Loan Sales and Accounting Conservatism

Saiying Deng
College of Business
Southern Illinois University
sdeng@business.siu.edu
618-453-1418

Yutao Li
Faculty of Management
University of Lethbridge
yutao.li@uleth.ca
403-329-2129

Gerald J. Lobo
Bauer College of Business
University of Houston
gjlobo@uh.edu
713-743-4838

Pei Shao
Faculty of Management
University of Lethbridge
shao@uleth.ca
403-380-1845

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Abstract

We examine whether the onset of loan sales in the secondary loan market affects firms' financial reporting, particularly accounting conservatism. We find that firms with traded loans experience significant decline in accounting conservatism in the post-trading period. Furthermore, we document that firms that borrow from reputable and relationship lenders, and firms with higher loan trading liquidity experience more pronounced decline in accounting conservatism after initial loan sales. Collectively we provide evidence that loan sales dilute lenders' monitoring incentive, and in turn lower lenders' demand for conservative reporting. Our results are robust to self-selection bias of loan trading and several sensitivity checks.

JEL: G21, G30, L14

Keywords: Loan Sales; Accounting Conservatism; Monitoring Incentives

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1. Introduction

In this paper, we examine whether the onset of loan sales in the secondary loan market affects firms' financial reporting, particularly accounting conservatism. Because lenders have a fixed claim on a borrower's assets, they are more sensitive to the borrowing firm's bad news than good news. As a result, to protect themselves from the downside risk, lenders have a strong preference for accounting conservatism which involves more timely recognition of bad news than recognition of good news.

Empirical evidence suggests that, lenders reward firms that exhibit a higher level of accounting conservatism with a lower average cost of debt (Ahmed et al, 2002; Zhang, 2008). In addition, Wittenberg-Moerman (2008) documents that the average bid-ask spread for loans traded on the secondary loan market is lower for firms with more conservative reporting. A strand of recent research examines how lenders influence firms' conservative reporting. For example, Tan (2013) shows that lenders increase their demand for accounting conservatism when they obtain decision rights upon borrowers' covenant violations. Frankel, Kim, Ma, and Martin (2013) document that lenders impose contracting terms requiring the submission of accounting receivable aging reports, leading to more timely recognition of bad news and therefore more conservative accounting numbers.

In this paper, we investigate how the onset of secondary loan trading affects lenders' demand for conservative reporting. Traditional financial intermediation theories suggest that bank loans are illiquid assets. That is, banks are expected to hold their loans until maturity and conduct due diligence through continuing monitoring during the terms of a loan contract. Because of the illiquid nature of the loan assets, banks are more concerned about the potential

deterioration of loan/firm quality and therefore have stronger incentives to monitor the borrowers (Diamond 1984, 1991; Boyd and Prescott, 1986; among others). However, the development and rapid growth of the secondary loan market over the past two decades,[1] has made these once illiquid loan assets reasonably liquid, which could have important consequences for firms' behavior. The economic consequences of loan sales in the secondary loan market have drawn much interest in empirical finance research. For example, Dahiya, Puri, and Saunders (2003) find that the loan sales announcement is associated with negative stock returns, and Santos and Nigro (2009) document that loan sales result in higher interest rate spread on future loans. Gande and Saunders (2012) report that loan sales lead to increased bank loan availability and more durable lending relationship. However, none of the prior research examines how loan sales affect borrower accounting practice.

We conjecture that loan sales will reduce lenders' incentives to monitor borrowers, which in turn will lower lenders' demand for accounting conservatism. There are two reasons why lenders' monitoring incentives might be diluted after the onset of the secondary loan trading. First, loan sales separate loan origination, servicing, and funding, which may dilute the monitoring incentives of originating banks since they can more easily offload loans to loan buyers (Parlour and Plantin, 2008; Gande and Saunders, 2012; Kamstra, Roberts, and Shao, 2013). Therefore lenders may have less demand for accounting conservatism. Second, anecdotal evidence shows that the most active participants in the secondary loan market are institutional investors, including hedge funds, prime funds, finance companies, and insurance companies, *etc*. These investors lack the information advantage and monitoring skills of banks to monitor the borrower (Drucker and Puri, 2009). They also have less incentive to monitor because of their

[1] The trading volume of the secondary loan market increased from $8 billion in 1991 to $ 413 billion in 2010 representing a compound annual growth rate of 35.2 percent.

primary investment objectives and constraints (Nandy and Shao, 2011).[2] Thus, the onset of secondary loan trading is more likely to change the constitution of the original loan syndication structure to one involving more lenders with less monitoring incentive, resulting in a reduced demand for accounting conservatism from the syndicate lenders.

Using Dealscan and the secondary mark-to-market loan pricing data both provided by Thomson-Reuters Loan Pricing Corporation (LPC), we examine whether and how the onset of loan trading affects borrowing firms' accounting conservatism. Specifically, we identify a group of firms with loans traded on the secondary loan market for the first time as the loan sales sample (the treatment sample).[3] We then use propensity score matching to select a group of control firms with syndicated loans not traded within five years after loan issuance, but with otherwise similar firm and loan characteristics (the control sample). We use *C-Score*, cumulative non-operating accruals (*NonAcc*), and skewnesss of earnings relative to skewness of cash flow (*Skew*) (as alternative measures of accounting conservatism) as well as a composite measure constructed from the three individual measures. Using a difference-in-differences design, we find that accounting conservatism declines significantly for firms with traded loans in the post-loan trading period.

Next, we provide more corroborative evidence that the lack of monitoring incentives associated with loan sales leads to less conservative reporting. More specifically, we examine whether the drop in accounting conservatism is more pronounced for firms that borrow from reputable banks and relationship lenders. More reputable lenders are more skilled and specialized

[2] In the investment policy statement, hedge funds or prime funds normally specify an objective of a high rate of return combined with a strict requirement on the liquidity of the assets under their management. Therefore, their primary goal is to identify the investment opportunities that can meet these requirements. And, in a typical loan syndicate, the institutional investors often serve as syndicate participants and rely on lead arrangers to monitor the borrowers (See Nandy and Shao, 2011).

[3] If a firm has multiple traded loans, we only retain the 1st loan that's being traded.

in screening and monitoring borrowers. Bharath et al. (2007) show that banks with prior lending relationship usually can monitor the borrowers more efficiently and effectively because they hold reusable private information about borrowers from repeated lending in the past, thus reducing information asymmetry and facilitating continuing monitoring. To the extent that the onset of loan trading in the secondary market dilutes lenders' monitoring incentives, we argue that the monitoring incentives decrease more for firms borrowing from more reputable banks and relationship lenders, and hence those firms experience a more pronounced decline in accounting conservatism. Our empirical evidence supports such conjecture, suggesting the loss of monitoring incentives is greater in loans with stronger *ex ante* lender monitoring.

In addition, we predict that the decrease in monitoring incentives and demand for conservative reporting is more pronounced for loans with higher trading liquidity as higher loan trading liquidity makes it easier for lenders to sell the loan in case borrowers perform poorly. To assess such effect, we use loan bid-ask spread and the average number of quotes per traded loan as proxies for loan trading liquidity. We find firms with lower loan bid-ask spread and a larger number of trading quotes (i.e., higher trading liquidity) experience a significant decline in accounting conservatism after initial loan sale in the secondary market. On the other hand, for firms with high loan bid-ask spread and smaller number of trading quotes per loan (i.e., lower trading liquidity), we do not find any significant change in accounting conservatism after initial loan sale.

We conduct a series of robustness tests to ensure the validity of our results. To address the self-selection bias of loans being traded, we employ two-stage least squares (2SLS) instrumental variable approach with *Trade* as an endogenous variable. Using average loan bid price on the secondary loan market and the presence of financial covenants as instruments for

loan trading, we find our baseline results still hold, that is firms with traded loans experience significant decline in accounting conservatism after the initial loan sale. Our results are also robust to several sensitivity checks, including using a different event window, employing a constant sample requiring firms to be present in both the pre- and post- trading periods, and deleting loans started being traded after 2006 from the sample to avoid the confounding effect of the recent 2007~2009 financial crisis.

