



# Entrepreneurial optimism, credit availability, and cost of financing: Evidence from U.S. small businesses<sup>☆</sup>

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## ABSTRACT

Using a large sample of U.S. small businesses and a new measure of optimism, we examine the role of entrepreneurial optimism in small business lending. We provide evidence that optimistic entrepreneurs are not rationed by lenders. Quite the opposite, our results suggest that they often have better credit accessibility and obtain lower cost of financing. Our results are robust to alternative measures of optimism and controls for private information between lenders and borrowers.

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## 1. Introduction

While the prevalence of entrepreneurial optimism is well-recognized, its impact on various economic choices is still a subject of an ongoing debate. This debate to a certain extent reflects the two opposing views on the nature of optimism that exist in the literature. On the one hand, optimism is viewed as a type of bias characterized by distorted perceptions of the future (Weinstein (1980)), and consequently an optimist is someone who either overestimates the probability of a favorable outcome or underestimates the probability of an unfavorable outcome. A number of studies in finance and entrepreneurship emphasize this negative view of optimism.<sup>2</sup> These studies argue that optimistic bias (sometimes referred to as overoptimism or overconfidence) results in too much entry, excessive risk taking, inferior performance and overlending. Entrepreneurial optimism is also considered as one of the possible explanations of the private equity premium puzzle documented by Moskowitz and Vissing-Jorgensen (2002).

On the other hand, there is a strand of the psychology and medicine literature (see Scheier and Carver (1985), Scheier et al. (1994)) that views optimism as generalized positive expectations about the future (also called dispositional optimism). In the

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<sup>2</sup> See, for example, De Meza and Southey (1996), Arabsheibani et al. (2000), Barber and Odean (2001), Heaton (2002), Bernardo and Welch (2001), Coelho et al. (2004), Malmendier and Tate (2005a, 2005b, 2008), Cassar and Friedman (2007), and Landier and Thesmar (2009).

finance literature, a recent study by Puri and Robinson (2007) documents that optimistic entrepreneurs work more and have higher productivity than other entrepreneurs and argues that optimism in a mild form is actually beneficial for small businesses.

While prior studies focus on the effect of optimism on risk taking and performance, very little attention has been devoted to the issue of the potential implications of entrepreneurial optimism for the availability of credit to and the cost of bank financing for small businesses. Do lenders turn down loan applications by optimistic entrepreneurs more or less often? Are banks and other financial institutions charging optimistic entrepreneurs higher or lower rates? Do financial intermediaries require more or less collateral from optimistic entrepreneurs? These are all important questions that have not been systematically studied, which is surprising given the fact that bank debt is the major source of financing for small firms. The only studies that deal with this issue are De Meza and Southey (1996) and De Meza (2002). Both studies argue that those individuals that are unrealistically optimistic self-select to become entrepreneurs and that entrepreneurial optimism increases overlending. The theoretical model of De Meza and Southey (1996) predicts that the presence of optimistic entrepreneurs will result in a lower quality of borrowers, excessive lending, and lower expected return per loan for lenders. In this situation, banks might have an incentive to limit credit to optimistic entrepreneurs in order to protect themselves from the entrance of lower quality borrowers to the current borrower pool and the eventual decrease in their expected rates of return. To the best of our knowledge, the prior literature provides no empirical testing of the predictions of De Meza and Southey (1996), or of any other potential relationship between entrepreneurial overoptimism and lending. Our study aims to fill this gap in the literature by examining whether the behavior of financial institutions that lend money to small businesses is consistent with the positive or negative view of entrepreneurial optimism.

The Achilles heel of any behavioral corporate finance study is the empirical measure of managerial bias. Toward this end, we design an innovative measure of optimism. In particular, we use the difference between the probability that the entrepreneur's application for loans will be denied given the firm characteristics and credit conditions and the entrepreneur's subjective assessment of this probability as our primary measure of optimism. As a robustness check, we also use several different versions of our main optimism measure. We discuss the design of our optimism measure in more detail in Section 3.

Using our optimism measures, we first examine the effect of entrepreneurial optimism on the availability of credit. Following the literature in small business lending, we adopt two measures of credit availability – whether small businesses pay their trade credit late and whether lenders approve their most recent loan applications. (See e.g., Petersen and Rajan, 1994, Cole, 1998 and Cole et al., 2004. Using data from the Federal Reserve Board's 2003 Survey of Small Business Finance (SSBF), we find evidence that optimistic entrepreneurs have better access to credit, consistent with the positive view of entrepreneurial optimism. For instance, we document that optimistic entrepreneurs are less likely to pay their trade credit late and their loan applications are more likely to be approved.

Our second set of analyses focuses on the relation between optimism and the cost of financing. Specifically, we examine two characteristics of small business loans: whether entrepreneurs are requested to provide collateral or guarantee, and the interest rate spread over the concurrent prime rate that they are charged. We document additional evidence in support of the positive view of optimism. For instance, an optimistic entrepreneur is less likely to be required to provide collateral or a personal guarantee. Moreover, an optimistic entrepreneur is charged a lower interest rate, on average.

We realize that our optimism measure could be polluted by lenders' private information that may be difficult to observe in our data. While it is impossible to completely eliminate the pollution due to potential unobserved factors, we take a number of approaches to alleviate the effect of this potential pollution on our main findings. First, in relevant specifications, we control for lenders' private information on the borrower's quality by including the distance and the length of relationship between lenders and borrowers, as well as the communication method used for loan applications. These variables are found in the existing literature to correlate with lenders' private information (See Petersen and Rajan, 1994; Berger and Udell, 1995; Cole, 1998; Petersen and Rajan, 2002). Second, we design a proxy for banks' unobservable private information based on their historical loan decisions. Using the proxy for unobservable private information in our main regressions, we find that our results do not change. These findings indicate that it is not very likely that our measure of optimism merely reflect banks' private information.

In our opinion, this study makes contributions to the following fields in the finance and entrepreneurship literature. Broadly, our paper adds to the literature on the impact of optimism on the economic choices. Previous empirical studies examine the effect of optimism on businesses' and individuals' investment behavior (Barber and Odean (2001), Malmendier and Tate (2005a, 2005b, 2008), Cassar and Friedman (2007)) or their financing decisions (Landier and Thesmar (2009)). Our paper uses a unique measure of entrepreneurial optimism and extends the literature by providing evidence on whether and how optimism affects small business' access to credit using the U.S. Federal Reserve Board's SSBF data.

The current literature on small business lending focuses mainly on the asymmetric information problem between lenders and borrowers and the ways to alleviate it via relationship lending, collateral requirements, choice of loan terms and maturity, use of bank guarantees, etc.<sup>3</sup> This study, for the first time, documents empirically the relation between entrepreneurial optimism and banks' lending decisions. We show that entrepreneurs' behavioral attributes, such as optimism, impact financiers' decisions. Specifically, financiers do not ration optimistic entrepreneurs. In contrast, they are more willing to provide loans to optimistic

<sup>3</sup> See Petersen and Rajan (1994), Berger and Udell (1995), Cole (1998), Harhoff and Korting (1998), Elsas and Krahnert (1998), Scott and Dunkelberg (1999), Machauer and Weber (2000).

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