

**Entrepreneurial Borrowing:  
Do Entrepreneurs Seek and  
Receive Enough Credit?**

**Other titles in Foundations and Trends® in Entrepreneurship**

*Knowledge-Intensive Innovative Entrepreneurship*

Franco Malerba and Maureen McKelvey

ISBN: 978-1-68083-518-2

*Senior Entrepreneurship: A Selective Review and a Research Agenda*

Catarina Seco Matos, Miguel Amaral and Rui Baptista

ISBN: 978-1-68083-504-5

*Contextual Entrepreneurship: An Interdisciplinary Perspective*

Ted Baker and Friederike Welter

ISBN: 978-1-68083-456-7

*Personality Traits of Entrepreneurs: A Review of Recent Literature*

Sari Pekkala Kerr, William R. Kerr and Tina Xu

ISBN: 978-1-68083-448-2

*Impact: Stanford University's Economic Impact via Innovation and Entrepreneurship*

Charles E. Eesley and William F. Miller

ISBN: 978-1-68083-422-2

*Venture Capital, Angel Financing, and Crowdfunding of Entrepreneurial Ventures: A Literature Review*

Johannes Wallmeroth, Peter Wirtz and Alexander Peter Groh

ISBN: 978-1-68083-394-2

# Entrepreneurial Borrowing: Do Entrepreneurs Seek and Receive Enough Credit?

---

**Stuart Fraser**  
University of Warwick, UK  
Stuart.Fraser@wbs.ac.uk

**now**

the essence of knowledge

Boston — Delft

## Foundations and Trends® in Entrepreneurship

*Published, sold and distributed by:*

now Publishers Inc.  
PO Box 1024  
Hanover, MA 02339  
United States  
Tel. +1-781-985-4510  
[www.nowpublishers.com](http://www.nowpublishers.com)  
[sales@nowpublishers.com](mailto:sales@nowpublishers.com)

*Outside North America:*

now Publishers Inc.  
PO Box 179  
2600 AD Delft  
The Netherlands  
Tel. +31-6-51115274

The preferred citation for this publication is

S. Fraser. *Entrepreneurial Borrowing: Do Entrepreneurs Seek and Receive Enough Credit?*. Foundations and Trends® in Entrepreneurship, vol. 15, no. 5-6, pp. 431–663, 2019.

ISBN: 978-1-68083-611-0  
© 2019 S. Fraser

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, mechanical, photocopying, recording or otherwise, without prior written permission of the publishers.

Photocopying. In the USA: This journal is registered at the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923. Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by now Publishers Inc for users registered with the Copyright Clearance Center (CCC). The 'services' for users can be found on the internet at: [www.copyright.com](http://www.copyright.com)

For those organizations that have been granted a photocopy license, a separate system of payment has been arranged. Authorization does not extend to other kinds of copying, such as that for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. In the rest of the world: Permission to photocopy must be obtained from the copyright owner. Please apply to now Publishers Inc., PO Box 1024, Hanover, MA 02339, USA; Tel. +1 781 871 0245; [www.nowpublishers.com](http://www.nowpublishers.com); [sales@nowpublishers.com](mailto:sales@nowpublishers.com)

now Publishers Inc. has an exclusive license to publish this material worldwide. Permission to use this content must be obtained from the copyright license holder. Please apply to now Publishers, PO Box 179, 2600 AD Delft, The Netherlands, [www.nowpublishers.com](http://www.nowpublishers.com); e-mail: [sales@nowpublishers.com](mailto:sales@nowpublishers.com)

**Foundations and Trends<sup>®</sup> in Entrepreneurship**  
Volume 15, Issue 5-6, 2019  
**Editorial Board**

**Editors-in-Chief**

**Albert N. Link**

University of North Carolina at Greensboro  
United States

**David B. Audretsch**

Indiana University  
United States

**Mike Wright**

Imperial College London  
United Kingdom

**Editors**

Howard Aldrich

*University of North Carolina*

Sharon Alvarez

*University of Denver*

Per Davidsson

*Queensland University of Technology*

Michael Frese

*National University of Singapore*

William B. Gartner

*Copenhagen Business School*

Magnus Henrekson

*IFN Stockholm*

Michael A. Hitt

*Texas A&M University*

Joshua Lerner

*Harvard University*

Jeff McMullen

*Indiana University*

P.R. Kumar

*Texas A&M University*

Maria Minniti

*Syracuse University*

Simon Parker

*University of Western Ontario*

Holger Patzelt

*TU Munich*

Saras Sarasvathy

*University of Virginia*

Roy Thurik

*Erasmus University*

## Editorial Scope

### Topics

Foundations and Trends® in Entrepreneurship publishes survey and tutorial articles in the following topics:

- Nascent and start-up entrepreneurs
- Opportunity recognition
- New venture creation process
- Business formation
- Firm ownership
- Market value and firm growth
- Franchising
- Managerial characteristics and behavior of entrepreneurs
- Strategic alliances and networks
- Government programs and public policy
- Gender and ethnicity
- New business financing:
  - Business angels
  - Bank financing, debt, and trade credit
  - Venture capital and private equity capital
  - Public equity and IPOs
- Family-owned firms
- Management structure, governance and performance
- Corporate entrepreneurship
- High technology:
  - Technology-based new firms
  - High-tech clusters
- Small business and economic growth

### Information for Librarians

Foundations and Trends® in Entrepreneurship, 2019, Volume 15, 6 issues. ISSN paper version 1551-3114. ISSN online version 1551-3122. Also available as a combined paper and online subscription.

## Contents

---

<b>1</b>	<b>Introduction</b>	<b>3</b>
1.1	Great Financial Crisis . . . . .	5
1.2	Purpose and Scope of the Review . . . . .	7
1.3	Entrepreneurial Credit Journeys . . . . .	10
1.4	Structure of the Review . . . . .	12
<b>2</b>	<b>Trends in Entrepreneurial Credit Markets and the Great Financial Crisis</b>	<b>15</b>
2.1	The Effects of Financial Crisis on Bank Lending to SMEs . . . . .	16
2.2	Data Sources on Entrepreneurial Credit . . . . .	18
2.3	US Trends . . . . .	23
2.4	UK Trends . . . . .	27
2.5	Euro Area Trends . . . . .	33
2.6	Japan Trends . . . . .	39
2.7	Summary . . . . .	44
<b>3</b>	<b>Asymmetric Information and Market Failure</b>	<b>46</b>
3.1	Credit Rationing . . . . .	47
3.2	Lending Technologies: Overcoming Market Failure . . . . .	53
3.3	Is There Favorable Selection in the Credit Market? . . . . .	79
3.4	Are There Information Asymmetries in the Credit Market? . . . . .	83
3.5	Summary . . . . .	83

<b>4</b>	<b>The Demand for Entrepreneurial Credit: Discouraged Borrowers and Control Aversion</b>	<b>87</b>
4.1	Discouraged Borrowers . . . . .	91
4.2	Absence of Credit Demands and Control Aversion . . . . .	103
4.3	Summary . . . . .	107
<b>5</b>	<b>Funding Gaps and Firm Performance</b>	<b>109</b>
5.1	Internal Finance Approach . . . . .	111
5.2	Alternative Approaches to Testing Financial Constraints . . . . .	122
5.3	Summary . . . . .	128
<b>6</b>	<b>Government Intervention in Entrepreneurial Credit Markets</b>	<b>131</b>
6.1	Background on Government Support for Small Firms in the UK, Germany, and US . . . . .	132
6.2	The Role of LGSs . . . . .	134
6.3	Evaluation of LGS – Economic and Finance Additionality . . . . .	143
6.4	Effectiveness of LGSs in Other Countries . . . . .	149
6.5	Competition Policy . . . . .	151
6.6	State Owned Investment Banks . . . . .	158
6.7	Summary . . . . .	159
<b>7</b>	<b>Is There Gender and Ethnic Minority Discrimination in Entrepreneurial Credit Markets?</b>	<b>163</b>
7.1	Gender Differences in Entrepreneurial Borrowing . . . . .	166
7.2	Ethnic Differences in Entrepreneurial Borrowing . . . . .	170
7.3	Are There Other Groups of Entrepreneurs Underrepresented in the Credit Market? . . . . .	177
7.4	Summary . . . . .	180
<b>8</b>	<b>Peer-to-Peer Lending</b>	<b>183</b>
8.1	What Factors Affect Entrepreneurs' Chances of Obtaining Credit from an Online Platform? . . . . .	186
8.2	Summary . . . . .	191



<b>9 Conclusion and Main Directions for Future Research</b>	<b>195</b>
9.1 Data on Entrepreneurial Credit Journeys . . . . .	199
9.2 Testing the Presence of Information Asymmetries and the Nature of Selection in Entrepreneurial Credit Markets . . .	199
9.3 Relationships Between Stages of the Entrepreneurial Credit Journey . . . . .	200
9.4 Disentangling Financial from Cognitive Constraints (External Funding Gaps Testing of Underinvestment) . . . . .	201
9.5 Entrepreneurial and Bank Learning Over Recurrent Credit Journeys . . . . .	202
<b>Acknowledgements</b>	<b>204</b>
<b>References</b>	<b>205</b>

# Entrepreneurial Borrowing: Do Entrepreneurs Seek and Receive Enough Credit?

Stuart Fraser

*University of Warwick, UK; [Stuart.Fraser@wbs.ac.uk](mailto:Stuart.Fraser@wbs.ac.uk)*

---

## ABSTRACT

This work reviews the literature on entrepreneurial borrowing. The dynamic concept of the “entrepreneurial credit journey” is developed to frame the discussion of supply and demand side issues affecting entrepreneurial borrowing. The entrepreneurial credit journey follows the entrepreneur from the development of credit needs, through application and lending decisions and, beyond, to the consequences of these earlier decisions for firm performance. The literature has traditionally focussed on the lending decision stage, including: problems of credit rationing which may arise due to asymmetric information; and lending technologies to reduce information issues. However, on the demand side, discouraged borrowers, who decide not to apply for fear of rejection, have received increasing attention. There is also greater attention to issues of entrepreneurial cognition (e.g., over-optimism, illusion of control) which may adversely affect borrowing decisions.

In terms of the firm performance effects of credit access, the review highlights the widely used internal finance approach to testing financial constraints is unidentified because it is unable to disentangle financial from cognitive constraints. An alternative, more direct, external funding gaps test of underinvestment is therefore proposed. The policy literature is also reviewed which suggests that assistance in the form of loan guarantees has been both finance and economic additional

(i.e., providing entrepreneurs with credit they cannot get elsewhere and helping to create jobs that would not otherwise have been created) especially following the Great Financial Crisis.

A discussion of the literature relating to underrepresented groups in the entrepreneurial credit market highlights that female and ethnic minority entrepreneurs may receive less credit, and/or pay a higher rate on the credit they receive, than their male or white counterparts. This speaks to ongoing issues of gender stereotypes and ethnic discrimination in the credit market. The increasing role of peer-to-peer lending following the Great Financial Crisis, and its potential for ‘democratizing entrepreneurial finance’, is discussed. This literature highlights that, while peer-to-peer lending is helping to fill credit gaps following the Great Financial Crisis, there are issues relating to the performance of small business peer-to-peer loans and possible issues of ethnic discrimination.

The review concludes with proposals for future research on entrepreneurial borrowing, including: collecting more data relating to entrepreneurial credit journeys; developing tests for the presence of information asymmetries and the nature of selection in entrepreneurial credit markets; testing relationships between stages of the entrepreneurial credit journey (e.g., to shed light on the causes of discouragement); developing tests which disentangle financial from cognitive constraints; and researching entrepreneurial and bank learning over recurrent entrepreneurial credit journeys.

---

**Keywords:** Entrepreneurial borrowing; credit rationing; discouraged borrowers; financial constraints; firm performance; enterprise policy.