Our study adds to the literature exploring the driving forces of accounting conservatism. Although it has long been argued that debt holders have significant influence on firms' financial reporting, existing studies mainly focuses on the relationship between accounting conservatism and contract design (e.g., Ahmed et al., 2002; Zhang, 2008; Nakolaev, 2010). Tan (2013) provides evidence that lenders can exercise a greater influence on firms' financial reporting when borrowers violate loan covenants. Using the onset of loan sales as a unique setting in which original lenders may lose monitoring incentives and loan buyers may lack monitoring expertise and incentives, we provide first hand evidence that lenders' monitoring incentives have significant influence on firms' financial reporting. Using prior lending relationship and lender reputation as proxies of *ex ante* lender monitoring effect, we provide corroborative evidence that lender monitoring incentives shape borrower financial reporting behavior. [4]

We also contribute to the loan sales literature by identifying another consequence of secondary loan market trading, i.e., reduced accounting conservatism. Our results suggest that loan sales could affect borrowers' financial reporting in that loan sales dilute lenders'

[4] Gong, Martin, and Roychowdhury (2012) find that the onset of credit default swaps (CDS) is associated with lower borrower accounting conservatism due to the lack of lender monitoring incentives. While both loan sales and CDS are credit risk transfer mechanism, loan sales differ from CDS in one important aspect: in loan sales, both credit risk and control rights over the loans are transferred to loan buyers; while in CDS, only credit risk is transferred to CDS seller, with the originating lender retaining the control rights over the loans. We expect loan sales are associated with more dilution of lenders' monitoring incentive, compared to CDS. Therefore loan sales may provide a more powerful setting to examine whether lenders' monitoring incentive have an impact on accounting conservatism.

monitoring incentives which in turn reduce their demand for conservative reporting. Therefore our study complements existing studies that focus on costs and benefits of loan sales to borrowers (Dahiya, Puri, and Saunders, 2003; Güner, 2006; Drucker and Puri, 2009; Santos and Nigro, 2009; Kamstra, Roberts, and Shao, 2013; etc.).[5]

The remainder of the paper is organized as follows: Section 2 presents literature review and hypotheses development. Section 3 discusses sample selection, research design, and empirical results. Section 4 discusses additional tests. Section 5 concludes.

2. Related literature and hypothesis development

Accounting conservatism, defined as the tendency of firms to understate the value of firm assets (Givoly *et al.*, 2007) in their financial statements has important implications for debt contracting. In particular, Watts (2003a, b) argues that lenders demand that borrowers use conservative accounting practices because the resultant downward bias in the reported value of net assets provides some assurance that the minimum amount of borrowers' net assets is greater than the lenders' claim on the borrowing firms. Consequently, conservative reporting reduces lenders' downside risk. Consistent with this argument, recent studies provide empirical evidence that accounting conservatism is associated with a lower cost of debt (*e.g.*, Ahmed *et al.*, 2002; Zhang, 2008) or lower loan bid-ask spread on the secondary loan market (Wittenberg-Moerman, 2008).

Chen, Chen, Lobo and Wang (2010) find that firms borrow more from state-owned banks display less accounting conservatism as state-owned banks have weaker demand for conservatism. Erkens, Subramanyam, and Zhang (2012) find that affiliated banker on board

[5] Some papers argue that certain mechanisms, including stringent covenants (Drucker and Puri, 2009) and lender reputation concern (Gande and Saunders, 2012; Yerramilli and Winton, 2012), could somehow mitigate the lack of monitoring incentive effect.

reduces accounting conservatism as affiliated banker on board obtain more private information from board representation, which facilitates the monitoring and strengthens the influence of the lenders. As a result, lenders demand for less accounting conservatism. A recent paper by Tan (2013) shows that lenders exhibit strong preference for conservative reporting when borrowers violate covenants, suggesting lenders increase their monitoring intensity by demanding higher accounting conservatism after covenant violations.

Different from the setting identified in Tan (2013), we identify a unique and significant economic event in lending, i.e., the onset of loan trading in the secondary loan market, in which lenders may lose monitoring incentive and lower demand for conservative reporting. The secondary loan market facilitates banks' credit risk management and allows non-banking firms to invest in loans. However, loan sales separate loan origination, servicing, and funding which may lead to several informational and agency related problems. Gorton and Pennacchi (1995) and Pennacchi (1988) argue that, while the development of secondary loan market generates liquidity for banks' assets, facilitating their portfolio and risk management, it may also dilute the monitoring incentive of originating banks since they can more easily offload loans to secondary loan market investors. Parlour and Plantin (2008) present a theoretical model in which banks have lower incentives to monitor a borrower and foster a relationship with the borrower, when there is an active secondary loan market which enables the banks to unbundle asset-liability management from borrower relationship management. Existing empirical evidence suggests that loan sales may reduce banks' incentives to monitor (Gande and Saunders, 2012; Kamstra et al. 2013). Furthermore, loan sales change the constituencies of the original loan syndication structure to the one involving more institutional lenders with less incentive to monitor the borrowers. As loan buyers typically are non-bank financial institutions such as finance

companies, insurance companies, investment banks, and hedge funds, they lack the information advantage and monitoring skills of originating banks to effectively monitor borrowers (Drucker and Puri, 2009). The lack of monitoring incentives by the originating banks due to loan sales and the lack of monitoring skills by the new lenders (loan buyers) could directly lead to a lower accounting conservatism after loan sales, consistent with the argument that lenders' monitoring incentives generate a demand for accounting conservatism (e.g., Watts, 2003a; Zhang, 2008; Gormley, Kim, and Martin, 2012; etc.)

On the other hand, secondary loan market provides a place for information dissemination about the borrowers. Loan trading in the secondary market may provide useful and non-public information about the borrower, previously held by the originating lenders, to the loan market participants. As a result, information transparency between borrowers and loan market participants improves. The enhanced information transparency may potentially strengthen market discipline and increase borrower accounting conservatism. As the onset of loan sales can increase or decrease accounting conservatism, we present our hypothesis in the alternative form as the following:

H1: Accounting conservatism decreases after the onset of loan sales.

To the extent that loan sales may dilute lenders' monitoring incentives, we predict a greater loss of monitoring incentives after loan sales for firms with loans originated by reputable or relationship lenders. Lender reputation is a major mechanism to mitigate information asymmetry and incentives problem in syndicated loans. Highly reputable lenders are more skilled and specialized in screening and monitoring borrowers. Furthermore, reputable lenders are more committed against opportunistic behavior because they want to preserve their good reputation, and hence, they provide a better guarantee against the exploitation of the private

information that they have collected. Pichler and Wilhelm (2001) and Sufi (2007), among others, argue that lead arranger reputation can serve as an effective mechanism in reducing moral hazard problem. At the onset of loan sales, reputable lenders can still extend greater efforts than non-reputable lenders in monitoring borrowers due to concerns over losing their reputations (Gande and Saunders, 2012). On the other hand, reputable lenders' monitoring incentives may also decline as compared to the period before the loans were put on sale. We predict that the onset of loan trading on secondary loan market leads to a greater loss of monitoring incentives from reputable banks, resulting in a more pronounced effect on accounting conservatism. Therefore we propose the following hypothesis:

H2: The decline in accounting conservatism after initial loan trading is more pronounced for firms with more reputable lenders.

Banks are special in that they can mitigate the information friction due to adverse selection and moral hazard (Diamond, 1984; Fama, 1985). Past lending relationship is valuable as banks can collect more and more borrower-specific information over the course of repeated lending, such information is reusable and enables the lenders to better assess the credit risk of borrowers. As a result, firms that borrow from relationship lenders receive more monitoring from the lenders before the loans started being traded in the secondary market. To the extent that the onset of secondary market loan trading reduces lenders' monitoring incentives due to increased loan liquidity or change in the composition of loan investors, the monitoring incentives diminish more for firms borrowing from relationship lenders, and hence the more pronounced decline in accounting conservatism.

H3: The decline in conservatism is more pronounced for firms borrowing from lenders that have prior lending relationships with the borrower.

Once the loan trading starts, loan investors will solicit trading quotes from secondary loan market makers. The frequency of the trading and the bid-ask spread reflect the easiness that a trade can be made and the liquidity of a traded loan (Bhasin and Carey, 1999). We argue that the onset of loan trading increases loan liquidity, and higher loan trading liquidity proxied by low loan bid-ask spread and larger number of quotes further reduces lenders' monitoring incentive after loan sales. Therefore, we posit the following prediction:

H4: The decline in accounting conservatism is more pronounced for firms with higher loan trading liquidity.

2. Research Design

2.1. Probability of loan sales

Loan sales may be an endogeneous choice as banks may decide to sell the loans for some reason. To address this sample selection bias, we first estimate a *probit* model of loan sales. Then we employ propensity score matching methodology to select the control firms. We employ the following augmented Drucker and Puri (2009) *probit* model to examine the probability of loan sales (*Trade*):

$$\begin{aligned} Trade = {} & \alpha_0 + \beta_1 \text{Size} + \beta_2 \text{Leverage} + \beta_3 \text{Pr}\,ofitability + \beta_4 Investgrade + \beta_5 Lloansize \\ & + \beta_6 Lmat + \beta_7 Syndicate + \beta_8 Institutionloan + \beta_9 F\,\text{cov}\,enant + \beta_{10}\,\text{Re}\,putation \\ & + Year\text{Dummies} + IndustryDummies + \varepsilon \end{aligned} \quad (1)$$

Trade is a binary variable which equals one if the loan is sold in the secondary loan market, and zero otherwise. We also include borrower, loan contract, and lender characteristics that are important determinants of loan sale. Borrower characteristics include logarithm of book assets (*Size*), debt-to-asset ratio (*Leverage*), profitability (*Profitability*), and an indicator for borrowers that are investment-grade rated (*Investgrade*). We expect loan sales to occur more likely for

larger borrowers, and for more risky (higher leverage, junk-rated) borrowers. For the loan characteristics, we include the logarithm of the loan size (*Lloansize*), the logarithm of the loan maturity in months (*Lmat),* an indicator for syndicated loans *(Syndicate),* an indicator for institutional loan *(Institutionloan*), and an indicator for loans with financial covenants (*Fcovenant*). We expect larger loans, loans with longer maturity, syndicated loans and institutional loans are more likely to be traded. We also include lead arranger reputation (*Reputation*) in the model. We expect loans issued by more reputable lenders are more likely to be sold. We also include industry and year fixed effects.

