The Price of Integrity

Chen Chen[a], Ying Xia[b], Bohui Zhang[c]

Abstract

This paper examines the effect of integrity culture on financing costs. Using the users' accounts information released from AshleyMadison.com, a website designed to facilitate extramarital affairs, we capture integrity culture by measuring the number of users within a firm. We find a strong negative relationship between financee's integrity and financing costs (bank loan spread and cost of equity). Using the Massachusetts' Alimony Reform Law of 2011 as an exogenous shock to integrity measures and the instrumental variable approach, we establish that the decrease in financee's integrity increases both bank loan spread and cost of equity. We further explore how integrity affects financing costs and find that lower integrity level can increase the financing costs through opaque accounting information and excessive risk taking.

JEL classifications: M14, G21, G12, G30

Keywords: Integrity, Bank Loan Spread, Cost of Equity

---

[a]Department of Accounting, Monash Business School, Monash University, 900 Dandenong Road, Caulfield East, VIC 3145, Australia. Email:chen.chen2@monash.edu.
[b]Department of Banking and Finance, Monash Business School, Monash University, 900 Dandenong Road, Caulfield East, VIC 3145, Australia. Email:ying.xia@monash.edu.
[c]School of Banking and Finance, University of New South Wales, Sydney, NSW, Australia. Email: bohui.zhang@unsw.edu.au.

Financing is nothing but an exchange of a sum of money today for a promise to return more money in the future. Whether such an exchange can take place depends not only on the legal enforceability of contracts, but also on the extent to which the financier trusts the financee.

--Guiso, Sapienza and Zingales (2004)

1. Introduction

Corporate culture has been addressed as an essential element in business. Due to the difficulties in defining the concept and the absence of high quality data to measure corporate culture, there are limited empirical studies on corporate culture. A recent development in the literature is the paper by Guiso, Sapienza, and Zingales (2015), they emphasize integrity as one dimension of corporate culture that matters for firms. Integrity, meaning to keep one's word and to have strong moral principles, is ranked as the second most important corporate value by the Standard and Poor's 500 companies (Guiso, Sapienza, and Zingales 2015). Integrity is among the most crucial factors that financial market participants consider when they enter into a financial contract. When financiers trust the financee, they spend fewer resources on protecting their rights, leading to a lower external financing cost. Therefore, integrity should have major effects on capital prices. Surprisingly, there is no empirical research providing evidence on whether integrity affects capital pricing.

In this paper, we investigate whether financee's integrity can affect financing costs. Financial contracts are actually incomplete contracts where the financiers are unable to contract on a financee's all future activities (Christensen, Nikolaev, and Wittenberg-Moerman 2016). A firm with the culture of "keeping one's word" can help mitigate the moral hazard problem in the financial contracts, and thereafter the financiers should charge less in terms of financing costs. Implied from the incomplete contract theory, we expect the risk premium required by financiers to be lower for the firms with higher integrity compared to those with lower integrity.

We empirically test our conjecture using a firm-year level measure of integrity. In particular, we use the off-the-job behavior of employees in one firm to capture the firm's culture of integrity. We argue that employees' tendency to conduct extramarital affair is negatively correlated with employees' tendency to act morally in their routine jobs. Literature has argued and found evidence that executives' prior legal infractions is related to firms' financial reporting risk (Davidson, Dey, and Smith 2015), lending support to our conjecture. Using the extramarital affair information to capture integrity culture offers two key advantages. First, no employees will admit they are dishonest and unethical officially, making empirical researchers difficult to gauge the integrity at firm level. By observing the extramarital affair of employees, researchers can have a better measure of integrity at firm level. Second, employees' extramarital affair is less likely to be affected than any on-the-job behavior by characteristics of the firm such as the incentive plans, the internal control environment and corporate governance systems, facilitating the clean identification of corporate culture.

Our measure of integrity culture is based on the data that is recently released (hacked) from the Ashley Madison (AM) website without intrusion to individual privacy. AM is a website that provides paid matching services for married people to seek extramarital affairs. Registration for such a website suggests relatively low level of honesty and weak recognition of contracts – given marriage is in effect a contract between the husband and wife. Marital infidelity is a private matter but it could be reflected in on-the-job decisions if integrity is embedded in one person's mind. To capture the measure of integrity culture at firm level, we merge the registrants' email domains with the companies' email domains and calculate the number of AM website users within a company. As pointed out by Schneider (1987), a firm is more likely to attract, select, and retain employees who match its culture, we expect that firms that do not emphasize and value integrity in their cultures are more likely to employ individuals who display a lack of integrity in their daily lives. Thus, we hypothesize that the greater the

number of a firm's employees who register with the website and actively use its service, the lower the degree of the integrity.

Our empirical analyses are based on the AM user data during years 2002–2015. After controlling for various firm characteristics as well as firm and year fixed effects, our tests confirm that firms with lower level of integrity (i.e., greater AM users count) receive higher bank loan spreads and higher cost of equity. In terms of economic significance, we find one standard deviation increase of integrity (i.e., drop of AM accounts measured by *Ln(1+AM Active)*) is associated with a drop of 16.92% (1.83%) over the sample mean of *Ln(Loan Spread)* (*Cost of Equity Avg*).

One concern is that the observed relation between integrity corporate culture and capital pricing could be endogenous even though we include firm fixed effects in the regression to control for time-invariant unobservable omitted firm characteristics. To further address this endogeneity concern, we perform several additional tests as follows.

First, we use Massachusetts' Alimony Reform Law of 2011 that changes the alimony for the devoice parties as an exogenous shock to our integrity measure. We argue that such a law change reduces the expected alimony if devoice happens, thereafter reducing the expected cost of extramarital infidelity. Empirically we find the number of AM users in Massachusetts increases compared to that in the surrounding states, validating our experiment. Next, we are able to conduct difference-in-difference tests to show that firms in Massachusetts experience more increases in their cost of bank loan and cost of equity after the shock compared to the firms in surrounding states. Our results are not sensitive to different control samples and different event windows. We further strengthen the analysis by using the two-stage least square (2SLS) regression analysis with an instrumental variable. In particular, we use the social capital in the firm's home county as our instrumental variable. We posit that the social capital in the firm's home county directly curbs people's tendency and incentive to cheat on their partners as

social capital provides a community governance (Bowles and Gintis 2002). Research in sociology documents that as social capital in U.S. decreases, the devoice rates increase significantly (Putnam 1995). The 2SLS regression results support our hypothesis that social capital is negatively associated with our integrity measures. More importantly, we find in the second stage the predicted value of integrity measures are negatively associated with bank loan spreads and cost of equity. Last, we use the regional level AM accounts as an alternative measure of integrity to mitigate the endogeneity problem as this measure is less endogenous.

One may question how the capital providers, such as banks, analysts and financial institutions can know the details of AM account registrants of each company before the user information is hacked. We argue that the outsiders can gauge or infer integrity culture of the firm from various public information sources indirectly. Our natural experiment is a good example how the outsiders can use the public information to infer integrity culture of the firms located in Massachusetts. To further strengthen our argument, we investigate channels through which integrity culture affects financing costs. One important channel we posit is that - financee with lower integrity may affect financing cost via increased information risks. We first establish that higher integrity level is associated with better accounting information quality and then show that better accounting information quality is associated with lower financing costs. The other possible channel that integrity may affect financing cost is through financees' excessive risk taking behavior. Literature in phycology suggests that integrity and risk taking is inversely related to each other (Gino and Ariely 2012). Firms that display lack of integrity culture are more likely to take excessive risk, as a result, the financiers will charge higher risk premium. The results of our further analysis also support this channel. We find that our AM accounts measure is positively associated with default risk and default risk is positively associated with financing costs.

Our study makes several contributions to the literature. First, we show that financees' integrity is an important priced factor in financial contracts. Most of the prior studies focus on the traditional risk factors or financees' financial fundamentals as the determinants of capital prices. We are the first to show that, corporate culture has also been considered by the capital providers. Second, our study broadens the current research in cultural finance. Guiso, Sapienza, and Zingales (2015) are among the first to show that integrity affects firms' performance positively. We exhibit that integrity could not only affect the numerator (cash flow) but also the denominator, in particular, investors' perception of risks. Third, our study provides direct evidence that trust or perceived trust worthiness affects financial contracts. Although prior studies have shown the importance of trust in affecting individuals willingness to participate in the stock market (Guiso, Sapienza, and Zingales 2008), few studies investigate whether and how perceived trustworthiness (integrity in our context) affects professional investors' (banks') attitudes in making their price decisions. Our study fills this void by providing ample empirical evidence.

The rest of the paper is arranged as follows. Section 2 reviews the literature and develops the hypothesis. Section 3 describes the data and research design. Section 4 reports our main results. Section 5 discusses the tests to address endogeneity. Section 6 presents the additional tests. Section 7 concludes.

2. Literature Review and Hypothesis Development

As advocated by Zingales (2015), there is a growing literature studying the effect of corporate culture on corporate behavior and performance. Guiso, Sapienz, and Zingales (2015) firstly documents that managers' perceived integrity and ethics are positively correlated with firm's performance. Pan, Siegel, and Wang (2014) finds that conditional on engaging in acquisitions, CEOs from more risk and uncertainty avoiding cultures try to reduce risk by

choosing targets with higher diversification potential and by using equity financing. Liu (2016) finds that firms with high corruption culture are more likely to engage in earnings management, accounting fraud, option backdating, and opportunistic insider trading.

Despite these evidence on the effects of corporate culture on corporate policies, there is very little evidence on how capital providers perceive the unethical culture. A related stream of related literature studies how trust could affect the capital providers' decisions. Moro and Fink (2013) find that small and medium size enterprises that enjoy high levels of trust are less constrained in their borrowing. Lewicki, MaCallister, and Bier (1998) find that trust reduces monitoring costs in the debt contracts. Gurun, Stoffman, and Yonker (2015) show that trust plays a critical role in financial intermediation by exploiting the geographic dispersion of the victims of the Madoff Ponzi scheme. From a corporate perspective, Pevzner, Xie, and Xin (2015) investigate country-level trust and how it affects investor's reaction to firms' financial disclosures, while Bottazzi, DaRin, and Hellman (2011) and Duarte, Siegel, and Young (2012) find that trust facilitate access to capital in the context of mergers and acquisition transactions. Giannetti and Wang (2016) study corporate financial misconduct and show that federal securities enforcement actions lead to reduced stock market participation of households in the fraudulent firm's state. All of the above papers, however, mainly focus on country-level measures of trust.

We hypothesize that capital providers also value firm level trustworthiness. If they realize one firm's culture emphasizes less on integrity, their subjective estimation of the likelihood of moral hazard problem in finance contracts is higher. As a result, they can price protect themselves ex ante. To summarize, our main hypothesis is as follows:

There is a negative association between financee's integrity culture and financing cost.

3. Data and variable construction

3.1 Sample Selection

The sample construction starts with a comprehensive list of US public firms between 2002 and 2015[1]. We obtained the released Ashley Madison accounts data from the internet, syndicated bank loan data from LPC's Dealscan database, firm financial statement data from Compustat, and stock return data from the Center for Research in Security Prices (CRSP) stock file. Implied cost of equity capital is estimated from the Institutional Brokers' Estimate System (IBES) data. We exclude from our sample financial firms [i.e. standard industrial classification (SIC) codes between 6000 and 6999]. The bank loan sample is created by matching bank loan data with Ashley Madison accounts data and other related firm fundamentals data, containing 7,663 firm-fiscal year observations. The intersection of Ashley Madison, IBES, CRSP, and Compustat databases creates our cost of equity capital sample which consists of 19,888 firm-fiscal year observations. We winsorize all variables except for indicator variables at the 1st and 99th percentiles to mitigate the influences of outliers. All variable definitions are in Appendix Table A1.

3.2 Ashley Madison (AM) accounts data

The Ashley Madison accounts data are collected from AshleyMadison.com which was hacked on July 15, 2015. We obtain subscribers' information for the majority of AM accounts after they were released on BitTorrent. To protect personal privacy, we discard all information regarding personal identification and keep the email domain information (i.e., the suffix after the "@" sign) of email addresses people use to register for the AM service and the zip codes of their mailing addresses when they fill out the registration form. We then manually collect

[1] The sample period from 2002 to 2015 is selected because of the constraints imposed by the availability of Ashley Madison accounts data.

email domains for the companies from their websites, excluding any email domains that appear to be associated with a company but are not, such as *yahoo.com, facebook.com, aol.com, verizon.com*. After matching the AM users' email domains to companies' email domains, we are able to identify the firm that the AM users are currently affiliated with. An individual who use the AM service to seek extramarital affair is considered lack of integrity. We then calculate the number of AM users within a firm as firm level integrity measures. The underlying assumption is that a firm is more likely to attract and employ individuals who match the firm's culture (Schneider 1987), thus firms that do not emphasize integrity in their cultures are more likely to employ individuals who display a lack of integrity. We hypothesize that greater number of AM users within a firm shows that the firm's culture does not emphasize integrity.

When constructing our measure of integrity, we consider three types of AM accounts users: AM service subscribers, active users of an AM account, and newly registered users of AM website. We first construct a broadly defined integrity measure, *AM_Accounts*, as the number of all AM users who have registered with AM service that are affiliated with a firm in a given fiscal year. For instance, if David of a firm registered with AM on March 1, 2006, he will be included in calculating *AM_ Accounts* from 2006 to the end of our sample period, but not the years before 2006.

