THE BENEFITS OF BALANCE SHEET CONSERVATISM: EVIDENCE FROM THE FINANCIAL CRISIS

Akram Khalilov*

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Abstract

I argue that firms' balance sheet conservatism (BSC) was instrumental in transmission of negative consequences of the financial crisis. Given the informational and cushioning roles of balance sheet conservatism, I predict that market participants placed a valuation premium over firms with higher BSC during the crisis. Using data on U.S. listed firms I show that high-BSC firms outperformed low-BSC firms both in terms of raw and market model-adjusted returns. Further, I document that firms with higher BSC passed liquidity shocks with lower reduction in investments, employment and productivity. Additionally, I report that high-BSC firms raised more capital, obtained lower cost of debt and were less risky. The results are robust if I measure BSC one, two and three years before the onset of the crisis.

Keywords: *balance sheet conservatism, stock return, financial crisis*

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*. Universidad Carlos III de Madrid. Department of Business Administration. Madrid 126, 28903 Getafe, Madrid (Spain). E-mail: akhalilo@emp.uc3m.es

1 Introduction

This paper examines the role of balance sheet conservatism (hereinafter BSC) in helping firms to withstand credit supply shocks. In particular, I consider a setting of recent financial crisis (2007-2008) and its effect on real corporate decisions of firms. Prior studies demonstrate that the financial crisis served as an exogenous shock to the supply of external funds (Ivashina and Scharfstein 2010). The magnitude and the consequences of the crisis emphasize the importance of further analysis on the factors that helped to ameliorate negative shocks to the real economy. Building on this premise, I predict that BSC helped firms to transmit negative consequences of the crisis through its informational and cushioning roles.

The notion that firm balance sheet plays a crucial role in dissemination of business cycle shocks stems from Bernanke and Gertler (1989) and Kiyotaki and Moore (1997). More recent works stress that balance-sheet asset-informativeness is beneficial for financial statement users (Chen et al. 2019). The focus of this paper is mostly on firms' heterogeneity, particularly on balance sheet conservatism, during the financial crisis.

BSC refers to persistent (i.e. news independent) understatement of net assets, that creates unrecognized goodwill. This results in net assets that proxy for liquidation values (Beaver and Ryan 2005) and reduced amount of funds distributable to contracting parties. The use of BSC has been largely critiqued in light of its reporting properties. In particular, given its understatement of net assets it is regarded as accumulation of hidden reserves (Penman and Zhang 2002) that foster in opportunistic managerial endeavor (Basu 2005), a bias of unknown magnitude in the financial statement (Ball and Shivakumar 2005) and income increasing mechanism (Ball et al. 2000; Jackson and Liu 2010a). I argue that the aforementioned properties of BSC can be beneficial during crisis time and stress on the notion that BSC is not contracting neutral (Sunder et al. 2018). As a main mechanism through which BSC is expected to benefit firms during the financial crisis is its cushioning and informational roles. On the cushioning side, BSC is expected to act as accumulator of "reserves" during good times and further release of this cushion in bad times (i.e.

Jackson and Liu 2010a). This feature might be especially beneficial in bad times since it allows to use 'cookie jar' reserves to smooth earnings, avoid covenant violation and retain higher investors' valuation.

The informational side of BSC bases on the importance of hard information to market participants. Given increased vulnerability of firms and investors attention on accounting quality of information during the crisis, market participants are more likely to spot weaknesses in firms. This might results in "flight to quality" syndrome (Goh et al. 2015) that would be particularly strong during the crisis as the level of trust in the economy significantly declined (Guiso et al. 2008). Provided that BSC-firms transmit reliable information on lower bound estimates of accounting numbers, I expect that market participants place a valuation premium over such firms. Additionally, given that BSC signals the wedge between book and liquidation value of assets, lenders would be less reluctant to provide favorable financing terms (i.e. lower cost of debt) to such firms (Sunder et al. 2018). This would facilitate access to capital and debt renegotiation that help firms to overcome liquidity needs and prevent bankruptcy filings (Giammarino 1989). This is especially important since the crisis was accompanied by a significant credit crunch (Ivashina and Scharfstein 2010).

Finally, BSC is expected to serve as an ex-ante screening mechanism and monitoring tool for market participants. Specifically, given managers reluctance to hide bad news (e.g. S. P. Kothari et al. 2009), BSC is expected to mitigate this opportunism through its reporting of lower bound estimates and its ability to smooth income. This is especially important as the crisis time is characterized by significant fall in profits (e.g. Kim and Yi 2006). Given aforementioned characteristics of BSC, I predict that firms that entered a crisis with high BSC performed better than low-BSC firms.

Natural experiment, exogenous financial shock, allows to sidestep endogeneity concern and identify the link between BSC and firm performance. The exogenous shock is expected to alter the equilibrium in the market, while BSC is kept constant over the period under consideration. This allows to analyze the level of investors valuation over the firms with BSC. Particularly, to overcome the inferences that BSC is endogenous to

unobserved variation in firm performance, I employ the following research design. First, I measure BSC in 2006 prior to the beginning of the crisis. This allows to treat BSC as an instrumental variable with the assumption that BSC in 2006 is not correlated with unobservable firm performance measures during the financial crisis. Second, I use placebo crisis period (i.e. nonexistent) and make sure that the results are relevant only during the crisis time. Third, I use both accounting- and market-based performance measures. Finally, main results continue to hold when I measure BSC in 2005, 2004 and 2003.

I test the predictions on a large sample of U.S. firms. The results suggest that firm balance sheet conservatism played a crucial role in the transmission of negative consequences attributable to credit supply shock during the recent financial crisis. First, I test whether firms with high BSC outperform those with low BSC. To test this premise I employ models that control for firm fixed effects and capture the difference in performance before, during and after the crisis. Regression estimates indicate that BSC has a positive impact on firms' valuation during the crisis period. Firms in the highest quintile of BSC outperformed firms in the lowest quintile of BSC by 13.8 (29.4) percentage point in raw (abnormal) returns. This result is not driven by time-invariant unobservable firm characteristics. I proxy for firm-performance using both market- and accounting-based performance measures. Given the divergence in returns between high- and low-BSC firms, we may conclude that the crisis was largely unanticipated. Additionally, a hedge portfolio of going long high BSC-firms and low BSC-firms earns excess returns of 98 basis points per month.

Second, I explore the causes behind the outperformance of firms with high BSC. Given that financial constraints impair firm's ability to gain access to financing, firms are faced with a trade-off - long-term optimization (cut on investment, restructure employment contracts, etc.) and short-term liquidity needs. As discussed above, high BSC firms are expected to be less financially constrained and more able to raise debt during the liquidity shock of the crisis. To test this, I analyze actions taken by firms related to financing, investment, productivity and labor practices during the crisis. On the financing side, I find that more balance sheet conservative firms raised additional debt in response

to a credit supply shock. Additionally, I document that these firms had better credit conditions that was represented by lower spreads of loan contracts from banks. Thus, I find evidence that BSC provides access to external financing during the liquidity shock.

On the investment side, I document that low BSC-firms cut more on investment during the crisis. Further, I analyze whether BSC-firms' better performance is not driven by labor cost reduction. The results indicate that high BSC-firms experienced higher employment. Next, I test whether pre-crisis level of BSC translated into lower riskiness of a firm during the crisis. I report that high BSC-firms had less volatile stock returns, higher credit rating and lower distance to default. This is particularly important in light of the financial crisis, where the issue of bankruptcy along supply chains and industries was exhibited. Third, I document that the positive effect of BSC is more pronounced in firms that entered the crisis as more financially constrained and informationally opaque shading more light on the fact that BSC helped firms to raise more capital during the crisis.

Finally, I ensure that the result do hold for alternative proxy of BSC and if I control for the pre-crisis level of financial reporting quality (FRQ). I document that FRQ is positively associated with firm performance during the crisis. Additionally, I do not find any evidence suggesting that high BSC-firms smoothed earnings during the crisis.

One important issue that might bias the results is that firms with higher balance sheet conservatism performed better during the financial crisis not because they could raise funding during the crisis, but because of other reasons parallel to the financial constraints. For instance, these firms may be more productive, more investment-intensive or expand more before the financial crisis. I find no evidence in support of these alternative mechanisms. Overall, I present that BSC serves as a value-enhancing mechanism to shareholders.

The findings might be interesting for both practical and policy implications. BSC might be regarded as a useful accounting tool for shareholders under the times of severe financial turmoil such as recent financial crisis. Collectively, the results of the study make several contributions to the literature. In particular, I add to the literature analyzing the

real effect of the crisis on the corporate sector (e.g. Almeida et al. 2012; Tong and Wei 2008; Campello et al. 2010; Duchin et al. 2010). I present a possible meachnism (i.e. BSC) that helped firms to overcome negative consequences of the crisis. Additionally, some prior works focuse on the "dark side" of BSC such as opportunistic managerial endeavors (Basu 2005), a bias of unknown magnitude in financial statements (Ball and Shivakumar 2005) and earnings management mechanim (Ball et al. 2000; Jackson and Liu 2010b). I present a "bright side", or informational role of BSC (similar to G. C. Biddle et al. (2016); Sunder et al. 2018), that serves as a benefit when there is a shock to external financing and a decline in trust.

The remainder of the paper is organized as follows. Section 2 outlines literature review. Section 3 describes measurement of BSC, and section 4 describes the data used. Sections 5 presents main results, while sections 6 provides additional robustness tests. Finally, section 7 concludes.

2 Literature Review

Balance sheet conservatism captures persistent understatement of net assets, that creates unrecognized goodwill (of unknown magnitude) and leads to a difference between the market and book value of recorded assets. Overall, BSC-firms report book values of assets that proxy for liquidation values. BSC can result from conservative reporting of assets relative to market value of assets; faster expensing and asset write-downs (that can not be reversed in case of good news) associated with bad news.[1] This paper does not differentiate between different sources, rather it considers an aggregate measure.

One important feature of BSC is that it is news independent conservative accounting at the inception of assets and liabilities (Basu 2005; Ryan 2006). Given these features, a number of scholars have critiqued the use of BSC. Basu (2005) states that BSC largely exists to circumvent taxes and regulation and relates it to opportunistic managerial endeavors. Ball and Shivakumar (2005) views BSC as introducing a bias of

1. As one of the examples we can consider expensing of R&D outlays independent of whether they represent successful innovations or not. Another example is accounting for acquisitions following the pooling of interest method.

unknown magnitude into financial statements that garbles the earnings signal and increases information asymmetry. Additionally, BSC leads to potential over-reporting of losses which may never be realized. I claim that these features might be beneficial during the times of increased distress as BSC creates 'cookie jar' reserves, that can be used to increase earnings when past understatements reverse (Ball et al. 2000; Jackson and Liu 2010b). Thus, I stress on positive sides of BSC during the financial distress through its accumulation of the cushion and its reporting properties that can help firms to overcome negative consequences of the crisis by raising more capital.

The main theoretical underpinning of the paper is that BSC helps firms to mitigate negative effect of the financial crisis through its cushioning and informational roles. Given that firms experienced severe credit constrains and lacked investment opportunities during the crisis (Ivashina and Scharfstein 2010; Campello et al. 2010), BSC might serve as ameliorating effect in reducing the destructive consequences of the crisis. BSC persistently understates net assets reducing the funds distributable to contracting parties that leads to higher amount of cash retained in the firm. In case of uncertainty future cash flows become riskier that favors keeping balance sheet more conservative to promote precautionary cash savings. For example, firms that face higher regulatory and political costs might keep their balance sheets more conservative that serves as a cost reduction and subsequent cash preservation (Basu 2005; Qiang 2007). Additionally, Sunder et al. (2018) document that firms with higher BSC obtain lower cost of debt that helps to reduce cash interest payments. In this sense, BSC might be considered as income smoothing mechanism that accumulates "reserves" during good times and releases this cushion in bad times (e.g. Levitt 1998; Jackson and Liu 2010a) .