Next we utilize the propensity score matching procedure to construct the control sample of firms. To identify potential matched control firms, we restrict our focus to all firms with available Compustat financial and Dealscan loan data, but the loans are not traded in the secondary loan market within 5 years after loan issuance.[6] Specifically, based on the estimation results of model (1), we obtain the estimated probability of loan sales for all firms that have bank loans during our sample period 1999~2009. For each firm with traded loans, we match (without replacement) it with one firm with non-traded loans with the closest estimated probability of loan sales. The comparison of estimated probability is made in the year of initial loan trading. This procedure generates 946 control firms with non-traded loans for the 946 treatment firms with traded loans.

2.2. Research Design and Variable Construction

2.2.1 Research Design

To alleviate the concern that the results could be driven by unobservable time series changes, such as macroeconomic or industry shocks, we explore the impact of loan sales on

[6] Drucker and Puri(2009) indicates more than 60% of loans are initially sold within one month of loan origination and almost 90% are sold within one year. We choose five-year period to be more conservative.

accounting conservatism using a difference-in-differences research design. Specifically, we regress accounting conservatism on an indicator for the type of borrowers (firms with traded loans versus firms with non-traded loans), an indicator for the time period (pre- versus post-initial loan trading period), the interaction between these two indicators, and a set of control variables. This research design allows us to investigate the change in accounting conservatism in the pre- versus post- initial loan trading period for borrowers with traded loans relative to the change in conservatism for borrowers with non-traded loans over the same sample period. Using firms with non-traded loans as control firms helps us to isolate the effect of loan sales by excluding possible confounding factors that change around loan sales. Furthermore, comparing the changes in accounting conservatism before and after loan sales helps to mitigate potential self-selection bias related to heterogeneous characteristics across firms with traded loans versus firms non-traded loans, if the differences in unobserved characteristics between the two groups are time-invariant. We employ the following model for our empirical analysis:

$$\begin{aligned} Conservatism = {} & \alpha_0 + \beta_1 \text{Trade} + \beta_2 \text{Post} + \beta_3 Post*Trade + \beta_4 \text{Size} + \beta_5 \text{Leverage} + \beta_6 MB \\ & + \beta_7 Blockholder + \beta_8 Age + \beta_9 Litigation + Year\text{Dummies} + IndustryDummies + \varepsilon \end{aligned} \quad (2)$$

The dependent variable is *Conservatism*, measured by *C-Score*, accumulation of non-operating accruals (*NonAcc*), skewness of earnings relative to cash flow (*Skew*), and a composite measure of the three individual measures (*Avg_rank_con*). *Trade* is an indicator variable, equal to one for traded loans and zero otherwise. *Post* is an indicator variable, equal to zero if the firm-years are in year [*t - 3, t*] and one if the firm-years are in year [*t + 1, t + 4*]. The variable of interest is the interaction term *Post*Trade*. If loan sales reduce lenders' incentives to monitor borrowers, resulting in lower accounting conservatism, we would expect a negative coefficient of *Post*Trade* (β_3) in the above model.

To evaluate H2 and H3 on whether the impact of loan sales on accounting conservatism varies by various factors associated with lenders' incentives to monitor borrowers, we partition the sample into two subsamples based on lead lender reputation and relationship lender, respectively. We then estimate model (2) for each of the subsample separately and expect the coefficients on *Post*Trade* (β_3) to be more negative in the subsample of loans syndicated by reputable and relationship lenders.

To test H4, we focus on traded loans and estimate the following regressions for the subsamples of loans with high and low trading liquidity, respectively:

$$Conservatism = \alpha_0 + \beta_1 \text{Post} + \beta_2 \text{Size} + \beta_3 \text{Leverage} + \beta_4 MB + \beta_5 Blockholder + \beta_6 FirmAge + \beta_7 \text{Pr}ofitability + \beta_8 Litigation + Year\text{Dummies} + IndustryDummies + \varepsilon \quad (3)$$

Where *Conservatism* is the composite measure of the accounting conservatism and *Post* is similarly defined as in model (2). We expect the coefficients *Post* to be more negative in the sample of traded loans with high trading liquidity.

2.2.2 Measures of accounting conservatism

Given the ongoing debate on some econometric issues related to accounting conservatism (Givoly, Hayn and Natarajan, 2007; Dietrich, Muller and Riedl, 2007; Ball, Kothari and Nikolaev, 2011, 2013; and Patatoukas and Thomas, 2011), we construct four measures of accounting conservatism to ensure the validity of our results. Specifically, we measure accounting conservatism by (1) the *C_score* measure developed by Khan and Watts (2009) based on an augmented Basu (1997) model; (2) the accumulation of negative non-operating accruals (*NonAcc*) scaled by total assets over the previous three years multiplied by negative one (Givoly and Hayn , 2000; Beatty, Webber and Yu 2008); (3) the difference between the skewness of cash flows from operations and the skewness in earnings before extraordinary items (*Skew*) as used by

Givoly and Hayn (2000) and Beatty et al. (2008); and (4) a composite rank based on the above three metrics. For the composite measure of accounting conservatism, we first rank the sample firms based on each of the three individual measures of conservatism annually, and then we divide each rank by the largest rank of each individual measure. Finally, we add the three relative ranks of each firm-year observation to obtain the composite rank of conservatism:

$$Avg\_rank\_con_i = C\_Score_i/C\_Score_{max} + NonAcc_i/NonAcc_{max} + Skew_i/Skew_{max} \quad (4)$$

Where C_Score_{max}, $NonAcc_{max}$ and $Skew_{max}$ are the largest rank of each individual measure. We provide the definition of all variables in appendix A.

2.2.3. Lender characteristics

We follow Bharath, Dahiya, Saunders, and Srinivasan (2007) to construct variables that capture lead arranger reputation and prior lending relationship. Lead arranger reputation (*Reputation*) is measured by the lead-arranger's market share (loans arranged by the lead-arranger divided by total loans issued in the entire market) in loan issuance year. If a lead arranger in a loan syndicate has a market share greater than 2%, we set *Reputation* equal to one, and zero otherwise. Prior lending relationship is the strength of the lender-borrower relationship (*Relationship)*. If a lead lender has lent to the borrower during the prior five-years, we set *Relationship* equal to one, and zero otherwise.

2.2.4. Control variables

Following Ramalingegowda and Yu (2012), and Kim, Li, Pan, and Zuo (2013), we include the following firm-specific variables as control variables: firm size (*Size*), leverage (*Leverage*), market-to-book ratio (*MB*), block holder ownership (*Blockholder*), firm age (*FirmAge*), litigation risk (*Litigation*). We measure firm size (*Size*) by the natural logarithm of the book value of total assets. Firm leverage (*Leverage*) is equal to the book value of total debt divided by the book value of total assets. A firm's market-to-book ratio (*MB*) is equal to its

market value of equity over its book value of equity. Block holder ownership (*Blockholder*) is the log of one plus the number of block holders with 5% or more stakes in a firm. Firm age (*FirmAge*) is the log of number of years a firm is listed on CRSP. We include *Profitability,* proxied by Earnings Before Interest, Taxes, Depreciation and Amortization divided by sales, to control for the fundamental performance of the firm. We proxy for a firm's litigation risk (*Litigation*) by a dummy variable that is equal to one if the firm operates in an industry with high litigation risk, including Biotechnology (SIC codes 2833–2836 and 8731-8734), Computers (SIC codes 3570–3577 and 7370-7374), Electronics (SIC codes 3600–3674), and Retailing (SIC codes 5200–5961) ; and zero otherwise. We also include year and industry dummies to control for fixed effects.

3. Sample Selection and Empirical Results

3.1. Sample Selection

We use four different databases to construct our sample. To identify loans that are traded in the secondary market, We use the Mark-to-Market Pricing database provided by Loan Syndication and Trading Association (LSTA) and Loan Pricing Corporation (LPC), which provides daily secondary market loan quotations such as borrower name, number of quotes, average bid quotes, average ask quotes, and mean of average bid and average ask quotes, etc.

We construct lead arranger reputation and prior lending relationship from *Dealscan* database provided by the LPC, which contains detailed information on borrower and lender identities, loan amounts, LIBOR spread, issuing and maturity dates, financial and general covenants, etc. We construct borrower-specific variables such as accounting conservatism, firm

size, leverage, etc. from Compustat database. Blockholder ownership information is obtained from Thomson Reuters' 13f institutional holdings.

