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同業競爭對手迎合或擊敗盈餘預期是否重要呢?(第 3 年)

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公 開 資 訊 ：本計畫涉及專利或其他智慧財產權，2 年後可公開查詢

中 華 民 國 102 年 10 月 31 日

中 文 摘 要 ： 以往研究顯示,MBE 有較高權評價/較低公債利率.本計畫旨在探討 MBE 對於私債條款(利率與到期日)的影響. 本計畫發現 MBE 會有較優的債務條款(i.e., 低利率與較長到期日). 進一步研究發現,主要理由歸因於 the prospect theory 而非 transaction cost theory. 此外,當公司財務困頓或是常常的公司,MBE 的利益是比較明顯的.

中文關鍵詞： 迎合/擊敗分析師預期,聯貸市場,差價,到期日

英 文 摘 要 ： Prior studies find that firms meeting or beating analysts' earnings forecasts (MBE) have higher equity valuation and lower bond yield spread. In contract to those studies, this paper explores a firm's MBE effect on its private loan terms, including price and non-price terms. We find that despite the fact that banks possess superior information access and processing abilities that reduce information asymmetry costs for borrowers, they still impose more favorable price (i.e., lower loan spread) and non-price (longer loan maturity) terms for firms meeting expectations than firms missing expectations. Further analyses indicate that the main explanation for our findings is provided by the prospect theory instead of transaction cost theory. In addition, we find that the benefits of meeting expectation (i.e., lower loan spread and longer maturity) are more pronounced for financially distress firms (habitual beaters) than financially sound firms (sporadic beaters)

英文關鍵詞： Meeting/beating analyst forecast, Syndicate Loan, spread, maturity

Does Meeting Analyst Forecasts Matter in Private Loan Market?

Abstract: Prior studies find that firms meeting or beating analysts' earnings forecasts (MBE) have higher equity valuation and lower bond yield spread. In contract to those studies, this paper explores a firm's MBE effect on its private loan terms, including price and non-price terms. We find that despite the fact that banks possess superior information access and processing abilities that reduce information asymmetry costs for borrowers, they still impose more favorable price (i.e., lower loan spread) and non-price (longer loan maturity) terms for firms meeting expectations than firms missing expectations. Further analyses indicate that the main explanation for our findings is provided by the prospect theory instead of transaction cost theory. In addition, we find that the benefits of meeting expectation (i.e., lower loan spread and longer maturity) are more pronounced for financially distress firms (habitual beaters) than financially sound firms (sporadic beaters).

Key words: Meeting analysts' expectations, loan market, loan spread, loan maturity

1. INTRODUCTION

It is well-documented that firms meeting or beating analysts' earnings expectations (thereafter MBE) have higher equity valuation (Bartov, Givoly, and Hayn 2002; Kasznik and McNichols 2002) and lower bond yield spread (Jiang 2008). However, in addition to public financial market (e.g., equity and public debt), private loan market becomes a significant source of corporate financing (Altunbas, Gadanecz, and Kara 2006; Ball, Bushman, and Vasvari 2008).[1] The extant studies document significant institutional differences between the two markets. For example, lenders across private and public debt markets differ with respect to their access to information, ability to monitor the borrowers and flexibility in resetting contract terms (Bharath, Sunder, and Sunder 2008). When private lenders possess superior information access and processing abilities that reduce information asymmetries between lenders and borrowers, it is an interesting but unsolved question whether the extant inferences on MBE can generalize to private debt market. To fill the gap, we examine whether the presence of MBE affects price (i.e., loan spread) and non-price (i.e., maturity) loan terms of bank contracts.[2]

Prior studies indicate that firms have incentive to avoid earnings decreases and losses, and to meet or beat analysts' earnings forecasts (Bursthalar and Dichiv 1997; Degeorge, Patel, and Zeckhauser 1999), and market rewards for meeting or beatinf these earnings benchmarks (Bartov et al. 2002; Barth, Elliott, and Finn 1999; Brown and Caylor 2005; Kasznik and McNichols 2002; Skinner and Sloan 2002). In the

[1] For example, over the past decade, there have been $780 billion in net debt security issuances, bank loans play a significant role (about 54% of total debt since 1980) (Graham, Li, and Qiu 2008).

[2] Regina Wittenberg-Moerman (2009) explores the syndicated loan market to investigate the impact of information asymmetry on loan spread and maturity; Gottesman and Roberts (2004) examine the association between loan spread and maturity to test whether lenders are compensated for longer maturity loans or limit their exposure by forcing riskier borrowers to take short-term loans. Following Regina Wittenberg-Moerman (2009) and Gottesman and Roberts (2004), we focus bank loan terms on interest rate and loan maturity.

context of public bond market, Jiang (2008) finds that a firm's MBE leads to lower bond spread. On the other hand, Bursthalar and Dichiv (1997) and Degeorge et al. (1999) present two theories to explain why firms have incentives to meet these targets: transaction cost theory and prospect theory. The former posits that to reduce information-processing costs, some firm stakeholders, such as stockholders and creditors, use earnings benchmarks as heuristics or reference points to evaluate firms' performance and determine terms of transaction with firms. And the latter argues that decision makers are more sensitive to losses but less sensitive to gains relative to some natural reference points. However, the extant literature provides no direct evidence of which accounts primarily for the incentive for firms to meet or beat earnings benchmarks. In this paper, we further address this issue.

Our motivation for the examination of loan contracting consequences of MBE stems from a variety of reasons. First, debt financing, in particular bank loans, is a major source of external financing in the U.S. and most other countries all over the world (Bharath et al. 2008; Graham et al. 2008). For example, in 2005 the total new capital raised in the syndicated loan market was $1,500 billion, and firm bond issuance amounted to about $700 billion (Bharath et al. 2008). As a result, issue of whether MBE affects loan terms of bank contracts is of economic importance.

Second, multi-faceted features of private debt contracts enable us to assess not only direct cost of firm's MBE (e.g., loan spread), but also the related indirect cost (i.e., tighter non-price terms such as shorter maturity). For example, Bharath et al. (2008) find that higher risk is entirely reflected in the interest spread in the case of public debt. However, in the case of private debt, there is substantial variation in loan contract terms. Therefore, in the context of private debt, focusing on the interest cost

alone potentially misestimates the total cost borne by borrowers.[3]

Third, prior research documents significant institutional differences between the private and public financial markets. relative to investors in public market (equity and bond), banks possess superior information-processing abilities and have better access to private information used to both design the loan terms of the contract (Diamond 1991) and monitor the loan ex post. In addition, borrowers are relatively more willing to share their proprietary information with a small group of lenders than with disperse bondholders (Bhattacharya and Chisea 1995).[4] Prior studies argues in the public financial markets that firms meeting expectations reduce the costs imposed in transaction with stakeholders (e.g., lenders), assuming that stakeholders' decisions are often based on heuristic cutoffs at earnings thresholds.[5] However, in our private debt context, due to their better access to information from borrowers and ability to processing information, that reduce adverse selection costs for borrowers, banks would be no longer or less likely to use earnings benchmarks as heuristic or reference points to determine the loan terms. Therefore, MBE in loan market, *if any*, should be able to be explained by another theory--- prospect theory. Thus, private loan market provides a unique setting to examine whether prospect theory framework, alone or to some degree, can account for MBE.

[3] Private loans tend to have more concentrated lenders relative to public debt. In addition, as mentioned later, information access and re-contracting flexibility allow private lenders to customize the price and non-price terms of the debt contract.

[4] Private debt contracts typically depend on the flow of confidential information between borrowers and lenders For example, the origination and ongoing maintenance of syndicated loans relies crucially on borrowers providing lenders with confidential information. This confidential information tends to include timely financial disclosures (e.g., quarterly or monthly financial disclosures), covenant compliance information, amendment and waiver requests, financial projections, and plans for acquisitions or dispositions (Bushman, Smith, and Wittenberg-Moerman 2010; Regina Wittenberg-Moerman 2008).

[5] Transaction cost theory argues that information-processing costs are sufficiently high that stakeholders determine the terms of transaction with the firm based on the heuristic or reference point such as earnings.

The first question to be addressed in this paper is to examine whether and how a borrower's MBE has an impact on price and non-price terms of bank loan contracts. To analyze the impact of MBE on price terms, we examine the effect on the loan spread. In this paper, loan spread is measured as the amount the borrower pays in basis points over LIBOR or LIBOR equivalent. Second, by investigating non-price terms of the contracts, we further analyze whether MBE has effects beyond increasing the price of bank loan. In this paper, we use bank loan maturity as proxy for non-price terms of loan contracts.

Using a sample of listed loan firms in Dealscan database during 1996-2011, we find that, as predicted, loan spread is lower for firms meeting analysts' expectations than those falling short of expectations. In addition, we also find that a borrower's MBE is translated into a longer loan maturity. Stated differently, we find that firms meeting expectations have significantly longer loan maturity than those missing expectations. The results are in line with the argument that a longer maturity due to MBE induces less frequent refinancing of banks loans to firms meeting or beating expectations, which allows the borrowers to less frequently renegotiate the loan contract terms. As a result, the economic effect of a borrower's MBE on the cost of loan contracts is likely even higher than that implied by the loan spread decrease *alone*.

The second question to be addressed in this paper is whether the more favorable contract terms due to a borrower's MBE is more pronounced for firms in financial distress than for financially sound firms. When a firm in financial distress beats its earnings expectation, this conveys information about its ability to survive, and thus the premium to MBE of financially distressed firms is larger than the premium to MBE of financially sound firms (Bartov et al. 2002). Since lenders bear the

borrower's downside risk but do not share in the upside growth potential, we thus hypothesize in the loan context that the more favorable contract terms due to a borrower's MBE is more pronounced for firms in financial distress than for financially sound firms. The empirical results provide evidence supporting our predictions. Specifically, we find that the decrease in loan spread and increase in loan maturity due to MBE are more pronounced for firms in financial distress than for financially sound firms.

Further analyses indicate that the differential loan spread and maturity due to a borrower's MBE are more pronounced for "habitual beaters" than "sporadic beaters". In addition, we find that reporting positive earnings or earnings increase is positively associated with more favorable loan terms, and such an association is much more pronounced when borrowers are in financial distress.

Recall that the extant literature presents two theories, based on the stakeholder use of information-processing heuristics and prospect theory, about the motivation for meeting or beating earnings benchmarks. Since banks possess superior information access and processing abilities that reduce information asymmetry costs (e.g., adverse selection costs) by borrowers, transaction cost theory is unlikely to explain our main findings. To provide direct evidence of whether our results are primarily accounted by prospect theory, we develop several distinctive empirical models of prospect theory. The results support our predictions that our MBE findings in the case of private market is accounted mainly for by the framework of prospect theory.

To ensure the robustness of our findings, we perform a battery of sensitivity analyses. First, allowing for simultaneity between loan spread and loan maturity does not influence our primary inferences that a borrower's MBE leads to a lower loan spread and longer maturity. Second, our primary analyses are based on the facility or

tranches level. According to Sufi's (2007) argument that treating multiple facilities on the same syndicated loan deal as independent observations could lead to erroneously small standard errors, we repeat our analyses at the deal level as an additional test. All primary inferences remain unchanged qualitatively.

This paper contributes to the literature on MBE in several ways. First, we contribute to the MBE literature by documenting that, in addition to public financial market, MBE also has an effect on private loan market. We find that although banks possess superior access to information about borrowers, whether to meeting or beating earnings expectations still affects the loan contract terms. To the best of our knowledge, this is the first to explore the effect of a firm's MBE on loan contract terms in the context of private debt market.

Second, a distinctive feature of our research design is the development of an empirical model of prospect theory. We document direct evidence that the main explanation for the findings in this paper is provided by the prospect theory, due to Kahneman and Tversky (1979). In contrast, prior MBE studies cannot disentangle the effect of prospect theory from that of transaction cost theory. As a result, our paper enhances our further understanding of whether and why banks use earnings benchmarks to evaluate performance when designing loan contract terms.

