

# The Long-Term Cost of the Financial Crisis\*

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## Introduction

Most introductory finance courses start by assuming that capital markets are “perfect” and that companies and banks are able to borrow and lend freely. In this hypothetical setting, corporate executives are free to make decisions that maximize the value of their companies and stock prices.

We are well aware that capital markets are not perfect. There are significant obstructions that prevent companies from making optimal choices and maximizing shareholder value. But, just how severe are these imperfections? And, how big of an obstacle are real-world constraints in terms of limiting opportunities to corporate executives? These are hard questions to answer because unlike in medical science, economic researchers are rarely able to conduct a controlled experiment that “treats” some companies, while administering a placebo to other firms. Instead, financial economists often study exogenous “shocks” to the corporate sector, to see how companies with different characteristics are affected, and to get a feel for the magnitudes and effects of real world capital market imperfections.

In the fall of 2008, world financial markets were in the midst of a credit crisis of historic breadth and depth. As devastating as this crisis has been to the livelihood of many, it also represents an enormous “shock” to the corporate sector that can aid economic research. We study this shock to learn about the ability of the corporate sector to adapt to adverse circumstances, and to better understand how the availability of liquidity affects corporate decision-making. Liquidity can be thought of as the oil that lubricates the economic machinery. When liquidity dries up, to what extent does this cause the economic infrastructure to seize up and destroy corporate value?

To better understand how the credit crisis has affected the corporate sector, in a November 2008 joint effort with CFO Magazine we surveyed 1,050 chief financial officers (CFOs) in the U.S., Europe, and Asia. We asked these corporate financial leaders for detailed information about how their companies are managing the liquidity needs of their firms. We find striking results that financially constrained firms are quickly burning through their cash reserves and are having great difficulty finding new sources of funding. The current lack of liquidity is causing these companies to make

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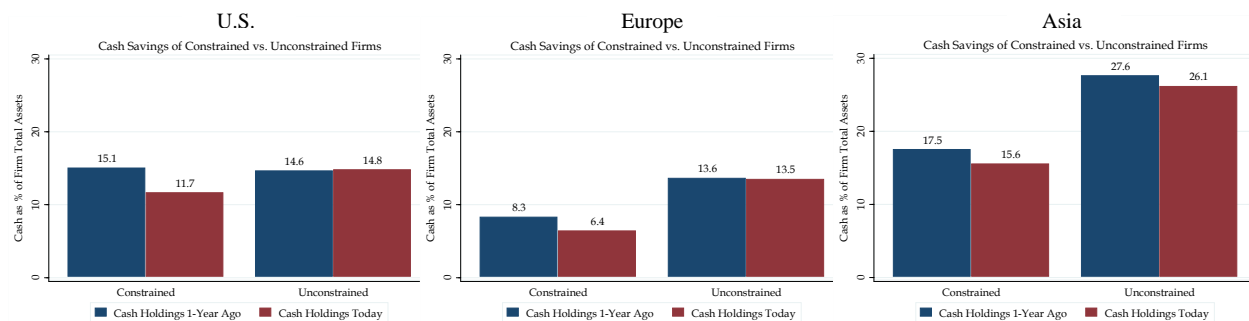


Figure 1: This figure displays firms' cash savings behavior (the ratio of cash and liquid securities to total assets) now and one year ago. Responses are averaged across sample partitions based on financial constraints.

drastic cuts to capital spending, hiring, and research and development, and indeed threatens the very survival of many companies.

## The Issues

We begin by benchmarking how much cash companies have on their balance sheets in November 2008 versus how much cash they had in November 2007. In the United States, the typical firm had cash and liquid assets equal to about 15% of asset value in 2007. The crisis has not affected cash holdings of unconstrained firms, which remain steady at 15% of asset value in 2008. In stark contrast, the cash reserves at financially constrained companies have fallen by one-fifth, from 15% to about 12% of book assets. (We classify a company as being financially constrained if its CFO says the firm has been affected by the cost or availability or external financing.) A similar pattern of cash burn for constrained firms is evident in Europe and Asia. In Europe, constrained firms typically hold less cash than in the U.S., while in Asia they hold more. Yet, constrained firms' cash holdings fell around 23% Europe and 11% in Asia. All of these patterns are depicted in Figure 1. This evidence implies that the ongoing credit crisis is affecting some firms greatly, while affecting less the most profitable companies in the economy.

The speed with which constrained companies around the world are burning through cash reserves is alarming. This problem could be severe if these companies have limited access to other untapped sources of liquidity. We therefore investigate corporate access to bank lines of credit. It is generally difficult to gather representative data on line of credit (LC) access. Much of the data available is restricted to public U.S. corporations, so this analysis is novel.

We ask financial executives about the size of the LCs to which they have access. We compare line of credit access now (during the crisis) to their lines of credit in fall 2007. The typical firm in

the United States has a pre-arranged line of credit of approximately 19% (unconstrained firms) to 27% (constrained firms) of total book asset value. The differences are more dramatic in Europe and Asia, where constrained firms have committed credit lines greater than 30% of asset value. We find no significant changes in the access to lines of credit in the United States (across either constrained or unconstrained firms). In Europe, constrained firms are using 21% more LCs than before, while in Asia they are using 10% less. Unconstrained firms in those non-U.S. economies have not changed their use of LCs.

We next ask the firms what they do with the proceeds when they draw down lines of credit. About half of CFOs around the world say that they use the funds for daily operations or short-term liquidity needs. Companies that are financially constrained use their LCs significantly more than do unconstrained counterparts as a way to fund normal business activities.

More surprisingly, 13% of constrained U.S. firms indicate that they have recently drawn on their credit lines in order to have cash for future needs. This purely precautionary use of LCs hints at the following astounding finding. One out of every six constrained U.S. firms has drawn down on its credit line now, just in case its banks might deny a line of credit in the future. That is, there has been a “bank run” on lines of credit, with many companies drawing on LCs “just in case” they may not have access in the future. Harvard University professors Victoria Ivashina and David Scharfstein have shown that the amount of this “run on LC” borrowing has been large enough to offset the overall tightness of available funding pervading the financial sector. Said differently, there has been so much “just in case” use of bank lines of credit by financially constrained companies, that it appears to have crowded out normal borrowing opportunities, even though the total volume of borrowing has remained high throughout 2008. This effect is slightly stronger in Asia, where 18% of surveyed constrained firms report this behavior, while in Europe that proportion equals 15%. By comparison, only about 6% of unconstrained firms in the U.S., Asia, and Europe say they are drawing on their credit lines for fear that their banks will restrict access to their outstanding lines of credit. These patterns are depicted in Figure 2.

As robust as credit drawdowns have been, some firms have resisted using their LCs, and we inquire why. The most common explanation is that CFOs want to preserve borrowing capacity in case it is needed in the future. The second most common explanation for not fully drawing the credit line is to maintain a strong reputation in the eyes of financial institutions. This preserving reputation explanation is significantly stronger among public firms and speculative U.S. firms. In Europe, preserving reputation in the eyes of bankers is significantly stronger among financially constrained companies.

So far, we have documented that around the world, companies that are financially constrained

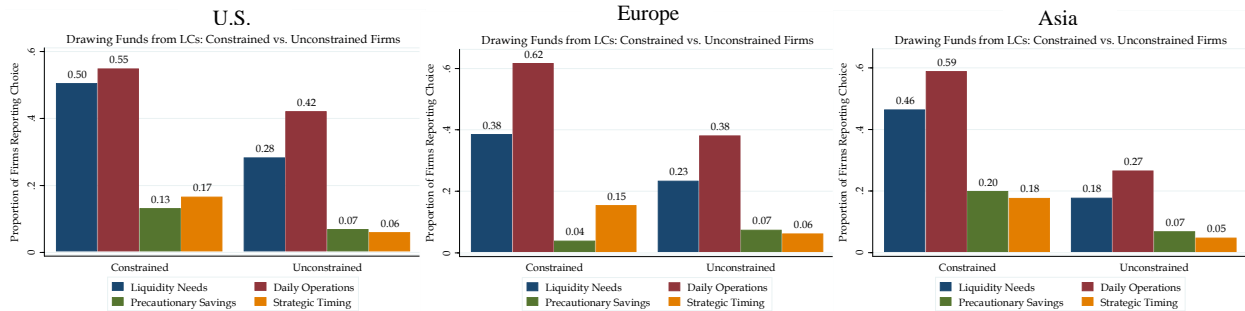


Figure 2: This figure displays firms’ LC management behavior (reasons for withdrawing funds from existing LCs). Responses are averaged across sample partitions based on financial constraints.

have burned through cash during this past year of financial crisis and have more actively managed lines of credit, including drawing down on them “just in case” their banks limit future access to credit lines. We next examine the degree to which these credit problems have seeped into the real sector, affecting the operating and investment decisions of corporations, with a close eye on the effects on financially constrained firms.

To study this issue, we examine the pro forma plans of companies conditional on whether they are financially constrained. We find that most companies plan to cut employment, R&D spending, capital investment, marketing expenditures, and (on average) dividends in 2009. The results are significantly worse for financially constrained firms. Constrained companies headquartered in the U.S. plan to dramatically reduce employment (by 11%), R&D spending (by 22%), capital investment (by 9%), marketing expenditures (by 33%), and dividends (by 14%) in 2009. Constrained firms in Europe are cutting employment by 8%, R&D spending by 5%, capital investment by 10%, marketing expenditures by 11%, while their dividends are being slashed in half. We see similar patterns in Asia as well; except that all firms there (constrained and unconstrained) are not forecasting cuts in employment.

We also study the long-run value implications of slashing corporate investment. Most first-year corporate finance courses demonstrate how a company’s managers can maximize stockholder value by choosing positive net present value projects. All this means is that if the returns on an investment outearn the cost of capital required to fund the project, it creates value for the firm. And these value-enhancing investments in turn increase shareholder wealth as the stock market capitalizes the increased value into the stock price. Therefore, if the credit crisis is causing companies to cancel value-enhancing projects, this real world “constraint” is destroying stockholder value.

To investigate this issue, we ask companies about the extent to which credit constraints limit their ability to pursue positive net present value investments. We start by benchmarking how often

companies say they have to bypass attractive ( $NPV > 0$ ) investment projects because of financial constraints. In the U.S., in normal credit markets, 46% of constrained companies say that they pass up attractive investment opportunities due to financial constraints. Recall that these are firms that declared themselves to be constrained in late Fall 2008. Undoubtedly, some of these firms would be constrained and some not constrained in “normal times.” One interpretation of our result is therefore that 46% of these firms are constrained during normal times (which limits their ability to pursue attractive projects in normal times). The 46% of self-declared constrained firms that say they pass up attractive investments is significantly greater than the 20% of unconstrained firms who say the same. In Europe and Asia, too, more than twice as many constrained firms pass up value-enhancing projects due to credit constraints. In particular, 44% of the constrained European firms in our survey say they bypass profitable opportunities because of the cost or availability of credit, compared to only 18% of the unconstrained firms in that continent. In Asia, the same comparison is 47% for constrained firms versus 20% for unconstrained ones.

Because we conducted our analysis during a severe credit crisis, we are able to investigate the effects of financial constraints on investment during extreme circumstances. A surprising 86% of constrained U.S. firms say that they bypass attractive investments during the credit crisis due to difficulties in raising external finance, about twice as great as the proportion of unconstrained firms that say the same. Again, these numbers are mirrored in Europe and Asia (80% versus 36% in Europe, and 69% versus 29% in Asia).

We next inquire about how firms fund attractive investments when they are unable to borrow in financial markets. About half of U.S. firms say that they rely on internally generated cash flows to fund investment under these circumstances, and about four in ten say that they use cash reserves. Notably, 56% of constrained U.S. firms say that they cancel investment projects when they are unable to fund them with external funds, significantly greater than the 31% of constrained firms that say the same. Once again, we find these same results in Europe and in Asia. In Europe, for example, 69% of the constrained firms in our survey say they will cancel their investment plans (compared to 33% of unconstrained firms). In Asia, that same comparison suggests a cancellation rate of 41% across constrained firms and only 16% across their unconstrained counterparts. To our knowledge, this is the first time that constraint-driven project cancellation has been documented in economic research.

These numbers are dramatic and document that real world constraints are a severe detriment to the ability of companies to pursue value-maximizing policies. We also find evidence of another significant disruption to optimal investment that is imposed by severely disrupted credit markets. Not only do companies cancel investment due to tight credit markets, some sell assets to obtain

cash. We find that the vast majority of financially constrained firms have sold assets in order to fund operations in 2008: Exactly 70% of the constrained respondents in our U.S. survey say that they are selling more assets now in 2008 than previously, compared to 37% of the unconstrained respondents, in order to obtain funds. We also find evidence of heavy use of asset sales across constrained firms Europe (61%) and Asia (43%).

## **Concluding Remarks**

The focus of the current credit crisis is on the immediate implications, such as reduced profits and increased unemployment. In contrast, we show that there are worrisome long-term economic consequences of the crisis through its effect on financially constrained firms.

Using a survey of over 1,000 CFOs in the United States, Europe and Asia, we show that firms are cutting back or cancelling projects that they know add to firm value. The elimination of profitable projects is especially acute for firms that face financial constraints.

One of the basic tenets of finance is that projects that enhance firm value should be pursued. Financial constraints potentially prevent the funding of these projects. The current credit crisis is an ideal setting to measure the impact of constraints on value creation.

Turning down or cancelling profitable projects is a lesser known cost of the current financial crisis. In the scramble for short-term cash flow, firms are sacrificing long-term value. This implies lower future growth opportunities and lower future employment growth.

## **Acknowledgements**

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