The sample selection procedure is as follows: Step one, we merge the facility dataset of Mark-to-Market Pricing with the facility dataset of Dealscan database by facilityid. Then we merge with the historical pricing dataset of Mark-to-Market Pricing by Facility Number. Step two, we link the dataset obtained in Step one with the Compustat database using the link file compiled by Chava and Roberts (2008).[7] Step three, we merge the dataset obtained in Step two with the 13f institutional holdings by TICKER and Year. The sample period covers 1999 to 2009. We start the sample period in 1999, as this is when the Mark-to-Market Pricing database is relatively more in complete prior to this date, and end in 2009, the most recent year data is available. The final sample contains 13,528 firm-loan observations over a sample period of 1999~2009, with 946 unique firms.

3.2. Probability of loan sales

The results of *probit* model predicting whether the loan is traded or not are presented in Table 1. Consistent with our prediction, loans issued to borrowers that are larger, with higher leverage, and speculative grade (credit rating lower than BBB) are more likely to be traded. Loans that are larger, with longer maturity, originated by more reputable lenders, with larger number of financial covenants and institutional loans are more likely to be sold.

We obtain propensity score for each observation and match firms with non-traded loans to firms with traded loans and closest propensity score.

3.3. Sample Descriptive Statistics

Table 2 reports the yearly distribution of firms with traded loans and matched firms with non-traded loans. We employ propensity score matching technique to match the firms with non-

[7] We would like to thank Michael R. Roberts for kindly providing the Dealscan-Compustat link file.

traded loans firm-loans with firms with traded firm-loans based on the model presented in Table model (1). For the firms with traded loans, the onset year is the initial loan trading year. For the firms with non-traded loans, the onset year is the year of loan issuance. The number of firms with traded loans is pretty evenly distributed in the years up to the recent 2007~2009 financial crisis, during which the number of firms with traded loans experience a sharp decline. Since we use one-on-one match, the number of observation in both firms with traded and non-traded loans in each year is the same.

Table 3 displays the summary statistics of the variables for both firms with traded loans (traded firms) and firms with non-traded loans (non-traded firms). We present the variables in the year of trading and two years after trading for the traded and non-traded firms in Panel A and B, respectively. Loan characteristics are displayed in Panel C. Panel A shows that in the year of initial loan trading (*t*), the average (median) *C_score* of the traded and non-traded firms are 0.128(0.115), and 0.091(0.078), respectively, and the difference is statistically significant. The average (median) skewness of the traded and non-traded firms are 1.103(1.075), and 0.733(0.622), respectively, and the difference is statistically significant. The average (median) negative non-operating accruals of the traded and non-traded firms are −0.04 (− 0.046), and −0.06 (−0.067), respectively, and the difference is statistically significant. The average (median) average composite rank of the traded and non-traded firms are 0.552(0.545) and 0.468(0.454), respectively, and the difference is statistically significant. The above results are corroborated by Figure 1 which shows traded firms have higher accounting conservatism (proxied by the average composite rank) in the years before trading, compared to non-traded firms.

Panel B shows that firm characteristics in two years after trading. The statistics shows that the gap in conservatism between traded and the matched non-traded firms narrows in year *t*

+ 2. For example, the difference in *C_score* has decreased to 0.033 in year *t + 2* from 0.037 in year *t* and the difference in *Avg_rank_con* has declined to 0.054 in year *t + 2* from 0.084 in year *t.* These results are also consistent with the conservatism pattern presented in Figure 1 showing a sudden drop in accounting conservatism for traded firms, but a gradual increase in accounting conservatism for non-traded firms.

Panels A and B also present the firm characteristics at *t* and *t + 2*, respectively. As expected, at time *t*, firm size, market to book ratios, and profitability are not significantly different between the traded and non-traded firms because we require the matched non-traded firms to have similar characteristics as traded firms. However, the average (median) leverage of traded and non-traded firms is 2.061(0.74), and 1.665(0.394), respectively. The difference is statistically significant at 5% level, suggesting that the traded firms are more risky than non-traded firms.

The average (median) number of block holders of traded and non-traded firms is 1.774(1), and 1.611(1), respectively, and the difference is statistically significant at the 5% level. The average (median) firm age of traded and non-traded firms is 9.123(5) years, and 13.4 (10) years, respectively. The difference is statistically significant. The percentage of firms with investment grade is lower in the traded firms (13.8%) than the matched non-traded firms (17.6%) In summary, in the initial year of trading, compared to non-traded firms, traded firms display more accounting conservatism in all four conservatism measures, have higher leverage, from industries with less litigation risk, have larger number of block holders, are younger and with more speculative credit ratings (Panel A).

Panel C displays loan characteristics. The loan amount, percentage of syndicate loan, percentage of loans syndicated by reputable lenders, the percentage of loans with financial

covenants, and percentage of institutional loans are not statistically different between the traded and non-traded loans, reflecting our selection of matched control sample on these loan characteristics is successful.

3.4. Test of H1: the effect of loan sales on accounting conservatism

We estimate model (2) of accounting conservatism, with standard errors clustered at firm level based on Petersen (2009). All regressions control for year and industry fixed effects. The interaction term between *Trade* and *Post* is the key variable. We measure the degree of accounting conservatism using asymmetric timeliness in recognition losses versus gains (*C_score*), the amount of negative non-operating accruals (*NonAcc)*, the difference between the skewness of cash flows and the skewness of earnings (*Skew*), and a composite rank based on the above three measures as an aggregate metric of accounting conservatism (*Avg_rank_con*).

The regression results are presented in Table 4. The coefficients on *Trade* is positive and statistically significant in all models using alternative conservatism measures as shown in columns (1) – (4), suggesting that conservatism is higher for borrowers with traded loans in years leading up to initial loan sale year. The coefficients on *Post* is also positive and statistically significant for all measures of conservatism except for the *C_score* measure, suggesting that accounting conservatism increases after loan issuance for *non- traded loans*. More interestingly, the coefficient estimates on the interaction term *Post*Trade* is negative and statistically significant in all models. The results imply that, after the onset of loan sales, accounting conservatism declines for firms with traded loans in comparison to the matched control firms with non-traded bank loans. These findings suggest that firms increase conservative reporting prior to initial loan sales but reduce conservative reporting afterwards as lenders' monitoring

incentive declines after initial loan sales, supporting our hypothesis H1. Most control variables display signs as what we expect and are consistent with those in existing studies.

3.5. Test of H2 and H3: Lender monitoring and the effect of loan sales on accounting conservatism

To the extent that loan sales reduce lenders' incentive to monitor borrowers, we predict that after loan sales, there is a greater decline in the monitoring efforts for loans syndicated by reputable or relationship lenders in H2 and H3, as highly reputable lenders are more skilled and specialized in screening and monitoring the borrowers and *Relationship* lenders can monitor the borrower at lower cost and more effectively. Accordingly, we expect the decline in accounting conservatism to be more pronounced in loans syndicated by reputable (H2) or relationship lenders (H3).

To test H2, we conduct separate regressions using model (2) for loans syndicated by reputable and non-reputable lenders. Following Bharath, Dahiya, Saunders, and Srinivasan (2007), we use market share (loans arranged by the lender divided by total loans issued in the entire market in the loan issuance year) to proxy for lender reputation. We define reputable lenders as those with market share greater than 2%. If at least one of the lead arrangers in a loan syndicate has the market share greater than 2% in the year of loan syndication, the loan is classified as a loan led by reputable lead arranger and otherwise as led by non-reputable lead arranger.

Results are reported in Table 5. In column (1), we report the regression results for loans syndicated by non-reputable lenders. We find that firms that borrow from non-reputable lenders do not experience any significant decline in accounting conservatism as compared to firms with non-traded loans. In contrast, for loans syndicated by reputable lenders, borrowers experience

more pronounced decline in accounting conservatism after the initial loan sale as compared to firms with non-traded bank loans.

To test H3, we divide the sample to relationship loans and non-relationship loans and estimate model (2), separately. The relationship loans are loans made by a lender which made loans to the same borrower in the five-year period prior to the current loan, and the non-relationship loans are loans made by a lender which did not make loans to the same borrower in the five-year period prior to the current loan. The results are shown in Table 5 Columns (3) and (4), respectively. We find that for firms borrowing from relationship lenders, the onset of loan trading leads to a significant decline in accounting conservatism for firms with traded loans as compared to firms with non-traded loans. On the other hand, for firms borrowing from non-relationship lenders, there is an insignificant decline in accounting conservatism for firms with traded loans in comparison to control firms with non-traded bank loans.

3.6. Test of H4: Loan trading liquidity and the effect of loan sales on accounting conservatism

We also test the effect of loan trading liquidity on accounting conservatism after initial loan sales. We predict that when loan trading liquidity is higher, it is easier for lenders to offload poorly-performing loans, and therefore lowering lenders' exposure to downside risk and leading to lower demand for conservative reporting. We use average loan bid-ask spread and average number of quotes of a traded loan each year as alternative proxies for loan trading liquidity. We divide the sample into two subsamples based on the sample median of loan bid-ask spread and the number of quotes in the secondary loan market, and estimate model (3) for the two subsamples separately.