Third, we also contribute to the MBE literature by documenting that the presence of meeting or beating earnings expectations has a positive effect on multiple debt contractual terms in loan market, including lower loan spread and longer loan maturity. In contrast, prior study finds in the context of equity (bond) market that MBE affects equity valuation (bond yield spread) *alone*. The results are in line with prior findings that information about borrowers affects price and non-price contract terms in the context of private debt (Costello and Wittenberg-Moerman 2011; Graham

et al. 2008), while only the price terms are affected in the case of public debt (Bharath et al. 2008). Fourth, our paper contributes to MBE literature by providing further evidence that the differential effect of MBE on loan terms, including price and non-price terms, systematically varies with firms' financial position and MBE recurrence.

Finally, our paper contributes to syndicated loan literature as well. First, we provide direct evidence that MBE is an important determinant of loan terms and its effect increases with MBE frequency. Second, despite their relative information advantage and better information-processing ability, private lenders perceive the greatest utility and hence offer better loan terms when the borrower's earnings move from a relative loss to gain.

The rest of this paper is organized as follows. Section 2 presents literature review and the hypotheses development. Section 3 describes our sample and research designs. Section 4 presents the empirical results. Section 5 conducts additional and sensitivity tests. Finally, section 6 summarizes and presents our conclusions.

2. LITERATURE AND HYPOTHESES

Bursthalar and Dichiv (1997) and Bowen, Ducharme, and Shores (1995) argue that the information about earnings affects terms of transactions between firms and their stakeholders; due to the sufficiently higher information-processing costs, some stakeholders determine terms of transactions with firms based on heuristics, such as earnings benchmarks. Next, prospect theory posits that the decision maker derives value from gain and loss with respect to some reference points, and also suggests that value function is steepest around wealth reference points. Degeorge et al. (1999) further posit that another salience of thresholds arises from the third psychological effects, referred to as the salience theory. That is, there is something fundamental

about positive and no-positive numbers in human thought processes (Barrow 1992). As a result, the dividing line carries over for the threshold on absolute earnings. They argue that when looking at the benchmarks of quarterly earnings and the analysts' consensus forecasts, there is a salient dividing line between meeting and missing the norm. Saliency makes the norm itself a focal point, which reinforces its psychological properties.

Consistent with these two theories, prior work indicates that managers have incentives to meet or beat the three earnings benchmarks---zero earnings, last year's earnings, and analyst's earnings forecasts (e.g., Bursthalar and Dichiv 1997; Degeorge et al. 1999) and that meeting earnings benchmarks has a higher equity valuation (Bartov et al. 2002; Brown and Caylor 2005; Kasznik and McNichols 2002; Lopez and Rees 2002; Skinner and Sloan 2002). In addition, missing analysts' expectations also is associated with career penalties in the form of lower compensation (Matsunaga and Park 2001; Graham, Harvey, and Rajgopal 2005; Mergenthaler, Rajgopal, and Srinivasan 2009) and the dismissal of CEO and CFO (e.g., Mergenthaler et al. 2009). Dechow, Richardson, and Tuna (2003) and Brown and Caylor (2005) further document that, in recent years, managers' propensity to meet analysts' expectations exceeds their propensity to avoid either losses or earnings decreases. Recently, Jiang (2008) finds in the context of bond market that firms meeting or beating earnings benchmarks have lower cost of debt.

This paper explores whether firms meeting analysts' earnings expectations have more favorable loan contract terms from the perspective of private lenders. There are two opposing arguments about the effect of a firm's MBE on loan contract terms. Recall that banks possess superior information access and processing ability that reduce adverse selection costs for borrowers. Accordingly, one might argue that due to

their better access to information and ability to monitor the borrowers, banks are less likely to rely on earnings benchmarks as heuristics or reference points when designing loan contract terms. Stated differently, based on transaction cost theory, borrowers have no or less incentive to meet or beat earnings expectations in the case of private loan.

However, an alternative argument posits that although banks are unlikely to rely on earnings benchmarks as reference points to determine loan terms, the prospect theory still can explain the pervasive avoidance of missing analysts' earnings expectations. Therefore, it is an empirical question whether banks use MBE information in pricing private loan. To provide empirical evidence, we establish the following hypothesis:

H1a: Loan spreads are lower for firms meeting or beating earnings expectations than for firms missing earnings expectations.

Regarding non-price terms, we expect that a borrower's MBE leads to longer loan maturity. Recall that banks tend to have lower renegotiation costs than public bondholders because of their better access to information about borrowers and greater investment in monitoring the borrowers. This enables private lenders to customize the price and maturity terms in response to borrowers' accounting quality. As a result, in the context of private debt, firms with poor accounting quality have more stringent price (higher spread) and non-price (shorter maturity) contract terms (Bharath et al. 2008).

Extant literature indicates that lenders tend to limit their exposure through forcing riskier borrowers to take short-term loans (Gottesman and Roberts 2004). The rationale for this argument is that a shorter loan maturity leads to more frequent loan refinancing to riskier borrowers, which allows lenders to more frequently renegotiate

the loan terms. Recall that borrowers' missing expectations signal lenders a worse future performance, which implies an increase in firm default risk and such an increase in risk is reflected in less favorable loan terms. In the same vein, we thus argue in the context of loan maturity that banks limit their exposure through forcing firms missing expectations to take short-term loans.

However, an alternative view is that a borrower issuing short-term debt can face costly liquidity at maturity, motivating the borrower to choose longer-term debt (Gottesman and Roberts 2004). If this is the case, this view will bias against our prediction that a borrower's MBE leads to longer loan maturity. We therefore advance the following hypothesis:

H1b: Loan Maturity is longer for firms meeting or beating earnings expectations than for firms missing earnings expectations.

Bartov et al. (2002) posit that a firm's MBE conveys information about its ability to survive if it is in financial distress. Therefore, they find that there is a greater stock premium to MBE for firms in financial distress than for financially sound firms. In the context of loan market, we argue that, in addition to signaling future earnings projections, firms' MBE may alter lenders' probability assessment regarding the future survival of a firm. To the extent that lenders bear the borrower's downside risk but do not share in the upside growth potential (Fischer and Verrecchia 1997), we thus predict that differential loan terms of private contracts due to a borrower's MBE are more pronounced for firms in financial distress than for financially sound firms. Accordingly, we propose our second hypotheses:

H2a: Lower loan spreads due to a borrower's MBE are more pronounced for financially distressed firms than for financially sound firms.

H2b: Longer loan maturity due to a borrower's MBE is more pronounced for financially distressed firms than for financially sound firms.

3. RESEARCH DESIGN

3.1 Data Source and Sample Selection

We use data from DealScan (provided by the Loan Pricing Corporation), which covers all publicly-traded loan observations in the period 1996~2011. The DealScan database, starting in 1986, is an online database that consists detailed bank loan data for U.S. and foreigner commercial loans made to corporations. The syndicated loan data are primarily gathered from the Security Exchange Commission or directly research by LPC through contacts with lenders, borrowers, and other sources. A syndication loan is provided by a group of lenders with each holding a fraction of the loan. Syndicated loan deals include multiple loan facilities (or tranches) that differ in price, type, and maturity (such as a line of credit and a term loan). There is no straightforward way to identify which facilities are parts of a deal in DealScan. We use loan facility-level data to study the effect of MBE on price and non-price loan terms in debt contracts. Our Analysts' forecasts data comes from I/B/E/S database, and financial accounting data are retrieved from the Compustat database.

The starting sample includes information on 252,990 completed dollar-denominated syndicated loan facilities issued between 1986 and 2011. Next, we eliminate loans to non-U.S. firms, not issued in U.S. dollars, and observations with missing data. We identify 57,941 loan facilities related to 12,815 borrowers. Third, we merge accounting data available from Compustat with I/B/E/S, and then match them with the loans using Robert's Dealscan-Compustat Linking Database (August 2012 vintage), graciously provided by Michael Roberts.[6] We exclude regulated utilities (SIC codes 4900 to 4999) and financial service firms (SIC codes 6000 to 6999),

[6] We thank Michael Roberts for sharing the Compustat-Dealscan link, which is made publicly available through website: http://finance.wharton.upenn.edu/~mrrobert/data_code.htm.

because these firms tend to have different capital structures and financing activities due to regulation. Keeping loans with facility active date from 1996 to 2011 and deleting observations with missing Compustat/IBES data, our final sample contains 8,494 facilities made to 2,064 borrowing firms.[7]

[INSERT TABLE 1 HERE]

3.2 Measurement of Earnings Surprises

The timeline that underlies the measurement of our analyst forecast variables is shown in Figure 1. The firm's earnings surprise (*EarSurp*) for quarter *t* is defined as the "unadjusted actual" EPS from I/B/E/S minus the last I/B/E/S median EPS forecast, scaled by the closing price at the beginning of the fiscal quarter.[8] We require that there are at least two analysts providing earnings forecasts for each quarter. As pointed out in Bartov et al. (2002), the release date of the latest forecast must precede the current quarter's earnings announcement by at least 3 trading days. The median of analyts' quarterly earnings forecast is used as the consensus analyst forecast to proxy for quarterly earnings expectations.[9] To capture whether a firm meet or beat quarterly earnings expectations, we construct an indicator variable, *MBE*, which takes on the value of one if *EarSurp* is zero or positive in the closest quarter ahead of loan initiation date, and zero otherwise.

[INSERT FIGURE 1 HERE]

[7] In this paper, we cannot clearly make sure the time lag between deal-active dates and their 10-Q filing dates with the SEC. As a result, to ensure that we only use quarterly accounting information that is publicly available at the time of a loan, we impose the following matching criteria: For a loan initiated on date *t*, its matching fiscal quarter is assumed to be the most recent quarter before date *t* minus six months.

[8] In order to make the forecast and actual earnings comparable, the individual forecasts within a forecast period are adjusted for stock splits using the CRSP cumulative adjustment split factor retrieved from the CRSP daily files.

[9] The results are similar and the inferences are robust to using the mean earnings forecast as the consensus analyst forecast to proxy for earnings expectations.

3.3 Measurement of Financial Distress

The Z-score model, created by Altman (1968) is a multiple-variable approach to the prediction of financial distress, and has been proved to be a powerful diagnostic tool.[10] Following Altman (1968), we use the threshold of 1.81 to distinguish distressed and financially sound firms.[11] We create a binary indicator variable, *DISTRESS*, that takes on the value of one if Altman's Z-score is less than 1.81, and zero otherwise.

3.4 Empirical Model

Our analysis begins by investigating whether firms meeting earnings expectations experience more favorable loan terms of the loan contracts than those that fail to meet expectations. To do so, we estimate the following OLS regression:

$$LOAN\_TERM = \beta_0 + \beta_1 MBE + \sum \alpha_i Loan\_Specific_i + \sum \delta_j Borrower\_Specific_j + \sum \gamma_k Lender\_Specific_k + \sum \theta_l \ Economy_l + \sum \pi_m Year_m + \sum \lambda_n Ind_n + u \quad (1)$$

Our second research question is whether the favorable loan terms due to a borrower's MBE is more pronounced for firms in financial distress than financially sound firms. To do so, we augment equation (1) to (2) by adding dummy variable *DISTRESS* and interaction term *MBE*DISTRESS* as follows:

$$LOAN\_TERM = \beta_0 + \beta_1 MBE + \beta_2 DISTRESS + \beta_3 MBE \times DISTRESS + \sum \alpha_i Loan\_Specific_i + \sum \delta_j Borrower\_Specific_j + \sum \gamma_k Lender\_Specific_k + \sum \theta_l \ Economy_l + \sum \pi_m Year_m + \sum \lambda_n Ind_n + u \quad (2)$$

In the above regressions, each observation represents a single loan facility. The dependent variable (*LOAN_TERM*) refers to one of the following features of a loan

[10] The Altman Z-score is defined as Z= 1.2*Working capital / total assets +1.4*Retained earnings / total assets + 3.3*earnings before interest and taxes / total assets + + 0.6*market value of equity / total liabilities + 0.999* net Sales / total assets.