The informational role of BSC stems from the importance of balance sheet to the market participants. Traditionally, lenders view balance sheet as one of the main sources of financial information. Benston (1969, 1973) state that early U.S. bondholders did not even require the data on earnings or sales. In good times investors are more likely to pay less attention to the accounting quality of information since there are more investment opportunities (Mitton 2002). In times of a crisis investors are more likely to spot weakness

in accounting quality that might result in "flight to quality" syndrome (Goh et al. 2015). During the crisis both Level 2 and Level 3 fair value accounting involves manipulation by managers that deviates from the true value of assets that results in downward valuation of such assets by investors (Plantin et al. 2008; Goh et al. 2015). Additionally, unfavorable economic conditions (i.e. the crisis time) lead to stricter impairment rule and induce firms to report more precise information (Göx and Wagenhofer 2009). Given that firms with BSC provide reliable lower bound estimates of accounting numbers, BSC-firms enter unfavorable economic periods with *ex-ante* impaired assets that maximizes the likelihood that investors favor such firms more. Particularly, shareholders may place a valuation premium over firms with higher BSC when there is a decline in overall trust in the economy (e.g. Guiso et al. 2008) as was the case during the crisis. BSC signals the wedge between the book and liquidation value of assets to the users of financial statements. Consequently, consistent conservative balance sheet reporting might serve as a signal to outside investors of higher accounting quality that, in turn, ensues less negative market pressure on a firm during the crisis. Sunder et al. (2018) present evidence that BSC is not contracting neutral and reject the notion that BSC introduces a noise to reported assets by simply understating them.

Given the informational role of BSC, lenders especially value its reporting of lower-end distributions of earnings and net assets as it allows them to better monitor the borrower's ability to repay. This notion is supported by bond prices quicker reaction to bad news in earnings rather that stock prices (Defond and Zhang 2014). Considered that BSC provides a lower bound of the collateral value of assets, it results in more credible book values and reduces lenders uncertainty regarding the liquidation value of assets (Ahmed et al. 2002; Göx and Wagenhofer 2009). This is more pronounced in the presence of information asymmetry that helps to ameliorate shareholder-debtholder conflicts of interest. This property of BSC serves as ex-ante screening mechanism of borrowers' ability to pay during the life of the loan. Thus, BSC serves as a bonding mechanism to lenders, which reduces the need for monitoring that leads to lower cost of debt (Sunder et al. 2018) and higher likelihood of obtaining financing (Göx and Wagenhofer 2009).

Finally, given that managers have strong incentives to hide bad news (S. P. Kothari et al. 2009; S. Kothari et al. 2010), BSC is expected to diminish opportunistic behavior of managers. Under information asymmetry and given personal benefits, managers tend to overstate the value of net assets and earnings because asset write-offs generate accounting losses that are destructive for the welfare of managers (Watts 2003; Beatty and Weber 2006). Asset write-off is prevalent during the crisis period as the expected profits fall (Johnson et al. 2000, Kim and Yi 2006). Bowen et al. (1995) predict that firms in need to fulfill greater implicit claims with suppliers and customers (which is exacerbated during the crisis) are more likely to manage their earnings upwards by choosing aggressive accounting methods. Göx and Wagenhofer (2009) motivate the use of conservatism under moral hazard problem that arise due to financing needs and a given project's incentives for hidden effort. Through committed reporting of lower-end distributions, BSC mitigates managerial opportunism mitigating the agency risk (G. C. Biddle et al. 2016).

Overall, given the cushioning and informational roles of BSC, I expect BSC-firms to perform better during the crisis.

3 Balance sheet conservatism

To measure balance sheet conservatism I follow Sunder et al. (2018), who measure it by the persistent downward bias in book value of equity. Book-to-market (BTM) is a noisy measure of balance sheet conservatism since there are several factors that are likely to affect both book and market value of equity. Hence, there is a need to extract other sources of variation in BTM. In particular, I control for long-term growth forecast and sales growth to control for the expected growth. Industry concentration is expected to capture higher rents that are associated with industry concentration that, in turn, exhibit lower BTM. Market sentiment may result in over- or under-investment of market capitalization in the denominator of BTM. Thus, I control for consumer sentiment (Qui and Welch 2006) and S&P index as a proxy for general level of market prices, given that investors' sentiment is tied to overall market conditions (Rosen 2006). Firm profitability,

credit rating and return volatility are used to control for distress. Given that even without conservatism inflation can decrease BTM (Basu 1997), there is a control for the presence of high inflation. Finally, to proxy for the extent of fair value accounting, accumulated other comprehensive income is included.[2] The main model under consideration is as follows:

$$\begin{aligned} BTM_{i,t} = \alpha &+ \beta_2 LT\ Growth\ Forecast_{i,t} + \beta_2 Sales\ Growth_{i,t} + \beta_3 Industry\ Concentration_{i,t} \\ &+ \beta_4 1/Consumer\ Sentiment\ Index_{i,t} + \beta_5 1/S\&P\ Index_{i,t} + \beta_6 Profitability_{i,t} \\ &+ \beta_7 Credit\ Rating_{i,t} + \beta_8 Return\ Volatility_{i,t} + \beta_9 High\ Inflation_{i,t} + \beta_{10} AOCI_{i,t} \\ &+ \epsilon_{i,t}, \end{aligned} \tag{1}$$

where BTM is the book value of assets divided by the market value of equity plus the book value of debt. Long-term growth forecast and sales growth proxy for the expected growth of a firm. Industry concentration controls for the effect of a high rent that results in a lower BTM. $1/Consumer\ SentimentIndex$ is a proxy for market sentiment and $1/S\&P$ accounts for general level of prices that is expected to affect investors' sentiments. $Profitability$, $Credit\ Rating$ and $Return\ Volatility$ are used to control for a distress. $High\ Inflation$ is an indicator variable that controls for inflation. $AOCI$ is calculated as accumulated other comprehensive income scaled by total assets to proxy for the extent of fair value accounting. $Eq.(1)$ is estimated within year and industry groups. Residual from $Eq.(1)$ is a measure of balance sheet conservatism (BSC). To assist in interpretation of results we multiply BSC by -1, so that the higher BSC, the higher is the firm's balance sheet.

4 Data Sample and Descriptive Statistics

The beginning of the crisis is defined as July 1, 2007 to March 31, 2009 (e.g. Duchin et al. 2010, Ivashina and Scharfstein 2010). Similar to prior literature I exclude finan-

2. For detailed explanation of variables construction and estimation procedure, please refer to Sunder et al. (2018).

cial (SIC 6000-6999) and utility firms (SIC 4900-4999). Accounting information comes from Compustat quarterly or annual (depending on the research setting). Data on share returns comes from CRSP. Information related to private loan issuance is from the Loan Pricing Corporation's database. Main independent variable is *RawReturn* (*AbnormalReturn*) which is estimated as raw (market model-adjusted) buy-and-hold return over the period July 2007 to March 2009. I require that firms have non-missing data for BSC and main control variables. However, I do not impose this restriction to the rest of the variables to preserve the sample size as large as possible. This results in 1724 firms. All continuous variables are winsorized at the 99% and 1% levels.

Table 1 presents descriptive statistics of primary variables of interest. All the variables are measured as close as possible to the beginning of the crisis. The mean of *BSC* is positive. Average raw (abnormal return) is -0.52 (0.16) and still strongly negative (positive) for the top sample quartile (quite in line with Lins et al. 2013; Lins et al. 2017). This suggests the negative consequence of the financial crisis. On average, firms entered a crisis being not highly levered with the mean of $Long-Term\,Debt$ ($Short-Term\,Debt$) equal to 16.8%(2.5%). The average cash-to-assets ratio is around 20% with average profitability of 9%.

Table 2 presents correlation matrix of primary variables of interest. It is important to note that BSC is positively correlated with crisis-period raw returns (0.19) and abnormal returns (0.14).

5 Empirical Results

5.1 Stock returns surrounding financial crisis and BSC

To test the performance of firms during the financial crisis with different pre-crisis levels of BSC, I estimate various regressions of stock returns (both raw and market-adjusted) as a function of BSC and a set of control variables. Panel A of Table 3 presents results for the baseline estimations. The variable under interest is BSC. All models include industry and firm's Carhart four-factor loadings estimated over 60 months (minimum 24) prior to

the onset of the crisis.

Columns (1) and (2) present that firms with higher BSC earned higher returns during the crisis. To overcome a concern associated with omitted variables columns (3) and (4) include a set of firm-specific characteristics. First, I control for firm's financial health before the crisis. Specifically, I include cash holdings, both short- and long-term debt and profitability. Firms that entered the crisis with healthier balance sheets were less affected by the economic downturn (see Almeida et al. 2012; Harford et al. 2014). Additionally, I control for book-to-market ratio, momentum (the firm's raw buy-and-hold return measured over one year prior to the onset of the crisis), dummy controlling for negative book-to-market ratio, size and idiosyncratic risk. All the variables are defined in Appendix A and are measured the last quarter before the beginning of the crisis.

Columns (3) and (4) present the results of the models including control variables. As before, high-BSC firms earned higher returns compared to low-BSC firms. Overall, after the inclusion of control variables the results are a bit attenuated, but still remain economically significant. A one standard deviation increase in BSC (0.184) is associated with 3.7 percentage point increase in raw returns and 8 percentage point increase in market model-adjusted abnormal returns during the crisis. The effect of control variables is as expected. For example, firms that entered the crisis with "healthier" balance sheets (higher cash holdings, more profitable, lower leverage) experienced higher returns during the crisis. Additionally, firms that were bigger in size outperformed small firms.

Panel B of Table 3 presents the re-estimation of all the previous models, but including linear measure of BSC. Specifically, BSC is divided into five quintiles, where the first quintile is set as a benchmark. The results indicate that firms with higher pre-crisis BSC had better stock performance during the crisis. High-BSC firms (BSC5) outperformed firms with the lowest BSC (BSC1) by 13.8 (29.4) percentage point in raw (abnormal) returns, once I do not control for firm characteristics. The difference in performance is somehow attenuated once I include control variables and is 8.4 (16) percentage point in raw (abnormal) returns. Overall, the impact of BSC is monotonic, but not entirely linear.

Panel C ensures that our results are robust to the inclusion of controls for measures

of corporate governance that led to better performance of firms during the crisis (Nguyen et al. 2015). All the models include full set of control variables. The results indicate that the impact of BSC is still positive and statistically significant. Additionally, there is some evidence that better governed firms performed better during the crisis. In particular, performance of firms with more entrenched managers was worse during the crisis (column (2), coeff. = -0.034, t-stat=-1.690).

