Accounting Conservatism and Banking Expertise on Board of Directors

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Abstract

Previous studies show mixed evidence of the role of banking expertise on the board of directors on accounting conservatism. In this paper, we add to this growing literature by providing an innovative way to measure banking expertise based on life-time working history in banks of all individual directors on the board. We find that accounting conservatism is negatively affected by banking expertise on the board. Also, the results indicate that banking expertise on the board has a more pronounced impact on accounting conservatism when firms have high bankruptcy risk and when firms have high financial leverage. The evidence has some implications for boards of directors.

Keywords: Accounting Conservatism · Banking Expertise · Boards of Directors

JEL Classification: G34 · M41

1 Introduction

Accounting conservatism is one of the major debt contracting mechanisms (Basu 1997; Mora and Walker 2015; Ruch and Taylor 2015; Watts 2003). Accounting conservatism results in lower book values relative to economic (or neutral) values of net assets due to lower verification requirements for the recognition of losses relative to gains (Mora and Walker 2015). Therefore, it facilitates the violation of debt covenants, which usually are based on accounting numbers, so that debtholders may take proactive actions, such as debt renegotiation or restructuring, to protect their interests (Ahmed et al. 2002; Nikolaev 2010; Watts 2003). Hence, it is in the debtholders' main interest to demand accounting conservatism.

Recently, previous studies indicate that the demand for accounting conservatism is affected by the presence of a banker on the board of directors, but the evidence is mixed. On the one hand, Erkens et al. (2014) show that executives of lending banks serving on boards of directors of borrowing firms (affiliated bankers) can act as a private channel to provide lending banks with the creditworthiness of borrowing firms, leading to a decline in accounting conservatism. Thus, affiliated bankers help borrowing firms avoid costs associated with accounting conservatism (e.g., Bhaskar et al. 2017; Chava and Roberts 2008; Gao et al. 2017; Kravet 2014; Nash et al. 2003; Nini et al. 2012). On the other hand, Bonetti et al. (2017) document a positive relationship between accounting conservatism and the presence of unaffiliated bankers on the board, e.g. those who are ex-bankers or bankers from non-lending banks, during the mandatory adoption of international financial reporting standards (IFRS) in Europe. However, the findings of Erkens et al. (2014) and Bonetti et al. (2017) could not explain if a firm employs both an affiliated and an unaffiliated banker on the board. Also, they fail to consider the importance of working history of all individual directors on the board, who might have in-depth knowledge about debt market and therefore know how much accounting conservatism is needed for debt monitoring.

This paper aims at contributing to the growing but inconclusive strand of the literature examining the role of banking expertise of the boards of directors on accounting conservatism. We believe that the existing mixed evidence in the extant literature might be a result of noises in the measures of banking expertise of the boards of directors employed by previous studies. Erkens et al. (2014) and Bonnetti et al. (2017), for example, use the presence of a banker on the board of directors to indicate banking expertise. We argue that we should look further than just the presence of a banker on the board because the level of such banking expertise also matters. We offer a new measure of banking expertise on the board using life-time working experience of individual directors, which is found to be valuable for corporate outcomes, e.g. Chemmanur et al. (2019) who find that more experienced directors lead to better acquisition outcomes, and Drobetz et al. (2018) who show that directors with more industry experience help to increase firms' values.

There are several reasons to expect that the banking expertise on the board affects accounting conservatism. On the one hand, directors who have worked in the banking industry for many years could provide boards of directors with information about market-level demand for accounting conservatism so that borrowing firms can reduce accounting conservatism, thus may avoid conservatism-related costs (Caskey and Laux 2017; Gigler et al. 2009; Heflin et al. 2014; Kravet 2014; Li 2013). Also, directors with banking expertise bring an interpersonal network in the banking industry (Engelberg et al. 2012), which can act as a private information-sharing channel to provide debtholders with better financial information about borrowing firms for debt monitoring, the intuition promoted by Erkens et al. (2014), leading to less demand for accounting conservatism.

On the other hand, existing literature suggests a positive relationship between the banking expertise on the board and accounting conservatim. For example, previous studies show that directors' working experience leads to favorable corporate outcomes (Chemmanur et al. 2019; Chou and Feng 2018; Huang et al. 2014) and less earnings management (Faleye et al. 2018; Wang et al. 2015). The presence of banking expertise on boards of directors helps to increase the board's monitoring role, which in turn results in higher accounting conservatism (Bonetti et al. 2017). This evidence is consistent with the idea that strong boards of directors lead to more conservative earnings (Ahmed and Duellman 2007; García Lara et al. 2009a). In short, we hypothesise that the banking expertise on the board affects accounting conservatism, but we do not predict the direction of the effect because the previous findings are mixed on whether bankers help to increase or reduce accounting conservatism (Bonetti et al. 2017; Erkens et al. 2014) and whether accounting conservatism is positive (Ahmed et al. 2002; Beatty et al. 2012; García Lara et al. 2011, 2016; Hu and Jiang 2019; Jain et al. 2019; Kim and Zhang 2016; Lobo et al. 2019; Louis et al. 2012; Zhang 2008) or negative (Bhaskar et al. 2017; Chava and Roberts 2008; Gao et al. 2017; Liu and Magnan 2016; Nash et al. 2003; Nini et al. 2012).

We test our hypothesis based on data on the working history of individual directors on the board of companies listed on the London Stock Exchange from 2005 to 2012. We measure banking expertise on the board differently by using (i) the total number of years all directors on the board have worked as executives in banks, (ii) the total number of banks for which all directors on the board have worked as executives, and (iii) the presence of at least one director on the board who has worked as an executive in a bank. We calculate firm-year accounting conservatism following previous studies (Basu 1997; García Lara et al. 2016; Khan and Watts 2009). The baseline regression results show that accounting conservatism is negatively correlated with our measures of banking expertise on the board. The relationship is economically and statistically significant. The findings hold strongly for various robustness checks, namely alternative measures of firm-year accounting conservatism and banking expertise on the board, the propensity score matching method to deal with confounding factors, and alternative methodologies to estimate the effect of banking expertise on accounting conservatism. In general, the evidence supports the first view that banking expertise on the board helps to reduce accounting conservatism. In general, the evidence supports our hypothesis that banking expertise on the board helps to reduce accounting conservatism. In final analyses, we investigate the impact of bankruptcy risk and financial leverage on the link between banking expertise and accounting conservatism. We conjecture and find that banking expertise on the board has more pronounced impacts on accounting conservatism when firms have high bankruptcy risk (low ZSCORE) and when firms have high financial leverage.

The research makes significant contributions to the existing literature. First, we offer an innovative way to measure banking expertise based on the working history in the banking industry of all directors on the board, which is not considered in recent studies on the effect of the presence of affiliated bankers (Erkens et al. 2014) and unaffiliated bankers (Bonetti et al. 2017) on accounting conservatism. Our measure of banking expertise is important because previous studies (e.g., Chemmanur et al. 2019; Drobetz et al. 2018; Faleye et al. 2018) show that life-time working experience of directors is valuable for firms. Second, our research sample is different from that of Erkens et al. (2014) and Bonetti et al. (2017). In contrast with Erkens et al. (2014), we do not require that the firms in the sample have an outstanding lending contract with affiliated banks. Thus, the findings of this study may be more generalised. Third, because the research period in this study is the post-IFRS adoption (2005) period

in the United Kingdom (UK), change in accounting conservatism is unlikely caused by the shift from local to international accounting standards, as documented in the work of Bonetti et al. (2017).

The results have some implications for boards of directors. The evidence suggests that boards of directors should consider the benefits of having directors with banking expertise on the board. However, we do not recommend that the board should differentiate directors who have many years of working experience in the banking industry from directors who have worked for many banks, because both are relevant in reducing costly accounting conservatism.

The remaining part of the paper proceeds as follows. Section 2 provides relevant literature and hypothesis development. Section 3 explains data and methodology, followed by Section 4 which presents findings. Section 5 provides concluding remarks.

2 Literature review and hypothesis development

2.1 Accounting conservatism and bankers on boards of directors

Accounting conservatism, which involves the recognition of all possible losses but not unverifiable gains, results in lower book values relative to economic (or neutral) values of net assets (Basu 1997; Mora and Walker 2015; Ruch and Taylor 2015; Watts 2003). Previous studies show that, together with debt covenants, accounting conservatism can be used as a mechanism for debt monitoring (Ahmed et al. 2002; Nikolaev 2010; Watts 2003). While debt covenants help to transfer control rights from shareholders to debtholders in certain situations, e.g. when borrowing firms face financial distress, accounting conservatism facilitates the violation of debt covenants, so that debtholders may take proactive actions to protect themselves in a timely manner (Watts 2003).

The literature documents that having a banker on the board of directors affects the level of conservatism, but the evidence is also mixed. Board members who are working as executives for lending banks (affiliated bankers) can serve as an alternative mechanism to mitigate the agency problems of debts (Byrd and Mizruchi 2005; Dittmann et al. 2010; Erkens et al. 2014; Kroszner and Strahan 2001). For example, Erkens et al. (2014) provide evidence that affiliated bankers on the board lead to a decrease in accounting conservatism in borrowing firms because they provide lending banks with better information on borrowers' financial health for debt monitoring. This private channel helps borrowing firms avoid costs related to accounting conservatism, as documented in the previous studies (Bhaskar et al. 2017; Chava and Roberts 2008; Gao et al. 2017; Nash et al. 2003; Nini et al. 2012). In contrast, Bonetti et al. (2017) examine the effect of unaffiliated bankers on boards, e.g. those who are currently working or used to work for banks that do not have a lending contract with the firm, on accounting conservatism before and after the mandatory IFRS adoption in Europe. They find that, compared with firms that do not have unaffiliated bankers on the board, firms that have unaffiliated bankers on the board exhibit higher accounting conservatism in the post-IFRS period. The authors argue that, unlike affiliated bankers, unaffiliated bankers do not face the conflicts of interests between shareholders and debtholders so that they contribute to strong boards of directors that are more committed to providing higher accounting conservatism (Ahmed and Duellman 2007; García Lara et al. 2009a).

In general, previous studies provide mixed evidence on how bankers on the board of directors contribute to the use of accounting conservatism. However, there are increasing concerns that having bankers on the board

as a debt monitoring mechanism is costly for borrowing firms (Burak Güner et al. 2008; Hilscher and Şişli-Ciamarra 2013; Kracaw and Zenner 1998; Rajan 1992; Stiglitz and Weiss 1981). Also, if a firm has both an affiliated banker and an unaffiliated banker on the board, the papers of Erkens et al. (2014) and Bonetti et al. (2017) could not explain. Next, given that each director on the board might have a working history in the banking industry, which is highly relevant for debt contracting, Erkens et al. (2014) and Bonetti et al. (2017) fail to consider the importance of individual directors' working experience. This leads to our argument that not just the presence of bankers on boards of directors that matters; banking expertise on the board also makes a difference.

2.2 The role of banking expertise on board of directors

In this paper, we revisit the relationship between bankers (ex-bankers) on boards of directors and accounting conservatism by looking at life-time working experience in the banking industry of board members. Previous studies, such as Erkens et al. (2014) and Bonnetti (2017), simply ask if the presence of a banker on the boards would influence the level of accounting conservatism. This approach has an advantage that it allows the analysis to focus on the network between the lenders and borrowers. However, it does not look at the strength of the banking expertise on board. On one hand, a banker with only a few years working in a bank would bring about an effect completely different from a director who has worked in the banking industry most of his life. We argue that looking more in-depth into not just the presence but also the level of the banking expertise of the board directors would offer a better chance for us to explore how banking expertise really drive accounting conservatism. On the other hand, we also argue that not just having a banker on the board matters, it is the cumulative exposure to the banking industry that the directors together bring to the boards is also important. For example, how many banks a firm has connections with through its directors are particularly important in the context of the potential impact on accounting conservatism because a firm with a lot of connections with various banks would have significantly more opportunities to gain have an information advantage about the market-level demand for accounting conservatism.