[11] Alternatively, we also use the threshold value of 2.0, as adopted by Bartov et al. (2002), to classify firms into distressed and non-distressed firms. The results remain unchanged qualitatively.

contract: (1) *Loan Spread*: defined as the all-in-drawn spread (plus the upfront fee and annual fee, if any) in basis points over the LIBOR and (2) *Maturity*: the natural log of one plus the number of months from the loan issue date to the maturity date. The test variable *MBE* in eq. (1) is as previously defined. To be consistent with our predictions, β_1 is expected to be negative (positive) when the dependent variable is *Loan Spread* (*Maturity*). According to H2a and H2b, we expect the coefficient on *MBE*×*DISTRESS* in eq. (2), β_3, to be negative (positive) for *Loan Spread* (*Maturity*).

Following the literature on bank loan contracting (Bae and Goyal 2009; Costello and Witternberg-Moerman 2011; Graham et al. 2008; Kim, Tsui, and Yi 2011), we incorporate various loan-specific and borrower-specific control variables and country-level macroeconomic conditions into our models. The loan-specific control variables include: (1) *Loan Size*, the natural log of facility amount; (2) *Lenders Number,* the number of lenders; (3) *Performance Pricing*, an indicator variable that equals one for loans with performance pricing provisions, and zero otherwise; (4) *Collateral*, an indicator variable that equals if the loan is secured with collateral and zero otherwise; (5) *Financial Covenants*, the number of financial covenants imposed by the loan agreement. Borrower-specific control variables include the following: (1) *SIZE*, the natural log of total assets in millions of dollars; (2) *LEV,* defined as the long-term debt divided by total assets; (3) *MB*, growth or investment opportunities, which is measured as the market value of equity plus the book value of debt divided by total assets; (4) *EBITDA*, firm profitability, measured by the earnings before interest, taxes, depreciation, and amortization to total assets; (5) *PPE*, the ratio of property, plant, and equipment to total assets; (6) *STD_CF*, uncertainty of firms' future growth, measured as the standard deviation of quarterly cash flows from operations (scaled by total assets) over the past five fiscal years (referred to as the cash-flow

volatility); (7) *Z-SCORE,* measured by Zmijewski's (1984) probability of bankruptcy score; (8) *AbsDA,* borrowers' informational asymmetry, measured by abnormal discretionary accruals;[12] (9) *BIG4,* an indicator variable, which equals one if the borrower is audited by Big4 CPA firm, and zero otherwise; (10) *EarSurp,* the magnitude of quarterly earnings surprises which has been previously defined: and (11) loan types (*Term loan, Revolver > 1 yr., Revolver < 1 yr.,* and *364-day facility*) and Purposes of loan (*Corporate purposes, Debt repayment, Working capital, Takeover, CP backup,* and *Acquisition*).

Country-level microeconomic factors include the following: (1) *Term Spread,* the difference in the yield between 10-year and 2-year U.S. Treasury bonds; (2) *Credit Spread,* measured by the yield spread between BAA- and AAA-rated corporate bonds. To control for differences in loan features over year and across industries, we include *Year* and *Industry* dummies in our regressions.

4. FINDINGS

4.1 Univariate Analysis

Table 2 reports the means and univariate results for the tests and the variables on which our analyses are based, tabulated by firms with *MBE*=1 and firms with *MBE*=0, cross-tabulated by firms with *DISTRESS*=1 and firms with *DISTRESS*=0, respectively. As shown in Table 2, we find that firms meeting earnings expectations have lower loan spread, longer maturities, larger loan size, a larger number of lenders, higher probability of performance provisions requirement and lower probability of collateral's being pledged than those missing earnings expectations, as predicted.

[12] To estimate discretionary accruals, we adopt the Modified Jones Model (Dechow, Sloan, and Sweeney 1995; DeFond and Subramanyam 1998; Kasznik 1999). We use a cross-sectional model to calculate discretionary accruals, where for each quarter we estimate the model for each 2-digit SIC grouping. We require each 2-digit SIC grouping has at least 8 observations per quarter.

Regarding loan purposes, the proportions of loans for debt repayment and CP backup are significantly larger for firms with *MBE*=0 than those for firms with *MBE*=1. On the contrary, the proportions of loans for corporate purposes, working capital, takeover, and acquisition are significantly larger for firms with *MBE*=1 than those for firms with *MBE*=0. With respect to terms of loan types, banks offer more revolving loans with maturities exceeding one year, but offer fewer revolving loan with maturities less than one year and 364-day facility when firms meet earnings expectations.

The last column of Table 2 reports the differences in means of the variables between firms with *DISTRESS* =1 and with *DISTRESS* =0. It can be seen that firms in financial distress have higher loan spread, longer loan maturity, greater number of lenders, the lower probability of performance provisions requirement, the higher probability of collateral's being pledged, and a larger number of financial covenants than those of financial soundness. In terms of loan purposes, banks offer more loans for corporate purposes and debt repayment but fewer loans with the purposes of working capital, takeover, CP backup and acquisition for firms with *DISTRSS*=1 than for firms with *DISTRSS*=0. With respect to terms of loan types, banks are likely to offer more term loan, but less revolver loans with maturity exceeding one year and 364-day facility when firms suffer financial distress.

Regarding loan spread and maturity, Table 2 documents the following results: (1) firms with *MBE*=1 have lower spread (longer maturity) than firms with MBE=0 by 20.05 bps (3.234 months); firms with *DISTRESS*=1 have higher spread (longer maturity) than firms with *DISTRESS*=0 by 63.36 bps (2.304 months); (2) firms with *MBE*=1 have lower spread and longer maturity; (3) firms with *MBE*=1/*DISTRESS*=1 have lower spread (19.4 bps) and longer maturity (3.62 months) than firms with

MBE=0/*DISTRESS*=1. The results provide preliminary evidence on H1 and H2.[13]

[INSERT TABLE 2 HERE]

Table 3 reports the Pearson and Spearman correlations between dependent variables and other related variables in our empirical model. As shown in the table, *MBE* is negatively related to *Loan Spread* but positively related to *Maturity*, as predicted. We also find that higher loan spreads are often bundled with smaller loans, a smaller number of lenders, lower likelihood of performance pricing provisions, higher probability of collateral requirement, and more financial covenants.

In examining the association of *Loan Spread* with borrowers' characteristics, we find that the loan spread is lower for firms with larger size, lower leverage, higher growth opportunity, higher *EBIDTA*, lower cash flows volatility, lower distress probability, lower *AbsDA*, and better audit quality, as predicted.

Now, we turn to analyze the correlations of *Maturity* with loan specific variables. As predicted, the results are very similar to those of *Loan Spread* except for the performance pricing provisions and number of lenders. Next, we find that the maturity is longer for firms with smaller size, higher leverage, lower growth opportunity, lower cash flows volatility, and higher distress probability, consistent with our predictions.

Finally, Table 3 reveals that s*pread* is positively associated with *Term Spread*, and *Credit Spread; Maturity* is negatively related to *Term Spread* and *Credit Spread*.

[INSERT TABLE 3 HERE]

5.2 Regression Results

The effects of MBE on loan spread and maturity

[13] Recall that Gottesman and Roberts (2004) propose the tradeoff hypothesis to explain why there are negative relation between loan spread and loan maturity.

Table 4 presents the regression results of testing H1a and H1b after controlling for all related factors known to be associated with loan spread and maturity, respectively. Consistent with our predictions, the *MBE* has a statistically and economically significant negative effect on the loan spreads (β_1=-0.077, p-value < 0.01, one-tailed test) and positive effect on the loan maturity (β_1=0.029, p-value < 0.01, one-tailed test), respectively. The results indicate that firms meeting or beating analysts' earnings expectations have more favorable loan terms than firms missing analysts' earnings expectations. Accordingly, the empirical results lend support to our first hypotheses.

With regard to loan characteristics, as expected, the results report that the loan spread is lower for loan contracts involving larger loan size, a large number of lenders, higher probability of performance pricing provisions requirement, lower collateral requirements, and less restrictions of financial covenants. Also, consistent with our predictions, the maturity is longer for loan contracts involving larger loan size, a large number of lenders, higher collateral requirements, and a small number of financial covenants. In terms of borrower characteristics, as expected, lenders will charge a lower loan spread to borrowers with larger firms, lower leverage, higher growth opportunity, higher *EBIDTA*, higher proportion of tangibility assets, lower cash flows volatility, lower distress probability, and higher audit quality. Moreover, the maturity is longer for borrowers with higher *EBIDTA*, lower cash flows volatility, and higher audit quality. The significantly negative coefficient of the variable *SIZE* is inconsistent with our prediction, which reveals that larger firms issue short-term loans to signal their better credit risk. It also can be seen that there is a positive relation between *LEV* and maturity; the plausible reason for this is that firms may adopt low leverage and issue short-term debt maturity to mitigate the underinvestment problem (Johnson

2003; Billett, King, and Mauer 2007).

In sum, the results, as evidenced in Table 4, loan spreads are lower and debt maturity is longer for firms meeting or beating earnings expectations than for firms missing earnings expectations, consistent with our hypotheses H1.

[INSERT TABLE 4 HERE]

The effect of MBE and financial distress on loan spreads and maturity

Our second hypotheses posit that the benefits of MBE in terms of lower loan spread and longer maturity are greater for firms in financial distress than for financially sound firms. Table 5 reports the empirical results of testing H2a and H2b.

Panels A and B of Table 5 present the results of a two-by-two analysis of *Loan Spread* and *Maturity* conditional on whether firms meet or beat earnings expectations and whether their financial position is sound, respectively. An examination of the two columns in Panel A shows that firms with *MBE*=1 have significantly lower loan spread than firms with *MBE*=0 among firms in financial distress, but not significantly low among financially sound firms. More importantly, the benefit of MBE in terms of lower loan spread for financially distressed firms (-0.117) is significantly greater than that for financially sound firms (-0.034), consistent with H2a. In the same vein, irrespective of whether firms meet or beat earnings expectations, financially sound firms have lower spread than financially distressed firms. In addition, the benefit of financial health in terms of lower loan spread for firms meeting earnings expectations (0.274) is significantly smaller than that for firms missing earnings expectations (0.357), as predicted.

Regarding loan maturity, Panel B reveals that the primary inferences are the same as those in Panel A. For example, we find that regardless of whether firms are in

financial distress, firms meeting or beating earnings expectations have significantly longer maturity than firms missing earnings expectations. More importantly, the benefit of MBE in terms of longer maturity for financially distressed firms (0.043) is significantly greater than that for financially sound firms (0.016).

Panel C presents the results form estimating equation (2). As shown in Column 1 of Panel C, the coefficient of *MBE*DISTRESS* is statistically and economically significantly negative (β_3=-0.084, p-value < 0.05, one-tailed test) in the sense that the benefits of MBE in terms of lower loan spread are more pronounced for financially distressed firms than financially sound firms. Similarly, Column (2) of Panel C indicates that, as predicted, the coefficient of *MBE*DISTRESS* is statistically and economically significantly positive (β_3=0.027, p-value < 0.10, one-tailed test), suggesting that the benefits of MBE in terms of longer loan maturity are greater for financially distressed firms than for financially sound firms. These results provide supporting evidence on H2a and H2b.

In summary, Table 5 provides strong evidence that the benefits of MBE are stronger for financially distress firms in private debt market, in line with that in public financial markets (Bartov et al 2002; Jiang 2008).

[INSERT TABLE 5 HERE]

5.3 Further Analysis

The Effect of firms' MBE recurrence on loan spread and maturity

Another stream of empirical research finds that firms with patterns of increasing earnings have higher price-earnings multipliers than others (Barth et al. 1999). Others further demonstrate that the market premium is more pronounced for firms that consistently beat earnings expectations ("habitual beaters") than for only occasionally

do so ("sporadic beaters") (Bartov et al. 2002; Kasznik and McNichols 2002). These findings are in line with the "momentum story".

In this section, we further shed light on the effect of MBE recurrence on loan terms in the case of private debt market. In doing so, we construct one proxy for MBE recurrence (*FMBE4*), measured as the frequency of achieving MBE during the consecutive four quarters immediately before the matching fiscal quarter for a loan initiation on date *t*. To examine this prediction, we restrict our sample to firms meeting earnings expectations.[14] The results are reported in Table 6.