Finally, Table 4 sheds light whether the positive relation between BSC and stock performance during the crisis is unique to this period or is common to other periods that might be due to omitted risk factors that are correlated with BSC. Following Lins et al. (2017) I estimate a difference-in-difference model with firm and time fixed effects:

$$\begin{aligned} y_{i,t} = \beta_0 + \beta_1 BSC_{2006} \times Credit\ Shock_t + \beta_2 BSC_{2006} \times Credit\ Trust_t \\ + \beta_3 BSC_{2006} \times Post - Crisis_t + \psi\prime X_{l,i,t-1} + \omega\prime FE_{i,t} + \epsilon_{i,t}, \end{aligned} \tag{2}$$

where y is either monthly raw return or market-adjusted return. BSC_{2006} stands for the measure of balance sheet conservatism at the end of 2006. $Credit\ Shock$ is a dummy variable set to one in the period July 2007 to July 2008. $Credit\,Trust$ is dummy variable set to one in the period August 2008 to March 2009, while $Post - Crisis$ stands for the period April 2009 to December 2013. $X_{i,t-1}$ is a vector of firm-specific control variables measured as close as possible to the oncet of the crisis. FE is a set of fixed effects that includes firm, time (monthly) and factor loadings fixed effects. The crisis period is not only associated with the shock to the supply of credit (e.g. Duchin et al. 2010; Ivashina and Scharfstein 2010), but also with a severe decline in trust (Tonkiss 2009; Sapienza and Zingales 2012). For example, Edelman (the world's largest independent public relations firms conducting survey on trust) estimated that trust in the United States business declined from 58% in early 2008 to 38% in early 2009 (Lins et al. 2017). Thus, in line with Lins et al. (2017), I segregate the period of financial crisis into credit supply shock ($Credit\,Shock$) and a shock to trust accompanied by the credit supply shock ($Credit\,Trust$) in order to guarantee that the results do hold within the whole period of the crisis.

Table 4 presents the results for both raw and market model-adjusted returns. Columns (1) and (2) do not control for firm-specific characteristics. In both specifications, high-BSC firms outperformed low-BSC firms during the crisis. In terms of economic significance, one standard deviation increase in BSC (0.184) in 2006 is associated with 0.33 (0.37) percentage point higher raw (abnormal) returns during the supply shock and 0.57 (0.81) percentage point higher raw (abnormal) returns during the trust shock. Columns (3) and (4) include additional control variables. As before, the results are positive and statistically significant.

Finally, I construct equal-weighted hedge portfolio that goes long firms with high (5th quintile) and short firms with low (1st quintile) pre-crisis BSC over the crisis period. Table 1 in the Internet Appendix B presents the results. The constructed portfolio earns excess returns (adjusted for three-factor loadings) of 98 basis points per month within the crisis period. Finally, I check whether firms with high pre-crisis BSC were less likely to default or get bankrupt. The results in Table 2 in the Internet Appendix B indicate that pre-crisis BSC decreases the probability of bankruptcy (in total there are 29 bankruptcies that occurred within 2007-2013).

Overall, the results present evidence that high-BSC firms outperformed low-BSC firms. This result is persistent only during the crisis time. The effect is more pronounced when the credit supply shock was accompanied by the decline in trust. These findings stay in line with Tong and Wei (2008) who find that financially constrained firms had higher stock declines during the crisis.

5.2 Robustness tests

In this section, I present additional analyses to ensure the robustness of baseline specifications. First, there is a possibility that the measure of BSC in 2006 may be correlated with the anticipation of the crisis. Even though the regression models include controls that might affect crisis period stock returns, the possibility that BSC in 2006 is correlated with unobservable measure of crisis anticipation might confound main findings.

To address this concern, I replicate the estimations of Table 3, Panel A and test

whether crisis-period returns are positively affected by BSC proxy measured in 2005, 2004 and 2003. Table 5, Panel A presents the results. In all the models the coefficient on BSC is positive and statistically significant (although the effect is attenuated with the time period when BSC is estimated). Overall, baseline findings are not sensitive to the time period when BSC in measured. One of the explanations for these findings is overall persistence of firms commitment to conservative balance sheet reporting. BSC reflects an accumulation of past accounting choices of the firm. Under U.S. GAAP past conservative write-offs of assets can not be easily reversed. Thus, BSC is considered as a sticky measure. In particular, the correlation between BSC measure in 2006 and 2005 is 76%; 2006 and 2004 is 62%; 2006 and 2003 is 52%.

Next, to address the issue that base line results are biased by time varying heterogeneity not explained by the control variables I use placebo (i.e., non-existent) years of financial crisis. In particular, I set crisis in July 2004 and in July 2003 (columns (1) to (4) Table 5, Panel B). The crisis period lasts 21 months. Table 5, Panel B presents the results. For none of the placebo crisis years the effect of BSC on returns is positive and statistically significant. Additionally, I check whether results are attributable to the credit supply shock rather than demand shock. For this, I repeat base-line specification for the negative demand shock caused by the September 11, 2001 event (Tong and Wei 2008). As before, the crisis period is set to last 21 months. Table 5, Panel B, columns (5) to (6) present the results. High BSC-firms do not outperform low BSC-firms. In fact, the coefficients in column (6) is negative and statistically significant, suggesting that, any possible spurious results that are due to endogeneity issue are actually biasing away the base line results.

5.3 Operating performance of firms surrounding financial crisis and BSC

In this section I study operating performance of firms surrounding the crisis period as a function of BSC in 2006 and a set of control variables. The main model under consideration is a difference-in-difference with continuous treatment levels. All the control

variables are lagged one period and are updated on a quarterly basis. Additionally, I include firm and quarter fixed effects. Hence, I account for the possibility that firms' performance is affected by some unobservable characteristics and that there is a variation in performance over time (that is attributable to the crisis period).

First, I analyze accounting-based performance measures. Accounting measures reflect both past and short-term financial performance of a firm, while market-based measures reflect future and long-term financial performance (e.g. Hoskisson et al. 1994). I use three measures of accounting performance: return on assets (ROA), return on equity (ROE) and return on sales (ROS). To account for the fact that high-BSC firms performed better before the crisis I estimate average ROA, ROE and ROS over eight quarters (minimum six) on a rolling basis. Table 6 presents the results. The interaction between BSC and a crisis dummy is positive and statistically significant for all profitability measures. A one standard deviation increase in pre-crisis BSC (0.186) is associated with 0.58, 1.1 and 4.2 percentage point increase in ROA, ROE and ROS, respectively. It is important to note that the difference in profitability between high- and low-BSC firms persists only during the crisis period.

Second, consistent with the idea that during periods of high liquidity constraints incremental investments have high payoffs, I study the effect on investment during the crisis. Recent studies demonstrate that firms experienced underinvestment that was dictated by drying-up liquidity during the crisis (e.g. Campello et al. 2010; Duchin et al. 2010). Additionally, Lins et al. (2013) document that firms which cut more investments during the financial crisis experienced lower stock performance. Given that BSC-firms had better borrowing capacity, I study whether this translated into higher value-creation through investment. Following Duchin et al. (2010) I define investment intensity as capital expenditures over total assets. Table 6 Panel B presents the results. Specifically, interaction between BSC and a crisis dummy is positive and statistically significant in all model specifications. Column (1) demonstrates results without the inclusion of control variables. In terms of economic significance: one standard deviation increase in pre-crisis BSC (0.186) is associated with the 0.2 percentage point increase in investment output.

Columns (2) includes the control variables, while column (3) controls for average eight quarter investment (minimum six quarters) on a rolling basis. The results in both columns are positive and statistically significant.

Third, I test whether firms with BSC were able to shield their employees from unemployment risk. In particular, better stock performance might be explained by higher labor cost reductions. Thus, I study whether firms maintained implicit contracts with their employees. In this analysis I turn to Compustat at an annual level as the data on number of employees is only available at annual frequency. Table 6 Panel C presents the results. Following Lins et al. (2013) I set $Crisis$ equal to one for years 2008 and 2009. $Post - Crisis$ is equal one for years 2010 to 2013. All the control variables are lagged one period. Interaction between BSC and a crisis dummy is positive and statistically significant in all model specifications. Column (1) demonstrates results without the inclusion of control variables. In terms of economic significance: one standard deviation increase in pre-crisis BSC (0.186) is associated with the 5 percentage point increase in employment. Column (2) includes the control variable. The results are a bit attenuated, but still remain positive and statistically significant. What is interesting is that the effect on employment remains positive and statistically significant in post-crisis period. One possible explanation for this is that BSC-firms' better performance during the crisis might be translated into labor-intensive fields.

Fourth, I test whether firms with higher BSC were less risky during the crisis. Given that BSC enhances cash-preservation and results in lower cost of debt, this should lead to lower riskiness of a firm. Specifically, firms with sufficient cash or access to external funding are able to meet debt service obligations. These, in turn, should result in lower bankruptcy risk (Uhrig-Homburg 2005). I test whether firms had lower monthly volatility of stock returns, better credit rating (the higher the score, the lower is the rating) and lower distance to default (Bharath and Shumway 2008). Table 6 Panel D presents the results. In all model specifications high-BSC firms were less risky: exhibited lower stock return volatility, higher ratings and lower distance to default (-0.045, t-stat=-7.954; -0.300, t-stat=-1.832; -0.211, t-stat=-8.365). Additionally, those firms that had higher

pre-crisis BSC continued to be less risky in post-crisis period: lower stock return volatility and lower distance to default (-0.046, t-stat=-8.740; -0.089, t-stat=-4.245).

5.3.1 Capital Raising surrounding financial crisis and BSC

In this section I turn to the investor channel and study capital raising around financial crisis. Additionally, I estimate total cost of borrowing and probability of covenant violation.

[Insert Table 7]

First, I start with capital raising. Debt issuance is defined as long-term debt minus the reduction in long-term debt scaled by the total assets in the previous quarter (Frank and Goyal 2003). The equity issuance is defined as total value of shares issued scaled by the market value of equity in the previous quarter. Table 7 presents the effect of BSC on debt- and equity issuance during the financial crisis. As illustrated in column (1) firms with higher BSC raised more debt during the crisis (0.003, t-stat=2.067). In contrast, there is no effect on equity issuance that is represented in column (2) (0.001, t-stat=0.102). This results support the evidence that BSC is especially valued by debtholders since it reduces lenders' uncertainty regarding the liquidation value of assets. Moreover, it supports evidence of Armstrong et al. (2010) that debt is the prevailing source of capital in the U.S..

Second, I estimate regression models of the cost of borrowing from banks both during- and post-crisis periods as a function of firms' pre-crisis BSC and a battery of control variables.

As a measure for the cost of borrowing, I use AISD (all-in-drawn spread that is a payment in basis points over LIBOR) (e.g. Anantharaman et al. 2013; Sunder et al. 2018). Additionally, I study the probability of financial covenant violation surrounding financial crisis and BSC. Borrowers' riskiness or in other words the degree of agency conflicts can be proxied by the probability of covenant violation (Demerjian and Owens 2016). The use of covenants in loan contracts is aimed to reduce agency conflicts and are exploited

as a monitoring mechanism. When firms keep their balance sheets more conservative, this results in lower bound of accounting numbers. To the extent that BSC benefits debtholders, this should result in less restrictive covenants (Sunder et al. 2018). In this section I test whether BSC reduced the probability of restrictive covenants usage in loans that are originated during the crisis.

