Research Report

Crowdfunding versus Credit when Banks are stressed

BANK INSTABILITY SEEMINGLY COULD PUSH BORROWERS TO USE CROWDFUNDING AS A SOURCE OF EXTERNAL FINANCE. WE CONSTRUCT A NOVEL, HAND-COLLECTED DATA SET OF VENTURES' USES OF EQUITY CROWDFUNDING IN GERMANY, THEIR RELATIONSHIPS WITH BANKS, AND VARIOUS VENTURE TRAITS SINCE 2011. BY OBSERVING VENTURE-BANK RELATIONSHIPS, WE CAN IDENTIFY IF VENTURES CONNECTED TO SHOCKED BANKS ARE MORE LIKELY TO USE CROWDFUNDING IN AN ATTEMPT TO SUBSTITUTE FOR CONTRACTING BANK CREDIT SUPPLY. OUR RESULTS SHOW THAT CROWDFUNDING IS SIGNIFICANTLY MORE LIKELY FOR NEW VENTURES THAT INTERACT WITH STRESSED BANKS. INNOVATIVE FUNDING SOURCES ARE THUS PARTICULARLY RELEVANT IN TIMES OF STRESS AMONG CONVENTIONAL FINANCIERS. BUT CROWDFUNDED VENTURES ARE GENERALLY ALSO MORE OPAQUE AND RISKY THAN NEW VENTURES THAT DO NOT USE CROWDFUNDING.

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Introduction

Akerlof's (1970) seminal lemons problem epitomizes the key challenge faced by any investor: how to select projects from a pool of opaque applicants. Traditionally, banks help resolve the information asymmetry between savers and investors by developing screening competences and acting as delegated monitors (Diamond, 1984). But dramatically reduced transaction and information acquisition costs, together with historically low interest rates, impede banks' incentives to engage in costly information generation, which can lead to the contraction of credit (Puri et al., 2011) or misallocated funding to projects that are too risky (Dell'Ariccia and Marquez, 2004). Against this backdrop, a novel form of financing may rival bank credit and connect even small savers with risky new ventures that face traditionally tighter financing constraints (e.g., Robb and Robinson, 2014).

This innovative way to reduce transaction costs in entrepreneurial financing is called "equity crowdfunding". Bradford (2012) defines equity crowdfunding as a scenario in which supporters or investors receive a stake in the ventures they fund, in the form of profit participation or straight equity. We similarly define equity crowdfunding as a source of funds, obtained when an entrepreneur sells equity shares of a company to a group of (small) investors through an open call for funding on Internet-based platforms.

Institutional background

Equity crowdfunding platforms are non-bank financial institutions that provide intermediation services for the offering and sale of stocks and similar securities to the general public. These services include the provision of standardized contracts, technology infrastructure for the transactions, and investor relations. To reduce investors' transaction costs, they also provide standardized information, such as pitch decks, financials, and valuations sourced from the venture, without guaranteeing their correctness though.

Most equity crowdfunding platforms do not act as open marketplaces but instead serve as network orchestrators, curating the offerings placed on the platform after a cross-check of formal criteria, such as limited liability and available documentation. Whereas some platforms allow the direct acquisition of securities in the venture, others act as nominated agents and pool funds. Because they facilitate the sale of equity-like instruments without voting rights, the platforms fall outside the legal brokerage framework. Yet, rapidly growing crowdfunding markets worldwide have prompted some countries (e.g., Italy, the United Kingdom, France, Germany, Spain) to develop specific crowdfunding regulations with the goal of protecting non-professional investors and increasing the transparency of offers in the shadow banking market.

German crowdfunding platforms use financial instruments and equity-like mezzanine capital, such as silent partnerships ("Stille Beteiligungen") and participation rights ("Genussrechte"). More common debt-like mezzanine instruments take the form of subordinated loans ("Partiarische Nachrangdarlehen"), which are less regulated. The offerings of a venture based on equity-like securities in Germany are limited to EUR 100,000 per year without an official prospectus, which is accepted by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) as long as there are more than 20 investors or the offering is aimed at non-professional investors with a share price of less than EUR 50,000. Subordinated loans skirt this problem and allow offerings with higher volumes.

Table 1 provides an overview of the German crowdfunding market. The first six projects were funded at the end of November 2011 on the Innovestment and Seedmatch platforms. As of December 2014, 14 active crowdfunding platforms were facilitating equity crowdfunding or revenue-sharing models in

Platform	Year				Total
	2011	2012	2013	2014	
Bankless24	–	–	0.18 (2)	0.37 (4)	0.55 (6)
Bergfuerst	–	–	3.0 (1)	1.1 (1)	4.1 (2)
Companisto	–	0.55 (6)	2.65 (15)	3.9 (9)	7.1 (30)
Fundsters	–	–	0.56 (5)	0.48 (6)	1.04 (11)
Innovestment	0.1 (2)	1.0 (13/8)	0.85 (11/4)	0.3 (7)	2.25 (33/12)
Mashup Finance	–	0.1 (1)	0.11 (1)	–	0.21 (2)
Seedmatch	0.35 (4)	2.2 (22)	7.32 (22/1)	9.17 (20)	19.04 (68/1)
Others	–	0.0 (1)	0.55 (11)	0.45 (7)	1.0 (19)
Total	0.45 (6)	3.85 (43/8)	15.22 (68/5)	15.77 (54)	35.29 (171/13)

Volume raised in the German equity crowdfunding market with successful campaigns, in millions of EUR. The number of (successful/unsuccessful) offerings appear in brackets.

Table 1: German Crowdfunding Market

Germany. Nine more platforms started operations, but closed before their first offering. The total funding volume of equity crowdfunding platforms in Germany in 2011 was around EUR 0.45 million, but it rose to EUR 35.3 million by the end of 2014. Seven of the 14 active platforms had one or no offerings during this period, and 95% of the total volume was raised on five platforms: Seedmatch (approximately EUR 19 million), Innovestment (EUR 2.3 million), Bergfuerst (EUR 4.1 million), Fundsters (EUR 1 million), and Companisto (EUR 7.1 million). In total, 171 offerings by the end of 2014 came from 165 different ventures.

Thirteen offerings were unsuccessful in that the minimum amount of the venture requested by the company was not raised during the funding process.

Empirical investigation

We test whether the "wisdom-of-the-(investor) crowd" can substitute for bank credit as a major source of funding for new ventures by exploiting exogenous shocks to young ventures' banks. We construct a novel, hand-collected data set of ventures' uses of equity crowdfunding in Germany, their relationships with banks, and various venture traits since 2011. By observing venture-bank relationships, we can identify if ventures connected to shocked banks are more likely to use crowdfunding in an attempt to substitute for contracting bank credit supply. In so doing, we move beyond the admittedly important descriptive evidence in this nascent strand of literature, which does not permit inferences about the causal effects of the determinants of crowd-funding.

We also control for observable management and venture traits to determine if more opaque ventures with greater information asymmetries are more likely to use crowdfunding as an alternative source of financing. Greater information asymmetries increase capital costs, which implies a well-known pecking order of capital structure: Internal funds are preferred over debt, and equity is a last resort of funding (Myers and Majluf, 1984).

To mitigate information asymmetries and facilitate the efficient allocation of financial resources (from savers to productive investors), financial intermediaries generate private information by establishing close and long-term relationships (Rajan, 1992). But relationship lending is costly, so banks may turn down funding requests by promising, yet hard-to-assess projects such as new ventures if they cannot confidently cover the costs associated with producing necessary private information (Petersen and Rajan, 1994). In this setting, we investigate if ventures tied to banks that struggle to cover the costs of private information generation are more likely to tap a potentially less-than-wise crowd as a funding source.

The financial crisis of 2008 amplified the generally prevalent challenges that young and small ventures confront when trying to raise external finance. In the aftermath of the great financial crisis, the number and volume of equity financing rounds from venture capital sources declined significantly, credit supply tightened in the Eurozone and in Germany, even local lenders reduced their loans (Puri et al., 2011).

Credit supply shocks are especially important for new ventures. However, most existing empirical evidence is geared toward venture capitalist funding (for an overview, see Gompers and Lerner, 2001). The ability of crowdfunding to substitute for bank credit or other sources of external finance, due to its significantly lower transaction costs in the Internet age, in particular remains unclear. This research gap exists primarily because of the absence of data. We hand-collected a sample of all the ventures that applied for funds on major German equity crowdfunding platforms since 2011. That is, among 357 new ventures for which we have data, 157 applied for equity crowdfunding at one of the six major German online platforms between November 2011 and June 2014.

We manually gathered the data for the crowdfunding ventures from each platform webpage and database. For the 200 ventures that did not use crowdfunding, we obtained the venture and management variables from the membership database of the Federal Association of Startups. Thus, in contrast to previous research, we can estimate the probability of tapping the "wisdom of the crowd", conditional on venture and managerial traits (like size, asset structure, credit rating, location of headquarter) relative to a relevant comparison group of comparable young ventures that face similar financing constraints.

Another challenge that plagues empirical literature pertaining to the role of crowdfunding is the notorious unobservability of the arguably most important competing source of external finance: bank credit. Because we collect information about each ventures' bank relationship, we can exploit the heterogeneity in bank distress in the aftermath of the financial crisis and identify credit supply shocks to ventures according to the health of their main external financier.

In total, we identify 82 banks connected to the new ventures in our sample and specify five alternative indicators of stressed relationship lenders. The main indicator is whether a bank received capital support from the German Special Fund for Financial Market Stabilization ("SoFFin"), which came into effect as of 2008. With an alternative approach, we also classify banks as stressed if they report an existing restructuring plan according to the comprehensive assessment conducted by the European Banking Authority (EBA) in November 2014, how stable the bank is according to the EBA, how stable the parent of a bank is according to the EBA, and whether a regional savings bank belongs to a stressed Landesbank in 2008 (see Puri et al., 2011).

Discussion of Results

By observing which ventures co-operated with banks that had to be bailed out by the German government, we identify an effect of an exogenous credit supply shock on the likelihood of using equity crowd funding. The main results show that ties to a bank bailed out by the SoFFin increase the probability that the venture taps a crowdfunding platform by 18%. The positive effect of crunched banks on the use of crowdfunding remains statistically and economically significant, even when we control directly for bank financial profiles (CAMEL). Alternative indicators of bank distress and especially the existence of restructuring plans shared with the EBA yield qualitatively similar results, though with weaker statistical significance.

The analysis also shows that bad credit scores increase the probability that a venture uses crowdfunding by 31%. Supply-side restrictions move banks to handle their lending more restrictively, and ventures that cannot demonstrate their creditworthiness are not financed. This result suggests that among opaque new ventures, riskier projects tend to tap equity crowdfunding instead of bank financing. We also find that smaller ventures and ventures with fewer tangible assets are more likely to use crowdfunding. The small amounts obtained in a crowdfunding offering make this finding plausible. Larger ventures often need greater volumes and have access to other, sometimes also cheaper sources of capital, such as initial public offerings. These results may indicate that ventures with greater information asymmetry suffer the most from a credit supply shock, and therefore seek crowdfunding as an alternative.

Whether these projects are more likely to be lemons or gems that have been neglected by banks is an important question for further research. However, other management team characteristics have no statistically significant effect. Likewise, the rating of the venture's quality by experts, the location of the headquarters, the reception of a scholarship, and the number of heads all showed no significant influence on a venture's use of crowdfunding. That is, the use of crowdfunding is not a question of management or other organizational factors. This result also supports the hypothesis that quality differences of ventures are not crucial. Perhaps the most important finding though is that ventures are more likely to use crowdfunding when their bank is affected by a credit crunch. Equity crowdfunding thus seems to be of particular importance for entrepreneurial finance as a critical source of capital in stressful times for banks.

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