**JEL classification:** L25 (Firm performance), L26 (Entrepreneurship), L53 (Enterprise policy).

# 1

---

## Introduction

---

Bank credit is the main source of external finance for entrepreneurs who want to start-up or grow their businesses. For example, while currently around 8% of small businesses in the UK use term loans from banks to fund fixed assets, and over 17% use overdraft facilities for working capital, only around 2% use external equity obtained from venture capitalists (VC) or business angels (British Business Bank, 2019).<sup>1</sup> Similarly, in the US, whereas more than 60% of small businesses report using any type of credit, and between 10% and 25% use loans to fund different types of fixed assets (Mach and Wolken, 2006), only around 5% of the total funding on small business balance sheets is accounted for by VC or angel finance (Berger and Udell, 1998).<sup>2</sup> Indeed, whilst firms backed by external equity providers may contribute disproportionately to job creation and growth, only a very small minority of entrepreneurs have the high growth potential and ambition to attract external investors (e.g., Manigart and Wright, 2013). In addition crowdfunding, in its various forms, remains the preserve of a select, if rapidly growing, minority (e.g., Wallmeroth *et al.*, 2018).

---

<sup>1</sup>Before the financial crisis of 2007–2008, 20% of small businesses used term loans and over 40% used overdraft facilities, while around 3% used external equity (Fraser, 2009a).

<sup>2</sup>Unfortunately, there are no comparable data in the US post 2007–2008. This and other data issues are discussed later in the review.

However, despite this reliance on bank credit, there are structural issues stemming from imperfect information in credit markets, which may result in entrepreneurs not receiving enough credit to meet their funding requirements. In short, the problem is that banks may not know entrepreneurs' ability, willingness, or motivation to repay loans. These information issues, arising both before and after credit is granted, may in certain circumstances leave entrepreneurs with unmet credit needs in equilibrium, in which case they are credit rationed (Jaffee and Russell, 1976; Stiglitz and Weiss, 1981). Accordingly, the availability of personal wealth to fill funding gaps left unmet by the credit market may be an important determinant of new venture creation and performance (Evans and Jovanovic, 1989).

Yet, in many classical writings on entrepreneurship, the role of the capitalist and entrepreneur are distinct. It is the role of the entrepreneur to co-ordinate economic activity (Say, 1803), innovate (Schumpeter, 1934), or move markets toward equilibrium through arbitrage (Kirzner, 1973, 1997), with profit the reward for carrying out these functions. The role of the capitalist/banker, on the other hand, is to fund entrepreneurial activities and receive interest as their reward for risk bearing:

The entrepreneur is never the risk bearer . . . The one who gives the credit comes to grief if the undertaking fails.

(Schumpeter, 1934, p. 137)

However, other writers have positioned risk-bearing, and by implication self-financing, as an intrinsic part of the entrepreneurial function. In Cantillon's (1755) view, the entrepreneur commits to buying products and hiring labour unsure of what consumers will be willing to pay for the final product. Profit is the entrepreneur's reward for bearing the downside of price fluctuations.

In more recent times, Knight (1921) made an important distinction between risk and uncertainty. In Knight's view: "The conception of an objectively measurable probability or chance [i.e., risk] is simply inapplicable [to entrepreneurial contexts]." (Knight, 1921, p. 231). Instead, entrepreneurial decision making is made in a world of uncertainty in which, in contrast to risk, the probabilities of random events such as price fluctuations are unknown. Entrepreneurs must therefore make

decisions based on their subjective beliefs about the likelihood of price changes and other relevant factors for their decision making. However, while profit is the entrepreneur's reward for bearing uncertainty, there is no capitalist with whom to share the downside. In other words, the entrepreneur must act as their own capitalist.

This literature provides rigorous theoretical foundations for the situation of imperfect information (i.e., uncertainty) in credit markets claimed at the start of the discussion. Indeed, the question of whether entrepreneurs receive enough credit may be framed (more eruditely) in terms of whether Schumpeter or Knight was right about the nature of the entrepreneurial and capitalist roles in the economy (e.g., Evans and Jovanovic, 1989).

However, it is clear that uncertainty affects not only lenders' decisions to provide credit but also entrepreneurs' decisions to seek credit (and how much). Accordingly, how entrepreneurs make decisions in the presence of too little (or too much) information has received increasing attention in the entrepreneurship literature (e.g., Mitchell *et al.*, 2007).

In this context, the central question of this review is therefore: do entrepreneurs seek and receive enough credit (in a situation of uncertainty)?

## 1.1 Great Financial Crisis

The seminal event affecting entrepreneurial borrowing in recent years was the Great Financial Crisis (GFC) of 2007–2008. Empirical macroeconomic studies highlight the positive and causal relationship between financial development (private sector credit/GDP) and economic growth (King and Levine, 1993; Rajan and Zingales, 1998). That is, credit flows to the real economy, and to businesses in particular, are important for economic development (Beck *et al.*, 2012). In this regard, the GFC caused major disruption in entrepreneurial credit markets worldwide, leading to significant declines in credit flows, and causing a global recession that affected all but a few countries (e.g., Ball, 2014).

The signal event of the GFC was when Lehman Brothers filed for Chapter 11 Bankruptcy protection on September 15th 2008 having announced \$3.9bn in losses for the second quarter of that year. Following Lehman's collapse money market interest rates rose sharply and

inter-bank lending froze as the market feared that other banks would be allowed to fail.<sup>3</sup> Consequently, an important source of funding for small business loans dried up. In addition, banks' capital was reduced by the writing down of bad loans, which threatened the solvency of some banks and further stemmed the flow of credit to entrepreneurs (Jiménez *et al.*, 2012). The level of government intervention worldwide to increase credit flows to the real economy and stop further bank collapses was unprecedented (in relation to the US policy response to the GFC see: Berger *et al.*, 2014; and DeYoung, 2014; regarding the policy response in EU countries, see Goddard *et al.*, 2014).<sup>4</sup>

Small businesses were particularly vulnerable during the GFC in view of their reliance on bank credit for external financial support. In this respect, evidence in the immediate aftermath of Lehman's collapse indicated small businesses were finding it much harder to obtain credit, were experiencing the withdrawal of previously made offers of credit, and were experiencing large increases in the cost of borrowing. Even firms with good credit histories were affected by these issues (see FSB, 2008). Survey evidence from the UK Survey of Small and Medium Sized Enterprise Finance (UKSMEF) 2008 confirmed anecdotal suspicions and indicated that rates of loan denial and loan margins had both increased (Fraser, 2009a). In addition, more small businesses were having their loans denied due to a lack of collateral suggesting banks had become more risk averse. An important study of Spanish loans by Jiménez *et al.* (2012) identified a reduction in lending to small firms due to bank balance sheet impairment following the GFC. Evidence from other countries in North America, Europe, and Asia suggests

---

<sup>3</sup>Three month LIBOR rates peaked at 6.3075% on 1st October 2008, which was over 130 basis points above the Bank of England base rate (source: [www.bba.org.uk](http://www.bba.org.uk)).

<sup>4</sup>A key difference between the UK and US policy response to the financial crisis was that the UK government re-capitalized the banks whereas the US government established a Troubled Asset Relief Program (TARP) to purchase toxic assets from the banks (Berger *et al.*, 2014). As a result of its re-capitalization policy, the UK Government became the main shareholder in the Royal Bank of Scotland Group (RBSG) after taking an initial 58% stake in the bank in November 2008. The government equity was required to re-capitalise RBSG due to write-downs on risky loans and a loss-making takeover of ABN Amro carried out in 2007.

that businesses worldwide were facing similar very difficult financing conditions following the GFC (Campello *et al.*, 2010).

The GFC has also had an impact on academic researchers in the field of banking, raising new questions about: the relationship between financial development and growth, and the role of the state in the financial system; the role and importance of financial innovation and securitisation in bank performance; the costs and benefits derived from the increased size of banks; and the links between banking competition and risk (Berger *et al.*, 2014). Some of these issues directly bearing on entrepreneurial borrowing are considered later in this review.

## 1.2 Purpose and Scope of the Review

The purpose of the review, broadly, is to review the extant literature on entrepreneurial borrowing and to provide insights into some of the key concepts and findings in the literature. The term ‘entrepreneurial borrowing’ is used as shorthand for ‘borrowing by Small and Medium Sized Enterprises (SMEs)’. The ‘entrepreneur’ in this context is therefore synonymous with the owner-manager of the SME. Accordingly, ‘entrepreneur’ encompasses both ‘lifestyle entrepreneurs’, who form the vast majority of SMEs, as well as the high growth aspiring innovator in the tradition of Schumpeter (1934) and Baumol (1990, 1993). Speaking directly to this point, De Bettignies (2008) provides comparisons between the financing of lifestyle and high growth ventures and highlights that lifestyle ventures use predominantly debt to fund their ventures whereas high growth ventures mainly use equity type instruments.

The emphasis on the term ‘borrowing’ (as opposed to ‘lending’) indicates there is a particular interest in this review in exploring issues related to the demand for credit. In this respect, issues of entrepreneurial cognition and cognitive biases (e.g., Baron, 1998; Mitchell *et al.*, 2007), along with related insights from the behavioral finance literature (e.g., Baker and Wurgler, 2013; Barberis and Thaler, 2002), receive due attention insofar as they may affect entrepreneurs’ borrowing decisions. Of course, examining the other (supply) side of the equation (i.e., ‘banks’ and ‘lending’ to SMEs) is unavoidable in view of its prominence and coverage in the literature (e.g., Udell, 2015). However, taking an



‘entrepreneurial borrowing’ perspective on the topic seems apt for the journal *Foundations and Trends in Entrepreneurship*.

A discussion of entrepreneurial finance more generally relating to venture capital, angel finance, or equity crowdfunding is out-with the scope of this review. The reader is referred to articles by Manigart and Wright (2013) and Edelman *et al.* (2017), and Wallmeroth *et al.* (2018) for comprehensive coverage of the literature relating to non-debt sources of entrepreneurial finance.

### 1.2.1 Previous Reviews of the Entrepreneurial Credit Literature

What value added can this review provide compared to previous reviews of the literature relating to the availability of SME credit (e.g., Parker, 2002; Udell, 2015)? A first general point of difference with Parker (2002) is that there is more coverage in the current review of the business and management literature on entrepreneurial borrowing, an area of the literature that has grown rapidly since Parker’s article. Relatedly, issues of ethnic and gender discrimination in entrepreneurial credit markets and the role of peer-to-peer lending following the GFC, have received increased attention in recent years especially in the business/management literature, and are therefore covered in this review. Equally, the evidence regarding the impact of the GFC on entrepreneurial credit conditions is another new and important area of discussion.

Another issue, which has received much more attention in both the economics/finance and business/management literatures since Parker (2002), relates to discouraged borrowers. This literature recognises that credit market imperfections may lead some entrepreneurs with credit needs to self-ration (Han *et al.*, 2009a; Kon and Storey, 2003). That is, despite having credit needs, the entrepreneur refrains from applying for credit for fear of rejection by an imperfectly informed lender. Increasingly, it has become recognised that self-rationing is potentially a greater constraint on entrepreneurship than traditional credit rationing (Fraser, 2014a). The issue of discouraged borrowers therefore receives much more attention in this review.

More recently, Udell (2015) provides a thorough assessment of what we know from the academic literature about SME access to

intermediated credit, through the prisms of SME lending technologies and lending channels. In particular, the idea of SME lending technologies builds on earlier work by Berger and Udell (2002, 2006), which emphasizes that banks lend to SMEs using a variety of different relational and transactional lending technologies, involving both soft and hard information, to overcome information asymmetries (see also Liberti and Petersen, 2018; Stein, 2002).