To address the above-mentioned weaknesses, this paper proposes a new measure which aggregates the life-time working experience in the banking industry of individual board members, as well as the number of banks they have worked for. We consider life-time working experience of board members is important because it is relevant for corporate outcomes (Chemmanur et al. 2019; Drobetz et al. 2018). For example, Chemmanur et al. (2019) argue that human capital of bankers is important for corporations. Firms which are seeking for high-value added mergers and acquisitions hire investment bankers with relevant advisory experience and these bankers provide firms with appropriate skills and experience to identify potential targets. Drobetz et al. (2018) find that outside directors with more industry experience bring more benefits for firms, e.g. a premium valuation effect, than outside directors with less industry experience. Other studies show that industry experience of directors also helps to deter real earnings management using R&D, increase R&D investment (Faleye et al. 2018), and increase the value of cash holdings (Chou and Feng 2018). In this paper, we argue that our measure of banking expertise on the board is likely to provide more reliable results on the relationship between banking expertise on boards of directors and accounting conservatism and hence would provide further insight to the issue amid the existing mixed evidence. First, our measure not only captures the presence of a banker on boards but also the level of banking expertise that all board members collectively bring about. It allows us to look deeper at the debt-contracting hypothesis in which banking expertise, not just the network with the lenders, would drive accounting

conservatism. Moreover, our evidence is also interesting and adds meaningfully to the recent and growing literature which suggests the life-time working experience of directors is valuable for corporate outcomes (Chemmanur et al. 2019; Drobetz et al. 2018; Faleye et al. 2018).

There are competing views on how the banking expertise on the board affects accounting conservatism. On the one hand, there is evidence to support the notion that banking expertise on the board may help to reduce accounting conservatism. Firstly, directors with banking expertise would have an information advantage about the market-level demand for conservatism; hence, having them on the boards can help non-financial firms avoid excessive accounting conservatism. For example, Dass et al. (2014) show that firms need information and expertise of directors with related industry experience. In this paper, we argue that directors who have worked many years in the banking industry could provide boards of directors with informaiton on lending banks' demand for accounting conservatism so that firms could use accounting conservatism at a needed level. By having banking expertise on the board, borrowing firms may prevent the acceleration of violation of debt covenants caused by accounting conservatism, thus mitigate costs of the violation (Beneish and Press 1993; Bhaskar et al. 2017; Chava and Roberts 2008; Denis and Wang 2014; Gao et al. 2017; Gigler et al. 2009; Kravet 2014; Li 2013; Nash et al. 2003; Nini et al. 2012). Also, having directors with banking expertise may also help firms mitigate the costs associated with the presence of affiliated bankers on the board due to conflicts of interests between shareholders and debtholders (Burak Güner et al. 2008; Hilscher and Şişli-Ciamarra 2013; Kracaw and Zenner 1998; Rajan 1992; Stiglitz and Weiss 1981).

Secondly, boards of directors with banking expertise often possess an interpersonal network in the banking industry that can act as a private communication channel for debt contracting, which helps to reduce accouting conservatism. Engelberg et al. (2012) find that an interpersonal network of directors of borrowing firms and managers of lending banks, who previously worked or studied together, can help borrowing firms raise debts with lower costs and have better subsequent stock performance. Erkens et al. (2014) show that affiliated bankers on the board can act as a private channel that provides lending banks with better information to take appropriate disciplinary actions in a timelier manner. Therefore, it is reasonable to expect that all directors who have worked as executives in banks can provide the boards with a network in the banking industry. This private network can also give lenders private information of borrowing firms, because it is directly related to debt markets, resulting in less demand for accounting conservatism at the firm-specific level.

On the other hand, previous studies suggest that the banking expertise on the board positively affects accounting conservatism. This argument is based on the idea that directors with banking expertise help to increase organisational outcomes, and accounting conservatism is an indication of good organisational outcomes. For example, Huang et al. (2014) find that directors' working experience in the banking industry helps firms make more acquisitions and have more benefits, e.g. higher announcement returns, lower advisory fees, and higher long-term performance. Chemmanur et al. (2019) further show greater deal experience lead to more successful acquisitions, suggesting that life-time working experience in a related industry is valuable for firms. Also, there is evidence that boards of directors can play the monitoring role, which results in higher organisational outcomes (Larcker et al. 2007). A strong board of directors requires managers to report more conservative earnings, which are beneficial for firms (Ahmed and Duellman 2007; García Lara et al. 2009a). This view is consistent with recent studies (Faleye et al. 2018; Wang et al. 2015) which find that the industry expertise of directors contributes to a

strong board which helps to increase the quality of earnings, e.g. reduce earnings management. Bonetti et al. (2017) provide more direct evidence that directors who have banking expertise contribute to a strong board with better monitoring role, resulting in higher accounting conservatism.

In short, the existing literature suggests that banking expertise of boards of directors may affect accounting conservatism, but the evidence is mixed. We argue that different directors may provide the board with varying levels of banking expertise, which may affect firms' demand for accounting conservatism. However, we do not expect the directional effect of banking expertise on accounting conservatism because accounting conservatism has both positive and negative sides. Accounting conservatism is generally expected to provide more timely and reliable information, which suggest that investors will be more inclined to consider information disclosed by conservative firms reliable. For example, Ahmed et al. (2002) find that conservative accounting helps to mitigate the conflicts of interests between shareholders and debtholders over dividend policies and Nikolaev (2010) argue that restrictive covenants in public debt contracts are effective only if borrowing firms report conservative earnings that include timely loss recognition. Previous studies show that accounting conservatism is useful for borrowing firms (Ahmed et al. 2002; Beatty et al. 2012; García Lara et al. 2011, 2016; Kim and Zhang 2016; Louis et al. 2012; Zhang 2008). In contrast, there is also evidence of the negative side of accounting conservatism. For example, theoretical models of Gigler et al. (2009) and Li (2013) suggest that accounting conservatism may negatively affect the efficiency of debt contracts in some circumstances, e.g. when the renegotiation of covenants is not viable or is induced by very high costs. Also, accounting conservatism accelerates the violation of debt covenants, which, in turn, potentially affects shareholders' wealth (Bhaskar et al. 2017; Chava and Roberts 2008; Gao et al. 2017; Liu and Magnan 2016; Nash et al. 2003; Nini et al. 2012). Therefore, we argue that a closer look at life-time working experience of board members would provide more reliable evidence on banking expertise on the board has a positive or negative impact on accounting conservatism. Our hypothesis is as follows:

H1: Ceteris paribus*, banking expertise on the board of directors affects accounting conservatism.*

3 Data and methodology

3.1 Data

We use a sample of all companies listed on the London Stock Exchange from 2005 to 2012. We remove financial and utility firms as they are highly regulated firms so that their demand for accounting conservatism may be different (see, e.g., Watts 2003). The sample covers the period following the mandatory IFRS adoption in the United Kingdom (2005) so that we can control for changes in accounting conservatism due to changes in accounting standards (see, e.g., Bonetti et al. 2017). Also, our sample ends in 2012 to avoid the effect of changes in corporate governance following the new corporate governance code (Financial Reporting Council (FRC) 2012) on accounting conservatism. To mitigate the influence of outliers on the estimation of accounting conservatism, we follow Khan and Watts (2009) to delete firms ranked annually in the top 1st and 99th percentiles of earnings, depreciation, returns, size, market-to-book ratio, and leverage in each fiscal year. We derive a sample of 3,428 firm-year observations with sufficient data for the calculation of all variables in the main regression models. Table 1 shows the sample selection procedure.

Table 1 Sample selection procedure

Procedure	Observations
Datastream's firm-year observations from 2005 to 2012 (excluding financial, insurance and utility firms)	24,168
Less:	
- Observations with missing share price and financial data for measures of accounting conservatism	-14,692
- Observations where share price is less than 0.5 pence	-4,120
- Observations where book values of equity is less than 0.5 million	-226
- Observations where financial statements are not in Sterling Pound	-14
- Observations with missing data for financial expertise of boards of directors	-1,688
Research sample	3,428

3.2 Measures of banking expertise

This section presents how we measure banking expertise on the board of directors. Based on the list of companies downloaded from Datastream, we firstly search for a list of directors for each company in each fiscal year in the Bloomberg database. Then we search for the working history of each board member in Bloomberg using the full name of directors and the name of companies in which directors are currently serving on the boards (if there is no result, we omit the first name and middle name of the director). For each director, we compile a list of companies he/she has worked for in the past. If we cannot find a director's working history in Bloomberg, we use the same searching strategy as explained above in Financial Times, then on LinkedIn. For the remained directors whose working histories are still missing, we download the corresponding annual reports from Key Note and scan the reports for any information on the directors working history. We scan the working history of each director to determine whether a director has current or previous working experience in a bank, and we document the working position (if available). We determine a director as having working experience in a bank if at least one of the companies the director has worked for is on the 'List of Banks' provided by the Bank of England (Bank of England 2016)[1] or has the keywords 'bank', 'BANK', 'banks', or 'BANKS' in its name. We also require that the working position in banks is executive, which is defined as the position from the head of a division and above, excluding the non-executive chairman, independent director, supervisory board member, and other roles that are not directly involved in bank business. If we cannot identify the working position, we assume it is not an executive role.

For each company, we capture the banking expertise of all directors who have served on the board of firms for at least three months to make sure that directors have a significant influence on the board. We measure banking expertise in three different ways. The first measure is the total number of years all directors on the board have worked as executives in banks ($yEXPERTISE$), and we refer to this variable as cumulative banking expertise on the board. A higher $yEXPERTISE$ indicates higher banking expertise on the board, because individual directors may accumulate banking expertise during many years working as executives in banks. The

[1] Our measure of directors' working experience in the banking industry is reasonably reliable. If a director has worked for a bank outside the UK, the name of the bank may also be included in the list, because London has been known as one of the leading financial centres in the world for many years.

second measure is the total number of banks for which all directors on the board have worked as executives ($aEXPERTISE$), and we refer to this variable as industry-level banking expertise on the board. A higher $aEXPERTISE$ indicates higher banking expertise on the board at the industry level, because working in different banks may help individual directors gain market-level banking expertise. While $yEXPERTISE$ and $aEXPERTISE$ are the aggregate measures of levels of banking expertise on the board, we have the third measure for the presence of banking expertise on the board ($EXPERTISE$), which is equal to one if a company has at least one director on the board who has worked as an executive in a bank, and zero otherwise. $EXPERTISE$ indicates whether the board has banking expertise.

3.3 Measure of accounting conservatism

For the purpose of this study, we use the firm-year measure of total accounting conservatism following García Lara et al. (2016), which is based on Basu (1997)[2] and Khan and Watts (2009), because the banking expertise on the boards may change over time and across firms and industries, and because total conservatism is better at capturing the total effect of conservative accounting on earnings.[3] The use of firm-year conservatism is also documented in previous studies (e.g., Ahmed and Duellman 2007; Bonetti et al. 2017; Hu and Jiang 2019; Kong et al. 2017; Lafond and Roychowdhury 2008). The remaining part of this section describes the calculation of total conservatism following Basu (1997), Khan and Watts (2009), and García Lara et al. (2016).

In the model of Basu (1997), the asymmetric timeliness of bad news over good news is calculated as follows:

$$EARN_{i,t} = \beta_1 + \beta_2 D_{i,t} + \beta_3 RET_{i,t} + \beta_4 D_{i,t} * RET_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where: $EARN_{i,t}$ is net income before extraordinary items in year t, scaled by the market value of equity at the end of year t-1; $RET_{i,t}$ is buy-and-hold stock returns for the period from the beginning to the end of fiscal year t; and $D_{i,t}$ is a dummy variable that equals one if $RET_{i,t} < 0$, and zero otherwise. The coefficient β_3 is the measure of good news timeliness. The coefficient β_4 is a measure of accounting conservatism, which is the incremental timeliness for bad news over good news. $\beta_3 + \beta_4$ is the total timeliness of bad news. In the model, β_3 and β_4 are expected to be positive. We run regression (1) for each year in the sample.

[2] Although some studies claim that Basu's model is biased (Caskey and Peterson 2014; Dietrich et al. 2007; Givoly et al. 2007; Pae et al. 2005; Roychowdhury and Watts 2007), there is emerging and robust evidence that Basu's coefficient is a valid measure for accounting conservatism. Ball et al. (2013b) provide formal tests in different settings and conclude that Basu's coefficient is valid. They explain that a limitation of the work of Basu (1997) is that the author does not provide formal econometric and comprehensive analyses to support the model, which could potentially invite questions from researchers about the validity of the model. Ball et al. (2013a) provide further evidence to support the validity of Basu's model.

[3] García Lara et al. (2016, p. 236) provide evidence for the validity of their measure of total accounting conservatism by showing that it is strongly related to determinants of accounting conservatism, namely financial leverage, firm size, and market-to-book ratio.

Based on the model of Basu (1997), Khan and Watts (2009) construct the empirical measures of the timeliness of good news ($GSCORE$) and the incremental timeliness of bad news over good news ($CSCORE$) based on firm characteristics as follows:[4]

$$GSCORE_{i,t} = \beta_3 = \mu_1 + \mu_2 SIZE_{i,t-1} + \mu_3 MTB_{i,t-1} + \mu_4 LEV_{i,t-1} \quad (2)$$

$$CSCORE_{i,t} = \beta_4 = \gamma_1 + \gamma_2 SIZE_{i,t-1} + \gamma_3 MTB_{i,t-1} + \gamma_4 LEV_{i,t-1} \quad (3)$$

Where: μ_j and γ_j (j = 1-4) are obtained from the following annual cross-sectional regressions:

$$\begin{aligned} EARN_{i,t} = {} & \beta_1 + \beta_2 D_{i,t} + \left(\mu_1 + \mu_2 SIZE_{i,t-1} + \mu_3 MTB_{i,t-1} + \mu_4 LEV_{i,t-1}\right) RET_{i,t} + \\ & \left(\gamma_1 + \gamma_2 SIZE_{i,t-1} + \gamma_3 MTB_{i,t-1} + \gamma_4 LEV_{i,t-1}\right) D_{i,t} * RET_{i,t} + \\ & (\delta_1 SIZE_{i,t-1} + \delta_2 MTB_{i,t-1} + \delta_3 LEV_{i,t-1} + \delta_4 D_{i,t} * SIZE_{i,t-1} + \delta_5 D_{i,t} * MTB_{i,t-1} \\ & + \delta_6 D_{i,t} * LEV_{i,t-1}) + \varepsilon_{i,t} \end{aligned} \quad (4)$$

$SIZE_{i,i-1}$ is the natural log of the market value of equity at the end of year t-1; $MTB_{i,i-1}$ is the market-to-book ratio at the end of year t-1; and $LEV_{i,t-1}$ is the sum of long-term and short-term debts at the end of year t-1, scaled by the market value of equity at the end of year t-1. The coefficients estimated from equation (4) are used in equation (2) to calculate $GSCORE$ and in equation (3) to calculate $CSCORE$.

To estimate total conservatism following García Lara et al. (2016), we add $GSCORE$ and $CSCORE$ together for each company in each year, and we refer to the new variable as $CONS$. After that, we calculate the average of $CONS$ across years t-2, t-1, and t (denoted $aCONS_{i,t}$); then rank $aCONS_{i,t}$ of all firms for each year; and divide the rank values by N+1, where N is the total observations in each rank group. We refer to the new variable as the annual fractional rank of total accounting conservatism, denoted $CONS\_RANK_{i,t}$. $CONS\_RANK_{i,t}$ ranges from 0 to 1, and a higher $CONS\_RANK_{i,t}$ indicates higher accounting conservatism. The use of rank values helps to mitigate nonlinearity concerns and errors in measurements (García Lara et al. 2016; Goh et al. 2017).[5]

3.4 Empirical model

To provide evidence for the Hypothesis H1, we run the following regressions:

$$CONSERVATISM_{i,t} = \alpha + \beta_1 X_{i,t} + \gamma_j CONTROL_{i,t}$$

[4] Khan and Watts (2009) use *SIZE*, *MTB*, and *LEV* in year t to estimate *GSCORE* and *CSCORE*. In this paper, we use *SIZE*, *MTB*, and *LEV* in year t-1. We argue that earnings are the incomes of the whole year so that firms may rely on the conditions (characterised by *LEV*, *SIZE*, and *MTB*) in year t-1 to make decisions on how much accounting numbers should be conservative in year t. The idea of using firm characteristics in year t-1 is also stipulated by Ball et al. (2013a). An example of using the same approach to estimate *GSCORE* and *CSCORE* is the work of Banker et al. (2012).

[5] We follow García Lara et al. (2016) to run regressions between *CONS_RANK* and determinants of accounting conservatism, which are firm size (*SIZE*), financial leverage (*LEV*), and market-to-book ratio (*MTB*). The findings (unreported) show that *CONS_RANK* is highly correlated with firm size, financial leverage, and market-to-book ratio (measured in both year *t* and year *t-1*).

$$+ INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t} \quad (5)$$

Where: $CONSERVATISM_{i,t}$ is $CONS\_RANK_{i,t}$ which is the annual fractional rank of the three-year average of total accounting conservatism in year t. $X_{i,t}$ can be $yEXPERTISE_{i,t}$, $aEXPERTISE_{i,t}$, or $EXPERTISE_{i,t}$ (used as substitutes). $CONTROL_{i,t}$ is a vector of firm characteristics associated with accounting conservatism. If the coefficient on measures of banking expertise (β_1) in regression (5) is statistically significant, it is evidence of an association between accounting conservatism and banking expertise. The sign of β_1 will indicate whether the banking expertise has a positive or negative effect on accounting conservatism. The following part briefly discusses related literature on control variables.

Leverage (LEV) is the first control variable. Prior studies (Ahmed and Duellman 2007; García Lara et al. 2009b, 2016; Khan and Watts 2009; LaFond and Watts 2008; Watts 2003) show that the conflicts of interests between shareholders and debtholders are high in firms with high LEV, so that there is higher contracting demand for accounting conservatism for firms with higher LEV. We expect that LEV has a positive sign.

Firm size ($SIZE$) is the next control variable. Large companies may have higher litigation demand for accounting conservatism (Khan and Watts 2009; LaFond and Watts 2008). However, large companies may need less accounting conservatism because those firms are more visible to the capital markets or have less information asymmetry (Ahmed and Duellman 2007; Khan and Watts 2009; LaFond and Watts 2008). We expect that $SIZE$ has a negative sign, as documented in most empirical evidence (Ahmed and Duellman 2007; García Lara et al. 2016; Khan and Watts 2009; LaFond and Watts 2008).

The next control variable is the market-to-book ratio (MTB). Firms with a high MTB might need more accounting conservatism in response to the increased agency costs resulting from more growth options (Khan and Watts 2009; LaFond and Watts 2008). Also, a high MTB is directly associated with understatement (or conservatism) of net assets (Givoly and Hayn 2000; Khan and Watts 2009; LaFond and Watts 2008). However, beginning MTB may be negatively correlated with accounting conservatism due to a reduction in loss recognition which results from unrecognition of increase in asset values (García Lara et al. 2016; Roychowdhury and Watts 2007). Therefore, we do not expect the sign of MTB.

Following Ahmed and Duellman (2013), we also control for profitability by using cash flows from operations (CFO), which is equal cash flow from operations in year t scaled by assets at the end of year t. Prior research shows that firms with low profitability are more likely to suffer higher costs related to accounting conservatism; hence, profitability is positively correlated with accounting conservatism (Ahmed et al. 2002). We expect that CFO has a positive sign.

The next control variable is firm business cycle ($CYCLE$). Based on Dickinson (2011), *CYCLE* is a dummy variable with a value of one if firms are classified based on cash flows as at mature stage (positive cash flows from operating activities, negative cash flows from investing activities, and negative cash flows from financing activities), and zero if firms are classified as at young stage (negative cash flows from operating activities, negative cash flows from investing activities, and positive cash flows from financing activities), or growth stage (positive cash flows from operating activities, negative cash flows from investing activities, and positive cash flows from financing activities). The existing literature provides mixed evidence. On the one hand, mature firms are more likely to face high litigation risks so that they demand a high degree of accounting

conservatism (Khan and Watts 2009; LaFond and Watts 2008). On the other hand, mature firms need less external financing for business expansions (Dickinson 2011); therefore, they need less accounting conservatism. We expect that $CYCLE$ is associated with accounting conservatism but do not predict its sign.

Sale growth ($\Delta SALE$) is the next control variable. $\Delta SALE$ is equal to change in sales from year t-1 to year t, scaled by total assets at the end of year t. The evidence is mixed about the effects of $\Delta SALE$ on accounting conservatism. Firms with higher growth have more information asymmetry, which results in more demand for accounting conservatism (LaFond and Watts 2008). In contrast, studies also document that it is possible that growth may result in less asymmetric timeliness of bad news over good news (Ball et al. 2013a). We expect that $\Delta SALE$ is associated with accounting conservatism but do not predict its sign.

Next, we control for debt issuance ($DEBTISSUE$) and seasoned equity offering (SEO). $DEBTISSUE$ is a dummy variable with the value of one if the change in short-term and long-term debts from the end of year t-1 to the end of year t, scaled by total assets at the end of year t, is positive and more than 5%, and zero otherwise. SEO is a dummy variable with the value of one if a firm increases outstanding shares in year t by at least 5% with positive proceeds from equity issuance, and zero otherwise. As discussed above, debt financing results in higher demand for accounting conservatism as a mechanism for debt monitoring (Erkens et al. 2014; García Lara et al. 2016; Goh et al. 2017; Watts 2003). However, in a recent paper, Goh et al. (2017) show that accounting conservatism is positively correlated with the choice of equity issuance versus debt issuance when firms need significant external capital. Also, recent research (Kim et al. 2013) provides empirical evidence that firms with $SEOs$ use accounting conservatism to reduce the negative impact of information asymmetry on returns around SEO announcements. Therefore, we expect that SEO have a positive sign but do not expect a sign for $DEBTISSUE$. Variable calculations are presented in the Appendix.

If β_1 in regression (5) is negative and significant, it is evidence of a negative association between accounting conservatism and the banking expertise on the board in line with our hypothesis.

4 Findings

4.1 Descriptive Statistics and Correlations

Table 2 shows the descriptive statistics of the selected variables. While Panel A reports the statistics of the full sample, Panel B shows those of firms with and without banking expertise on the board of directors. Looking at Panel A, firm characteristics' statistics are similar to prior research that uses similar data (e.g., Goh and Gupta 2016). The statistics show that the sample has more young and growth firms than mature firms (median of $CYCLE$ is 0) and more firms that do not have seasoned equity offering or debt issuance in the fiscal year than firms that do (medians of SEO and $DEBTISSUE$ are 0). In addition, the descriptive statistics indicate that y$EXPERTISE$ has a minimum of 0 and a maximum of 42. This means that the number of years that all directors on the board have worked as executives in banks can reach 42 years. On average, the boards have 2.57 years of experience in the banking industry (MEAN of $yEXPERTISE$). Similarly, the statistics show that the largest number of banks for which all directors on the board have worked as executives is 6 (MAX of $aEXPERTISE$), and, on average, all directors on the board have worked for 0.44 banks (MEAN of $aEXPERTISE$). Moreover, the mean and median of $EXPERTISE$ are 0.23 and 0, respectively, suggesting that more observations do not have banking

expertise on the board than observations that do. Those impressive statistics could make a difference in accounting practices such as conservatism, which is under investigation in this study. Finally, the proxy for firm-year accounting conservatism ($CONS\_RANK$) varies from 0.01 to 0.99, with a mean of 0.50.

Turning to Panel B of Table 2, we find that accounting conservatism is lower in groups of observations with banking expertise on the board than in those without banking expertise on the board, and mean differences in accounting conservatism between two groups are statistically significant. Second, further statistics on $yEXPERTISE$ and $aEXPERTISE$ indicate that the means of cumulative and industry-level banking expertise of the treatment group are 11.23 and 1.92, respectively, while those of the control group equal 0 by definition. Also, the results of the t-test show that most differences in firm characteristics between two groups are significant at the 5% level.

Table 3 reports Pearson correlations among the selected variables. The negative and significant correlations of $CONS\_RANK$ with $yEXPERTISE$, $aEXPERTISE$ and $EXPERTISE$ suggest that the measures of banking expertise on the board are associated with a reduction in accounting conservatism. The correlations among the independent variables are generally not too high (no pair-wise correlation coefficient is higher than 0.29) and insignificant in many cases. Therefore, it is unlikely that multicollinearity among independent variables is a major concern in this study.

4.2 Baseline regression results

Table 4 reports the results of estimating the main regression (5) between $CONS\_RANK$ and our measures of banking expertise on the board. Most control variables have expected signs and are statistically significant. The coefficients on $yEXPERTISE$ (column a), $aEXPERTISE$ (column b), and $EXPERTISE$ (column c) are negative and significant at the 5% level (t-statistics are -1.78, -2.28, and -3.16, respectively). Also, the relationships are economically significant. For example, in column (a), the coefficient on $yEXPERTISE$ means that when the board has one additional year of banking expertise, $CONS\_RANK$ decreases by 0.00072.[6] Although a one-year increase in $yEXPERTISE$ is associated with only a reduction of 0.144% in $CONS\_RANK$ (=0.00072/0.5, where 0.5 is the mean of $CONS\_RANK$ reported in Table 2), it is more likely that an individual director could work for banks in many years; therefore, the marginal effect of an appointment of a director with banking expertise on the board is significant in economic terms. In column (b), one unit increase in $aEXPERTISE$ is associated with a decrease by 0.00612 (a 1.22% reduction) in $CONS\_RANK$. Also, it is more likely that a director may work for several banks; therefore, the marginal effect of having a director with banking expertise on the board is economically significant. Similarly, in column (c), compared with firms without banking expertise on the board, firms with banking expertise on the board have less accounting conservatism by 0.02127, a 4.25% reduction in $CONS\_RANK$ which is non-trivial. Overall, we find that accounting conservatism is negatively affected by levels of banking expertise on the board, and the effect is statistically and economically significant.

[6] A note is that coefficients reported the table are already multiplied by 100.

Table 2 Descriptive Statistics

Panel A: Descriptive statistics of the full sample

	N	MEAN	MEDIAN	STD	MIN	MAX
$AT_{i,t}$	3428	1,545	192	4,583	0	50,806
$SALE_{i,t}$	3428	1,296	188	3,796	0	60,931
$IB_{i,t}$	3428	103	8	451	-1,426	6,893
$RET_{i,t}$	3428	0.14	0.07	0.56	-0.98	6.21
$CONS\_RANK_{i,t}$	3428	0.50	0.50	0.29	0.01	0.99
$CSCORE\_RANK_{i,t}$	3428	0.50	0.50	0.29	0.01	0.99
$yEXPERTISE_{i,t}$	3428	2.57	0.00	6.87	0.00	42.00
$mEXPERTISE_{i,t}$	3428	1.05	0.00	2.22	0.00	10.00
$aEXPERTISE_{i,t}$	3428	0.44	0.00	1.04	0.00	6.00
$EXPERTISE_{i,t}$	3428	0.23	0.00	0.42	0.00	1.00
$LEV_{i,t}$	3428	0.32	0.16	0.50	0.00	3.12
$SIZE_{i,t}$	3428	12.16	12.08	2.03	7.63	17.38
$MTB_{i,t}$	3428	2.93	1.94	3.37	0.32	22.83
$CFO_{i,t}$	3428	0.08	0.08	0.11	-0.46	0.34
$\Delta SALE_{i,t}$	3428	0.11	0.07	0.25	-0.62	1.21
$CYCLE_{i,t}$	3428	0.06	0.00	0.24	0.00	1.00
$SEO_{i,t}$	3428	0.10	0.00	0.30	0.00	1.00
$DEBTISSUE_{i,t}$	3428	0.22	0.00	0.42	0.00	1.00
$PPE_{i,t}$	3428	0.44	0.34	0.37	0.01	1.53

Panel B: Descriptive statistics by firms with and without banking expertise on the board

	EPXERTISE = 1 (N = 785)			EXPERTISE = 0 (N = 2,643)			T-test	
	MEAN	MEDIAN	STD	MEAN	MEDIAN	STD	MEAN	t-statistic
$CONS\_RANK_{i,t}$	0.33	0.26	0.27	0.55	0.56	0.28	0.217***	19.91
$CSCORE\_RANK_{i,t}$	0.33	0.27	0.27	0.55	0.56	0.28	0.216***	19.83
$yEXPERTISE_{i,t}$	11.23	8.00	10.45	0.00	0.00	0.00	-11.23***	-30.11
$mEXPERTISE_{i,t}$	4.60	4.00	2.30	0.00	0.00	0.00	-4.600***	-55.98
$aEXPERTISE_{i,t}$	1.92	1.00	1.38	0.00	0.00	0.00	-1.922***	-38.99
$LEV_{i,t}$	0.29	0.16	0.46	0.33	0.15	0.52	0.044**	2.25
$SIZE_{i,t}$	13.45	13.49	2.01	11.78	11.74	1.88	-1.670***	-20.77
$MTB_{i,t}$	3.33	2.25	3.57	2.81	1.86	3.30	-0.526***	-3.68
$CFO_{i,t}$	0.10	0.09	0.09	0.07	0.08	0.12	-0.025***	-6.23
$\Delta SALE_{i,t}$	0.09	0.07	0.20	0.11	0.07	0.27	0.021**	2.36
$CYCLE_{i,t}$	0.07	0.00	0.25	0.06	0.00	0.24	-0.010	-1.00
$SEO_{i,t}$	0.06	0.00	0.25	0.11	0.00	0.32	0.048***	4.48
$DEBTISSUE_{i,t}$	0.22	0.00	0.41	0.23	0.00	0.42	0.012	0.70
$PPE_{i,t}$	0.46	0.37	0.36	0.43	0.33	0.37	-0.023	-1.59

The table reports descriptive statistics of selected variables. Panel A shows descriptive statistics of the full sample, including the number of observations (N), mean (MEAN), median (MEDIAN), standard deviation (STD), min (MIN), and max (MAX). Panel B shows descriptive statistics by two groups: observations with banking expertise on the board (EXPERTISE = 1) and observations without banking expertise on the board (EXPERTISE = 0). This panel also shows mean differences between the two groups and the t-statistics obtained from the t-tests under the null that the difference is zero. Variable definitions are in the Appendix. *, **, *** are significance at 10%, 5% and 1%, respectively.

Table 3 Pearson Correlations

		1	2	3	4	5	6	7	8	9	10
$AT_{i,t}$	1	1.00									
$SALE_{i,t}$	2	0.86*	1.00								
$IB_{i,t}$	3	0.82*	0.71*	1.00							
$RET_{i,t}$	4	-0.02	-0.02	0.01	1.00						
$CONS\_RANK_{i,t}$	5	-0.40*	-0.40*	-0.33*	0.04*	1.00					
$CSCORE\_RANK_{i,t}$	6	-0.43*	-0.42*	-0.33*	0.05*	0.93*	1.00				
$yEXPERTISE_{i,t}$	7	0.31*	0.27*	0.27*	0.01	-0.28*	-0.28*	1.00			
$mEXPERTISE_{i,t}$	8	0.27*	0.25*	0.25*	-0.00	-0.28*	-0.28*	0.80*	1.00		
$aEXPERTISE_{i,t}$	9	0.29*	0.24*	0.23*	0.01	-0.31*	-0.31*	0.88*	0.71*	1.00	
$EXPERTISE_{i,t}$	10	0.25*	0.22*	0.21*	0.01	-0.32*	-0.32*	0.69*	0.87*	0.77*	1.00
$LEV_{i,t}$	11	0.08*	0.03*	-0.05*	-0.16*	0.23*	0.05*	-0.03	-0.05*	-0.01	-0.04*
$SIZE_{i,t}$	12	0.57*	0.54*	0.46*	0.11*	-0.82*	-0.86*	0.32*	0.32*	0.34*	0.35*
$MTB_{i,t}$	13	0.02	0.03	0.09*	0.15*	-0.19*	-0.16*	0.07*	0.07*	0.06*	0.07*
$CFO_{i,t}$	14	0.07*	0.08*	0.12*	0.16*	-0.22*	-0.23*	0.10*	0.10*	0.09*	0.09*
$\Delta SALE_{i,t}$	15	-0.04*	-0.01	-0.02	0.13*	0.02	0.04*	-0.04*	-0.04*	-0.03*	-0.03*
$CYCLE_{i,t}$	16	0.02	0.01	0.01	0.02	-0.01	-0.02	0.04*	0.04*	0.03	0.02
$SEO_{i,t}$	17	-0.09*	-0.10*	-0.08*	0.05*	0.16*	0.17*	-0.06*	-0.06*	-0.07*	-0.07*
$DEBTISSUE_{i,t}$	18	0.04*	0.01	0.02	-0.09*	-0.05*	-0.06*	-0.00	-0.02	0.01	-0.01
$PPE_{i,t}$	19	0.07*	0.05*	0.05*	0.01	0.02	-0.03	0.02	0.02	0.01	0.02
(Continued)		11	12	13	14	15	16	17	18	19	
$LEV_{i,t}$	11	1.00									
$SIZE_{i,t}$	12	-0.04*	1.00								
$MTB_{i,t}$	13	-0.18*	0.21*	1.00							
$CFO_{i,t}$	14	-0.07*	0.28*	0.04*	1.00						
$\Delta SALE_{i,t}$	15	-0.08*	0.02	0.10*	0.16*	1.00					
$CYCLE_{i,t}$	16	0.02	0.05*	-0.03	0.02	-0.14*	1.00				
$SEO_{i,t}$	17	-0.05*	-0.14*	0.03	-0.29*	0.12*	-0.05*	1.00			
$DEBTISSUE_{i,t}$	18	0.18*	0.07*	0.05*	-0.08*	0.18*	-0.10*	0.06*	1.00		
$PPE_{i,t}$	19	0.17*	0.08*	-0.06*	0.17*	-0.00	-0.04*	-0.06*	0.17*	1.00	

The table reports the Pearson correlation coefficients between selected variables. * is significance at 5%. Variable definitions are in the Appendix.

