5-2014

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Chu Yeong LIM
Singapore Management University, cylim@smu.edu.sg

Edward LEE
University of Manchester

Asad KAUSAR
Nanyang Technological University

Martin WALKER
University of Manchester

Citation

LIM, Chu Yeong; LEE, Edward; KAUSAR, Asad; and WALKER, Martin. Bank Accounting Conservatism and Bank Loan Pricing. (2014). *Journal of Accounting and Public Policy*. 33, (3), 260-278.
Available at: https://ink.library.smu.edu.sg/soa_research/1195

Published in Journal of Accounting and Public Policy, Volume 33, Issue 3, May 2014, Pages 260-278.
http://doi.org/10.1016/j.jaccpubpol.2014.02.005

Bank accounting conservatism and bank loan pricing

Chu Yeong Lim [a], Edward Lee [b], Asad Kausar [c], Martin Walker [d,*]

[a] School of Accountancy, Singapore Management University, 60 Stamford Road, Singapore 178900, Singapore
[b] Manchester Business School, The University of Manchester, Crawford House, Oxford Road, Manchester M13 9PL, UK
[c] Nanyang Business School, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, Singapore
[d] Manchester Business School, The University of Manchester, Room 6.21, Harold Hankins Building, Booth Street West, Manchester M13 9QH, UK

A B S T R A C T

This paper studies the effects of bank accounting conservatism on the pricing of syndicated bank loans. We provide evidence that banks timelier in loss recognition charge higher spreads. We go onto consider what happens to the relationship between spreads and timeliness in loss recognition during the financial crisis. During the crisis, banks timelier in loss recognition increase their spreads to a lesser extent than banks less timely in loss recognition. These findings are broadly consistent with the argument that conditional accounting conservatism serves a governance role. The policy implication is that banks timelier in loss recognition exhibit more prudent and less pro-cyclical loan pricing behaviour.

1. Introduction

This study examines the effect of timely loss recognition among banks on the yield spreads they charge on syndicated loans. We base our theoretical rationale on the corporate governance role of accounting conservatism. Agency conflicts between various parties to the firm are important drivers for the existence of corporate governance provisions. Classical agency theory attempts to model such conflicting relationships (Jensen and Meckling, 1976; Jensen, 1986). For example, Jensen and Meckling

* Corresponding author. Tel.: +44 0161 275 4008.
E-mail addresses: cylim@smu.edu.sg (C.Y. Lim), edward.lee@manchester.ac.uk (E. Lee), akausar@ntu.edu.sg (A. Kausar), martin.walker@mbs.ac.uk (M. Walker).

(1976) highlight that a lack of alignment between managers and other stakeholders' (e.g., shareholders') interests creates incentives for managers to expropriate firm's resources. Although contracts are written to align the interests of related parties, nonetheless contracts cannot eliminate all agency costs because of the incomplete nature of such contracts and thus assign significant control rights to managers (Shleifer and Vishny, 1997). Accounting conservatism is expected to serve a corporate governance role whenever accounting numbers are used as managerial performance indicators in such contracts.

Positive accounting theory (Watts and Zimmerman, 1986) stipulates that the use of accounting numbers in contracts can create incentives for managers to use aggressive accounting methods to accelerate gain recognition and/or delay loss recognition. Therefore, accounting numbers that are generated under conditionally conservative accounting can enhance contracting efficiency and the mitigation of agency costs (Watts, 2003). Existing studies (Beekes et al., 2004; Lobo and Zhou, 2006; Ahmed and Duellman, 2007; Garcia Lara et al., 2009) suggest that timely loss recognition can facilitate monitoring and contribute to corporate governance. Ball (2001) also provides arguments to support the corporate governance function of conditional accounting conservatism. He suggests that managers may seek to avoid negative impacts to their bonuses and promotion prospects by continuing to pursue some existing risky investments. However, if managers know ex-ante that economic losses will be recognized early, they are less likely to take on investments that they anticipate may underperform.

In the context of bank lending, without recognising losses on a timely basis, bank managers could be tempted to continue lending and/or increase lending to borrowers of higher credit default risks at low spreads. This is in spite of the fact that these loans give rise to high loan losses and negative net income in the long run. The reason why bank managers behave in this fashion is that such loans yield positive income and increase bank managers' bonuses and promotion prospects in the short run. Among banks that adopt more conditionally conservative accounting, it will be less possible to defer the recognition of loan losses to future periods. As a result, managers of the more accounting conservative banks are more likely to provide for expected loan losses by making higher provisioning compared to the less accounting conservative banks. Nevertheless, higher provisioning would negatively affect current earnings and capital adequacy ratios. Since earnings and adequacy ratios are important measures of managerial performance, bank managers would have incentives to take steps to positively influence these measures. Based on the rationale of Ball (2001), we predict that banks with more conditionally conservative accounting policies would charge higher spreads after controlling for other factors such as borrowers' credit default risk proxied by loan provisions and borrower credit ratings.

During the recent financial crisis, banks' lending behaviours are also expected to be influenced by their degree of conditional accounting conservatism. Beatty and Liao (2011) use the credit crisis theory to argue that banks suffer a loss of capital and hence face greater regulatory capital constraints during recessions. They suggest that banks with less timely loss recognition might not have built up sufficient loan provisions prior to economic downturns, and could have suffered greater loan losses and loss of capital when downturns occur. As a result, such banks are more likely to reduce their lending during recession periods than the more prudent banks. In other words, conditionally conservative accounting policies could moderate the negative impact of recessions on the supply of bank loans to the capital market. Based on this rationale of Beatty and Liao (2011), we predict that the increase of yield spread during the financial crisis period relative to the pre-crisis period will be less pronounced among banks with timelier loss recognition.

In this study, we test the aforementioned predictions empirically through a sample of 3327 syndicated loan deals based on 513 borrowers and 48 banks covering 16 countries. The countries are US, UK, Canada, Australia, Spain, Germany, France, Italy, Ireland, Switzerland, Denmark, Netherlands, Norway, Belgium, Sweden and Finland. To capture the degree of conditional accounting conservatism among banks, we use the Khan and Watts (2009) *C-Score* measure of timeliness of loss recognition for our main tests, and the Beatty et al. (2002a) approach of employing discretionary loan loss provisions as an alternative measure of timeliness of loss recognition for robustness. We provide empirical evidence consistent with our predictions that banks that adopt more conditionally conservative accounting charge higher yield spreads, but increase their spread less during the financial crisis than banks that are less timely in their loss recognition. These findings are robust to controls for borrower, lender, and deal characteristics. Furthermore, a novel feature of our analysis of the credit crisis is that we

explicitly control for the incidence a form of credit rationing during the crisis. We do this by modelling the selection of firms that are able to borrow through syndicated loans using a Heckman selection model. This model allows for the possibility that some potential borrowers may have been unable to borrow during the credit crisis. Our empirical results show that it is important to model selection under the economic conditions of the credit crisis.