I use an aggregate covenant violation probability measure developed by Demerjian and Owens (2016). This measure is superior to the commonly used alternatives and more predictive of actual covenant violation as it addresses the issue of the measurement error. In particular, some studies focus only on the covenants that are expected to mitigate measurement error explicitly assuming that these covenants aggregate total probability of violation (e.g. Dichev and Skinner 2002). Alternatively, other studies account for the number of financial covenants attributable to the loan as a proxy for the probability of violation that does not account for the covenant slack. The measure developed by Demerjian and Owens (2016) incorporate individual covenant violation probabilities that are included in a loan. They use a hand-coded sample of loans that contains actual covenant definitions (unlike in Dealscan database) and compare the expected likelihood of the violation based on the actual definition. They find that for most covenants the average error is insignificantly different from zero. The main measure is $PVIOL$ - an aggregate covenant violation probability measure (at the loan inception date) covering 15 types of financial covenants. Addtionally, PVIOL_CCOV (PVIOL_PCOV) is an aggregate probability of capital (performance) covenants violation. These measures represent the probability of covenant violation in the next quarter and the higher is the measure the tighter set of covenants there are.[3]

All the regression models include a set of loan and borrowing characteristics that are expected to affect cost of borrowing. Following the literature, the loan-level controls include size, maturity, whether the loan has a collateral, has financial covenant, prime

3. Types of financial covenants are (1) Min.Interest Coverage, (2) Min. Cash Interest Coverage, (3) Min.Fixed Charge Coverage, (4) Min. Debt Service Coverage, (5) Max. Debt-to-EBITDA, (6) Max.Senior Debt-to-EBITDA, (7) Min. EBITDA, (8) Max.Leverage, (9) Max. Senior Leverage, (10) Max. Debt-to-Tangible Net Worth, (11) Max.Debt-to-Equity, (12) Min. Current Ratio, (13) Min. Quick Ratio, (14) Min. NetWorth, (15) Min. Tangible Net Worth. (1)-(7)are performance covenants; (8)-(15) are capital covenants.

as base rate, or performance pricing. Borrower-specific controls include size, coverage ratio, leverage, profitability, tangibility, current ratio, cash and rating all measure before the initiation of the loan. Additionally, a vector of fixed effects includes loan type, loan purpose, industry and year dummies. Given that loans to the same borrower might be correlated with each other, standard errors are clustered by firms (Petersen 2009). All the borrowing-specific controls are lagged to ensure that all the accounting information is captured prior to the loan origination. The regression model for the cost of loan is estimated at "facility" level, while for the probability of covenant violation at "package" level (covenant are written at the "package" level).

[Insert Table 8 about here]

Table 8 presents the coefficient estimates for the cost of borrowing surrounding the financial crisis for firms with high/low BSC. Column one reports regression estimates with the dependent variable equal to AISD. The coefficient of $BSC \times Crisis$ is negative and statistically significant (-0.524, t-stat=-2.849). Columns (2) to (4) present the results for the estimation of covenants violation probability surrounding the crisis. The results indicate that firms with higher pre-crisis balance sheet conservatism exhibited lower probability of covenants violation during the crisis (PVIOL = -0.375; t-stat=-2.454). It is important to note that the results are driven by the lower probability of performance covenants violation (PVIOL_PCOV=-0.302, t-stat=-2.022). This is consistent with the hypothesis that BSC reports net assets at a lower bound creating a cushion. The probability on capital covenant violation is negative, but statistically insignificant (PVIOL_CCOV=-0.105, t-stat=-0.977). Overall, the results indicate that firms that entered the crisis with high BSC had lower cost of borrowing from banks and had lower probability of covenant violation during the crisis period.

5.4 Did BSC-firms smooth earnings during the crisis?

In this section I study whether better performance of high BSC-firms during the crisis stems from earnings smoothing. In line with the idea that BSC accumulates reserves in

"bad" times and releases them in "good" times, it might be the case that the observed outperformance of high BSC-firms is driven by the use of 'cookie jar' reserves (Ball et al. 2000; Jackson and Liu 2010a). The main empirical challenge is to segregate earnings smoothness into its fundamental and discretionary components. I follow Lang and Maffett (2011) and Lang et al. (2012) in estimation of earnings smoothing proxy. In particular, for each firm-quarter pair I estimate measures of overall earnings smoothness ($SMTH1$ and $SMTH2$) over two-digit SIC industry. Second, $SMTH1$ ($SMTH2$) is regressed on a set of determinants of earnings smoothness, where discretionary smoothing is defined as the residual term equal to $DSMTH1$ ($DSMTH2$). Finally, firm-quarter measure of earnings smoothing is defined as the average of percentile rank values of $DSMTH1$ and $DSMTH2$ defined as $DSMTH$.[4]

[Insert Table 9]

Table 9 present the results. Both during and after the crisis there is no statistically significant evidence that high BSC-firms smoothed earnings (-0.008, t-stat=-1.502; 0.009, t-stat=0.871).

5.5 Split sample analysis

In this section I conduct a split sample analysis to better understand the underlying mechanism of BSC that affected firm-performance during the crisis. The negative effect of supply shock to external financing should be more pronounced for firms that entered the crisis as financially constrained firms (e.g. Duchin et al. 2010). Hence, firms with higher financing needs and lower degree of BSC are expected to face greater difficulty in obtaining financing and thus, experience a greater negative impact on firm performance compared to firms with higher BSC. Importantly, by segregating firms into high and low samples based on proxies related to financial constraints helps to disentangle the issue of whether the observed reduction in financing is due to a negative supply shock rather

4. For detailed description of all variables under consideration, please refer to Lang and Maffett (2011) and Lang et al. (2012).

than the demand shock. In case of the later, there is no role of financial reporting in mitigating the negative impact.

The main measures of financing constraints are the KZ-index (Kaplan and Zingales 1997) and WW-index (Whited and Wu 2006). To classify firms as financially constrained, I sort all firms into two groups based on whether a firm's measure of financing constraints lies above or below the median in the pre-crisis year (2006). Table 10 Panel A and B present the results. Both for raw and abnormal returns the results are higher (and statistically significant) for the sample of firms that entered the crisis as financially constrained firms that support the arguments above.

Next, I examine whether the negative effect of supply shock to external financing is more pronounced in firms with higher information asymmetry. Agency problems associated with information asymmetry might lead to financing constraints, especially when external financing is used to finance risky projects (Greenwald et al. 1984; Myers and Majluf 1984). To the extent that BSC mitigates information asymmetry between lenders and borrowers, I predict that firms with higher BSC would face less difficulty in obtaining financing and hence, experience better firm performance. To classify firms as low/high informationally opaque, I sort all firms into two groups based on whether a firm's measure of information asymmetry (bid-ask spread) lies above or below the median in the pre-crisis year (2006). Table 10 Panel C presents the results. Consistent with the prediction, I find that the role of BSC is greater in firms that entered the crisis with higher information asymmetry.

6 Additional Robustness Tests

So far the results document a strong evidence that BSC is positively related to firm performance during the crisis. In this section I introduce further tests to ensure robustness of main results. First, I analyze whether the results do hold once I control for a firm pre-crisis financial reporting quality. Second, I introduce alternative BSC proxy.

Effective financial reporting quality results in lower information asymmetry (Gra-

ham et al. 2005). As a consequence, it leads to lower political and regulatory costs, higher managerial efforts, lower cost of debt and lower (higher) information risk (stock returns) (Farraghe et al. 1994; Francis et al. 2005; Agarwal et al. 2008; G. Biddle et al. 2009; Bushee and Miller 2012). In this regard, I control for financial reporting quality to make sure that the effect of BSC is not subsumed. I use two proxies for financial reporting quality (AQ) derived from discretionary accruals model following prior literature (e.g. Dechow and Dichev 2002; Francis et al. 2005; G. Biddle et al. 2009). The main premise of the measure is that the prediction of earnings is more precise when there is a lower error embedded in accruals. The discretionary accruals model is estimated following Dechow and Dichev 2002 and additionally augmented by the fundamental variables from Jones 1991, namely PPE and change in revenues as suggested by McNichols 2002. The first model is a regression of working capital accruals on lagged, current, and future cash flows, while the second adds the change in revenue and PPE. Following Francis et al. (2005) both models are estimated cross-sectionally for each industry with at least 20 observations in a given year based on the Fama and French (1997) 48-industry classification. AQ is defined as the standard deviation of the firm-level residuals from the Dechow and Dichev model calculated over the years t-4 to t. Higher values of standard deviations of residuals indicate poorer accruals quality. This signifies that accruals lack predictability and should be a reason for priced uncertainty. I multiply the obtained measure for AQ by negative one so that it is increasing in financial reporting quality and measure the proxy in 2006. Table 2 presents correlation between BSC and financial reporting quality proxies. In particular, the correlation between AQ_{Dechow} (AQ) and BSC is positive and statistically significant (no significance), equal to 0.06 (0.04). This suggest that BSC-firms, on average, were associated with better reporting quality in the pre-crisis year.

Table 11 present the results. Panel A uses AQ proxy following original Dechow and Dichev (2002) model. In Panel B, AQ accounts for changes in revenue and PPE. All the regressions include firm-specific characteristics as in the main regressions. The results indicate that pre-crisis level of financial reporting quality is positively associated with firm performance during the crisis both in Panel A and B (columns (1) and (2)). Additionally,

accounting for pre-crisis level of financial reporting quality does not subsumes the positive effect of BSC. The results remain positive and statistically significant.

Finally, I estimate balance sheet conservatism using alternative proxy following Beaver and Ryan (2000). The proxy for the incorporation of information in book value is the coefficient of lagged returns on equity. By introducing the Basu (1997) framework, we avoid the bias in the firm-specific intercept that captures both unconditional and conditional bias and permits isolating the level of unconditional conservatism. Table 12 presents the results. The results are positive and statistically significant in all model specifications.

7 Summary and Conclusion

Using financial crisis as a natural experiment, I test to what extent balance sheet conservatism affected shareholders' value during the recent financial crisis. This paper provides evidence that BSC is value-enhancing mechanism to shareholders when the level of liquidity problem in the economy increases.

First, I find that firms with higher BSC outperformed firms with lower BSC during the crisis by around 13.8 percentage points in raw stock returns. Second, I document that BSC-firms invested more during the crisis, were more productive and maintained higher employment rates. Third, I find that BSC-firms were less risky during the crisis that is represented by lower stock return volatility, distance to default and higher credit ratings. Fourth, I find that BSC-firms raised more debt with lower cost of debt and lower probability of covenant violation. Finally, I present an evidence that the positive effect of BSC is more pronounced for firms that entered the crisis as financially constrained or informationally opaque. These findings play in favor of causality rather then association of the main findings.

The study presents convincing evidence on the positive side of BSC to shareholders during the crisis times. Financial constraints impair firms' ability to engage in long-term efficiency increasing investments. That is, firms with higher balance sheet conservatism

are more protected against financial frictions. Collectively, these results present the importance of BSC predominately in periods of high vulnerability and low market liquidity. During the normal times the level of firms' BSC is already embedded in the stock price. Given the rare frequency and predictability of such an event as financial crisis, I stay away from suggesting the optimal level of balance sheet conservatism that managers should target.

The results of the paper should be considered within certain limitations. First, measurement error of balance sheet conservatism. Although, I tried to incorporate different proxies, I can not rule out the measurement problem. Second, there are several mechanisms through which BSC is supposed to ameliorate negative consequences of the crisis. Although, there is no explicit findings on the factors that drive the results, I find an evidence in support of informational role of BSC. Third, all the main conclusions are limited to the crisis times and should be regarded with caution during alternative time spans.

A Appendix: Variable Definitions

Variable	Definition of main variables
Panel A: Variables used in construction of BSC following Sunder et al. (2018)	
BTM	The book-to-market ration, computed as the ratio of the book value of total assets (at) to the market value of equity (prcc_f × csho) plus the book value of debt (at-ceq)
$LT\ Growth\ Forecast$	The median of long-term growth estimates by analysts (I/B/E/S data)
$Sales$	Ratio of sales (sale) to lagged sales
$Industry\ Concentration$	Herfindahl index (FIC300HHI) constructed by Hoberg and Phillips (2010, 2016) following the Fixed Industry Classification (FIC) available at http://cwis.usc.edu/projects/industrydata.
$ConsumerSentimentIndex$	Published by the University of Michigan, available at http://www.sca.isr.umich.edu/tables.html
$S\&P$	Level of the S&P's Composite Index from CRSP
$Profitability$	The ration of cash flow from operations (oancf) lagged total assets (at)
$Credit\ Rating$	The numerical equivalent of S&P domestic long-term issuer credit rating (splticrm) from COMPUSTAT. For firms not rated by S&P, I first regress debt rating on a set of financial variables, including log of assets (at), ROA (ib/at), leverage, dividend (dvc) indicator, subordinated debt (ds) indicator and a loss indicator, with industry and year fixed effects for rated firms. Then, I use the estimated coefficients from the first regression and the firm's financial information to compute a credit rating for each firm in each year. The computed rating values are winsorized at 2 and 27 to be consistent with the range of ratings reported in COMPUSTAT. The value of Credit Rating decreases in credit quality
$High\ Inflation$	An indicator variable equal to one if the inflation over the past five years is higher than the median level during the sample period, and zero otherwise. Inflation is from Consumer Price Index from the Bureau of Labor Statistics
$AOCI$	Accumulated other comprehensive income (acominc) scaled by total assets (at)
Panel B: Main Variables	
BSC	A measure of balance sheet conservatism following Sunder et al. (2018)
$Raw\ Raturn$	Raw return computed over the period July 2007 to March 2009
$Abnormal\ Return$	Market model-adjusted return over the period July 2007 to March 2009. Market model parameters are estimated over the five-year period ending in June 2007 using the CRSP value-weighted index as the market proxy
$MarketCap.$	Market value of assets estimated as share price (prcc_f) times the number of shares outstanding (csho)
$Long-TermDebt$	Long-term debt (dltt) divided by total assets (at)
$Short-TermDebt$	Short-term debt (dlcq) divided by total assets (atq)
B/M	Book value of assets (ceqq) scaled by market capitalization
$IdiosyncraticRisk$	The residual variance of the market model estimated over five-year period ending in June 2007 (monthly CRSP data)
$Negative\ B/M$	A dummy variable set to one when the B/M is negative and zero otherwise
$Momentum$	One year buy-and-hold return preceding the crisis
Panel C: Additional Control Variables	
$E-Index$	The sum of six dummies reflecting antitakeover provisions (Bebchuk et al. 2009) http://www.law.harvard.edu/faculty/bebchuk/data.shtml
$Board\ Independence$	Percentage of independent directors sitting on the board
$Compensation\ Committee\ Independence$	Percentage of independent directors in the compensation committee
ROA	Net income (ibq) over the total assets (atq)
ROE	Net income (ibq) over the shareholders' equity (ceqq)
ROS	Net income (ibq) over the net sale(atq)
$Investment$	Capital expenditure (capxy) scaled by total assets (atq)
$Employment$	The number of people employed by the company (emp)
$StandardDev.$	Monthly standard deviation of daily stock returns (ret)
$Rating$	The numerical equivalent of S&P domestic long-term issuer credit rating (splticrm) that decreases in credit quality
$DefaultProb.$	Monthly monthly distances to default following Bhattacharya et al. (2003)

Table A continued

Variable	Definition of main variables
Panel C: ***Continued***	
$DebtIssuance$	Ratio of long-term debt (dltisy) minus the reduction in long-term debt (dltry) to total assets (atq) in the previous quarter
$EquityIssuance$	Ratio of total the total value of shares issued (cshiq × prccq) to market value of equity in the previous quarter (prccq × cshoq)
$AISD$	Natural logarithm of $All-in-drawnspread$, expressed in basis points
$PVIOL$	Aggregate covenant violation probability measure (Demerjian and Owens 2016). Available at Peter Demerjian website.
$PVIOL\_CCOV$ ($PVIOL\_PCOV$)	Aggregate probability of capital (performance) covenant violation (Demerjian and Owens 2016). Available at Peter Demerjian website.
$Amount$	Facility amount (Dealscan)
$Maturity$	Facility maturity in months (Dealscan)
$Collateral$	Dummy variable equal to one if facility is secured and zero otherwise (Dealscan)
$Covenant$	Dummy variable equal to one if a loan has covenant and zero otherwise (Dealscan)
$Prime\ Base\ Rate$	Dummy variable equal to one if the base rate is prime and zero otherwise (Dealscan)
$Total\ Assets$	Total assets (atq)
$Tangibility$	Ratio of property, plant, and equipment (ppentq) to total assets (atq)
$Current\ Ratio$	Ratio of current assets (acoq) to current liabilities (lcoq)
$Coverage$	Ratio of operating income before depreciation (oibdpq) to interest expenses(xintq)
$Leverage$	Ratio of long-term debt (dlttq) and short-term debt (dlcq) to total assets (atq)
$KZ-index$	Kaplan and Zingales (1997) measure of financing constraints following Lamont et al. (2001): KZ-index = -1.001909 × cash flow (ib + dp)/capital (lagged ppent) + 0.2826389 × Tobin's Q ([at + prcc_f×csho-ceq-txdb]/at) + 3.139193 × debt(dltt + dlc)/total capital(dltt + dlc + seq) - 39.3678 × dividend(dvc + dvp)/capital (lagged ppent) - 1.314759 × cash (che)/capital (lagged ppent)
$WW-index$	Whited and Wu (2006) measure of financing constraints: WW-index = -0.091 × cash flow (ib + dp)/assets (at) - 0.062 × positive dividend (dv) dummy + 0.021 × long-term debt (dltt)/assets (at) - 0.044 × log(assets (at)) + 0.102 × industry sales (sale) growth - 0.035 × sales (sale) growth
$InformationAsymmetry$	Average of the daily relative bid-ask spread estimated over a year preceding the crisis. Relative Bid-ask spread = 100 × (Ask - Bid)/(0.5× (Ask + Bid)).
$DSMTH$	Earnings smoothing proxy following Lang and Maffett (2011) and Lang et al. (2012)
AQ_{Dechow}	Discretionary accruals model following Dechow and Dichev (2002)
AQ	Discretionary accruals model following Dechow and Dichev (2002) augmented by the fundamental variables (PPE and change in revenues) following McNichols 2002
BSC_{Beaver}	Beaver and Ryan (2000) measure of balance sheet conservatism

B Appendix: Internet Appendix

Table 1: Calendar-Time Regressions of Portfolios Formed on firms with high and low pre-crisis BSC

This table reports calendar-time regressions of a zero-investment (equal-weighted) hedge portfolio that goes long firms with high (5th quintile) and short firms with low (1st quintile) levels of pre-crisis BSC. p-values are reported using White (1980)-adjusted standard errors.

	(1)	(2)
VARIABLES	Estimate	p-Value
Alpha	0.98	0.02
Mktret	-0.09	0.22
Smb	-0.45	0.02
Hml	-0.11	0.36
R^2	0.60	

Table 2: BSC and firm survival around the crisis

This table presents results of the relationship between crisis returns and BSC. Crisis-period returns are measured over the period from July 2007 to March 2009. The regression model under consideration is as follows:

$$Fail_i = \beta_0 + \beta_1 BSC_i + \psi\prime X_i + \omega\prime FE_i + \epsilon_i,$$

where subscript i denotes firm. The dependent variable $Fail$ is a dummy variable equal to one if a firm defaults or gets bankrupt (*staltq=TL or CRSP dlstcd=400-490 or 574*) within 2007-2013. BSC stands for the measure of balance sheet conservatism. X_i is a vector of firm-specific control variables measured as close as possible before the beginning of the crisis. FE is industry dummies that are set at two-digit SIC code. All the variables are as described in Table A. ***, **, * denote statistical significance at 1%, 5% and 10% levels. P-values are derived based on heteroskedasticity-consistent standard errors.

	(1)
VARIABLES	Fail
BSC	**-0.099****
	(-2.190)
Ln(Market Cap.)	-0.002
	(-0.943)
Long-Term Debt	0.071***
	(2.623)
Short-Term Debt	-0.107**
	(-2.276)
Cash Holdings	0.013
	(0.648)
Profitability	-0.021
	(-0.562)
B/M	-0.056
	(-1.492)
Idiosyncratic Risk	0.386
	(1.165)
Constant	0.040
	(1.532)
Observations	1,724
Adjusted R-squared	0.060
Industry FE	Yes

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Table 1: Descriptive statistics of Main Variables

This table presents descriptive statistics of primary variables of interest. All of the variables are defined in Table A.

	N	Mean	Std.dev	Q1	Median	Q3
BSC	1724	0.004	0.184	-0.114	0.018	0.141
Raw Return	1724	-0.518	0.292	-0.746	-0.549	-0.334
Abnormal Return	1724	0.163	0.879	-0.408	-0.033	0.453
Market Cap.	1724	5542.732	14681.459	395.230	1087.490	3405.257
Long-Term Debt	1724	0.168	0.181	0.001	0.127	0.263
Short-Term Debt	1724	0.025	0.050	0.000	0.004	0.026
Cash Holdings	1724	0.195	0.204	0.034	0.118	0.302
Profitability	1724	0.089	0.102	0.051	0.095	0.144
B/M	1724	0.413	0.257	0.237	0.370	0.554
Idiosyncratic Risk	1724	0.014	0.013	0.005	0.009	0.018
Negative B/M	1724	0.025	0.156	0.000	0.000	0.000
Momentum	1724	0.194	0.381	-0.037	0.160	0.374
AQ_{Dechow}	1057	-0.048	0.037	-0.060	-0.037	-0.024
AQ	1056	-0.047	0.035	-0.060	-0.038	-0.024
BSC_{Beaver}	1340	0.033	0.222	-0.112	0.048	0.203

Table 2: Correlation Matrix

This table presents correlation matrix between primary variables of interest. All the variables are as described in Table A.