Table 4 Baseline regression results on the relationship between CONS_RANK and measures of banking expertise on the board

	Expected signs	yEXPERTISE (a)		aEXPERTISE (b)		EXPERTISE (c)	
		Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
$yEXPERTISE_{i,t}$	-	-0.072*	-1.78				
$aEXPERTISE_{i,t}$	-			-0.612**	-2.28		
$EXPERTISE_{i,t}$	-					-2.127***	-3.16
$LEV_{i,t}$	+	12.280***	21.76	12.295***	21.79	12.263***	21.75
$SIZE_{i,t}$	-	-11.631***	-73.66	-11.596***	-72.65	-11.555***	-72.41
$MTB_{i,t}$	+/-	0.099	1.23	0.097	1.21	0.100	1.24
$CFO_{i,t}$	+	7.282***	2.87	7.127***	2.81	7.111***	2.80
$\Delta SALE_{i,t}$	+/-	5.176***	4.78	5.186***	4.79	5.177***	4.79
$CYCLE_{i,t}$	+/-	4.223***	3.94	4.217***	3.93	4.212***	3.93
$SEO_{i,t}$	+	6.256***	6.91	6.223***	6.88	6.232***	6.89
$DEBTISSUE_{i,t}$	+/-	-2.163***	-3.33	-2.163***	-3.33	-2.189***	-3.37
Constant		1.890***	51.59	1.888***	51.50	1.885***	51.44
Year fixed effects		Yes		Yes		Yes	
Industry fixed effects		Yes		Yes		Yes	
Observations		3428		3428		3428	
Adjusted R^2		0.749		0.749		0.749	

Column (a) reports the results of estimating the following regression: $CONS\_RANK_{i,t} = \alpha + \beta_1 yEXPERTISE_{i,t} + \beta_2 LEV_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 MTB_{i,t} + \beta_5 CFO_{i,t} + \beta_6 \Delta SALE_{i,t} + \beta_7 CYCLE_{i,t} + \beta_8 SEO_{i,t} + \beta_9 DEBTISSUE_{i,t} + INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t}$.

Column (b) reports the results of estimating the following regression: $CONS\_RANK_{i,t} = \alpha + \beta_1 aEXPERTISE_{i,t} + \beta_2 LEV_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 MTB_{i,t} + \beta_5 CFO_{i,t} + \beta_6 \Delta SALE_{i,t} + \beta_7 CYCLE_{i,t} + \beta_8 SEO_{i,t} + \beta_9 DEBTISSUE_{i,t} + INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t}$.

Column (c) reports the results of estimating the following regression: $CONS\_RANK_{i,t} = \alpha + \beta_1 EXPERTISE_{i,t} + \beta_2 LEV_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 MTB_{i,t} + \beta_5 CFO_{i,t} + \beta_6 \Delta SALE_{i,t} + \beta_7 CYCLE_{i,t} + \beta_8 SEO_{i,t} + \beta_9 DEBTISSUE_{i,t} + INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t}$.

All coefficients are multiplied by 100. Industry fixed effects are based on Datastream's level six codes. Variable definitions are in the Appendix. *, **, *** are significance at 10%, 5% and 1%, respectively.

The evidence supports the hypothesis that the banking expertise on the board affects accounting conservatism. The findings are consistent with the view that the banking expertise on the board leads to a decrease, rather than an increase, in accounting conservatism. A possible explanation is that directors with banking expertise provide boards of directors with relevant knowledge on lending banks' demand for accounting conservatism so that firms avoid reporting excessive conservatism, which is costly for firms. Also, boards of directors with banking expertise often possess an interpersonal network in the banking industry that can act as a private communication channel for debt contracting, which also helps to reduce accouting conservatism.

4.3 Alternative measures of accounting conservatism and banking expertise

4.3.1 Alternative measure of firm-year accounting conservatism

In the baseline regression, we use total accounting conservatism following García Lara et al. (2016), which is based on Basu (1997) and Khan and Watts (2009). Although García Lara et al. (2016, p. 236) indicate that their measure of total accounting conservatism is strongly related to determinants of accounting conservatism, we are concerned whether our findings hold with traditional proxies for accounting conservatism.

To deal with this concern, we employ two other measures of firm-year accounting conservatism. First, we use the measure of asymmetric timeliness of bad news over good news (Khan and Watts 2009). In other words, we use CSCORE obtained from Equation (3) rather than CONS. We also calculate CSCORE_RANK, which is the annual fractional rank of three-year average of CSCORE, in the same way with the calculation of CONS_RANK. We then use CSCORE_RANK as an alternative measure of firm-year accounting conservatism.

Second, we calculate the negative accumulation of non-operating accruals introduced by Givoly and Hayn (2000). Non-operating accruals do not include accruals from depreciation, amortisation and operating accruals. Instead, non-operating accruals mostly include accruals from items whose timing and amount recognised are affected by the discretion of managers, such as bad debt provisions, restructuring charges, changes in accounting estimates, disposals of assets, write-downs of assets, or revenue deferrals. Givoly and Hayn (2000) argue that the negative accumulation of non-accruals is an indicator of accounting conservatism. They also find that the negative accumulation of non-accruals is related to timely recognition of bad news over good news. Similar to CONS_RANK and CSCORE_RANK, we calculate NOACC_RANK which is annual fractional rank of the three-year average of the negative accumulation of non-operating accruals.

Table 5 reports the findings of the regression (5) where CONS_RANK is replaced by CSCORE_RANK (Panel A) and NOACC_RANK (Panel B) as the dependent variable. The evidence shows that there are negative and significant relationships between CSCORE_RANK and NOACC_RANK with different measures of banking expertise on boards of directors. In general, our findings on the effect of banking expertise on accounting conservatism hold for those two alternative measures of accounting conservatism.

Table 5 Alternative measures of firm-year accounting conservatism

	yEXPERTISE (a)		aEXPERTISE (b)		EXPERTISE (c)	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Panel A: Relationship between CSCORE_RANK and measures of banking expertise on the boards						
$yEXPERTISE_{i,t}$	-0.041	-1.04				
$aEXPERTISE_{i,t}$			-0.448*	-1.70		
$EXPERTISE_{i,t}$					-1.655**	-2.50
Controls	Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes	
Observations	3428		3428		3428	
Adjusted R^2	0.757		0.757		0.757	
Panel B: Relationship between NOACC_RANK and measures of banking expertise on the boards						
$yEXPERTISE_{i,t}$	-0.105	-1.43				
$aEXPERTISE_{i,t}$			-0.830*	-1.70		
$EXPERTISE_{i,t}$					-3.220***	-2.63
Controls	Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes	
Observations	3406		3406		3406	
Adjusted R^2	0.174		0.175		0.175	

The table reports the results of the estimation of the relationship between alternative measures of firm-year accounting conservatism and banking expertise on the boards of directors. In Panel A and B, we replace CONS_RANK in the regression (5) by CSCORE_RANK and NOACC_RANK, respectively. Controls are included in all models, but we do not report them and the constant term to save space. All coefficients are multiplied by 100. Industry fixed effects are based on Datastream's level six codes. Variable definitions are in the Appendix. *, **, *** are significance at 10%, 5% and 1%, respectively.

4.3.2 Alternative measure of banking expertise

Our next concern is that the measures of banking expertise, e.g. yEXPERTISE, may inflate the levels of banking expertise on boards of directors, therefore there may be estimation errors. To mitigate this concern, we use the average number of years all directors on the board have worked as executives in banks, denoted mEXPERTISE, as an alternative measure of banking expertise. As reported in Table 6, the results show that the coefficient on mEXPERTISE is negative and statistically significant when the dependent variable are CONS_RANK (column a) and NOACC_RANK (column c), while it is still negative when the dependent variable is CSCORE_RANK (column b). In general, the evidence is consistent with the baseline regression results.[7]

4.4 Propensity score matching

Because this research is a non-experimental study, there may be possible confounding factors which may affect both accounting conservatism and the presence of banking expertise on the board (see, e.g., Gow et al. 2016; Shipman et al. 2017). The presence of directors with banking expertise on the board may not be random because it can be affected by firm characteristics (Hilscher and Şişli-Ciamarra 2013; Kang and Kim 2017; Kroszner and Strahan 2001). Similar to the work of Erkens et al. (2014), we construct a propensity score matching sample to eliminate the effect of confounding factors. We firstly classify observations into two groups: observations where firms have directors with banking expertise on the board (treatments) and observations where firms do not have directors with banking expertise on the board (controls). We then run a probit regression to estimate the probability of having directors with banking expertise on the board based on explanatory variables, which are control variables used in the main regressions (debt-to-asset ratio, firm size, market-to-book ratio, cash flow-to-asset ratio, sale growth, business cycle, seasoned equity offering, and debt issuance). Based on the conditional odd ratio of having directors with banking expertise on the board, we match each treatment with four controls having the closest odd ratio and a maximum caliper of 0.01. The final matched sample has 2,590 firm-year observations (679 treatments and 1,911 controls). We also perform a simple t-test and find that (unreported) differences in firm characteristics between the two groups are insignificant at the 1% level. This procedure is similar to what is suggested by Shipman et al. (2017).

Table 7 shows the results of the regression (5) with the propensity-score-matching sample. In Panel A, we find that CONS_RANK is negatively correlated with four different measures of banking expertise on boards of directors. The magnitudes of the coefficients on banking expertise are broadly equivalent to those reported in Table 4. In Panel B and C, we find similar evidence on the negative relationship between CSCORE_RANK and NOACC_RANK with banking expertise. In short, the results in this section suggest that the link between the banking expertise on board of directors and accounting conservatism is less likely affected by confounding factors.

[7] When we use the average number of banks directors have worked for, the results are statistically unchanged.

Table 6 Alternative measures of banking expertise

	CONS_RANK (a)		CSCORE_RANK (b)		NOACC_RANK (c)	
	Coefficient	**t-statistic**	**Coefficient**	**t-statistic**	**Coefficient**	**t-statistic**
$mEXPERTISE_{i,t}$	-0.255**	-2.04	-0.136	-1.11	-0.445**	-1.96
$LEV_{i,t}$	12.250***	21.70	1.100**	1.98	2.553**	2.49
$SIZE_{i,t}$	-11.622***	-73.71	-12.334***	-79.58	-0.111	-0.39
$MTB_{i,t}$	0.100	1.24	0.160**	2.04	0.497***	3.39
$CFO_{i,t}$	7.306***	2.88	7.530***	3.02	24.304***	5.21
$\Delta SALE_{i,t}$	5.174***	4.78	5.965***	5.60	27.958***	14.17
$CYCLE_{i,t}$	4.236***	3.95	3.574***	3.39	-11.681***	-6.00
$SEO_{i,t}$	6.279***	6.94	5.341***	6.01	9.013***	5.47
$DEBTISSUE_{i,t}$	-2.177***	-3.35	-0.534	-0.84	0.268	0.23
Constant	1.890***	51.63	2.006***	55.76	0.282***	3.77
Year fixed effects	Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes	
Observations	3428		3428		3406	
Adjusted R^2	0.749		0.757		0.175	

The table reports the findings of regressions between the alternative measure of banking expertise on the boards of directors (mEXPERTISE) and three different firm-year measures of accounting conservatism.

Column (a) reports the results of estimating the following regression: $CONS\_RANK_{i,t} = \alpha + \beta_1 mEXPERTISE_{i,t} + \beta_2 LEV_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 MTB_{i,t} + \beta_5 CFO_{i,t} + \beta_6 \Delta SALE_{i,t} + \beta_7 CYCLE_{i,t} + \beta_8 SEO_{i,t} + \beta_9 DEBTISSUE_{i,t} + INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t}$.