An SME lending channel “is a two dimensional concept that pairs a lending technology with a type of financial institution that offers the technology” (Udell, 2015, p. 21). The concept of SME lending channels was introduced by Taketa and Udell (2007) to analyze the impact of the Japanese banking crisis on SME credit. More generally, a key benefit of the SME lending channels paradigm is that it can be used to frame the effects of financial shocks on SME access to credit. Applying this paradigm to the GFC, and looking at a number of studies which identify credit supply effects using European data sources (e.g., Carbó-Valverde *et al.*, 2016; Jiménez *et al.*, 2012), Udell (2015) concludes:

Overall these studies have found, among other things, evidence of a significant credit crunch with a bigger effect associated with banks under more stress and in countries under more stress.

(Udell, 2015, p. 24)

In terms of points of difference with Udell (2015) paper, the emphasis in the current review on ‘entrepreneurial borrowing’ (rather than ‘bank lending’) leads to more discussion of issues such as discouraged borrowers, and ethnic/gender discrimination in the credit market. In addition, in contrast to Udell (2015), the current work reviews the financial constraints literature that has traditionally looked at the relationship between the firm’s internal finances and investment for evidence of financial constraints. (In a perfect capital market there should be no relationship between the firm’s financing and investment decisions, as suggested in the seminal paper on capital structure by Modigliani and Miller, 1958.) However, a key issue highlighted in this review is that internal finance tests are unable to distinguish supply side financial

constraints from demand side cognitive constraints. That is, internal finance tests are unidentified. An alternative, better identified, test of underinvestment based on external funding gaps (due to non-borrowing, discouragement, or rejection by a lender) is therefore proposed. However, inevitably, there is some overlap between Udell's (2015) review and the current review, including the topics of lending technologies and the impact of the GFC on SME lending.

### 1.3 Entrepreneurial Credit Journeys

To help structure the review, and frame its core themes and concepts, the overarching concept of the 'entrepreneurial credit journey' is developed. The entrepreneurial credit journey follows the entrepreneur from the development of credit needs, through application and lending decisions and, beyond, to the consequences of these earlier decisions for firm performance. The entrepreneurial credit journey is therefore: dynamic by its very nature; relates to issues affecting both the demand and supply of credit; places the entrepreneur at the heart of the discussion; but, at the same time, highlights the external credit market issues that may inhibit the entrepreneur's access to credit and constrain firm performance.

Specifically, the entrepreneurial credit journey encompasses:

- Firm level contextual factors determining whether the firm develops credit needs in the first place. This relates to the stage of the firm in its life cycle, or financial growth cycle (Berger and Udell, 1998), which affects credit needs (and availability). In addition, control aversion (Shaver and Scott, 1991) may lead entrepreneurs to prefer self-finance even if this results in lower firm performance (Cressy, 1995). Control aversion seems to be a particular issue for family owned firms (Mishra and McConaughy, 1999; Romano *et al.*, 2001).
- The factors affecting whether or not credit needs are translated into a credit application (Kon and Storey, 2003). If the entrepreneur is discouraged, this may lead to a demand-side 'self-

rationing' credit gap even if the origins of discouragement lie in (supply side) information asymmetries (Kon and Storey, 2003).

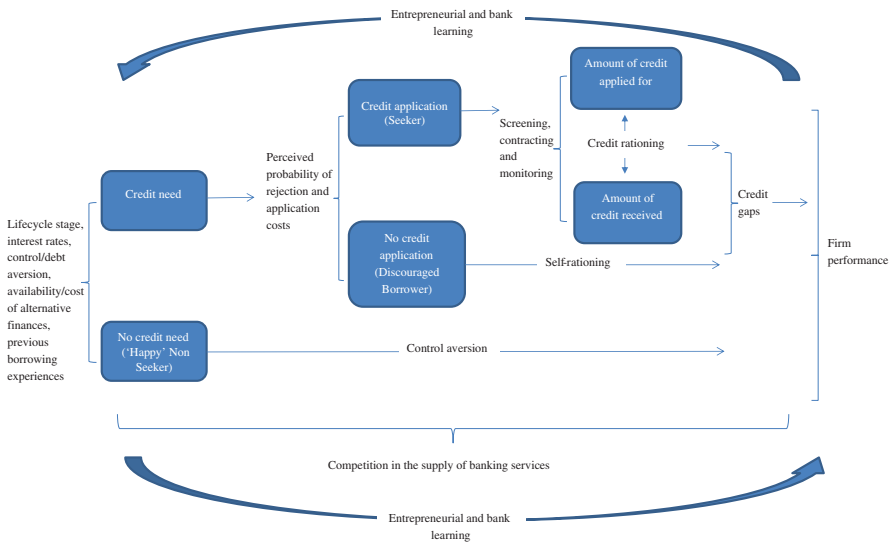
- If the entrepreneur applies for credit, the potential issue of a supply-side credit gap due to classical credit rationing caused by information asymmetries between the firm and bank (e.g., Stiglitz and Weiss, 1981).
- The role of screening, contracting and monitoring activities ('lending technologies') conducted by the bank to reduce information asymmetries and improve credit supply (e.g., Berger and Udell, 2002, 2006; Udell, 2015).
- The real effects of credit gaps/unmet credit needs, due to self-rationing and credit-rationing, on new venture creation and firm performance (e.g., Evans and Jovanovic, 1989; Hvide and Møen, 2010).

The literature shows that market conditions play an important role in SME financing conditions (e.g., Beck and Demirgüç-Kunt, 2006; Hefferman, 2006). In this regard, Figure 1.1 indicates that the entrepreneurial credit journey is also affected by market level factors relating to competition in the credit market (Berger *et al.*, 2004). Competition affects not only on the cost and availability of credit (Petersen and Rajan, 1995) but also on the likelihood of discouragement (Han *et al.*, 2009a). In particular, higher bank concentration may encourage banks to invest more in their relationships with small firms. This may improve information flows and lower the likelihood of discouragement among creditworthy firms (Han *et al.*, 2009a).

A fundamental issue highlighted by Figure 1.1 is that the entrepreneurial credit journey is a dynamic recurrent process.<sup>5</sup> In particular, the entrepreneur may require several infusions of credit at different

---

<sup>5</sup>This relates to the more general idea of a 'financial growth cycle' (Berger and Udell, 1998). Start-ups traditionally tend to rely on insider finance, trade credit and, to a lesser degree, angel finance. Since the GFC, start-ups may also use crowdfunding and accelerators as sources of funding. As the firm grows and gains a track record, it is more likely to become 'investor ready' allowing it to access external finance in the form of bank debt, and venture capital. For the most informationally transparent firms, public debt and equity may also become available.



**Figure 1.1:** Entrepreneurial credit journey.

stages in the firm's lifecycle necessitating multiple credit journeys over time. By implication, learning by both entrepreneurs (Jovanovic, 1982) and banks (Petersen and Rajan, 1994) will take place with the experiences obtained over repeated credit journeys. In this respect, previous borrowing experiences which are good (e.g., a successful application), bad (e.g., an unsuccessful application), and ugly (e.g., an unsuccessful application aggravated by poor handling of the denial by the bank), and indeed the absence of previous borrowing experiences, may affect both entrepreneurial financing decisions and banks' lending decisions in subsequent credit journeys (see directions for future research below).

#### 1.4 Structure of the Review

In this context, the core of the review involves reviewing the literature relating to (information) issues affecting the supply and demand for entrepreneurial credit and the policy responses aimed at addressing these issues. Specifically, the review contains the following sections:

- Section 2 reviews key data sources and empirical findings relating to the demand and supply of entrepreneurial credit. The literature

on recent trends in entrepreneurial credit and the impact of the GFC on entrepreneurial credit conditions is also reviewed. This section is largely about stating facts and commenting on issues relating to entrepreneurial credit journeys without going into rigorous theoretical explanations, which are explored in more detail in subsequent sections.

- Section 3 reviews the literature relating to supply-side credit-rationing and market mechanisms designed to overcome information asymmetries (i.e., the lending technologies used by finance providers in the entrepreneurial credit market).
- Section 4 reviews the literature relating to demand-side self-rationing (discouragement) and issues of control/debt aversion that inhibit the development of credit needs.
- Section 5 reviews the issue of financial constraints on firm performance caused by credit-rationing and discouragement. Existing internal finance tests of underinvestment are critiqued and an alternative external funding gap test is proposed.
- Section 6 reviews policy issues, in particular the role of loan guarantee schemes and small firm banking competition policy in improving credit supply to entrepreneurs.
- Section 7 reviews the literature on gender and racial/ethnic discrimination in entrepreneurial credit markets. There is also a discussion of other underrepresented groups of entrepreneurs in the credit market (the young, religious minorities, and those geographically located at a distance from lenders).
- Section 8 reviews the literature relating to peer-to-peer lending facilitated by online platforms, a key development in entrepreneurial borrowing since the GFC, and the factors affecting the chances of entrepreneurs successfully receiving credit on online platforms.
- Section 9 concludes with a recap of the main findings from each previous section and provides directions for future research.

Each section concludes with its own comprehensive summary to help the reader keep track of the issues as they progress through the review. In addition, italicised text in the summaries highlights areas where there are substantial gaps in our understanding and therefore scope for further research. These gaps feed in to the main directions for future research proposed in Section 9.

## References

---

- Ackert, L. F., B. K. Church, and B. Englis (2002). “The asset allocation decision and investor heterogeneity: A puzzle?” *Journal of Economic Behavior and Organisation*. 47(4): 423–433.
- Agarwal, S., S. Chomsisengphet, C. Liu, C. Song, and N. S. Souleles (2018). “Benefits of relationship banking: Evidence from consumer credit markets”. *Journal of Monetary Economics*. 96: 16–32.
- Agarwal, S. and R. Hauswald (2010). “Distance and private information in lending”. *The Review of Financial Studies*. 23(7): 2757–2788.
- Albertazzi, U. and D. J. Marchetti (2010). *Credit supply, flight to quality and evergreening: An analysis of bank-firm relationships after Lehman*. Bank of Italy Temi di Discussione (Working Paper) No, 756.
- Allee, K. D. and T. L. Yohn (2009). “The demand for financial statements in an unregulated environment: An examination of the production and use of financial statements by privately held small businesses”. *The Accounting Review*. 84(1): 1–25.
- Allen, L., G. DeLong, and A. Saunders (2004). “Issues in the credit risk modelling of retail markets”. *Journal of Banking and Finance*. 28(4): 727–752.
- Allinson, G., P. Robson, and I. Stone (2013). *Economic Evaluation of the Enterprise Finance Guarantee (EFG) Scheme*. Department for Business Innovation and Skills.



- Altman (1968). “Discriminant analysis and the prediction of corporate bankruptcy”. *Journal of Finance*. 23: 589–609.
- Amit, R., J. Brander, and C. Zott (1998). “Why do venture capital firms exist? Theory and Canadian evidence”. *Journal of Business Venturing*. 13(6): 441–466.
- Ang, J. S. (1991). “Small business uniqueness and the theory of financial management”. *Journal of Small Business Finance*. 1(1): 1–13.
- Arabsheibani, G., D. De Meza, J. Maloney, and B. Pearson (2000). “And a vision appeared unto them of a great profit: Evidence of self-deception among the self-employed”. *Economics Letters*. 67(1): 35–41.
- Arping, S., G. Lóránth, and A. D. Morrison (2010). “Public initiatives to support entrepreneurs: Credit guarantees versus co-funding”. *Journal of Financial Stability*. 6(1): 26–35.
- Arulampalam, W., A. L. Booth, and M. P. Taylor (2000). “Unemployment persistence”. *Oxford Economic Papers*. 52(1): 24–50.
- Ashton, J. and K. Keasey (2005). “Competition and the provision of banking services to SME’s in the UK”. *Small Business Economics*. 24(5): 477–485.
- Asiedu, E., J. A. Freeman, and A. Nti-Addae (2012). “Access to credit by small businesses: How relevant are race, ethnicity, and gender?” *American Economic Review*. 102(3): 532–537.
- Baker, M. and J. Wurgler (2013). “Behavioral corporate finance: An updated survey”. In: *Handbook of the Economics of Finance*. Vol. 2. Elsevier. 357–424.
- Bakker, M. R., L. Klapper, and G. Udell (2004). *The role of factoring in commercial finance and the case of Eastern Europe*. World Bank Working Paper 3342.
- Ball, L. M. (2014). “Long-term damage from the Great Recession in OECD countries (No. w20185)”. National Bureau of Economic Research.
- Bandura, A. (1977). *Social Learning Theory*. New York: General Learning Press.
- Bank of England (1999). *The Financing of Ethnic Minority Firms in the United Kingdom: A Special Report*. London: Bank of England.

- Bank of England (2004). *Finance for Small Firms – An Eleventh Report*. London.
- Barberis, N. and R. Thaler (2002). *A survey of behavioral finance*. National Bureau of Economic Research. Working Paper 9222.
- Baron, R. A. (1998). “Cognitive mechanisms in entrepreneurship: Why and when entrepreneurs think differently than other people”. *Journal of Business Venturing*. 13(4): 275–294.
- Baumol, W. J. (1990). “Entrepreneurship: Productive, unproductive and destructive”. *Journal of Political Economy*. 98(5): 893–921.
- Baumol, W. J. (1993). *Entrepreneurship, Management, and the Structure of Payoffs*. Cambridge, MA: The MIT Press.
- Beck, T., B. Büyükkarabacak, F. K. Rioja, and N. T. Valev (2012). “Who gets the credit? And does it matter? Household vs. firm lending across countries”. *The B.E. Journal of Macroeconomics*. 12(1): 1–46.
- Beck, T. and A. Demirgüç-Kunt (2006). “Small and medium-size enterprises: Access to finance as a growth constraint”. *Journal of Banking and Finance*. 30(11): 2931–2943.
- Beck, T., A. Demirgüç-Kunt, and V. Maksimovic (2004). “Bank competition and access to finance: international evidence”. *Journal of Money, Credit, and Banking*. 36(3): 627–648.
- Beck, T., L. F. Klapper, and J. C. Mendoza (2010). “The typology of partial credit guarantee funds around the world”. *Journal of Financial Stability*. 6(1): 10–25.
- Becker, G. S. (1971). *The Economics of Discrimination*. Second Edition. University of Chicago and London: Chicago Press.
- Behn, M., R. Haselmann, and V. Vig (2014). “Risk weights, lending, and financial stability: Limits to model-based capital regulation”. Annual Conference 2014 (Hamburg): Evidence-based Economic Policy 100430, Verein für Socialpolitik. German Economic Association.
- Belleflamme, P., T. Lambert, and A. Schwienbacher (2014). “Crowdfunding: Tapping the right crowd”. *Journal of Business Venturing*. 29(5): 585–609.
- Berger, A. N., A. Demirgüç-Kunt, R. Levine, and J. G. Haubrich (2004). “Bank concentration and competition: An evolution in the making”. *Journal of Money, Credit, and Banking*. 36(3): 433–451.

- Berger, A. N., W. S. Frame, and N. H. Miller (2005a). "Credit scoring and the availability, price and risk of small business credit". *Journal of Money, Credit and Banking*. 37(2): 191–222.
- Berger, A. N. and T. H. Hannan (1989). "The price-concentration relationship in banking". *The Review of Economics and Statistics*: 291–299.
- Berger, A. N., L. F. Klapper, and R. Turk-Ariss (2017). "Bank competition and financial stability". In: *Handbook of Competition in Banking and Finance*. Ed. by J. A. Bikker and L. Spierdijk. Chapter 10. Edward Elgar Publishing.
- Berger, A. N., L. F. Klapper, and G. F. Udell (2001). "The ability of banks to lend to informationally opaque small businesses". *Journal of Banking and Finance*. 25(12): 2127–2167.
- Berger, A. N., N. H. Miller, R. G. Petersen, and J. C. Stein (2005b). "Does function follow organizational form? Evidence from the lending practices of large and small banks". *Journal of Financial Economics*. 76: 237–269.
- Berger, A. N., P. Molyneux, and J. O. Wilson (2014). "Banking in a post-crisis world". In: *The Oxford Handbook of Banking*. Ed. by A. N. Berger, P. Molyneux, and J. O. Wilson. Chapter 1. OUP Oxford.
- Berger, A. N., A. Saunders, J. M. Scalise, and G. F. Udell (1998). "The effects of bank mergers and acquisitions on small business lending". *Journal of Financial Economics*. 50(2): 187–229.
- Berger, A. N. and G. F. Udell (1990). "Collateral, loan quality, and bank risk". *Journal of Monetary Economics*. 25(1): 21–42. (January).
- Berger, A. N. and G. F. Udell (1992). "Some evidence on the empirical significance of credit rationing". *Journal of Political Economy*. 100(5): 1047–1077.
- Berger, A. N. and G. F. Udell (1994). "Did risk-based capital allocate bank credit and cause a "credit crunch" in the United States?" *Journal of Money, Credit and Banking*. 26(3): 585–628.
- Berger, A. N. and G. F. Udell (1995). "Relationship lending and lines of credit in small firm finance". *Journal of Business*: 351–381.

- Berger, A. N. and G. F. Udell (1998). “The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle”. *Journal of Banking and Finance*. 22(6): 613–673.
- Berger, A. N. and G. F. Udell (2002). “Small business credit availability and relationship lending: The importance of bank organisational structure”. *The Economic Journal*. 112(477): F32–F53.
- Berger, A. N. and G. F. Udell (2006). “A more complete conceptual framework for SME finance”. *Journal of Banking and Finance*. 30(11): 2945–2966.
- Berggren, B., C. Olofsson, and L. Silver (2000). “Control aversion and the search for external financing in swedish SME’s”. *Small Business Economics*. 15(3): 233–242.
- Bernanke, B. S. (1983). “Nonmonetary effects of the financial crisis in the propagation of the great depression”. *The American Economic Review*. 73(3): 257–276.
- Bester, H. (1985). “Screening vs. rationing in credit markets with imperfect information”. *The American Economic Review*. 75(4): 850–855.
- Bester, H. (1987). “The role of collateral in credit markets with imperfect information”. *European Economic Review*. 31(4): 887–899.
- Bhaumik, S. K., V. Dang, and A. Kutan (2011). “Implications of bank ownership for the credit channel of monetary policy transmission”. *Journal of Banking and Finance*. 35(9): 2418–2428.
- Bhaumik, S. K. and J. Piesse (2008). “Does lending behaviour of banks in emerging economies vary by ownership? Evidence from the Indian banking sector”. *Economic Systems*. 32(2): 177–196.
- Biais, B. and C. Gollier (1997). “Trade credit and credit rationing”. *Review of Financial Studies*. 10(4): 903–937.
- BIS (2013). “Evaluating changes in bank lending to UK SME’s over 2001–12 – Ongoing tight credit? Econometric analyses from the UK Survey of SME Finances and the SME Finance Monitor”. Department for Business Innovation and Skills, April 2013.
- BIS (2016). *SME Lending and Competition: An International Comparison of Markets*. Department for Business Innovation and Skills Research Paper No. 270., May 2016.

- Black, S. E. and P. E. Strahan (2002). "Entrepreneurship and bank credit availability". *The Journal of Finance*. 57(6): 2807–2833.
- Blanchflower, D. G. and A. J. Oswald (1998). "What makes an entrepreneur?" *Journal of Labor Economics*. 16(1): 26–60.
- Blanchflower, D., P. Levine, and D. Zimmerman (2003). "Discrimination in the small-business credit market". *The Review of Economics and Statistics*. 85(4): 930–943.
- Boden Jr, R. J. (1999). "Flexible working hours, family responsibilities and female self-employment". *American Journal of Economics and Sociology*. 58(1): 71–83.
- Bolton Committee (1971). "Report of the Committee on Small Firms". In: *Cmnd.* Vol. 4811. London: HMSO.
- Bolton, P. and D. S. Scharfstein (1996). "Optimal debt structure and the number of creditors". *Journal of Political Economy*. 104: 1–25.
- Bonaccorsi di Patti, E. and G. Dell’Ariccia (2004). "Bank competition and firm creation". *Journal of Money, Credit and Banking*. 36: 225–252.
- Bonaccorsi di Patti, E. B. and G. Gobbi (2007). "Winners or losers? The effects of banking consolidation on corporate borrowers". *The Journal of Finance*. 62(2): 669–695.
- Boocock, G. and M. N. M. Shariff (2005). "Measuring the effectiveness of credit guarantee schemes: Evidence from Malaysia". *International Small Business Journal*. 23(4): 427–454.
- Boot, A. (2000). "Relationship banking: What do we know?" *Journal of Financial Intermediation*. 9: 7–25.
- Boot, A. W. and A. V. Thakor (2000). "Can relationship banking survive competition?" *The Journal of Finance*. 55(2): 679–713.
- Bosma, N., M. Van Praag, R. Thurik, and G. De Wit (2004). "The value of human and social capital investments for the business performance of startups". *Small Business Economics*. 23(3): 227–236.
- Bottazzi, G., A. Secchi, and F. Tamagni (2014). "Financial constraints and firm dynamics". *Small Business Economics*. 42(1): 99–116.
- Boyd, J. and G. De Nicolo (2005). "The theory of bank risk taking revisited". *Journal of Finance*. 60: 1329–1343.

- Brash, R. (2008). *Public sector duplication of small business administration loan and investment programs: An analysis of Overlap Between Federal, State, and Local Programs Providing Financial Assistance to Small Business*. Washington, DC, Urban Institute. Report.
- Brash, R. and M. Gallagher (2008). *A Performance Analysis of SBA's Loan and Investment Programs*. Washington DC: Urban Institute.
- Breedon, T. (2012). *Boosting finance options for business*. Report, Department for Business Innovation and Skills, UK, March.
- Bris, A. and I. Welch (2005). "The optimal concentration of creditors". *Journal of Finance*. 60: 2193–2221.
- British Business Bank (2017). "Small business finance markets 2016/17". URL: <http://www.british-business-bank.co.uk>.
- British Business Bank (2019). "Small business finance markets 2018/19". URL: <http://www.british-business-bank.co.uk>.
- Brown, J. and J. Earle (2012). *Do SBA Loans Create Jobs? Estimates from Universal Panel Data and Longitudinal Matching Methods*. US Census Bureau Center for Economic Studies Paper No. CES-WP-12-27.
- Bruton, G., S. Khavul, D. Siegel, and M. Wright (2015). "New financial alternatives in seeding entrepreneurship: Microfinance, crowdfunding, and peer-to-peer innovations". *Entrepreneurship Theory and Practice*. 39(1): 9–26.
- Burkart, M. and T. Ellingsen (2004). "In-kind finance: A theory of trade credit". *American Economic Review*. 94(3): 569–590.
- Burke, A. E., F. R. Fitzroy, and M. A. Nolan (2002). "Self-employment wealth and job creation: The roles of gender, non-pecuniary motivation and entrepreneurial ability". *Small Business Economics*. 19(3): 255–270.
- Caballero, R. J., T. Hoshi, and A. K. Kashyap (2008). "Zombie lending and depressed restructuring in japan". *American Economic Review*. 98: 1943–1977.
- Campello, M., J. R. Graham, and C. R. Harvey (2010). "The real effects of financial constraints: Evidence from a financial crisis". *Journal of Financial Economics*. 97(3): 470–487.
- Cantillon, R. (1755). *Essay on the Nature of General Commerce*. Henry Higgs. London: Macmillan.

- Carbó-Valverde, S., F. Rodríguez-Fernández, and G. F. Udell (2009). “Bank market power and SME financing constraints”. *Review of Finance*. 13(2): 309–340.
- Carbó-Valverde, S., F. Rodríguez-Fernández, and G. F. Udell (2016). “Trade credit, the financial crisis, and SME access to finance”. *Journal of Money, Credit and Banking*. 48(1): 113–143.
- Carey, M., M. Post, and S. A. Sharpe (1998). “Does corporate lending by banks and finance companies differ? Evidence on specialization in private debt contracting”. *The Journal of Finance*. 53(3): 845–878.
- Cargill, T. F. (2000). “What Caused Japan’s Banking Crisis?” In: *Crisis and Change in the Japanese Financial System*. Ed. by T. Hoshi and H. T. Patrick. Amsterdam: Kluwer Academic. 37–58.
- Carletti, E., V. Cerasi, and S. Daltung (2007). “Multiple-bank lending: Diversification and free-riding in monitoring”. *Journal of Financial Intermediation*. 16(3): 425–451.
- Carpenter, R. E. and B. C. Petersen (2002). “Is the growth of small firms constrained by internal finance?” *Review of Economics and Statistics*. 84(2): 298–309.
- Carter, S. and P. Rosa (1998). “The financing of male- and female-owned businesses”. *Entrepreneurship and Regional Development*. 10: 225–241.
- Carter, S., E. Shaw, W. Lam, and F. Wilson (2007). “Gender, entrepreneurship, and bank lending: The criteria and processes used by bank loan officers in assessing applications”. *Entrepreneurship Theory and Practice*. 31(3): 427–444.
- Cavalluzzo, K. S. and L. C. Cavalluzzo (1998). “Market structure and discrimination: The case of small businesses”. *Journal of Money, Credit and Banking*: 771–792.
- Cavalluzzo, K. S., L. C. Cavalluzzo, and J. D. Wolken (2002). “Competition, small business financing, and discrimination: Evidence from a new survey”. *The Journal of Business*. 75(4): 641–679.
- Cetorelli, N. (2003). “Life-cycle dynamics in industrial sectors: The role of banking market structure”. *Federal Reserve Bank of St. Louis Quarterly Review*. 85: 135–147.

- Chakravarty, S. and M. Xiang (2013). “The international evidence on discouraged small businesses”. *Journal of Empirical Finance*. 20: 63–82.
- Chamley, C. (1983). “Entrepreneurial abilities and liabilities in a model of self-selection”. *The Bell Journal of Economics*: 70–80.
- Chen, C. C., P. G. Greene, and A. Crick (1998). “Does entrepreneurial self-efficacy distinguish entrepreneurs from managers?” *Journal of Business Venturing*. 13(4): 295–316.
- Chittenden, F., G. Hall, and P. Hutchinson (1996). “Small firm growth, access to capital markets and financial structure: Review of issues and an empirical investigation”. *Small Business Economics*. 8(1): 59–67.
- Coccorese, P. (2017). “Banking competition and economic growth”. In: *Handbook of Competition in Banking and Finance*. Ed. by J. A. Bikker and L. Spierdijk. Edward Elgar Publishing. Chapter 12.
- Cole, R. A. (1998). “The importance of relationships to the availability of credit”. *Journal of Banking and Finance*. 22(6–8): 959–977.
- Cole, R. A. and T. Sokolyk (2016). “Who needs credit and who gets credit? Evidence from the surveys of small business finances”. *Journal of Financial Stability*. 24: 40–60.
- Coleman, S. and A. Robb (2009). “A comparison of new firm financing by gender: evidence from the Kauffman Firm Survey data”. *Small Business Economics*. 33(4): 397–411.
- Competition Commission (2002). *The Supply of Banking Services by Clearing Banks to Small and Medium Sized Enterprises*. London.
- Cook, L. (1999). “Trade credit and bank finance: Financing small firms in Russia”. *Journal of Business Venturing*. 14(5–6): 493–518.
- Cooper, A. C., W. Dunkelberg, and C. Woo (1988). “Entrepreneur’s perceived chances for success”. *Journal of Business Venturing*. 3(2): 97–108.
- Cosh, A., D. Cumming, and A. Hughes (2009). “Outside entrepreneurial capital”. *The Economic Journal*. 119(540): 1494–1533.
- Cowling, M. (2010). “The role of loan guarantee schemes in alleviating credit rationing in the UK”. *Journal of Financial Stability*. 6(1): 36–44.



- Cowling, M., W. Liu, M. Minniti, and N. Zhang (2016b). "UK credit and discouragement during the GFC". *Small Business Economics*. 47(4): 1049–1074.
- Cowling, M., W. Liu, and N. Zhang (2016a). "Access to bank finance for UK SME's in the wake of the recent financial crisis". *International Journal of Entrepreneurial Behavior and Research*. 22(6): 903–932.
- Cowling, M. and J. Siepel (2013). "Public intervention in UK small firm credit markets: Value-for-money or waste of scarce resources?" *Technovation*. 33(8–9): 265–275.
- Cressy, R. (1995). "Business borrowing and control: A theory of entrepreneurial types". *Small Business Economics*. 7(4): 291–300.
- Cressy, R. (1996). "Are business startups debt-rationed?" *The Economic Journal*: 1253–1270.
- Cressy, R. (2000). "Credit rationing or entrepreneurial risk aversion? An alternative explanation for the Evans and Jovanovic finding". *Economics Letters*. 66(2): 235–240.
- Cruickshank, D. (2000). *Competition in UK Banking: A Report to the Chancellor of the Exchequer*. London: HMSO.
- Cumming, D. J., S. Vismara, and M. Meoli (2018). "Does equity crowdfunding democratize entrepreneurial finance?" Available at SSRN 3281727 (forthcoming *Small Business Economics*).
- Curran, J. and R. Blackburn (1993). *Ethnic enterprise and the high street bank*. Working Paper, Kingston Business School, Kingston University.
- Dana, L. P. (2009). "Religion as an explanatory variable for entrepreneurship". *The International Journal of Entrepreneurship and Innovation*. 10(2): 87–99.
- Dana, L. P. and T. E. Dana (2008). "Ethnicity and entrepreneurship in Morocco: A photo-ethnographic study". *International Journal of Business and Globalisation*. 2(3): 209–226.
- De Bettignies, J. E. (2008). "Financing the entrepreneurial venture". *Management Science*. 54(1): 151–166.
- de Meza, D. (2002). "Overlending?" *The Economic Journal*. 112(477): F17–F31.
- de Meza, D. and C. Southey (1996). "The borrower's curse: optimism, finance and entrepreneurship". *The Economic Journal*: 375–386.

- de Meza, D. and D. C. Webb (1987). "Too much investment: A problem of asymmetric information". *The Quarterly Journal of Economics*. 102(2): 281–292.
- de Meza, D. and D. C. Webb (1989). "The role of interest rate taxes in credit markets with divisible projects and asymmetric information". *Journal of Public Economics*. 39(1): 33–44.
- de Meza, D. and D. C. Webb (1990). "Risk, adverse selection and capital market failure". *The Economic Journal*. 100(399): 206–214.
- DeAngelo, H. and R. W. Masulis (1980). "Optimal capital structure under corporate and personal taxation". *Journal of Financial Economics*. 8(1): 3–29.
- Degryse, H. and P. V. Cayseele (2000). "Relationship lending within a bank-based system: evidence from European small business data". *Journal of Financial Intermediation*. 9: 90–109.
- Degryse, H. and S. Ongena (2007). "The impact of competition on bank orientation". *Journal of Financial Intermediation*. 16(3): 399–424.
- Delis, M. D., I. Hasan, S. Kokas, L. Liu, and N. Mylonidis (2017). "Bank market power and loan growth". In: *Handbook of Competition in Banking and Finance*. Ed. by J. A. Bikker and L. Spierdijk. Chapter 18. Edward Elgar Publishing.
- Dell’Ariccia, G. and R. Marquez (2004). "Information and bank credit allocation". *Journal of Financial Economics*. 72(1): 185–214.
- Detragiache, E., P. Garella, and L. Guiso (2000). "Multiple versus single banking relationships: Theory and evidence". *The Journal of Finance*. 55(3): 1133–1161.
- DeYoung, R. (2014). "Banking in the United States". In: *The Oxford Handbook of Banking*. Ed. by A. N. Berger, P. Molyneux, and J. O. Wilson. Chapter 34. OUP Oxford.
- DeYoung, R., W. S. Frame, D. Glennon, D. P. McMillen, and P. Nigro (2008). "Commercial lending distance and historically underserved areas". *Journal of Economics and Business*. 60(1–2): 149–164.
- Diamond, D. W. (1991). "Monitoring and reputation: the Choice between bank loans and direct placed debt". *Journal of Political Economy*. 99: 689–721.
- Dougal, C. E., C. A. J. Parsons, and Van Wesep, E. D. (2011). *Anchoring and the cost of capital*. University of North Carolina Working Paper.

- Duarte, J., S. Siegel, and L. Young (2012). "Trust and credit: the role of appearance in peer-to-peer lending". *Review of Financial Studies*. 25(8): 2455–2484.
- Edelman, L. F., T. S. Manolova, and C. G. Brush (2017). "Angel investing: A literature review". *Foundations and Trends in Entrepreneurship*. 13(4–5): 265–439.
- Elsas, R. (2005). "Empirical determinants of relationship lending". *Journal of Financial Intermediation*. 14(1): 32–57.
- Elsas, R. and J. P. Krahenen (1998). "Is relationship lending special? Evidence from credit-file data in Germany". *Journal of Banking and Finance*. 22(10–11): 1283–1316.
- Elyasiani, E. and L. G. Goldberg (2004). "Relationship lending: a survey of the literature". *Journal of Economics and Business*. 56(4): 315–330.
- Ergungor, O. E. (2010). "Bank branch presence and access to credit in low-to moderate-income neighborhoods". *Journal of Money, Credit and Banking*. 42(7): 1321–1349.
- Evans, D. S. and B. Jovanovic (1989). "An estimated model of entrepreneurial choice under liquidity constraints". *Journal of Political Economy*. 97(4): 808–827.
- Fabowale, L., B. Orser, and A. Riding (1995). "Gender, structural factors, and credit terms between Canadian small businesses and financial institutions". *Entrepreneurship Theory and Practice*. 19: 41–65.
- Farinha, L. A. and J. A. C. Santos (2002). "Switching from single to multiple bank lending relationships: Determinants and implications". *Journal of Financial Intermediation*. 11: 124–151.
- Fay, M. and L. Williams (1993). "Gender bias and the availability of business loans". *Journal of Business Venturing*. 8(4): 363–376.
- Fazzari, S., R. G. Hubbard, and B. C. Petersen (1988). "Financing constraints and corporate investment". NBER Working Paper No. 2387.
- FDIC (Federal Deposit Insurance Corporation) (2012). FDIC Community Banking Study. Washington, DC: Federal Deposit Insurance Corporation, December 2012. URL: <http://www.fdic.gov/regulations/resources/cbi/study.html>.

- Fernandez de Guevara, J. and J. Maudos (2017). "Competition in the european banking markets in the aftermath of the financial crisis". In: *Handbook of Competition in Banking and Finance*. Ed. by J. A. Bikker and L. Spierdijk. Chapter 7. Edward Elgar Publishing.
- Ferrando, A., A. Popov, and G. F. Udell (2017). "Sovereign stress and SMEs' access to finance: Evidence from the ECB's SAFE survey". *Journal of Banking and Finance*. 81: 65–80.
- Fiske, S. T. and S. Taylor (1991). *Social Cognition*. 2nd edn. New York: Random House.
- Frame, W. S., A. Srinivasan, and L. Woosley (2001). "The effect of credit scoring on small-business lending". *Journal of Money, Credit and Banking*: 813–825.
- Fraser, S. (2014a). "Back to borrowing? Perspectives on the arc of discouragement". 2014, Enterprise Research Centre, White Paper 8.
- Fraser, S. (2014b). "The Impact of the Late 2000s' Financial Crisis on the Supply of Bank Credit to Small Businesses: Evidence from the UK". *International Review of Entrepreneurship*. 12(4): pp163–190.
- Fraser, S. (2009a). "Small firms in the credit crisis: Evidence from the UK survey of SME finances, ESRC". RES-177-25-0007. URL: <http://www.esrc.ac.uk/my-esrc/grants/RES-177-25-0007/outputs/read/3a959d0a-d5b3-4dfb-96b3-ec1b02067be>.
- Fraser, S. (2009b). "Is there ethnic discrimination in the UK market for small business credit?" *International Small Business Journal*. 27(5): 583–607.
- Fraser, S. (2005). *UK Survey of SME Finances 2004*. SN 5326. Colchester, Essex: UK Data Archive [distributor].
- Fraser, S. (2011). "Access to finance for creative industry businesses. Research Report Prepared for the Department for Business". *Innovation and Skills and Department for Culture, Media and Sport*. Available at: URL: <http://www.bis.gov.uk/assets/biscore/enterprise/docs/a/11-898-access-to-finance-for-creative-industry-businesses>.
- Fraser, S., S. K. Bhaumik, and M. Wright (2015). "What do we know about entrepreneurial finance and its relationship with growth?" *International Small Business Journal*. 33(1): 70–88.

- Fraser, S. and F. J. Greene (2006). “The effects of experience on entrepreneurial optimism and uncertainty”. *Economica*. 73(290): 169–192.
- Freedman, S. and G. Z. Jin (2008). “Do social networks solve the information problems for peer-to-peer lending? Evidence from Prosper.com”. Working paper, University of Maryland.
- FSB (2008). “Number crunching the credit crunch”. 23rd October 2008. URL: [www.fsb.org.uk](http://www.fsb.org.uk).
- Fukuda, S., M. Kasuya, and J. Nakajima (2005). *Bank health and investment: An analysis of unlisted companies in japan*. Bank of Japan Working Paper Series No. 05-E-5.
- Galbraith, C. S., C. H. Stiles, and J. Benitez-Bertheau (2004). “The embryonic development of an ethnic neighbourhood: a longitudinal case study of entrepreneurial activity”. In: ed. by C. H. Stiles and C. S. Galbraith. *Ethnic Entrepreneurship: Structure and Process*: Elsevier, Oxford. 95–112.
- Gale, D. and M. Hellwig (1985). “Incentive compatible debt contracts: The one period problem”. *Review of Economic Studies*. L11: 647–663.
- Gale, W. G. (1990a). “Federal lending and the market for credit”. *Journal of Public Economics*. 42(2): 177–193.
- Gale, W. G. (1990b). “Collateral, rationing, and government intervention in credit markets”. In: *Asymmetric Information, Corporate Finance, and Investment*. Ed. by R. G. Hubbard. Chicago: University of Chicago Press. 177–193.
- Galetovic, A. and R. Sanhueza (2006). *Fogape: An economic analysis*. University of Chile Economics Department Working Paper 222. Santiago.
- Generale, A. (2008). “On the evolution of firm size distributions”. *The American Economic Review*. 98(1): 426–438.
- Giannetti, M., M. Burkart, and T. Ellingsen (2011). “What you sell is what you lend? Explaining trade credit contracts”. *Review of Financial Studies*. 24(4): 1261–1298.
- Gibson, M. S. (1997). “More evidence on the link between bank health and investment in japan”. *Journal of the Japanese and International Economies*. 11: 296–310.

- Gilbert, D. T., S. E. McNulty, T. A. Giuliano, and J. E. Benson (1992). "Blurry words and fuzzy deeds: The attribution of obscure behavior". *Journal of Personality and Social Psychology*. 62(1): 18–25.
- Goddard, J. A. N., P. Molyneux, and J. O. Wilson (2014). "Banking in the European Union: Deregulation, Crisis, and Renewal". In: *The Oxford Handbook of Banking*. Ed. by A. N. Berger, P. Molyneux, and J. O. Wilson. OUP Oxford. Chapter 35.
- Grable, J. E. (2000). "Financial risk tolerance and additional factors that affect risk taking in everyday money matters". *Journal of Business and Psychology*. 14(4): 625–630.
- Graham, T. (2004a). *Graham Review of the Small Firms Loan Guarantee: Interim Report*. London: HM Treasury.
- Graham, T. (2004b). *Graham Review of the Small Firms Loan Guarantee: Recommendations*. London: HM Treasury.
- Greenbaum, S. I. and A. V. Thakor (2007). *Contemporary Financial Intermediation*. San Diego: Academic Press.
- Greene, F. J., L. Han, and S. Marlow (2013). "Like mother, like daughter? Analyzing maternal influences upon women's entrepreneurial propensity". *Entrepreneurship Theory and Practice*. 37(4): 687–711.
- Haines, G. H., B. J. Orser, and A. L. Riding (1999). "Myths and realities: An empirical study of banks and the gender of small business clients". *Canadian Journal of Administrative Sciences*. 16(4): 291–307.
- Hamilton, B. H. (2000). "Does entrepreneurship pay? An empirical analysis of the returns to self-employment". *Journal of Political Economy*. 108(3): 604–631.
- Han, L., S. Fraser, and D. J. Storey (2009a). "Are good or bad borrowers discouraged from applying for loans? Evidence from US small business credit markets". *Journal of Banking and Finance*. 33(2): 415–424.
- Han, L., S. Fraser, and D. J. Storey (2009b). "The role of collateral in entrepreneurial finance". *Journal of Business Finance and Accounting*. 36(3–4): 424–455.
- Han, L., D. J. Storey, and S. Fraser (2008). "The concentration of creditors: Evidence from small businesses". *Applied Financial Economics*. 18(20): 1647–1656.

- Hancock, D. and J. A. Wilcox (1998). "The credit crunch and the availability of credit to small business". *Journal of Banking and Finance*. 22(6): 983–1014.
- Hannan, T. H. (1991). "Bank commercial loan markets and the role of market structure: Evidence from surveys of commercial lending". *Journal of Banking and Finance*. 15(1): 133–149.
- Harris, M. and A. Raviv (1991). "The theory of capital structure". *The Journal of Finance*. 46(1): 297–355.
- Haynes, G. W. and J. R. Brown (2009). "How strong is the link between internal finance and small firm growth?" In: *Evidence from Survey of Small Business Finances, in: Small Business in Focus: Finance*. Small Business Administration.
- Heffernan, S. (2006). "UK bank services for small business: how competitive is the market?" *Journal of Banking and Finance*. 30: 3087–3110.
- Hmieleski, K. M. and R. A. Baron (2009). "Entrepreneurs' optimism and new venture performance: A social cognitive perspective". *Academy of Management Journal*. 52(3): 473–488.
- Holmes, A. and P. Horvitz (1994). "Mortgage redlining: Race, risk, and demand". *The Journal of Finance*. 49(1): 81–99.
- Holmstrom, B. R. (1982). "Moral hazard in teams". *Bell Journal of Economics*. 13: 324–340.
- Holton, S., M. Lawless, and F. McCann (2013). "SME financing conditions in Europe: credit crunch or fundamentals?" *National Institute Economic Review*. 225(1): R52–R67.
- Holtz-Eakin, D., D. Joulfaian, and H. S. Rosen (1994). "Sticking it out: Entrepreneurial survival and liquidity constraints". *Journal of Political Economy*. 102(1): 53–75.
- Honohan, P. (2010). "Partial credit guarantees: principles and practice". *Journal of Financial Stability*. 6(1): 1–9.
- Hosono, K. and A. Masuda (2005). *Bank health and small business investment: Evidence from Japan, RIETI discussion paper series No. 05-E-030*.
- Hubbard, R. G. (1998). "Capital-market imperfections and investment". *Journal of Economic Literature*. 36(1): 193–225.

- Hurst, E. and A. Lusardi (2004). "Liquidity constraints, household wealth, and entrepreneurship". *Journal of Political Economy*. 112(2): 319–347.
- Hvide, H. K. and J. Møen (2010). "Lean and hungry or fat and content? Entrepreneurs' wealth and start-up performance". *Management Science*. 56(8): 1242–1258.
- Independent Commission on Banking (2011). Final Report: URL: <http://www.hm-treasury.gov.uk/d/ICB-Final-Report.pdf>.
- Innes, R. (1991). "Investment and government intervention in credit markets when there is asymmetric information". *Journal of Public Economics*. 46(3): 347–381.
- IPPR (2012). *Investing for the future: Why we need a British investment bank*. September. London: Institute for Public Policy Research.
- Ishikawa, D. and Y. Tsutsui (2013). "Credit Crunch and its Spatial Differences in Japan's Lost Decade: What Can We Learn From It?" *Japan and the World Economy*. 28: 41–52.
- Iyer, R., A. I. Khwaja, E. F. P. Luttmer, and K. Shue (2009). *Screening in new credit markets: Can individual lenders infer borrower creditworthiness in peer-to-peer lending?* Working Paper, Harvard University.
- Iyer, R., J. L. Peydró, S. da-Rocha-Lopes, and A. Schoar (2013). "Inter-bank liquidity crunch and the firm credit crunch: Evidence from the 2007-2009 crisis". *The Review of Financial Studies*. 27(1): 347–372.
- Jaffee, D. M. and T. Russell (1976). "Imperfect information, uncertainty, and credit rationing". *The Quarterly Journal of Economics*: 651–666.
- Jaffee, D. M. and J. Stiglitz (1990). "Credit rationing". In: *The Handbook of Monetary Economics*. Ed. by B. M. Friedman and F. H. Hahn. Vol. II. Amsterdam: North Holland. 837–888.
- Jappelli, T. (1990). "Who is credit constrained in the US economy?" *Quarterly Journal of Economics*. 105(1): 219–234.
- Jappelli, T. and M. Pagano (2000). *Information Sharing in Credit Markets: A Survey*. Vol. 36. CSEF Working Paper.
- Jappelli, T. and M. Pagano (2002). "Information sharing, lending and defaults: Cross-country evidence". *Journal of Banking and Finance*. 26(10): 2017–2045.



- Jensen, M. C. and W. H. Meckling (1976). "Theory of the firm: Managerial behavior, agency costs and ownership structure". *Journal of Financial Economics*. 3(4): 305–360.
- Jianakopols, N. A. and A. Bernasek (1998). "Are women more risk averse?" *Economic Inquiry*. 36(4): 620–630.
- Jiménez, G., J. Lopez, and J. Saurina (2007). *How Does Competition Impact Bank Risk Taking?* Working Paper, Madrid: Banco de Espana.
- Jiménez, G., S. Ongena, J. L. Peydró, and J. Saurina (2012). "Credit supply and monetary policy: Identifying the bank balance-sheet channel with loan applications". *American Economic Review*. 102(5): 2301–2326.
- Jones, T., D. McEvoy, and G. Barrett (1994). "Raising Capital for the Ethnic Minority Small Firm". In: *Finance and the Small Firm*. Ed. by A. Hughes and D. Storey. London and New York: Routledge. 145–181.
- Jovanovic, B. (1982). "Selection and the Evolution of Industry". *Econometrica: Journal of the Econometric Society*: 649–670.
- Kaartemo, V. (2017). "The elements of a successful crowdfunding campaign: a systematic literature review of crowdfunding performance". *International Review of Entrepreneurship*. 15(3): 291–318.
- Kahneman, D. and D. Lovallo (1994). "Timid choices and bold forecasts: A cognitive perspective on risk taking". In: *Fundamental Issues in Strategy: A Research Agenda*. Ed. by R. P. Rumelt, D. E. Schendel, and D. J. Teece. 71–96.
- Kahneman, D. and A. Tversky (1979). "Prospect theory: An analysis of decision under risk". *Econometrica*. 47(2): 263–291.
- Kan, K. and W. D. Tsai (2006). "Entrepreneurship and risk aversion". *Small Business Economics*. 26(5): 465–474.
- Kano, M. and Y. Tsutsui (2003). "Geographical segmentation in Japanese bank loan markets". *Regional Science and Urban Economics*. 33: 157–174.
- Kaplan, S. N. and L. Zingales (1997). "Do investment-cash flow sensitivities provide useful measures of financing constraints?" *The Quarterly Journal of Economics*. 112(1): 169–215.

- Karlan, D. and J. Zinman (2009). "Observing unobservables: Identifying information asymmetries with a consumer credit field experiment". *Econometrica*. 77(6): 1993–2008.
- Keeton, W. R. (1979). *Equilibrium Credit Rationing*. New York: Garland Publishing Inc.
- Kelley, D., C. Brush, P. Greene, M. Herrington, A. Ali, and P. Kew (2015). GEM special report: Women's entrepreneurship.
- Kepler, E. and S. Shane (2007). "Are male and female entrepreneurs really that different?" *Small Business Administration, Office of Advocacy Research Summary*. (309).
- King, R. G. and R. Levine (1993). "Finance and growth: Schumpeter might be right". *The Quarterly Journal of Economics*. 108(3): 717–737.
- Kirzner, I. M. (1973). *Competition and Entrepreneurship*. Chicago: Chicago University Press.
- Kirzner, I. M. (1997). "Entrepreneurial discovery and the competitive market process: An Austrian approach". *Journal of Economic Literature*. 35(1): 60–85.
- Klafft, M. (2008). "Peer to peer lending: Auctioning microcredits over the internet". *Proceedings of the 2008 International Conference on Information Systems, Technology and Management*: 1–8.
- Klapper, L. (1998). *Short-term collateralization: Theory and evidence*. Working Paper, The World Bank.
- Kleiner, K. (2014). *How did the 2007–09 credit crisis become the great recession? Budget constraints, collateral, and small firm employment*. Indiana University Working Paper.
- Klyver, K., S. L. Nielsen, and M. R. Evald (2013). "Women's self-employment: An act of institutional (dis) integration? A multilevel, cross-country study". *Journal of Business Venturing*. 28(4): 474–488.
- Knight, F. H. (1921). *Risk, Uncertainty and Profit*. New York: Hart, Schaffner and Marx.
- Kon, Y. and D. J. Storey (2003). "A theory of discouraged borrowers". *Small Business Economics*. 21: 37–49.
- Körner, T. and I. Schnabel (2010). *Public ownership of banks and economic growth – The role of heterogeneity*. Working Paper No. 2010\_41, Max Planck Institute for Research on Collective Goods.

- Kysucky, V. and L. Norden (2015). “The benefits of relationship lending in a cross-country context: A meta-analysis”. *Management Science*. 62(1): 90–110.
- La Porta, R., F. Lopez-de-Silanes, and A. Shleifer (2002). “Government ownership of banks”. *Journal of Finance*. 57: 265–301.
- Larraín, C. and J. Quiroz (2006). *Estudio para el fondo de garantía de pequeños empresarios*. (Documento sin publicar). Santiago de Chile: Banco Estado.
- Lee, M. O. and G. Vouchilas (2016). “Preparing to age in place: attitudes, approaches, and actions”. *Housing and Society*. 43(2): 69–81.
- Lelarge, C., D. Sraer, and D. Thesmar (2010). “Entrepreneurship and credit constraints: Evidence from a French loan guarantee program”. In: *International differences in entrepreneurship*. University of Chicago Press. 243–273.
- Levenson, A. R. and K. L. Willard (2000). “Do firms get the financing they want? Measuring credit rationing experienced by small businesses in the US”. *Small Business Economics*. 14(2): 83–94.
- Lévesque, M. and M. Minniti (2006). “The effect of aging on entrepreneurial behavior”. *Journal of Business Venturing*. 21(2): 177–194.
- Liberti, J. M. and A. R. Mian (2008). “Estimating the effect of hierarchies on information use”. *The Review of Financial Studies*. 22(10): 4057–4090.
- Liberti, J. M. and M. A. Petersen (2018). “Information: Hard and soft”. *Review of Corporate Finance Studies*. 8(1): 1–41.
- Lin, M., N. R. Prabhala, and S. Viswanathan (2013). “Judging borrowers by the company they keep: Friendship networks and information asymmetry in online peer-to-peer lending”. *Management Science*. 59(1): 17–35.
- Lindh, T. and H. Ohlsson (1996). “Self-employment and windfall gains: Evidence from the Swedish lottery”. *The Economic Journal*: 1515–1526.
- Lowe, R. A. and A. A. Ziedonis (2006). “Overoptimism and the performance of entrepreneurial firms”. *Management science*. 52(2): 173–186.

- Mac an Bhaird, C., J. S. Vidal, and B. Lucey (2016). “Discouraged borrowers: evidence for Eurozone SME’s”. *Journal of International Financial Markets, Institutions and Money*. 44: 46–55.
- Mach, T. L., C. M. Carter, and C. R. Slattery (2014). *Peer-to-peer lending to small businesses*. Working Paper No. 10, Federal Reserve Board, Washington.
- Mach, T. L. and J. D. Wolken (2006). “Financial services used by small businesses: Evidence from the 2003 Survey of Small Business Finances”. *Federal Reserve Bulletin*. Oct.
- MacMillan Committee (1931). “Report on the Committee on Finance and Industry”. In: *Cmd. Vol. 3897*. London: HMSO.
- Malmendier, U. and G. Tate (2005). “CEO overconfidence and corporate investment”. *The Journal of Finance*. 60(6): 2661–2700.
- Manigart, S. and M. Wright (2013). “Venture capital investors and portfolio firms”. *Foundations and Trends® in Entrepreneurship*. 9(4–5): 365–570.
- Marlow, S. and M. McAdam (2012). “Analyzing the influence of gender upon high-technology venturing within the context of business incubation”. *Entrepreneurship Theory and Practice*. 36(4): 655–676.
- Marlow, S. and D. Patton (2005). “All credit to men? Entrepreneurship, finance, and gender”. *Entrepreneurship Theory and Practice*. 29(6): 717–735.
- Marquez, R. (2002). “Competition, adverse selection, and information dispersion in the banking industry”. *Review of Financial Studies*. 15(3): 901–926.
- McAdam, M. (2013). *Female Entrepreneurship*. London: Routledge.
- McCann, F. and T. McIndoe-Calder (2012). “Determinants of SME loan default: the importance of borrower-level heterogeneity (No. 06/RT/12)”. Central Bank of Ireland.
- McKechnie, S., C. Ennew, and L. Read (1998). “The nature of the banking relationship: A comparison of the experiences of male and female small business owners”. *International Small Business Journal*. 16(3): 39–55.
- Mester, L. J. (1997). “What’s the Point of Credit Scoring”. *Federal Reserve Bank of Philadelphia Business Review*. (September/October): 3–16.

- Micco, A. and U. Panizza (2006). "Bank ownership and lending behavior". *Economics Letters*. 93(2): 248–254.
- Micco, A., U. Panizza, and M. Yañez (2007). "Bank ownership and performance. Does politics matter?" *Journal of Banking and Finance*. 31: 219–241.
- Michaelas, N., F. Chittenden, and P. Poutziouris (1999). "Financial policy and capital structure choice in UK SME's: Empirical evidence from company panel data". *Small Business Economics*. 12(2): 113–130.
- Mishra, C. S. and D. L. McConaughy (1999). "Founding family control and capital structure: The risk of loss of control and the aversion to debt". *Entrepreneurship: Theory and Practice*. 23(4): 53–53.
- Mitchell, R. K., L. W. Busenitz, B. Bird, C. Marie Gaglio, J. S. McMullen, E. A. Morse, and J. B. Smith (2007). "The central question in entrepreneurial cognition research 2007". *Entrepreneurship Theory and Practice*. 31(1): 1–27.
- Miyajima, H. and Y. Yafeh (2007). "Japan's Banking Crisis: An Event-Study Perspective". *Journal of Banking and Finance*. 31: 2866–2885.
- Modigliani, F. and M. H. Miller (1958). "The cost of capital, corporation finance and the theory of investment". *The American Economic Review*: 261–297.
- Mol-Gómez-Vázquez, A., G. Hernández-Cánovas, and J. Koëter-Kant (2018). *Bank market power and the intensity of borrower discouragement: analysis of SME's across developed and developing European countries*. *Small Business Economics*. 1–15.
- Molyneux, P. J., P. Thornton, and D. M. Lloyd-Williams (1996). "Competition and market contestability in Japanese commercial banking". *Journal of Economics and Business*. 48: 33–45.
- Morse, A. (2015). "Peer-to-peer crowdfunding: Information and the potential for disruption in consumer lending". *Annual Review of Financial Economics*. 7: 463–482.
- Moss, T. W., D. O. Neubaum, and M. Meyskens (2015). "The effect of virtuous and entrepreneurial orientations on microfinance lending and repayment: A signaling theory perspective". *Entrepreneurship Theory and Practice*. 39(1): 27–52.

- Mueller, E. (2008). "Benefits of control, capital structure and company growth". *Applied Economics*. 40(21): 2721–2734.
- Musso, P. and S. Schiavo (2008). "The impact of financial constraints on firm survival and growth". *Journal of Evolutionary Economics*. 18(2): 135–149.
- Myers, S. C. (1984). "The capital structure puzzle". *The Journal of Finance*. 39(3): 574–592.
- Myers, S. C. and N. S. Majluf (1984). "Corporate financing and investment decisions when firms have information that investors do not have". *Journal of Financial Economics*. 13(2): 187–221.
- Ng, C. K., J. K. Smith, and R. L. Smith (1999). "Evidence on the determinants of credit terms used in interfirm trade". *Journal of Finance*. 54(3): 1109–1129.
- Nikkin (2005). "Nikkin Data Annual (in Japanese)".
- Norton, E. (1991). "Capital structure and small public firms". *Journal of Business Venturing*. 6(4): 287–303.
- Oaksford, M., F. Moreris, B. Grainger, and J. M. G. Williams (1996). "Mood, reasoning, and central executive processes". *Journal of Experimental Psychology: Learning, Memory, and Cognition*. 22(3): 476–492.
- Ongena, S. and D. C. Smith (2000). "What determines the number of bank relationships? Cross-country evidence". *Journal of Financial Intermediation*. 9(1): 26–56.
- Ono, A. and I. Uesugi (2014). "SME financing in japan during the global financial crisis: Evidence from firm surveys". *International Review of Entrepreneurship*. 12(4): 191–218.
- Parker, S. C. (2002). "Do banks ration credit to new enterprises? And should governments intervene?" *Scottish Journal of Political Economy*. 49(2): 162–195.
- Parker, S. C. (2003). "Asymmetric information, occupational choice and government policy". *The Economic Journal*. 113(490): 861–882.
- Parker, S. C. (2009). *The Economics of Entrepreneurship*. Cambridge: Cambridge University Press.
- Peek, J. and E. Rosengren (1995a). "Bank regulation and the credit crunch". *Journal of Banking and Finance*. 19(3): 679–692.

- Peek, J. and E. Rosengren (1995b). “The capital crunch: neither a borrower nor a lender be”. *Journal of Money, Credit and Banking*. 27(3): 625–638.
- Petersen, M. A. and R. G. Rajan (1994). “The benefits of lending relationships: Evidence from small business data”. *The Journal of Finance*. 49(1): 3–37.
- Petersen, M. A. and R. G. Rajan (1995). “The effect of credit market competition on lending relationships”. *Quarterly Journal of Economics*. 110(2): 407–443.
- Petersen, M. A. and R. G. Rajan (1997). “Trade credit: theories and evidence”. *Review of Financial Studies*. 10(3): 661–691.
- Petersen, M. A. and R. G. Rajan (2002). “Does distance still matter? The information revolution in small business lending”. *The Journal of Finance*. 57(6): 2533–2570.
- Pope, D. G. and J. R. Sydnor (2011). “What’s in a picture? Evidence of discrimination from Prosper.com”. *Journal of Human Resources*. 46(1): 53–92.
- Popov, A. and G. F. Udell (2012). “Cross-border banking, credit access, and the financial crisis”. *Journal of International Economics*. 87(1): 147–161.
- Potok, N., R. Bailey, B. Sherman, R. Harter, M. Yang, J. Chapline, and J. Bartoline (2005). *The 2003 Survey of Small Business Finances: Methodology Report*. National Organization for Research (University of Chicago).
- Rajan, R. G. (1992). “Insider and outsider: The choice between informed and arm’s length debt”. *Journal of Finance*. 47: 1367–1400.
- Rajan, R. G. and L. Zingales (1995). “What do we know about capital structure? Some evidence from international data”. *The Journal of Finance*. 50(5): 1421–1460.
- Rajan, R. G. and L. Zingales (1998). “Financial dependence and growth”. *American Economic Review*. 88(3): 559–586.
- Ratnovski, L. (2013). *Competition policy for modern banks*. IMF Working Paper WP/13/126, Washington, DC: International Monetary Fund.

- Raturi, M. and A. V. Swamy (1999). "Explaining ethnic differentials in credit market outcomes in Zimbabwe". *Economic Development and Cultural Change*. 47(3): 585–604.
- Repetto, A., S. Rodríguez, and R. Valdés (2004). *Do Bank Lending Relationships Benefit Borrowing Firms?* Working Paper. University of Chile.
- Riding, A. L. and C. S. Swift (1990). "Women business owners and terms of credit: Some empirical findings of the Canadian experience". *Journal of Business Venturing*. 5(5): 327–340.
- Riding, A., J. Madill, and G. Haines (2007). "Incrementality of SME loan guarantees". *Small Business Economics*. 29(1–2): 47–61.
- Romano, C. A., G. A. Tanewski, and K. X. Smyrniotis (2001). "Capital structure decision making: A model for family business". *Journal of Business Venturing*. 16(3): 285–310.
- Rosen, R. J. and G. F. Udell (2017). "SME business loans". In: *Handbook of Competition in Banking and Finance*. Ed. by J. A. Bikker and L. Spierdijk. Edward Elgar Publishing. Chapter 15.
- Rostamkalaei, A., M. Nitani, and A. Riding (2018). *Borrower discouragement: The role of informal turndowns*. *Small Business Economics*. 1–16.
- Rouse, J. and J. Kitching (2006). "Do enterprise support programmes leave women holding the baby?" *Environment and Planning C: Government and Policy*. 24(1): 5–19.
- Rowlands, C. (2009). *The Provision of Growth Capital to UK SME's*. London: Department for Business Innovation and Skills.
- Rutherford, R. (1994/1995). "Securitizing Small Business Loans: a Banker's Action Plan". *Commercial Lending Review*. 10(1): 62–74. Winter 1994-95.
- Saldana, C. G. (2000). "Assessing the economic value of credit guarantees". *Journal of Philippine Development*. 27(1): 27–48.
- Sapienza, P. (2004). "The effects of government ownership on bank lending". *Journal of Financial Economics*. 72(2): 357–384.
- Saridakis, G., S. Marlow, and D. J. Storey (2014). "Do different factors explain male and female self-employment rates?" *Journal of Business Venturing*. 29(3): 345–362.
- Say, J. B. (1803). *Traite de Economie Politique*. Paris: Deterville.



- Schiantarelli, F. (1996). "Financial constraints and investment: methodological issues and international evidence". *Oxford Review of Economic Policy*. 12(2): 70–89.
- Schubert, B. R., M. Gysler, and H. W. Brachinger (1999). "Financial decision-making: are women really more risk-averse?" *The American Economic Review*. 89(2): 381–385.
- Schumpeter, J. A. (1934). *The Theory of Economic Development: An Inquiry Into Profits, Capital, Credit, Interest, and the Business Cycle*. Cambridge, MA: Harvard University Press.
- Sharpe, S. (1990). "Asymmetric information, bank lending and implicit contracts: A stylized model of customer relationships". *Journal of Finance*. 45: 1069–1087.
- Shaver, K. G. and L. R. Scott (1991). "Person, process, choice: The psychology of new venture creation". *Entrepreneurship Theory and Practice*. 16: 23–42.
- Smallbone, D., M. Ram, D. Deakins, and R. B. Aldock (2003). "Access to finance by ethnic minority businesses in the UK". *International Small Business Journal*. 21(3): 291–314.
- SME Finance Monitor (2018). *SME finance monitor 2017 annual report*. An Independent Report by BDRC Continental: URL: <http://www.sme-finance-monitor.co.uk/>.
- Smith, A. (1937). "The wealth of nations". In: ed. by E. Cannan. New York: Modern Library, 1937. 532.
- Stein, J. C. (2002). "Information production and capital allocation: Decentralized versus hierarchical firms". *The Journal of Finance*. 57(5): 1891–1921.
- Stiglitz, J. E. and A. Weiss (1981). "Credit rationing in markets with imperfect information". *The American Economic Review*. 71(3): 393–410.
- Storey, D. J. (1994). *Understanding the Small Business Sector*. London: Routledge.
- Storey, D. J. (1998). *Six steps to heaven: evaluating the impact of public policies to support small businesses in developed economies*. Centre for Small and Medium Sized Enterprises, Warwick Business School.

- Storey, D. J. (2000). *Six steps to heaven: evaluating the impact of public business in developed countries*. The Handbook of Entrepreneurship Research. Kluwer Academic Publishers.
- Taketa, K. and G. F. Udell (2007). “Lending channels and financial shocks: The case of small and medium-sized enterprise trade credit and the Japanese banking crisis”. *Monetary and Economic Studies*. 25(2): 1–44.
- Tang, Y., C. Deng, and A. Moro (2017). “Firm-bank trusting relationship and discouraged borrowers”. *Review of Managerial Science*. 11(3): 519–541.
- Taylor, M. P. (2001). “Self-employment and windfall gains in Britain: Evidence from panel data”. *Economica*. 68(272): 539–565.
- Taylor, M. P. (2003). “Self-employment and windfall gains in Britain: Evidence from panel data”. *Economica*. 68(272): 539–565.
- Taylor, S. E. (1989). *Positive Illusions: Creative Self-deception and the Healthy Mind*. Basic Books.
- Temkin, K. and B. Theodos (2008a). *An Analysis of Lenders’ Compliance with SBA’s Credit Elsewhere Requirement*. Washington, DC: Urban Institute. Report.
- Temkin, K. and B. Theodos (2008b). *Competitive and Special Competitive Opportunity Gap Analysis of the 7(a) and 504 Programs An Analysis of Lenders’ Compliance with SBA’s Credit Elsewhere Requirement*. Washington, DC: Urban Institute. Report.
- Titman, S. and R. Wessels (1988). “The determinants of capital structure choice”. *The Journal of Finance*. 43(1): 1–19.
- Townsend, R. (1979). “Optimal contracts and competitive markets with costly state verification”. *Journal of Economic Theory*. 21: 265–293.
- Tversky, A. and D. Kahneman (1974). “Judgement under uncertainty: Heuristics and biases”. *Science*. 185(4187): 1124–1131.
- Ucbasaran, D., P. Westhead, M. Wright, and M. Flores (2010). “The nature of entrepreneurial experience, business failure and comparative optimism”. *Journal of Business Venturing*. 25(6): 541–555.
- Uchida, H. and Y. Tsutsui (2005). “Has competition in the Japanese banking sector improved?” *Journal of Banking and Finance*. 29: 419–439.

- Uchida, H. and G. F. Udell (2014). "Banking in Japan". In: *The Oxford Handbook of Banking*. OUP Oxford. Ed. by A. N. Berger, P. Molyneux, and J. O. Wilson. Chapter 36.
- Uchida, H., G. F. Udell, and N. Yamori (2012). "Loan officers and relationship lending to SME's". *Journal of Financial Intermediation*. 21(1): 97–122.
- Udell, G. F. (2015). "SME Access to intermediated credit: What do we know and what don't we know". In *Small Business Conditions and Finance Conference Volume*: 61–109.
- US Senate Committee (2014). "21<sup>st</sup> Century barriers to women's entrepreneurship".
- Van Praag, M., G. De Wit, and N. Bosma (2005). "Initial capital constraints hinder entrepreneurial venture performance". *The Journal of Private Equity*: 36–44.
- Verheul, I. and R. Thurik (2000). *Start-Up Capital: Differences Between Male and Female Entrepreneurs. Does Gender Matter?* (EIM Research Report 9910/E). Rotterdam, the Netherlands: Erasmus University.
- von Hayek, F. A. (1937). "Economics and knowledge". *Economica*. 4(13): 33–54.
- von Thadden, E. (1992). "The commitment of finance, duplicated monitoring, and the investment horizon". In: *CEPR, Network in Financial Market Working Paper 27*.
- von Thadden, E. L. (2004). "Asymmetric information, bank lending and implicit contracts: the winner's curse". *Finance Research Letters*. 1(1): 11–23.
- Wagster, J. D. (1999). "The Basle Accord of 1988 and the international credit crunch of 1989-1992". *Journal of Financial Services Research*. 15(2): 123–143.
- Wallmeroth, J., P. Wirtz, and A. P. Groh (2018). "Venture capital, angel financing, and crowdfunding of entrepreneurial ventures: A literature review". *Foundations and Trends<sup>®</sup> in Entrepreneurship*. 14(1): 1–129.
- Watson, H. (1984). "Credit markets and borrower effort". *Southern Economic Journal*: 802–813.

- Wheelock, D. C. (2011). “Banking industry consolidation and market structure: impact of the financial crisis and recession”. *Federal Reserve Bank of St. Louis Review*. 93(6): 419–438.
- Whited, T. M. and G. Wu (2006). “Financial constraints risk”. *The Review of Financial Studies*. 19(2): 531–559.
- Williamson, S. D. (1987). “Costly monitoring, loan contracts, and equilibrium credit rationing”. *The Quarterly Journal of Economics*. 102(1): 135–145.
- Wilson Committee (1979). “The Financing of Small Firms, Interim Report of the Committee to Review the Functioning of the Financial Institutions”. In: *Cmnd*. Vol. 7503. London: HMSO.
- Wilson, N., M. Wright, and M. Kacer (2018). “The equity gap and knowledge-based firms”. *Journal of Corporate Finance*. 50: 626–649.
- Winker, P. (1999). “Causes and effects of financing constraints at the firm level”. *Small Business Economics*. 12(2): 169–181.
- Wolken, J. and D. Rodhe (2002). *Changes in the Location of Small Businesses’ Financial Services Suppliers Between 1993 and 1998*. Mimeo: Federal Reserve Bank.
- Wyer Jr., R. S. and T. K. Srull (1994). *Handbook of Social Cognition*. Hillsdale, NJ: Erlbaum.
- Yamori, N., K. Kondo, K. Tomiura, Y. Shindo, and K. Takaku (2013). “Japanese Banking Regulations and SME Finance under the Global Financial Crisis”. *Japanese Journal of Monetary and Financial Economics*. 1(1): 59–90.
- Zhang, T. and Z. Acs (2018). “Age and entrepreneurship: nuances from entrepreneur types and generation effects”. *Small Business Economics*. 51(4): 773–809.
- Zia, B. H. (2008). “Export incentives, financial constraints, and the (mis) allocation of credit: micro-level evidence from subsidized export loans”. *Journal of Financial Economics*. 87(2): 498–527.