As shown in column (1) of Table 6, the coefficient of *FMBE4* is significantly negative, suggesting that loan spread decreases with frequency of MBE. Similarly, as shown in column (3) of Table 6, the coefficient of *FMBE4* is significantly positive in the sense that loan maturity increases with frequency of MBE. Overall, the benefits of MBE in terms of loan spread and maturity increase with MBE frequency.

Next, we examine whether the benefits of habitual MBE are relatively greater for firms in financial distress. As evidenced by column (2) of Table 6, the coefficient of *FMBE4*DISTRESS* is significantly negative, as predicted. In addition, column (4) of Table 6 shows that the coefficient of *FMBE4*DISTRESS* is positive but insignificant. Alternatively, we follow Bartov et al. (2002) and construct a dichotomous indicator variable *HMB4* to identify firms as being ''sporadic beaters'', based on the criterion that firms meeting or beating earnings expectations in at least 75% of the previous four quarters. Untabulated results are the same as those in Table 6.

Overall, these results lend support to the argument that the benefits of habitual

[14] Our results are robust when we use the full sample to test our predictions.

or sporadic MBE in terms of loan spread are relatively greater for financially distress firms than for financially sound firms. However, this inference is slightly weaker in the case of loan maturity.

[INSERT TABLE 6 HERE]

Can Prospect Theory account for our findings?

As mentioned earlier, two theories are proposed to account for the MBE: transaction cost theory and prospect theory. Due to their superior access to the information from the borrowers, private lenders such as banks are unlikely to rely on earnings information heuristics or reference points to evaluate borrowers' credit worthiness' credit worthiness when designing loan contract terms. Consequently, we conjecture that the results in this paper should be primarily accounted for by the prospect theory, rather than transaction cost theory. In this section, we will take direct examination of the association between loan contract terms and MBE from the perspective of prospect theory.

Prospect theory postulates that decision-maker derives value from gain and loss with respect to some reference points, and also suggests that value function is steepest around the wealth reference points. Thus, the value function is S-shaped with the curve concave for gains (implying risk-averse) and convex for losses (implying risk-seeking), and the corresponding losses is steeper than that for gains. As indicated by Degeorge et al. (1999), meeting analysts' earnings forecasts is an important reference point. We might be able to anticipate that lenders' risk premium depends on the loan spread they are willing to pay.

In this setting, the lender derives value from gain and loss with respect to analysts' earnings forecast. Specifically, unexpected earnings (e.g., the difference

between actual earnings and analysts' forecast earnings) is a natural reference point for lenders who estimate wealth as a multiple of loan spread which is negatively related to earnings. Assuming that firms manipulate wealth measures (changes in earnings and in turn changes in spreads) to affect the value perceived by lenders, we expect to observe earnings-increasing management around wealth reference points—in our setting, in the vicinity of zero changes of unexpected earnings. The above arguments can be summarized in Panel (a) of Figure 2.

Due to the negative relation between loan spread and actual earnings, we thus multiply *Loan Spread* by negative one to convert it into S-shaped value function as postulated in prospect theory (See Panel (b) of Figure 2).

[INSERT FIGURE 2 HERE]

On the other hand, as noted in Gottesman and Roberts (2004), lenders may be willing to offer long-term or short-term loans to riskier borrowers at higher spreads at the same time. Therefore, the association between earnings and the length of loan maturity is not clear. In our context, we examine the benefits of MBE (i.e., lower loan spread) and spread-earnings association under the prospect theory framework; specifically, we examine whether the MBE benefits are greater for losses than for gains when earnings move from losses to gains relative to analysts' earnings forecasts.

To test our conjecture, we use the negative of loan spread, denoted *Loan Spread**(*-1*), as dependent variable and run the following proposed quadratic regressions for firms meeting or beating earnings expectations and those missing earnings expectations, respectively:

$$Loan\ Spread_{ij} * (-1) = \beta_0^{MBE} + \beta_1^{MBE} Earnings_{ij} + \beta_2^{MBE} Earnibgs_{ij}^2 + \sum \alpha_k^{MBE} Loan\_Specific_{ijk} + \sum \delta_l^{MBE} Borrower\_Specific_{ijl} + \sum \gamma_m^{MBE} Lender\_Specific_{ijm} + \sum \theta_n^{MBE}\ Economy_{ijn} + \sum \pi_o^{MBE} Year + \sum \lambda_p^{MBE} Ind + u_{ij} \quad \text{if j} \in \text{group of MBE,} \tag{3a}$$

$$Loan\ Spread_{ij} * (-1) = \beta_0^{MISS} + \beta_1^{MISS} Earnings_{ij} + \beta_2^{MISS} Earnibgs_{ij}^2 + \sum \alpha_k^{MISS} Loan\_Specific_{ijk} + \sum \delta_l^{MISS} Borrower\_Specific_{ijl} + \sum \gamma_m^{MISS} Lender\_Specific_{ijm} + \sum \theta_n^{MISS}\ Economy_{ijn} + \sum \pi_o^{MISS} Year + \sum \lambda_p^{MISS} Ind + u_{ij} \quad \text{if j} \notin \text{group of MBE,} \tag{3b}$$

where *Earnings* is defined as the Compustat actual earnings; all other variables are as previously defined. We use $\beta_1^{MBE} + 2\beta_2^{MBE} \times Earnings$ ($\beta_1^{MISS} + 2\beta_2^{MISS} \times Earnings$) to measure the extent to which earnings affect loan terms for firms with *MBE*=1 (firms with *MBE*=0).[15] As such, if prospect theory can explain our findings in Tables 4 and 5, we predict that the MBE benefits functions are steepest around zero unexpected earnings benchmarks, and are concave in gains and convex in losses relative to earnings. Stated differently, we expect (1) that β_2^{MBE} (β_2^{MISS}) is negative (positive), and (2) that $\beta_1^{MBE} + 2\beta_2^{MBE} \times Earnings < \beta_1^{MISS} + 2\beta_2^{MISS} \times Earnings$. Table 7 summaries the results for models (3a) and (3b).

The left side of Table 7 describes the results of the full sample firms. For our spread analyses, Panel A indicates that the coefficient of *Earnings*^{2}, β_2^{MBE} (β_2^{MISS}), is negative (positive) among firms meeting (missing) expectations, as predicted. To test our second prediction, we first calculate the estimated value of

[15] The reason for doing so is that the slope of a quadratic function ax^2+bx+c is $2ax+b$.

$\beta_1^{MBE} + 2\beta_2^{MBE} \times Earnings$ for every observation with *MBE*=1 from equation (3a). Similarly, we calculate the estimated value of $\beta_1^{MISS} + 2\beta_2^{MISS} \times Earnings$ for every observation with *MBE*=0 from equation (3b). Next, we compare the mean (median) of estimated values of $\beta_1^{MBE} + 2\beta_2^{MBE} \times Earnings$ and that of $\beta_1^{MISS} + 2\beta_2^{MISS} \times Earnings$. As revealed in Panel B, the means (medians) of $\beta_1^{MBE} + 2\beta_2^{MBE} \times Earnings$ are significantly larger than those of $\beta_1^{MISS} + 2\beta_2^{MISS} \times Earnings$, contrary to our predictions.

As mentioned above, the slope of the value function in prospect theory is steepest near the reference point. Therefore, the inconsistent results above may be driven by the inclusion of firms reporting earnings by large amounts. As such, we restrict our sample into firm-quarters with earnings surprises that do not exceed the absolute value of 0.005 (Burgstahler and Dichev 1997).[16]

The right-hand side of Table 7 shows the results of this subsample. It can be seen that the coefficient of *Earnings*^{2}, β_2^{MBE} (β_2^{MISS}), is significantly negative (positive) among firms meeting (missing) expectations, as predicted. In addition, the mean (median) of $\beta_1^{MBE} + 2\beta_2^{MBE} \times Earnings$ are significantly smaller than that of $\beta_1^{MISS} + 2\beta_2^{MISS} \times Earnings$, in line with our predictions. More specifically, untabulated results show that about 99% of the estimated values of $\beta_1^{MBE} + 2\beta_2^{MBE} \times Earnings$ and $\beta_1^{MISS} + 2\beta_2^{MISS} \times Earnings$ are positive.

Overall, our empirical results provide direct evidence that even though banks are unlikely to use earnings as a heuristic or reference point to determine loan spread

[16] We also use the scaled earnings surprise with internal widths of 0.0025, and the results remain qualitatively unchanged.

due to superior access to information about borrowers, the prospect theory framework still can explain their loan behaviors. The findings in this section are in line with the argument by Degeorge et al. (1999) that there is a salient dividing line between meeting and missing the norm and saliency makes the norm itself a focal point, which reinforces lenders' psychological properties.

[INSERT Table 7 HERE]

The effects of other earnings thresholds on loan terms

Brown and Caylor (2005) show that, in recent years, managers' propensity to meet analysts' earnings expectations exceeds their propensity to avoid either earnings losses or earnings decreases. Thus, to shed light on whether the findings on MBE in public financial markets can generalize to private loan market, we focus our analyses on the analysts' earnings forecasts benchmark. In this section, we further explore the effects of other two earnings thresholds on loan terms--- avoidance of losses and earnings decreases.

To test for the effect of avoidance of earnings losses on loan terms, we replace *MBE* with *AvoidLosses*s in equations (1) and (2). *AvoidLosses*s is an indicator variable taking the value of one if a firm's basic earnings per share before extraordinary items is greater than or equal to 0 at quarter *q* in year *t*, and zero otherwise. In addition, for the set of *Borrower_Specific* control variables in equations (1) and (2), we replace *EarSurp* with *EPS* to control for the effect of earnings on loan terms. *EPS* is defined to be a firm's basic earnings per share before extraordinary items at quarter *q* in year *t* divided by its stock price at the beginning of quarter *q*. All other variables are as previously defined in equations (1) and (2).

Similarly, to examine the effect of avoidance of earnings decreases, we replace

MBE with *AvoidDecreases* in equations (1) and (2). *AvoidDecreases* is an indicator variable taking the value of one if a firm's earnings per share before extraordinary items at quarter *q* in year *t* is greater than or equal to the same in year *t-1*, and zero otherwise. Further, we replace *EarSurp* with *EarChanges* to control for the effect of earnings on loan terms, where *EarChanges* is defined to the change in a firm's basic earnings per share before extraordinary items between quarter *q* in year *t* and quarter *q* in year *t-1*, divided by its stock price at the beginning of quarter *q* in year *t-1*. All other variables are as previously defined.

The results are presented in Table 8. For brevity, we do not report the empirical results of control variables. Panels A indicates that irrespective of avoidance of earnings losses or earnings decreases, meeting or beating earnings thresholds has a lower spread and longer maturity. Panel B shows that all results are broadly comparable to those in Table 5, indicating that regardless of reporting profits or reporting earnings increases, the benefits of meeting thresholds are more pronounced for firms in financial distress than for financially sound firms.

Overall, the findings in Table 8 indicate that although reporting profits and reporting earnings increases are associated with favorable loan terms, their effects are stronger when firms are in financial distress.

[INSERT TABLE 8 HERE]

5.4 Additional Robustness Tests

Endogeneity issue

Recall that it is possible that loan spread and loan maturity are determined jointly. For example, on one hand, borrowers with poor accounting quality tend to have higher spread and shorter maturity contract terms (Bharath et al. 2008); on the

other hand, lenders limit their exposure through forcing riskier borrowers taking short-term loans (Gottesman and Roberts 2004). To address this question, we estimate the simultaneous equations, in which the loan spread and maturity are jointly determined.

First, we rely on asset maturity as affecting loan maturity but exogenous to loan spread. Following Stohs and Mauer (1996), they find that firms with longer-term asset maturities tend to use longer-term debt. Therefore, for our spread analyses, we use asset maturity as our instrument for loan maturity.[17] Next, we find that *MB, PPE, Z-SCORE* and *Performance Pricing* are insignificant when incorporated into the maturity model, but significant when incorporated into the loan model. The results indicate that *MB, PPE, Z-SCORE* and *Performance Pricing* are exogenous for maturity. As a result, for our maturity analyses, we use *MB, PPE, Z-SCORE* and *Performance Pricing* as the instrument variables for loan spread. In sum, asset maturity is used as the instrument variable for spread analyses, and *MB, PPE, Z-SCORE* and *PR* are used as the instrument variables for maturity model.

The empirical results, as evidenced in Table 9, confirm that allowing for the joint determination of the loan spread and maturity does not affect our primary inferences.

[INSERT TABLE 9 HERE]

Analysis unit of loans

The analyses presented here so far are based on the facility or tranches level, as opposed to deal level. In this section, we repeat analyses of Hypotheses 1 and 2 at the

[17] Following Johnson (2003), asset maturity is (gross property, plant, and equipment, PPE)/total assets) × (gross PPE/depreciation expense) + (current assets/total assets) × (current assets/ cost of goods sold).

deal level.[18] The untabulated results indicate that all results remain unchanged qualitatively in the deal-level analyses. Therefore, our conclusions are robust to different analysis unit of loans.

6. Conclusions

Prior studies on MBE document in the context of public financial market that firms meeting or beating earnings expectations have higher equity valuation and lower bond yield spread. In this paper, we examine whether the extant findings on MBE can generalize to private loan market. Specifically, we investigate in the context of private loan market whether firms meeting or beating analysts' expectations have favorable contractual loan terms than firms missing expectations.

Using a sample of listed loan firms in Dealscan database during 1996-2011, we first find that firms meeting or beating earnings expectations have lower loan spread and longer loan maturity than those falling to meeting earnings expectations, consistent with our predictions. Second, we find that the benefits of MBE, in terms of lower loan spread and longer maturity, are more pronounced for firms in financial distress than financially sound firms. Third, the results indicate that the benefits of MBE increase with the frequency of a borrower' MBE.

In private loan market, due to superior access to borrowers' information and ability to process information, banks are unlikely to use earnings as a heuristic or reference point to determine loan terms. However, further analyses do find that private lenders' loan behaviors can be explained by prospect theory framework. Specifically, in our analyses of MBE benefits, as proxied by lower loan spread, and earnings

[18] The spread and maturity of a deal are computed using the average of each facility. The respective qualitative loan features we observe for each loan deal are binary variables by identifying if any facility belonging to the same deal contains specific loan feature. As to the respective quantitative loan features, we also take the average of each facility to be our research variables at deal level.

association, we find that MBE benefits functions are concave in gains and convex in losses relative to earnings, in line with prospect theory.

Finally, we explore the effects of other two earnings thresholds, avoiding earnings losses and avoiding earnings decreases, on loan terms, and find that the effect of avoiding earnings losses is stronger than that of avoiding earnings decreases, and the effects of these two thresholds are more pronounced for firms in financial distress than for financially sound firms.

APPENDIX
Variable Definitions

Test variables

MBE — An indicator variable taking a value of one if a firm meeting or beating earnings expectations, and zero otherwise.

Firm-specific variables

SIZE — Defined as the natural log of total assets in millions of dollars (data mnemonic ATQ).

LEV — Defined as the long-term debt (data mnemonic LTQ) / total assets (data mnemonic ATQ).

MB — Measured as the market value of equity plus the book value of debt (data mnemonic CSHOQ * data mnemonic PRCCQ + data mnemonic ATQ - data mnemonic CEQQ) / total assets (data mnemonic ATQ).

EBIDTA — Earnings before interest, taxes, depreciation, and amortization (data mnemonic OIBDPQ) / total assets (data mnemonic ATQ).

PPE — Net property, plant, equipment (data mnemonic PPENTQ) / total assets (data mnemonic ATQ).

STD_CF — Cash-flow volatility, defined as the standard deviation of quarterly cash flows from operations (quarterly data item OANCFY) / total assets (data mnemonic ATQ) over the past four fiscal years before the loan initiation year.

Z-SCORE — The probability of the bankruptcy score based on Zmijewski (1984), with higher values indicating a higher probability of distress. The distress score is calculated as follow:

$$Z\text{-}SCORE=\int_{-\infty}^{z^*}\frac{1}{\sqrt{2\pi}}e^{-\frac{z^2}{2}}dz$$

where z*=-4.336-4.513*(Net Income/Total Assets)+5.679*(Total Liabilities/Total Assets)+0.04*(Current Assets/Current Liabilities).

AbsDA — To measure the accrual-based earnings management, we adopt the Modified Jones Model (Jones, 1991) and use a cross-sectional model to calculate discretionary accruals, where for each year we estimate the model for each 2-digit SIC grouping. We require each 2-digit SIC grouping has at least 8 observations per year. The accrual-based earnings management is measured as the residuals obtained by estimating the following regression:

$$\left(ACC_{jt}/ASSET_{jt-1}\right)=\alpha_{0t}\left(1/ASSET_{jt-1}\right)+\alpha_{1t}\left(\Delta SALES_{jt}/ASSET_{jt-1}\right)+\alpha_{2t}\left(PPE_{jt}/ASSET_{jt-1}\right)+\varepsilon_{jt}$$

BIG4 — Indicator variable equal to 1 if the auditor is one of the Big 4 auditors, and 0 otherwise.

Loan-specific variables

Loan Spread — Measured by all-in spread drawn, which is calculated as the amount the firm (borrower) pays in basis points over LIBOR (or LIBOR equivalent) for each dollar drawn down. This measure adds the borrowing spread of the loan over LIBOR with any annual fee paid to the bank group (data are obtained from the LPC Dealscan database).

Maturity — The natural log of one plus maturity; maturity is defined as the maturity period of the bank loan measured with the number of months (data are obtained from the LPC Dealscan database).

Loan Size — The natural log of the dollar amount of loan facility (data are obtained from the LPC Dealscan database).

Lenders Number — The natural log of one plus the number of lenders; the number of lenders is defined as the number of lending banks for each loan facility.

Performance Pricing — Indicator variable equal to 1 if loan contract includes performance pricing options, and 0 otherwise.

Collateral — Indicator variable equal to 1 if the loan facility is secured with collateral, and 0 otherwise.

(continued on next page)

APPENDIX (continued)

Financial Covenants	Financial Covenant Index constructed by counting the number of financial covenants contained in the loan contract, including: (1) Max. capital expenditure (2) Min. fixed charge coverage, (3) Min. debt service coverage, (4) Min. interest coverage, (5) Min. cash interest coverage, (6) Max. leverage ratio, (7) Max. debt to cash flow, (8) Max. senior debt to cash flow, (9) Max. debt to tangible net worth, (10) Max. debt to equity, (11) Min. current ratio, (12) Min. quick ratio, (13) Min. tangible net worth, (14) Min. net worth, (15) Max. loan to value, (16) Min. EBITDA, (17) Max. debt to EBITDA, (18). Max. senior debt to EBITDA.
Loan purpose	
Corporate purposes	An indicator variable taking the value of 1 if the loan is issued for corporate purposes and 0 otherwise.
Debt repayment	An indicator variable taking the value of 1 if the loan is issued for debt repayment and 0 otherwise.
Working capital	An indicator variable taking the value of 1 if the loan is issued for working capital and 0 otherwise.
Takeover	An indicator variable taking the value of 1 if the loan is issued for takeover and 0 otherwise.
CP backup	An indicator variable taking the value of 1 if the loan is issued for CP backup and 0 otherwise.
Acquisition	An indicator variable taking the value of 1 if the loan is issued for acquisition and 0 otherwise.
Loan type	
Term loan	An indicator variable taking the value of 1 if the loan's type is term loan and 0 otherwise.
Revolver >1 yr.	An indicator variable taking the value of 1 if the loan's type is revolver greater than one year and 0 otherwise.
Revolver <1 yr.	An indicator variable taking the value of 1 if the loan's type is revolver less than one year and 0 otherwise.
364-day facility	An indicator variable taking the value of 1 if the loan's type is 364-day facility and 0 otherwise.
Macroeconomic variable	
Term Spread	The difference in the yield between 10-year and 2-year U.S. Treasury bonds measured one month before the loan becomes active (data are obtained from the Federal Reserve Board of Governors).
Credit Spread	The difference in the yield between BAA- and AAA-rated corporate bonds measured one month before the loan becomes active (data are obtained from the Federal Reserve Board of Governors).

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FIGURE 1

Time-line Illustration of Measurement of Analysts' Forecast Variables

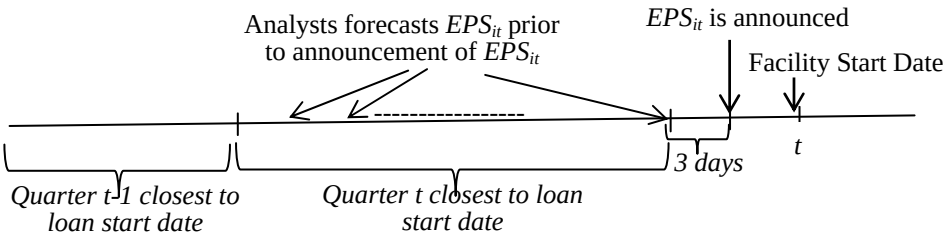
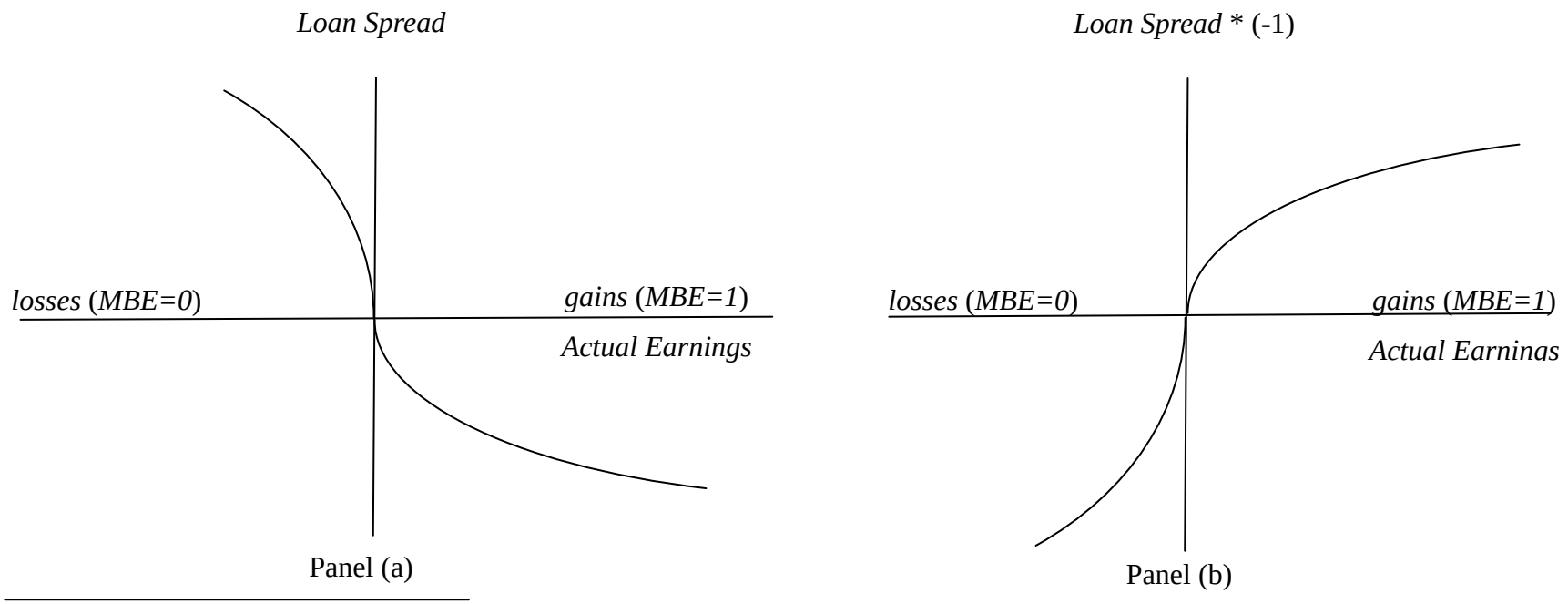


FIGURE 2

Value Function of Spread-Earnings Association under the Framework of Prospect Theory



This figure presents the value function perceived by lenders we expect to observe earnings-increasing management around wealth reference points—in our setting, in the vicinity of zero changes of unexpected earnings. Panel (a) demonstrates the negative relation between *Loan Spread* and actual earnings. Panel (b) shows the positive relation between negative *Loan Spread* and actual earnings if we multiply *Loan Spread* by negative one to convert it into S-shaped value function as postulated in prospect theory

TABLE 1
Sample Selection Process

	Facilities	Deals	Firms
Full sample of DealScan from 1986~2011	252,990	174,219	65,104
Sample after elimination of facilities to non-U.S. firms	120,324	84,896	31,254
Sample after elimination of facilities issued in foreign currencies, partially or unconfirmed loans	74,812	50,283	15,474
After elimination of facilities with missing AISD, maturity, facility amount, deal amount	57,941	38,530	12,815
Intersection with DealScan-Compustat linking table	37,252	26,002	6,529
Keeping loans with facility active date from 1996~2011, intersecting with Compustat/IBES, eliminating missing Compustat/IBES data, eliminating facilities with regulated utilities and financial industries	8,494	6,202	2,064

TABLE 2

Comparison of Research Variables among Firms that Meet/Beat Earnings Thresholds in the Most Recent Quarter

Variables	*MBE*=1 (5,058)			*MBE*=0 (3,436)			*MBE*=1 v.s. *MBE*=0	*DISTRESS*=1 v.s. *DISTRESS* =0
	DISTRESS =1 (2,034)	*DISTRESS* =0 (3,024)	Diff	*DISTRESS* =1 (1,823)	*DISTRESS* =0 (1,613)	Diff		
EarSurp	0.005	0.002	0.003***	-0.018	-0.003	-0.015***	0.014***	-0.006***
Borrower specific variables								
SIZE	7.875	7.289	0.586***	7.596	7.017	0.579***	0.201***	0.549***
LEV	0.346	0.162	0.184***	0.366	0.156	0.210***	-0.032***	0.195***
MB	0.397	1.560	-1.164***	0.330	1.242	-0.912***	0.334***	-1.084***
EBIDTA	0.022	0.041	-0.019***	0.012	0.031	-0.019***	0.013***	-0.020***
PPE	0.384	0.272	0.112***	0.389	0.301	0.088***	-0.030***	0.104***
STD_CF	0.045	0.061	-0.016***	0.046	0.061	-0.015***	0.001***	-0.015***
Z-SCORE	0.362	0.105	0.257***	0.385	0.111	0.274***	-0.048***	0.266***
AbsDA	0.034	0.037	-0.003**	0.035	0.035	0.000	0.000	-0.002*
BIG4	0.967	0.959	0.008	0.957	0.950	0.007	0.008*	0.006
Loan specific variables								
Loan Spread	190.90	134.80	56.10***	210.30	140.30	70.00***	-20.052***	63.36***
Maturity (months)	49.563	46.785	2.778***	45.943	43.227	2.716***	3.234***	2.304***
Loan Size ($M)	596	514	82.00**	419	397	22.1	138***	27.60
Lenders Number	12.208	9.775	2.433***	10.513	8.831	1.682***	1.030***	1.961***

(continued on next page)

TABLE 2 (continued)

Variables	MBE=1 (5,058)			MBE=0 (3,436)			MBE=1 v.s. MBE=0	Distress=1 v.s. Distress=0
	Distress=1 (2,034)	Distress=0 (3,024)	Diff	Distress=1 (1,823)	Distress=0 (1,613)	Diff		
Loan specific variables								
Performance Pricing	0.530	0.601	-0.071***	0.507	0.579	-0.072***	0.032***	-0.074***
Collateral	0.371	0.293	0.077***	0.425	0.313	0.112***	-0.048***	0.096***
Financial Covenants	1.571	1.536	0.035	1.549	1.445	0.105**	0.050*	0.057*
Purpose of loan indicators								
Corporate purposes	0.394	0.334	0.060***	0.339	0.281	0.058***	0.047***	0.052***
Debt repayment	0.119	0.087	0.032***	0.188	0.167	0.021***	-0.078***	0.037***
Working capital	0.160	0.205	-0.045***	0.161	0.169	-0.007	0.022***	-0.032***
Takeover	0.133	0.143	-0.010	0.107	0.126	-0.019*	0.023***	-0.016**
CP backup	0.080	0.100	-0.020**	0.088	0.139	-0.051***	-0.020***	-0.030***
Acquisition	0.040	0.058	-0.018***	0.027	0.052	-0.025***	0.012**	-0.022***
Loan type indicators								
Term loan	0.271	0.180	0.091***	0.273	0.167	0.104***	-0.007	0.096***
Revolver > 1 yr.	0.560	0.610	-0.050***	0.541	0.580	-0.038**	0.031***	-0.048***
Revolver <1 yr.	0.008	0.010	-0.002	0.016	0.019	-0.003	-0.008***	-0.001
364-day facility	0.114	0.143	-0.029***	0.132	0.182	-0.050***	-0.024***	-0.035***

(continued on next page)

TABLE 2 (continued)

Variables	MBE=1 (5,058)			MBE=0 (3,436)			MBE=1 v.s. MBE=0	Distress=1 v.s. Distress=0
	Distress=1 (2,034)	Distress=0 (3,024)	Diff	Distress=1 (1,823)	Distress=0 (1,613)	Diff		
Macroeconomic variable								
Term Spread	1.320	1.088	0.233***	1.092	0.987	0.105***	0.139***	0.160***
Credit Spread	0.943	0.967	-0.024**	0.932	0.944	-0.012	0.020**	-0.021***

*, **, *** indicate the coefficient estimate is significantly different from zero at the 0.10, 0.05, and 0.01 levels, using a two-sided test.

All variables are defined as in APPENDIX. The sample consists of 8,494 facility-years from 1996 to 2011.

TABLE 3
Correlation Analysis

	Pearson Correlation Coefficients		Spearman Correlation Coefficients	
Variables	*Loan Spread*	*Maturity*	*Loan Spread*	*Maturity*
Loan Spread	—	0.165***	—	0.197***
Testing variable				
MBE	-0.077***	0.070***	-0.072***	0.052***
Borrower specific variables				
SIZE	-0.320***	-0.131***	-0.439***	-0.121***
LEV	0.238***	0.143***	0.217***	0.119***
MB	-0.189***	-0.089***	-0.337***	-0.023***
EBIDTA	-0.212***	0.005	-0.279***	0.030***
PPE	-0.016	-0.004	-0.034***	-0.020***
STD_CF	0.023**	-0.048***	-0.029***	-0.063***
Z-SCORE	0.170***	0.044***	0.097***	0.011*
AbsDA	0.078***	-0.001	0.089***	-0.031****
BIG4	-0.150***	0.001	-0.146***	0.009
Loan specific variables				
Loan Size ($M)	-0.191***	-0.058***	-0.393***	0.027***
Lenders Number	-0.194***	0.061***	-0.276***	0.069***
Performance Pricing	-0.138***	0.097***	-0.019**	0.090***
Collateral	0.384***	0.219***	0.475***	0.211***
Financial Covenants	0.228***	0.169***	0.344***	0.167***
Purpose of loan indicators				
Corporate purposes	0.006	0.032***	0.025***	0.048**
Debt repayment	-0.026**	0.061***	-0.009	0.062***
Working capital	0.014	-0.010	0.052***	-0.017**
Takeover	0.091***	0.107***	0.137***	0.104***
CP backup	-0.316***	-0.353***	-0.410***	-0.336***
Acquisition	0.051***	0.015	0.083***	0.009
Loan type indicators				
Term loan	0.362***	0.331***	0.368***	0.318***
Revolver > 1 yr.	-0.104***	0.230***	-0.025***	0.240***
Revolver <1 yr.	0.017	-0.189***	-0.006	-0.179***
364-day facility	-0.329***	-0.619***	-0.405***	-0.599***
Macroeconomic variable				
Term Spread	0.260***	-0.090***	0263***	-0.124***
Credit Spread	0.298***	-0.118***	0.255***	-0.086***

*, **, *** indicate the coefficient estimate is significantly different from zero at the 0.10, 0.05, and 0.01 levels, using a two-sided test. All variables are defined as in APPENDIX. The sample consists of 8,494 facility-years from 1996 to 2011.

TABLE 4
Spread and Maturity as a Function of Meeting/Beating Earnings Expectations —Least Squares Regression

	Loan Spread	*Maturity*
Testing variable		
MBE	-0.077*** (-3.68)	0.029*** (3.23)
Borrower specific variables		
EarSurp	-0.459** (-1.92)	0.152* (1.48)
SIZE	-0.115*** (-10.08)	-0.029*** (-5.92)
LEV	0.773*** (9.55)	0.130*** (3.72)
MB	-0.083*** (-8.29)	-0.001 (-0.22)
EBIDTA	-2.607*** (-6.63)	0.534*** (3.15)
PPE	-0.151** (-2.23)	0.017 (0.57)
STD_CF	0.734** (1.67)	-0.719*** (-4.26)
Z-SCORE	0.335*** (5.79)	-0.020 (-0.78)
AbsDA	-0.041 (-0.17)	-0.064 (-0.63)
BIG4	-0.237*** (-4.73)	0.048** (2.21)
Loan specific variables		
Loan Spred	—	-0.025*** (-5.35)
Maturity	-0.135*** (-5.35)	—
Loan Size ($M)	-0.117*** (-9.40)	0.012** (2.31)
Lenders Number	-0.070*** (-4.26)	0.098*** (13.95)
Performance Pricing	-0.403*** (-17.08)	-0.007 (-0.71)
Collateral	0.477*** (18.67)	0.059*** (5.29)
Financial Covenants	0.050*** (5.03)	-0.009** (-2.09)
Purpose of loan indicators		
Corporate purposes	-0.805*** (-20.00)	-0.121*** (-6.83)
Debt repayment	-0.657*** (-14.19)	-0.093*** (-4.59)
Working capital	-0.781*** (-17.78)	-0.154*** (-8.04)
Takeover	-0.449*** (-9.86)	-0.100*** (-5.10)
CP backup	-0.963*** (-18.08)	-0.084*** (-3.61)
Acquisition	-0.586*** (-10.24)	-0.147*** (-5.96)
Loan type indicators		
Term loan	0.192*** (3.77)	0.594*** (28.31)
Revolver > 1 yr.	-0.346*** (-7.15)	0.473*** (23.35)
Revolver <1 yr.	-0.427*** (-4.31)	-1.123*** (-27.42)
364-day facility	-0.812*** (-13.86)	-0.832*** (-34.92)
Macroeconomic variables		
Term Spread	0.163*** (4.68)	-0.027** (-1.81)
Credit spread	0.249*** (4.68)	-0.063*** (-3.08)
Intercept	5.969*** (19.94)	3.174*** (24.95)
Year and Industry	Yes	Yes
Adj. R^2	0.5669	0.6704

*, **, *** indicate the coefficient estimate is significantly different from zero at the 0.10, 0.05, and 0.01 levels, using a one -sided test. All variables are defined as in APPENDIX. The sample consists of 8,494 facility-years from 1996 to 2011.