	BSC	Raw Return	Abnormal Return	Market. Cap	Long-Term Debt	Short-Term Debt	Cash Holdings	Profitability	B/M	Idiosyncratic Risk	Negative B/M	Momentum	AQ_{Dechow}	AQ	BSC_{Beaver}
BSC	1.00														
Raw Return	0.19***	1.00													
	(0.00)														
Abnormal Return	0.14***	0.62***	1.00												
	(0.00)	(0.00)													
Market. Cap	0.14***	0.16***	0.00	1.00											
	(0.00)	(0.00)	(0.84)												
Long-Term Debt	-0.06**	-0.10***	-0.14***	-0.02	1.00										
	(0.01)	(0.00)	(0.00)	(0.51)											
Short-Term Debt	-0.02	-0.05**	-0.08***	0.07***	0.04*	1.00									
	(0.52)	(0.05)	(0.00)	(0.00)	(0.07)										
Cash Holdings	0.19***	0.05*	0.28***	-0.09***	-0.35***	-0.14***	1.00								
	(0.00)	(0.06)	(0.00)	(0.00)	(0.00)	(0.00)									
Profitability	0.15***	0.16***	-0.01	0.16***	-0.11***	-0.14***	-0.15***	1.00							
	(0.00)	(0.00)	(0.82)	(0.00)	(0.00)	(0.00)	(0.00)								
B/M	-0.81***	-0.18***	-0.14***	-0.14***	-0.14***	-0.00	-0.18***	-0.19***	1.00						
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.96)	(0.00)	(0.00)							
Idiosyncratic Volatility	0.05**	-0.20***	0.21***	-0.23***	-0.08***	-0.02	0.40***	-0.34***	-0.09***	1.00					
	(0.04)	(0.00)	(0.00)	(0.00)	(0.00)	(0.39)	(0.00)	(0.00)	(0.00)						
Negative B/M	0.12***	-0.02	0.01	-0.03	0.41***	0.05*	0.02	-0.10***	-0.34***	0.09***	1.00				
	(0.00)	(0.45)	(0.60)	(0.28)	(0.00)	(0.05)	(0.38)	(0.00)	(0.00)	(0.00)					
Momentum	0.16***	0.08***	0.05*	0.05**	0.09***	-0.01	-0.09***	0.15***	-0.20***	-0.04	0.08***	1.00			
	(0.00)	(0.00)	(0.06)	(0.02)	(0.00)	(0.56)	(0.00)	(0.00)	(0.00)	(0.11)	(0.00)				
AQ_{Dechow}	0.06*	0.13***	-0.00	0.08**	0.14***	-0.02	-0.23***	0.11***	-0.03	-0.35***	0.01	0.08***	1.00		
	(0.06)	(0.00)	(0.99)	(0.01)	(0.00)	(0.47)	(0.00)	(0.00)	(0.40)	(0.00)	(0.80)	(0.01)			
AQ	0.04	0.13***	0.01	0.05*	0.14***	-0.00	-0.23***	0.08***	-0.01	-0.31***	0.00	0.07**	0.93***	1.00	
	(0.22)	(0.00)	(0.79)	(0.09)	(0.00)	(0.93)	(0.00)	(0.01)	(0.85)	(0.00)	(0.93)	(0.02)	(0.00)		
BSC_{Beaver}	0.86***	0.26***	0.19***	0.15***	-0.21***	-0.06**	0.35***	0.31***	-0.87***	0.09***	0.07***	0.14***	0.01	-0.01	1.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.02)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.76)	(0.70)	

Table 3: Crisis period returns and BSC

This table presents results of the relationship between crisis returns and BSC. Crisis-period returns are measured over the period from July 2007 to March 2009. The regression model under consideration is as follows:

$$y_i = \beta_0 + \beta_1 BSC_i + \psi\prime X_i + \omega\prime FE_i + \epsilon_i,$$

where subscript i denotes firm. The dependent variable y is crisis-period returns measured as raw and abnormal buy and hold returns. BSC stands for the measure of balance sheet conservatism. X_i is a vector of firm-specific control variables measured as close as possible before the beginning of the crisis. FE is industry dummies that are set at two-digit SIC code. Factor loadings are estimated each month based on the previous 60 months' data. In Panel B, BSC is segregated into quintiles, where each variable is set as a dummy variable that corresponds to a specific quintile (the intercept captures the effect of quintile 1). For example, BSC2 is set to one if a firm is in the second quintile of BSC measured in 2006 and zero otherwise. Panel C, uses linear measure of BSC and includes additional controls for corporate governance. When the measure of the governance metrics is missing, I set it equal to zero and introduce a dummy variable set to one if there is a missing value of the governance metrics. All models include these dummies, but the coefficients are not reported in the table. All the variables are as described in Table A. ***, **, * denote statistical significance at 1%, 5% and 10% levels. P-values are derived based on heteroskedasticity-consistent standard errors.

Panel A: Pre-Crisis BSC and stock returns

	(1)	(2)	(3)	(4)
VARIABLES	Raw return	Abnormal return	Raw return	Abnormal return
BSC	**0.274*** **	**0.604*** **	**0.203*** **	**0.433** **
	(7.435)	(6.065)	(2.860)	(2.142)
Ln(Market Cap.)			0.017***	0.047***
			(3.072)	(3.488)
Long-Term Debt			-0.132**	-0.102
			(-2.470)	(-0.686)
Short-Term Debt			-0.306**	-0.819**
			(-2.279)	(-2.201)
Cash Holdings			0.081*	0.408***
			(1.662)	(2.809)
Profitability			0.192**	0.448
			(2.128)	(1.611)
B/M			0.008	0.080
			(0.133)	(0.498)
Negative B/M			0.054	0.035
			(1.024)	(0.238)
Idiosyncratic Risk			-3.007***	-0.962
			(-4.238)	(-0.352)
Momentum			0.037*	0.098*
			(1.868)	(1.656)
Constant	-0.437***	-0.496***	-0.566***	-0.971***
	(-31.793)	(-11.780)	(-8.996)	(-5.883)
Observations	1,724	1,724	1,724	1,724
Adjusted R-squared	0.155	0.333	0.194	0.349
Four-factor loadings	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 3 - *Continued*

Panel B: Quintile Dummies of BSC				
	(1)	(2)	(3)	(4)
VARIABLES	Raw return	Abnormal return	Raw return	Abnormal return
BSC2	**0.046****	**0.082**	**0.021**	**0.026**
	(2.160)	(1.503)	(0.827)	(0.408)
BSC3	**0.098*****	**0.207*****	**0.058****	**0.116**
	(4.667)	(3.799)	(2.026)	(1.536)
BSC4	**0.125*****	**0.262*****	**0.071****	**0.135**
	(5.956)	(4.578)	(2.210)	(1.586)
BSC5	**0.138*****	**0.294*****	**0.084****	**0.160***
	(6.444)	(5.294)	(2.402)	(1.707)
Ln(Market Cap.)			0.017***	0.048***
			(3.105)	(3.540)
Long-Term Debt			-0.134**	-0.112
			(-2.499)	(-0.757)
Short-Term Debt			-0.307**	-0.827**
			(-2.281)	(-2.205)
Cash Holdings			0.085*	0.417***
			(1.743)	(2.862)
Profitability			0.165*	0.385
			(1.803)	(1.347)
B/M			-0.024	-0.007
			(-0.452)	(-0.047)
Negative B/M			0.044	0.008
			(0.824)	(0.056)
Idiosyncratic Risk			-3.063***	-1.086
			(-4.301)	(-0.397)
Momentum			0.036*	0.097
			(1.827)	(1.632)
Constant	-0.518***	-0.664***	-0.596***	-1.015***
	(-25.812)	(-11.823)	(-8.133)	(-5.290)
Observations	1,724	1,724	1,724	1,724
Adjusted R-squared	0.155	0.332	0.193	0.347
Four-factor loadings FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Panel C: Control for Corporate Governance Proxies				
BSC	**0.253*****	**0.573*****	**0.190*****	**0.417****
	(6.837)	(5.671)	(2.660)	(2.055)
E-Index	-0.011	-0.034*	-0.007	-0.024
	(-1.465)	(-1.690)	(-0.930)	(-1.194)
Compensation Committee Independence	0.070	0.052	0.067	0.040
	(1.571)	(0.357)	(1.473)	(0.267)
Board Independence	-0.030	-0.063	-0.048	-0.104
	(-0.508)	(-0.441)	(-0.823)	(-0.714)
Constant	-0.413***	-0.363***	-0.509***	-0.804***
	(-9.102)	(-2.691)	(-6.446)	(-3.647)
Observations	1,724	1,724	1,724	1,724
Firm Characteristics	No	No	Yes	Yes
Adjusted R-squared	0.173	0.337	0.200	0.350
Four-factor loadings	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 4: Stock returns surrounding the Crisis and BSC

This table presents results of the relationship between crisis returns and BSC estimating the following model:

$$y_{i,t} = \beta_0 + \beta_1 BSC_{2006} \times Credit\ Shock_t + \beta_2 BSC_{2006} \times Credit\ Trust_t + \beta_3 BSC_{2006} \times Post - Crisis_t + \psi\prime X_{i,t-1} + \omega\prime FE_{i,t} + \epsilon_{i,t},$$

where subscripts i, and $t(-1)$ denote firm and (lagged) time period respectively. The dependent variable y is either monthly raw return or market-model adjusted return. BSC_{2006} stands for the measure of balance sheet conservatism measure at the end of 2006. *Credit Shock* is dummy variable set to one in the period July 2007 to July 2008. $Credit\ Trust$ is dummy variable set to one in the period August 2008 to March 2009, while $Post - Crisis$ stands for the period April 2009 to December 2013. $X_{i,t-1}$ is a vector of firm-specific control variables that are updated every quarter. FE is a set of fixed effects. The model is estimated over the period 2007-2013. All the variables are as described in Table A. ***, **, * denote statistical significance at 1%, 5% and 10% levels. P-values are derived based on clustered standard errors at the firm level.

VARIABLES	(1) Raw return	(2) Abnormal return	(3) Raw return	(4) Abnormal return
BSC × Credit Shock	**0.018*** **	**0.020*** **	**0.026*** **	**0.027*** **
	(2.649)	(2.785)	(3.483)	(3.465)
BSC × Credit Trust	**0.031*** **	**0.044*** **	**0.044*** **	**0.056*** **
	(3.540)	(4.739)	(4.965)	(5.873)
BSC × Post − Crisis	**-0.010***	**-0.000**	**0.005**	**0.012**
	(-1.664)	(-0.029)	(0.730)	(1.612)
Ln(Market Cap.)			-0.025***	-0.024***
			(-16.327)	(-15.739)
Long-Term Debt			0.007	0.014**
			(1.311)	(2.426)
Short-Term Debt			-0.013	-0.011
			(-1.301)	(-1.043)
Cash Holdings			-0.005	-0.004
			(-1.089)	(-0.786)
Profitability			0.012*	0.013*
			(1.694)	(1.815)
B/M			0.004*	0.007***
			(1.819)	(2.967)
Negative B/M			-0.004	-0.004
			(-0.896)	(-0.836)
Momentum			-0.018***	-0.021***
			(-16.847)	(-18.525)
Idiosyncratic Risk			0.127*	0.030
			(1.758)	(0.420)
Constant	0.016***	-0.012***	0.195***	0.156***
	(6.107)	(-4.593)	(15.823)	(13.018)
Observations	145,713	145,713	140,534	140,534
Adjusted R-squared	0.245	0.036	0.253	0.046
Time FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Four-factor loadings	Yes	Yes	Yes	Yes
Clustered St. Errors	Yes	Yes	Yes	Yes

Table 5: Stock returns surrounding the Crisis and BSC: Robustness Test

This table presents results of the relationship between both BSC and stock returns estimating the following model:

$$y_{i,t} = \beta_0 + \beta_1 BSC_t \times Credit\ Shock_t + \beta_2 BSC_t \times Credit\ Trust_t + \beta_3 BSC_t \times Post - Crisis_t + \psi\prime X_{i,t-1} + \omega\prime FE_{i,t} + \epsilon_{i,t},$$

where subscripts i, and $t(-1)$ denote firm and (lagged) time period respectively. The dependent variable y is either monthly raw return or market-model adjusted return. BSC_{2006} stands for the measure of balance sheet conservatism measure at the end of 2006. *Credit Shock* is dummy variable set to one in the period July 2007 to July 2008. *Credit Trust* is dummy variable set to one in the period August 2008 to March 2009, while $Post - Crisis$ stands for the period April 2009 to December 2013. $X_{i,t-1}$ is a vector of firm-specific control variables. FE is a set of fixed effects. The model is estimated over the period 2007-2013. All the variables are as described in Table A. ***, **, * denote statistical significance at 1%, 5% and 10% levels. P-values are derived based on clustered standard errors at the firm level.

