



Managerial cash use, default, and corporate financial policies



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ABSTRACT

This article investigates the impact of the observation that managers can use cash to defer bankruptcy on default risk and corporate financial policies. I show that with managerial cash use to defer default, the impact of cash on default risk depends on two opposing channels. While cash provides managers with a buffer against bankruptcy during difficult times, it also reduces equityholders' willingness to contribute funds to the firm, which increases bankruptcy risk. The total impact of cash on default risk is driven by firm and industry characteristics that affect the relative importance of these two channels. As managers' propensity for excess cash holdings depends on this total impact, the model explains observed excess cash levels, their determinants, and a wide range of empirical regularities of corporate cash holdings properties.

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1. Introduction

The main difference between debt or equity funds and corporate cash balances is that cash provides unconditional liquidity discretionary available to managers at any time. According to the survey of Lins et al. (2010), the most prominent reason for managers to hold non-operational cash is that these holdings can serve them a self-preservation motive, i.e., a basic financial insurance function as a buffer against corporate bankruptcy by allowing to fund current operations in bad times. Given the extent to which the literature examines the effect of managers spending cash for self-interested projects, it is, therefore, surprising that the consequences of managers spending cash to avoid or delay default in their own instead of shareholders' interest have not been similarly explored.

This paper rigorously investigates the impact of managers' use of cash to avoid or delay default on corporate financial policies. To analyze the effect of this managerial discretion, I develop a trade-off model of capital structure in the spirit of Leland (1994). A firm is initially financed with equity and debt. I extend the model by incorporating both a corporate cash policy and agency conflicts between managers and shareholders. It is widely accepted in the literature that the precautionary motive is a critical determinant of corporate cash holdings (see, e.g., Huberman, 1984). To capture this motive, I assume that shareholders agree to leave cash within the firm because of future profitable investment opportunities that can only be realized by investing quickly out of cash. Managers, however, have an additional self-preservation motive for holding cash: Cash reduces a firm's default risk. I identify two channels through which cash affects the default risk of firms. First, managers' control over cash allows them to defer default by using cash to service debt when equityholders are unwilling to inject funds during economic distress. Doing so is beneficial for managers because it allows them to obtain the fixed salary over an extended period of time. This direct effect reflects the common intuition about how cash reduces bankruptcy risk. Second, I show that there also is an indirect effect of cash on default risk: Without cash, equityholders also inject - to some extent - funds into a firm with negative net-worth to maintain the firm's ability to service debt. These injections keep

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their option on the firm's assets, and, hence, their upside potential alive. In a firm with cash, however, equityholders anticipate that ceasing to inject funds does not lead to immediate default because managers burn through cash. As a consequence, their option stays alive for some time without equity financing. In case of negative net-worth, this ability to cease injecting funds (that directly accrue to debtholders) without immediately losing their option on the firm's assets induces equityholders to stop contributing funds earlier to a firm with cash than to a firm without cash. Hence, because equityholders optimally respond to managers' tendency to use cash to defer default, higher cash makes it harder for firms to obtain equity financing during bad times.

As impressively demonstrated by several real cases during the recent financial crisis, a firm's ability to raise equity is an important determinant of credit risk. Lehman Brothers, for example, obtained temporary relief from the issue of preferred stock in April 2008. However, several attempts to obtain additional outside funding failed after this date. The impact of cash on a firm's ability to raise equity financing if managers can use cash to defer default has, so far, been neglected in the literature. I show that this indirect effect of cash that increases the default risk is crucial to understand managers' self-preservation motive for cash.

The presented model of managerial cash use to defer default has important implications. First, I show that the direct effect of cash on default risk dominates the indirect effect, which motivates managers' self-preservation motive for cash. This motive induces managers to target a policy of substantial levels of excess cash. In particular, their target cash level is about 20% above the one that maximizes equityholders' wealth in the baseline firm. By dissecting the total effect of cash on default risk into the direct and indirect effects, I link excess cash that results from the self-preservation motive to firm and industry characteristics. While recent theoretical cash models of credit risky firms address the relationship between cash and firm characteristics (see, e.g., Acharya et al., 2012; Anderson and Carverhill, 2012), this dissection allows me to explain empirically reported excess cash patterns, and to derive new testable predictions. For firms or industries that entail a stronger direct, or a weaker indirect effect than the baseline firm, my model predicts a stronger self-preservation motive, and, hence, larger excess cash. For example, excess cash should increase with firm risk, and decrease with takeover threats. Managers' target cash level can reach 182% of the one that equityholders would deem optimal. The agency costs from the self-preservation motive distortion caused by managers' ability to burn through cash during difficult times are remarkable, implying up to a 5% loss in firm value. The illustration of these results is motivated by the observation that the average marginal value of cash to shareholders is, empirically, below one, which suggests that the average firm holds excess cash (see, e.g., Faulkender and Wang, 2006). Moreover, Opler et al. (1999) argue that some firms maintain very high levels of excess cash. As cash is a major position in today's firms' balance sheets (see, e.g., Bates et al., 2009), it is crucial to understand why managers implement a policy of excess cash, and to analyze which firms are particularly exposed to this problem.

I also employ a dynamic approach in the spirit of Bhamra et al. (2010) by simulating over time a model-implied cross-section of firms that is structurally similar to S&P 500 firms. I measure typical cash properties in the simulated economy such as the average market-to-book value of cash and the marginal value of cash to equityholders. The results show that the marginal value of cash is negatively related to both the cash ratio and leverage. Hence, the model-predicted excess cash levels implied by the self-preservation agency can go a long way towards explaining important empirical cash regularities (see, e.g., Faulkender and Petersen, 2006).

Second, it is well known that besides providing a tax shield and imposing bankruptcy costs, debt also causes underinvestment. In a firm with cash, an additional source of underinvestment emerges from managers' tendency to use cash to service debt instead of investing it in the investment opportunities when equityholders stop contributing funds during economic distress. As equityholders stop contributing funds earlier in a firm with more cash, my model suggests that cash exacerbates debt-related underinvestment. Because more severe underinvestment makes debt more costly, I obtain lower optimal leverage ratios than predicted by the standard trade-off theory of capital structure.

Third, the idea that managers use cash to service debt during economic distress instead of investing it also suggests that cash is not a suitable hedging tool to ensure investment in bad times. Therefore, incorporating agency challenges the notion in the literature that cash may allow financially constrained firms to hedge future investment against income shortfalls (see, e.g., Acharya et al., 2007).

1.1. Related literature

The presented model is closely related to the growing literature on structural models with cash holdings. Gamba and Triantis (2008) explain how debt flotation costs lead to simultaneous cash and debt holdings. Hugonnier et al. (2014) show how capital market supply frictions affect corporate policy choices. These studies abstract away from both agency issues and credit risk. Two closely related models with cash holdings incorporate agency. Nikolov and Whited (2013) estimate a dynamic model of firm investment and cash accumulation in the presence of shareholder-manager conflicts. The authors argue that compensation contracts induce agency problems that are important for understanding corporate cash holdings. Mahmudi and Pavlin (2013) extend the objective function of the manager to capture a perceived cost to payout reductions. Higher cash today decreases the probability of having to cut dividends tomorrow, and, consequently, lowers managers' expected disutility. My approach is similar to these agency models with respect to the idea that managers' personal motive is important for explaining cash policies. I show that additionally incorporating credit risk is crucial to analyze to what extent self-preservation induces managers to target excess liquidity to protect their fixed compensation against bankruptcy. Two recent cash papers include credit risk. Acharya et al. (2012) argue that firms choose cash according to a trade-off between investing available cash in a profitable long-term project, and retaining cash to reduce the probability of losing the future cash flows from the project due to default. As the authors completely restrict external equity financing, they can not explore the effect of cash on equityholders' optimal decision to inject funds after initiation into the firm. I show that incorporating the impact of this indirect effect of cash on default risk is crucial to understand managers' self-preservation motive for cash. Anderson and Carverhill (2012) derive the optimal policy toward holding liquid assets by incorporating dividend, short-term borrowing, and share issuance choices. They do not consider agency, i.e., the fact that managers may hold excess liquidity because they can use

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