One concern with the first measure is that some subscribers may never use the AM service since they registered. So we construct our second measure of integrity, *AM_Active*, which is a more narrowly defined measure based on whether a registered user is actively using the AM website. A subscriber is defined as an active user if some activities are recorded, such as chatting or sending messages. The "active period" is defined as the period between the date of an individual's registration for AM website and the last activity was recorded. For instance, if David of a firm registered on March 1, 2006, and his last recorded activity took place on December 16, 2010, he will be included in calculating the *AM_Active* for the firm from 2006

to 2010. In addition, we construct our third measure of integrity, *AM_New*, defined as the number of new AM users who registered with AM website during the year. We take the natural logarithm of 1 plus all the three measures denoted by *Ln(1+AM_Accounts)*, *Ln(1+AM_Active)*, and *Ln(1+AM_New)* respectively.

The integrity measures are not scaled by the total number of employees due to two reasons. First, the number of employees is voluntary reported by the firm and is often unaudited. Second, the number of employees obtained from the Compustat database also includes the number of foreign employees, but our AM accounts measures do not account for foreign company AM users. Therefore, scaling *AM_Accounts*, *AM_Active* or *AM_New* by the total number of employees will introduce more measurement errors in these variables. As an alternative, the natural logarithm of total number of employees is included as a control variable in all specifications.

3.3 Cost of Bank Loans

Our bank loan data are extracted from Loan Pricing Corporation (LPC)'s DealScan database. The bank loan data is at facility or tranche level. Facilities are grouped into a package (i.e. a deal), one deal could have multiple facilities. In the case of multiple facilities within a deal, we take the largest facility as an observation. For each loan origination date, we are able to obtain the various loan information at the deal-level, including spread, maturity, loan amount, purpose of the loan, and type of the loan. We capture cost of bank loans using the all-in-drawn spread measured as the spread over the London Interbank Offered Rate (LIBOR) or LIBOR equivalent on a loan plus associated loan origination fees. We take the natural logarithm of the loan spread, denoted as *Ln(Loan Spread)*, to mitigate the skewness problem in the data.

3.4 Implied Cost of Equity Capital

We estimate the cost of equity capital which is implied in the current stock price and future earnings. Specifically, we use consensus earnings forecasts from the IBES database to estimate future earnings. Then we employ the methodologies outlined in in Gebhardt, Lee, and Swaminathan (2001), Claus and Thomas (2001), Easton (2004), and Ohlson and Juettner-Nauroth (2005) to calculate four implied cost of equity measures, denoted as *Cost of Equity GLS*, *Cost of Equity CT*, *Cost of Equity Easton*, and *Cost of Equity OJ*, respectively. We follow the literature to use the mean of the four cost of equity estimates, denoted as *Cost of Equity Avg*, as our main measure of the cost of equity.

3.5 Control variables

To investigate the effect of integrity on cost of bank loans, we follow the bank loan literature (e.g. Graham, Li, and Qiu 2008) to control for other loan contract-specific and borrower-specific factors that might affect loan spread. Loan characteristics that we control for include natural logarithm of loan facility amount, loan maturity measured in months, whether the loan facility uses performance-based pricing, different loan types (term loans, acquisition facility, bridge loans, revolvers, and etc.), and different purpose of loan facility (acquisition, commercial paper backup, corporate purposes, debt repay, exit financing, mergers, securities purchase, stock buyback, takeover, working capital, and etc.). We also control for borrower characteristics which include the natural logarithm of total assets, market-to-book ratio calculated as market value of assets divided by book value of assets, return on asset, leverage ratio, asset tangibility captured by net property, plant and equipment (*PPENT*) divided by total assets (*AT*), cash flow volatility measured as the standard deviation of operating income before depreciation (*OIBDP*) divided by total assets (*AT)* over the 20 quarters before the quarter

containing the loan origination date, Altman's (1968) Z-Score, and the natural logarithm of the number of people (in thousand) employed by the firm.

To study the impact of integrity culture on cost of equity capital, we control for variables which are used in prior literature (e.g. Dhaliwal, Judd, Serfling, and Shaikh 2016). Market beta is estimated by regressing daily stock returns on the CRSP value-weighted daily market returns over the fiscal year, idiosyncratic risk is the annualized standard deviation of the residuals from the regression of daily stock returns on the CRSP value-weighted daily market returns over the fiscal year, market value of equity is calculated by multiplying stock price (*PRCC_F*) by number of shares outstanding (*CSHO*), book-to-market ratio is book value of equity (*CEQ*) divided by market value of equity, leverage ratio is the sum of long-term debt (*DLTT*) and debt in current liabilities (*DLC*) divided by total asset (*AT*) , stock return momentum is stock return over the fiscal year, return on asset is calculated as income before extraordinary items (*IB*) divided by total asset (*AT*), the forecasted long-term growth rate is the median analyst forecast of the long-term earnings growth rate, analyst forecast dispersion is the standard deviation of the analysts' forecast for the next period's earnings within 90 days before earnings announcement divided by the consensus forecast for the next period's earnings, and the natural logarithm of the number of employees.

3.6 Summary Statistics

Panel A of Table 1 reports the summary statistics for the bank loan sample. An average firm in our sample has the *Ln(Loan Spread)* of 0.325, *Ln(Loan Size)* of 5.818, maturity of 51 months, market-to-book of 1.767, return on asset of 0.136, leverage ratio of 0.278, asset tangibility of 0.327, cash flow volatility of 0.014, and Z-Score of 3.412. These statistics are consistent with existing literature (Campello, Lin, Ma, and Zou 2011; Campello and Gao 2017).

Integrity measured by *Ln(1+AM Accounts)* ranges from 0 to 4.143 with a mean value of 0.682. The *Ln(1+AM Active)* measure averages 0.296, and the mean of *Ln(1+AM New)* is 0.264.

The summary statistics for the cost of equity sample are reported in Panel B of Table 1. The Gebhardt, Lee, and Swaminathan (2001)'s GLS method generates the lowest average cost of equity of 0.07 while the Ohlson and Juettner-Nauroth (2005)'s OJ method gives the highest estimation of the average cost of equity of 0.232. The mean value of the cost of equity estimated using Claus and Thomas (2001)'s and Easton (2004)'s methods are 0.099 and 0.113 respectively. The *Cost of Equity Avg* which is the average of the four cost of equity measures has a mean value of 0.126. All these cost of equity measures are comparable to the prior literature (Dhaliwal, Judd, Serfling, and Shaikh 2016). The other firm variables also have reasonable statistics. The average market beta, idiosyncratic risk, and momentum are 1.151, 0.396, and 0.168 respectively. The average firm has a market value of equity of $7 billion, book-to-market ratio of 0.501, and leverage ratio of 0.206. On average, the forecasted long-term growth rate is 0.116 and the analyst forecast dispersion is 0.307.

[Insert Table 1 About here]

4. Baseline regression analysis

In this section, we examine the general relationship between financee's integrity and financing costs. Overall, the multivariate regressions show that firms with higher integrity level tend to have lower costs of both bank loan and equity capital.

4.1 Effect of integrity on the cost of bank loans

To study the effect of integrity on the cost of bank loan, we rely on the multivariate regression analysis. We follow prior literature (Graham, Li, and Qiu 2008; Campello, Lin, Ma,

and Zou 2011; Campello and Gao 2017) to include both loan and firm characteristics as the determinants of bank loan spread. To mitigate the reverse causality issue, for each loan deal, we link it to the AM accounts measures and firm characteristics variables measured over the fiscal year before loan deal origination date. We also control for loan type, loan purpose, and firm and year fixed effects. Standard errors are clustered at firm level. To capture the effect of integrity, we add one of the AM accounts variable as the independent variable. The baseline specification for bank loan is as follows:

$$Ln(Loan\ Spread) = \alpha_1\ Integrity + \beta' Controls + \gamma' Firm + \theta' Year + \varepsilon, \quad (1)$$

where *Integrity* is either *Ln(1+AM Accounts)*, *Ln(1+AM Active)*, or *Ln(1+AM New)*, *Controls* is a set of control variables including both loan and firm characteristics as mentioned above, *Firm* and *Year* stand for vectors of firm and year fixed effects.

Panel A of Table 2 presents the results from the bank loan spread regression analysis. Columns 1 to 3 report the results of regressions with *Ln(1+AM Accounts)*, *Ln(1+AM Active)*, or *Ln(1+AM New)* as integrity measures, respectively. The results suggest that lower level of integrity (i.e. greater number of AM accounts at firm level) is associated with higher bank loan spread. The results are consistent across all three measures of integrity. All of the point estimates are statistically significant at the 1% level. The coefficients are also economically important. For instance, the coefficient on *Ln(1+AM Active)* is 0.091, meaning that a one standard deviation increase in *Ln(1+AM Active)* is associated with a 0.055 (i.e., 0.091×0.602) level raise in *Ln(Loan Spread)*, which is equivalent to an increase of 16.92% over of the sample's average *Ln(Loan Spread)*.

With regard to the control variables, most of the results are consistent with prior literature. Larger firm size, higher market-to-book and return on asset, lower leverage ratio, higher asset tangibility, and larger loan facility amounts are associated with lower loan spreads.

4.2 Effect of integrity on the cost of equity

We then look at the impact of integrity on the cost of equity using similar regression analysis setting. We control for the factors that might determine cost of equity. Likewise, we add one of the AM accounts variable as the independent variable. As in Equation (1), we also control for firm and year fixed effects in all regressions. Standard errors are clustered at firm level. The baseline specification for implied cost of equity is as follows:

$$Cost\ of\ Equity\ Capital = \alpha_1\ Integrity + \beta' Controls + \gamma' Firm + \theta' Year + \varepsilon, \qquad (2)$$

where *Integrity* is either *Ln(1+AM Accounts)*, *Ln(1+AM Active)*, or *Ln(1+AM New)*, *Controls* is a set of control variables including both loan and firm characteristics, *Firm* and *Year* stand for vectors of firm and year fixed effects.

Panel B of Table 2 presents the results from the regression analysis with *Cost of Equity Avg* as dependent variable. Columns 1 to 3 report the results of regressions with *Ln(1+AM Accounts)*, *Ln(1+AM Active)*, or *Ln(1+AM New)* as integrity measures, respectively. Consistent with the bank loan estimates, the results indicate that lower level of integrity (i.e. greater number of AM accounts) is related to higher cost of equity. All the coefficients on AM accounts measures are statistically significant at the 1% level. The regressions results with the four implied cost of equity measures as dependent variables are reported in Appendix A2, all the coefficients on AM accounts measures are positive and significant. The coefficient on *Ln(1+AM Active)* is 0.004, indicating that a one standard deviation increase in *Ln(1+AM Active)*

is associated with a 0.0023 (i.e., 0.004×0.576) level increase in *Cost of Equity Avg*, equivalent to an increase of 1.83% over of the sample's average *Cost of Equity Avg*.

[Insert Table 2 About Here]

5. Tests to Address Endogeneity

Although the prior section suggests a significant relationship between financee's integrity and financing costs (loan spread and cost of equity), the multivariate regression analysis are subject to several concerns regarding estimation biases. One of the major concerns is the endogeneity issue. It is possible that there might be certain other firm characteristics omitted from our regression specifications that affect both the firm-level integrity culture and the cost of capital, leading to biased results. Although it is extremely difficult to completely overcome the endogeneity concern, we attempt to address this issue in three separate ways in this section. The first identification strategy we implement is to use Massachusetts' Alimony Reform Law as an exogenous shock that changes the local resident's attitude of extramarital affairs as well as the number of AM users. The second method we employ is a 2SLS with a valid instrumental variable. The third approach we adopt is to use an alternative AM account measure at the region level rather than at the firm level.

5.1 Difference-in-Difference analysis

To address the endogeneity issue, we conduct difference-in-difference tests in the context of an exogenous event to identify the effect of integrity on cost of bank loan and equity. The exogenous event we examine is the Massachusetts' Alimony Reform Law[2] which was passed

[2] More information on the Massachusetts' Alimony Reform Law can be found via the following link: https://www.massalimonyreform.org/reformlaw/.

on September 26, 2011 and then took effect in March 2012. Alimony, or spousal support, is a court-ordered payment from higher-earning partner to the lower-earning partner upon divorce. The courts have discretion in determining the amount and duration of alimony award. Prior to the reform, Massachusetts employed typical alimony laws in which there was no cap for the amount of alimony and no guideline as to when the alimony should end. The Alimony Reform Law then set limits on the amount and duration of alimony. Specifically, the Alimony Reform limits the cap of spousal support into 30% to 35% of the difference between the parties' gross incomes, sets durational limits which are based on the length of the marriage, and allows the termination of spousal support under some new circumstances. For instance, before the reform, all alimony in Massachusetts was alimony for life. After the reform, people can terminate their alimony when they reach retirement age so they have time to save money to prepare for retirement. Another example is that before the reform, if the paying spouse got re-married, the receiving spouse could take them back into court to receive an increase in their alimony, based on the second spouse's income. After the reform, if the person who pays alimony gets remarried, their new spouse's income and assets are not considered in a re-determination of the alimony. We posit that these changes in the alimony law will significantly reduce the divorce costs for the betrayed party. As a result, it will induce more incentives for the betrayed party to use AM accounts. In other words, there should be greater increase in the number of AM users in Massachusetts after the Alimony Reform compared to other states.[3] We believe this law change can serve as a good candidate for an exogenous shock to the integrity culture measured by the AM accounts due to two reasons. First of all, the event is unlikely to be driven by firm fundamentals or cost of debt and equity capital. The reform was proposed in order to provide more specific guidelines on how to determine the reasonable amount and duration of spousal

[3] Empirically, we observe the AM accounts increase significantly more in Massachusetts compared to the control sample in surrounding states after the Alimony Reform takes place. The significance level is in 5%.

support based on the length of the marriage and the individual circumstances of the couple's relationship. Second, this event only affects Massachusetts, which allows us to implement a difference-in-difference analysis to test whether an exogenous change in integrity measures will lead to a greater change in cost of capital.

