Strengthening Efficiency and Competitiveness in the European Knowledge Economies (SEEK)

Conference 2011: Going for Smart Growth with Knowledge and Innovations

Seek Project 2010:

How Do Banks Screen Innovative Firms?

Motivation

- Bank finance is the most important source of external finance for start-up firms.
- Adverse selection and moral hazard in lending relationships are more severe for highly-innovative firms.
- Transformation towards a knowledge based economy with increased corporate innovation thus may directly affect how banks screen and monitor their clients and vice versa.

Research Questions

- Do banks screen innovative start-ups differently than start-ups in traditional sectors?
  – Do they rely more or less on external information from credit bureaus?
- How does a bank's screening strategy for innovative firms depend on its characteristics?
  – Do large banks or banks with greater distance to their potential clients rely more on verifiable information?
  – Do banks that concentrate their lending in the sector of the innovative firm rely less on verifiable information?

Research Team

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Data Sources

- **KfW/ZEW Start-up Panel** wave 2008–2010 provides information on 9,715 firms with over 17,000 observations:

Year of foundation	Firm age in years				
	1	2	3	4	5
2005	–	–	1,774	1,098	926
2006	–	1,942	1,482	1,136	–
2007	1,728	1,582	1,334	–	–
2008	1,434	1,289	–	–	–
2009	1,510	–	–	–	–

The Panel contains information on firms' investment, financing structure, innovation, and performance.

- The **Mannheim Enterprise Panel** provides firm's credit rating information prepared by Creditreform, Germany's largest credit agency.
- The **German Banking Panel** identifies each firm's main bank ("Hausbank") and the characteristics of the bank's credit portfolio for their corporate customers finance.

Method

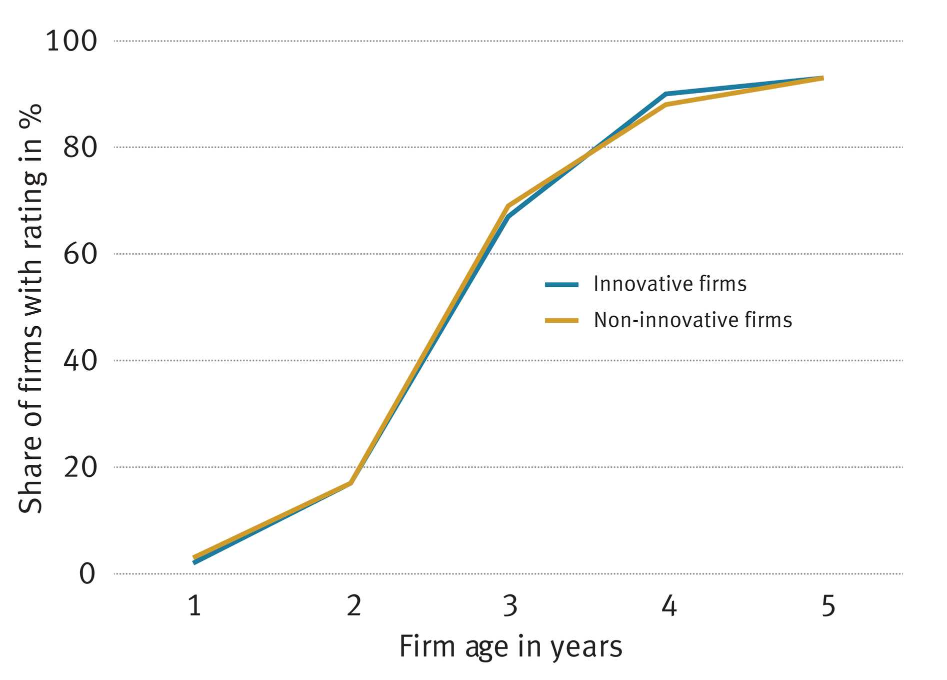
- We identify how a change in the external credit rating of a start-up improves its access to bank finance. We use interaction terms to test whether credit rating matters differently for innovative firms and for bank characteristics.

- Access to finance
- Share of bank finance
- Difficulties seeking bank finance

= $\beta_0 + \beta_1$ rating information
+ β_2 innovation
+ β_3 **rating * innovation**
+ β_4 **bank characteristics * innovation**
+ β_5 **rating * bank characteristics * innovation**
+ β_6 firm controls
+ β_7 bank controls
+ ξ

Some Descriptives

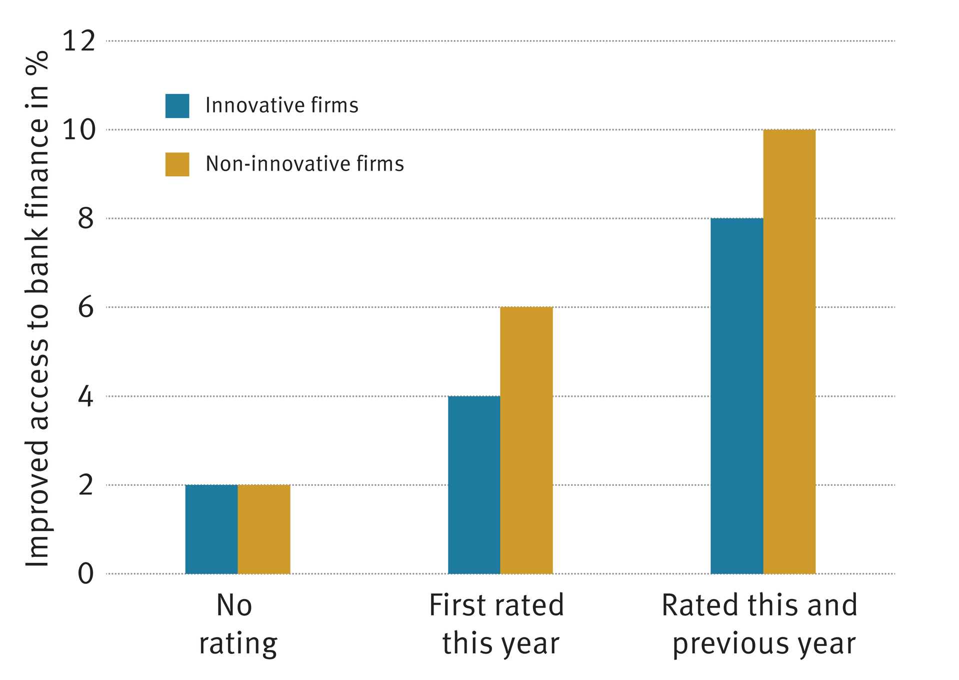
Rating Availability



Note: Calculated for firms observed in the KfW/ZEW Start-up Panel.
Source: Mannheim Enterprise Panel (ZEW), 2011.

- The availablity of rating increases with firm age.
- Five years after foundation a rating is available for nearly every firm.
- There is no difference in rating availability between innovative and non-innovative firms.

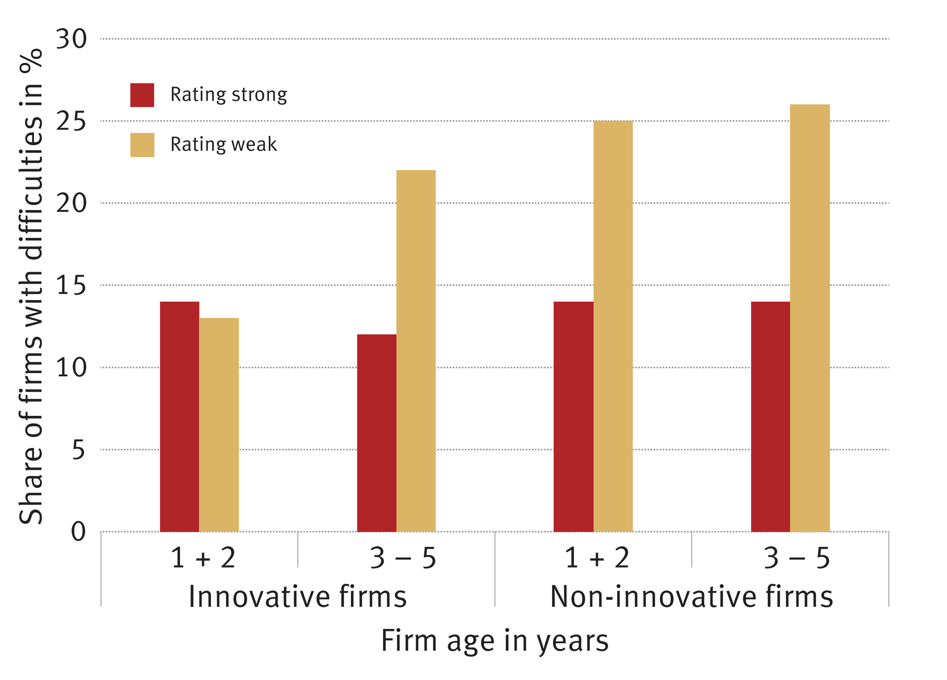
Change in Rating Availability and Improved Access to Bank Finance



Firms with an improved access to bank finance used bank finance in *t* but non in *t-1*.
Source: KfW/ZEW Start-up Panel and Mannheim Enterprise Panel (ZEW), 2011.

- Firms that did not use bank debt in the previous year have a better access to finance if a rating is available.
- A change of rating availability seems to be less important for innovative than for non-innovative firms.

Rating Category and Difficulties Seeking Bank Finance



Source: KfW/ZEW Start-up Panel and Mannheim Enterprise Panel (ZEW), 2011.

- For non-innovative start-ups a strong rating is always important.
- Banks seem to rely on other aspects than a rating when assessing very young innovative start-ups.
- For innovative firms aged 3 to 5 a strong rating gets more important.

Further Steps

We will analyse whether ...

- ... banks specialised in the firms industry have specific knowledge to screen innovative firms.
- ... banks consider several items of external ratings differently between innovative and non-innovative firms.
- ... banks rely on the expertise of other financing partners, such as venture capitalists, business angels, or public R&D funding.
- ... the entrepreneurs qualification or experience are more important for innovative than non-innovative firms.