THE INTERDEPENDENCE OF R&D ACTIVITY AND DEBT FINANCING OF BUSINESS START-UPS (SUMMARY)

Helmut Fryges  
ZEW Centre for European Economic Research, helmut.fryges@utas.edu.au

Karsten Kohn  
KfW Bankengruppe

Katrin Ullrich  
KfW Bankengruppe

Recommended Citation
Fryges, Helmut; Kohn, Karsten; and Ullrich, Katrin (2011) "THE INTERDEPENDENCE OF R&D ACTIVITY AND DEBT FINANCING OF BUSINESS START-UPS (SUMMARY)," Frontiers of Entrepreneurship Research: Vol. 31 : Iss. 3 , Article 4. Available at: https://digitalknowledge.babson.edu/fer/vol31/iss3/4

This Summary is brought to you for free and open access by the Entrepreneurship at Babson at Digital Knowledge at Babson. It has been accepted for inclusion in Frontiers of Entrepreneurship Research by an authorized editor of Digital Knowledge at Babson. For more information, please contact digitalknowledge@babson.edu.
SUMMARY

THE INTERDEPENDENCE OF R&D ACTIVITY AND DEBT FINANCING OF BUSINESS START-UPS

Helmut Fryges, ZEW Centre for European Economic Research, Germany
Karsten Kohn, KfW Bankengruppe, Germany
Katrin Ullrich, KfW Bankengruppe, Germany

Principal Topic

Business start-ups and young enterprises introduce new products to the market and employ new processes for production. To create these new products and processes, firms often engage in R&D. Since conducting R&D is an expensive task, substantial financial resources are required. However, the internal financing capacity of young firms is limited. In this case, loans can relieve financing constraints on R&D activities.

The relationship between R&D activities and loan financing can, however, also be argued to go in the opposite direction: The ability of young enterprises to tap external financing sources depends, among other things, on growth opportunities that may be generated by R&D activities. Moreover, R&D expenditures are rather allocated into intangible assets that cannot serve as collaterals.

Method

In this paper, we explore empirically the bidirectional relationship between R&D and loan financing. In doing so, we use data of the first two survey waves of the KfW/ZEW Start-up Panel, a unique data set of young firms in Germany founded in the period from 2005 to 2008.

In a first step, we estimate single-equation Tobit models that explain, first, the share of loan financing in total financing and, second, firms’ R&D intensity, defined as R&D expenditures over total sales. The single-equation estimates reveal that the share of loan financing is basically determined by firm-specific variables derived from traditional theories of corporate finance like the static trade-off theory or the pecking order theory, whereas both firm-specific and entrepreneur-specific variables are decisive for the level of a firm’s R&D intensity.

Results and Implications

In order to account for the interdependence between R&D and loan financing, we estimate a simultaneous, bivariate Tobit model. It proves that there is in fact a significantly positive, interdependent relationship between the share of loan financing and R&D intensity. In the bivariate Tobit model, unobserved random shocks are negatively correlated across the two equations. In response to such a random shock, firms simultaneously adjust both their capital structure and their R&D activities.

CONTACT: Helmut Fryges; fryges@zew.de; (T): 49-621-1235189; (F): 49-621-1235170; ZEW Centre for European Economic Research, L 7,1 Mannheim, 68161 Germany.