To conduct the difference-in-difference identification strategy, we construct a treatment group and a control group. The treatment group contains the firms located in Massachusetts, while the control group includes firms located in the state surrounding Massachusetts[4] (i.e. New York, New Jersey, New Hampshire, Vermont, Connecticut, Rhode Island, and Pennsylvania). We focus on the fiscal years before and the fiscal years after the reform (excluding the event period which are the fiscal years between 2011 and 2012). Note that, for the bank loan sample, we don't use the propensity score matching method to identify matches between firms in the treatment group and firms in the control firm because the propensity score matching algorithm requires the firm to have bank loan issues in both pre-event and post-event year, leaving us with too few observations to run the difference-in-difference regression. The propensity score matching method can be implemented in the cost of equity sample, the difference-in-difference results for the propensity score matched cost of equity sample are reported in Appendix Table A3 Panel C. To be consistent for both tests, we just report the difference-in-difference tests using all the firms in the surrounding states.

Before we run the difference-in-difference regressions, we first perform a *t*-test on the differences between the two groups' pre-event (2010) characteristics. Panel A and Panel B of Table 3 show that there is no statistically significant differences between the treatment group and the control group for most of the factors that affect bank loan spread and cost of equity.

[4] We repeat the same test by including firms located in all the other states as control firms, the results still hold and are reported in Appendix Table A3 Panel A and Panel B.

Second, we compare the change of financing costs for the treatment and control firms over a three-year period centered on the Alimony Reform time (denoted as time 0). The two figures in Figure 1 depicts the trends clearly for bank loan spread and cost of equity respectively. Pre-event year is denoted as time -1 and the post-event year is denoted as time 1. As it is shown in the first figure, there is slightly increase in bank loan spread for both treatment and control groups from time -1 to the event time. After the event time, the bank loan spread starts to decline for the control group but still goes up for the treatment group, indicating a larger increase in loan spread for the treatment group. The second figure shows the trend for cost of equity. Both the treatment and control groups experience drops in cost of equity before the event time. After the Alimony Reform, the treatment firms show a large increase in cost of equity while the cost of equity for control firms continues to drop.

[Insert Figure 1 About Here]

Next, we perform the difference-in-difference analysis in a regression framework as follows:

$$Ln(Loan\ Spread) or\ Cost\ of\ Equity = \alpha_1\ Treatment \times Post + \alpha_2\ Treatment + \alpha_3 Post + \beta' Controls + \varepsilon, \quad (3)$$

where *Treatment* is a dummy variable equal to one (zero) if a firm is in the treatment (control) group, *Post* is a dummy variable equal to one for post-event fiscal year and zero for pre-event fiscal year, and *Treatment*×*Post* is the interaction between these two variables. The control variables are the same as those used in baseline model.

The results are in Table 3, Panel C and Panel D. In both panels, Column (1) reports the results for the sample with one year before (fiscal year=2010) and one year after (fiscal

year=2013) the reform, Column (2) shows the results for the sample with two years before (fiscal year=2009 and 2010) and two years after (fiscal year=2013 and 2014) the reform, and Column (3) presents the results for the sample with three years before (fiscal year=2008, 2009, and 2010) and three years after (fiscal year=2008, 2009, and 2010) the law change. As expected, for both samples, the coefficients on *Treatment×Post* are statistically significant and positive, indicating that the treatment firms experience a larger increase in loan spread after the Alimony Reform compared with the control firms. The results consistently show that an increase in the number of AM accounts (i.e. a drop in integrity level) raises both loan spread and cost of equity.

To make sure that the results we find by using the Massachusetts' Alimony Reform Law as exogenous event are not random, we first conduct tests to examine the parallel trend. In particular, we add a *Pseudo Post* variable and the interaction term *Treatment×Pseudo Post* in which we use other year as a pseudo-event year. The results are presented in Column (4) and (5) of Panel C and Panel D in Table 3. In Column (4) we use 2010 as a pseudo-event, and 2009 is chosen as a pseudo-event in Column (5). The coefficients of *Treatment×Pseudo Post* in both columns are insignificant whereas the coefficients of *Treatment× Post* remain statistically significant. Next, we perform a placebo test. More specifically, we replace the event state Massachusetts with a randomly selected state from all the other 49 states and randomly choose one fiscal year between 2008 and 2013 as the event year and rerun our difference-in-difference regressions. The firms located in the randomly selected state is called 'pseudo treatment' firm and the randomly selected fiscal year is called 'pseudo event year'. We repeat this randomly choosing process and run the difference-in-difference regressions for 200 times. The distribution of the coefficients on the interaction term Pseudo *Treatment×Pseudo Post* and the corresponding t-statistics are reported in Panel E of Table 3. The average coefficient estimate is insignificant and much smaller in magnitude compared to those in Panel C and D. For

instance, the coefficient estimate on the interaction term for the bank loan specification in Column (3) of Panel C is 0.139 and significant at 5% level, while the placebo estimates are insignificant and only have a mean value of 0.002 and a median value of -0.008. For the cost of equity tests, compared to the coefficient estimate on the interaction term in Column (3) of Panel D which is 0.022 and significant at 5% level, the mean and median value of the placebo estimates are -0.002 and 0 respectively. Both placebo tests support that our findings in the context of the Massachusetts' Alimony Reform Law are unique, suggesting the identification of the effect of financee's integrity on cost of capital.

[Insert Table 3 About Here]

5.2 Instrumental variable approach

To further address this endogeneity concern, we also perform a two-stage least square (2SLS) regression by using instrumental variable. A valid instrument must be correlated with integrity measures but unrelated to any unobservable variables that may affect firm's financing cost independently. In particular, we use social capital in the firm's home county as an instrument for integrity measures. Social capital, as a major community governance mechanism, can reduce employees' incentives to do something dishonest by imposing a reputational loss (Bowles and Gintis 2002), and thus increases the costs of cheating in one's marriage. In fact, research sociology documents that as social capital in U.S. decreases, the devoice rates increase significantly (Putnam 1995). We think that the social capital in the firm's home county is a valid instrumental variable as there is no other reason for us to believe that it affects loan pricing and cost of equity in a direct way. In other words, it affects firm's financing cost mainly through its integrity culture channel.

Empirically, we measure social capital at the county level. It is constructed as the first principal component of four inputs: *Assn*, *Nccs*, *Pvote* and *Respn*. The data are collected from the Northeast Regional Center for Rural Development (NERCRD) surveys. *Assn* is the sum of the religious organizations, civic and social associations, business associations, political organizations, professional organizations, labor organizations, bowling centers, physical fitness facilities, public golf courses, sport clubs, managers and promoters membership sports and recreation clubs (no data for 2005 or 2009), and membership organizations not elsewhere classified (no data for 2005 or 2009), then divided the number by 12 (10 for 2005 or 2009) and scaled by the population of the county (measured per 10,000 people). *Nccs* is the total number of nongovernment organizations excluding the ones with an international focus, scaled by the population (measured per 10,000 people). *Pvote* is the number of votes casted scaled by the population above 18 years old (measured per 10,000 people). *Respn* is the census response rate. As the NERCD surveys are not conducted every year, we linearly interpolate and fill the social capital data for years between two adjacent surveys.

In the first-stage, we regress integrity measures on the instrumental variable and other control variables. In the second-stage, we regress the financing costs measures on the fitted value of integrity measures obtained from the first-stage. The 2SLS regressions are as follows:

$$1st\ Stage:\ Integrity = \alpha_1\ Social\ Capital + \beta' Controls + \gamma' Year + \varepsilon,$$

$$2nd\ Stage:\ Ln(Loan\ Spread) or\ Cost\ of\ Equity = \alpha_1\ Fit\_Integrity + \beta' Controls + \gamma' Year + \varepsilon, \quad (4)$$

where *Integrity* is either *Ln(1+AM Accounts)*, *Ln(1+AM Active)*, or *Ln(1+AM New)*, *Fit_ Integrity* is the fitted value of *Ln(1+AM Accounts))*, *Ln(1+AM Active)*, or *Ln(1+AM New)*,

Controls is a set of control variables used in the baseline regressions, and *Year* stand for vectors of year fixed effects. We cannot include firm fixed effects because the social capital is measured at county level and is not time variant at firm level.

The results of 2SLS regressions are tabulated in Table 4. In Column (1), (3) and (5), the coefficients on *Ln(1+AM Accounts)), Ln(1+AM Active),* or *Ln(1+AM New)* are negative and significant, indicating that social capital is highly correlated with firm level integrity. Column (2), (4) and (6) show the results of second-stage regressions. Consistent with our previous findings, the coefficients on *Fit_Ln(1+AM Accounts), Fit_Ln(1+AM Active),* and *Fit_Ln(1+AM New)* are all positive and significant at 1% (10%) level for bank loan sample (cost of equity sample). Thus, the results are robust to the controlling for endogeneity issue using instrumental variable approach.

[Insert Table 4 About Here]

5.3 Alternative Integrity Measure

One concern of our AM account measures is that these measures are in the firm-level, which are subject to criticism of endogeneity. In this section, we rely on an alternative measure, which is the aggregate number of AM users scaled by the total population in a particular region. The aggregate number of AM users in a region reflects a general trend of or attitude towards extra-marital affairs of the region. Instead of using subscribers' corporate email addresses, this alternative measure relies on the zip code of registrants, regardless whether the user is affiliated with a company or not. To compile the Core Based Statistical Area (CBSA)[5] level AM accounts, we first obtain zip codes from the mailing addresses filled out by the AM subscribers,

[5] A Core Based Statistical Area (CBSA) is a U.S. geographic area defined by the Office of Management and Budget (OMB) that consists of one or more counties anchored by an urban center of at least 10,000 people plus adjacent counties that are socioeconomically tied to the urban center by commuting.

excluding the zip codes that appear to be fake or with disproportionally large number of AM registrants, such as "00000" and "12345". After calculating the aggregated number of AM users at CBSA level, we scale the number of AM users by its corresponding population. We then match with firms whose headquarters are located in the same CBSA. Similar to the firm-level AM account measures, we calculated the number of total users, the number of active users, and the number of newly registered users at CBSA level, denoted as *Cbsa_AM Accounts*, *Cbsa_AM Active*, and *Cbsa_AM New* respectively.

Consistent with our previous results, the coefficient estimates, reported in Table 5, on the CBSA level AM accounts measures are positive and significant, suggesting that greater number of AM users in the CBSA is associated with higher loan spread as well as higher cost of equity.

[Insert Table 5 About Here]

6 Channels that Integrity Affects Capital Pricing

After establishing a causal effect of integrity on capital pricing, in this section, we further explore the channels through which integrity culture affects capital pricing.

6.1 Accounting Information Quality

The first channel we posit is through information opaqueness. Prior research has found that accounting information quality has a singifcant role in loan contracting terms as well as equity prices (Graham, Li, and Qiu 2008; Francis, Lafond, Olsson and Schipper 2004). If integrity signficantly improves the accounting information quality of the financees, one may expect that integrity reduces financing cost via the reduced information risk channel. In fact, Karpoff, Lee, and Martin (2008) finds that unethical behavior affects the credibility of corporate disclosure. To empirical test our conjecture, we use the discretionary accrual to proxy

for accounting information quality. We first show that integrity improves the accounting information quality. The subsequent analysis tests whether the accounting information quality affects loan spreads and cost of equity.

Table 6 reports our two-step analysis. Column (1) to Column (3) in Panel A and Panel B show that our integrity measure, AM accounts is negatively associated with accounting information quality (positively associated with discretionary accrual). Column (4) in Panel A and Panel B show results the discretionary accrual is priced by debt holders and equity holders.

[Insert Table 6 About Here]

6.2 Excessive Risk Taking

The second channel we posit is through excessive risk taking. Prior study has found that less integrity culture may encourage more risk takings. Research in psychology and behavioral economics finds a robust positive association between dishonesty and creativity. Gino and Ariely (2012) find that creativity is a strong determinant of unethical behavior in an experimental setting. Creative people are more likely to break the existing rules and more able to develop rationalizations for unethical behavior. In a controlled experiment, Gino and Wiltermuth (2014) find that acting dishonestly leads to greater creativity in subsequent tasks within the same individual. They argue that acting dishonestly leads to a heightened feeling of being unconstrained by rules (Gino and Wiltermuth 2014). In the corporate world, Grieser, Kapadia, Li, and Simonov (2016) finds that a less-honest corporate culture, can sometimes be advantageous to innovation as dishonest individuals are more rule-breaking and willing to take more risks. Given unethical behavior and risk taking is intercorrelated, one may conjecture that capital providers may charge the finencees' more for their excessive risk taking behavior stemming from dishonesty. To empirically test our conjecture, we use the distance to default

to proxy for firm's risk taking beahvior. We first show that the dishonesty culture encourages risk taking. The subsequent analysis tests if the risk taking affects loan spreads or cost of equity.