Table 5
Loan Terms as a Function of Meeting/Beating Earnings Expectations and Financial Distress

Panel A: Two-by-two Analysis of Spread conditional on Meeting/Beating Earnings Expectations and Financial Distress

	Financial distress	Financial soundness	Diff.
Meeting/Beating earnings expectations	5.927 (2,034)	5.653 (3,024)	0.274***
Missing earnings expectation	6.044 (1,823)	5.687 (1,613)	0.357***
Diff.	-0.117***	-0.034	-0.084**

Panel B: Two-by-two Analysis of Maturity conditional on Meeting/Beating Earnings Expectations and Financial Distress

	Financial distress	Financial soundness	Diff.
Meeting/Beating earnings expectations	3.203 (2,034)	3.201 (3,024)	0.002
Missing earnings expectation	3.160 (1,823)	3.185 (1,613)	-0.025***
Diff.	0.043***	0.016*	0.027*

Panel C: Pooled Regressions

	Loan Spread	*Maturity*
Testing variables		
MBE	-0.034 (-1.21)	0.016* (1.36)
DISTRESS	0.357*** (10.15)	-0.025* (-1.63)
*MBE *DISTRESS*	-0.084** (-2.14)	0.027* (1.57)
Borrower specific variables		
EarSurp	-0.459** (-1.93)	0.140* (1.45)
SIZE	-0.131*** (-11.43)	-0.029*** (-5.74)
LEV	0.619*** (7.61)	0.137*** (3.87)
MB	-0.051*** (-4.95)	-0.001 (-0.33)
EBIDTA	-1.942** (-4.93)	0.511*** (2.99)
PPE	-0.196*** (-2.92)	0.017 (0.58)
STD_CF	0.931*** (2.39)	-0.728*** (-4.30)
Z-SCORE	0.147*** (2.46)	-0.015** (-0.57)
AbsDA	-0.038 (-0.16)	-0.062 (-0.61)
BIG4	-0.214*** (-4.31)	0.047** (2.18)
Loan specific variables		
Loan Spread	—	-0.024*** (-5.17)
Maturity	-0.130*** (-5.17)	—
Loan Size ($M)	-0.108*** (-8.69)	0.012** (2.27)
Lenders Number	-0.072*** (-4.41)	0.098*** (13.95)
Performance Pricing	-0.393*** (-16.79)	-0.007 (-0.72)
Collateral	0.464*** (18.30)	0.059*** (5.30)
Financial Covenants	0.051*** (5.16)	-0.009** (-2.10)

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TABLE 5 (continued)

	Loan Spread	*Maturity*
Purpose of loan indicators		
Corporate purposes	-0.801*** (-20.07)	-0.120*** (-6.81)
Debt repayment	-0.666*** (-14.48)	-0.092*** (-4.57)
Working capital	-0.787*** (-18.05)	-0.153*** (-7.99)
Takeover	-0.458*** (-10.13)	-0.100*** (-5.08)
CP backup	-0.938*** (-17.74)	-0.085*** (-3.64)
Acquisition	-0.566*** (-9.97)	-0.148*** (-5.97)
Loan type indicators		
Term loan	0.171*** (3.39)	0.594*** (28.33)
Revolver > 1 yr.	-0.362*** (-7.54)	0.474*** (23.38)
Revolver <1 yr.	-0.435*** (-4.42)	-1.123*** (-27.40)
364-day facility	-0.817*** (-14.07)	-0.831*** (-34.87)
Macroeconomic variables		
Term Spread	0.163*** (5.59)	-0.028** (-1.84)
Credit Spread	0.264*** (5.59)	-0.064*** (-3.09)
Intercept	5.687*** (19.08)	3.185*** (25.00)
Year and Industry	Yes	Yes
Adj. R^2	0.5738	0.6705

*, **, *** indicate the coefficient estimate is significantly different from zero at the 0.10, 0.05, and 0.01 levels, using a one-sided test. All variables are defined as in APPENDIX. The sample consists of 8,494 facility-years from 1996 to 2011.

TABLE 6
Spread and Maturity as a Function of Habitual Meeting/Beating Earnings Expectations and Financial Distress

	Loan Spread		*Maturity*	
Testing variables				
FMBE4	-0.045*** (-2.36)	0.004 (0.17)	0.013* (1.59)	0.010 (0.97)
DISTRESS	–	0.595*** (5.47)	–	-0.042 (-0.87)
*FMBE4*DISTRESS*	–	-0.103*** (-2.99)	–	0.006 (0.37)
Borrower specific variables				
EarSurp	-1.888 (-1.01)	-1.204 (-0.65)	-0.587 (-0.73)	-0.621 (-0.76)
SIZE	-0.115*** (-5.25)	-0.123*** (-5.68)	-0.041*** (-4.38)	-0.041*** (-4.27)
LEV	1.109*** (6.20)	0.907*** (5.05)	0.230*** (2.95)	0.244*** (3.10)
MB	-0.107*** (-5.44)	-0.078*** (-3.85)	-0.006 (-0.68)	-0.008 (-0.93)
EBIDTA	-2.174*** (-3.35)	-1.860*** (-2.89)	1.002*** (3.58)	0.979*** (3.49)
PPE	-0.173* (-1.34)	-0.198* (-1.54)	-0.123** (-2.21)	-0.121** (-2.16)
STD_CF	1.709** (2.02)	2.221*** (2.63)	-0.576* (-1.57)	-0.622* (-1.69)
Z-SCORE	0.137 (1.15)	-0.029 (-0.24)	-0.045 (-0.87)	-0.031 (-0.58)
AbsDA	-0.220 (-0.47)	-0.202 (-0.44)	0.270* (1.33)	0.268* (1.33)
BIG4	-0.307*** (-2.92)	-0.316*** (-3.02)	-0.060* (-1.33)	-0.060* (-1.31)
Loan Specific variables				
Loan Spread	—	—	-0.001 (-0.13)	0.000 (0.04)
Maturity	-0.00 (-0.13)	0.002 (0.04)	—	—
Loan Size ($M)	-0.123*** (-5.40)	-0.114*** (-5.04)	0.002 (0.20)	0.001 (0.15)
Lenders Number	-0.102*** (-3.20)	-0.105*** (-3.33)	0.132*** (9.81)	0.132*** (9.83)
Performance Pricing	-0.382*** (-14.46)	-0.351*** (-8.11)	-0.082*** (-4.32)	-0.082*** (-4.32)
Collateral	0.425*** (14.62)	0.395*** (7.97)	0.097*** (4.451)	0.098*** (4.50)
Financial Covenants	0.040** (1.91)	0.041** (1.94)	-0.023*** (-2.53)	-0.023*** (-2.54)

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TABLE 6 (continued)

	Loan Spread		*Maturity*	
Macroeconomic variables				
Term Spread	0.155*** (2.64)	0.162*** (2.78)	-0.077*** (-3.04)	-0.078*** (-3.07)
Credit Spread	0.213*** (2.80)	0.227*** (3.01)	-0.054* (-1.65)	-0.056*** (-1.69)
Intercept	6.587*** (11.52)	6.083*** (10.62)	3.526*** (14.50)	3.550*** (14.50)
Purpose of loan indicators	Yes	Yes	Yes	Yes
Loan type variables	Yes	Yes	Yes	Yes
Year and Industry	Yes	Yes	Yes	Yes
Adj. R^2	0.6030	0.6106	0.6898	0.6897

*, **, *** indicate the coefficient estimate is significantly different from zero at the 0.10, 0.05, and 0.01 levels, using a one -sided test. *FMBE4* is the frequency of firms meeting or beating earnings forecasts during one year before the loan initiation date. The sample consists of 2,494 facility-years from 1996 to 2011.

TABLE 7
Tests of Prospect Theory

$$Loan\ Spread_{ij} * (-1) = \beta_0^{MBE} + \beta_1^{MBE} Earnings_{ij} + \beta_2^{MBE} Earnibgs_{ij}^2 + \sum \alpha_k^{MBE} Loan\_Specific_{ijk} + \sum \delta_l^{MBE} Borrower\_Specific_{ijl} + \sum \gamma_m^{MBE} Lender\_Specific_{ijm} + \sum \theta_n^{MBE}\ Economy_{ijn} + \sum \pi_o^{MBE} Year + \sum \lambda_p^{MBE} Ind + u_{ij} \quad \text{if j} \in \text{group of MBE,} \tag{3a}$$

$$Loan\ Spread_{ij} * (-1) = \beta_0^{MISS} + \beta_1^{MISS} Earnings_{ij} + \beta_2^{MISS} Earnibgs_{ij}^2 + \sum \alpha_k^{MISS} Loan\_Specific_{ijk} + \sum \delta_l^{MISS} Borrower\_Specific_{ijl} + \sum \gamma_m^{MISS} Lender\_Specific_{ijm} + \sum \theta_n^{MISS}\ Economy_{ijn} + \sum \pi_o^{MISS} Year + \sum \lambda_p^{MISS} Ind + u_{ij} \quad \text{if j} \notin \text{group of MBE,} \tag{3b}$$

	Full Sample			Subsample[a]		
Panel A: *Regression Results*						
	EarSurp ≥ 0 (n=5,058)	*EarSurp* < 0 (n=3,436)		*EarSurp* ≥ 0 (n=4,308)	*EarSurp* < 0 (n=2,290)	
Earnings	1.049** (2.28)	0.646*** (2.43)		0.760 (1.16)	1.585** (2.01)	
Earnings^2	-0.598 (-0.63)	0.134 (1.25)		-2.558** (-1.65)	5.347*** (2.63)	
Adj. R^2	0.5717	0.5683		0.5806	0.6020	
Panel B[b]: Summary of $\hat{\beta}_1 + 2\hat{\beta}_2 \cdot Earnings$						
	EarSurp ≥ 0 Mean (Median)	*EarSurp* < 0 Mean (Median)	Mean Difference (Median Difference)	*EarSurp* ≥ 0 Mean (Median)	*EarSurp* <0 Mean (Median)	Mean Difference (Median Difference)
$\hat{\beta}_1 + 2\hat{\beta}_2 \cdot Earnings$	1.034 (1.032)	0.643 (0.649)	0.392*** (0.383***)	0.698 (0.690)	1.692 (1.701)	-0.994*** (-1.011***)

*, **, *** indicate the coefficient estimate is significantly different from zero at the 0.10, 0.05, and 0.01 levels, using a one -sided test. All variables are defined as in APPENDIX. The sample consists of 8,494 facility-years from 1996 to 2011.

[a] We restrict our sample into firm-quarters with earnings surprises that do not exceed the absolute value of 0.005.

[b] To test our second prediction, we first calculate the estimated value of $\hat{\beta}_1 + 2\hat{\beta}_2 \cdot Earnings$ for every observation with *MBE*=1 from equation (3a). Similarly, we estimate the predicted value of $\hat{\beta}_1 + 2\hat{\beta}_2 \cdot Earnings$ for every observation with *MBE*=0 from equation (3b). This panel provides the mean and median of $\hat{\beta}_1 + 2\hat{\beta}_2 \cdot Earnings$, along with mean t-tests and median Wilcoxon z-tests of differences across the two groups of firms meeting expectations and of firms missing expectations.

TABLE 8

Spread and Maturity as a Function of Meeting/Beating Earnings Benchmarks of Avoiding Losses and Decreases[a]

	Avoiding Earnings Losses		*Avoiding Earnings Decreases*	
	Spread	*Maturity*	*Spread*	*Maturity*
Panel A: Main results of H1				
Testing variables				
AVoidLoss	-0.408*** (-2.48)	0.139** (1.97)	–	–
AvoidDecrease	–	–	-0.086*** (-4.17)	0.020** (1.13)
Adj. R^2	0.5739	0.6701	0.5732	0.6677
N	8,494	8,494	8,066	8,066
Panel B: Main results of H2				
Testing variables				
Intercept	5.736*** (19.24)	3.201*** (24.90)	5.730*** (18.75)	3.173*** (24.04)
AvoidLoss	-0.208*** (-3.97)	-0.023 (-1.02)	–	–
AvoidDecrease	–	–	-0.005 (-0.19)	0.001 (0.06)
DISTRESS	0.462*** (7.92)	-0.069*** (-2.69)	0.396*** (11.02)	-0.030** (-1.91)
*AVoidLoss*DISTRESS*	-0.190*** (-3.21)	0.068*** (2.64)	–	–
*AvoidDecrease*DISTRESS*	–	–	-0.162*** (-4.10)	0.041*** (2.39)
Adj. R^2	0.5804	0.6703	0.5803	0.6679
N	8,494	8,494	8,066	8,066

(continued on next page)

TABLE 8 (continued)

*, **, *** indicate the coefficient estimate is significantly different from zero at the 0.10, 0.05, and 0.01 levels, using a one-sided test. All variables are defined as in APPENDIX. The sample consists of facility-years from 1996 to 2011. *AvoidLosses*=1 if a firm's basic earnings per share before extraordinary items is greater than or equal to 0 in quarter t; and 0 otherwise. *EPS* is defined to be a firm's basic earnings per share before extraordinary items at quarter *q* in year *t* divided by its stock price at the end of quarter *q*. *AvoidDecreases*=1 if a firm's earnings per share before extraordinary items at quarter q in year t is greater than or equal to that at quarter in year t-1, and 0 otherwise. *EarChanges* is defined to the change in a firm's basic earnings per share before extraordinary items between quarter *q* in year *t* and quarter *q* in year *t-1*, divided by its stock price at the beginning of quarter *q* in year *t-1*.