Column (b) reports the results of estimating the following regression: $CSCORE\_RANK_{i,t} = \alpha + \beta_1 mEXPERTISE_{i,t} + \beta_2 LEV_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 MTB_{i,t} + \beta_5 CFO_{i,t} + \beta_6 \Delta SALE_{i,t} + \beta_7 CYCLE_{i,t} + \beta_8 SEO_{i,t} + \beta_9 DEBTISSUE_{i,t} + INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t}$.

Column (c) reports the results of estimating the following regression: $NOACC\_RANK_{i,t} = \alpha + \beta_1 mEXPERTISE_{i,t} + \beta_2 LEV_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 MTB_{i,t} + \beta_5 CFO_{i,t} + \beta_6 \Delta SALE_{i,t} + \beta_7 CYCLE_{i,t} + \beta_8 SEO_{i,t} + \beta_9 DEBTISSUE_{i,t} + INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t}$.

All coefficients are multiplied by 100. Industry fixed effects are based on Datastream's level six codes. Variable definitions are in the Appendix. *, **, *** are significance at 10%, 5% and 1%, respectively.

Table 7 Propensity score matching

	Expected signs	yEXPERTISE (a)		aEXPERTISE (b)		EXPERTISE (c)		mEXPERTISE (d)	
		Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Panel A: CONS_RANK and banking expertise on boards of directors									
$yEXPERTISE_{i,t}$	-	-0.117**	-2.56						
$aEXPERTISE_{i,t}$	-			-0.887***	-2.96				
$EXPERTISE_{i,t}$	-					-2.569***	-3.58		
$mEXPERTISE_{i,t}$								-0.316**	-2.34
Controls		Yes		Yes		Yes		Yes	
Year fixed effects		Yes		Yes		Yes		Yes	
Industry fixed effects		Yes		Yes		Yes		Yes	
Observations		2590		2590		2590		2590	
Adjusted R^2		0.704		0.704		0.705		0.704	
Panel B: CSCORE_RANK and banking expertise on boards of directors									
$yEXPERTISE_{i,t}$	-	-0.095**	-2.11						
$aEXPERTISE_{i,t}$	-			-0.730**	-2.46				
$EXPERTISE_{i,t}$	-					-2.144***	-3.02		
$mEXPERTISE_{i,t}$								-0.226*	-1.69
Controls		Yes		Yes		Yes		Yes	
Year fixed effects		Yes		Yes		Yes		Yes	
Industry fixed effects		Yes		Yes		Yes		Yes	
Observations		2590		2590		2590		2590	
Adjusted R^2		0.705		0.705		0.705		0.704	
Panel B: NOACC_RANK and banking expertise on boards of directors									
$yEXPERTISE_{i,t}$	-	-0.085	-1.06						
$aEXPERTISE_{i,t}$	-			-0.679	-1.30				
$EXPERTISE_{i,t}$	-					-3.155**	-2.52		
$mEXPERTISE_{i,t}$								-0.432*	-1.84
Controls		Yes		Yes		Yes		Yes	
Year fixed effects		Yes		Yes		Yes		Yes	
Industry fixed effects		Yes		Yes		Yes		Yes	
Observations		2590		2590		2590		2590	
Adjusted R^2		0.705		0.705		0.705		0.704	

Table 7 Propensity score matching (continued)

This table reports findings with the propensity score matching sample. To construct the propensity score matching sample, we first run a probit regression to estimate the probability of having directors with banking expertise on the board based on explanatory variables, which are the same with control variables used in the main regressions (debt-to-asset ratio, firm size, market-to-book ratio, cash flow-to-asset ratio, sale growth, business cycle, seasoned equity offering, and debt issuance). Based on the conditional odd ratio of having directors with banking expertise on the board, we match each treatment with four controls having the closest odd ratio and a maximum caliper of 0.01. We also perform a simple t-test and find that (unreported) differences in firm characteristics are insignificant at the 1% level.

In Panel A, B, and C, we use CONS_RANK, CSCORE_RANK, and NOACC_RANK, respectively, as the dependent variable (used as substitutes) in our models. All coefficients are multiplied by 100. Industry fixed effects are based on Datastream's level six codes. Variable definitions are in the Appendix. *, **, *** are significance at 10%, 5% and 1%, respectively.

In another approach, we use the two-stage Heckman procedure (e.g., Lennox et al. 2012). In the first stage, we run a probit regression to predict the probability of the presence of at least one director who has worked as an executive in a bank on the board of directors based on firm characteristics. After the first stage, we test correlations between the error terms in equation (5) and those in the Heckman's first-stage regression. The findings (unreported) indicate that we cannot reject the null that the correlation coefficient is equal to zero at the 1% significant level, suggesting that the OLS estimations reported in Table 4 are not biased.

4.5 Alternative methods to estimate the effects of banking expertise on accounting conservatism

4.5.1 Original Basu (1997)'s model

To test whether the findings are robust, we employ the model of Basu (1997) to measure the asymmetric timeliness of bad news over good news as a proxy of accounting conservatism. Following prior research (e.g., Erkens et al. 2014; Hu and Jiang 2019; Kong et al. 2017; Lin 2014), we interact the measures of banking expertise on the board with the variables in the model. We also follow Ball et al. (2013a) to include industry and year fixed effects to mitigate heterogeneity bias. The model is as follows:

$$EARN_{i,t} = \alpha_1 + \beta_1 D_{i,t} + \beta_2 RET_{i,t} + \beta_3 D_{i,t} * RET_{i,t} + \gamma_1 D_{i,t} * X_{i,t} + \gamma_2 * RET_{i,t} * X_{i,t} + \gamma_3 D_{i,t} * RET_{i,t} * X_{i,t} + INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t}. \quad (6)$$

Where: $X_{i,t}$ is $yEXPERTISE_{i,t}$, $aEXPERTISE_{i,t}$, $EXPERTISE_{i,t}$, or $mEXPERTISE_{i,t}$ (used as substitutes). Variable definitions are in the appendix. The coefficient γ_3 indicates the effect of banking expertise on the asymmetric timeliness of bad news over good news. We expect that γ_3 is negative and significant.

Table 8 reports the findings of regression (6). We find that the coefficient γ_3 is negative across all measure of banking expertise and statistically significant in column (b) and (c). The evidence is consistent with our main findings that banking expertise on the board has a negative impact on accounting conservatism.

4.5.2 Ball and Shivakumar (2008)'s model

Next, we follow Ball and Shivakumar (2005) and Ball and Shivakumar (2008) to use the timeliness of loss recognition as an alternative proxy for accounting conservatism. We also interact the measures of banking expertise on the board with other variables in the model as follows (see, e.g., Kong et al. 2017):

$$ACC_{i,t} = \alpha_1 + \beta_1 DCFO_{i,t} + \beta_2 CFO_{i,t} + \beta_3 DCFO_{i,t} * CFO_{i,t} + \beta_4 \Delta SALE_{i,t} + \beta_5 PPE_{i,t} + \gamma_1 DCFO_{i,t} * X_{i,t} + \gamma_2 * CFO_{i,t} * X_{i,t} + \gamma_3 DCFO_{i,t} * CFO_{i,t} * X_{i,t} + INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t} \quad (7)$$

Where: $X_{i,t}$ is $yEXPERTISE$, $aEXPERTISE$, $EXPERTISE$, or $mEXPERTISE$ (used as substitutes). Variable definitions are in the Appendix.

Table 8 Applying the Basu (1997)'s to estimate the effect of banking expertise on the asymmetric timeliness of bad news over good news

	Expected sign	yEXPERTISE (a)		aEXPERTISE (b)		EXPERTISE (c)		mEXPERTISE (d)	
		Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
$D_{i,t}$		4.025*	1.87	4.232*	1.95	4.445**	1.98	4.077*	1.85
$RET_{i,t}$	+	2.750	1.59	2.673	1.53	2.849	1.59	2.811	1.60
$D_{i,t}*RET_{i,t}$	+	33.740***	6.04	35.321***	6.26	36.591***	6.25	34.574***	6.05
$D_{i,t}*yEXPERTISE_{i,t}$		-0.047	-0.18						
$RET_{i,t}*yEXPERTISE_{i,t}$		0.038	0.19						
$D_{i,t}*RET_{i,t}*yEXPERTISE_{i,t}$	**-**	**-0.695**	**-0.81**						
$D_{i,t}*aEXPERTISE_{i,t}$				-0.930	-0.57				
$RET_{i,t}*aEXPERTISE_{i,t}$				0.400	0.33				
$D_{i,t}*RET_{i,t}*aEXPERTISE_{i,t}$	**-**			**-9.125***	**-1.70**				
$D_{i,t}*EXPERTISE_{i,t}$						-2.610	-0.63		
$RET_{i,t}*EXPERTISE_{i,t}$						-0.237	-0.08		
$D_{i,t}*RET_{i,t}*EXPERTISE_{i,t}$	**-**					**-21.700***	**-1.75**		
$D_{i,t}*mEXPERTISE_{i,t}$								-0.189	-0.24
$RET_{i,t}*mEXPERTISE_{i,t}$								-0.012	-0.02
$D_{i,t}*RET_{i,t}*mEXPERTISE_{i,t}$								**-2.503**	**-1.03**
Constant		0.087	1.01	0.087	1.01	0.083	0.97	0.086	1.00
Year fixed effects		Yes		Yes		Yes		Yes	
Industry fixed effects		Yes		Yes		Yes		Yes	
Observations		3428		3428		3428		3428	
Adjusted R^2		0.026		0.027		0.028		0.027	

Column (a) reports the results of estimating the following regression: $EARN_{i,t} = \alpha_1 + \beta_1 D_{i,t} + \beta_2 RET_{i,t} + \beta_3 D_{i,t} * RET_{i,t} + \gamma_1 D_{i,t} * yEXPERTISE_{i,t} + \gamma_2 * RET_{i,t} * yEXPERTISE_{i,t} + \gamma_3 D_{i,t} * RET_{i,t} * yEXPERTISE_{i,t} + INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t}$.

Column (b) reports the results of estimating the following regression: $EARN_{i,t} = \alpha_1 + \beta_1 D_{i,t} + \beta_2 RET_{i,t} + \beta_3 D_{i,t} * RET_{i,t} + \gamma_1 D_{i,t} * aEXPERTISE_{i,t} + \gamma_2 * RET_{i,t} * aEXPERTISE_{i,t} + \gamma_3 D_{i,t} * RET_{i,t} * aEXPERTISE_{i,t} + INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t}$.

Column (c) reports the results of estimating the following regression: $EARN_{i,t} = \alpha_1 + \beta_1 D_{i,t} + \beta_2 RET_{i,t} + \beta_3 D_{i,t} * RET_{i,t} + \gamma_1 D_{i,t} * EXPERTISE_{i,t} + \gamma_2 * RET_{i,t} * EXPERTISE_{i,t} + \gamma_3 D_{i,t} * RET_{i,t} * EXPERTISE_{i,t} + INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t}$.

Column (d) reports the results of estimating the following regression: $EARN_{i,t} = \alpha_1 + \beta_1 D_{i,t} + \beta_2 RET_{i,t} + \beta_3 D_{i,t} * RET_{i,t} + \gamma_1 D_{i,t} * mEXPERTISE_{i,t} + \gamma_2 * RET_{i,t} * mEXPERTISE_{i,t} + \gamma_3 D_{i,t} * RET_{i,t} * mEXPERTISE_{i,t} + INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t}$.

All coefficients are multiplied by 100. Industry fixed effects are based on Datastream's level six codes. Variable definitions are in the Appendix. *, **, *** are significance at 10%, 5% and 1%, respectively.

Dechow et al. (1998), among others, show that accruals have a contemporaneous negative relationship with operating cash flows. Thus, β_2 is expected to be negative. In addition, Ball and Shivakumar (2005) argue that good news and bad news affect the revisions of both current cash flows and expected future cash flows because cash flows generated from an asset are more likely to be correlated. Current-period accruals include the timely recognition of good news (gains) and bad news (losses), which reflect changes in expected future cash flows. Therefore, the asymmetric timely recognition of economic gains (good news) and losses (bad news) causes a positive relationship between current-period accruals and current-period cash flows. β_3 is the incremental timeliness in recognition of bad news over good news, which is used as a measure of accounting conservatism. It is predicted that β_3 is positive, because accruals are more likely to reflect losses in periods with negative cash flows. In the model (7), the coefficient γ_3 shows the effect of the banking expertise on the asymmetric timelines of loss recognition. We expect that γ_3 is negative and significant.

Table 9 reports the findings of regression (7). The evidence shows that the coefficient on γ_3 is negative and significant in nearly every case. The results suggest that the measures of banking expertise have a significantly negative effect on asymmetric timeliness of loss recognition.

4.6 Cross-sectional analyses

So far, our main results show that banking expertise on boards of directors negatively affects accounting conservatism. In this section, we do cross-sectional analyses to see how the effect of banking expertise on accounting conservatism varies with bankruptcy risk and financial leverage.

4.6.1 Bankruptcy risk

We conjecture that the effect of financial expertise on boards of directors on accounting conservatism is more pronounced for firms having higher bankruptcy risk. Opler and Titman (1994) document that firms with financial distress experience a decline in corporate performance. In those circumstances, debtholders are more likely to demand more borrowing firms' accounting conservatism, which facilitates the violation of debt covenants and the transfer to control rights from shareholders to debtholders (e.g., Watts 2003). However, the violation of debt covenants prevents borrowers from investing in profitable projects (Nash et al. 2003) and has other consequences such as increases in operating and restructuring costs (Beneish and Press 1993; Bhaskar et al. 2017; Gao et al. 2017), thus limits their opportunities to increase their corporate performance. Previous studies also find that boards of directors help to reduce bankcrupty risk (Chen 2008; Fich and Slezak 2008). As a consequence, directors with working experience in the banking industry could help borrowing firms not only access external capital (e.g., Engelberg et al. 2012) but also reduce excessive costly accounting conservatism.

To test this conjecture, we run the regression (5) using subsamples of firms with high and low bankruptcy risk. We employ the ZSCORE (Altman 1968; Taffler 1983) as a measure of bankruptcy risk, with a lower ZSCORE indicating higher bankruptcy risk. We rank ZSCORE of all firms in the sample and define that firms have a high (low) bankruptcy risk when its ZSCORE in year t-1 is smaller than or equal (greater) than the median level of all firms.

Table 9 Applying the Ball and Shivakumar (2008) model to estimate the effect of banking expertise on the timeliness of loss recognition

	Expected sign	yEXPERTISE (a)		aEXPERTISE (b)		EXPERTISE (c)		mEXPERTISE (d)	
		Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
$DCFO_{i,t}$		0.185	0.36	-0.008	-0.02	-0.020	-0.04	0.130	0.25
$CFO_{i,t}$	-	-40.139***	-28.35	-39.943***	-28.05	-41.667***	-27.93	-42.323***	-28.63
$DCFO_{i,t}$*$CFO_{i,t}$	+	28.500***	16.69	28.488***	16.58	30.238***	17.02	30.722***	17.44
$\Delta SALE_{i,t}$	+	8.459***	18.30	8.437***	18.26	8.399***	18.21	8.433***	18.31
$PPE_{i,t}$	-	-2.075***	-4.41	-2.060***	-4.38	-2.039***	-4.34	-2.009***	-4.28
$DCFO_{i,t}$*$yEXPERTISE_{i,t}$		-0.052	-0.51						
$CFO_{i,t}$*$yEXPERTISE_{i,t}$		0.279**	2.04						
$DCFO_{i,t}$*$CFO_{i,t}$*$yEXPERTISE_{i,t}$	**-**	**-0.913**	**-1.18**						
$DCFO_{i,t}$*$aEXPERTISE_{i,t}$				0.232	0.37				
$CFO_{i,t}$*$aEXPERTISE_{i,t}$				1.253	1.34				
$DCFO_{i,t}$*$CFO_{i,t}$*$aEXPERTISE_{i,t}$	**-**			**-10.154****	**-2.43**				
$DCFO_{i,t}$*$EXPERTISE_{i,t}$						0.439	0.33		
$CFO_{i,t}$*$EXPERTISE_{i,t}$						8.539***	3.75		
$DCFO_{i,t}$*$CFO_{i,t}$*$EXPERTISE_{i,t}$	**-**					**-17.762*****	**-3.38**		
$DCFO_{i,t}$*$mEXPERTISE_{i,t}$								-0.091	-0.37
$CFO_{i,t}$*$mEXPERTISE_{i,t}$								2.061***	5.12
$DCFO_{i,t}$*$CFO_{i,t}$*$mEXPERTISE_{i,t}$								**-3.103****	**-2.48**
Constant		0.005	0.28	0.003	0.16	0.004	0.21	0.006	0.30
Year fixed effects		Yes		Yes		Yes		Yes	
Industry fixed effects		Yes		Yes		Yes		Yes	
Observations		3421		3421		3421		3421	
Adjusted R^2		0.348		0.348		0.351		0.352	

Column (a) reports the findings of the regression: $ACC_{i,t} = \alpha_1 + \beta_1 DCFO_{i,t} + \beta_2 CFO_{i,t} + \beta_3 DCFO_{i,t} * CFO_{i,t} + \beta_4 \Delta SALE_{i,t} + \beta_5 PPE_{i,t} + \gamma_1 DCFO_{i,t} * yEXPERTISE_{i,t} + \gamma_2 * CFO_{i,t} * yEXPERTISE_{i,t} + \gamma_3 DCFO_{i,t} * CFO_{i,t} * yEXPERTISE_{i,t} + INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t}$.
Column (b) reports the findings of the regression: $ACC_{i,t} = \alpha_1 + \beta_1 DCFO_{i,t} + \beta_2 CFO_{i,t} + \beta_3 DCFO_{i,t} * CFO_{i,t} + \beta_4 \Delta SALE_{i,t} + \beta_5 PPE_{i,t} + \gamma_1 DCFO_{i,t} * aEXPERTISE_{i,t} + \gamma_2 * CFO_{i,t} * aEXPERTISE_{i,t} + \gamma_3 DCFO_{i,t} * CFO_{i,t} * aEXPERTISE_{i,t} + INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t}$.
Column (c) reports the findings of the regression: $ACC_{i,t} = \alpha_1 + \beta_1 DCFO_{i,t} + \beta_2 CFO_{i,t} + \beta_3 DCFO_{i,t} * CFO_{i,t} + \beta_4 \Delta SALE_{i,t} + \beta_5 PPE_{i,t} + \gamma_1 DCFO_{i,t} * EXPERTISE_{i,t} + \gamma_2 * CFO_{i,t} * EXPERTISE_{i,t} + \gamma_3 DCFO_{i,t} * CFO_{i,t} * EXPERTISE_{i,t} + INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t}$.
Column (d) reports the findings of the regression: $ACC_{i,t} = \alpha_1 + \beta_1 DCFO_{i,t} + \beta_2 CFO_{i,t} + \beta_3 DCFO_{i,t} * CFO_{i,t} + \beta_4 \Delta SALE_{i,t} + \beta_5 PPE_{i,t} + \gamma_1 DCFO_{i,t} * mEXPERTISE_{i,t} + \gamma_2 * CFO_{i,t} * mEXPERTISE_{i,t} + \gamma_3 DCFO_{i,t} * CFO_{i,t} * mEXPERTISE_{i,t} + INDUSTRY\ FIXED\ EFFECTS + YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t}$.
All coefficients are multiplied by 100. Industry fixed effects are based on Datastream level-six codes. Variable definitions are in the Appendix. *, **, *** are significance at 10%, 5% and 1%, respectively.

Table 10 reports findings with subsamples of firms with high and low bankruptcy risk. Panel A, B, and C show results when accounting conservatism is CONS_RANK, CSCORE_RANK, and NOACC_RANK, respectively. Looking at Panel A, we observe that the magnitudes of the coefficients on banking expertise are considerably higher for firms with a low ZSCORE than for firms with a high ZSCORE. Importantly, we find that the coefficients on banking expertise are significant in subsamples of firms with a low ZSCORE, but not significant for those with a high ZSCORE. We obtain similar results in Panel B and C. In general, the evidence supports our conjecture that the effect of the board's banking expertise on accounting conservatism is more pronounced when firms have high bankruptcy risk.

4.6.2 Financial leverage

In our final analysis, we examine how financial leverage affects the relationship between banking expertise on boards of directors and accounting conservatism. Highly levered firms face restrictive debt covenants and have a high demand for accounting conservatism as a debt monitoring mechanism (Khan and Watts 2009; LaFond and Watts 2008; Watts 2003). Because the violation of debt covenants is costly (Chava and Roberts 2008; Gao et al. 2017; Nash et al. 2003; Nini et al. 2012) and accounting conservatism may have negative impact on shareholders' wealth (Beneish and Press 1993; Bhaskar et al. 2017; Gao et al. 2017; Nash et al. 2003), highly levered firms are more likely to rely on financial expertise on boards of directors to mitigate the negative consequences of accounting conservatism. In general, we predict that the effect of banking expertise on accounting conservatism is more pronounced for firms with high financial leverage than for firms with low financial leverage.

To provide evidence for this prediction, we also run the regression (5) with subsamples: firms with high and low financial leverage. We define firms with high (low) financial leverage as having financial leverage (LEV) in year t-1 greater than or equal (lower) than the median of all firms. Table 11 reports findings with those subsamples. Panel A, B, and C present results of regressions where the dependent variable is CONS_RANK, CSCORE_RANK, and NOACC_RANK, respectively. In nearly every case across all columns and all panels, we find robust evidence that the coefficients on financial expertise are substantially higher for firms with high financial leverage than for firms with low financial leverage. Also, the coefficients on financial expertise are (not) significant or firms with high (low) financial leverage. In short, the evidence is consistent with our prediction that the effect of banking expertise on accounting conservatism is more pronounced when firms have high financial leverage.

Table 10 Cross-sectional analysis: The effect of bankruptcy risk on the relationship between accounting conservatism and banking expertise on the board

	yEXPERTISE (a)		aEXPERTISE (b)		EXPERTISE (c)		mEXPERTISE (d)	
	Low ZSCORE	High ZSCORE	Low ZSCORE	High ZSCORE	Low ZSCORE	High ZSCORE	Low ZSCORE	High ZSCORE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: CONS_RANK and measures of banking expertise on boards of directors								
$yEXPERTISE_{i,t}$	-0.139**	-0.001						
	(-2.16)	(-0.02)						
$aEXPERTISE_{i,t}$			-1.074**	-0.115				
			(-2.55)	(-0.34)				
$EXPERTISE_{i,t}$					-3.469***	-0.664		
					(-3.27)	(-0.79)		
$mEXPERTISE_{i,t}$							-0.425**	-0.060
							(-2.05)	(-0.40)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1708	1720	1708	1720	1708	1720	1708	1720
Adjusted R^2	0.718	0.791	0.718	0.791	0.719	0.792	0.718	0.791
Panel B: CSCORE_RANK and measures of banking expertise on boards of directors								
$yEXPERTISE_{i,t}$	-0.117*	0.021						
	(-1.86)	(0.43)						
$aEXPERTISE_{i,t}$			-0.985**	0.004				
			(-2.40)	(0.01)				
$EXPERTISE_{i,t}$					-2.888***	-0.204		
					(-2.79)	(-0.24)		
$mEXPERTISE_{i,t}$							-0.305	0.083
							(-1.51)	(0.56)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1708	1720	1708	1720	1708	1720	1708	1720
Adjusted R^2	0.733	0.797	0.734	0.797	0.734	0.797	0.733	0.797

Table 10 Cross-sectional analysis: The effect of bankruptcy risk on the relationship between accounting conservatism and banking expertise on the board (continued)

Panel C: NOACC_RANK and measures of banking expertise on boards of directors								
$yEXPERTISE_{i,t}$	-0.175	-0.075						
	(-1.58)	(-0.76)						
$aEXPERTISE_{i,t}$			-1.555**	-0.262				
			(-2.15)	(-0.38)				
$EXPERTISE_{i,t}$					-4.991***	-1.667		
					(-2.74)	(-0.99)		
$mEXPERTISE_{i,t}$							-0.721**	-0.256
							(-2.03)	(-0.85)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1693	1713	1693	1713	1693	1713	1693	1713
Adjusted R^2	0.173	0.211	0.174	0.211	0.176	0.212	0.174	0.211

This table reports the findings on the effect of bankruptcy risk on the relationship between accounting conservatism and banking expertise on the board. We define firms with low (high) ZSCORE as having a $ZSCORE_{t-1}$ lower (greater) than the median of all firms. In Panel A, B, and C, we use CONS_RANK, CSCORE_RANK, and NOACC_RANK as the dependent variable (used as substitutes), respectively. All coefficients are multiplied by 100. Industry fixed effects are based on Datastream's level six codes. Figures in parentheses are *t*-statistics. Definitions of variables are in the Appendix. *, **, *** are significance at 10%, 5% and 1%, respectively.

Table 11 Cross-sectional analysis: the effect of financial leverage on the relationship between CONS_RANK and measures of banking expertise

	yEXPERTISE (a)		aEXPERTISE (b)		EXPERTISE (c)		mEXPERTISE (d)	
	High leverage	Low Leverage	High leverage	Low Leverage	High leverage	Low Leverage	High leverage	Low Leverage
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: CONS_RANK and measures of banking expertise on boards of directors								
$yEXPERTISE_{i,t}$	-0.127**	0.003						
	(-2.12)	(0.08)						
$aEXPERTISE_{i,t}$			-0.998***	-0.323				
			(-2.58)	(-0.99)				
$EXPERTISE_{i,t}$					-2.884***	-1.146		
					(-2.74)	(-1.57)		
$mEXPERTISE_{i,t}$							-0.314	0.016
							(-1.53)	(0.13)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1714	1714	1714	1714	1714	1714	1714	1714
Adjusted R^2	0.739	0.838	0.739	0.838	0.740	0.838	0.739	0.838
Panel B: CSCORE_RANK and measures of banking expertise on boards of directors								
$yEXPERTISE_{i,t}$	-0.078	-0.008						
	(-1.35)	(-0.17)						
$aEXPERTISE_{i,t}$			-0.699*	-0.467				
			(-1.87)	(-1.44)				
$EXPERTISE_{i,t}$					-2.263**	-1.377*		
					(-2.23)	(-1.89)		
$mEXPERTISE_{i,t}$							-0.199	0.000
							(-1.01)	(0.00)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1714	1714	1714	1714	1714	1714	1714	1714
Adjusted R^2	0.755	0.843	0.755	0.843	0.755	0.844	0.755	0.843

Table 11 Cross-sectional analysis: the effect of financial leverage on the relationship between CONS_RANK and measures of banking expertise (continued)

Panel C: NOACC_RANK and measures of banking expertise on boards of directors								
$yEXPERTISE_{i,t}$	-0.164*	-0.099						
	(-1.75)	(-0.85)						
$aEXPERTISE_{i,t}$			-1.096*	-0.910				
			(-1.82)	(-1.09)				
$EXPERTISE_{i,t}$					-4.512***	-2.632		
					(-2.77)	(-1.40)		
$mEXPERTISE_{i,t}$							-0.705**	-0.385
							(-2.22)	(-1.16)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1705	1701	1705	1701	1705	1701	1705	1701
Adjusted R^2	0.199	0.195	0.199	0.195	0.201	0.196	0.200	0.195

This table reports the findings on the effect of financial distress on the relationship between accounting conservatism and measures of banking expertise. We define firms with low (high) financial leverage as having LEV_{t-1} lower (greater) than the median of all firms. In Panel A, B, and C, we use CONS_RANK, CSCORE_RANK, and NOACC_RANK as the dependent variable (used as substitutes), respectively. All coefficients are multiplied by 100. Industry fixed effects are based on Datastream's level six codes. Figures in parentheses are *t*-statistics. Definitions of variables are in the Appendix. *, **, *** are significance at 10%, 5% and 1%, respectively.

5 CONCLUSIONS

In this research, we revisit the relationships between bankers (ex-bankers) on boards of directors and accounting conservatism by providing an innovative way to measure banking expertise based on the working history in banks of all individual directors on the board. Using a sample of listed companies in the UK from 2005 to 2012, we find evidence to support the view that the banking expertise on the board negatively affects accounting conservatism. The negative relationship is both statistically and economically significant. The findings hold strongly for various robustness checks. Also, further analyses show that the banking expertise on the board has a more pronounced impact on accounting conservatism when firms have high bankruptcy risk and when firms have high financial leverage. The research makes significant contributions to the literature. First, the measure of banking expertise proposed in this study possibly results in more reliable findings on the relationship between bankers (ex-bankers) and accounting conservatism than previous studies, e.g. the work of Erkens et al. (2014) and Bonetti et al. (2017). Second, the study adds the research strand on the importance of life-time working experience of directors for corporate outcomes (e.g., Chemmanur et al. 2019; Drobetz et al. 2018). Nevertheless, a limitation of our study is that since the paper exclusively deals with UK data, the results might not provide direct evidence of the influence of the banking expertise on accounting conservatism in all international contexts.

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Appendix: Variable definitions

Variable	Definitions
Accounting conservatism measures	
CONS_RANK	Annual fractional rank of the three-year average of total accounting conservatism (García Lara et al. 2016), where total accounting conservatism is the sum of the timeliness of good news (*GSCORE*) and the asymmetric timeliness of bad news over good news (*CSCORE*) estimated by the model of Khan and Watts (2009), which is based on Basu (1997). We calculate the average of total accounting conservatism across years t-2, t-1, and t (denoted $aCONS_{i,t}$); then rank $aCONS_{i,t}$ of all firms for each year; and divide the rank values by N+1, where N is the total observations in each rank group. We refer to the new variable as the annual fractional rank of total accounting conservatism.
CSCORE_RANK	Annual fractional rank of the three-year average of *CSCORE* (Basu 1997; Khan and Watts 2009).
NOACC_RANK	Annual fractional rank of the three-year average of the negative accumulation of non-operating accruals (Givoly and Hayn 2000). The calculation of negative non-operating accruals is as follows: $NOACC_{i,t} = -1 * \{TABD_{i,t} - OA_{i,t}\}$ $= -1 * \{[(NI_{i,t} + DEP_{i,t}) - CFO_{i,t}] - [\Delta REC_{i,t} + \Delta INV_{i,t} + \Delta PREPAID_{i,t} - \Delta PAY_{i,t} - \Delta TAX_{i,t}]\}$ Where: $NOACC_{i,t}$ is negative non-operating accruals at the end of year t; $TABD_{i,t}$ is total accruals before depreciation and amortisation at the end of year t; $OA_{i,t}$ is operating accruals at the end of year t; $NI_{i,t}$ is net income in year t; $DEP_{i,t}$ is depreciation and amortisation in year t; $CFO_{i,t}$ is cash flows from operations in year t; $\Delta REC_{i,t}$ is change in account receivables from the end of year t-1 to the end of year t; $\Delta INV_{i,t}$ is change in inventories from the end of year t-1 to the end of year t; $\Delta PREPAID_{i,t}$ is change in prepaid expenses from the end of year t-1 to the end of year t; $\Delta PAY_{i,t}$ is change in account payables from the end of year t-1 to the end of year t; $\Delta TAX_{i,t}$ is change in tax payables from the end of year t-1 to the end of year t. All variables are scaled by total assets at the end of year t. i represents company i and t represents fiscal year t.
Banking expertise measures	
yEXPERTISE	Total number of years all directors on the board have worked as executives in banks.
aEXPERTISE	Total number of banks for which all directors on the board have worked as executives.
EXPERTISE	The presence of banking expertise on the board, which is equal one if a company has at least one director on board who has worked as an executive in a bank, zero otherwise.
mEXPERTISE	Average number of years all directors on the board have worked as executives in banks, which is equal *yEXPERTISE* divided by the number of board members.
Other variables	
$\Delta SALE$	Sale growth, which is equal change in sales from year t-1 to year t, scaled by total assets at the end of year t.
ACC	Accruals which are calculated as follows: $ACC = \Delta INV + \Delta REC + \Delta OCA - \Delta PAY - \Delta OCL - DEP$, where ΔINV is change in inventories from the end of year t-1 to year the end of year t, ΔREC is change in receivables from the end of year t-1 to year the end of year t, ΔOCA is change in other current assets from the end of year t-1 to year the end of year t, ΔPAY is change in payables from the end of year t-1 to year the end of year t, ΔOCL is change in other current liabilities the end of year t-1 to year the end of year t, DEP is depreciation and amortisation in year t.
AT	Total assets

CASH	Ratio of cash to total asset at the end of year t.
CFO	Cash flow from operations, which equals to net income before extraordinary items (IB) minus accruals (ACC) in year t, scaled by assets at the end of year t.
CYCLE	Business life cycle (Dickinson 2011), which is a dummy variable is equal one if firms are classified based on cash flows as at mature stage (positive cash flows from operating activities, negative cash flows from investing activities, and negative cash flows from financing activities), and zero if firms are classified as at young stage (negative cash flows from operating activities, negative cash flows from investing activities, and positive cash flows from financing activities), or growth stage (positive cash flows from operating activities, negative cash flows from investing activities, and positive cash flows from financing activities).
D	A dummy variable that equals one if $RET < 0$, and zero otherwise.
DCFO	A dummy variable which equals to one if $CFO < 0$, and zero otherwise.
DEBTISSUE	Debt issue, which is a dummy variable with the value of one if the change in short-term and long-term debts from the end of year t-1 to the end of year t.
EARN	Net income before extraordinary items in year t, scaled by market value of equity at the end of year t-1
IB	Net income before extraordinary items
LEV	Financial leverage, which is the sum of long-term and short-term debts at the end of year t, scaled by the market value of equity at the end of year t.
MTB	Market to book ratio, which is equal to market value of equity divided by book value of equity at the end of year t.
PPE	Ratio of property plant and equipment (gross) to total assets at the end of year t.
RET	Buy-and-hold stock returns for the period from the beginning to the end of fiscal year t
SALE	Sales
SEO	Equity issue, which is a dummy variable with the value of one if a firm increases outstanding shares in year t at least 5% with positive proceeds from equity issuance, zero otherwise.
SIZE	Firm size, which is the log of the market value of equity at the end of year t
ZSCORE	Financial distress at the end of year t, measured by $ZSCORE$ following (Taffler 1983) as follows: $$\text{ZSCORE} = 3.2 + 12.18 * \frac{\text{Profit before tax}}{\text{current liabilities}} + 2.50 * \frac{\text{Current assets}}{\text{Total liabilities}} - 10.68 * \frac{\text{Current liabilities}}{\text{Total assets}} + 0.029 * \frac{(\text{Quick assets} - \text{Current liabilities})}{(\text{Sales} - \text{Pretax income} - \text{Depreciation})/365}$$