Table 7 reports our two-step analysis. Column (1) to Column (3) in Panel A and Panel B show that our integrity measure, AM accounts is negatively associated with distance to default (positively associated with risk taking). Column (4) in Panel A and Panel B show results that excessive risk taking is priced by debt holders and equity holders.

[Insert Table 7 About Here]

7 Conclusion

This paper examines whether and how integrity culture affects cost of bank loan and cost of equity. We capture integrity culture using the number of employees who register for AM website and find a strong relationship between financee's integrity and financing costs. To overcome endogeniety concerns, we first rely on the Massachusetts' Alimony Reform Law of 2011 as an exogenous shock to integrity measures and conduct difference-in-difference analysis to establish a negative effects of integrity level on financing costs, i.e. the drop in integrity (increase in AM accounts measures) increases both bank loan spread and cost of equity. Next we employ the instrumental variable method by using social capital in the firm's home county as an instrumental variable for integrity measures and find results that support our hypothesis. The results remain robust if we use the regional level of AM accounts as alternative measures. The study further explores the possible mechanisms through which financee's integrity affect financing costs. We show that the firm with lower integrity level can increase the financing costs through opaque accounting information and excessive risk taking.

Integrity culture plays a crucial role in virtually every financial transaction. Our findings may be of interest to firms and investors who are concerned about the determinants of capital

prices and have important implications for regulators and policymakers when they attempt to emphasize the importance of integrity culture in business.

References

Altman, E.I., 1968. Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The Journal of Finance* 23, 589-609.

Bottazzi, L., Da Rin, M., and Hellmann, T. F. 2011. The importance of trust for investment: Evidence from venture capital (No. w16923). National Bureau of Economic Research.

Bowles, S., and Gintis, H. 2002. Social capital and community governance. *The Economic Journal*, 112(483).

Campello, M. and Gao, J., 2017. Customer concentration and loan contract terms. *Journal of Financial Economics* 123, 108-136.

Campello, M., Lin, C., Ma, Y. and Zou, H., 2011. The real and financial implications of corporate hedging. *The Journal of Finance* 66, 1615-1647.

Christensen, H. B., Nikolaev, V. V., and Wittenberg-Moreman, R., 2016. Accounting information in financial contracting: The incomplete contract theory perspective. *Journal of Accounting Research* 54, 397-435.

Claus, J. and Thomas, J., 2001. Equity premia as low as three percent? Evidence from analysts' earnings forecasts for domestic and international stock markets. *The Journal of Finance* 56, 1629-1666.

Davidson, R., Dey, A., and Smith, A. 2015. Executives'"off-the-job" behavior, corporate culture, and financial reporting risk. *Journal of Financial Economics* 117, 5-28.

Dhaliwal, D., Judd, J. S., Serfling, M., and Shaikh, S. 2016. Customer concentration risk and the cost of equity capital. *Journal of Accounting and Economics* 61, 23-48.

Duarte, J., Siegel, S., and Young, L. 2012. Trust and credit: the role of appearance in peer-to-peer lending. *The Review of Financial Studies* 25, 2455-2484.

Easton, P.D., 2004. PE ratios, PEG ratios, and estimating the implied expected rate of return on equity capital. *The Accounting Review* 79, 73-95.

Francis, J., LaFond, R., Olsson, P. M., and Schipper, K. 2004. Costs of equity and earnings attributes. *The Accounting Review* 79, 967-1010.

Gebhardt, W.R., Lee, C. and Swaminathan, B., 2001. Toward an implied cost of capital. *Journal of Accounting Research* 39, 135-176.

Giannetti, M., and Wang, T. Y. 2016. Corporate scandals and household stock market participation. The *Journal of Finance* 71, 2591-2636.

Gino, Francesca, and Dan Ariely, 2012, The dark side of creativity: Original thinkers can be more dishonest, *Journal of Personality and Social Psychology* 102, 445-459.

Gino, Francesca, and Scott S. Wiltermuth, 2014, Evil Genius? How Dishonesty Can Lead to Greater Creativity, *Psychological Science*.

Graham, J.R., Li, S. and Qiu, J., 2008. Corporate misreporting and bank loan contracting. *Journal of Financial Economics* 89, 44-61.

Grieser, W.D., Kapadia, N., Li, R. and Simonov, A., 2016. Fifty shades of corporate culture. Working paper.

Guiso, L., Sapienza, P. and Zingales, L., 2004. The role of social capital in financial development. The *American Economic Review* 94, 526-556.

Guiso, L., Sapienza, P., and Zingales, L. 2008. Trusting the stock market. *Journal of Finance* 63, 2557-2600.

Guiso, L., Sapienza, P., and Zingales, L. 2015. The value of corporate culture. *Journal of Financial Economics* 117, 60-76.

Gurun, U. G., Stoffman, N., and Yonker, S. E. 2015. Trust busting: The effect of fraud on investor behavior. Working Paper.

Karpoff, J. M., Lee, D. S., and Martin, G. S. 2008. The cost to firms of cooking the books. *Journal of Financial and Quantitative Analysis* 43, 581-611.

Lewicki, R. J., McCallister, D. J., Bies, R. J., 1998. Trust and distrust: new relationships and realities. *Academy of Management Review* 23, 438–458.

Liu, X. 2016. Corruption culture and corporate misconduct. *Journal of Financial Economics* 122, 307-327.

Moro, A., and Fink, M. 2013. Loan managers' trust and credit access for SMEs. *Journal of Banking and Finance* 37, 927-936.

Ohlson, J.A. and Juettner-Nauroth, B.E., 2005. Expected EPS and EPS growth as determinants of value. *Review of Accounting Studies* 10, 349-365.

Pan, Y., Siegel, S., and Wang, T. Y. 2014. The cultural origin of preferences: CEO cultural heritage and corporate investment. Working Paper, University of Utah.

Pevzner, M., Xie, F., and Xin, X. 2015. When firms talk, do investors listen? The role of trust in stock market reactions to corporate earnings announcements. *Journal of Financial Economics* 117, 190-223.

Putnam, R. D. 1995. Tuning in, tuning out: The strange disappearance of social capital in America. *PS-WASHINGTON-*, 28, 664-664.

Schneider, Benjamin, 1987, The People Make the Place, *Personnel Psychology* 40, 437-453.

Zingales, L. 2015. The" cultural revolution" in finance. *Journal of Financial Economics* 117, 1-4.

Table 1
Summary Statistics

Panel A reports summary statistics for the bank loan sample firm-fiscal year observations. The sample contains 7,663 firm-fiscal year observations between 2002 and 2015 (excluding financial firms). Panel B reports summary statistics for the cost of equity sample firm-fiscal year observations. The sample contains 19,888 firm-fiscal year observations between 2002 and 2015 (excluding financial firms). The variables are defined in Table A1. The descriptive statistics are the mean, minimum, median, maximum, and standard deviation of the key variables.

Panel A: Bank Loan Sample

Variable	N	Mean	Minimum	Median	Maximum	Std Dev
Ln(Loan Spread)	7,663	0.325	-1.743	0.405	1.833	0.755
Ln(1+AM_Accounts)	7,663	0.682	0	0	4.143	1.014
Ln(1+AM_Active)	7,663	0.296	0	0	2.833	0.602
Ln(1+AM_New)	7,663	0.264	0	0	2.639	0.558
Ln(Asset)	7,663	7.836	4.200	7.771	11.305	1.604
Market-to-Book	7,663	1.767	0.747	1.482	5.807	0.904
Return on Asset	7,663	0.136	-0.079	0.127	0.371	0.073
Leverage	7,663	0.278	0	0.259	0.931	0.193
Asset Tangibility	7,663	0.327	0.020	0.251	0.904	0.249
Cash Flow Volatility	7,663	0.014	0.002	0.010	0.077	0.013
Ln(Loan Size)	7,663	5.818	2.303	5.858	8.615	1.270
Maturity	7,663	50.918	1	60	180	20.070
Z-Score	7,663	3.412	-0.924	2.854	15.608	2.711
Ln(Employee)	7,663	1.854	-6.908	1.881	7.650	1.685

Panel B: Cost of Equity Sample

Variable	N	Mean	Minimum	Median	Maximum	Std Dev
Cost of Equity GLS	18,008	0.070	0.001	0.050	0.552	0.082
Cost of Equity CT	17,219	0.099	0.000	0.080	0.632	0.089
Cost of Equity Easton	14,940	0.113	0.035	0.101	0.341	0.051
Cost of Equity OJ	12,964	0.232	0.034	0.202	0.754	0.144
Cost of Equity Avg	17,145	0.126	0.014	0.108	0.575	0.082
Ln(1+AM_Accounts)	19,888	0.502	0	0	3.951	0.879
Ln(1+AM_Active)	19,888	0.242	0	0	5.811	0.576
Ln(1+AM_New)	19,888	0.197	0	0	2.485	0.489
Market Beta	19,888	1.151	0.067	1.117	2.499	0.495
Idiosyncratic Risk	19,888	0.396	0.055	0.340	7.497	0.245
Market Value of Equity	19,888	7.004	0.844	6.907	13.348	1.804
Book-to-Market	19,888	0.501	-0.407	0.423	2.272	0.401
Leverage	19,888	0.206	0	0.174	0.898	0.198
Momentum	19,888	0.168	-0.815	0.099	2.691	0.557
Return on Asset	19,888	0.004	-0.920	0.044	0.268	0.178
Long-term Growth Rate	19,888	0.116	-4.213	0.110	71.455	0.575
Analyst Forecast Dispersion	19,888	0.307	0.018	0.120	4.907	0.664
Ln(Employee)	19,888	0.970	-6.908	1.054	7.696	2.012

Table 2
Baseline regressions

Panel A presents results for ordinary least squares (OLS) regressions of bank loan spread on email accounts. There are 7,663 firm-fiscal year observations between 2002 and 2015. The dependent variable is the bank loan spread (*Ln(Loan Spread)*). Columns 1 to 3 reports the results of regressions with *Ln(1+AM_Accounts)*, *Ln(1+AM_Active)*, and *Ln(1+AM_New)* as email account measures, respectively. Other control variables are *Ln(Asset), Market-to-Book, Return on Asset, Leverage , Asset Tangibility, Ln(Loan Size), Maturity, Cash Flow Volatility, Z-Score, Ln(Employee),* and *Performance Pricing*. We control for loan type, loan purpose, firm fixed effects, and year fixed effects in all regressions. In Panel B, the dependent variable is the implied cost of equity calculated by taking the mean of the four cost of equity measures following the methodologies outlined in Gebhardt, Lee, and Swaminathan (2001), Claus and Thomas (2001), Easton (2004), and Ohlson and Juettner-Nauroth (2005). Columns 1 to 3 reports the results of regressions with *Ln(1+AM_Accounts)*, *Ln(1+AM_Active)*, and *Ln(1+AM_New)* as email account measures, respectively. Other control variables are *Market Beta, Idiosyncratic Risk, Market Value of Equity, Book-to-Market, Leverage , Momentum, Return on Asset, Long-term Growth Rate, Analyst Forecast Dispersion,* and *Ln(Employee)*. We control for firm and year fixed effects in all regressions. See Table A1 for definitions of all variables. Standard errors are clustered at the firm level. T-statistics are presented in parentheses. *, **, and *** indicates statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Bank Loan Spread

	Dependent Variable: *Ln(Loan Spread)*		
Variable	(1)	(2)	(3)
Ln(1+AM_Accounts)	0.095***		
	(6.712)		
Ln(1+AM_Active)		0.091***	
		(6.295)	
Ln(1+AM_New)			0.071***
			(4.938)
Ln(Asset)	-0.086***	-0.087***	-0.089***
	(-3.081)	(-3.117)	(-3.202)
Market-to-Book	-0.034*	-0.036*	-0.038**
	(-1.820)	(-1.889)	(-1.977)
Return on Asset	-1.079***	-1.079***	-1.067***
	(-6.856)	(-6.916)	(-6.835)
Leverage	0.497***	0.518***	0.521***
	(6.466)	(6.699)	(6.724)
Asset Tangibility	-0.435***	-0.460***	-0.456***
	(-3.347)	(-3.560)	(-3.527)
Ln(Loan Size)	-0.046***	-0.046***	-0.045***
	(-4.614)	(-4.671)	(-4.509)
Maturity	-0.001**	-0.001**	-0.001**
	(-2.022)	(-2.166)	(-2.205)
Cash Flow Volatility	-0.114	-0.091	-0.114
	(-0.101)	(-0.079)	(-0.098)
Z-Score	-0.004	-0.004	-0.004
	(-0.653)	(-0.518)	(-0.530)
Ln(Employee)	-0.025	-0.033	-0.033
	(-1.051)	(-1.364)	(-1.360)
Performance Pricing	-0.001	0.001	0.002
	(-0.111)	(0.087)	(0.164)
Loan Type	Yes	Yes	Yes
Loan Purpose	Yes	Yes	Yes

Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Number of Observations	7,663	7,663	7,663
Adj. R-squared	0.539	0.536	0.534

Panel B: Cost of Equity Avg

	Dependent Variable: *Cost of Equity Avg*		
Variable	(1)	(2)	(3)
Ln(1+AM_Accounts)	0.002**		
	(2.016)		
Ln(1+AM_Active)		0.004***	
		(2.896)	
Ln(1+AM_New)			0.003***
			(2.792)
Market Beta	0.003	0.003	0.003
	(1.161)	(1.146)	(1.135)
Idiosyncratic Risk	0.028***	0.028***	0.029***
	(3.216)	(3.230)	(3.239)
Market Value of Equity	-0.015***	-0.015***	-0.015***
	(-5.208)	(-5.193)	(-5.204)
Book-to-Market	-0.006	-0.006	-0.006
	(-1.289)	(-1.297)	(-1.300)
Leverage	0.031***	0.031***	0.031***
	(3.540)	(3.551)	(3.565)
Momentum	-0.002	-0.002	-0.002
	(-0.908)	(-0.906)	(-0.912)
Return on Asset	-0.021	-0.021	-0.021
	(-1.456)	(-1.455)	(-1.449)
Long-term Growth Rate	0.003*	0.003*	0.003*
	(1.935)	(1.936)	(1.916)
Analyst Forecast Dispersion	-0.002	-0.002	-0.002
	(-0.765)	(-0.777)	(-0.772)
Ln(Employee)	0.010***	0.010***	0.010***
	(3.400)	(3.356)	(3.351)
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Number of Observations	17,145	17,145	17,145
Adj. R-squared	0.057	0.057	0.057

Table 3
Difference-in-Difference analysis

This table reports the results for difference-in-difference analysis around the Alimony Reform law in Massachusetts in 2011. *Treatment* is a dummy variable that equals one if the firm is located in Massachusetts and zero otherwise. *Post* is a dummy which equals one if it is pre-event year and equals zero if it is post-event year. Panel A and Panel B report pre-event year (2010) control variable averages for the treatment and control groups, the differences in means of each variable, and the corresponding t-statistics. Panel C and Panel D report the difference-in-difference regressions for the surrounding states sample of bank loan and cost of equity respectively. We look at Massachusetts and the states surrounding Massachusetts (New York, New Jersey, New Hampshire, Vermont, Connecticut, Rhode Island, and Pennsylvania). Column (1) reports the results for the sample with one year before (fiscal year=2010) and one year after (fiscal year=2013) the law change. Column (2) shows the results for the sample with two years before (fiscal year=2009&2010) and two years after (fiscal year=2013&2014) the law change. Column (3) presents the results for the sample with three years before (fiscal year=2008&2009&2010) and three years after (fiscal year=2013&2014&2015) the law change. Column (4) adds a *Pseudo Post* variable in which we use 2010 as a pseudo-event and the interaction term between *Treatment* and *Pseudo Post*. Column (5) adds the *Pseudo Post* variable in which we use 2009 as a pseudo-event and the interaction term between *Treatment* and *Pseudo Post*. Panel E presents the distribution of the coefficients on the interaction term between Pseudo Treatment and Pseudo Post in which we randomly choose any state (excluding Massachusetts) and any year (between 2008 and 2013) as the event state and year and run 200 regressions. We control for loan type and loan purpose in all bank loan regressions. See Table A1 for definitions of all variables. Standard errors are robust standard errors. T-statistics are presented in parentheses. *, **, and *** indicates statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Differences in control variables in pre-event year (2010) for bank loan sample

	Treatment	Control	Difference	T-Value	Pr > |t|
Ln(Asset)	7.685	7.891	-0.206	-0.72	0.479
Market-to-Book	2.097	1.673	0.424	2.06	0.047
Return on Asset	0.156	0.134	0.021	1.27	0.212
Leverage	0.230	0.278	-0.049	-1.36	0.182
Asset Tangibility	0.155	0.216	-0.061	-1.59	0.113
Ln(Loan Size)	5.935	6.016	-0.081	-0.37	0.716
Maturity	49.520	56.622	-7.102	-1.57	0.128
Cash Flow Volatility	0.011	0.011	0.000	0.17	0.863
Z-Score	3.635	3.227	0.407	0.94	0.355
Performance Pricing	0.240	0.353	-0.113	-1.16	0.255
Ln(Employee)	1.595	2.000	-0.405	-1.19	0.243

Panel B: Differences in control variables in pre-event year (2010) for cost of equity sample

	Treatment	Control	Difference	T-Value	Pr > |t|
Market Beta	1.179	1.167	0.011	0.26	0.795
Idiosyncratic Risk	0.347	0.362	-0.015	-0.97	0.334
Market Value of Equity	7.074	6.740	0.335	2.18	0.030
Book-to-Market	0.476	0.495	-0.019	-0.63	0.532
Leverage	0.096	0.100	-0.004	-0.34	0.735
Momentum	0.357	0.342	0.015	0.33	0.745
Return on Asset	0.035	0.027	0.007	0.59	0.554
Long-term Growth Rate	0.116	0.104	0.012	0.67	0.504
Analyst Forecast Dispersion	0.343	0.467	-0.124	-1.24	0.216

Ln(Employee)	0.750	0.519	0.231	1.40	0.163

Panel C: DID regression for bank loan –Surrounding states sample

	Dependent Variable: *Ln(Loan Spread)*				
Variable	(1)	(2)	(3)	(4)	(5)
*Treatment*Post*	0.197*	0.122*	0.139**	0.163**	0.144**
	(1.911)	(1.674)	(2.122)	(2.488)	(2.227)
Treatment	-0.126*	-0.116**	-0.131**	-0.043	-0.095
	(-1.755)	(-2.009)	(-2.454)	(-0.569)	(-0.676)
Post	-0.120**	-0.160***	-0.199***	-0.100***	-0.162***
	(-2.584)	(-4.941)	(-6.909)	(-3.237)	(-5.648)
*Treatment*Pseudo Post*				-0.110	-0.040
				(-1.220)	(-0.277)
Pseudo Post				-0.244***	-0.317***
				(-5.464)	(-5.314)
Ln(Asset)	-0.025	-0.076***	-0.070***	-0.062***	-0.070***
	(-0.743)	(-3.250)	(-3.827)	(-3.358)	(-3.844)
Market-to-Book	-0.108***	-0.058**	-0.046**	-0.044**	-0.035*
	(-3.271)	(-2.165)	(-2.284)	(-2.269)	(-1.745)
Return on Asset	-1.356***	-1.084***	-0.631***	-0.692***	-0.732***
	(-4.300)	(-3.725)	(-3.256)	(-3.483)	(-3.545)
Leverage	0.779***	0.328***	0.242**	0.227**	0.193**
	(5.368)	(2.767)	(2.338)	(2.355)	(1.994)
Asset Tangibility	-0.002	0.270***	0.288***	0.277***	0.276***
	(-0.014)	(3.072)	(3.652)	(3.618)	(3.506)
Ln(Loan Size)	-0.098***	-0.048*	-0.044**	-0.045**	-0.033
	(-2.771)	(-1.773)	(-2.049)	(-2.164)	(-1.558)
Maturity	0.004**	-0.002	-0.004***	-0.002	-0.003*
	(2.340)	(-1.109)	(-2.737)	(-1.360)	(-1.871)
Cash Flow Volatility	6.810***	6.323***	6.744***	6.344***	6.607***
	(3.056)	(3.927)	(4.408)	(4.242)	(4.495)
Z-Score	-0.012	-0.028**	-0.042***	-0.036***	-0.042***
	(-0.740)	(-2.404)	(-3.748)	(-3.263)	(-3.927)
Ln(Employee)	-0.020	0.009	-0.001	-0.005	-0.002
	(-1.180)	(0.630)	(-0.085)	(-0.405)	(-0.164)
Performance Pricing	-0.087**	0.005	-0.016	-0.044	-0.031
	(-2.001)	(0.144)	(-0.578)	(-1.647)	(-1.171)
Loan Type	Yes	Yes	Yes	Yes	Yes
Loan Purpose	Yes	Yes	Yes	Yes	Yes
Number of Observations	278	472	620	620	620
Adj. R-squared	0.530	0.599	0.600	0.628	0.627

Panel D: DID regression for cost of equity –Surrounding states sample

	Dependent Variable: *Cost of Equity Avg*				
Variable	(1)	(2)	(3)	(4)	(5)
*Treatment*Post*	0.028**	0.032***	0.022**	0.026**	0.028***
	(2.012)	(2.821)	(2.220)	(2.226)	(2.755)
Treatment	-0.026***	-0.023***	-0.032***	-0.040***	-0.035***
	(-4.087)	(-4.812)	(-7.473)	(-7.072)	(-7.595)
Post	-0.030***	-0.031***	-0.024***	-0.023***	-0.009
	(-2.955)	(-3.985)	(-3.610)	(-2.597)	(-0.644)

*Treatment*Pseudo Post*				-0.005	-0.020
				(-0.393)	(-1.251)
Pseudo Post				0.015*	0.012*
				(1.917)	(1.686)
Market Beta	-0.014	-0.006	-0.003	-0.005	-0.004
	(-1.359)	(-0.892)	(-0.505)	(-0.862)	(-0.598)
Idiosyncratic Risk	0.105*	0.055**	0.025	0.039*	0.029
	(1.817)	(2.360)	(1.254)	(1.714)	(1.442)
Market Value of Equity	-0.004	-0.003	-0.005**	-0.004*	-0.005*
	(-0.886)	(-1.102)	(-1.996)	(-1.757)	(-1.932)
Book-to-Market	0.002	-0.003	-0.004	-0.003	-0.004
	(0.152)	(-0.299)	(-0.455)	(-0.349)	(-0.456)
Leverage	0.049**	0.064***	0.038***	0.039***	0.039***
	(2.533)	(4.210)	(2.911)	(2.941)	(2.970)
Momentum	-0.013	-0.013**	-0.001	-0.002	-0.003
	(-1.226)	(-1.996)	(-0.241)	(-0.457)	(-0.536)
Return on Asset	-0.127**	-0.100**	-0.088***	-0.085***	-0.085***
	(-2.198)	(-2.356)	(-2.777)	(-2.651)	(-2.687)
Long-term Growth Rate	0.017	-0.008	-0.018	-0.017	-0.016
	(0.915)	(-0.522)	(-1.132)	(-1.073)	(-0.996)
Analyst Forecast Dispersion	0.003	0.002	0.002	0.002	0.002
	(0.275)	(0.298)	(0.466)	(0.413)	(0.433)
Ln(Employee)	0.005	0.002	0.003	0.003	0.003
	(1.548)	(0.931)	(1.465)	(1.528)	(1.433)
Number of Observations	666	1,305	1,805	1,805	1,805
Adj. R-squared	0.150	0.115	0.108	0.110	0.109

Panel E: Placebo tests

	Mean	5%	25%	Median	75%	95%
Coefficient Estimates	(1)	(2)	(3)	(4)	(5)	(6)
Bank Loan Sample						
*Pseudo Treatment*Pseudo Post*	0.002	-0.270	-0.090	-0.008	0.087	0.307
	(0.130)	(-2.075)	(-0.670)	(-0.080)	(0.480)	(2.975)
Cost of Equity Sample						
*Pseudo Treatment*Pseudo Post*	-0.002	-0.064	-0.014	0.000	0.015	0.034
	(-1.130)	(-2.330)	(-1.105)	(0.015)	(1.225)	(1.530)

Table 4
Instrumental Variable Approach

This table reports the two-stage least squares (2SLS) regressions results. In this approach, email account measures are instrumented using social capital at county level. Panel A presents the results for bank loan sample. We control for loan type, loan purpose, and year fixed effects in all regressions. Panel B presents results for cost of equity sample. We control for year fixed effects in all regressions. See Table A1 for definitions of all variables. Standard errors are robust standard errors. T-statistics are presented in parentheses. *, **, and *** indicates statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Bank loan spread

	Ln(1+AM_Accounts)	*Ln(Loan Spread)*	*Ln(1+AM_Active)*	*Ln(Loan Spread)*	*Ln(1+AM_New)*	*Ln(Loan Spread)*
Variable	First (1)	Second (2)	First (3)	Second (4)	First (5)	Second (6)
Social Capital	-0.025**		-0.009*		-0.010*	
	(-2.475)		(-1.655)		(-1.855)	
Fit_Ln(1+AM_Accounts)		1.708***				
		(6.216)				
Fit_Ln(1+AM_Active)				4.723***		
				(6.216)		
Fit_Ln(1+AM_New)						4.336***
						(6.216)
Ln(Asset)	0.166***	-0.432***	0.076***	-0.507***	0.071***	-0.454***
	(12.842)	(-9.326)	(11.072)	(-8.705)	(10.238)	(-9.110)
Market-to-Book	0.022*	-0.086***	0.016**	-0.123***	0.016***	-0.118***
	(1.784)	(-8.206)	(2.528)	(-8.425)	(2.688)	(-8.451)
Return on Asset	-0.061	-0.418***	-0.052	-0.276*	-0.108**	-0.054
	(-0.643)	(-3.002)	(-0.925)	(-1.915)	(-2.326)	(-0.343)
Leverage	0.110	0.163***	0.056	0.085	0.040	0.179***
	(1.513)	(2.976)	(1.563)	(1.355)	(1.131)	(3.347)
Asset Tangibility	-0.311***	0.484***	-0.125***	0.542***	-0.106***	0.411***
	(-7.409)	(5.548)	(-5.676)	(5.637)	(-4.878)	(5.395)
Ln(Loan Size)	0.015	-0.089***	0.001	-0.067***	0.004	-0.081***
	(1.182)	(-8.683)	(0.107)	(-7.290)	(0.615)	(-8.359)
Maturity	-0.002***	0.002*	-0.001	0.001	-0.001**	0.003***
	(-2.622)	(1.895)	(-1.557)	(1.490)	(-2.521)	(2.784)
Cash Flow Volatility	0.349	2.116***	-0.140	3.373***	0.020	2.626***
	(0.689)	(4.586)	(-0.534)	(7.439)	(0.075)	(5.872)
Z-Score	-0.002	-0.060***	-0.005	-0.038***	-0.004	-0.047***
	(-0.304)	(-10.545)	(-1.390)	(-5.554)	(-1.022)	(-7.715)
Ln(Employee)	0.121***	-0.212***	0.057***	-0.271***	0.059***	-0.259***
	(13.621)	(-6.286)	(11.936)	(-6.288)	(12.325)	(-6.288)
Performance Pricing	0.013	-0.006	0.017	-0.065***	0.006	-0.008
	(0.635)	(-0.475)	(1.528)	(-3.533)	(0.498)	(-0.573)
Loan Type	Yes	Yes	Yes	Yes	Yes	Yes

