






Global retail lending in the aftermath of the US financial crisis: Distinguishing between supply and demand effects ☆

[Manju Puri](#)^a  , [Jörg Rocholl](#)^{b 1} , [Sascha Steffen](#)^{c 2} 

[Show more](#) ▾

 Share  Cite

<https://doi.org/10.1016/j.jfineco.2010.12.001> ↗

[Get rights and content](#) ↗

Abstract

This paper examines the broader effects of the US financial crisis on global lending to retail customers. In particular we examine retail bank lending in Germany using a unique data set of German savings banks during the period 2006 through 2008 for which we have the universe of loan applications and loans granted. Our experimental setting allows us to distinguish between savings banks affected by the US financial crisis through their holdings in Landesbanken with substantial subprime exposure and unaffected savings banks. The data enable us to distinguish between demand and supply side effects of bank lending and find that the US financial crisis induced a contraction in the supply of retail lending in Germany. While demand for loans goes down, it is not substantially different for the affected and nonaffected banks. More important, we find evidence of a significant supply side effect in that the affected banks reject substantially more loan applications than nonaffected banks. This result is particularly strong for smaller and more liquidity-constrained banks as well as for mortgage as compared with consumer loans. We also find that bank-depositor relationships help mitigate these supply side effects.

Introduction

Krugman and Obstfeld (2008) argue that “one of the most pervasive features of today's commercial banking industry is that banking activities have become globalized” (p. 600). An important question is whether the growing trend in globalization in banking results in events such as the US financial crisis affecting the real economy in other countries through the bank lending channel.³ In particular, it is important to understand the implications for retail customers who are a major driver of economic spending and who have been the focus of much of regulators' attention in dealing with the current crisis.

The goal of this paper is thus to understand if subsequent to a substantial adverse credit shock such as the US financial crisis there is an important global supply side effect for retail customers even in banks that are mandated to serve only local customers and countries that are affected only indirectly by the crisis. The paper builds on the existing literature on nonmonetary transmissions of shocks to the lending sector (e.g., Bernanke, 1983, Bernanke and Blinder, 1988, Bernanke and Blinder, 1992) and financial contagion (e.g., Allen and Gale, 2000) and asks the following questions. Does the financial crisis affect lending practices in foreign countries with stable economic performance? Do the worst-hit banks in these countries reduce their lending? Does the domestic retail customer, e.g., the construction worker in Germany, face credit rationing from his local bank as a result? Or is the decreased credit driven by reduced loan applications on the demand side by consumers? If there are supply effects, which type of credit is affected most? Do bank-depositor relations help mitigate these effects? These questions are particularly important in the context of retail lending on which there has been relatively little research.

In this paper we address these questions by taking advantage of a unique database. Our experimental setting is that of German savings banks, which provide an ideal laboratory to analyze the question of supply side effects on retail customers. Savings banks in Germany are particularly interesting to examine as they are mandated by law to serve only their respective local customers and thus operate in precisely and narrowly defined geographic regions, following a version of narrow banking. Total lending and corporate lending by savings banks in Germany kept increasing even after the beginning of the financial crisis in 2007. However, retail lending by savings banks showed a slow and continuous decrease. This raises the question of whether the decline in retail credit is due to savings banks rejecting more loan applications. For the savings banks we have the universe of loan applications made, along with the credit scoring. We also know which loan applications were granted and which were turned down. Hence we are able to directly distinguish between supply and demand effects. This differentiation is important from a policy perspective. We are able to assess the implications of credit rationing for retail customers on which there has been relatively little empirical work. Further, our data set also allows us to speak to the kinds of loans that are affected most and also assess if relations help mitigate credit rationing in such situations.

The German economy showed reasonable growth and a record-low level of unemployment until 2008. Furthermore, the German housing market did not experience the significant increase and rapid decline in prices that occurred in US and other European markets and thus did not affect German banks. At the same time, some of the German regional banks (Landesbanken) had large exposure to the US subprime market and were substantially hit in the wake of the financial crisis. These regional banks are in turn owned by the savings banks, which had to make guarantees or equity injections into the affected Landesbanken. We thus have a natural experiment in which we can distinguish between affected savings banks (that own Landesbanken affected by the financial crisis) and other savings banks.