We report the results in Table 6. We find that firms with high loan trading liquidity, proxied by either lower bid-ask spread or larger number of quotes, experience a significant drop in accounting conservatism, in comparison to firms with low loan trading liquidity. Overall, the results suggest that when loan trading liquidity is higher, there is a larger decline in both lender monitoring incentive and accounting conservatism, consistent with our H4.

3.7. Robustness check

3.7.1 Instrumental variable approach to address the self-selection bias of trading

In our main analysis, we employ propensity score matching to select a sample of control firms based on observable firm and loan characteristics. To further address the unobservable firm characteristics that can affect both the probability of trading and change in accounting conservatism, we employ instrumental variable approach to account for the selection bias arising from the choice of trading.

As in the previous difference-in-differences analysis, we treat *Trade* and *Trade*Post* as endogenous variables. We use the average market loan trading liquidity index and the presence of financial covenants as instruments for the endogenous variables. The market loan trading index is the market average bid price (*Avg_market_bid*) for each month. While higher market trading index increases the probability of loan being traded on the market, this index is unlikely to affect individual firms' conservative reporting. The second instrument is the presence of financial covenants. Druker and Puri (2009) find that loans with financial covenants are more likely to be traded. Nikolaev (2010) finds that conservative reporting is associated with higher probability of using financial covenants in debt contracts, and therefore the presence of financial covenants is unlikely to change firms' conservative reporting. The third instrument is *Avg_market_bid*Post* as Wooldridge (2010) suggests that when *Avg_market_bid* is an

instrument, the interaction term between *Avg_market_bid* and an exogenous variable *(Post)* becomes a natural instrument for the model.

We present the two-stage regression results in Table 7. The first stage regression suggests that the presence of financial covenants (*Fcovenant*) and the market trading index (*Avg_market_bid*) are positively correlated with the probability of being traded (both are significant at the 1% level). The second stage regression results show that the coefficient on *Post*Trade* remains negative and significant (at 1%), suggesting that after using instrumental variables to address the potential endogeneity concern, the effect of loan trading on accounting conservatism remains negative and significant. The weak-instrument test (Anderson-Rubin Wald test F statistics = 5.32, p = 0.001) rejects the null that the instruments are weakly correlated with the endogenous variables and the insignificant *Hansen J statistics* (J statistics = 0.3; p = 0.584) suggests that the instrument variables are valid instruments such that they are not correlated with the error terms in the second stage regression.

3.7.2 Other robustness tests

We also conduct a battery of other robustness checks to ensure the validity of our results. First, we use a constant sample by requiring that the sample firms have variables available both before and after loan trading. Results are reported in Table 8. Using the composite rank as the conservatism measure and the pooled constant sample, we find that the baseline results still hold, that is, firms with traded loans experience decrease in accounting conservatism after the onset of loan sale, compared to the control sample firms with banks loans not traded (Panel A). The results in Table 8 Panels B also suggest that borrowers with loans led by reputable lenders experience more pronounced drop in accounting conservatism. However, borrowers with relationship loans and non-relationship loans experience a similar decline (in magnitude) in

accounting conservatism. The results presented in Panel C suggest that in the constant sample, firms with higher loan trading liquidity have a more significant drop in accounting conservatism.

As our sample period overlaps the recent 2007~2009 financial crisis, to alleviate the concern that our results might be driven by financial crisis effect, we remove the loans issued after 2006 and re-estimate the models. Another reason that we remove loans issued after 2006 is to address the truncation problem arising from loan trading data since our sample ends in 2009 and we require four years data after initial loan trading. Results are presented in Table 9. We continue to find that firms with traded loans experience significant drop in accounting conservatism after the initial loan sale, and borrowers borrowing from reputable lenders experience more pronounced declines in accounting conservatism. However, we find that borrowers with relationship loans have more significant drop (in magnitude) in accounting conservatism than borrowers with non-relationship loans, although the difference in the coefficients on *Post*Trade* is not statistically significant. Using this reduced sample to estimate the effects of trading liquidity on accounting conservatism, we find that firms with higher loan trading liquidity experience a more significant drop in accounting conservatism, consistent with the results presented in Table 6.

We also redefine our *pre-* and *post-* trading windows as [$t - 2$, t] and [$t + 1$, $t + 3$], where t is the year of loan trading for traded loans or year of loan issuance for non-traded loans. Untabulated results show that our predictions hold using the alternative event window.

5. Conclusion

We examine the effect of loan trading on accounting conservatism in this paper. On one hand, loan sales in the secondary market may dilute the monitoring incentives of the originating banks, which potentially lead to lower demand for accounting conservatism. On the other hand,

loan trading in the secondary market may disseminate useful and private information about the borrowers to loan market participants. As a result, information transparency between borrowers and market improves, which may strengthens market discipline and leads to more conservatism.

Our empirical results indicate that firms with traded loans experience a significant decline in accounting conservatism after the onset of loan trading, suggesting monitoring effect dominates the information transparency effect. This negative relationship is more pronounced in firms borrowing from more reputable lenders and relationship lenders, and firms with higher loan trading liquidity. Collectively, we provide corroborative evidence that loan sales reduce lenders' monitoring incentives, and hence lower their demand for accounting conservatism.

Taking the onset of loan trading as a unique event that may affect lenders' monitoring incentives, our results show that lenders play an important role in shaping firms' financial reporting. We also contribute to the loan sales literature by documenting another consequence of secondary loan market trading, i.e., reduced accounting conservatism. Our study complements existing studies that focus on costs and benefits of loan sales to borrowers (Dahiya, Puri, and Saunders, 2003; Drucker and Puri, 2009; Santos and Nigro, 2009; Gande and Saunders, 2012; Kamstra, Roberts, and Shao, 2013; Saunders, Shao, and Li, 2013, etc.).

Appendix A: Variable Definitions

Variables	Definition
Dependent variables	
NonAcc	A measure of accounting conservatism, the accumulation of non-operating accruals over three years prior to the event year divided by total assets. Non-operating accruals = -[(net income (Compustat:ni) + depreciation (Compustat:dp) – cash flows from operation (Compustat: oancf)– changes in AR(Compustat:rect) –change in inventories(Compustat:invt)+ change in account payable (Compustat :ap)+ change in tax payable(Compustat:txp)-change in prepaid expense (Compustat:xpp)) /average assets(Compustat:at)]. When cash flows from operation is not available, cash flow from operation = funds from operation (Compustat:fopt)+change in cash (Compustat:che) – change in current assets (Compustat:act) + change in current liabilities in debt (Compustat:dlc)+change in current liabilities (Compustat:lct).
Skew	A measure of accounting conservatism, the negative of the difference in the skewness of earnings and the skewness of cash flows over *three years* prior to the event year.
C-Score	A measure of accounting conservatism developed by Khan and Watts (2009) (see appendix B for the estimation procedure).
Avg_rank_con	The composite measure of accounting conservatism by adding the relative rank of the three individual conservatism measures (*NonAcc*, *Skew*, *C-Score*).
Main Independent Variables	
Trade	An indicator variable equals to 1 if a loan is traded on the secondary loan market or 0 otherwise.
Post	An indicator variable, equals to one if the firm-year is in [$t + 1$, $t + 4$] and zero if the firm-year is in [$t - 3$, t].
*Post*Trade*	The interaction term between *Trade* and *Post* defined above.
Reputation	An indicator variable, equals to one if at least one of the lead lender in a loan syndicate has market share greater than 2%, and zero otherwise.
Relationship	An indicator variable, equals to one if at least one of the lead lender in a loan syndicate has lent to the borrower in previous deals within five years, and zero otherwise.
Average bid-ask spread	The average loan bid-ask spread during the loan trading year.
Average Number of quotes	The average number of loan trading quotes during the loan trading year.
Other Independent Variables: Loan Characteristics	
Lloansize	Natural logarithm of the loan facility amount.
Lmat	Natural logarithm of the loan maturity in months.
Fcovenants	An indicator variable equals to 1 if there is restrictive financial covenant specified in a loan contract or 0 otherwise.
Institutionloan	An indicator variable equals to 1 if a loan facility is a term loan B, C, D, or E, and 0 otherwise.
Borrower Characteristics	
Size	Natural logarithm of the borrower's total assets.
Leverage	The borrower's book value of total debt over book value of total assets.
MB	The borrower's market-to-book ratio, calculated as (TA+MKVALF-CEQ)/TA, where TA is the book value of total assets, MKVALF is the market value of equity at the fiscal year end, and CEQ is the book value of equity.
Investgrade	An indicator variable equals to 1 if a borrower has a S&P long term debt rating of

	BBB or above, and 0 otherwise.
Profitability	Calculated as EBITDA over sales.
Litigation	An indicator variable, equals to one if the firm is from an one of the following industries Biotechnology (SIC codes 2833–2836 and 8731-8734), Computers (SIC codes 3570–3577 and 7370-7374), Electronics (SIC codes 3600–3674), and Retailing (SIC codes 5200–5961) ; and zero otherwise.
Blockholder	Natural logarithm of (1 + the number of block holders). Block holders are defined as the institutional shareholders with the percentage of holdings greater than 5%.
FirmAge	The natural logarithm of firm age.

Appendix B: Description of C-Score Measure (Khan and Watts, 2009)

Khan and Watts (2009) develop a firm-year specific measure based on Basu's (1997) notion of asymmetric timeliness as well as empirical and theoretical evidence that firm size, market to book ratio, and leverage generate cross-sectional variations in accounting conservatism. The basic Basu (1997) model is the following:

$$E_{it}/P_{t-1} = \alpha_{1t} + \beta_{0t} \times DR_{it} + \beta_{1t} \times R_{it} + \beta_{2t} \times R_{it} \times DR_{it} \quad \text{(A1)}$$

where E_{it} is earnings, R_{it} is annual returns, DR_{it} is an indicator variable equal to one when returns are negative, and β_{2t} measures the incremental timeliness of earnings loss recognition.

Khan and Watts (2009) extend the Basu (1997) model by incorporating firm size, market-to-book ratio, and leverage to estimate the following equation:

$$E_{it}/P_{t-1} = \alpha_{1t} + \beta_{0t} \times DR_{it} + \beta_{1t} \times R_{it} \times (\mu_1 + \mu_2 \times Size_{it} + \mu_3 \times M/B_{it} + \mu_4 \times Lev_{it}) +$$

$$\beta_{1t} \times R_{it} \times DR_{it} \times (\lambda_1 + \lambda_2 \times Size_{it} + \lambda_3 \times M/B_{it} + \lambda_4 Lev_{it}) + \varepsilon_{it} \quad \text{(A2)}$$

where *Size* is the natural log of market value of equity, *M/B* is the market to book ratio, *Lev* is the leverage of the firm, and other variables are as defined in the equation A1.

This results in an expanded regression model:

$$E_{it}/P_{t-1} = \alpha_{1t} + \beta_{0t} \times DR_{it} + R_{it} \ (\omega_{1t} + \omega_{2t} \times Size_{it} + \omega_{3t} \times M/B_{it} + \omega_{4t} Lev_{it}) +$$

$$R_{it} \times DR_{it} \times (\gamma_{1t} + \gamma_{2t} \times Size_{it} + \gamma_{3t} \times M/B_{it} + \gamma_{4t} Lev_{it}) + \phi_{it} \quad \text{(A3)}$$

I estimate the regression model in A3 by Ordinary Least Squares regression in each quarter. All variables in estimating the coefficients are winsorized at the top and bottom 1%. I calculate the asymmetric timeliness (*C-Score*) for each firm-quarter by using coefficients estimated for that quarter as follows:

$$C - Score = \hat{\gamma}_{it} + \hat{\gamma}_{2t_t} \times Size_{it} + \hat{\gamma}_{3t} \times M/B_{it} + \hat{\gamma}_{4t} \times Lev_{it} \quad \text{(A4)}$$

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Figure 1. Loan trading and conservatism

This figure shows the time trend of conservatism around the onset of loan trading (year 0) for the loan traded and matched non-traded samples (Year 0 is the year of loan issuance for the non-traded sample). Avg_rank_con is the composite measure of accounting conservatism by adding the relative rank of the three individual conservatism measures (*NonAcc*, *Skew*, *C-Score*).

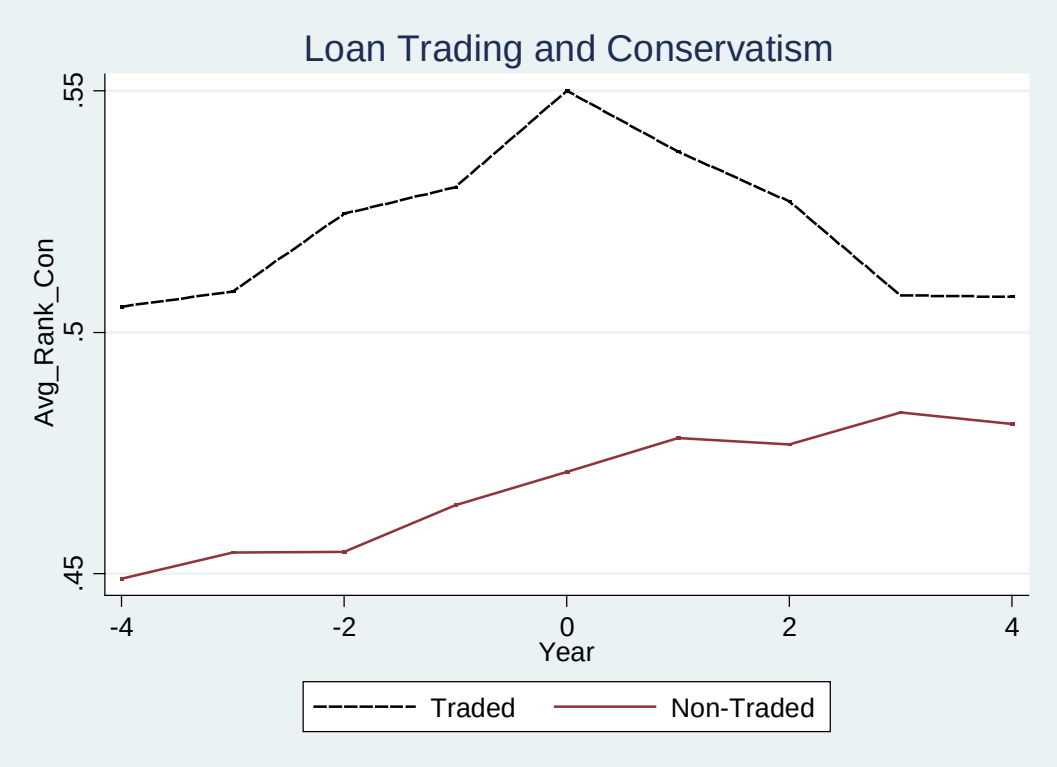

Table 1 Probit Regression Results of likelihood of loan sales

This table presents the estimation results from a *probit* model to predict the probability of loan sales. The dependent variable is *Trade*, taking the value of 1 if a firm-loan is initially traded in the secondary loan market; and 0 otherwise. For non-traded loans, we require that there is no trading record within five years of loan issuance. Our post-trading period spans four years after loan trading (issuance), and therefore, we require non-traded loans as those not being traded within five years of loan issuance. The sample contains all loans traded or issued between 1999 - 2009. The definition of the variables can be found in appendix A. Superscripts ***, **, * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively, with standard errors clustered at firm level.

Variables	***Trade***	
Size	0.457***	[14.060]
Leverage	0.076***	[8.159]
Profitability	-0.248*	[-1.766]
Investgrade	-1.408***	[-14.213]
Lloansize	0.152***	[5.338]
Lmat	0.798***	[15.614]
Syndicate	0.278	[1.184]
Institutionloan	1.763***	[29.714]
Fcovenant	0.607***	[9.610]
Reputation	0.487***	[4.060]
Industry fixed effects	Yes	
Year fixed effects	Yes	
Observations	12,665	
Pseudo R^2	0.517	

Table 2. Sample Distribution

This table reports the yearly distribution of the onset of loan trading for firms with traded loans and matched firms with non-traded loans. We employ propensity score matching technique to match the firms with non-traded loans with firms with traded loans based on model (1). For the matched firms with non-traded loans, the onset year is the year of loan issuance.

Year	Traded Firms		Non-traded Firms	
	N	%	N	%
1999	107	11.31%	107	11.31%
2000	84	8.88%	84	8.88%
2001	83	8.77%	83	8.77%
2002	92	9.73%	92	9.73%
2003	99	10.47%	99	10.47%
2004	117	12.37%	117	12.37%
2005	123	13.00%	123	13.00%
2006	115	12.16%	115	12.16%
2007	84	8.88%	84	8.88%
2008	29	3.07%	29	3.07%
2009	13	1.37%	13	1.37%
Total	946	100.00%	946	100.00%

Table 3: Descriptive Statistics

This table present the descriptive statistics for main variables in the empirical analysis for both traded and their matching firms with loan issuance (not-traded) in the period before and after the loan being traded. Panel A presents the comparison of traded and not-traded firms in the onset year of loan trading (*t*) and Panel B presents the comparison in the post-trade period (*t + 2*). For traded firm-loans, *t* is the year of loan trading; for non-traded loans, *t* is the year of loan issuance. The mean difference and the *t-statistics* are calculated for the variables presented. Superscripts ***, **, * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively. All variable definition is included in appendix A.

Panel A: The onset year of trading (t)

	Non-traded firms				Traded firms				Mean differences	
	N	**Mean**	**Std**	**Median**	**N**	**Mean**	**Std**	**Median**	**Difference**	***t- stat***
C-score	921	0.091	0.137	0.078	652	0.128	0.131	0.115	0.037	5.236***
Skew	996	0.733	1.698	0.622	869	1.103	1.715	1.075	0.370	4.673***
NonAcc	995	-0.060	0.098	-0.067	865	-0.040	0.107	-0.046	0.020	4.212***
Avg_rank_con	899	0.468	0.197	0.454	634	0.552	0.195	0.545	0.084	8.297***
Size	1046	7.617	1.640	7.530	925	7.601	1.334	7.445	-0.016	-0.2378
MB	1046	2.609	4.112	1.895	925	2.436	6.858	1.794	-0.173	-0.690
Leverage	1046	1.665	4.502	0.394	925	2.061	4.092	0.740	0.397	2.036**
Profitability	1046	0.001	0.291	0.038	925	-0.013	0.153	0.015	-0.014	-1.302
Litigation	1046	0.221	0.415	0	925	0.173	0.378	0	-0.048	-2.663***
#of blockholders	1046	1.611	1.636	1	925	1.774	1.813	1	0.163	2.10**
FirmAge	1046	13.400	11.982	10	925	9.123	10.682	5	-4.276	-8.318***
Investgrade	1046	0.176	0.381	0	925	0.138	0.345	0	-0.038	-2.279**

Panel B: Post Trade (t + 2)

	Non-traded firms				Traded firms				Mean differences	
	N	**Mean**	**Std**	**Median**	**N**	**Mean**	**Std**	**Median**	**Difference**	***t- stat***
C-score	852	0.069	0.129	0.065	611	0.102	0.135	0.096	0.033	4.672***
Skew	927	0.764	1.770	0.601	809	0.860	1.864	0.821	0.096	1.104
NonAcc	932	-0.058	0.099	-0.067	810	-0.051	0.093	-0.055	0.007	1.589
Avg_rank_con	845	0.474	0.193	0.464	607	0.528	0.190	0.515	0.054	5.334***
Size	934	7.789	1.671	7.755	812	7.703	1.329	7.551	-0.085	-1.170
MB	934	2.626	4.819	1.843	812	1.936	6.661	1.690	-0.690	-2.502**

Table 3 Panel B (continued)

Leverage	934	1.265	3.489	0.362	812	2.482	5.142	0.753	1.218	2.502**
Profitability	934	0.012	0.164	0.041	812	-0.011	0.165	0.021	-0.023	-2.959***
Litigation	934	0.221	0.415	0	812	0.171	0.377	0	-0.049	-2.588**
#of block holders	934	1.699	1.701	1	812	1.946	1.867	2	0.247	2.889***
FirmAge	934	15.502	12.194	12	812	11.011	11.014	7	-4.491	-8.027***
Investgrade	934	0.182	0.386	0	812	0.145	0.353	0	-0.037	-2.062**

Panel C: Loan Characteristics

	Non-traded firms				**Traded firms**				**Mean differences**	
	N	**Mean**	**Std**	**Median**	**N**	**Mean**	**Std**	**Median**	**Difference**	***t- stat***
Loan amount (in million $)	1046	592.840	1182.373	313.44	925	594.775	1584.578	259.599	1.935	0.031
Maturity (in months)	1046	53.377	18.636	60	925	57.187	19.863	60	3.810	4.390***
Syndicate	1046	0.990	0.097	1	925	0.994	0.080	1	0.003	0.759
Reputation	1046	0.943	0.233	1	925	0.957	0.204	1	0.014	1.425
Fcovenant	1046	0.815	0.389	1	925	0.822	0.383	1	0.007	0.407
Institutionloan	1046	0.155	0.362	0	925	0.170	0.376	0	0.015	0.893
Relationship	1046	0.657	0.475	1	925	0.686	0.464	1	0.030	1.400
Average Spread					781	1.198	1.381	0.842		
Average # of quotes					798	1.710	1.352	1		

Table 4: The Effect of Loan Trading on Accounting Conservatism

This table presents the estimation results evaluating the effects of loan trading on firms' accounting conservatism. The depdendent variables are measures of conservatism: accumulated non-operating accruals (*NonAcc*), *C-Score*, Skewness of earnings (*Skew*), and the average rank of the three individual conservatism measures (*Avg_rank_con*). *Traded* is an indicator variable, equals to one for traded loans and zero otherwise. *Post* is an indicator period, equals to 1 if the firm-year is in [*t + 1, t + 3*] and 0 if the firm year is in [*t - 2, t*]. For traded firm-loans, *t* is the year of loan trading; for non-traded loans, *t* is the year of loan issuance. The definition of the regression variables can be found in appendix A. Superscripts ***, **, * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively, with standard errors clustered at firm level.

	(1)		**(2)**		**(3)**		**(4)**	
VARIABLES	***NonAcc***		***C_score***		***Skew***		***Avg_rank_con***	
Trade	0.008*	[1.803]	0.021***	[7.280]	0.311***	[3.584]	0.052***	[6.154]
Post	0.007**	[2.077]	0.003	[1.371]	0.114*	[1.764]	0.011**	[2.172]
Post*trade	**-0.011*** **	**[-2.789]**	**-0.008*** **	**[-2.718]**	**-0.211** **	**[-2.247]**	**-0.026*** **	**[-3.437]**
Size	-0.003**	[-2.545]	-0.045***	[-56.499]	-0.051**	[-2.087]	-0.048***	[-20.845]
Leverage	0.004***	[6.080]	0.021***	[10.069]	0.033***	[3.582]	0.016***	[7.374]
MB	-0.001***	[-3.005]	-0.001**	[-2.346]	-0.005	[-1.341]	-0.003***	[-3.638]
Blockholder	-0.001	[-0.564]	0.006***	[3.151]	0.096*	[1.761]	0.020***	[3.533]
FirmAge	-0.000***	[-3.047]	0.000*	[1.697]	0.003	[0.927]	0.000	[0.425]
Profitability	-0.173***	[-4.478]	-0.100***	[-5.416]	-1.056***	[-3.111]	-0.604***	[-7.545]
Litigation	-0.002	[-0.432]	-0.018***	[-5.281]	-0.057	[-0.543]	-0.040***	[-3.997]
Year fixed effects	Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes	
Observations	13,528		11,605		13,484		11,288	
Adjusted R-square	0.243		0.691		0.0563		0.391	

Table 5: The Effect of Reputable and Relationship Lenders on Accounting Conservatism after Loan Sales

This table presents the estimation results evaluating the differential effects of loans syndicated by reputable and relationship lenders on firms' accounting conservatism after loan trading. The dependent variables is the average rank of the three individual conservatism measures (*Avg_rank_con*). *Traded* is an indicator variable, equals to one for traded loans and zero otherwise. *Post* is an indicator period, equals to 1 if the firm-year is in [*t + 1, t + 4*] and 0 if the firm year is in [*t - 3, t*]. For traded firm-loans, *t* is the year of loan trading; for non-traded loans, *t* is the year of loan issuance. The definition of the regression variables can be found in appendix A. Superscripts ***, **, * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively, with standard errors clustered at firm level.

	Reputable Lenders				**Relationship Lenders**			
VARIABLES	**No (1)**		**Yes (2)**		**No (3)**		**Yes (4)**	
Trade	0.023	[0.682]	0.053***	[6.027]	0.046***	[3.348]	0.051***	[5.229]
Post	-0.006	[-0.161]	0.011**	[2.069]	0.001	[0.140]	0.015**	[2.465]
Post*Trade	**-0.009**	**[-0.211]**	**-0.027*** **	**[-3.458]**	**-0.020**	**[-1.405]**	**-0.027*** **	**[-3.009]**
Size	-0.039***	[-4.077]	-0.048***	[-20.097]	-0.052***	[-14.045]	-0.047***	[-17.291]
Leverage	0.010***	[3.159]	0.016***	[6.762]	0.014***	[6.182]	0.016***	[4.583]
MB	-0.001	[-0.288]	-0.003***	[-3.537]	-0.004***	[-4.256]	-0.003**	[-2.526]
Blockholder	0.015	[0.836]	0.021***	[3.558]	0.022***	[2.701]	0.020***	[2.819]
FirmAge	0.003***	[3.651]	0.000	[0.129]	-0.001**	[-2.005]	0.000	[1.328]
Profitability	-0.445***	[-3.467]	-0.610***	[-7.034]	-0.496***	[-6.414]	-0.703***	[-4.658]
Litigation	-0.069**	[-2.295]	-0.039***	[-3.819]	-0.026*	[-1.682]	-0.047***	[-4.104]
Year fixed effects	Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes	
Observations	433		10,855		3,454		7,834	
Adjusted R-square	0.406		0.387		0.379		0.399	

Table 6. The Effect of Loan Liquidity on Accounting Conservatism after Loan Sales

This table presents the estimation results evaluating the differential effects of loan liquidity on firms' accounting conservatism after loan trading. The dependent variable is the composite measure *(Avg_rank_con*)of the three individual measures of accounting conservatism: *C_Score, NonAcc, Skew*. We use loan bid-ask spread and the average number of trading quotes as measures of loan liquidity. Low bid-ask spread and greater number of trading quotes are associated with more liquid loans. *Post* is an indicator period, equals to 1 if the firm-year is in [*t + 1, t + 4*] and 0 if the firm year is in [*t - 3, t*] where *t* is the year of loan trading. The definition of the regression variables can be found in appendix A. Superscripts ***, **, * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively, with standard errors clustered at firm level.

	Bid-ask Spread				**Number of Quotes**			
VARIABLES	**(1) High**		**(2) Low**		**(3) Low**		**(4) High**	
Post	**0.002**	**[0.160]**	**-0.027****	**[-2.432]**	**0.005**	**[0.474]**	**-0.031*****	**[-2.958]**
Size	-0.040***	[-6.733]	-0.045***	[-9.092]	-0.050***	[-8.454]	-0.040***	[-7.239]
Leverage	0.012***	[4.565]	0.019***	[2.909]	0.013***	[2.883]	0.015***	[4.775]
MB	-0.001	[-0.960]	-0.001	[-0.614]	-0.003**	[-2.016]	-0.000	[-0.227]
Blockholder	0.002	[0.201]	0.027*	[1.960]	0.012	[0.903]	0.015	[1.328]
FirmAge	0.001	[1.293]	-0.001	[-0.862]	0.000	[0.473]	-0.000	[-0.326]
Profitability	-0.762***	[-10.756]	-0.916***	[-7.188]	-0.802***	[-8.182]	-0.903***	[-11.413]
Litigation	-0.039*	[-1.745]	-0.041*	[-1.767]	-0.048**	[-2.270]	-0.042*	[-1.778]
Year fixed effects	Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes	
Observations	1,882		1,878		1,905		1,940	
Adjusted R-square	0.321		0.409		0.377		0.379	

Table 7 Robustness Test: Instrumental Variable Approach

This table reports the regression results using the two-stage least squares regression approach, where *Trade* and *Trade*Post* are treated as endogenous variables. Columns (1) and (2) report the first stage results, while Column (3) reports the second stage conservatism regression results. The instrument variables are *Fcovenant*, A*vg_market_bid*, and A*vg_market_bid*Post*. In the first stage, we estimate *Trade* and *Trade*Post* regressions, respectively, and the residuals obtained from the first stage regressions are used in the conservatism regression in the second stage. The definition of the variables can be found in appendix A. The main variable of interest is the interaction term *Trade*Post*. Superscripts ***, **, * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively, with standard errors clustered at firm level.

Regression	First Stage Reduced Form Estimation				Second stage estimation	
Variables	*Trade (1)*		*Trade*Post (2)*		Conservatism (3)	
Post	0.232	[1.27]	-1.526***	[-6.18]	0.051***	[4.730]
Trade					0.186***	[3.760]
Trade*Post					**-0.191*** **	**[-2.724]**
Size	0.048***	[11.93]	0.024***	[11.36]	-0.050***	[-24.561]
Leverage	0.035***	[10.30]	0.016***	[8.28]	0.019***	[10.268]
MB	0.004***	[3.56]	0.002***	[3.35]	-0.004***	[-8.034]
Blockholder	0.036***	[4.64]	0.019***	[4.49]	0.015***	[4.359]
FirmAge	-0.005***	[-7.50]	-0.002***	[-7.60]	-0.000	[-1.566]
Litigation	-0.023	[-1.48]	-0.013	[-1.54]	-0.023***	[-3.691]
Profitability	-0.072***	[-4.20]	-0.042***	[-4.45]	-0.366***	[-13.204]
Fcovenant	0.092***	[9.12]	0.050***	[9.69]		
Avg_market_ bid	0.273***	[5.87]	-0.035***	[-3.98]		
Avg_market_ bid*Post	-0.053	[-1.31]	0.369***	[6.74]		
Weak Instrument test						
Anderson-Rubin Wald test F Statistics				5.32	*P-value*	0.001
Hansen J statistic				0.3	*P-value*	0.584
Endogeneity test of endogenous repressors				8.013	*P-value*	0.018
Observations	47,861		47,861		47,861	

Table 8 Robustness Tests: Constant Sample

This table presents the estimation results evaluating the effects of loan trading on firms' accounting conservatism using a constant sample requiring the firms to have variables available both before and after loan trading. The dependent variable is the average rank of the three individual conservatism measures (*Avg_rank_con*). *Trade* is an indicator variable, equals to one for traded loans and zero otherwise. *Post* is an indicator variable, equals to 1 if the firm-year is in [*t + 1, t + 4*] and 0 if the firm year is in [*t - 3, t*]. For traded firm-loans, *t* is the year of loan trading; for non-traded loans, *t* is the year of loan issuance. Panel A presents results for the full sample; Panel B presents the subsample analysis results partitioned by lender reputation and lender relationship; Panel C presents the subsample analysis results for traded loans with high vs. low trading liquidity. The definition of the regression variables can be found in appendix A. Superscripts ***, **, * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively, with standard errors clustered at firm level.

Panel A: Constant Sample

VARIABLES	**Full Sample**	
Trade	0.054***	[6.184]
Post	0.013**	[2.424]
Post*Trade	**-0.028*** **	**[-3.644]**
Control variables	Yes	
Year fixed effects	Yes	
Industry fixed effects	Yes	
Observations	11,049	
Adjusted R-square	0.388	

Table 8 (continued)

Panel B: The Effects of Reputable and Relationship Lenders on Accounting Conservatism and Loan Sales

	Reputable Lenders				Relationship Lenders			
VARIABLES	**No (1)**		**Yes (2)**		**No (3)**		**Yes (4)**	
Trade	0.025	[0.701]	0.054***	[6.028]	0.053***	[3.775]	0.051***	[5.068]
Post	-0.003	[-0.093]	0.012**	[2.251]	0.006	[0.534]	0.015***	[2.592]
Post*Trade	**-0.010**	**[-0.228]**	**-0.028*** **	**[-3.618]**	**-0.027***	**[-1.88]**	**-0.027*** **	**[-2.98]**
Control variables	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes	
Observations	409		10,640		3,357		7,692	
Adjusted R-square	0.400		0.386		0.377		0.396	

Panel C: The Effects of Loan Trading Liquidity on Accounting Conservatism and Loan Sales

	Average bid-ask spread				# of quotes			
VARIABLES	**High (1)**		**Low (2)**		**Low (3)**		**High (4)**	
Post	**0.003**	**[0.281]**	**-0.029*** **	**[-2.601]**	**0.004**	**[0.336]**	**-0.03*** **	**[-2.944]**
Control variables	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes	
Observations	1,843		1,832		1,882		1,875	
Adjusted R-square	0.321		0.412		0.375		0.384	

Table 9 Robustness test: Removing Loans Issued after 2006

This table presents the estimation results evaluating the effects of loan trading on firms' accounting conservatism after removing loans issued after 2006 to eliminate the impact of financial crisis in 2007 - 2009 and to address the truncation problem due to the unavailability of loan trading data after 2009. The dependent variable is the average rank of the three individual conservatism measures (*Avg_rank_con*). *Traded* is an indicator variable, equals to one for traded loans and zero otherwise. *Post* is an indicator period, equals to 1 if the firm-year is in [$t + 1$, $t + 4$] and 0 if the firm year is in [$t - 3$, t]. For traded firm-loans, t is the year of loan trading; for non-traded loans, t is the year of loan issuance. Panel A presents results for the full sample; Panel B presents the subsample analysis results partitioned by lender reputation and lender relationship; Panel C presents the subsample analysis results for traded loans with high vs. low trading liquidity. The definition of the regression variables can be found in appendix A. Superscripts ***, **, * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively, with standard errors clustered at firm level.

Panel A:Full Sample Results after Removing Loans Issued after 2006

VARIABLES	**Full Sample**	
Trade	0.051***	[5.717]
Post	0.009	[1.479]
Post*Trade	**-0.029*** **	**[-3.497]**
Control variables	Yes	
Year fixed effects	Yes	
Industry fixed effects	Yes	
Observations	9,796	
Adjusted R-square	0.387	

Table 9 (continued)

Panel B: The Effects of reputable and relationship lenders on accounting conservatism and loan sales after removing loans issued after 2006

	Reputable Lenders				Relationship Lenders			
VARIABLES	**No (1)**		**Yes (2)**		**No (3)**		**Yes (4)**	
Trade	0.018	[0.530]	0.051***	[5.630]	0.041***	[2.752]	0.051***	[4.899]
Post	-0.001	[-0.022]	0.007	[1.266]	0.001	[0.074]	0.010	[1.472]
Post*Trade	**-0.032**	**[-0.693]**	**-0.028*** **	**[-3.401]**	**-0.033** **	**[-2.098]**	**-0.025** **	**[-2.551]**
Control variables	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes	
Observations	378		9,418		3,054		6,742	
Adjusted R-square	0.421		0.382		0.373		0.397	

Pane C: The effects of loan trading liquidity on accounting conservatism and loan sales after removing loans issued after 2006

	Average bid-ask spread				# of quotes			
VARIABLES	**High (1)**		**Low (2)**		**Low (3)**		**High (4)**	
Post	**0.000**	**[0.029]**	**-0.028** **	**[-2.382]**	**0.004**	**[0.357]**	**-0.034*** **	**[-2.848]**
Control variables	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes	
Observations	1,699		1,679		1,743		1,720	
Adjusted R-square	0.338		0.407		0.378		0.386	