Loan Purpose	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	6,822	6,822	6,822	6,822	6,822	6,822
Adj. R-squared	0.378	0.636	0.248	0.636	0.223	0.636

Panel B: Cost of equity

	Ln(1+AM_Accounts)	*Cost of Equity Avg*	*Ln(1+AM_Active)*	*Cost of Equity Avg*	*Ln(1+AM_New)*	*Cost of Equity Avg*
	First	Second	First	Second	First	Second
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Social Capital	-0.017**		-0.008*		-0.009**	
	(-2.355)		(-1.781)		(-2.118)	
Fit_Ln(1+AM_Accounts)		0.050*				
		(1.754)				
Fit_Ln(1+AM_Active)				0.104*		
				(1.754)		
Fit_Ln(1+AM_New)						0.096*
						(1.754)
Market Beta	-0.116***	0.008**	-0.076***	0.010**	-0.078***	0.010**
	(-8.901)	(2.181)	(-8.805)	(2.109)	(-9.653)	(2.122)
Idiosyncratic Risk	0.341***	0.035**	0.226***	0.029*	0.242***	0.029*
	(5.756)	(2.474)	(5.558)	(1.659)	(6.077)	(1.687)
Market Value of Equity	0.182***	-0.014***	0.106***	-0.016**	0.102***	-0.015**
	(27.496)	(-2.629)	(23.746)	(-2.481)	(24.183)	(-2.565)
Book-to-Market	0.012	0.001	0.011	0.001	0.014***	0.000
	(1.068)	(0.780)	(1.495)	(0.417)	(2.624)	(0.259)
Leverage	0.029	0.040***	0.030	0.038***	0.003	0.041***
	(0.970)	(13.691)	(1.522)	(11.604)	(0.188)	(14.693)
Momentum	-0.058***	-0.003	-0.044***	-0.001	-0.035***	-0.003
	(-4.530)	(-1.466)	(-5.426)	(-0.468)	(-4.737)	(-1.124)
Return on Asset	-0.336***	-0.011	-0.200***	-0.007	-0.192***	-0.009
	(-7.425)	(-0.934)	(-6.814)	(-0.488)	(-7.307)	(-0.732)
Long-term Growth Rate	-0.012	0.003***	-0.010*	0.003***	0.001	0.002***
	(-1.454)	(3.228)	(-1.935)	(3.249)	(0.288)	(2.609)
Analyst Forecast Dispersion	0.024*	-0.001	0.024***	-0.002	0.018**	-0.002
	(1.735)	(-0.516)	(3.017)	(-0.991)	(2.532)	(-0.747)
Ln(Employee)	0.134***	-0.003	0.069***	-0.004	0.060***	-0.002
	(27.533)	(-0.799)	(22.609)	(-0.866)	(21.854)	(-0.648)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	15,846	15,846	15,846	15,846	15,846	15,846
Adj. R-squared	0.389	0.171	0.277	0.171	0.251	0.171

Table 5
Robustness: CBSA level email accounts

Panel A presents results for ordinary least squares (OLS) regressions of bank loan spread on CBSA level email accounts. There are 8,161 firm-fiscal year observations between 2002 and 2015. The dependent variable is the bank loan spread (*Ln(Loan Spread)*). Panel B presents results for ordinary least squares (OLS) regressions of cost of equity on CBSA level email accounts. There are 18,969 firm-fiscal year observations between 2002 and 2015. The dependent variable is the *Cost of Equity Avg*. Columns 1 to 3 reports the results of regressions with *Cbsa_AM Accounts*, *Cbsa_AM Active*, and *Cbsa_AM New* as CBSA level email account measures (measured in millions), respectively. See Table A1 for definitions of all variables. Standard errors are clustered at the firm level. T-statistics are presented in parentheses. *, **, and *** indicates statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Bank loan spread

	Dependent Variable: *Ln(Loan Spread)*		
Variable	(1)	(2)	(3)
Cbsa_AM Accounts	0.126*		
	(1.953)		
Cbsa_AM Active		0.485**	
		(2.211)	
Cbsa_AM New			0.722**
			(2.065)
Ln(Asset)	-0.134***	-0.134***	-0.134***
	(-6.585)	(-6.583)	(-6.566)
Market-to-Book	-0.046**	-0.046**	-0.046**
	(-2.558)	(-2.533)	(-2.519)
Return on Asset	-1.014***	-1.015***	-1.015***
	(-6.799)	(-6.813)	(-6.813)
Leverage	0.510***	0.513***	0.510***
	(7.319)	(7.349)	(7.317)
Asset Tangibility	-0.369***	-0.371***	-0.371***
	(-3.199)	(-3.218)	(-3.210)
Ln(Loan Size)	-0.052***	-0.052***	-0.052***
	(-4.641)	(-4.667)	(-4.667)
Maturity	-0.002***	-0.002***	-0.002***
	(-3.836)	(-3.836)	(-3.821)
Cash Flow Volatility	-1.178	-1.174	-1.173
	(-1.245)	(-1.241)	(-1.239)
Z-Score	-0.004	-0.004	-0.004
	(-0.662)	(-0.673)	(-0.684)
Ln(Population)	0.001	0.001	0.002
	(0.113)	(0.110)	(0.115)
Performance Pricing	-0.149***	-0.143***	-0.153***
	(-3.114)	(-3.122)	(-3.141)
Loan Type	Yes	Yes	Yes
Loan Purpose	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Number of Observations	8,161	8,161	8,161
Adj. R-squared	0.535	0.535	0.536

Panel B: Cost of equity

	Dependent Variable: *Cost of Equity Avg*		
Variable	(1)	(2)	(3)
Cbsa_AM Accounts	0.019***		
	(2.693)		
Cbsa_AM Active		0.062**	
		(2.560)	
Cbsa_AM New			0.099***
			(2.965)
Market Beta	-0.007**	-0.007**	-0.007**
	(-2.513)	(-2.512)	(-2.511)
Idiosyncratic Risk	0.061***	0.061***	0.061***
	(4.479)	(4.487)	(4.493)
Market Value of Equity	-0.000	-0.000	-0.000
	(-0.452)	(-0.449)	(-0.464)
Book-to-Market	0.010*	0.010*	0.010*
	(1.861)	(1.842)	(1.837)
Leverage	0.056***	0.056***	0.056***
	(9.086)	(9.093)	(9.072)
Momentum	-0.011***	-0.011***	-0.011***
	(-6.207)	(-6.166)	(-6.183)
Return on Asset	-0.070***	-0.070***	-0.070***
	(-5.444)	(-5.458)	(-5.486)
Long-term Growth Rate	0.001	0.001	0.001
	(0.108)	(0.119)	(0.114)
Analyst Forecast Dispersion	-0.019***	-0.019***	-0.019***
	(-7.149)	(-7.102)	(-7.113)
Ln(Employee)	-0.002*	-0.002**	-0.003**
	(-2.000)	(-2.061)	(-2.372)
Industry fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Number of Observations	18,969	18,969	18,969
Adj. R-squared	0.109	0.109	0.109

Table 6
Possible mechanism: Earnings Management

Panel A presents the results for bank loan sample. Panel B presents results for cost of equity sample. Standard errors are robust standard errors. T-statistics are presented in parentheses. *, **, and *** indicates statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Bank loan spread

	Discretional Accrual			*Ln(Loan Spread)*
Variable	(1)	(2)	(3)	(4)
Discretional Accrual				0.133**
				(2.214)
Ln(1+AM_Accounts)	0.017			
	(1.628)			
Ln(1+AM_Active)		0.021*		
		(1.704)		
Ln(1+AM_New)			0.032**	
			(1.997)	
Ln(Asset)	-0.109***	-0.109***	-0.110***	-0.077**
	(-3.084)	(-3.091)	(-3.093)	(-2.469)
Market-to-Book	0.046	0.046	0.046	-0.056***
	(0.950)	(0.950)	(0.947)	(-3.232)
Return on Asset	-0.183	-0.185	-0.180	-1.080***
	(-0.590)	(-0.593)	(-0.581)	(-6.388)
Leverage	-0.162	-0.160	-0.161	0.446***
	(-1.543)	(-1.531)	(-1.537)	(6.294)
Asset Tangibility	0.074	0.068	0.069	-0.323**
	(1.016)	(0.937)	(0.946)	(-2.415)
Ln(Loan Size)	0.020	0.019	0.020	-0.053***
	(1.390)	(1.385)	(1.397)	(-5.058)
Maturity	0.000	0.000	0.000	-0.002***
	(0.253)	(0.229)	(0.269)	(-3.545)
Cash Flow Volatility	-0.544	-0.544	-0.558	-0.346
	(-0.268)	(-0.268)	(-0.275)	(-0.250)
Z-Score	-0.008	-0.008	-0.008	0.000
	(-1.389)	(-1.389)	(-1.397)	(0.061)
Ln(Employee)	0.039	0.037	0.037	-0.053*
	(1.106)	(1.063)	(1.057)	(-1.688)
Performance Pricing	-0.016	-0.016	-0.017	0.006
	(-1.076)	(-1.070)	(-1.083)	(0.437)
Loan Type	Yes	Yes	Yes	Yes
Loan Purpose	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Number of Observations	6,327	6,327	6,327	6,327
Adj. R-squared	0.024	0.024	0.024	0.551

Panel B: Cost of equity

	Discretional Accrual			*Cost of Equity Avg*
Variable	(1)	(2)	(3)	(4)
Discretional Accrual				0.012**
				(2.157)
Ln(1+AM_Accounts)	0.008**			
	(2.143)			
Ln(1+AM_Active)		0.008*		
		(1.777)		
Ln(1+AM_New)			0.010*	
			(1.900)	
Market Beta	0.030***	0.030***	0.030***	0.001
	(4.517)	(4.459)	(4.470)	(0.552)
Idiosyncratic Risk	0.069***	0.070***	0.070***	0.020**
	(2.678)	(2.731)	(2.738)	(2.492)
Market Value of Equity	0.001	0.001	0.001	-0.014***
	(0.190)	(0.212)	(0.197)	(-6.008)
Book-to-Market	-0.036***	-0.036***	-0.036***	0.000
	(-2.710)	(-2.728)	(-2.726)	(0.081)
Leverage	-0.017	-0.017	-0.016	0.033***
	(-0.637)	(-0.629)	(-0.622)	(4.447)
Momentum	0.010**	0.010**	0.010**	0.000
	(2.349)	(2.349)	(2.348)	(0.168)
Return on Asset	0.079***	0.079***	0.079***	-0.008
	(2.623)	(2.615)	(2.627)	(-0.746)
Long-term Growth Rate	0.002	0.002	0.002	0.003**
	(0.713)	(0.736)	(0.692)	(2.081)
Analyst Forecast Dispersion	0.001	0.001	0.001	-0.001**
	(0.491)	(0.487)	(0.484)	(-2.498)
Ln(Employee)	-0.003	-0.004	-0.004	0.010***
	(-0.401)	(-0.475)	(-0.481)	(3.591)
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Number of Observations	14,798	14,798	14,798	14,798
Adj. R-squared	0.059	0.059	0.059	0.059

Table 7
Possible mechanism: default risk

Panel A presents the results for bank loan sample. Panel B presents results for cost of equity sample. Standard errors are robust standard errors. T-statistics are presented in parentheses. *, **, and *** indicates statistical significance at the 10%, 5%, and 1% level, respectively.

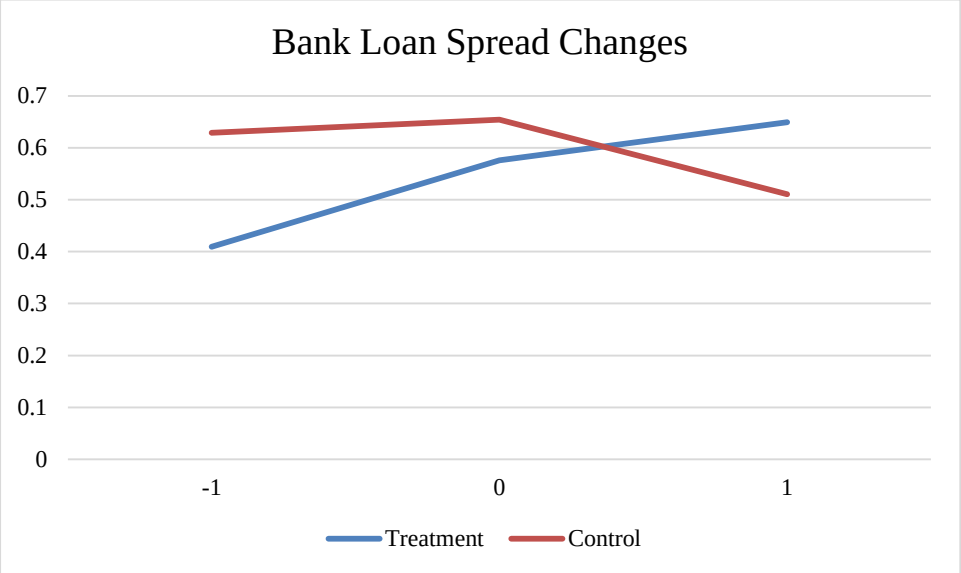
Panel A: Bank loan spread

	Distance-to-Default			*Ln(Loan Spread)*
Variable	(1)	(3)	(5)	(6)
Distance-to-Default				-0.005***
				(-4.315)
Ln(1+AM_Accounts)	0.028			
	(0.204)			
Ln(1+AM_Active)		-0.283*		
		(-1.904)		
Ln(1+AM_New)			-0.261*	
			(-1.859)	
Ln(Asset)	0.013	0.017	0.021	-0.096***
	(0.042)	(0.056)	(0.070)	(-2.804)
Market-to-Book	1.614***	1.607***	1.608***	-0.039**
	(3.920)	(3.928)	(3.936)	(-2.236)
Return on Asset	1.734	1.777	1.722	-1.090***
	(0.826)	(0.846)	(0.821)	(-5.669)
Leverage	-7.842***	-7.792***	-7.765***	0.364***
	(-6.564)	(-6.562)	(-6.548)	(3.678)
Asset Tangibility	-3.549***	-3.547***	-3.563***	-0.410***
	(-2.860)	(-2.868)	(-2.875)	(-2.890)
Ln(Loan Size)	-0.116	-0.112	-0.117	-0.056***
	(-1.313)	(-1.266)	(-1.327)	(-5.002)
Maturity	0.012***	0.012***	0.012***	-0.001*
	(2.943)	(2.877)	(2.841)	(-1.844)
Cash Flow Volatility	-15.028**	-15.249**	-15.068**	-0.103
	(-2.102)	(-2.145)	(-2.113)	(-0.158)
Z-Score	0.347**	0.347**	0.351**	-0.008
	(2.002)	(2.014)	(2.035)	(-0.751)
Ln(Employee)	-0.234	-0.238	-0.233	-0.047
	(-0.798)	(-0.814)	(-0.794)	(-1.442)
Performance Pricing	0.042	0.051	0.048	0.000
	(0.344)	(0.413)	(0.391)	(0.031)
Loan Type	Yes	Yes	Yes	Yes
Loan Purpose	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Number of Observations	6,402	6,402	6,402	6,402
Adj. R-squared	0.285	0.286	0.286	0.559

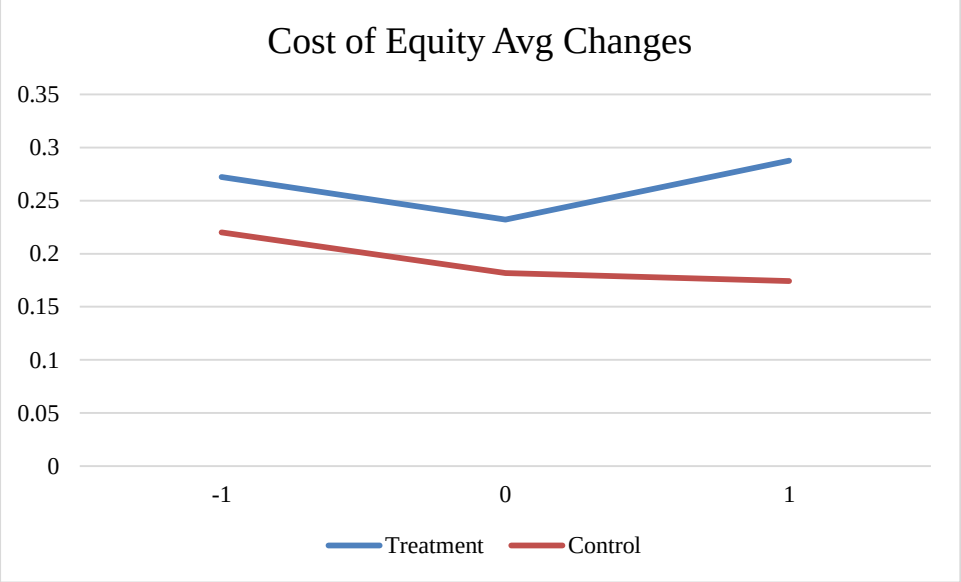
Panel B: Cost of equity

	Distance-to-Default			*Cost of Equity Avg*
Variable	(1)	(2)	(3)	(4)
Distance-to-Default				-0.025**
				(-2.231)
Ln(1+AM_Accounts)	-0.123			
	(-1.187)			
Ln(1+AM_Active)		-0.557***		
		(-4.836)		
Ln(1+AM_New)			-0.392***	
			(-3.683)	
Market Beta	-1.418***	-1.432***	-1.423***	0.000
	(-10.404)	(-10.510)	(-10.448)	(0.112)
Idiosyncratic Risk	-12.195***	-12.162***	-12.191***	0.013
	(-22.225)	(-22.208)	(-22.243)	(1.586)
Market Value of Equity	0.450***	0.443***	0.451***	-0.013***
	(2.903)	(2.859)	(2.908)	(-5.011)
Book-to-Market	-0.904***	-0.909***	-0.905***	0.001
	(-3.727)	(-3.754)	(-3.726)	(0.189)
Leverage	-12.168***	-12.133***	-12.152***	0.020**
	(-19.389)	(-19.393)	(-19.415)	(2.461)
Momentum	2.960***	2.959***	2.961***	-0.002
	(27.513)	(27.507)	(27.500)	(-1.514)
Return on Asset	-1.822**	-1.841**	-1.856**	-0.033**
	(-2.367)	(-2.392)	(-2.413)	(-2.556)
Long-term Growth Rate	0.448	0.462	0.454	0.060***
	(1.105)	(1.141)	(1.122)	(9.158)
Analyst Forecast Dispersion	0.451***	0.444***	0.448***	-0.008**
	(2.642)	(2.606)	(2.634)	(-1.997)
Ln(Employee)	-0.917***	-0.898***	-0.900***	0.012***
	(-5.028)	(-4.926)	(-4.943)	(4.614)
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Number of Observations	13,232	13,232	13,232	13,232
Adj. R-squared	0.392	0.394	0.393	0.093

Figure 1
Bank loan spread surrounding the Massachusetts' Alimony Reform Law



Cost of equity surrounding the Massachusetts' Alimony Reform Law



Appendix
Table A1
Variable Definitions

Variable	Definition	Source
Ln(1+AM_Accounts)	Natural logarithm of 1 plus *AM_Accounts*. *AM_Accounts* is the number of all AM users within a firm who have registered with AM service in a fiscal year.	Ashley Madison
Ln(1+AM_Active)	Natural logarithm of 1 plus *AM_Active*. *AM_Acitve* is the number of active AM users within a firm who have registered with AM service in a fiscal year.	Ashley Madison
Ln(1+AM_New)	Natural logarithm of 1 plus *AM_New*. *AM_New* is the number of new AM users within a firm who registered with AM website during the fiscal year.	Ashley Madison
Loan Spread	All-in-drawn spread. The spread over the London Interbank Offered Rate (LIBOR) (or LIBOR equivalent) on a loan plus associated loan origination fees. In percentage.	DealScan
Ln(Loan Spread)	Natural logarithm of All-in-drawn spread.	DealScan
Ln(Asset)	Natural logarithm of the total asset (*AT*).	Compustat
Market-to-Book	Market-to-book ratio. Market value of assets (*PRCC_F*×*CSHO* –*CEQ*+*AT*)/Book value of assets (*AT*).	Compustat
Return on Asset	Operating income before depreciation (*OIBDP*) over book value of total assets (*AT*).	Compustat
Leverage	Leverage ratio is calculated as the sum of long term debt (*DLTT*) and debt in current liabilities (*DLC*) divided by total assets (*AT*).	Compustat
Asset Tangibility	Net property, plant and equipment (*PPENT*) divided by total assets (*AT*).	Compustat
Cash Flow Volatility	The standard deviation of operating income before depreciation (*OIBDP*) divided by total assets (*AT)* over the 20 quarters before the quarter containing the loan origination date.	Compustat
Ln(Loan Size)	Natural logarithm of Loan (facility) amount.	DealScan
Maturity	Loan maturity, measured in months.	
Z-Score	Altman's (1968) Z-Score =1.2×(*WCAP/AT*)+1.4×(*RE/AT*)+3.3×(*OIADP/AT*)+0.6×(*PRCC_F*×*CSHO/LT*)+0.999×(*SALE/AT*).	Compustat
Ln(Employee)	Natural logarithm of the actual number of people (in thousand) employed by the company and its consolidated subsidiaries.	Compustat
Performance pricing	A dummy variable which equals to one if the loan uses performance pricing.	DealScan
Cost of Equity GLS	Implied cost of equity measure following the methodologies outlined in Gebhardt, Lee, and Swaminathan (2001).	IBES, CRSP
Cost of Equity CT	Implied cost of equity measure following the methodologies outlined in Claus and Thomas (2001).	IBES, CRSP
Cost of Equity Easton	Implied cost of equity measure following the methodologies outlined in Easton (2004).	IBES, CRSP
Cost of Equity OJ	Implied cost of equity measure following the methodologies outlined in Ohlson and Juettner-Nauroth (2005).	IBES, CRSP
Cost of Equity Avg	Mean of the four implied cost of equity measure following the methodologies outlined in Gebhardt, Lee, and	IBES, CRSP

	Swaminathan (2001), Claus and Thomas (2001), Easton (2004), and Ohlson and Juettner-Nauroth (2005).	
Market Beta	Estimated by regressing daily stock returns on the CRSP value-weighted daily market returns over the fiscal year.	CRSP
Idiosyncratic Risk	The annualized standard deviation of the residuals from the regression of daily stock returns on the CRSP value-weighted daily market returns over the fiscal year.	CRSP
Market Value of Equity	Stock price (*PRCC_F*) multiplied by number of shares outstanding (*CSHO*).	Compustat
Book-to-Market	Book value of equity (*CEQ*) divided by market value of equity.	Compustat
Momentum	Stock return over the fiscal year.	CRSP
Long-term Growth Rate	The median analyst forecast of the long-term earnings growth rate.	IBES
Analyst Forecast Dispersion	The standard deviation of the analysts' forecast for the next period's earnings within 90 days before earnings announcement divided by the consensus forecast for the next period's earnings	IBES

Table A2
Baseline Regressions-Cost of equity measures

Panel A to Panel D presents results for ordinary least squares (OLS) regressions of implied cost of equity on email accounts. The sample period is between 2002 and 2015. In Panel A, the dependent variable is the implied cost of equity calculated following the methodologies outlined in Gebhardt et al. (2001). In Panel B, the dependent variable is the implied cost of equity calculated following the methodologies outlined in Claus and Thomas (2001). The dependent variable in Panel C is the implied cost of equity calculated following the methodologies outlined in Easton (2004). The dependent variable in Panel D is the implied cost of equity calculated following the methodologies outlined in Ohlson and Juettner-Nauroth (2005). Columns 1 to 3 reports the results of regressions with *Ln(1+AM_Accounts)*, *Ln(1+AM_Active)*, and *Ln(1+AM_New)* as email account measures, respectively. Other control variables are *Market Beta*, *Idiosyncratic Risk*, *Market Value of Equity*, *Book-to-Market*, *Leverage* , *Momentum*, *Return on Asset*, *Long-term Growth Rate*, *Analyst Forecast Dispersion*, and *Ln(Employee)*. We control for firm and year fixed effects in all regressions. See Table A1 for definitions of all variables. Standard errors are clustered at the firm level. T-statistics are presented in parentheses. *, **, and *** indicates statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Cost of Equity GLS

	Dependent Variable: *Cost of Equity GLS*		
Variable	(1)	(2)	(3)
Ln(1+AM_Accounts)	0.002**		
	(2.121)		
Ln(1+AM_Active)		0.004***	
		(3.634)	
Ln(1+AM_New)			0.004***
			(2.991)
Market Beta	0.001	0.001	0.001
	(0.519)	(0.503)	(0.495)
Idiosyncratic Risk	0.035***	0.036***	0.036***
	(3.948)	(3.951)	(3.962)
Market Value of Equity	-0.014***	-0.014***	-0.014***
	(-5.312)	(-5.308)	(-5.311)
Book-to-Market	-0.000	-0.000	-0.000
	(-0.021)	(-0.033)	(-0.030)
Leverage	0.013	0.013	0.013
	(1.418)	(1.419)	(1.435)
Momentum	0.000	0.000	0.000
	(0.114)	(0.109)	(0.105)
Return on Asset	-0.004	-0.004	-0.004
	(-0.351)	(-0.346)	(-0.345)
Long-term Growth Rate	0.000	0.000	-0.000
	(0.028)	(0.059)	(-0.027)
Analyst Forecast Dispersion	0.003*	0.003*	0.003*
	(1.682)	(1.670)	(1.670)
Ln(Employee)	0.008***	0.008***	0.008***
	(2.891)	(2.842)	(2.833)
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Number of Observations	18,008	18,008	18,008
Adj. R-squared	0.033	0.033	0.033

Panel B: Cost of Equity CT

	Dependent Variable: *Cost of Equity CT*		
Variable	(1)	(2)	(3)
Ln(1+AM_Accounts)	0.002*		
	(1.945)		
Ln(1+AM_Active)		0.002*	
		(1.752)	
Ln(1+AM_New)			0.003**
			(2.232)
Market Beta	0.001	0.001	0.001
	(0.339)	(0.299)	(0.306)
Idiosyncratic Risk	0.032***	0.032***	0.032***
	(3.123)	(3.143)	(3.142)
Market Value of Equity	-0.018***	-0.018***	-0.018***
	(-5.497)	(-5.480)	(-5.486)
Book-to-Market	-0.012**	-0.012**	-0.012**
	(-2.154)	(-2.165)	(-2.165)
Leverage	0.009	0.009	0.009
	(0.846)	(0.869)	(0.869)
Momentum	-0.002	-0.002	-0.002
	(-0.725)	(-0.724)	(-0.726)
Return on Asset	0.001	0.001	0.001
	(0.043)	(0.035)	(0.043)
Long-term Growth Rate	0.009***	0.009***	0.009***
	(4.305)	(4.297)	(4.285)
Analyst Forecast Dispersion	-0.001	-0.001	-0.001
	(-0.348)	(-0.359)	(-0.355)
Ln(Employee)	0.014***	0.013***	0.013***
	(3.901)	(3.859)	(3.854)
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Number of Observations	17,219	17,219	17,219
Adj. R-squared	0.037	0.037	0.037

Panel C: Cost of Equity Easton

	Dependent Variable: *Cost of Equity Easton*		
Variable	(1)	(2)	(3)
Ln(1+AM_Accounts)	0.002***		
	(2.930)		
Ln(1+AM_Active)		0.002***	
		(2.582)	
Ln(1+AM_New)			0.003***
			(3.584)
Market Beta	0.002	0.002	0.002
	(1.288)	(1.217)	(1.232)
Idiosyncratic Risk	0.036***	0.036***	0.036***
	(7.038)	(7.106)	(7.099)
Market Value of Equity	-0.006***	-0.006***	-0.006***
	(-3.403)	(-3.388)	(-3.417)
Book-to-Market	-0.004	-0.004	-0.004
	(-1.200)	(-1.218)	(-1.225)
Leverage	0.026***	0.026***	0.026***

	(4.836)	(4.883)	(4.888)
Momentum	-0.004***	-0.004***	-0.004***
	(-3.838)	(-3.845)	(-3.854)
Return on Asset	-0.065***	-0.064***	-0.064***
	(-7.755)	(-7.734)	(-7.719)
Long-term Growth Rate	0.000	0.000	0.000
	(1.145)	(1.191)	(1.084)
Analyst Forecast Dispersion	0.009***	0.009***	0.009***
	(3.206)	(3.203)	(3.192)
Ln(Employee)	0.006***	0.006***	0.006***
	(2.854)	(2.773)	(2.775)
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Number of Observations	14,940	14,940	14,940
Adj. R-squared	0.131	0.131	0.131

Panel D: Cost of Equity OJ

	Dependent Variable: *Cost of Equity OJ*		
Variable	(1)	(2)	(3)
Ln(1+AM_Accounts)	0.005**		
	(2.047)		
Ln(1+AM_Active)		0.007***	
		(2.586)	
Ln(1+AM_New)			0.008***
			(3.231)
Market Beta	-0.008***	-0.008***	-0.008***
	(-2.640)	(-2.657)	(-2.653)
Idiosyncratic Risk	-0.014	-0.013	-0.013
	(-1.175)	(-1.147)	(-1.150)
Market Value of Equity	-0.027***	-0.026***	-0.027***
	(-5.912)	(-5.900)	(-5.949)
Book-to-Market	-0.011	-0.011	-0.011
	(-1.617)	(-1.632)	(-1.645)
Leverage	0.057***	0.057***	0.057***
	(4.300)	(4.335)	(4.347)
Momentum	-0.001	-0.001	-0.001
	(-0.442)	(-0.415)	(-0.431)
Return on Asset	-0.019	-0.018	-0.018
	(-1.087)	(-1.082)	(-1.051)
Long-term Growth Rate	0.001	0.001	0.001
	(0.512)	(0.514)	(0.467)
Analyst Forecast Dispersion	-0.030***	-0.030***	-0.031***
	(-5.503)	(-5.491)	(-5.537)
Ln(Employee)	0.019***	0.018***	0.018***
	(3.281)	(3.223)	(3.234)
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Number of Observations	12,964	12,964	12,964
Adj. R-squared	0.400	0.400	0.401

Table A3
Difference-in-Difference regressions

This table reports the results for difference-in-difference regressions around the divorce law (in terms of spouse' support) change in Massachusetts in 2011. *Treatment* is a dummy variable that equals one if the firm is located in Massachusetts and zero otherwise. *Post* is a dummy which equals one if it is pre-event year and equals zero if it is post-event year. Panel A and Panel B report the difference-in-difference regressions for the full sample of bank loan and cost of equity respectively. Column (1) reports the results for the sample with one year before (fiscal year=2010) and one year after (fiscal year=2013) the law change. Column (2) shows the results for the sample with two years before (fiscal year=2009&2010) and two years after (fiscal year=2013&2014) the law change. Column (3) presents the results for the sample with three years before (fiscal year=2008&2009&2010) and three years after (fiscal year=2013&2014&2015) the law change. Column (4) adds a *Pseudo Post* variable in which we use 2010 as a pseudo-event and the interaction term between *Treatment* and *Pseudo Post*. Column (5) adds the *Pseudo Post* variable in which we use 2009 as a pseudo-event and the interaction term between *Treatment* and *Pseudo Post*. We control for loan type and loan purpose in all bank loan regressions. See Table A1 for definitions of all variables. Standard errors are robust standard errors. T-statistics are presented in parentheses. *, **, and *** indicates statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: DID regression for bank loan – full sample

	Dependent Variable: *Ln(Loan Spread)*				
Variable	(1)	(2)	(3)	(4)	(5)
*Treatment*Post*	0.127*	0.131**	0.134**	0.170***	0.155***
	(1.719)	(2.145)	(2.138)	(2.768)	(2.605)
Treatment	-0.162***	-0.153***	-0.130**	-0.044	-0.014
	(-3.245)	(-3.107)	(-2.516)	(-0.571)	(-0.096)
Post	-0.095***	-0.181***	-0.222***	-0.102***	-0.191***
	(-5.897)	(-13.638)	(-16.818)	(-7.247)	(-14.632)
*Treatment*Pseudo Post*				-0.124	-0.139
				(-1.344)	(-0.880)
Pseudo Post				-0.282***	-0.248***
				(-14.618)	(-8.858)
Ln(Asset)	-0.109***	-0.108***	-0.105***	-0.099***	-0.106***
	(-9.203)	(-12.028)	(-12.736)	(-12.393)	(-13.142)
Market-to-Book	-0.055***	-0.062***	-0.080***	-0.069***	-0.072***
	(-3.807)	(-5.730)	(-7.843)	(-6.933)	(-7.105)
Return on Asset	-0.697***	-0.399**	-0.342***	-0.353***	-0.381***
	(-4.647)	(-2.352)	(-2.783)	(-2.823)	(-2.854)
Leverage	0.461***	0.400***	0.433***	0.402***	0.412***
	(7.327)	(7.713)	(9.417)	(8.931)	(8.816)
Asset Tangibility	-0.015	-0.053*	-0.072***	-0.083***	-0.078***
	(-0.410)	(-1.860)	(-2.618)	(-3.084)	(-2.850)
Ln(Loan Size)	-0.022	-0.021*	-0.021**	-0.014	-0.012
	(-1.587)	(-1.940)	(-2.173)	(-1.506)	(-1.243)
Maturity	0.002	-0.000	-0.001**	0.000	-0.001
	(1.397)	(-0.417)	(-2.214)	(0.743)	(-0.950)
Cash Flow Volatility	4.148***	4.091***	4.667***	4.310***	4.381***
	(5.738)	(7.317)	(8.995)	(8.517)	(8.450)
Z-Score	-0.020***	-0.029***	-0.026***	-0.025***	-0.027***
	(-3.145)	(-5.506)	(-5.519)	(-5.403)	(-5.592)
Ln(Employee)	-0.005	-0.003	0.004	0.001	0.003
	(-0.641)	(-0.614)	(0.801)	(0.228)	(0.629)
Performance Pricing	-0.018	0.002	0.009	-0.021*	-0.003

	(-1.026)	(0.186)	(0.721)	(-1.687)	(-0.206)
Loan Type	Yes	Yes	Yes	Yes	Yes
Loan Purpose	Yes	Yes	Yes	Yes	Yes
Number of Observations	1,462	2,595	3,168	3,168	3,168
Adj. R-squared	0.577	0.558	0.530	0.565	0.574

Panel B: DID regression for cost of equity – full sample

	Dependent Variable: *Cost of Equity Avg*				
Variable	(1)	(2)	(3)	(4)	(5)
*Treatment*Post*	0.028**	0.035***	0.027***	0.031***	0.031***
	(2.110)	(3.129)	(2.796)	(2.907)	(3.213)
Treatment	-0.025***	-0.022***	-0.036***	-0.043***	-0.037***
	(-8.001)	(-8.947)	(-16.716)	(-15.136)	(-16.022)
Post	-0.031***	-0.033***	-0.028***	-0.027***	-0.018
	(-3.886)	(-4.806)	(-4.326)	(-2.962)	(-1.117)
*Treatment*Pseudo Post*				-0.004	-0.014
				(-0.364)	(-0.844)
Pseudo Post				0.014***	0.003
				(3.850)	(0.808)
Market Beta	-0.010*	-0.007**	-0.001	-0.003	-0.001
	(-1.888)	(-1.987)	(-0.356)	(-1.029)	(-0.415)
Idiosyncratic Risk	0.096***	0.058***	0.029***	0.043***	0.030***
	(4.301)	(4.568)	(2.884)	(3.857)	(2.950)
Market Value of Equity	-0.002	-0.001	-0.004***	-0.003***	-0.004***
	(-1.073)	(-0.828)	(-3.168)	(-2.667)	(-3.141)
Book-to-Market	0.018**	0.021***	0.010**	0.010**	0.010**
	(2.121)	(3.703)	(2.463)	(2.553)	(2.466)
Leverage	0.072***	0.082***	0.063***	0.063***	0.064***
	(6.709)	(11.144)	(10.383)	(10.348)	(10.409)
Momentum	-0.010**	-0.006*	0.004*	0.003	0.004
	(-2.148)	(-1.866)	(1.659)	(1.288)	(1.353)
Return on Asset	-0.148***	-0.106***	-0.082***	-0.080***	-0.081***
	(-4.793)	(-4.929)	(-5.263)	(-5.174)	(-5.208)
Long-term Growth Rate	0.016	0.005	-0.006	-0.006	-0.006
	(1.431)	(0.612)	(-0.875)	(-0.808)	(-0.830)
Analyst Forecast Dispersion	0.005	0.000	-0.001	-0.002	-0.001
	(1.135)	(0.050)	(-0.570)	(-0.668)	(-0.581)
Ln(Employee)	0.002	-0.001	-0.001	-0.001	-0.001
	(1.208)	(-0.679)	(-0.676)	(-0.522)	(-0.685)
Number of Observations	3,074	5,977	8,286	8,286	8,286
Adj. R-squared	0.137	0.114	0.119	0.121	0.119

Panel C: DID regression for cost of equity – Propensity score matching

	Dependent Variable: *Cost of Equity Avg*		
Variable	(1)	(2)	(3)
*Treatment*Post*	0.028**	0.028***	0.020***
	(2.502)	(3.109)	(2.855)
Treatment	-0.032***	-0.022***	-0.030***
	(-3.648)	(-3.493)	(-5.644)
Post	-0.030***	-0.027***	-0.020***

	(-3.347)	(-4.009)	(-3.910)
Market Beta	-0.015	-0.010	-0.005
	(-1.425)	(-1.444)	(-0.817)
Idiosyncratic Risk	0.116***	0.049**	0.010
	(3.552)	(2.330)	(0.534)
Market Value of Equity	-0.008**	-0.005	-0.007***
	(-1.980)	(-1.609)	(-2.870)
Book-to-Market	0.046***	0.046***	0.019**
	(2.660)	(3.469)	(2.011)
Leverage	-0.003	0.043**	0.012
	(-0.146)	(2.354)	(0.821)
Momentum	0.001	-0.004	0.004
	(0.070)	(-0.718)	(0.824)
Return on Asset	-0.122**	-0.054	-0.072***
	(-2.069)	(-1.443)	(-2.652)
Long-term Growth Rate	0.065***	0.025	0.008
	(3.304)	(1.380)	(0.486)
Analyst Forecast Dispersion	-0.006*	-0.005	-0.003
	(-1.691)	(-1.616)	(-0.962)
Ln(Employee)	0.008**	0.002	0.003
	(2.016)	(0.585)	(1.118)
Number of Observations	780	1,552	2,152
Adj. R-squared	0.167	0.088	0.087