta NI_{i,t-1} + \beta_6 EAR * \Delta NI_{i,t-1}$$
$$+ \beta_7 EAR * D\Delta NI_{i,t-1} * \Delta NI_{i,t-1} + \varepsilon_{i,t}$$

Where ΔNI represents the change in net income scaled by the beginning of year total assets and $D\Delta NI$ is a dummy variable that takes the value one when the change in net income in prior year is negative and zero otherwise. The dummy variable EAR takes the value one for observations in the earlier stage of the crisis and zero otherwise.

The estimations for the later stage of the crisis, Panel B, require to replace the dummy EAR by another dummy that takes the value one for observations in the later stage of the crisis and zero otherwise.

All continuous variables are winsorized at the 1st and 99th percentiles.

Notes: ***, **, * indicate significance at the 1 percent, 5 percent and 10 percent levels, respectively. t-statistics are presented in parentheses.

Panel A		Basu Regression			Ball & Shivakumar Regression	
Earlier stage	β_3	β_7	β_3 (MTB,VAR)	β_{15} (MTB,VAR)	β_3	β_7
POOL	0.080*** (18.669)	-0.080*** (-9.241)	0.092*** (16.167)	-0.088*** (-7.675)	-0.670*** (-40.361)	0.286*** (8.822)
Num. Obs	26,383		24,318		24,504	
Adj. R-squa.	0.409		0.466		0.118	
Panel B		Basu Regression			Ball; Shivakumar Regression	
Later stage	β_3	β_7	β_3 (MTB,VAR)	β_{15} (MTB,VAR)	β_3	β_7
POOL	0.045*** (12.099)	0.062*** (6.688)	0.045*** (9.238)	0.066*** (5.411)	-0.578*** (-34.075)	-0123*** (-4.041)
Num. Obs	26,383		24,318		24,504	
Adj. R-squa.	0.422		0.493		0.121	

Source: authors.

The coefficient of interest is β_7 that reflects the incremental sensitivity of earnings (income for Ball & Shivakumar) to bad news relative to good news given the change in economic conditions. In the case of Basu regression with control variables market-to-book ratio and variance of stock returns, the corresponding coefficient is β_{15}.

While exhibiting a conservative accounting practice, as suggested by the coefficient β_3, there is a change in the level of conservatism associated with the financial crisis. The coef-

ficient to analyze the change in conservatism in the earlier stage of the crisis is β_7 that is negative and significant (positive and significant) in the Basu (Ball & Shivakumar) model, Panel A of Table 4. The results still hold after including control variables because β_{15} is negative and significant. These results support hypothesis (H3) and suggest that during the earlier stage of crisis accounting conservatism decreases, consistent with managers' incentives to delay reporting bad news to stakeholders in the hope that economic conditions improve. In addition, the coefficient to analyze the change in conservatism in the later stage of the crisis is β_7 that is positive and significant (negative and significant) in the Basu (Ball & Shivakumar) model, Panel B of Table 4. When including control variables, the coefficient of interest β_{15} is also positive and significant. These results support hypothesis (H4) and suggest an increase in conservatism in the later stage of the crisis consistent with managers being aware that creditors and shareholders consider that conservative accounting signals a higher quality of reported information, and that they have incentives to change to a more conservative accounting in order to signal information quality to outsiders.

4.2.4. Testing the impact of the intensity of the change in economic conditions on conservatism

To further develop the analysis of the impact of the change in economic conditions on conservatism and as an additional contribution, we study if this impact depends on the intensity of the economic downturn. If the intensity of the economic downturn matters, it is expected a greater change in the level of conservatism in the GIPS countries relative to the UK, because the crisis affected more severely the former group of countries. The coefficient β_{15}, gives the incremental sensitivity of earnings of listed firms in the GIPS countries to bad news. The results are reported on Table 5. The equations displayed in Table 5 include the dummy variable EAR which refers to the earlier stage of the crisis and estimations are reported in Panel A. In the estimations displayed in Table 5, Panel B, we use a similar approach but we replace EAR by a new dummy that identifies the later stage of the crisis. We also estimate interactions with the other variables. These regressions including the control variables MTB and VAR and their interactions with the other variables.

As we can see in Table 5, Panel A, the coefficient of conservatism and the coefficient associated with the incremental sensitivity of conservatism to crisis β_7 (without MTB, VAR) and β_{14} (MTB, VAR) are statistically significant and negative, suggesting a decrease in conservatism in the earlier stage of the crisis for the pool of countries while in Panel B these coefficients are positive and statistically significant, supporting an increase in conservatism in the later stage of the crisis for the pool of countries. In addition, we find evidence that the intensity of the changes in economic conditions matters in terms of conservatism. In fact, taking into account β_{14}(without MTB, VAR) and β_{38} (MTB, VAR) in Panel A, the decrease in conservatism in the earlier stage of the crisis, although statistically weak, is stronger in the GIPS countries supporting the H5.a hypothesis. In Panel B, the coefficients β_{14}(without MTB, VAR) and β_{38} (MTB, VAR) are positive and statistically significant at 1% level, suggesting that the increase in conservatism in the later stage of the crisis is stronger for the GIPS countries, supporting the H5.b hypothesis.

Table 5. Impact of the intensity of the change in economic conditions on conservatism

This table reports the results for the modified version of the Basu regression for the GIPS countries and the UK. The modified Basu (1997) regression, which includes firm fixed effects, is:

$$\frac{X_{it}}{P_{i,t-1}} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 D_{it}*R_{it} + \beta_4 EAR + \beta_5 EAR*D_{it} + \beta_6 EAR*R_{it}$$
$$+ \beta_7 EAR*D_{it}*R_{it} + \beta_8 GIPS*D_{it} + \beta_9 GIPS*R_{it} + \beta_{10} GIPS*D_{it}*R_{it}$$
$$+ \beta_{11} GIPS*EAR + \beta_{12} GIPS*EAR*D_{it} + \beta_{13} GIPS*EAR*R_{it}$$
$$+ \beta_{14} GIPS*EAR*D_{it}*R_{it} + e_{it}$$

The table also displays the coefficients β_{15}(MTB,VAR) and β_{38}(MTB,VAR) obtained by estimating the Basu regression with control variables market-to-book (MTB) and variance of stock returns (VAR),), including firm fixed effects:

$$\frac{X_{it}}{P_{i,t-1}} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 D_{it} R_{it} + \beta_4 MTB_{it-1} + \beta_5 MTB_{it-1} D_{it} + \beta_6 MTB_{it-1} R_{it}$$
$$+ \beta_7 MTB_{it-1} D_{it} R_{it} + \beta_8 VAR_{it} + \beta_9 VAR_{it} D_{it} + \beta_{10} VAR_{it} R_{it} + \beta_{11} VAR_{it} D_{it} R_{it}$$
$$+ EAR(\beta_{12} + \beta_{13} D_{it} + \beta_{14} R_{it} + \beta_{15} D_{it} R_{it} + \beta_{16} MTB_{it-1} + \beta_{17} MTB_{it-1} D_{it}$$
$$+ \beta_{18} MTB_{it-1} R_{it} + \beta_{19} MTB_{it-1} D_{it} R_{it} + \beta_{20} VAR_{it} + \beta_{21} VAR_{it} D_{it}$$
$$+ \beta_{22} VAR_{it} R_{it} + \beta_{23} VAR_{it} D_{it} R_{it})$$
$$+ GIPS(\beta_{24} D_{it} + \beta_{25} R_{it} + \beta_{26} D_{it} R_{it} + \beta_{27} MTB_{it-1} + \beta_{28} MTB_{it-1} D_{it}$$
$$+ \beta_{29} MTB_{it-1} R_{it} + \beta_{30} MTB_{it-1} D_{it} R_{it} + \beta_{31} VAR_{it} + \beta_{32} VAR_{it} D_{it}$$
$$+ \beta_{33} VAR_{it} R_{it} + \beta_{34} VAR_{it} D_{it} R_{it} + EAR(\beta_{35} + \beta_{36} D_{it} + \beta_{37} R_{it} + \beta_{38} D_{it} R_{it}$$
$$+ \beta_{39} MTB_{it-1} + \beta_{40} MTB_{it-1} D_{it} + \beta_{41} MTB_{it-1} R_{it} + \beta_{42} MTB_{it-1} D_{it} R_{it}$$
$$+ \beta_{43} VAR_{it} + \beta_{44} VAR_{it} D_{it} + \beta_{45} VAR_{it} R_{it} + \beta_{46} VAR_{it} D_{it} R_{it})) + e_{it}$$

Where X is earnings per share, P is stock price, R is stock return and D is a dummy variable that is set to one if the stock return is negative and zero otherwise, EAR is a dummy variable that takes the value one for observations in the earlier stage of the crisis (2005 to 2008) and zero otherwise, GIPS is a dummy variable that represents the pool of the four GIPS countries, MTB is the beginning-of-period market-to-book ratio and VAR is the variance of stock returns.

The estimations for the later stage of the crisis, Panel B, require to replace the dummy EAR by another dummy that takes the value one for observations in the later stage of the crisis (2009 to 2012) and zero otherwise.

All continuous variables are winsorized at the 1st and 99th percentiles.

Notes: ***, **, * indicate significance at the 1 percent, 5 percent and 10 percent levels, respectively. t-statistics are presented in parentheses.

Panel A	Basu Regression			
Earlier stage	β_7	β_{14}	β_{15}(MTB,VAR)	β_{38}(MTB,VAR)
GIPS and the UK	-0.067*** (-7.036)	-0.032 (-1.369)	-0.074*** (-6.460)	-0.073* (-1.649)
Num. Obs	26,383		24,318	
Adjusted R-squa.	0.408		0.471	
Panel B	Basu Regression			
Later stage	β_7	β_{14}	β_{15}(MTB,VAR)	β_{38}(MTB,VAR)
GIPS and the UK	0.027*** (2.718)	0.184*** (6.722)	0.033*** (2.662)	0.186*** (4.297)
Num. Obs	26,383		24,318	
Adjusted R-squa.	0.418		0.480	

Source: authors.

5. Conclusions

In this study we investigate how economic conditions affect accounting practice in terms of conditional conservatism and how this impact depends on country-specific characteristics. Given that we aim to examine if the effect of changes in economic conditions on conservatism varies across countries, we select a group of countries that differ in the resilience to economic shocks but also in institutional factors.

The results of the empirical estimations support our research hypotheses and provide significant evidence on the use of conditional conservatism and how it is affected by changes in economic conditions. Firstly, despite using a heterogeneous sample, we find evidence consistent with prior studies of a conservative practice in all countries analyzed, specifically Greece, Ireland, Portugal, Spain and the UK, for the period from 1998 to 2018. Therefore, these results are in line with the positive accounting theory by suggesting

that conservatism is an efficient contracting and governance mechanism. Secondly, the results are consistent with a more conservative practice in the UK relative to the remaining countries. Given that the UK exhibits the most developed equity market in our sample, this finding suggests a high demand for conservatism by shareholders. Thirdly, we also find that the economic conditions affect the level of conservatism. For that purpose, we use data from the 2007/2008 financial crisis and the results show that the impact depends on the stage of the crisis. In the earlier stage of the crisis conservatism decreases, consistent with managers using discretion to delay the report of bad news in the hope that economic conditions will improve. In the later stage of crisis, once the crisis is installed, managers tend to adjust their approach by adopting a more conservative reporting to gain investors' confidence and respond to the demand for conservative reporting. Fourthly our results provide robust evidence on a non-monotonic association between economic conditions and conservatism. In fact, comparing the reaction in the UK with the GIPS countries, which were more severely affected by the crisis, we find that the impact is stronger for the GIPS countries, both regarding the decrease of conservatism in the earlier stage of the crisis and the increase in the later stage.

Overall, this study brings useful insights into the understanding of the relationship between conservative reporting and the deterioration in economic conditions, providing evidence that this relationship is non-monotonic, both because the sign of the relation depends on the stage of the economic crisis and because its level depends on the intensity of the crisis. Our findings about the non-monotonic relation between economic conditions and conditional conservatism suggest that each type of crisis requires adjustments in both the length of the earlier stage of the crisis and the later stage of the crisis and also if there is under-reaction or overreaction in the earlier stage of the crisis. For example, in the case of the COVID 19 pandemic, it would be interesting to test this approach, in future research, when enough financial data will be available.

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Conflict of interests

The authors declare no conflict of interests.

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