Panel A: Persistence of BSC proxy

	BSC_{2005}		BSC_{2004}		BSC_{2003}	
VARIABLES	Raw return (1)	Abnormal return (2)	Raw return (3)	Abnormal return (4)	Raw return (5)	Abnormal return (6)
BSC	**0.212*** **	**0.476*** **	**0.130** **	**0.288***	**0.089***	**0.190**
	(4.127)	(3.403)	(2.407)	(1.920)	(1.849)	(1.479)
Observations	1,613	1,613	1,482	1,482	1,372	1,372
Firm Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.199	0.371	0.199	0.368	0.201	0.387
Four-factor loadings	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Placebo years

	2004		2003		2001	
		Raw return	Abnormal return	Raw return	Abnormal return	
BSC	**-0.065**	**-0.057**	**0.163**	**0.130**	**-0.132**	**-0.177***
	(-0.454)	(-0.478)	(1.331)	(1.349)	(-1.520)	(-1.780)
Observations	1,988	1,988	2,115	2,115	2,109	2,109
Firm Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.104	0.104	0.174	0.172	0.087	0.085
Four-factor loadings	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 6: Operating performance surrounding the Crisis and BSC

This table presents results of the relationship between operating performance surrounding the crisis and BSC. Main regression under consideration is as follows:

$$y_{i,t} = \beta_0 + \beta_1 BSC_{2006} \times Credit\ Shock_t + \beta_2 BSC_{2006} \times Credit\ Trust_t + \beta_3 BSC_{2006} \times Post - Crisis_t + \psi\prime X_{l,i,t-1} + \omega\prime FE_{i,t} + \epsilon_{i,t},$$

where subscripts i, and $t(-1)$ denote firm and (lagged) time period respectively. The dependent variable y is ROA, ROE or ROS, one at a time. BSC_{2006} stands for the measure of balance sheet conservatism measure at the end of 2006. $Crisis$ is dummy variable set to one in the period July 2007 to March 2009, while $Post-Crisis$ stands for the period April 2009 to December 2013. $X_{i,t-1}$ is a vector of firm-specific control variables. FE is a set of fixed effects. Average ROA, ROE, ROS and average investment are estimated on a rolling basis over eight quarters (with a minimum of six quarters). The model is estimated over the period 2007-2013. All the variables are as described in Table A. ***, **, * denote statistical significance at 1%, 5% and 10% levels. P-values are derived based on clustered standard errors at the firm level.

Panel A: Alternative profitability measures			
	(1)	(2)	(3)
VARIABLES	ROA	ROE	ROS
BSC × Crisis	**0.031*** **	**0.060*** **	**0.226*** **
	(7.405)	(3.382)	(4.517)
BSC × Post − Crisis	**0.005**	**0.012**	**0.023**
	(1.092)	(0.707)	(0.438)
Log(Market Cap.)	0.005***	-0.011***	0.013
	(5.815)	(-3.028)	(1.079)
B/M	-0.020***	-0.087***	-0.163***
	(-18.960)	(-16.410)	(-11.654)
Long-Term Debt	-0.010***	-0.024	0.060
	(-2.645)	(-1.070)	(0.980)
Short-Term Debt	-0.015**	-0.037	0.108
	(-2.092)	(-1.126)	(1.161)
Cash Holdings	0.020***	0.055***	0.088
	(4.295)	(3.206)	(1.410)
Sales Growth	0.014***	0.029***	0.175***
	(10.354)	(4.983)	(6.576)
Average ROA	0.201***		
	(6.982)		
Average ROE		-0.030	
		(-0.848)	
Average ROS			0.409***
			(8.501)
Constant	-0.018***	0.131***	-0.059
	(-3.136)	(4.519)	(-0.670)
Observations	45,746	45,738	45,746
Adjusted R-squared	0.458	0.153	0.575
Time FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Clustered St. Errors	Yes	Yes	Yes

Table 6 - *Continued*

Panel B: Investment Output			
	(1)	(2)	(3)
VARIABLES	Investment	Investment	Investment
$\boldsymbol{BSC \times Crisis}$	**0.011*** **	**0.011*** **	**0.010*** **
	(4.011)	(3.911)	(3.686)
$\boldsymbol{BSC \times Post-Crisis}$	**-0.002**	**-0.003**	**-0.001**
	(-0.886)	(-0.989)	(-0.622)
Log(Market Cap.)		0.003***	0.003***
		(6.212)	(6.420)
B/M		-0.004***	-0.004***
		(-5.092)	(-5.394)
Long-Term Debt		-0.014***	-0.012***
		(-5.308)	(-5.569)
Short-Term Debt		-0.024***	-0.022***
		(-5.096)	(-5.192)
Cash Holdings		-0.016***	-0.007***
		(-5.939)	(-3.194)
Sales Growth		-0.001	-0.001
		(-1.335)	(-1.187)
Average Investment			0.461***
			(23.001)
Constant	0.015***	0.012***	-0.002
	(34.753)	(3.126)	(-0.665)
Observations	50,316	45,719	45,593
Adjusted R-squared	0.670	0.682	0.704
Time FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Clustered St. Errors	Yes	Yes	Yes

Table 6 - *Continued*

Panel C: Employment		
	(1)	(2)
VARIABLES	Log(EMPL)	Log(EMPL)
$\boldsymbol{BSC \times Crisis}$	**0.263*** **	**0.120*** **
	(6.710)	(3.064)
$\boldsymbol{BSC \times Post-Crisis}$	**0.637*** **	**0.449*** **
	(7.323)	(5.802)
Log(Market Cap.)		0.206***
		(9.320)
B/M		0.079***
		(3.392)
Long-Term Debt		0.373***
		(3.799)
Short-Term Debt		0.418***
		(2.904)
Cash Holdings		-0.490***
		(-6.519)
Sales Growth		0.107***
		(3.858)
Constant	1.516***	-0.053
	(172.553)	(-0.292)
Observations	9,699	9,595
Adjusted R-squared	0.978	0.982
Time FE	Yes	Yes
Firm FE	Yes	Yes
Clustered St. Errors	Yes	Yes

Table 6 - *Continued*

Panel D: Firm risk			
	(1)	(2)	(3)
VARIABLES	Standard Dev.	Rating	Default Prob.
BSC* × *Crisis	**-0.045*** **	**-0.300***	**-0.211*** **
	(-7.954)	(-1.832)	(-8.365)
BSC* × *Post − Crisis	**-0.046*** **	**-0.198**	**-0.089*** **
	(-8.740)	(-0.635)	(-4.245)
Log(Market Cap.)	-0.006***	-0.680***	0.017***
	(-5.720)	(-13.242)	(2.944)
B/M	0.012***	0.195**	0.043***
	(7.531)	(2.467)	(5.242)
Long-Term Debt	0.037***	2.185***	0.060***
	(7.421)	(8.445)	(2.715)
Short-Term Debt	0.029***	1.077***	0.141***
	(3.324)	(2.646)	(3.562)
Cash Holdings	-0.019***	-0.054	-0.038**
	(-4.490)	(-0.188)	(-1.968)
Sales Growth	0.000	-0.001**	-0.000***
	(0.681)	(-2.503)	(-4.707)
Constant	0.125***	17.408***	-0.155***
	(15.360)	(38.538)	(-3.416)
Observations	143,054	58,531	113,665
Adjusted R-squared	0.608	0.948	0.470
Time FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Clustered St. Errors	Yes	Yes	Yes

Table 7: Capital raising surrounding the Crisis and BSC

This table presents results of estimating the following model:

$$y_{l,i,t} = \beta_0 + \beta_1 BSC_{l,i,2006} \times Crisis + \beta_2 BSC_{l,i,2006} \times Post - Crisis + \gamma\prime Z_{l,t} + \psi\prime X_{l,i,t-1} + \omega\prime FE_{l,i,j,t} + \epsilon_{l,i,t},$$

where subscripts l, i, j, and $t(-1)$ denote loan, borrowing firm, industry and (lagged) time period respectively. The dependent variable y is debt- or equity-issuance. BSC stands for the measure of balance sheet conservatism. $Crisis$ is dummy variable set to one in the period July 2007 to March 2009, while $Post-Crisis$ stands for the period April 2009 to December 2013. $Z_{l,t}$ is a a vector of loan-specific control variables, while $X_{l,i,t-1}$ is a vector of firm-specific control variables. FE is a set of fixed effects. All the variables are as described in Table A. ***, **, * denote statistical significance at 1%, 5% and 10% levels. P-values are derived based on robust standard errors clustered at the firm level.

	(1)	(2)
VARIABLES	Debt Issuance	Equity Issuance
BSC × Crisis	**0.003****	**0.001**
	(2.067)	(0.102)
BSC × Post − Crisis	**-0.003***	**0.002**
	(-1.952)	(0.227)
$Log(Total\ Assets)_{t-1}$	0.004	-0.145***
	(1.365)	(-15.128)
$Current\ Ratio_{t-1}$	-0.001	-0.003
	(-1.273)	(-1.035)
$Tangibility_{t-1}$	-0.002	0.102*
	(-0.093)	(1.898)
$Leverage_{t-1}$	0.002	0.026
	(0.367)	(0.725)
$Cash_{t-1}$	0.003	-0.037
	(0.381)	(-1.141)
$Profitability_{t-1}$	-0.047***	0.543***
	(-2.585)	(6.351)
Constant	0.000	2.019***
	(0.006)	(29.767)
Observations	41,134	40,723
Adjusted R-squared	0.124	0.397
Time FE	Yes	Yes
Firm FE	Yes	Yes
Clustered St. Errors	Yes	Yes

Table 8: Total Cost of borrowing surrounding the Crisis and BSC

This table presents results of the estimating the following panel regression model:

$$y_{l,i,t} = \beta_0 + \beta_1 BSC_{l,i,2006} \times Crisis + \beta_2 BSC_{l,i,2006} \times Post - Crisis + \gamma\prime Z_{l,t} + \psi\prime X_{l,i,t-1} + \omega\prime FE_{l,i,j,t} + \epsilon_{l,i,t},$$

where subscripts l, i, j, and $t(-1)$ denote loan, borrowing firm, industry and (lagged) time period respectively. The dependent variable y is the logarithm of all-in-drawn spread (AISD), expressed in basis points; aggregate covenant violation probability ($PVIOL$); aggregate probability of capital (performance) covenants violation - $PVIOL\_CCOV$ ($PVIOL\_PCOV$). BSC stands for the measure of balance sheet conservatism. $Crisis$ is dummy variable set to one in the period July 2007 to March 2009, while $Post-Crisis$ stands for the period April 2009 to December 2013. $Z_{l,t}$ is a a vector of loan-specific control variables, while $X_{l,i,t-1}$ is a vector of firm-specific control variables. FE is a set of fixed effects. All the variables are as described in Table A. ***, **, * denote statistical significance at 1%, 5% and 10% levels. P-values are derived based on robust standard errors clustered at the firm level.