Our empirical strategy proceeds as follows. Using a comprehensive data set of consumer loans for the July 2006 through June 2008 period, we examine whether banks that are affected at the onset of the financial crisis reduce consumer lending more relative to nonaffected banks. We are able to distinguish between demand and supply effects. While we find an overall decrease in demand for consumer loans after the beginning of the financial crisis, we do not find significant differences in demand as measured by applications to affected versus unaffected savings banks. More important, we do, however, find evidence for a supply side effect on credit after the onset of the financial crisis. In particular, we find the average rejection rate of affected savings banks is significantly higher than of nonaffected savings banks. This result holds particularly true for smaller and more liquidity-constrained banks. Further, we find that this effect is stronger for mortgage as compared with consumer loans. Finally, we consider the change in rejection rates

at affected banks after the beginning of the financial crisis by rating class. We find that the rejection rates significantly increase for each rating class and, in particular, for the worst rating classes, but the overall distribution of accepted loans does not change.

We next analyze whether bank-depositor relations affect supply side effects in lending. We are interested in whether borrowers at affected banks who have a prior relationship with this bank are more likely to receive a loan after the start of the financial crisis. We show a clear benefit to bank-depositor relations resulting in significantly higher acceptance rates of loan applications by customers in the absence of the financial crisis. Further, while affected banks significantly reduce their acceptance rates during the financial crisis, we find relationships help mitigate the supply side effects on bank lending. Customers with relationships with the affected bank are less likely to have their loans rejected as compared with new customers. Our results are robust to multiple specifications.

Our paper adds to the growing literature on the effects of the globalization of banking. Peek and Rosengren (1997), Rajan and Zingales (2003), Berger, Dai, Ongena, and Smith (2003), and Mian (2006) analyze the opportunities and limits of banks entering foreign countries and the effect of foreign banks lending to corporate firms. Relatively little research has been done on the effect of globalization on retail lending, and on the effect of small savings banks taking on international exposure on the bank's local borrowers in the bank's home country. Our paper provides evidence on this count. We show that borrowers are affected through a direct banking channel when their local bank experiences an adverse shock even when the local bank itself practices narrow banking but has exposure in a foreign country through its ownership structure. Our paper also adds to the growing work that tries to understand the real effects of financial crises. Ivashina and Scharfstein (2010) and Chari, Christiano, and Kehoe (2008) study bank lending to corporate firms in the US after the onset of the financial crisis. Gan (2007) and Duchin, Ozbas, and Sensoy (2010) show a decline in corporate investments as a consequence of tightened credit supply. Our paper presents complementary evidence on the consumer, or retail side, using an experimental setting that enables us to directly distinguish between the demand and supply effects of the financial crisis. Insofar as retail customers do not have access to other financing sources in the same way as corporate customers who can also access public debt or equity markets, if there is a supply side effect of bank lending, it is likely to be particularly important for retail customers. We find evidence of supply side effect on retail lending after the beginning of the financial crisis that is stronger for certain kinds of loans and mitigated by consumer-bank relationships. More generally, our paper adds to the broader literature on credit rationing (Stiglitz and Weiss, 1981). While credit rationing has been studied for corporations, limited work examines credit rationing for retail loans, especially in times of financial crises. Finally, our paper also speaks to the literature on relationships. While bank-firm relations are generally considered important (see Petersen and Rajan, 1994, Berger and Udell, 1995), the importance of bank relations for retail customers has received far less attention. Our evidence suggests that bank-depositor relationships are important in mitigating credit rationing effects in times of financial crises.

The rest of the paper is as follows. Section 2 gives the institutional background. Section 3 explains the empirical strategy and proposed methodology. Section 4 describes the data. Section 5 gives the empirical results. Section 6 does robustness checks. Section 7 concludes.

Institutional background and data

We start by describing the institutional background and the data that we use in our paper...

Empirical strategy

We analyze whether credit supply and demand is affected by the financial crisis. In particular, we employ a difference-in-differences (DID) approach to analyze the following two questions. First, does banks' supply of credit change when these banks are affected by the financial crisis, i.e., do they accept fewer loan applications? Second, does customers' demand for credit change in banks that are affected by the financial crisis, i.e., do customers apply less for loans or do they request lower...

Data description and summary statistics

We describe next in detail the data sources for our analyses and provide summary statistics...

Empirical results

This section describes the main empirical analyses for loan demand and supply at affected and nonaffected banks and the impact of bank-borrower relationships...

Robustness

In this section, we provide several additional analyses to test the validity of the empirical specification and the robustness of the results....

Conclusion

In this paper we take advantage of a unique data set to study the real effects of the financial crisis through the global supply of credit. We have the universe of loan applications and loan approvals for German savings banks in a time period that spans the financial crisis. We have a unique experimental setting in that some of our local savings banks, while they engage in narrow banking, are substantially affected by the US financial crisis through the Landesbanken that they own, which in turn ...

[Recommended articles](#)

References (32)

A. Berger *et al.*

[To what extent will the banking industry be globalized? A study of bank nationality and reach in 20 European nations](#)

Journal of Banking and Finance (2003)

R. Duchin *et al.*

[Costly external finance, corporate investment, and the subprime mortgage credit crisis](#)

Journal of Financial Economics (2010)

R.R. Huang

[Evaluating the real effect of bank branching deregulation: comparing contiguous counties across US state borders](#)

Journal of Financial Economics (2008)

V. Ivashina *et al.*

[Bank lending during the financial crisis of 2008](#)

Journal of Financial Economics (2010)

R. Rajan *et al.*

[The great reversals: the politics of financial development in the 20th century](#)

Journal of Financial Economics (2003)

F. Allen *et al.*

[Financial contagion](#)

Journal of Political Economy (2000)

J.G. Altonji *et al.*

[Small-sample bias in GMM estimation of covariance structures](#)

Journal of Business and Economic Statistics (1996)

E.M. Andersen

[Conditional Inference and Models for Measuring](#)

(1973)

O. Ashenfelter *et al.*

[Using longitudinal structure of earnings to estimate the effect of training programs](#)

Review of Economics and Statistics (1985)

A. Berger *et al.*

[Relationship lending and lines of credit in small firm finance](#)

Journal of Business (1995)



View more references

Cited by (413)

[Quantitative Easing and bank risk-taking behavior](#)

2023, Heliyon

[Show abstract](#)

[COVID-19, a blessing in disguise for the Tech sector: Evidence from stock price crash risk](#)

2023, Research in International Business and Finance

[Show abstract](#) 

[An evolution of global and regional banking networks: A focus on Japanese banks' international expansion](#)

2023, Journal of International Financial Markets, Institutions and Money

[Show abstract](#) 

[The impact of laws and institutions on financial contracts: Evidence from relationship lending across the world](#)

2023, Journal of Banking and Finance

[Show abstract](#) 

[Consumer credit in an emerging economy: Demand, supply, and liquidity restrictions](#)

2023, Emerging Markets Review

[Show abstract](#) 

[Impact of ridesharing platforms on hospitals' emergency department admissions](#)

2023, Decision Support Systems

[Show abstract](#) 



[View all citing articles on Scopus](#) 

☆ We thank Sanvi Avouyi-Dovi, Hans Degryse, Enrica Detragiache, Valeriya Dinger, Andrew Ellul, Mark Flannery, Nils Friewald, Luigi Guiso, Andreas Hackethal, Victoria Ivashina, Michael Kötter, Hamid Mehran, José-Luis Peydro, Harry Schmidt, Bill Schwert (the editor), Berk Sensoy, David Smith (the referee), Phil Strahan, Marcel Tyrell, Vikrant Vig, Mark Wahrenburg, as well as seminar participants at the 2010 Western Finance Association (WFA) meetings, 2010 Financial Intermediation Research Society (FIRS) conference, 2010 Interdisciplinary Center (IDC) Herzliya conference, 2010 American Finance Association (AFA) meetings, 2009 UniCredit conference in Rome, 2009 Federal Deposit Insurance Corporation's Center for Financial Research (FDIC CFR) workshop, second Centre for Economic Policy Research and the European Banking Center and the University of Antwerp (CEPR-EBC-UA) Conference on Competition in Banking Markets, 2009 European Central Bank and the Center for Financial Studies (ECB-CFS) Research Network Conference, 2009 CEPR meetings in Gerzensee, Business Models in Banking Conference at Bocconi, FDIC Ninth Annual Bank Research Conference, Recent Developments in Consumer Credit and Payments Conference at Federal Reserve Bank Philadelphia, German Finance Association annual meeting, Bruegel, Deutsche Bundesbank, Duke University, ESMT, HEC Lausanne, Tilburg University, University of Amsterdam, University of Mannheim, and University of North Carolina. We are grateful to the FDIC for funding and to the German Savings Bank Association for access to data. Jörg Rocholl acknowledges support from the Peter-Curtius Foundation. Sascha Steffen acknowledges support from Deutsche Forschungsgemeinschaft (Grant Ste 1836/1-1).

1 Tel.: + 49 30 21231 1292.

2 Tel.: + 49 621 181 1531.

[View full text](#)



All content on this site: Copyright © 2023 Elsevier B.V., its licensors, and contributors. All rights are reserved, including those for text and data mining, AI training, and similar technologies. For all open access content, the Creative Commons licensing terms apply.