[a] The table presents the regression results of eqs. (4a) and (4b) for earnings thresholds of zero earnings and that of eqs. (5a) and (5b) for earnings thresholds of last quarter's earnings, respectively. For brevity, we do not report the empirical results of control variables.

TABLE 9

Spread and Maturity as a Function of Meeting/Beating Earnings Expectations—Simultaneous Regression

	Loan Spread	*Maturity*	*Loan Spread*	*Maturity*
Testing variables				
MBE	-0.080*** (-3.79)	0.030*** (3.34)	-0.035 (-1.26)	0.016* (1.36)
DISTRESS	–	–	0.360*** (10.22)	-0.029** (-1.93)
*MBE*DISTRESS*	–	–	-0.086** (-2.19)	0.028* (1.63)
Borrower specific variables				
EarSurp	-0.471** (-1.97)	0.164* (1.60)	-0.470** (-1.97)	0.147* (1.43)
SIZE	-0.113*** (-9.91)	-0.028*** (-5.85)	-0.129*** (-11.28)	-0.027*** (-5.55)
LEV	0.765*** (9.45)	0.105*** (4.07)	0.610*** (7.50)	0.121*** (4.25)
MB	-0.083*** (-8.29)	–	-0.051*** (-4.95)	–
EBIDTA	-2.652*** (-6.75)	0.561*** (3.53)	-1.982*** (-5.03)	0.494*** (3.00)
PPE	-0.152** (-2.26)	–	-0.197*** (-2.94)	–
STD_CF	0.789** (2.01)	-0.751*** (-4.61)	0.986*** (2.53)	-0.760*** (-4.66)
Z-SCORE	0.337*** (5.82)	–	0.148*** (2.48)	–
AbsDA	-0.036 (-0.15)	-0.076 (-0.75)	-0.033 (-0.14)	-0.067 (-0.67)
BIG4	-0.241*** (-4.81)	0.051*** (2.34)	-0.218*** (-4.38)	0.049** (2.28)
Loan specific variables				
Loan Spread	—	-0.018*** (-3.93)	—	-0.018*** (-3.84)
Maturity	-0.084*** (-3.55)	—	-0.081*** (-3.43)	—
Loan Size ($M)	-0.118*** (-9.49)	0.014*** (2.60)	-0.109*** (-8.78)	0.013*** (2.51)
Lenders Number	-0.078*** (-4.74)	0.099*** (14.35)	-0.080*** (-4.89)	0.099*** (14.31)
Performance Pricing	-0.403*** (-17.09)	—	-0.393*** (-16.79)	—
Collateral	0.473*** (18.53)	0.053*** (4.81)	0.460*** (18.16)	0.054*** (4.88)
Financial Covenants	0.051*** (5.11)	-0.010*** (-2.58)	0.052*** (5.23)	-0.010*** (-2.59)

(continued on next page)

TABLE 9 (continued)

	Loan Spread	*Maturity*	*Loan Spread*	*Maturity*
Purpose of loan indicators				
Corporate purposes	-0.797*** (-19.83)	-0.111*** (-6.35)	-0.794*** (-19.90)	-0.111*** (-6.38)
Debt repayment	-0.652*** (-14.07)	-0.085*** (-4.23)	-0.660*** (-14.37)	-0.085*** (-4.24)
Working capital	-0.771*** (-17.57)	-0.145*** (-7.65)	-0.777*** (-17.85)	-0.145*** (-7.62)
Takeover	-0.442*** (-9.72)	-0.095*** (-4.87)	-0.451*** (-9.99)	-0.095*** (-4.86)
CP backup	-0.968*** (-18.00)	-0.073*** (-3.15)	-0.933*** (-17.65)	-0.074*** (-3.22)
Acquisition	-0.576*** (-10.07)	-0.140*** (-5.68)	-0.556*** (-9.80)	-0.141*** (-5.73)
Loan type variables				
Term loan	0.147*** (2.97)	0.592*** (28.27)	0.128*** (2.60)	0.593*** (28.30)
Revolver > 1 yr.	-0.383*** (-8.05)	0.477*** (23.69)	-0.397*** (-8.42)	0.478*** (23.71)
Revolver <1 yr.	-0.343*** (-3.53)	-1.121*** (-27.39)	-0.354*** (-3.68)	-1.119*** (-27.35)
364-day facility	-0.750*** (-13.27)	-0.824*** (-34.79)	-0.758*** (-13.52)	-0.823*** (-34.74)
Macroeconomic variables				
Term Spread	0.165*** (4.75)	-0.029** (-1.95)	0.165*** (4.78)	-0.029** (-1.96)
Credit Spread	0.254*** (5.34)	-0.066*** (-3.23)	0.269*** (5.70)	-0.067*** (-3.25)
Intercept	5.830*** (19.47)	3.126*** (24.80)	5.553*** (18.63)	3.143*** (24.89)
Year and *Industry*	Yes	Yes	Yes	Yes
Adj. R^2	0.5664	0.6703	0.5733	0.6704

*, **, *** indicate the coefficient estimate is significantly different from zero at the 0.10, 0.05, and 0.01 levels, using a one-sided test. All variables are defined as in APPENDIX. The sample consists of 8,494 facility-years from 1996 to 2011.

赴香港移地研究心得報告

計畫編號	99-2410-H-004-059-MY3
計畫名稱	同業競爭對手迎合或擊敗盈餘預期是否重要呢?
出國人員姓名（服務機關及職稱）	金成隆（國立政治大學會計學系教授）
出國時間地點	2013.06.29~2013.07.02
香港地區研究機構	香港科技大學 (Hong Kong University of Science and Technology)

此次前往香港地區進行移地研究，主要是 Hong Kong University of Science and Technology，該校會計學系可以說是亞洲地區最好的會計研究單位。此次研究議題為"Does Meeting Analyst Forecasts Matter in Private Loan Market?"，主要是探討 meeting/beating analyst forecast 是否也是在私有的 loan market 存在?以及此一結果是否是起因於 prospect theory 或是 transaction cost theory。

此次移地研究，於中華民國一百零二年六月二十九日至七月二日赴香港進行學術交流。茲將工作記要列示如下：

工作記要：

2013/06/29 於早上搭乘 Cathay pacific 航空班機 CX465 到達香港機場，並入住香港市區旅館。

2013/06/30-2013/07/02 本人與 Hong Kong University of Science and Technology 會計系老師討論相關的合作文章，希望能透過該校較高的國際能見度，讓研究有機會發表在 Top Accounting Journal。討論過程，包括文章鋪陳，研究設計等，都做的深入的討

論。同時，我們也想到了一些其他進一步未來可以在研究與做的議題。

2013/07/2 於晚上香港機場搭乘 Cathay pacific 航空班機 CX4085 於當日到台灣桃園機場。

二、移第研究心得：

茲就此次參訪的心得分述如下：

1. Hong Kong University of Science and Technology是亞洲會計研究最好的學校，未來似乎可以在加強台灣與該校的合作。
2. 此次討論，讓本研究議題有更進一層的提昇，包括研究設計、假說內容、與文章結構等。
3. 經由此次討論，誘發展出一些新的合作移議題。
4. 此次國科會的補助計畫，有助於高水準研究文章的產生。

國科會補助計畫衍生研發成果推廣資料表

日期:2013/10/28

國科會補助計畫	計畫名稱: 同業競爭對手迎合或擊敗盈餘預期是否重要呢?
	計畫主持人: 金成隆
	計畫編號: 99-2410-H-004-059-MY3　　學門領域: 會計

無研發成果推廣資料

99 年度專題研究計畫研究成果彙整表

計畫主持人：金成隆	計畫編號：99-2410-H-004-059-MY3
計畫名稱：同業競爭對手迎合或擊敗盈餘預期是否重要呢?	

成果項目			量化			單位	備註（質化說明：如數個計畫共同成果、成果列為該期刊之封面故事...等）
			實際已達成數（被接受或已發表）	預期總達成數(含實際已達成數)	本計畫實際貢獻百分比		
國內	論文著作	期刊論文	80	100	100%	篇	
		研究報告/技術報告	0	0	100%		
		研討會論文	100	100	100%		2013 年兩岸學術研討會
		專書	0	0	100%		
	專利	申請中件數	0	0	100%	件	
		已獲得件數	0	0	100%		
	技術移轉	件數	0	0	100%	件	
		權利金	0	0	100%	千元	
	參與計畫人力（本國籍）	碩士生	0	0	100%	人次	
		博士生	0	0	100%		
		博士後研究員	0	0	100%		
		專任助理	0	0	100%		
國外	論文著作	期刊論文	0	100	100%	篇	目前即將投稿到 The Accounting Review
		研究報告/技術報告	0	0	100%		
		研討會論文	100	100	100%		已於 AAA 發表
		專書	0	0	100%	章/本	
	專利	申請中件數	0	0	100%	件	
		已獲得件數	0	0	100%		
	技術移轉	件數	0	0	100%	件	
		權利金	0	0	100%	千元	
	參與計畫人力（外國籍）	碩士生	0	0	100%	人次	
		博士生	0	0	100%		
		博士後研究員	0	0	100%		
		專任助理	0	0	100%		

其他成果 (無法以量化表達之成果如辦理學術活動、獲得獎項、重要國際合作、研究成果國際影響力及其他協助產業技術發展之具體效益事項等，請以文字敘述填列。)	無

	成果項目	量化	名稱或內容性質簡述
科教處計畫加填項目	測驗工具(含質性與量性)	0	
	課程/模組	0	
	電腦及網路系統或工具	0	
	教材	0	
	舉辦之活動/競賽	0	
	研討會/工作坊	0	
	電子報、網站	0	
	計畫成果推廣之參與（閱聽）人數	0	

國科會補助專題研究計畫成果報告自評表

請就研究內容與原計畫相符程度、達成預期目標情況、研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）、是否適合在學術期刊發表或申請專利、主要發現或其他有關價值等，作一綜合評估。

1. 請就研究內容與原計畫相符程度、達成預期目標情況作一綜合評估

■達成目標

□未達成目標（請說明，以 100 字為限）

□實驗失敗

□因故實驗中斷

□其他原因

說明：

2. 研究成果在學術期刊發表或申請專利等情形：

論文：□已發表 ■未發表之文稿 □撰寫中 □無

專利：□已獲得 □申請中 ■無

技轉：□已技轉 □洽談中 ■無

其他：(以 100 字為限)

已經於 AAA 發表,目前正在擬投稿至 The Accounting Reivew.本文具有一些創意,具有發表在好期刊的機會.

3. 請依學術成就、技術創新、社會影響等方面，評估研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）(以 500 字為限)

前正在擬投稿至 The Accounting Reivew.本文具有一些創意,具有發表在好期刊的機會.

This paper contributes to the literature. First, we document that MBE also has an effect on private loan market. To the best of our knowledge, this is the first to explore the effect of a firm's MBE on loan contract terms in the context of private debt market. Second, a distinctive feature of our research design is the development of an empirical model of prospect theory. We find that the main explanation for the findings in this paper is provided by the prospect theory. As a result, our paper enhances our further understanding of whether and why banks use earnings benchmarks to evaluate performance when designing loan contract terms.Third, we document that the MBE presence has a positive effect on multiple debt terms in loan market. Fourth, we find that the differential effect of MBE on loan terms varies with firms' financial position and MBE recurrence.