VARIABLES	(1) AISD	(2) PVIOL	(3) PVIOL_PCOV	(4) PVIOL_CCOV
$\boldsymbol{BSC \times Crisis}$	**-0.524*** **	**-0.375** **	**-0.302** **	**-0.105**
	(-2.849)	(-2.454)	(-2.022)	(-0.977)
$\boldsymbol{BSC \times Post - Crisis}$	**0.039**	**-0.095**	**-0.011**	**-0.073**
	(0.476)	(-0.964)	(-0.116)	(-1.530)
$Ln(Amount)_t$	-0.063***	-0.011	-0.036**	0.026**
	(-4.491)	(-0.611)	(-1.984)	(2.545)
$Ln(Maturity)_t$	0.006	-0.089**	-0.079**	-0.018
	(0.147)	(-2.531)	(-2.263)	(-1.108)
$Collateral_t$	0.153***	0.076*	0.038	0.038**
	(3.684)	(1.899)	(0.998)	(1.983)
$Log(1 + covenant)_t$	0.107***	0.085**	0.079**	0.018
	(3.219)	(2.367)	(2.226)	(1.126)
$Prime\ Base\ Rate_t$	0.063**	0.037	0.041*	-0.003
	(2.071)	(1.438)	(1.719)	(-0.182)
$Performance\ Pricing_t$	-0.035	0.001	-0.002	0.009
	(-1.300)	(0.040)	(-0.079)	(0.582)
$Ln(Total\ Assets)_{t-1}$	0.026*	-0.003	0.013	-0.015
	(1.688)	(-0.143)	(0.661)	(-1.541)
$Profitability_{t-1}$	-1.014***	-0.522**	-0.770***	0.262**
	(-4.073)	(-2.195)	(-3.344)	(2.196)
$Tangibility_{t-1}$	0.103	0.023	-0.142	0.168***
	(1.263)	(0.226)	(-1.469)	(2.796)
$Current\ Ratio_{t-1}$	-0.025**	-0.004	0.007	-0.007
	(-2.279)	(-0.306)	(0.583)	(-0.736)
$Cash_{t-1}$	0.224	-0.290**	-0.190	-0.110*
	(1.403)	(-2.071)	(-1.425)	(-1.739)
$Coverage_{t-1}$	-0.000	-0.000	-0.000	-0.000
	(-0.145)	(-0.330)	(-0.055)	(-1.058)
$Leverage_{t-1}$	0.008	0.352***	0.379***	-0.007
	(0.091)	(3.585)	(4.045)	(-0.189)
$Rating_{t-1}$	0.099***	0.028***	0.030***	-0.002
	(9.507)	(2.913)	(3.278)	(-0.597)
Observations	1,527	1,030	1,030	1,030
Adjusted R-squared	0.712	0.334	0.322	0.222
Time FE	Yes	Yes	Yes	Yes
Loan Type FE	Yes	Yes	Yes	Yes
Loan Purpose FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Clustered St. Errors	Yes	Yes	Yes	Yes

Table 9: Earnings Smoothing surrounding the Crisis and BSC

This table presents results of the relationship between earnings smoothing surrounding the crisis and BSC. Main regression under consideration is as follows:

$$y_{i,t} = \beta_0 + \beta_1 BSC_{2006} \times Credit\ Shock_t + \beta_2 BSC_{2006} \times Credit\ Trust_t + \beta_3 BSC_{2006} \times Post - Crisis_t + \psi\prime X_{l,i,t-1} + \omega\prime FE_{i,t} + \epsilon_{i,t},$$

where subscripts i, and $t(-1)$ denote firm and (lagged) time period respectively. The dependent variable y is a proxy for earnings smoothing (DSMTH). BSC_{2006} stands for the measure of balance sheet conservatism measure at the end of 2006. $Crisis$ is dummy variable set to one in the period July 2007 to March 2009, while $Post - Crisis$ stands for the period April 2009 to December 2013. $X_{i,t-1}$ is a vector of firm-specific control variables. FE is a set of fixed effects. The model is estimated over the period 2007-2013. All the variables are as described in Table A. ***, **, * denote statistical significance at 1%, 5% and 10% levels. P-values are derived based on clustered standard errors at the firm level.

	(1)	(2)
VARIABLES	DSMTH	DSMTH
BSC × Crisis	0.002	-0.008
	(0.399)	(-1.502)
BSC × Post − Crisis	0.020*	0.009
	(1.853)	(0.871)
Log(Market Cap.)		0.003
		(1.596)
B/M		-0.003
		(-1.156)
Long-Term Debt		-0.002
		(-0.164)
Short-Term Debt		0.003
		(0.144)
Cash Holdings		-0.040***
		(-3.208)
Sales Growth		0.003**
		(2.530)
Constant	0.587***	0.575***
	(276.792)	(39.017)
Observations	37,616	36,057
Adjusted R-squared	0.665	0.677
Time FE	Yes	Yes
Firm FE	Yes	Yes
Clustered St. Errors	Yes	Yes

Table 10: Subsample analysis - role of financing constraints and information asymmetry

This table presents results of subsample analysis based on financing constraints and information asymmetry. Crisis-period returns are measured over the period from July 2007 to March 2009. The regression model under consideration is as follows:

$$y_i = \beta_0 + \beta_1 BSC_i + \psi\prime X_i + \omega\prime FE_i + \epsilon_i,$$

where subscript i denotes firm. The dependent variable y is crisis-period returns measured as raw and abnormal buy and hold returns. BSC stands for the measure of balance sheet conservatism. X_i is a vector of firm-specific control variables measured as close as possible before the beginning of the crisis. FE is industry dummies that are set at two-digit SIC code. Factor loadings are estimated each month based on the previous 60 months' data. In Panel A financial constraint is proxied following Kaplan and Zingales (1997) and in Panel B following Whited and Wu (2006). In Panel C, information asymmetry is proxied by bid-ask spread measured over a year preceding the crisis. Firms are segregated into high (low) groups if they are above (below) the median of the sample. The model is estimated over the period 2007-2013. All the variables are as described in Table A. ***, **, * denote statistical significance at 1%, 5% and 10% levels. P-values are derived based on heteroskedasticity-consistent standard errors.

Panel A: KZ-index

	Low		High	
	(1)	(2)	(3)	(4)
VARIABLES	Raw return	Abnormal return	Raw return	Abnormal return
BSC	**0.166**	**0.322**	**0.308*** **	**0.555** **
	(1.456)	(0.953)	(3.213)	(2.145)
Observations	803	803	803	803
Firm Characteristics	Yes	Yes	Yes	Yes
Adjusted R-squared	0.164	0.367	0.219	0.337
Four-factor loadings	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Panel B: WW-index

	Low		High	
	(1)	(2)	(3)	(4)
VARIABLES	Raw return	Abnormal return	Raw return	Abnormal return
BSC	**0.162***	**0.070**	**0.303*** **	**0.777** **
	(1.679)	(0.281)	(2.683)	(2.254)
Observations	862	862	861	861
Firm Characteristics	Yes	Yes	Yes	Yes
Adjusted R-squared	0.284	0.366	0.132	0.328
Four-factor loadings	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Panel C: Information Asymmetry

	Low		High	
	(1)	(2)	(3)	(4)
VARIABLES	Raw return	Abnormal return	Raw return	Abnormal return
BSC	**0.099**	**0.116**	**0.318*** **	**0.744** **
	(0.959)	(0.421)	(3.185)	(2.572)
Observations	862	862	862	862
Firm Characteristics	Yes	Yes	Yes	Yes
Adjusted R-squared	0.230	0.392	0.123	0.328
Four-factor loadings	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 11: Crisis period returns, BSC and financial reporting quality

This table presents results of crisis period returns, financial reporting quality and BSC . Crisis-period returns are measured over the period from July 2007 to March 2009. The regression model under consideration is as follows:

$$y_i = \beta_0 + \beta_1 BSC_i + \beta_2 AQ_i + \psi\prime X_i + \omega\prime FE_i + \epsilon_i,$$

where subscript i denotes firm. The dependent variable y is crisis-period returns measured as raw and abnormal buy and hold returns. BSC stands for the measure of balance sheet conservatism and AQ is the measure of financial reporting quality. X_i is a vector of firm-specific control variables measured as close as possible before the beginning of the crisis. FE is industry dummies that are set at two-digit SIC code. Factor loadings are estimated each month based on the previous 60 months' data. All the variables are as described in Table A. ***, **, * denote statistical significance at 1%, 5% and 10% levels. P-values are derived based on heteroskedasticity-consistent standard errors.

Panel A: Dechow and Dichev (2002) model

	(1)	(2)	(3)	(4)
VARIABLES	Raw return	Abnormal return	Raw return	Abnormal return
$\boldsymbol{AQ_{Dechow}}$	**0.488****	**1.223****	**0.447***	**1.106****
	(1.967)	(2.229)	(1.826)	(2.021)
BSC			**0.212****	**0.601****
			(2.314)	(2.430)
Observations	1,057	1,057	1,057	1,057
Firm Characteristics	Yes	Yes	Yes	Yes
Adjusted R-squared	0.196	0.377	0.200	0.381
Four-factor loadings	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Panel B: Modified Dechow and Dichev (2002) model following McNichols (2002)

	(1)	(2)	(3)	(4)
VARIABLES	Raw return	Abnormal return	Raw return	Abnormal return
AQ	**0.588****	**1.418****	**0.552****	**1.316****
	(2.228)	(2.419)	(2.110)	(2.243)
BSC			**0.211****	**0.601****
			(2.301)	(2.428)
Observations	1,056	1,056	1,056	1,056
Firm Characteristics	Yes	Yes	Yes	Yes
Adjusted R-squared	0.198	0.378	0.202	0.382
Four-factor loadings	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 12: Crisis period returns and alternative proxy for BSC

This table presents results of crisis period returns and alternative BSC proxy. Crisis-period returns are measured over the period from July 2007 to March 2009. To measure BSC I follow the modified model of Beaver and Ryan (2000). The model is as follows:

$$BTM_{i,t} = \alpha_i + \alpha_t + \sum_{j=0}^{6}[\beta_1 D_{i,t-j} + \beta_2 R_{i,t-j} + \beta_3 D_{i,t-j} R_{i,t-j}] + \epsilon_{i,t},$$

where BTM is the book-to-market value of equity measured at the end of the fiscal period. α_t is a time intercept and α_i is firm-specific measure of unconditional conservatism. This measure is referred as BSC_{Beaver}. The regression model under consideration is as follows:

$$y_i = \beta_0 + \beta_1 BSC_{Beaver_i} + \psi\prime X_i + \omega\prime FE_i + \epsilon_i,$$

where subscript i denotes firm. The dependent variable y is crisis-period returns measured as raw and abnormal buy and hold returns. X_i is a vector of firm-specific control variables measured as close as possible before the beginning of the crisis. FE is industry dummies that are set at two-digit SIC code. Factor loadings are estimated each month based on the previous 60 months' data. All the variables are as described in Table A. ***, **, * denote statistical significance at 1%, 5% and 10% levels. P-values are derived based on heteroskedasticity-consistent standard errors.

	(1)	(2)	(3)	(4)
VARIABLES	Raw return	Abnormal return	Raw return	Abnormal return
$\boldsymbol{BSC_{Beaver}}$	**0.248*** **	**0.479*** **	**0.303*** **	**0.789*** **
	(7.020)	(5.361)	(2.980)	(2.895)
Constant	-0.425***	-0.547***	-0.617***	-0.996***
	(-25.675)	(-12.850)	(-7.276)	(-4.691)
Observations	1,340	1,340	1,340	1,340
Firm Characteristics	No	No	Yes	Yes
Adjusted R-squared	0.174	0.374	0.202	0.389
Four-factor loadings	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes