Entrepreneurship, Marketing, Innovation

Band 2

An Economic Perspective on Entrepreneurial Decision Making

First Haniel-Kreis Meeting on Entrepreneurship Research

Edited by

Dominique Demougin and Christian Schade

Duncker & Humblot · Berlin

DOMINIQUE DEMOUGIN / CHRISTIAN SCHADE (Eds.)

An Economic Perspective on Entrepreneurial Decision Making

Entrepreneurship, Marketing, Innovation

Herausgegeben von Prof. Dr. Christian Schade

Band 2

An Economic Perspective on Entrepreneurial Decision Making

First Haniel-Kreis Meeting on
Entrepreneurship Research

Edited by

Dominique Demougin and Christian Schade

Duncker & Humblot · Berlin

Bibliographic information published by Die Deutsche Bibliothek

Die Deutsche Bibliothek lists this publication in
the Deutsche Nationalbibliografie; detailed bibliographic
data is available in the Internet at <http://dnb.ddb.de>.

All rights reserved. No part of this book may be reproduced, translated,
or utilized in any form or by any means, electronic or mechanical,
without the expressed written consent of the publisher.
© 2006 Duncker & Humblot GmbH, Berlin
Typesetting and printing:
Berliner Buchdruckerei Union GmbH, Berlin
Printed in Germany

ISSN 1861-3144
ISBN 3-428-12186-4

Gedruckt auf alterungsbeständigem (säurefreiem) Papier
entsprechend ISO 9706 ♾

Internet: http://www.duncker-humblot.de

Preface

What does the name "Haniel-Kreis" stand for? The Haniel-Kreis is a meeting of guest professors who visited Humboldt-Universität zu Berlin as part of the Haniel Foundation sponsored guest professorship for entrepreneurship that was founded in 2001. At the Kreis, scientific papers are presented and discussed, ideas exchanged, and joint projects launched and worked on. The Kreis is intended to resemble the old European tradition of a Salon – many thanks to Maria Minniti who originally came up with this idea! Haniel guest professors are accompanied by selected faculty and doctoral students of the School of Business and Economics, Humboldt-Universität zu Berlin. The Kreis is organized by Dominique Demougin and Christian Schade from this university, and will take place once every two years.

This volume is dedicated to the first Haniel-Kreis, which took place in Berlin from the 4th to the 8th of January, 2005. The almost weeklong event was characterized by stimulating bilateral meetings, various scientific presentations, and intense discussions. One commonality among the authors is a growing interest in the application of economic models and econometrics to the field of entrepreneurship. Entrepreneurship, a comparatively young field of research, generates a growing interest by researchers from various fields including economics, psychology, sociology, operations research, and management (to name only the most influential). The Kreis focuses on an economic perspective by emphasizing expertise from behavioral economics, operations research, and management.

This book addresses pivotal areas of entrepreneurial decisions. The topics include the decision to start a business and the identification and analysis of the factors, environments, and prerequisites that led to this decision, such as age (Levesque and Minniti), perceptions about personal ability (Köllinger et al.), and the institutional environment in a country (Choi and Phan). A related question is the decision on succession in a family business and the organization of the transfer from one generation to the next (Phan et al.). Finally, the design of an incentive compatible wage scheme that covers the area of entrepreneurial decision-making (Demougin and Fluet) is discussed.

Before you start reading, we would like to give you a short overview of the articles and corresponding discussions that are presented in this book. The articles are sorted in alphabetic order according to the first author named in the respective papers.

The first paper stresses the pivotal role of entrepreneurship, which may accelerate overall economic development. Young R. Choi and Phillip H. Phan theoreti-

cally and empirically examine the factors that drive national entrepreneurial development. In the first part of the paper, the authors develop a theoretical approach to sort out the macroeconomic issues that determine aggregate entrepreneurial activity to understand why some countries exhibit greater entrepreneurial activity. The second part of the paper provides an empirical test of the theoretical predictions. The authors propose a generalized supply and demand model to investigate how technology and economic policy explain the temporal variations in national entrepreneurial intensity in the United States and South Korea. Their findings demonstrate that entrepreneurial intensity depends on technological and economic structural opportunities. In particular in Korea, but also in the U.S., the level of entrepreneurial activity is determined by demand side factors such as venture capital availability and government financial support. The supply side, i.e. factors such as unemployment rate or labor unionism, appears to be less relevant in both countries. In particular, the dynamics of entrepreneurial activity vary by country because of differences in technological knowledge capital, institutions, and market structure. In effect, factors that determine supply and demand of entrepreneurial activity may operate differently across countries.

In her comment, Maria Minniti discusses serval determinants of supply and demand for entrepreneurship. She stresses the importance of cross-country studies to assess the significance of various factors and how they relate to attributes such as cultural norms and institutions.

In the second paper, Dominique Demougin and Claude Fluet assess the merits of individual vs. group performance pay when workers are inequality averse. Some performance pay is needed to align incentives in employment contracts. When workers are indifferent to relative payoffs, optimal incentives can be induced with both individual and group performance pay schemes. However, workers may not only care about absolute payoffs, so that concerns for equity and fairness could foster equal payment. Demougin and Fluet show that when workers have a propensity for envy, precisely this aversion to unequal pay may be used as an incentive tool by the firm, causing it to favor either scheme. Which payment scheme leads to lower wage costs is shown to depend on two factors: the workers' reservation utility and on the precision of available performance measures. Based on the model of inequality aversion developed by Fehr and Schmidt (1999), they show that individual performance pay may be preferable when monitoring is costly. While envy increases an individual's incentives under individual performance pay, the worker may at the same time ask for compensation for the anticipated frustration of being outperformed by other workers. These conflicting effects could be avoided if monitoring devices were better and the firm would resort to group performance pay.

In his comment, Christian Schade points out that the integration of risk aversion may change the model's findings. He also suggests that envy may be reduced if the other's success is deserved. Finally, he recommends that the model's predictions should be tested empirically.

The third paper examines the characteristics of potential entrepreneurs. Philipp Koellinger, Maria Minniti, and Christian Schade use a non-parametric classification and regression tree (CART) to analyze data collected from 18 countries. CART is a regression method that provides parsimonious and intuitive results, permits the relaxation of underlying assumptions, and reveals interactions of covariates to improve the quality of the model. The authors show a high importance of perceptual variables and their associated bias. Across countries, individuals involved in start-up activities share a high level of confidence in their skills, knowledge, and ability to start a business. The trait of currently having a job – part-time or full-time – and knowing another entrepreneur suggests a high propensity to become an entrepreneur. Socio-economic factors such as education and income, turn out to be less relevant than expected. The analysis reveals that subjective individual perceptions are the greatest distinction between entrepreneurs and non-entrepreneurs across countries.

In her comment, Moren Lévesque calls for a distinction between necessity and opportunity entrepreneurs, suggesting that for the latter group variables such as education may indeed turn out to be significant. Equally special attention should be paid to cultural differences, since in countries such as Japan, South Korea, or New Zealand working status and not perception turned out to be the most significant predictor.

In the forth paper, Moren Lévesque and Maria Minniti explore the relation between age and entrepreneurial activity, giving particular attention to aging populations. While in a previous work the authors investigated the interplay of age, wealth, and risk aversion on entrepreneurial activity, the present paper focuses on the relation between entrepreneurial choice, the need for independence, and age. The analysis confirms the existence of an inverted U-shaped relationship between age and entrepreneurial behavior, which continues to hold when an individual's need for independence is considered. The probability of becoming an entrepreneur increases with age up to a threshold point and decreases afterwards. At the beginning of his working career an individual needs time to gather sufficient skills, knowledge, and experience before starting a business. Then, at some later point in time, he may choose to refrain from entrepreneurial activity, because of the gap until a new business generates a positive cash flow. Hence, at a certain time, a limited resource becomes the defining factor. This implies that the level of entrepreneurship will be related to the age structure of the population so that the growth rate of economic activity also depends on the age structure of the population.

In his comment, Claude Fluet points out that the need for independence may not suffice to explain the inverted U shape. It may be also required to assume that, for instance, the productivity of entrepreneurship increases with experience.

Finally, the fifth paper by Phillip H. Phan, John E. Butler, and Soo-Hoo Lee presents an empirical analysis of the succession in family businesses. This topic has so far been barely addressed, though in many OECD countries family businesses

are responsible for more than 50 % of GNP. Recognizing the pivotal role of family businesses for the economy, Phan, Butler, and Lee analyze the process of transition, which despite its commonness often fails. They identify three factors that influence the performance of succession: first, preparation of the succession, measured by the existence of a formal succession plan, second, the preparation of the successor, i.e. the extend to which he or she had been prepared and groomed ahead, and third, a variable classifying the economic, family, and social goals contemplated by the business owner. The data used was collected by the authors in Hong Kong and Canada through mailed questionnaires and analyzed using a hierarchical regression. The results of the survey data confirm the economic intuition, the first two variables, i.e. the preparedness, the selection and the human capital of a successor, turn out to be significant in increasing the chance of survival of family businesses during and after the transition period. Yet, the third variable, the family, economic and social subsystem seemed statistically insignificant.

In his comment, Dominique Demougin points out an alternative explanation for the contiguity between the preparedness of the successor and the success of the transition. Viewing a business – and a family business in particular – as a nexus of implicit and relational contracts, a change in management would cause many of these informal contracts to break down. This requires the parties to renegotiate, opening doors for all kinds of opportunistic behavior. Instead, a prepared successor in a family business may inherit and keep a proportion of these implicit contracts.

The participants and the organizers of the Haniel-Kreis express their thankfulness to the Haniel Foundation for making such an engaging and successful meeting possible and for funding the guest professorship for so many years.

Christian Schade, Eva-Maria Steiger

Contents

A Generalized Supply / Demand Approach to National Entrepreneurship: Examples from the United States and South Korea

By Young Rok Choi and Phillip H. Phan

Abstract

Healthy entrepreneurial activity can diversify a country's sources of wealth creation and thus attenuate the economic impact of business cycles. In emerging and transition economies, entrepreneurship can also accelerate the private accumulation of capital and thus economic development. The importance of this issue is exemplified by the vast resources that governments have committed to national entrepreneurial development. However, what appears to be lacking from the literature is a systematic way of assessing the factors that drive national entrepreneurial development. Our study addresses this issue with a generalized supply / demand model to investigate how technology and economic policy explain the temporal variations in national entrepreneurial intensity in the United States and Korea. The results confirm the utility of this theoretical approach and reveal distinct patterns in national entrepreneurship that are driven by differences in opportunity (technological capital, economic concentration and competition policy), supply (labor market mobility and unemployment rate), and demand (venture capital and government financial support).

Keywords: technology policy, national entrepreneurship, unionism, absorptive capacity, Schumpeterian competition.

JEL Classifications: C31, D24, E11, E24, L16

1. Introduction

The increase in entrepreneurial activity can diversify a developed country's sources of wealth creation and thus attenuate the economic impact of business cycles. In emerging and transition economies, entrepreneurship can accelerate overall economic development through the private accumulation of capital (Busenitz et al. 2000, Peng and Shekshnia 2001). Yet, not all regions have been equally successful at achieving this goal. In this paper, we attempt to understand why some countries exhibit greater entrepreneurial intensity than others.

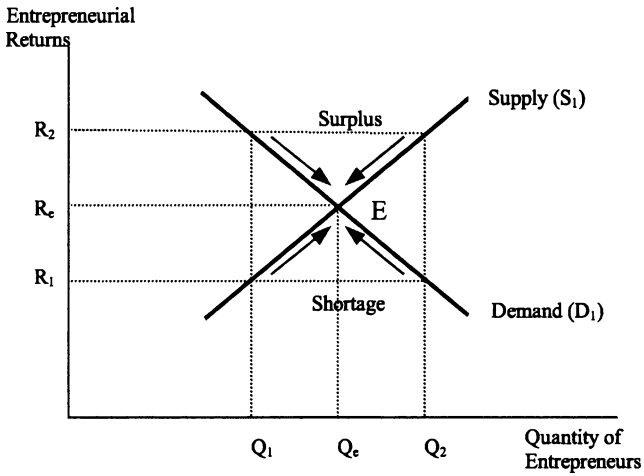
National entrepreneurial intensity is defined as the magnitude of entrepreneurial activity per unit population, which includes both *rate* of new firm creation and *stock* of business organization per capita (see Gartner and Shane 1995 for a detailed discussion). Early studies on the variations in national entrepreneurial intensity rely on explanations of the differences in national cultures. They explored such factors as the cultural legitimacy for entrepreneurial behavior (Weber 1904), the societal tolerance for new ideas (Wallace 1970), the attitudes toward business formation (Shapero and Sokol 1982), the culture dimensions of power distance, individualism, uncertainty avoidance and masculinity (Hofstede 1980, McGrath et al. 1992), and the individual need for achievement (McClelland 1961). Thornton (1999) argues that individual and group behaviors are embedded so that, "in addition to individual and cultural differences, entrepreneurs and entrepreneurship are determined by forces operating within other, larger contexts" (pg. 23). As such, modeling entrepreneurship as an outcome of institutional forces has become an equally popular approach (e.g., Reynolds 1987, Herron et al. 1991, Low and Abrahamson 1997, Busenitz et al. 2000). The extant literature however, reveals the lack of a theoretical framework incorporating these institutional factors. The reason may be that countries differ, making it difficult to build comparative models. But if one can find an appropriate level of generalization, then modeling the influence of a country's institutions may provide a theoretically valid way to explain entrepreneurial intensity across economic contexts.

2. A general supply / demand model of entrepreneurship

Casson (1995) characterizes entrepreneurial intensity as a result of the "market for entrepreneurship that equates demand and supply." Therefore, dynamic changes in entrepreneurial intensity are simultaneously influenced by factors driving supply and demand. Supply factors create the pool of available entrepreneurs while demand factors drive the level of entrepreneurial activity required to sustain economic growth in an economy.[1] Baumol (1990) suggests that people are motivated to choose entrepreneurship or employment by the reward structure of an economy, i.e., the rules of the game that govern the payoffs to individual effort. Eisenhauer's (1995) economic model of entrepreneurship is based on the expected utility derived from income and the working conditions of employment vs. self-employment. Douglas and Shepherd (2000) represent an individual's choice to be self-employed by a utility-maximizing model where people intend to be self-employed when the combination of income, risk, work effort required, and independence provides greater utility than does the corresponding combination for the best employment option. In sum,

[1] We assume that the decision to engage in entrepreneurship is the result of rational economic choice (i.e., we rule out 'life-style' and 'social' entrepreneurship).

the supply of entrepreneurs is driven by the return on entrepreneurial human capital (Figure 1).



Notes: In Figure 1, we posit a simple dynamic equilibrium that works something like the following. Assume that an exogenous change (deregulation, technological shift, demography, etc.) creates a higher expected entrepreneurial return (R_2) to human capital employed. At the higher level, more individuals choose the entrepreneurial option, which creates an excess supply of entrepreneurs compared to the resources for entrepreneurial activity. Competition increases the cost of entrepreneurial resources, reducing entrepreneurial returns in the short term, driving individuals away from the entrepreneurial option and decreasing the pressure on excess supply. Over the long term, technological improvements may lead to permanent changes in the carrying capacity of the economy, causing an upward *shift* in the demand for entrepreneurship, which then absorbs excess supply without a corresponding lowering of returns (Figure 2).

By the same logic, one can explain the process in which the entrepreneurship market reaches equilibrium from excess demand. Assume that entrepreneurs are expected to earn a lower reward (R_1) because alternative uses of human capital are now more attractive, such as the sudden growth in corporate hiring. This drives individuals away from the entrepreneurship option, reducing the number of entrepreneurs relative to the available resources for entrepreneurial activity. In this excess demand situation, resource providers such as investors compete for entrepreneurial talent, which drives up entrepreneurial returns in the next period. At that period, more individuals choose the entrepreneurial option, which decreases the pressure from excess demand. Consequently, the market for entrepreneurship reaches equilibrium.

Figure 1: Supply and demand curves and equilibrium in the market for entrepreneurship

Entrepreneurial returns represent the 'wage' factor, traditionally used in the economic analysis of labor supply (Baumol 1990, Casson 1995, Douglas and Shepherd 2000). Formally, entrepreneurial return is the net present value of the entrepreneur's human capital including the associated risk premium attached to the variance in the entrepreneur's stream of future cash flows. The relationship between entrepreneurial value creation and entrepreneurial returns can be simplified in the following vector: