Full text available at: http://dx.doi.org/10.1561/0500000041

Long Run Relationships in Banking

Anand Srinivasan
Department of Finance, NUS Business School,
National University of Singapore,
15 Kent Ridge Drive, MRB 07-45,
Singapore 119245, Singapore
bizas@nus.edu.sg

the essence of knowledge
Boston — Delft

Full text available at: http://dx.doi.org/10.1561/0500000041

Foundations and Trends® in Finance

Published, sold and distributed by:
now Publishers Inc.
PO Box 1024
Hanover, MA 02339
United States
Tel. +1-781-985-4510
www.nowpublishers.com
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

A. Srinivasan. *Long Run Relationships in Banking*. Foundations and Trends® in Finance, vol. 8, no. 2, pp. 55–143, 2013.

This Foundations and Trends® issue was typeset in LaTeX using a class file designed by Neal Parikh. Printed on acid-free paper.

ISBN: 978-1-60198-863-8
© 2014 A. Srinivasan

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

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; 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; e-mail: sales@nowpublishers.com

Full text available at: http://dx.doi.org/10.1561/0500000041

Foundations and Trends® in Finance
Volume 8, Issue 2, 2013

Editorial Board

Editor-in-Chief

George M. Constantinides
Booth School of Business
University of Chicago
United States

Editors

Francis Longstaff
Co-Editor
University of California, Los Angeles

Sheridan Titman
Co-Editor
University of Texas at Austin

Full text available at: http://dx.doi.org/10.1561/0500000041

Editorial Scope

Topics

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

- Corporate finance
  - Corporate governance
  - Corporate financing
  - Dividend policy and capital structure
  - Corporate control
  - Investment policy
  - Agency theory and information
- Financial markets
  - Market microstructure
  - Portfolio theory
  - Financial intermediation
  - Investment banking
  - Market efficiency
  - Security issuance
  - Anomalies and behavioral finance
- Asset pricing
  - Asset-pricing theory
  - Asset-pricing models
  - Tax effects
  - Liquidity
  - Equity risk premium
  - Pricing models and volatility
  - Fixed income securities
- Derivatives
  - Computational finance
  - Futures markets and hedging
  - Financial engineering
  - Interest rate derivatives
  - Credit derivatives
  - Financial econometrics
  - Estimating volatilities and correlations

Information for Librarians

Foundations and Trends® in Finance, 2013, Volume 8, 4 issues. ISSN paper version 1567-2395. ISSN online version 1567-2409. Also available as a combined paper and online subscription.

Full text available at: http://dx.doi.org/10.1561/0500000041

Foundations and Trends® in Finance
Vol. 8, No. 2 (2013) 55–143
© 2014 A. Srinivasan
DOI: 10.1561/0500000041

Long Run Relationships in Banking

Anand Srinivasan
Department of Finance, NUS Business School,
National University of Singapore,
15 Kent Ridge Drive, MRB 07-45,
Singapore 119245, Singapore
bizas@nus.edu.sg

Full text available at: http://dx.doi.org/10.1561/0500000041

Contents

Full text available at: http://dx.doi.org/10.1561/0500000041

Full text available at: http://dx.doi.org/10.1561/0500000041

Abstract

This monograph surveys the effects of long-run relationships in banking between corporate borrowers and lenders. The first part of the survey analyzes econometric issues in the measurement of the costs and benefits of such relationships. In particular, we analyze potential issues with commonly used proxies of relationship lending — duration, scope and intensity. This analysis, as well as studies that have access to internal bank records, suggest that intensity (fraction of the total lending of a borrower by a given bank) would be a better measure of relationship lending, relative to duration. This analysis also suggests that accounting for endogeneity of relationships and simultaneity of loan contract terms does not qualitatively impact the results of earlier literature. Papers with the ability to circumvent several of the econometric issues are discussed in detail. The second part of this monograph is similar to a standard review where papers relating to hold-up costs, multiple banking relationships, impact of competition on relationship banking, and measurement of soft information in banking are covered.

A. Srinivasan. *Long Run Relationships in Banking*. Foundations and Trends® in Finance, vol. 8, no. 2, pp. 55–143, 2013.

DOI: 10.1561/0500000041.

Full text available at: http://dx.doi.org/10.1561/0500000041

1

Introduction

Relationship banking is defined as repeated purchase of banking services by firms from the same financial intermediary (or set of financial intermediaries) over time. To fix ideas, consider the situation where a borrowing firm is choosing a bank to take a loan. Within the framework of relationship banking, the proposed loan's price and non-price terms would depend on other financial services for which the borrower uses the bank, as well as the potential for future lending and other financial services for which the borrower is likely to retain the bank. A natural corollary of the above is that we should expect the likelihood of a relationship loan as well as its price and non-price terms, to vary from the 'transactional' likelihood and price and non-price terms of a similar loan by the same bank to the same borrower, where the transactional terms of the loan are those that would prevail in the absence of such cross-product and inter-temporal considerations — both for the borrower and the bank.

In simple terms, the possibility of cross-product interactions and repeat business between the bank and the borrower creates gains to trade from maintaining this relationship for both counter-parties. There are several sources for these gains, especially in the context of lending

Full text available at: http://dx.doi.org/10.1561/0500000041

between banks and borrowing firms. These are: (1) inter-temporal smoothing of loan contract terms; (2) reduction of information asymmetry between the borrower and lender; (3) continual monitoring of the borrower; (4) certification of the borrower quality to external financiers, and (5) optimal liquidation/continuation decisions by the lender when the borrower is in distress.

Most papers on relationship banking examine how these potential gains to trade benefit the borrowing firm. Thus, the default point of view is from the purchasing firm's perspective. A notable exception to this point of view is that proposed by Bharath et al. [2007], who examine the decision problem from the bank's perspective.

The structure of this review is as follows. In Section 2, we briefly review the theoretical arguments for the prevalence of long-run relationships in banking. In Section 3, we review evidence on the ways by which relationships add value. Recent literature challenges the traditional argument that bank relationships are special and add value. We review arguments for and against this assertion, using evidence both from event studies from outside the United States, as well as non-event study-based research. We conclude this section by speculating on potential causes for the conflicting results.

In Section 4, we critique existing empirical approaches used to measure relationship banking effects, focusing on the validity of the commonly used empirical proxies to capture the underlying economic constructs of relationship banking. Interestingly, for example, from the survey in Elsas [2005], internal bank records suggest that banks view relationship intensity (the fraction of the borrower's total lending by a given bank) as one of the important determinants of relationship lending. In contrast, duration and scope do not figure as prominently. This provides a good empirical justification for recent use of intensity measures in studies such as Bharath et al. [2011].

A key empirical issue that is identified is that for commonly used proxies (duration, scope and intensity) to have their hypothesized effects on loan contracts, the researcher needs to make two assumptions: (1) the correlation of these proxies with the non-public information that the lender has about credit risk of the borrower is positive, and (2) this non-public information implies a lower credit risk of the

Full text available at: http://dx.doi.org/10.1561/0500000041

firm than its publicly available signal of credit risk. We argue that these conditions may not always be satisfied in the empirical data.

We cover potential sample selection issues here in the context of commonly used empirical models. Lastly, in this section, we explore the connections between borrower hold-up and bank hold-up. We show that both phenomena are manifestations of splitting the gains to trade from engaging in relationship banking. We also show that an increasing loan rate with relationship duration is not necessarily indicative of borrower hold-up, as commonly interpreted.

In Section 5, we survey the burgeoning literature on hold-up (switching costs) of borrowers by banks that circumvent some of the empirical issues raised above. In Section 6, we examine the motivations for firms to engage in multiple banking relationships that are not related to circumscribing the rents arising from hold-up. In Section 7, we examine the impact of competition on relationship banking. Theory and empirical evidence suggests a complex relationship between the two. In Section 8, we review more direct evidence on the importance of soft information in relationship banking. This evidence provides a micro-foundation for the earlier papers' claims that banks are indeed special. Thus, we conclude the bank relationships continue to be important, notwithstanding the contradictory evidence reviewed in Section 3. In Section 9, we conclude with directions for future research.

For reviews of earlier papers, we refer the reader to surveys by Bhattacharya and Thakor [1993], Boot [2000], Ongena and Smith [2000a,b] and Gorton and Winton [2003]. Other surveys that partially cover papers on relationship banking include Drucker and Puri [2007], Strahan [2007], and Freixas and Rochet [2008].

The very large number of papers in this area necessitates exclusion of several papers in this review and we apologize to authors whose relevant articles may not be cited here. Degryse et al. [2009], as well as the meta-analysis by Kysucky and Norden [2013], provide readers with a very comprehensive list of relevant references. Our survey emphasizes deeper coverage of the referenced papers. This review has a larger sampling of studies that use US data sets. Nevertheless, we do cover several studies based on European data, as well as a few using Japanese data.

Full text available at: http://dx.doi.org/10.1561/0500000041

In addition, there is significantly larger coverage of empirical work, both in number and depth of coverage, relative to theoretical papers.

Lastly, some important branches of literature that are closely linked to relationship banking have been excluded due to length and time considerations. Specifically, the comparison of bank- versus market-dominated systems [Allen and Gale, 2000, 2004, Allen and Carletti, 2009] would merit a separate survey article in itself. Therefore, we do not include it. In the context of this literature, there is also a large literature on the real effects of such main banks, for example, as studied in Hoshi et al. [1991]. These effects are also not covered in this monograph. The connections between relationship banking and investment banking are also not covered here. We refer the reader to the survey by Drucker and Puri [2007] for insights into this topic.

Full text available at: http://dx.doi.org/10.1561/0500000041

References

V. V. Acharya, S. T. Bharath, and A. Srinivasan. Does industry-wide distress affect defaulted firms? evidence from creditor recoveries. *Journal of Financial Economics*, 85:787–821, 2007.

S. Agarwal and R. Hauswald. Distance and private information in lending. *Review of Financial Studies*, 23:2757–2788, 2010.

S. Agarwal, B. Ambrose, S. Chomsisenphet, and C. Liu. The role of soft information in a dynamic contract setting: Evidence from the home equity credit market. *Journal of Money, Credit and Banking*, 4:633–655, 2011.

F. Allen. The market for information and the origin of financial intermediation. *Journal of Financial Intermediation*, 1:3–30, 1990.

F. Allen and E. Carletti. The roles of banks in financial systems. In J. Wilson A. Berger, P. Molyneux, editor, *Oxford Handbook of Banking*, pages 32–57. Oxford University Press, Oxford, 2009.

F. Allen and D. Gale. *Comparing Financial Systems*. MIT Press, Cambridge, 2000.

F. Allen and D. Gale. Financial intermediaries and markets. *Econometrica*, 72:1023–1061, 2004.

F. Allen, E. Carletti, and R. Marquez. Credit market competition and capital regulation. *Review of Financial Studies*, 24:983–1018, 2011.

R. W. Anderson and S. Sundaresan. Design and valuation of debt contracts. *Review of Financial Studies*, 9:37–68, 1996.

M. Baker and M. Collins. English industrial distress before 1914 and the response of banks. *European Review of Economic History*, 3:1–24, 1999.

Full text available at: http://dx.doi.org/10.1561/0500000041

M. J. Barclay and C. W. Smith, Jr. The maturity structure of corporate debt. *The Journal of Finance*, 50:609–631, 1995.

E. Benmelech and N. K. Bergman. Collateral pricing. *Journal of Financial Economics*, 91:339–360, 2009.

A. N. Berger and G. F. Udell. Collateral, loan quality and bank risk. *Journal of Monetary Economics*, 25:21–42, 1990.

A. N. Berger and G. F. Udell. Relationship lending and lines of credit in small firm finance. *The Journal of Business*, 68:351–81, 1995.

A. N. Berger, L. F. Klapper, and G. F. Udell. The ability of banks to lend to informationally opaque small businesses. *Journal of Banking & Finance*, 25:2127–2167, 2001.

A. N. Berger, N. H. Miller, M. A. Petersen, R. G. Rajan, and J. C. Stein. Does function follow organizational form? evidence from the lending practices of large and small banks. *Journal of Financial Economics*, 76:237–269, 2005.

M. Berlin and L. J. Mester. On the profitability and cost of relationship lending. *Journal of Banking & Finance*, 22:873–897, 1998.

M. Berlin and L.J. Mester. Deposits and relationship lending. *Review of Financial Studies*, 12:579–607, 1999.

D. Besanko and G. Kanatas. Credit market equilibrium with bank monitoring and moral hazard. *Review of Financial Studies*, 6:213–232, 1993.

D. Besanko and A. Thakor. Relationship banking, deposit insurance and bank portfolio choices. In X. Vives and C. Mayer, editors, *Capital Markets and Financial Intermediation*, pages 292–318. Cambridge University Press, Cambridge, 1993.

R. Best and H. Zhang. Alternative information sources and the information content of bank loans. *The Journal of Finance*, 48:1507–1522, 1993.

S. Bharath, S. Dahiya, A. Saunders, and A. Srinivasan. So what do i get? the bank's view of lending relationships. *Journal of Financial Economics*, 85: 368–419, 2007.

S. T. Bharath, S. Dahiya, A. Saunders, and A. Srinivasan. Lending relationships and loan contract terms. *Review of Financial Studies*, 24:1141–1203, 2011.

S. Bhattacharya and A. V. Thakor. Contemporary banking theory. *Journal of Financial Intermediation*, 3:2–50, 1993.

M. T. Billett, M. J. Flannery, , and J. A. Garfinkel. The effect of lender identity on a borrowing firm's equity return. *The Journal of Finance*, 50: 699–718, 1995.

Full text available at: http://dx.doi.org/10.1561/0500000041

M. T. Billett, M. J. Flannery, and J. A. Garfinkel. Are bank loans special? evidence on the post-announcement performance of bank borrowers. *Journal of Financial and Quantitative Analysis*, 41:733–751, 2006.

S. E. Black and P. E. Strahan. Entrepreneurship and bank credit availability. *The Journal of Finance*, 57:2807–2833, 2002.

D. W. Blackwell and D. B. Winters. Banking relationships and the effect of monitoring on loan pricing. *The Journal of Financial Research*, 20:275–289, 1997.

H. Bodenhorn. Short-term loans and long-term relationships: Relationship lending in early America. *Journal of Money, Credit and Banking*, 35(4): 485–505, 2003.

P. Bolton and X. Freixas. Equity bonds and bank debt: Capital structure and financial market equilibrium under asymmetric information. *Journal of Political Economy*, 108:324–351, 2000.

P. Bolton and D. S. Scharfstein. Optimal debt structure and the number of creditors. *Journal of Political Economy*, 104:1–25, 1996.

E. Bonaccorsi di Patti and G. Gobbi. Winners or losers? the effects of banking consolidation on corporate borrowers. *The Journal of Finance*, 62:669–695, 2007.

A. W. A. Boot. Relationship banking: What do we know? *Journal of Financial Intermediation*, 9:7–25, 2000.

A. W. A. Boot and A. V. Thakor. Moral hazard and secured lending in an infinitely repeated credit market game. *International Economic Review*, 35: 899–920, 1994.

A. W. A. Boot and A. V. Thakor. Can relationship banking survive competition? *The Journal of Finance*, 55:679–715, 2000.

A. W. A. Boot, S. I. Greenbaum, and A. V. Thakor. Reputation and discretion in financial contracting. *American Economic Review*, 83:1165–1183, 1993.

I. E. Brick and D. Palia. Evidence of jointness in the terms of relationship lending. *Journal of Financial Intermediation*, 16:452–476, 2007.

C. Calomiris and T. Pornrojnangkool. Relationship banking and the pricing of financial services. *Journal of Financial Services Research*, 35:189–224, 2009.

R. Canales and R. Nanda. A darker side to decentralized banks: Market power and credit rationing in SME lending. *Journal of Financial Economics*, 105: 353–366, 2012.

Full text available at: http://dx.doi.org/10.1561/0500000041

E. Carletti. The structure of bank relationships, endogenous monitoring, and loan rates. *Journal of Financial Intermediation*, 13:58–86, 2004.

E. Carletti, V. Cerasi, and S. Daltung. Multiple-bank lending: Diversification and free-riding in monitoring. *Journal of Financial Intermediation*, 16: 425–451, 2007.

G. Cerqueiro, H. Degryse, and S. Ongena. Rules versus discretion in loan rate setting. *Journal of Financial Intermediation*, 20:503–529, 2011.

R. A. Cole. The importance of relationships to the availability of credit. *Journal of Banking & Finance*, 22:959–977, 1998.

R. A. Cole, L. G. Goldberg, and L. J. White. Cookie cutter vs. character: The micro structure of small business lending by large and small banks. *Journal of Financial and Quantitative Analysis*, 39:227–251, 2004.

J. D. Coval and T. J. Moskowitz. The geography of investment: Informed trading and asset prices. *Journal of Political Economy*, 109:811–841, 2001.

S. Dahiya, M. Puri, and A. Saunders. Bank borrowers and loan sales: New evidence on the uniqueness of bank loans. *Journal of Business*, 76:563–582, 2003a.

S. Dahiya, A. Saunders, and A. Srinivasan. Financial distress and bank lending relationships. *The Journal of Finance*, 58:375–399, 2003b.

N. Dass and M. Massa. The impact of a strong bank-firm relationship on the borrowing firm. *Review of Financial Studies*, 24:1204–1260, 2011.

S. Datta, M. Iskandar-Datta, and A. Patel. Bank monitoring and the pricing of corporate public debt. *Journal of Financial Economics*, 51:435–449, 1999.

H. Degryse and S. Ongena. Distance, lending relationships, and competition. *The Journal of Finance*, 60:231–266, 2005.

H. Degryse and S. Ongena. The impact of competition on bank orientation. *Journal of Financial Intermediation*, 16:399–424, 2007.

H. Degryse and P. Van Cayseele. Relationship lending within a bank-based system: Evidence from european small business data. *Journal of Financial Intermediation*, 9:90–109, 2000.

H. Degryse, M. Kim, and S. Ongena. *Microeconometrics of Banking: Methods, Applications, and Results*. Oxford University Press, Oxford, 2009.

H. Degryse, N. Masschelein, and J. Mitchell. Staying, dropping, or switching: The impacts of bank mergers on small firms. *The Review of Financial Studies*, 24:1102–1140, 2011.

Full text available at: http://dx.doi.org/10.1561/0500000041

G. Dell'Ariccia and R. Marquez. Information and bank credit allocation. *Journal of Financial Economics*, 72:185–214, 2004.

G. Dell'Ariccia, E. Friedman, and R. Marquez. Adverse selection as a barrier to entry in the banking industry. *The RAND Journal of Economics*, 30: 515–534, 1999.

S. Dennis, D. Nandy, and I. G. Sharpe. The determinants of contract terms in bank revolving credit agreements. *Journal of Financial and Quantitative Analysis*, 35:87–110, 2000.

E. Detragiache, P. Garella, and L. Guiso. Multiple versus single banking relationships: Theory and evidence. *The Journal of Finance*, 55:1133–1161, 2000.

M. Dewatripont and E. Maskin. Credit and efficiency in centralized and decentralized economies. *The Review of Economic Studies*, 62:541–555, 1995.

D. W. Diamond. Financial intermediation and delegated monitoring. *Review of Economic Studies*, 51:393–414, 1984.

D. W. Diamond. Monitoring and reputation: The choice between bank loans and directly placed debt. *Journal of Political Economy*, 99:689–721, 1991.

D. W. Diamond. Seniority and maturity of debt contracts. *Journal of Financial Economics*, 33:341–368, 1993.

I. S. Dinç. Bank reputation, bank commitment, and the effects of competition in credit markets. *Review of Financial Studies*, 13:781–812, 2000.

S. Djankov, J. Jindra, and L. F. Klapper. Corporate valuation and the resolution of bank insolvency in East Asia. *Journal of Banking & Finance*, 29: 2095–2118, 2005.

S. Drucker and M. Puri. On the benefits of concurrent lending and underwriting. *The Journal of Finance*, 60:2763–2799, 2005.

S. Drucker and M. Puri. Banks in capital markets. In E. Eckbo, editor, *Handbooks in Finance: Empirical Corporate Finance*, pages 189–232. North-Holland Publishers, Amsterdam, 2007.

S. Drucker and M. Puri. On loan sales, loan contracting and lending relationships. *Review of Financial Studies*, 22:2835–2872, 2009.

R. Elsas. Empirical determinants of relationship lending. *Journal of Financial Intermediation*, 14:32–57, 2005.

R. Elsas and J. P. Krahnen. Is relationship lending special? Evidence from credit-file data in Germany. *Journal of Banking & Finance*, 22:1283–1316, 1998.

Full text available at: http://dx.doi.org/10.1561/0500000041

O. E. Ergungor. The profitability of bank-borrower relationships. *Journal of Financial Intermediation*, 14:485–512, 2005.

L. A. Farinha and J. A. Santos. Switching from single to multiple bank lending relationships: Determinants and implications. *Journal of Financial Intermediation*, 11:124–151, 2002.

L. P. Fields, D. R. Fraser, T. L. Berry, and S. Byers. Do bank relationships still matter. *Journal of Money, Credit and Banking*, 38:1195–1209, 2006.

X. Freixas and J.-C. Rochet. *Microeconomics of Banking*. MIT Press, Cambridge: MA, 2008.

A. Gande and A. Saunders. Are banks still special when there is a secondary market for loans? *The Journal of Finance*, 67:1649–1684, 2012.

R. Gopalan, G. F. Udell, and V. Yerramilli. Why do firms form new banking relationships? *Journal of Financial and Quantitative Analysis*, 46:1335–1365, 2011.

G. Gorton and G. Pennacchi. Banks and loan sales: Marketing non-marketable assets. *Journal of Monetary Economics*, 35:389–411, 1995.

G. Gorton and A. Winton. Financial intermediation. In M. Harris G. Constantinides and R. Stulz, editors, *Handbooks in the Economics of Finance, Volume 1A: Corporate Finance*. Elsevier Science, Amsterdam, 2003.

S. I. Greenbaum, G. Kanatas, and I. Venezia. Equilibrium loan pricing under the bank-client relationship. *Journal of Banking & Finance*, 13:221–235, 1989.

G. Hale and J. A. Santos. Do banks price their informational monopoly? *Journal of Financial Economics*, 93:185–206, 2009.

D. Harhoff and T. Korting. Lending relationships in Germany — empirical evidence from survey data. *Journal of Banking & Finance*, 22:1317–1353, 1998.

J. G. Haubrich. Financial intermediation: Delegated monitoring and long-term relationships. *Journal of Banking & Finance*, 13:9–20, 1989.

R. Hauswald and R. Marquez. Competition and strategic information acquisition in credit markets. *Review of Financial Studies*, 19:967–1000, 2006.

J. J. Heckman, H. Ichimura, and P. E. Todd. Matching as an econometric evaluation estimator: Evidence from evaluating a job training programme. *The Review of Economic Studies*, 64:605–654, 1997.

J. J. Heckman, H. Ichimura, and P. Todd. Matching as an econometric evaluation estimator. *The Review of Economic Studies*, 65:261–294, 1998.

Full text available at: http://dx.doi.org/10.1561/0500000041

A. Hertzberg, J. Liberti, and D. Paravisini. Information and incentives inside the firm: Evidence from loan officer rotation. *The Journal of Finance*, 65: 795–828, 2010.

T. Hoshi, A. Kashyap, and D. Scharfstein. Corporate structure, liquidity, and investment: Evidence from Japanese industrial groups. *The Quarterly Journal of Economics*, 106:33–60, 1991.

J. Houston and C. James. Bank information monopolies and the mix of private and public debt claims. *The Journal of Finance*, 51:1863–1889, 1996.

R. Inderst and H. M. Mueller. A lender-based theory of collateral. *Journal of Financial Economics*, 84:826–859, 2007.

V. Ioannidou and S. Ongena. Time for a change: Loan conditions and bank behavior when firms switch banks. *The Journal of Finance*, 65:1847–1877, 2010.

R. Iyer and M. Puri. Understanding bank runs: The importance of depositor-bank relationships and networks. *American Economic Review*, 102:1414–1445, 2012.

C. James. Some evidence on the uniqueness of bank loans. *Journal of Financial Economics*, 19:217–235, 1987.

C. James and P. Wier. Borrowing relationships, intermediation, and the cost of issuing public securities. *Journal of Financial Economics*, 28:149–171, 1990.

G. Jiménez, V. Salas, and J. Saurina. Organizational distance and use of collateral for business loans. *Journal of Banking & Finance*, 33:234–243, 2009.

M. Kano, H. Uchida, G. F. Udell, and W. Watanabe. Information verifiability, bank organization, bank competition and bank borrower relationships. *Journal of Banking & Finance*, 35:935–954, 2011.

J. Karceski, S. Ongena, and D. C. Smith. The impact of bank consolidation on commercial borrower welfare. *The Journal of Finance*, 60:2043–2082, 2005.

A. K. Kashyap, R. Rajan, and J. C. Stein. Banks as liquidity providers: An explanation for the coexistence of lending and deposit-taking. *The Journal of Finance*, 57:33–73, 2002.

M. Kim, D. Kliger, and B. Vale. Estimating switching costs: The case of banking. *Journal of Financial Intermediation*, 12:25–56, 2003.

V. Kysucky and L. Norden. The benefits of relationship lending in a cross-country context: A meta-analysis. SSRN Working paper 2170601, 2013.

Full text available at: http://dx.doi.org/10.1561/0500000041

K. Li and N. R. Prabhala. Self-selection models in corporate finance. In B. Espen Eckbo, editor, *Handbook of Corporate Finance: Empirical Corporate Finance*, Chapter 2, pages 37–86. North-Holland Publishers, Amsterdam, 2007.

J. M. Liberti and A. R. Mian. Estimating the effect of hierarchies on information use. *Review of Financial Studies*, 22:4057–4090, 2009.

S. Longhofer and J. Santos. The importance of bank seniority for relationship lending. *Journal of Financial Intermediation*, 9:57–89, 2000.

S. L. Lummer and J. J. McConnell. Further evidence on the bank lending process and the capital market response to bank loan agreements. *Journal of Financial Economics*, 25:99–122, 1989.

R. Marquez. Competition, adverse selection, and information dispersion in the banking industry. *Review of Financial Studies*, 15:901–926, 2002.

P. K. Maskara and D. J. Mullineaux. Information asymmetry and self-selection bias in bank loan announcement studies. *Journal of Financial Economics*, 101:684–694, 2011.

L. J. Mester, L. I. Nakamura, and M. Renault. Transactions accounts and loan monitoring. *Review of Financial Studies*, 20:529–556, 2007.

A. Mian. Distance constraints: The limits of foreign lending in poor economies. *The Journal of Finance*, 61:1465–1505, 2006.

K. J. Mitchener and D. C. Wheelock. Does the structure of banking markets affect economic growth? Evidence from US state banking markets. *Explorations in Economic History*, 50:161–178, 2013.

H. Miyajima and Y. Yafeh. Japan's banking crisis: An event study perspective. *Journal of Banking & Finance*, 31:2866–2885, 2007.

D. Neuberger and S. Rathke. Microenterprises and multiple bank relationships: The case of professionals. *Small Business Economics*, 32:207–229, 2009.

Y. Ogura. Lending competition and credit availability for new firms: Empirical study with the price cost margin in regional loan markets. *Journal of Banking and Finance*, 36:1822–1838, 2012.

S. Ongena and V. Roscovan. Bank loan announcements and borrower stock returns: Does bank origin matter? *International Review of Finance*, 13: 137–159, 2013.

S. Ongena and D. C. Smith. What determines the number of bank relationships? Cross-country evidence. *Journal of Financial Intermediation*, 9: 26–56, 2000a.

Full text available at: http://dx.doi.org/10.1561/0500000041

S. Ongena and D. C. Smith. Bank relationships: A review. In P. Harker and S. Zenios, editors, *Performance of Financial Institutions*, pages 221–258. Cambridge University Press, Cambridge, U.K., 2000b.

S. Ongena and D. C. Smith. The duration of bank relationships. *Journal of Financial Economics*, 61:449–475, 2001.

S. Ongena, D. C. Smith, and D. Michalsen. Firms and their distressed banks: Lessons from the Norwegian banking crisis. *Journal of Financial Economics*, 67:81–112, 2003.

A. J. Padilla and M. Pagano. Endogenous communication among lenders and entrepreneurial incentives. *Review of Financial Studies*, 10:205–236, 1997.

M. Pagano and T. Jappelli. Information sharing in credit markets. *The Journal of Finance*, 48:1693–1718, 1993.

C. Parlour and G. Plantin. Loan sales and relationship banking. *The Journal of Finance*, 63:1291–1314, 2008.

C. Parlour and U. Rajan. Competition in loan contracts. *American Economic Review*, 91:1311–1328, 2001.

C. Parlour and A. Winton. Laying off credit risk: Loan sales versus credit default swaps. *Journal of Financial Economics*, 107:25–45, 2013.

G. Pennacchi. Loan sales and the cost of bank capital. *The Journal of Finance*, 43:375–396, 1988.

M. A. Petersen and R. G. Rajan. The benefits of lending relationships: Evidence from small business data. *The Journal of Finance*, 49:3–37, 1994.

M. A. Petersen and R. G. Rajan. The effect of credit market competition on lending relationships. *The Quarterly Journal of Economics*, 110:407–443, 1995.

M. A. Petersen and R. G. Rajan. Does distance still matter? The information revolution in small business lending. *The Journal of Finance*, 57:2533–2570, 2002.

D. Preece and D. J. Mullineaux. Monitoring, loan renegotiability, and firm value: The role of lending syndicates. *Journal of Banking & Finance*, 20: 577–593, 1996.

A. F. Presbitero and A. Zazzaro. Competition and relationship lending: Friends or foes? *Journal of Financial Intermediation*, 20:387–413, 2011.

M. Puri and J. Rocholl. On the importance of retail banking relationships. *Journal of Financial Economics*, 89:253–267, 2008.

Full text available at: http://dx.doi.org/10.1561/0500000041

J. Qian and P. E. Strahan. How laws and institutions shape financial contracts: The case of bank loans. *The Journal of Finance*, 62:2803–2834, 2007.

R. Rajan and A. Winton. Covenants and collateral as incentives to monitor. *The Journal of Finance*, 50:1113–1146, 1995.

R. G. Rajan. Insiders and outsiders: The choice between informed and arm's-length debt. *The Journal of Finance*, 47:1367–1400, 1992.

R. Ramakrishnan and A. V. Thakor. Information reliability and a theory of financial intermediation. *The Review of Economic Studies*, 51:415–432, 1984.

T. Rice and P. E. Strahan. Does credit competition affect small firm finance. *The Journal of Finance*, 65:861–889, 2010.

P. R. Rosenbaum. *Observational Studies*. Springer Science + Business Media, New York, 2nd edition, 2002.

D. Ross. The dominant bank effect: How high lender reputation affects the information content and terms of bank loans. *Review of Financial Studies*, 23:2730–2756, 2010.

J. Santos and A. Winton. Bank loans, bonds, and information monopolies across the business cycle. *The Journal of Finance*, 63:1315–1359, 2008.

P. Sapienza. The effects of banking mergers on loan contracts. *The Journal of Finance*, 57:329–367, 2002.

A. Saunders and S. Steffen. The costs of being private: Evidence from the loan market. *Review of Financial Studies*, 24:4091–4122, 2011.

C. Schenone. Lending relationships and information rents: Do banks exploit their information advantages? *Review of Financial Studies*, 23:1149–1199, 2010.

J. A. Scott. Small business and the value of community financial institutions. *Journal of Financial Services Research*, 25:207–230, 2004.

S. A. Sharpe. Asymmetric information, bank lending, and implicit contracts: A stylized model of customer relationships. *The Journal of Finance*, 45: 1069–1087, 1990.

M. B. Slovin, M. E. Sushka, and J. A. Polonchek. The value of bank durability: Borrowers as bank stakeholders. *The Journal of Finance*, 48:247–266, 1993.

F. Song and A. V. Thakor. Relationship banking, fragility, and the asset-liability matching problem. *The Review of Financial Studies*, 20:2129–2177, 2007.

Full text available at: http://dx.doi.org/10.1561/0500000041

J. C. Stein. Information production and capital allocation: Decentralized versus hierarchical firms. *The Journal of Finance*, 57:1891–1921, 2002.

P. E. Strahan. Bank structure and lending: What do we know and do not know. In A. Boot and A. Thakor, editors, *Handbook of Financial Intermediation and Banking*, pages 107–131. Elsevier Publishers, Amsterdam, 2007.

A. Sufi. Information asymmetry and financing arrangements: Evidence from syndicated loans. *The Journal of Finance*, 62:629–668, 2007.

H. Uchida, G. F. Udell, and W. Watanabe. Bank size and lending relationships in japan. *Journal of the Japanese and International Economies*, 22:242–267, 2008.

H. Uchida, G. F. Udell, and N. Yamori. Loan officers and relationship lending to SME's. *Journal of Financial Intermediation*, 21:97–122, 2012.

T. Vesala. Switching costs and relationship profits in bank lending. *Journal of Banking & Finance*, 31:477–493, 2007.

E.-L. Von Thadden. Long-term contracts, short-term investment and monitoring. *The Review of Economic Studies*, 62:557–575, 1995.

Y. Yafeh and O. Yosha. Industrial organization of financial systems and strategic use of relationship banking. *European Finance Review*, 5:63–78, 2001.

R. De Young, D. Glennon, and P. Nigro. Borrower-lender distance, credit scoring, and loan performance: Evidence from informational-opaque small business borrowers. *Journal of Financial Intermediation*, 17:113–143, 2008.