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ZEW policy brief

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Start-up Financing: How Credit Ratings and Bank Concentration Impact Credit Access

Essential Issues

Research Question and Relevance

Start-ups, especially those in high-tech industries, are an important force for innovation. They contribute to the competitive success of the economy, and help to create new jobs. Bank financing is the most important source of external credit for newly established firms. In the last two decades, bank consolidation and regulatory changes such as Basel II have influenced banks' screening processes, leading to a greater reliance on hard information. Yet newly established firms do not have a financial track record. Publicly available information like credit ratings is rarely available for new firms.

Especially in the high-tech sector, a large share of young firms has reported difficulties in obtaining bank loans. For this reason, policy makers are worried that bank consolidation and the increasing reliance of the banking sector on third-party credit ratings may have detrimental effects on the access of start-ups to credit, especially in high-tech industries. This, in turn, could harm the innovative capabilities and competitiveness of German industry. Yet are such worries justified? To answer this question, researchers examined how credit availability is impacted by start-ups' credit ratings as well as the size and industry expertise of their primary bank. The study relied on firm-level survey data from the ZEW/KfW Start-up Panel.

Key Messages

With regard to banks' increasing reliance on credit ratings, our findings indicate that policy makers should not be worried when it comes to high-tech industries. This is because banks appear to rely less on third-party ratings when lending to high-tech firms as opposed to low-tech firms. However, the trend toward greater concentration in the banking sector may have a detrimental impact on the availability of credit to innovative start-up firms. The study reveals that start-ups dealing with larger banks face greater difficulties in obtaining financing. However, this effect is quite small and it applies to all types of start-ups – both low-tech and high-tech – suggesting that special policy intervention for innovative firms is unwarranted.

Key Messages

The study shows that when a credit rating is available it only affects a firm's access to credit if the rating contains negative information, i.e. when the rating is bad. Moreover, banks appear to react to bad ratings when lending in traditional industries, but not in innovative ones. Firms in low-tech industries with a bad rating are less likely to use bank financing and have more difficulties compared to firms with no, fair, or good ratings. For high-tech firms, no significant effects were identified.
Start-ups that have a relationship with a large bank are less likely to use bank financing and report more difficulties in getting bank credit. While the effect of bank size is statistically significant, the magnitude of the impact is relatively small. Our results further suggest that larger expertise of the bank in the firm's industry does not significantly reduce difficulties in getting credit.

Research Question and Relevance

Bank Financing for Start-up Firms

Newly created firms and high-tech start-ups in particular are engines of growth in many countries. Empirical evidence from the United States and Europe shows that banks are the most important source of financing to new firms. However, start-up firms – both low-tech and high-tech – often face difficulties in raising the required funds to implement their ideas. Complaints are often raised that banks are less willing to provide funds to start-ups, as these firms lack collateral and are more opaque to outsiders. Asymmetric information regarding creditworthiness and a lack of tangible capital may arguably lead to stronger credit constraints for high-tech start-ups as opposed to low-tech start-ups.

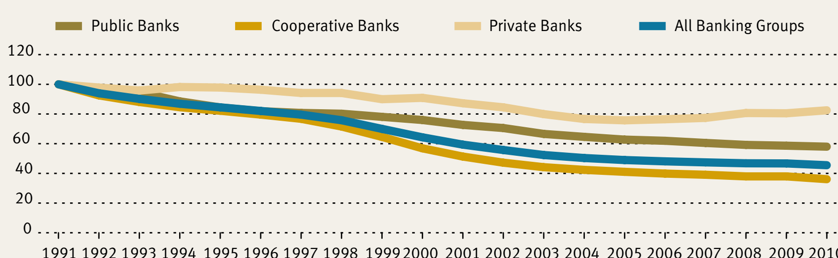
External Rating in Banks' Decision Process

Over the last two decades, two developments in the banking industry have changed the way banks assess their prospective clients. First, banks increasingly rely on third-party credit reports when judging the creditworthiness of prospective borrowers. While empirical evidence suggests that information sharing through credit bureaus enhances credit availability (particularly for small businesses), the extent to which increased reliance on credit reports by banks may benefit start-up firms is unclear – especially in high-tech industries. Little research has been conducted to date on how credit information sharing affects credit availability to start-up firms. This, however, is an important issue. If banks rely strongly on credit history information for their credit assessment, this may have a negative impact on prospective borrowers without a credit history. This information may be particularly important for a bank's credit assessment when it deals with innovative start-ups, as information asymmetries are particularly strong.

Banking Market Consolidation

A second trend impacting lending behaviour is the ongoing consolidation of the banking industry, which has led to fewer banks with more diversified lending portfolios. In Germany, for example, the number of banks decreased by 53 per cent between 1990 and 2010. Figure 1 shows bank consolidation in Germany between 1991 and 2010, starting at an index value of 100. Bank mergers have taken place especially in the cooperative banking sector. Technical progress and bank regulation have particularly led local banks to be consolidated into a more efficient size. Also, a significant number of Sparkassen (savings banks) have merged within the public banking sector.

Figure 1: Bank consolidation in Germany 1991–2010



Source: Deutsche Bundesbank, 2012. Indexed values: Baseline of 100 in 1991

As larger banks are typically more hierarchal, soft information about the creditworthiness of borrowers may become more difficult to transport within the organisation when making lending decisions. This, in turn, may reduce the ability and willing-

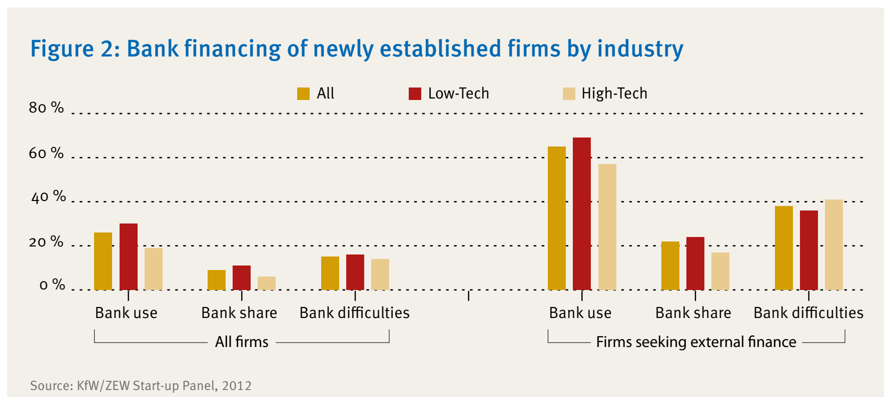
ness of banks to lend to start-ups, and especially those in high-tech industries, as their assessment is more dependent on such information. On the other hand, larger banks may build industry expertise in a broader range of industries – for example, by employing loan officers who specialize in lending to new, innovative firms. This could theoretically increase the likelihood of lending.

Methods and Data

Start-up Panel Data

We examined the impact of third-party credit ratings, bank size, and banks' industry expertise on German start-up firms' access to credit. Our analysis was based on data from the KfW/ZEW Start-up Panel, which encompasses 9,715 firms founded in 2005–2009. In computer-assisted telephone interviews, start-up entrepreneurs provided information on investments and financing sources. We considered three firm-level measures of credit availability: the incidence of bank credit (26 per cent in our sample), the share of total firm financing obtained from banks (sample mean: 9 per cent), and whether or not the firm reported difficulties in obtaining bank credit (15 per cent in our sample). It is noteworthy that a large share of the start-ups in our sample did not require external financing. Of those that did require external financing, 65 per cent used bank credit. The mean share of bank credit to total financing was 22 per cent, and 38 per cent of firms reported difficulties in securing bank credit. Start-up firms in high-tech industries were more likely to report difficulties in getting bank credit (41 per cent) than those in low-tech industries (36 per cent). Figure 2 presents the shares of firms that use bank financing, the share of bank financing to total financing, and reported difficulties by industry for all firms and those seeking external finance. Information from the Start-up Panel was merged with information obtained from Creditreform, Germany's largest credit bureau, on each firm's credit rating and its main bank.

Figure 2: Bank financing of newly established firms by industry



Source: KfW/ZEW Start-up Panel, 2012

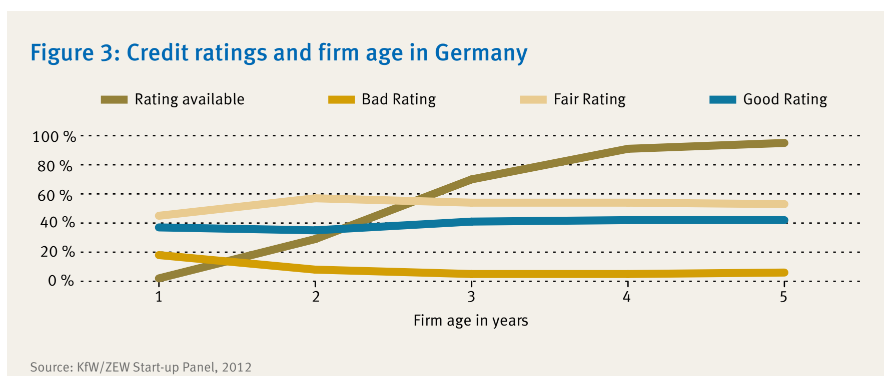
Research Results in Detail

Impact of External Credit Ratings

We first examined how the release of credit ratings for a start-up impacted access to bank financing. The German credit bureau Creditreform waits at least a year before publishing a rating on a newly founded firm. Figure 3 shows that rating availability increases with firm age. While only 28 per cent of start-ups have a Creditreform rating in their second year of operation, 95 per cent of firms have a rating by the fourth and fifth year of their existence. Figure 3 also shows that approximately 55 per cent of young firms have a fair rating, and that about 40 per cent have a good rating.

Our results show that when a third-party credit rating becomes available it only affects a firm's access to credit if it contains negative information, i.e. when the rating is bad. Moreover, banks react to bad ratings when lending in traditional industries, but

Figure 3: Credit ratings and firm age in Germany



Source: KfW/ZEW Start-up Panel, 2012

not in innovative ones. Firms in low-tech industries with a bad rating are less likely to use bank financing and have more difficulties compared to firms with no, fair, or good ratings. For high-tech firms we found no significant effects. These findings suggest that banks take into account that external ratings are less informative when it comes to high-tech firms. Credit ratings are based on publicly available information and business-to-business (trade credit) relations. In general, credit bureaus do not use different rating standards for high-tech and low-tech firms. Aware of this fact, banks seem to react to the negative signalling of an external rating only in the case of low-tech firms.

Impact of Bank Size and Industry Expertise

We identified the main bank of each firm through the Creditreform database. For each of these banks we then used the entire Creditreform database (for start-up and established firms) to establish the size of the bank (number of firms served, weighted by labour force) and the expertise of the bank in the start-up's industry (number of firms served in the same industry). Our results suggest that start-ups that have a relationship with a large bank are less likely to rely on bank financing. They also report greater difficulties in getting bank credit. While the effect of bank size is statistically significant, its economic magnitude is relatively small: an increase of bank size by one standard deviation decreases the probability of using bank credit by 1.6 percentage points and increases the probability of reported difficulties in getting credit by 1.1 percentage points. By comparison, 65 per cent of the start-ups in our sample used bank financing and 38 per cent reported difficulties in accessing bank credit. Furthermore, our results suggest that larger expertise of the bank in the firm's industry does not significantly reduce difficulties in getting credit.

Project Profile

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Publications

Brown, M., Degryse, H., Höwer, D., and M.F. Penas (2012), "How Do Banks Screen Innovative Firms? Evidence from Start-up Panel Data", ZEW Discussion Paper No 12-032, Mannheim.

Websites

SEEK programme: **www.seek.zew.de**
Data source: **www.gruendungspanel.de**

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