Our study contributes to the accounting literature in two ways. First, existing literature on timely loss recognition focuses largely on the borrowers' side of this accounting policy choice. For instance, empirical evidence shows that the more accounting conservative borrowers enjoy lower cost of debt (e.g. Ahmed et al., 2002; Zhang, 2008), and that timely loss recognition among borrowers is more pronounced among countries with greater reliance on debt-based financing (Ball et al., 2008b) and among public debt contracts with greater reliance on covenants (Nikolaev, 2010). Prior literature also examines the associations between conditional conservatism and fraudulent financial reporting activities (Alam and Petruska, 2012), the associations between conditional conservatism and the probability of future bad news such as missing analyst forecasts and earnings decreases (Kim and Pevzner, 2010), and the associations between auditor tenure and conservatism in reported earnings (Jenkins and Velury, 2008; Li, 2010). Unlike these studies, our study focuses on the lenders' side of this accounting policy choice, and reveals its influence on lending behaviour. Second, among the few existing studies of bank accounting conservatism, none of them so far have evaluated the influence on yield spread. Beatty and Liao (2011) focuses mainly on the effects of bank accounting conservatism on changes in loans, while Bushman and Williams (2012) evaluates the impact of bank accounting conservatism on the risk profile of banks. Our focus on yield spread provides more direct evidence on the relationship between banks' accounting policy choices and the interest rates they charge corporate borrowers in the capital market.

Our paper is also driven by, and contributes to public policy and accounting policy debates. In the last 12 months the International Accounting Standards Board (IASB) has started to rethink its stance towards accounting prudence/conservatism. The IASB's conceptual framework stresses neutrality as an important characteristic of information that is faithfully representative (para QC12, IASB, 2010). However this view was challenged both before and after the release of the conceptual framework and work is on-going to understand the nature of prudence/conservatism and how, in what sense, it might be consistent with the conceptual framework. In a speech in September 2012, Hans Hoogervorst, the Chairman of the IASB, has recently described the notion of prudence as 'plain common sense' (Hoogervorst, 2012). However it is far from obvious how this view is captured in the conceptual framework which argues that prudence is inconsistent with faithful presentation (IASB, 2010). More recently the European Financial Reporting Advisory Group (EFRAG), which is an influential group of regional accounting standard setters and advisors, has argued in their Bulletin that the conceptual framework needs to be revised to explicitly consider the role of prudence in financial reporting (paragraph 38, EFRAG et al., 2013).

The present paper highlights timely loss recognition as an aspect of prudence in accounting choice. This provides an important example of how and where the notion of prudence may need to be made more explicit within the conceptual framework. Our paper also has important policy implications for bank regulation and control. A number of authors have noted the role of inappropriate incentives faced by bank lenders in exacerbating the recent financial crisis. Our evidence suggests that banks that operated prudent accounting arrangements were less affected by the financial crisis in terms of the terms on which they were able to offer syndicated loans.

The remaining sections of the paper are organized as follows. Section 2 develops the hypotheses. We provide the methodology and data sample in Section 3. The empirical results are reported in Section 4. Section 5 is the conclusion.

2. Literature review and hypotheses development

Banks differ from industrial firms in that the key components of banks' financial statements are loans and fair valued instruments. Fair valued instruments tend not to exhibit differential timeliness in the recognition of gains and losses because fair valued asset write-ups are generally recognized as

quickly as asset write-downs.[1] On the other hand, there is differential timeliness in the recognition of loan losses versus loan gains (for example, Benston and Wall (2005) find that book values of loans are lower than fair values). Loan provisions are assessed largely by a credit department, independent of the lending department. There are two main categories of loan portfolios. The first category is a large number of homogenous loans in small sizes such as credit cards. In this case, the credit department analyses the probabilities of defaults based on statistical models and sets aside loan provisions based on a collective assessment of the pool of loans. The second category is a smaller number of heterogeneous loans in large sizes such as syndicated loans. In such cases, a specific loan provision is made when a loan becomes non-performing, for example when the borrower is insolvent, taking into account collaterals and guarantees on the loans, as well as the recovery rate.[2] In this study, we focus on the large syndicated loans, which prior literature demonstrates contain substantial discretion (Liu and Ryan, 1995).

The literature has documented that bank management use their judgement and discretion in setting loan provisions (Beatty et al., 1995; Kanagaretnam et al., 2004). The incurred loan loss accounting standards allow substantial subjective judgement and evaluation on the part of the bank management, credit control departments, lending officers and accountants in setting loan provisions (Dugan, 2009). The evaluation criteria include borrower default risk profiles (including internal and external credit risk ratings) and (current and forecasted) economic conditions. The more prudent banks use their discretion to be timelier in recognising loan loss provisions, i.e. they recognize loan loss provisions quicker in their accounting response to negative economic news than loan loss recoveries in their accounting response to positive economic news. The degree of conditional accounting conservatism and the underlying prudence such policy choice reflects is likely to vary across banks due to differences in corporate governance and management quality. For instance, Bushman and Williams (2012) show stronger market discipline of banks' risk-taking in countries with timelier loss recognition, and this implies that conditionally conservative accounting facilitates the investors' monitoring of banks.

Ball (2001) provides the theoretical rationale for the corporate governance role of conditional accounting conservatism. He argues that managers may continue with losing investments because abandonment of such investments will reduce net income and correspondingly the managers' bonuses and promotion prospects. At the same time, managers pursue more losing investments to increase their short term profits at the cost of negative net present value in the long run. However, managers are less likely to carry on or pursue more losing investments if their firms adopt conditional conservative accounting policies since they know that economic losses will be recognized early and reflected in their performance. In other words, timely loss recognition helps discipline managers against self-serving behaviour which is against the interest of shareholders.

Consistent with Ball (2001), we expect timely recognition of losses among banks to influence their lending behaviour. Loans to borrowers with anticipated loan losses greater than interest income in the long run are equivalent to the losing investments Ball (2001) refers to. In the absence of timely loss recognition, bank managers may continue or increase lending to such borrowers. This is because even though such loans may have negative performance (i.e., higher likelihood of defaults) in the long run, they provide short-term income for the bank managers to justify their bonuses/promotion prospects. When banks are timelier in recognising loan losses, their business profitability and performance will be affected by underperforming borrowers more quickly. As a result, these banks are expected to be more constrained and disciplined in their pricing of bank loans. Being more prudent, the banks that adopt more conditionally conservative accounting policies are expected to charge higher spreads than their less conservative counterparts.

We assume that banks play a delegated monitoring role of corporate customers in which medium to long term relations do matter to some extent. At the margin some firms will be willing to pay a higher spread than the long run equilibrium in order to maintain their relation with the bank that best understands their business, and in which banks' and borrowers' reputations matter (Diamond, 1989, 1991). These considerations open up the possibilities that some banks will be able to charge more for

[1] One exception is given in Vyas (2011), which provides examples of less timely accounting write-downs of fair valued mortgage-backed and structured credit instruments during the financial crisis.

[2] We gratefully acknowledge the inputs of an anonymous senior lending officer and an anonymous senior accountant on the loan provisioning process.

the same level of default risk as part of a long term arrangement in which borrowers trade off the higher spread in the good times against the signalling benefits of being able to borrow from a prudent bank, and the benefits of having a relation with a bank that is better placed to weather difficult financial times.

This leads us to our first testable hypothesis:

H1. Banks that are timelier in loss recognition charge higher spreads than those less timely in loss recognition.

There are factors that may bias our research design against finding empirical evidence consistent with hypothesis H1. It is possible that the banks that recognise losses on a timelier basis do not charge higher spreads because of the following reasons. First, such banks may lose market share if they charge higher spreads than their less conditionally conservative competitors. Second, some borrowers, especially the financially stronger ones, may prefer to switch to the less conditionally conservative banks that charge lower spreads. Finally, the banks that are timelier in recognising losses may not want to risk losing market share by charging higher spreads due to pressures from shareholders to achieve strong revenue growth.

Beatty and Liao (2011) draw on the credit crunch theory to argue that banks should become more sensitive to regulatory capital constraints during recessions. They argue that banks with timelier loss recognition would build sufficient loan provisions prior to recessions, and that during the crisis periods they enjoy stronger capital base relative to banks with less timely loss recognition. On the other hand, the banks that delayed their recognition of loan losses prior to recessions will have to take bigger charges against their earnings and capital during the economic downturn periods. Beatty and Liao (2011) provide empirical evidence that banks which recognize loan provisions on a timelier basis are less likely to reduce their lending volume during recessions than banks that delay loan loss recognition.

Consistent with Beatty and Liao (2011), we expect that timely loss recognition would influence changes in banks' lending behaviours during the recent financial crisis. The banks have to compete for a smaller pool of financially healthy borrowers during the crisis. Due to the greater capital constraints, banks that are less timely in loss recognition prior to the crisis must ration their loans and charge higher spreads during the crisis. The banks that are timelier in loss recognition have stronger capital positions and are more competitive. Hence banks that are timelier in loss recognition are expected to increase their spreads to a lesser extent than banks that are less timely in loss recognition. This leads to our second testable hypothesis:

H2. The increase in spreads from the pre-crisis to the crisis period is lower for banks that are timelier in loss recognition than banks less timely in loss recognition.

Stiglitz and Weiss (1981) raise the hypothetical possibility of a credit rationing situation when there is an excess demand for credit that is not met. In a credit rationing situation, there is a group of borrowers categorised by specific common characteristics, who are unable to get funding regardless of the price they are willing to pay. There is no equilibrium market interest rate which equates the demand to the supply. The recent credit crisis reflects such a scenario as bankers become risk averse and cut back severely on lending. The bankers tighten up their internal lending standards, which results in a shock to the loan supply (Lown and Morgan, 2006). To deal with the influence of this issue in our tests of hypotheses H1 and H2 we model the possibility that some firms may have been credit rationed using a borrower selection model.

3. Methodology and data

3.1. Asymmetric timeliness in loss recognition measure

Accounting conservatism is defined as anticipating losses but not profits, which results in the deferment of gains (Watts, 2003). The conventional measure of conditional accounting conservatism

in the prior literature is the Basu (1997) asymmetric timeliness coefficient. The limitation of the Basu (1997) approach is that it is estimated for a firm using a time-series of firm years. Using the same firm across years does not consider changes in the firm's operating characteristics and conservatism over time. The C-Score of Khan and Watts (2009) accounts for firm-specific characteristics such as leverage, market to book and size to overcome these limitations. Also, C-Score is estimated in the cross-section and unlike the Basu (1997) approach does not require time-series data. Beatty and Liao (2011) and Francis and Martin (2010) use the C-Score methodology in their study of the effects of timely loss recognition on loan volume and investment decisions respectively. We estimate C-Scores as follows:

$$X_{it} = \beta_1 + \beta_2 D_{it} + R_{it}(\mu_1 + \mu_2 Size_{it} + \mu_3 MB_{it} + \mu_4 Lev_{it}) + D_{it}R_{it}(\lambda_1 + \lambda_2 Size_{it} + \lambda_3 MB_{it} + \lambda_4 Lev_{it}) + (\delta_1 Size_{it} + \delta_2 MB_{it} + \delta_3 Lev_{it}) + D_i(\delta_4 Size_{it} + \delta_5 MB_{it} + \delta_6 Lev_{it}) + \varepsilon_i \quad (1)$$

where X_{it} is earnings scaled by shareholder's equity; R_{it} is stock returns; D_{it} is dummy indicator equal to one when returns is negative and zero otherwise; $Size_{it}$ is total assets; MB_{it} is market to book ratio; Lev_{it} is total liabilities divided by total assets (leverage). The C-Score is $\lambda_1 + \lambda_2\ Size_{it} + \lambda_3\ MB_{it} + \lambda_4 Lev_{it}$. We define dummy variable *Cons* as 1 for banks with C-Score above median, and 0 otherwise.

Larger firms have richer information environments (e.g. more analyst following) and lower information asymmetry than small firms. This suggests a lower contracting demand for conservatism from larger firms. The empirical evidence in Khan and Watts (2009) indicates a negative relation between C-Score and size. Firms with higher market to book (M/B) ratios have higher growth options relative to their assets. Growth options are positively related to agency costs, and conservatism is an efficient corporate governance response to agency costs. This suggests a positive relation between market to book ratios and conservatism. On the other hand, there is empirical evidence that firms with high market to book ratios are less likely to be regulated, suggesting lower regulation demand for conservatism from firms with high market to book ratios. Thus, the market to book ratio is a measure of conditional conservatism but its sign is not predicted (Ahmed et al., 2002; Beaver and Ryan, 2000; Khan and Watts, 2009). Higher levered firms have higher agency costs, which also increase the need for accounting conservatism.

3.2. Test of hypothesis H1

To test H1 we augment a standard model of yield spread (e.g. Asquith et al., 2005; Beatty et al., 2002b) by adding our bank timely loss recognition variable, as well as other control variables to fit our context:

$$Spread_{ijt} = \alpha_0 + \alpha_1 Cons_{jt} + \alpha_2 LL_{jt} + \alpha_3 Rating_{ijt} + \alpha_4 Tenor_{ijt} + \alpha_5 Deal_{ijt} + \alpha_6 Cb_{ijt} + \alpha_7 Returnvol_{jt} + \alpha_8 Insider_{jt} + \alpha_9 Separate_{jt} + \alpha_{10} AD_{jt} + Tranche\ dummies + Country\ dummies + Borrower\ industry\ dummies + \varepsilon_i \quad (2)$$

where for deal i of bank j in year t, $Spread_{ijt}$ is the credit spread charged to borrowers, defined as the mark-up above base rates such as Libor (London Interbank Offer Rates), Euribor (Euro Interbank Offer Rates) or BBSY (Bank Bill Swap Bid Rates), which are reference interest rates set in London, Euro zone and Australia respectively (the mark-ups are not above the cost of funds as the latter are not available); $Cons_{jt}$ is an indicator of banks' timely loss recognition, which is assigned a value of 1 for banks with above median level of timely loss recognition, and 0 otherwise. Based on our hypothesis H1 we expect α_1 to be strictly positive i.e., more conditionally conservative banks charge higher spreads. LL_{jt} is the loan loss provision of the prior period divided by total loans; *Rating* is the senior long term debt rating of the borrower, with the best rating AAA given an indicator 1 and one additional point for every one notch worsening of the credit rating; *Tenor* is the length of loan contract in number of years; *Deal* is the log of deal size in dollar; *Cb* is an indicator of borrowers' conditional accounting conservatism, which is assigned to 1 for borrowers with above median level of Khan and Watts (2009) *C-Score*, and 0 otherwise; *Returnvol* is an indicator of bank risk in terms of the dispersion of returns and is measured as the average standard deviation of daily returns for each lagging bank/year; *Insider* is the percentage of non-independent directors in the board of the bank; *Separate* is 1 when the position

of CEO and board chairman is separate for the bank, and 0 otherwise; *AD* is the percentage of directors in the board of bank holding outside directorships. Table 1 provides the variable definitions. We also control for the fixed effects of tranche (26 dummy variables), bank country (16 dummy variables), and borrower industries (26 dummy variables). The description of deal tranches, and borrower industries are provided in Appendices A and B respectively. Coefficient α_2 indicates the relationship between the yield spread charged in syndicated loan deals and banks' degree of timely loss recognition.

Our choice of control variables follows existing literature. We expect a positive relation between *Spread* and *LL* because higher *LL* may suggest greater loan uncertainty and higher default risk (e.g., Ho and Saunders, 1981). Consistent with Asquith et al. (2005) and Beatty et al. (2002b), we expect *Spread* to be positively related to *Rating* because the required returns are higher for poorer rated borrowers. We also expect *Spread* to be negatively related with *Tenor* and *Deal* since loans with longer tenor and larger size are typically charged lower rates. Consistent with Zhang (2008), we expect *Cb* to be negatively related with *Spread*, since conditionally conservative borrowers enjoy a lower cost of debt. We also control for banks' dispersion of returns through the *Returnvol* measure following Laeven and Levine (2009). Garcia Lara et al. (2009) and Ahmed and Duellman (2007) find that a stronger corporate governance structure (for example a lower percentage of insider directors on the board) leads to higher levels of accounting conservatism. In the context of banking, we posit that a stronger governance structure may induce more conditionally conservative accounting and more prudent lending behaviours. We additionally control for corporate governance effect through variables such as *Insider* and *Separate*.

3.3. Test of hypothesis H2

To test hypothesis H2, we introduce a crisis dummy into our yield spread model to get Eq. (3):

Table 1
Variable definition.

Variable	Definition
Spread	Credit spread charged to borrowers, which is margin above base rates such as Libor (London Interbank Offer Rates), Euribor (Euro Interbank Offer Rates) or BBSY (Bank Bill Swap Offer Rates)[a]
Rating	Senior long term debt rating of the borrower, with the best rating AAA given an indicator 1 and one additional point for one notch worsening of credit rating
Tenor	Term/length of loan contract in number of years
Deal	Logarithm of dollar deal size
LL	Loan provisions prior period divided by total loans
Cds	Bank sector CDS rates in multiples of 100 points
Cons	Dummy indicator 1 for more conditionally conservative banks 0 for less conditionally conservative banks based on the bank C score ranking per Khan and Watts (2009)
Crisis	Dummy indicator 1 for 2008 and 2009, otherwise zero
Cb	Dummy indicator 1 for more conditionally conservative borrowers, 0 for less conditionally conservative borrowers based on the borrower C score ranking per Khan and Watts (2009)
Insider	Percentage of insiders (defined as executive directors) in the board of directors of the bank
Separate	Dummy indicator as 1 when the position of CEO and board chairman for the bank is separate, 0 otherwise
AD	Percentage of directors in the board of bank holding outside directorships
Returnvol	Daily return standard deviation average for each lagging bank/year as an indicator of each bank's risk taking
Bcrisis	Borrower selection indicator as 1 if borrower has loan deals during the crisis, 0 otherwise
NI	Net income scaled by shareholder's equity[a]
Lsize	Natural logarithm of total assets[a]
Lev	Leverage derived from total liabilities divided by total assets[a]
Workcap	Working capital scaled by total assets[a]
Sales	Change of sales from prior period to current period scaled by shareholder's equity[a]
MB	Ratio of market value to net book value[a]
DLL	Discretionary loan loss provisions
ΔNPL	Change in non-performing loans year on year

[a] Winzorized at 1% and 99% levels.

$$Spread_{ijt} = \alpha_0 + \alpha_1 Cons_{jt} + \alpha_2 Crisis_t * Cons_{jt} + \alpha_3 Crisis_t + \alpha_4 LL_{jt} + \alpha_5 Rating_{ijt} + \alpha_6 Tenor_{ijt} + \alpha_7 Deal_{ijt} + \alpha_8 Cb_{ijt} + \alpha_9 Return vol_{jt} + \alpha_{10} Insider_{jt} + \alpha_{11} Separate_{jt} + \alpha_{12} AD_{jt} + Tranche\ dummies + Country\ dummies + Borrower\ industry\ dummies + \varepsilon \quad (3)$$

where *Crisis* is an indicator of the financial crisis, and assigned a value of 1 for years 2008 and 2009, and 0 for prior years. $Crisis_t * Cons_{jt}$, the interaction between $Crisis_t$ and $Cons_{jt}$ is the main variable of interest to test H2. We expect the sign on α_2 to be negative i.e., the more conditionally conservative banks increase their spreads less in the crisis period relative to the less conditionally conservative banks. In other words, timely loss recognition moderates the impact of the crisis on yield spread. This finding would be consistent with hypothesis H2. All other variables are defined as for Eq. (2) and Table 1. Coefficient α_3 indicates the effect of the financial crisis on the yield spread charged by banks with less timely loss recognition. This coefficient is expected to be positive.

3.4. Borrower selection model

The credit rationing situation during the crisis may cause a sample selection bias because borrowers with specific characteristics (for example poorer financial health conditions) are unable to obtain bank financing at that time (Stiglitz and Weiss, 1981). In order to control for this bias, we use a two-stage Heckman test. The first-stage is a probit selection model as follows:

$$Bcrisis = \alpha_0 + \alpha_1 Rating + \alpha_2 NI + \alpha_3 LSize + \alpha_4 Lev + \alpha_5 Workcap + \alpha_6 Sales + \alpha_7 MB + \alpha_8 Tenor + \alpha_9 Deal + Borrower\ country\ dummies + Borrower\ industry\ dummies + Tranche\ dummies + \varepsilon \quad (4)$$

where *Bcrisis* is 1 when borrowers have loan deals during the crisis, and 0 otherwise; *NI* is net income scaled by shareholders' equity; *LSize* is borrower size measured as log total assets; *Lev* is borrower leverage measured as total liabilities divided by total assets; *Workcap* measures the liquidity of borrowers and is measured as working capital divided by total assets; *Sales* is growth in revenue; *MB* is the market-to-book ratio. Other control variables such as *Rating*, *Tenor*, *Deals*, Borrower dummies, and Tranche dummies are as defined in Eqs. (2) and (3) above. Firms that are more likely to borrow during the financial crisis are expected to be those with larger size, and higher market-to-book value. With regards to loan tenor *Tenor* and loan size *Deal*, borrowers which borrow more for longer periods prior to the crisis are less likely to obtain new loans during the crisis. Credit rating, leverage, working capital, and sales can affect the likelihood of borrowing during the crisis in two ways. On the one hand, firms with poorer credit rating, more leverage, less working capital, and lower sales growth may be in poorer financial health and are less able to borrow during the crisis. On the other hand, such firms may be more dependent on bank financing and are more willing to pay higher spread during the crisis.

3.5. Data

Syndicated loans are chosen for our research because they constitute a significant component of the loan market, representing about 7% of a typical bank's balance sheet on December 2011 (BIS Quarterly Review, 2012), and syndicated loans provide higher underwriting revenues than either the equity or the bond market (Ball et al., 2008a). Large syndicated loans provide observable data to study differences in lending behaviour across banks.

The syndicated loan deals are obtained from the Dealscan Loan Connector database. The deal observations are extracted for the years 2006–2009. The start year is 2006 because the European banks start applying IAS 39 in 2005. The loan provision is the amount of loan loss expense (net of recovery) in the bank income statement, extracted from either annual reports or Compustat. The reason for using the loan loss expense (net of recovery) is that the lending officers' performance evaluation is affected by this net of recovery figure and not just by the increase in loan loss allowance charged to the income. The loan provisions lead the deal data (for example spreads) by 1 year in order to study the effects of

Table 2
Sample selection.

Criteria	Observations
Original sample after excluding deals with missing values in any variables	26,696 for 70 banks, 2665 borrowers
Eliminating borrowers with missing data to calculate borrower conservatism measure	5511 for 70 banks, 717 borrowers
Eliminating borrowers with missing data in the first stage selection equation	4178 for 70 banks, 513 borrowers
Eliminating banks with missing data to calculate conditional conservatism measures	3327 for 48 banks, 513 borrowers

loan provisions on bank lending behaviour. The loan provisions are scaled by the total loan outstanding.

In order to capture the effects of timeliness in loss recognition on the most significant players in the global syndication loan market, and to maximize the number of deal observations, we select banks based on the rankings in the 2009 global syndication league table (provided by Reuters LPC Corporation). The study covers US, UK, Western European, Canadian and Australian banks in the top 130 positions of the 2009 book runner league table. The banks that have been delisted within the 2005–2008 sample period have either missing data or are not in the league table. Banks whose loan provision accounts are not available either because the banks are not publicly listed or because the banks fair value their loan portfolios are excluded. The total deal size of the selected banks comprises 69% of the market share within the top 130 positions.

For the borrower and deal characteristics, we use the Standard and Poor's (S&P) long term senior debt rating of borrowers (as most of the syndicated deals are long term), borrower country, borrower industry, loan tenor, loan deal size and all-in drawn spread[3] in Dealscan. Deal observations are dropped when there are missing data in any of the fields. Banks with missing stock prices, net income or non-performing loan data to calculate the conditional conservatism measure are dropped from the sample. The selection criteria leaves a total of 513 borrowers and 48 banks covering 16 countries that span US, UK, Europe, Canada and Australia. The above deal, bank and borrower selection criteria give us a sample size of 3327 deals from the original sample size of 26,696. The selection process is shown in Table 2.

4. Empirical results

4.1. Descriptive statistics

Table 3 reports the descriptive statistics of the variables used in the regression tests. Panels A, B, and C are based on the full sample period, the pre-crisis period, and the crisis period respectively. In terms of deals, the average *Spread* is the main dependent variable in our analyses, the average is 140 basis points for the full sample period, with 100 basis points prior to the crisis and 210 basis points during the crisis. The maximum spread of 700 basis points is charged to a B rated borrower during the crisis. The minimum spread of zero basis points is granted to a borrower with a AAA rating prior to the crisis period. The average loan tenor is 4.4 years for the full sample period. It shortens from an average of 4.8 years in the pre-crisis period to 3.6 years during the crisis period. The average dollar deal size declines by 5% from the pre-crisis to the crisis period.[4]

On the lenders' side, the average *Cons* is 0.664 over the full sample period, which indicates that more than half of the deals are done by banks which recognise losses on a timelier basis. The average loan provision is 1.1% of total loans over the full sample period, and hits a maximum of 40% of total loans during the crisis. On the borrowers' side, the mean rating over the full sample period is 10

[3] We use spreads instead of yield rate as the yield rate includes the benchmark rate, such as the Libor which is driven by central bank interest rate while spreads capture the credit default risks of the borrowers.

[4] Based on un-tabulated analyses, the drop in the number of deals from the pre-crisis period to the crisis period amounts to 85%. Out of this decline, 70% is attributed to borrowers who have had deals prior to the crisis and stop borrowing during the crisis. This sharp decline in the number of deals points to a possibility of a credit rationing situation documented in Stiglitz and Weiss (1981).

Table 3
Descriptive statistics.

Variable	Panel A: Full sample (3327 obs)					Panel B: Pre-crisis sample (2276 obs)					Panel C: During-crisis sample (1051 obs)				
	Mean	Std. Dev.	Min	Max	Median	Mean	Std. Dev.	Min	Max	Median	Mean	Std. Dev.	Min	Max	Median
Spread	0.014	0.012	0.000	0.070	0.010	0.010	0.009	0.000	0.070	0.007	0.021	0.015	0.000	0.070	0.023
LL	0.011	0.041	−0.001	0.400	0.004	0.008	0.034	−0.001	0.363	0.003	0.019	0.053	−0.000	0.400	0.006
Rating	10.306	3.263	1.000	21.000	11.000	10.224	3.371	1.000	21.000	11.000	10.484	3.011	1.000	18.000	10.000
Tenor	4.395	1.838	0.000	23.000	5.000	4.770	1.404	0.000	10.333	5.000	3.584	2.339	0.000	23.000	3.000
Deal	7.103	1.332	2.708	10.915	7.003	7.199	1.343	2.996	10.597	7.090	6.895	1.282	2.708	10.915	6.802
Cons	0.664	0.472	0.000	1.000	1.000	0.647	0.478	0.000	1.000	1.000	0.701	0.458	0.000	1.000	1.000
Crisis	0.316	0.465	0.000	1.000	0.000										
Cb	0.426	0.495	0.000	1.000	0.000	0.444	0.497	0.000	1.000	0.000	0.386	0.487	0.000	1.000	0.000
Insider	0.153	0.116	0.000	0.727	0.125	0.141	0.105	0.000	0.583	0.125	0.178	0.132	0.000	0.727	0.133
Separate	0.520	0.500	0.000	1.000	1.000	0.470	0.499	0.000	1.000	0.000	0.630	0.483	0.000	1.000	1.000
AD	0.756	0.154	0.238	1.000	0.778	0.765	0.156	0.238	1.000	0.786	0.736	0.146	0.294	1.000	0.765
Returnvol	0.173	0.057	0.098	0.512	0.152	0.156	0.043	0.098	0.297	0.145	0.211	0.065	0.127	0.512	0.204
NI	0.208	0.523	−2.162	4.911	0.161	0.206	0.367	−2.162	4.911	0.158	0.211	0.758	−2.162	4.911	0.163
Lsize	8.679	1.813	2.262	16.221	8.524	8.652	1.861	2.702	16.221	8.558	8.736	1.702	2.262	12.803	8.474
Lev	0.600	0.161	0.121	0.993	0.597	0.596	0.156	0.121	0.993	0.595	0.610	0.171	0.121	0.993	0.598
Workcap	0.112	0.158	−0.326	0.673	0.074	0.116	0.159	−0.219	0.673	0.078	0.104	0.156	−0.326	0.673	0.067
Sales	0.354	0.962	−2.590	13.778	0.209	0.366	0.905	−2.590	13.778	0.219	0.327	1.073	−2.590	8.481	0.174
MB	3.283	3.350	0.001	19.695	2.421	3.377	3.042	0.001	19.695	2.703	3.078	3.930	0.001	19.695	1.829

All variables are defined in Table 1. Pre-crisis years include 2006 and 2007. During the crisis years include 2008 and 2009.

Table 4
Correlation matrix.

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	*Spread*	1.00																	
2	*LL*	−0.03	1.00																
3	*Rating*	0.55*	−0.07*	1.00															
4	*Tenor*	0.04	−0.07*	0.29*	1.00														
5	*Deal*	−0.29*	0.09*	−0.32*	−0.07*	1.00													
6	*Cons*	−0.03	0.13*	0.00	0.01	0.03*	1.00												
7	*Crisis*	0.43*	0.12*	0.04	−0.30*	−0.11*	0.05*	1.00											
8	*Cb*	0.07*	−0.01	0.11*	0.01	−0.34*	−0.01	−0.05*	1.00										
9	*Insider*	−0.04	0.05*	−0.03	−0.02	0.19*	0.30*	0.15*	−0.03	1.00									
10	*Separate*	−0.02	−0.12*	−0.03	−0.06*	0.23*	−0.01	0.15*	−0.09*	0.37*	1.00								
11	*AD*	0.05*	−0.15*	0.05*	0.06*	−0.15*	0.13*	−0.09*	0.06*	−0.39*	−0.27*	1.00							
12	*Returnvol*	0.38*	0.02	0.12*	−0.13*	−0.06*	−0.09*	0.45*	0.00	0.04	0.09*	−0.14*	1.00						
13	*NI*	−0.18*	0.07*	−0.16*	−0.05*	0.10*	−0.02	0.00	0.08*	0.03	−0.01	−0.02	−0.05*	1.00					
14	*Lsize*	−0.38*	0.07*	−0.60*	−0.21*	0.59*	0.06*	0.02	−0.19*	0.12*	0.15*	−0.11*	−0.03	0.04	1.00				
15	*Lev*	0.03	0.02	0.03	−0.07*	−0.10*	0.02	0.04	0.73*	0.02	−0.03	0.01	0.07*	0.20*	0.14*	1.00			
16	*Workcap*	0.15*	−0.08*	0.21*	0.09*	−0.20*	−0.07*	−0.04	−0.13*	−0.09*	−0.10*	0.02	0.01	−0.06*	−0.27*	−0.25*	1.00		
17	*Sales*	0.08*	−0.01	0.05*	−0.01	−0.07*	0.00	−0.02	0.14*	−0.02	−0.03	0.02	0.00	0.35*	−0.08*	0.23*	0.00	1.00	
18	*MB*	−0.07*	0.06*	−0.14*	−0.06*	0.03	0.03	−0.04	0.24*	0.02	−0.03	0.00	−0.03	0.47*	−0.15*	0.22*	−0.10*	0.32*	1.00

This table provides Pearson correlations of variables used in our analyses. All variables are defined in Table 1.
* Significance at 1% level.

(BBB-) and borrowers within the A− to B+ rating category make up 68% (mean plus/minus one standard deviation) of the market segment. This indicates that the syndicated loan is a market tailored for borrowers in the middle tier of credit ratings because top rated borrowers generally can raise funds via other means such as bond issues. Over the full sample period, the mean net income is 21% of shareholder's equity. The average leverage is 60%, which shows that the borrowers are generally highly levered. Moreover, the borrowers have weak liquidity positions, with working capital making up only 11% of the overall balance sheet. The historical sales growth of the borrowers is generally strong at 35%. The average market to book ratio is healthy at 3.3. These statistics show that the borrowers have healthy profitability and growth performance, but they have weak liquidity positions and take on high levels of debt.

Table 4 presents the Pearson correlations between the variables in our analyses. *Spread* is positively correlated with borrower ratings (*Ratings*) and the crisis period indicator (*Crisis*). This indicates that banks charge higher yield spreads to borrowers of higher default risks, and during the financial crisis. The high positive correlation of 0.55 between *Spread* and *Ratings* indicate that the borrowers that were charged higher spreads have poorer credit ratings. Also, the significant positive correlation between *Spread* and *Returnvol* highlights the importance of controlling for dispersion of bank returns in our multivariate analyses of H1 and H2. *Spread* is negatively correlated with deal size (*Deal*), borrower size (*Lsize*), and borrower growth (*MB*). This indicates lower spreads among larger size loans, and larger or higher growth borrowers. The positive correlation between *Spread* and the percentage of directors on the board holding outside directorship (*AD*) suggests that banks with stronger corporate governance are more prudent and charge higher spreads.

The correlation of banks' timely loss recognition measure *Cons* with *Spread* is not statistically significant on a univariate basis. However, *Cons* is positively correlated with loan loss provision (*LL*), which indicates that banks that adopt more conditionally conservative accounting policies are associated with higher loan loss provisions. There is also a statistically significant negative correlation between *Cons* and *Returnvol*, which indicates that banks timelier in recognizing losses have lower dispersion of returns. Regarding the more significant correlations among the remaining variables, the positive correlation between loan provisions (*LL*) and *Crisis* shows that during the crisis the banks have higher loan loss provisions. *Lsize* is negatively correlated with *Rating* and *Tenor*, and this shows that larger borrowers have better credit ratings and borrow loans of shorter tenors. The positive correlation between *Lsize* and *Deal* shows that the dollar deal size is higher for the loans to larger borrowers.

Appendix B shows the geographical and industry distribution of borrowers. In Panel A, the US is the largest country segment of borrowers (83%) and contributes to the biggest drop in borrowers during the credit crisis. Canada takes the second spot in the market segment, with 5% of the market segment, while the UK takes the third spot with 4% of the market segment. In un-tabulated results, the bank timeliness in loss recognition is not higher in specific countries or legal regimes than in others. This is in contrast to the industrial firms, which are timelier in loss recognition in common law countries (US, UK, Canada and Australia) than in code law countries (Europe) (Ball et al., 2000). In Panel B, general manufacturing, oil and gas and utilities, are the industry segments with the highest number of borrowers. The drop in borrowers during the credit crisis is evenly distributed among all the industry segments. This shows that the credit crisis is broad based and impacts all industries. In un-tabulated results, the industry sectors with borrowers that are more (less) timely in loss recognition are utilities (mining).

4.2. Test of borrower selection

Table 5 shows the results of the Probit borrower selection model i.e. Eq. (4). We observe significantly positive coefficients on *Rating, Lsize*, and *Lev*. These indicate borrowers during the crisis period are more likely to be firms that are poorer in credit rating, larger in size, and more dependent on bank financing. We observe significantly negative coefficients on *Workcap*, *Sales*, *Tenor*, and *Deals.* This suggests that borrowers during the crisis period are less likely to be firms that have higher liquidity, more growth, borrow for longer periods, and borrow more.

Table 5
First stage equation on selection of borrowers during the crisis.

Variables	Coeff	*p*-Value
Rating	0.0335	(0.010)
NI	0.0880	(0.127)
Lsize	0.1055	(0.001)
Lev	1.4801	(0.000)
Workcap	−0.5436	(0.011)
Sales	−0.0657	(0.042)
MB	0.0033	(0.753)
Tenor	−0.2873	(0.000)
Deal	−0.2765	(0.000)
Intercept	0.0054	(0.989)
Borrow Country dummies	Yes	
Borrow Industry dummies	Yes	
Tranche dummies	Yes	
Pseudo R^2	0.3258	
Obs	3327	

This table presents the results from the first-stage Probit regression of a Heckman test to address the selection of borrowers during the crisis. Dependent variable is *Bcrisis*, which is 1 if borrower has deal in during the crisis period of 2008–2009, and 0 otherwise. All variables are defined in Table 1.

Table 6
Test of hypothesis H1.

	Regression 1		Regression 2		Regression 3	
	Coeff	*p*-Value	Coeff	*p*-Value	Coeff	*p*-Value
Cons	0.0028	(0.000)	0.0023	(0.000)	0.0014	(0.001)
LL	0.0209	(0.000)	0.0236	(0.000)	0.0150	(0.004)
Rating	0.0019	(0.000)	0.0019	(0.000)	0.0020	(0.000)
Tenor	−0.0008	(0.000)	−0.0008	(0.000)	0.0002	(0.012)
Deal	−0.0011	(0.000)	−0.0011	(0.000)	−0.0007	(0.000)
Cb	0.0001	(0.766)	0.0001	(0.742)	−0.0013	(0.000)
Returnvol	0.0731	(0.000)	0.0730	(0.000)	0.0492	(0.000)
Insider			−0.0061	(0.037)	−0.0052	(0.054)
Separate			0.0006	(0.197)	0.0005	(0.167)
AD			0.0038	(0.018)	0.0035	(0.016)
IMR					−0.0065	(0.000)
Intercept	0.0090	(0.157)	−0.0002	(0.951)	0.0203	(0.001)
Tranche dummies	Yes		Yes		Yes	
Country dummies	Yes		Yes		Yes	
Borrower Industry dummies	Yes		Yes		Yes	
R^2 (overall)	0.4876		0.4960		0.5618	
Obs	3327		3327		3327	

This table presents the results tests of hypothesis H1. The dependent variable, *Spread*, is the credit spread charged to borrowers. All variables are defined in Table 1. *IMR* is inverse Mills ratio derived from the first-stage Probit regression in Table 5.

4.3. Tests of hypothesis H1

Table 6 reports the results for the tests of hypothesis H1. Regression 1 excludes the controls for corporate governance, and Regression 2 includes these controls. Regression 3 further controls for borrower selection bias. The coefficient of *Cons* is positive and statistically significant throughout Table 6. For instance, the positive coefficient of 0.0028 in Regression 1 shows that the banks timelier in loss recognition charge higher spreads of 28 basis points. In other words, we have robust evidence that banks with timelier loss recognition are associated with higher yield spreads in their syndicated loans. These results are consistent with hypothesis H1, and they imply that banks adopting more conditionally conservative accounting policies are more prudent in their loan pricing decisions.

Table 7
Test of hypothesis H2.

	Regression 1		Regression 2		Regression 3	
	Coeff	*p*-Value	Coeff	*p*-Value	Coeff	*p*-Value
Cons	0.0022	(0.000)	0.0017	(0.000)	0.0012	(0.004)
*Crisis * Cons*	−0.0022	(0.001)	−0.0021	(0.001)	−0.0018	(0.004)
Crisis	0.0108	(0.000)	0.0108	(0.000)	0.0078	(0.000)
LL	0.0113	(0.024)	0.0135	(0.009)	0.0099	(0.045)
Rating	0.0020	(0.000)	0.0019	(0.000)	0.0020	(0.000)
Tenor	−0.0002	(0.011)	−0.0002	(0.015)	0.0004	(0.000)
Deal	−0.0003	(0.028)	−0.0003	(0.027)	−0.0003	(0.060)
Cb	0.0008	(0.013)	0.0009	(0.012)	−0.0004	(0.211)
Returnvol	0.0376	(0.000)	0.0374	(0.000)	0.0299	(0.000)
Insider			−0.0057	(0.034)	−0.0052	(0.043)
Separate			0.0001	(0.818)	0.0002	(0.532)
AD			0.0040	(0.007)	0.0037	(0.008)
IMR					−0.0049	(0.000)
Intercept	0.0063	(0.285)	0.0042	(0.485)	0.0151	(0.008)
Tranche dummies	Yes		Yes		Yes	
Country dummies	Yes		Yes		Yes	
Borrower Industry dummies	Yes		Yes		Yes	
R^2 (overall)	0.5596		0.5707		0.5963	
Obs	3327		3327		3327	

This table presents the results tests of hypothesis H2. Dependent variable is *Spread*, which is the credit spread charged to borrowers. All variables are defined in Table 1. *IMR* is inverse Mills ratio derived from the first-stage Probit regression in Table 5.

The coefficient on *LL* is positive and highly statistically significant throughout Table 6. The positive coefficient of *LL* shows that the banks charge higher spreads when loan provisions increase. For instance, in Regression 1, the positive coefficient 0.0209 means that for every 1% increase in loan provisions as a proportion of total loans, the spreads charged borrowers increase by 2 basis points.

In Table 6, the signs of the control variable coefficients are largely consistent with intuition. Across Regressions 1–3, the *Rating* coefficient is significantly positive, which indicates that poorer rated borrowers are charged higher spreads, consistent with the findings in Asquith et al. (2005) and Beatty et al. (2002b). In Regressions 2 and 3, the significantly negative coefficient on *Insider* and the positive coefficient on *AD* show that banks with stronger corporate governance charge higher spreads. The significantly positive *Returnvol* coefficients in Regressions 1–3 show that banks with higher return dispersion charge higher spreads. In Regression 3, we observe a significant coefficient on the inverse Mills ratio (*IMR*) from the results of the borrower selection model in Table 5. This confirms the importance of controlling for sample selection bias. The addition of *IMR* variable improves the R^2 by 7%, i.e. from 0.4960 in Regression 2 to 0.5618 in Regression 3.

4.4. Tests of hypothesis H2

Table 7 presents the results for the test of hypothesis H2. Regression 1 excludes the controls for corporate governance, and Regression 2 includes these controls. Regression 3 further controls for borrower selection bias. The *Crisis* coefficient is significantly positive throughout Table 7. For instance, it is 0.0108 in Regression 1, and this indicates that, during the crisis banks increase their spreads by 108 basis points. This finding suggests banks charge higher spreads during the crisis than before. The coefficient on the interaction term *Crisis∗Cons* is significantly negative throughout Table 7. For instance, it is −0.0022 in Regression 1, and this demonstrates that during the crisis, the banks that are timelier in loss recognition increase their spreads to a lesser extent (by 22 basis points) than those less timely in loss recognition. These findings are consistent with hypothesis H2. They suggest that timely loss recognition moderates the sensitivity of the yield spread to the impact of the financial crisis. In other words, banks that adopt more conditionally conservative accounting policies exhibit less pro-cyclical loan pricing behaviour.

Table 8
Additional tests of hypotheses H1 and H2 using discretionary loan loss provisions.

	Regression 1		Regression 2		Regression 3		Regression 4	
	Coeff	*p*-Value	Coeff	*p*-Value	Coeff	*p*-Value	Coeff	*p*-Value
DLL	0.0260	(0.000)	0.0159	(0.003)	0.0216	(0.000)	0.0183	(0.000)
*Crisis * DLL*					−0.0121	(0.011)	−0.0162	(0.003)
Crisis					0.0079	(0.000)	0.0055	(0.000)
Rating	0.0020	(0.000)	0.0019	(0.000)	0.0020	(0.000)	0.0019	(0.000)
Tenor	−0.0005	(0.065)	0.0003	(0.049)	−0.0002	(0.145)	0.0004	(0.006)
Deal	−0.0009	(0.000)	−0.0007	(0.000)	−0.0004	(0.015)	−0.0003	(0.018)
Cb	0.0000	(0.986)	−0.0010	(0.004)	0.0005	(0.106)	−0.0003	(0.337)
Returnvol	0.1042	(0.000)	0.0771	(0.000)	0.0638	(0.000)	0.0552	(0.000)
Insider	−0.0053	(0.119)	−0.0056	(0.075)	−0.0028	(0.386)	−0.0030	(0.325)
Separate	0.0012	(0.011)	0.0009	(0.026)	0.0004	(0.368)	0.0004	(0.368)
AD	0.0143	(0.000)	0.0103	(0.000)	0.0104	(0.000)	0.0082	(0.000)
IMR			−0.0057	(0.000)			−0.0046	(0.000)
Intercept	−0.0311	(0.000)	−0.0237	(0.000)	−0.0297	(0.000)	−0.0244	(0.000)
Tranche dummies	Yes		Yes		Yes		Yes	
Country dummies	Yes		Yes		Yes		Yes	
Borrower Industry dummies	Yes		Yes		Yes		Yes	
R^2 (overall)	0.5987		0.6479		0.6389		0.6652	
Obs	2983		2983		2983		2983	

This table presents the additional results tests of hypotheses H1 and H2. Dependent variable is *Spread*, which the credit spread charged to borrowers. DLL is discretionary loan loss provision and is used as a proxy for bank timely loss recognition. All variables are defined in Table 1. *IMR* is inverse Mills ratio derived from the first-stage Probit regression in Table 5.

The coefficient on *Cons* is significantly positive. This indicates that prior to the crisis, banks with timelier loss recognition charged higher spreads. The coefficients of *LL* are positive and statistically significant. This shows that the banks charged higher spreads when loan provisions increased. Consistent with Table 6, the coefficient of *IMR* is again statistically significant, which indicates the importance to control for borrower selection bias in our analyses.

4.5. Additional tests

We conduct additional tests of hypotheses H1 and H2 using discretionary loan provisions as an alternative proxy for banks' timely loss recognition.

The discretionary loan loss provisions are the residuals from a regression of loan loss provisions (*LL*) controlling for the change in non-performing loans (ΔNPL), in line with Beatty et al. (1995, 2002a). As our sample is international banks, we hand collect the change in non-performing loans variable for our sample banks.

Banks which recognize loan provisions on a timelier basis are expected to have higher discretionary loan provisions. To confirm our hypotheses, we first test whether banks that have higher discretionary loan loss provisions charge higher spreads. We then go onto examine that banks that make higher discretionary loan loss provisions increase their spreads less in the crisis period relative to banks that make lower discretionary loan loss provisions. To test H1 and H2 using discretionary loan loss provisions, we re-estimate our models 2 and 3 by replacing the *C-Score* measure with the *DLL* (discretionary loan loss provisions) measure. Table 8 presents the results of these tests.

In Table 8, Regressions 1 and 2 report the results of tests for hypothesis 1 before and after adding the inverse Mills ratio from the borrower selection model in Table 5. The *DLL* coefficients are positive and statistically significant at the 1% level in both cases, which is consistent with hypothesis H1. Regressions 3 and 4 consider the impact of the financial crisis, and show the results before and after adding *IMR* the inverse Mills ratio from borrower selection model of Table 5. As expected the coefficient on the interaction term *Crisis * DLL* is negative and statistically significant. This is consistent with hypothesis H2.

5. Conclusion

This study examines the effect of timeliness in bank loss recognition on the yield spread charged on syndicated loans. We highlight two main findings. First, timely loss recognition among banks is positively related to the prudence of bank lending decisions in terms of loan pricing. Banks timelier in loss recognition charge higher spreads. The results remain statistically significant after controlling for a series of bank, borrower and deal characteristics, as well as corporate governance and bank return dispersion. This finding is consistent with the governance role of conditional accounting conservatism suggested by Ball (2001).

Second, as the period under study straddles the pre-crisis and the crisis periods, it provides us with a setting to examine how the relationship between timeliness in loss recognition and loan pricing changes during the credit crisis. The results show that banks that are timelier in loss recognition are likely to exhibit more prudent and less pro-cyclical loan pricing behaviour. This result is robust to a control for the possibility that the sample of borrowers may be truncated during the credit crisis due to credit rationing. This result is broadly consistent with the findings of Beatty and Liao (2011) that the banks timelier in loss recognition set aside more loan provisions prior to recessions, and as a result, these banks face lower credit crisis effects.

We have argued that banks that choose to account for losses in a timely way are less likely to make bad loan decisions. In part this is because loan officers have a greater incentive to avoid making bad loans if losses are recognised in a timely fashion. This provides an explanation for both our pre and post crisis results. An alternative explanation is that our post crisis results could be due purely to economic differences between the banks, with some banks making smarter lending decisions than others. It is true that if some banks operated better informed lending policies this would have resulted in them having lower losses in the crisis, and in them being able to offer lower spreads during the crisis (i.e. they would not have to increase their spreads by as much as the less informed banks during the crisis). However this argument does not explain why we find a positive correlation between the pre-crisis spreads and conservative accounting for loan losses. Nevertheless it is logically possible that banks that are timelier in loss recognition tend to know their business better. In this case it is possible that our post crisis results could be due to the fact that they know their business better rather than their relatively conservative accounting practices.

Our study contributes to two strands of the accounting literature. First, existing literature on conditional conservatism pays more attention to whether the adoption of this accounting policy by borrowers affects their cost of debt. Our study focuses instead on whether the adoption of this accounting policy by lenders affects the required returns they charge their borrowers. In other words, conditional accounting conservatism could influence the cost of debt in the capital market not only through the borrowers or demand side, but also through lenders or supply side. Second, existing studies on banks' accounting conservatism focus mainly on changes in the loan and risk profiles of banks. To the best of our knowledge, we are the first study to link bank conservatism to yield spread, which we argue provides more direct evidence of the impact of accounting policy choice on asset pricing in debt markets.

Our evidence also informs public policy debates by highlighting the importance of articulating more clearly the role of prudence in the accounting conceptual framework. While the IASB has focused on neutrality in place of prudence, the EFRAG, together with the UK, French, German and Italian accounting bodies have released a bulletin to discuss the role of prudence in the framework (EFRAG et al., 2013). Our research provides evidence that banks that exercise conditional conservatism tend to exhibit more prudent and less pro-cyclical loan pricing behaviour. We agree with EFRAG et al. that there are both "good" and "bad" forms of prudence, and the conceptual framework needs to pay more attention to recognising and elaborating on this.

Acknowledgements

Chu Yeong Lim gratefully acknowledges research funding from the European Community's Seventh Framework Programme FP7-PEOPLE-ITN-2008 under Grant agreement number PITN-GA-2009-237984 and the Singapore Management University. The authors acknowledge helpful comments by

Martin Loeb, an anonymous referee, John O'Hanlon, Stuart Turley, Andrew Stark, Norman Strong, Richard Taffler, Ser Huang Poon, David Brierwood, Kevin Ow Yong, Atif Ellahie, the 2010 Manchester Business School doctoral conference participants, the 2011 Marie Curie workshop participants, the 2012 London Business School Trans-Atlantic doctoral conference participants and the 2013 Journal of Accounting and Public Policy Conference participants.

Appendix A. Deal tranche and borrower rating

Panel A: Tranche purpose		Panel B: Borrower rating	
Purpose	Tranche indicator	S&P LT senior debt	Rating indicator
Acquisition. Line	1	AAA	1
Aircraft finance	2	AA+	2
Capital expenditure.	3	AA	3
Corporate purposes	4	AA−	4
CP backup	5	A+	5
Debt Repayment	6	A	6
Debtor-in-possession	7	A−	7
Dividend Recapitalization	8	BBB+	8
Equipment Purchase	9	BBB	9
Exit financing	10	BBB−	10
Guarantee	11	BB+	11
Infrastructure	12	BB	12
IPO Related. Financing	13	BB−	13
LBO	14	B+	14
Pre-Export	15	B	15
Project. Finance	16	B−	16
Real estate	17	CCC+	17
Recapitalization	18	CCC	18
Restructuring	19	CCC	19
Securities Purchase	20	CC+	20
Ship finance	21	CC	21
Spinoff	22	CC−	22
Stock buyback	23	C+	23
Takeover	24	C	24
Trade finance	25	C−	25
Working capital	26	D+	26
		D	27

Appendix B. Distribution of borrowers

Panel A: Country	Total	Panel B: Industry	Total
Canada	27	Aerospace and Defence	15
Finland	3	Agriculture	2
France	5	Automotive	14
Germany	15	Beverage, Food, and Tobacco Processing	15
Italy	3	Business Services	9
Mexico	2	Chemicals, Plastics & Rubber Manufacturing	30

Appendix B (*continued*)

Panel A: Country	Total	Panel B: Industry	Total
Netherlands	3	Construction	13
Russia	6	Financial Services	10
Sweden	3	General Manufacturing	65
United Kingdom	19	Healthcare	32
US	427	Hotel & Gaming	10
		Leisure and Entertainment	5
		Media	18
		Mining	12
		Oil and Gas	59
		Paper & Packaging	13
		Restaurants	7
		Retail & Supermarkets	35
		Services	12
		Shipping	6
		Technology	29
		Telecommunications	12
		Textiles and Apparel	10
		Transportation	10
		Utilities	53
		Wholesale	17
Grand Total	513	Grand Total	513

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