The Role of the Bundesbank Microdata Production in Times of Big Data: The Need for Data Access, Data Sharing, and an Integrated Digital Information System

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The Role of the Bundesbank Microdata Production in Times of Big Data: The Need for Data Access, Data Sharing, and an Integrated Digital Information System

Abstract
Deutsche Bundesbank - as other central banks - collects monetary, financial and external sector statistical data, comprehensive sets of indicators and seasonally adjusted business statistics. So, the Bundesbank is one of the largest data producers in Germany and its data are of high quality. This applies also to its micro data - quality-tested administrative data covering the fields of banks, securities, enterprises and household finance.

To meet the demand of data users and data compilers for (granular) data sharing and to facilitate the implementation of the G20-Recommendation II.20 of DGI-2, the Bundesbank provides free of charge access for external independent researchers to its (linked) microdata for research purposes in its Research Data and Service Centre (RDSC).

To improve the knowledge RDSC together with NYU (Julia Lane) are developing an Integrated Digital Information System (IDIS). IDIS is a dynamic and adaptive repository which connects data producers, RDSC and Bundesbank researchers, by building a community around research projects, data sets and publications (knowledge map) The knowledge map turns fragmented knowledge produced at all stages of the research process into discoverable and reusable knowledge. Second, by incorporating possibilities for all data users to feed back their information, the knowledge map becomes dynamic. So, IDIS creates value by making discovery of data and related projects, people, and publications at Bundesbank more comprehensive and efficient through storage of usable knowledge in a repository. It also enables analysis about research using modern statistical tools.

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The Role of the Bundesbank Microdata Production in Times of Big Data: The Need for Data Access, Data Sharing, and an Integrated Digital Information System

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Based on a project with and contributions from:
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(The views expressed here do not necessarily reflect the opinion of the Deutsche Bundesbank or the Eurosystem.)
We are talking about microdata

Banks

Companies

Securities

Households
Research data workflow (2)
Vision: Open flows of information
- **Step 1**: Create the set of corpora and metadata (computer science technology) - Competition

- **Step 2**: Figure out how you learn from it and automate it (machine learning techniques) - Engagement
Step 1: Competition

3 Data Description

The data sources used in our study are (i) Auxmoney for data on P2P lending; (ii) the Deutsche Bundesbank (Interest Rates Statistics) for data on bank lending; (iii) Schufa for data on credit ratings; (iv) the Deutsche Bundesbank (Balance Sheet Statistics) for data on loan loss provisions.

Auxmoney is the oldest and largest P2P lending platform in Germany. According to its website, from the day it began business in 2007 until late 2015, the total volume of credit provided was €219 million in 39,000 projects, with an average nominal interest rate of 9.65%.

Auxmoney provided us with two different datasets. The first includes all loans divided by state between January 2010 and September 2014, with no maturity information. The second includes the average interest rate and the average credit rating represented by the Schufa score for each state per month.\textsuperscript{22}

The Deutsche Bundesbank statistics used in this study are provided by two different datasets. The first is the Interest Rates Statistics (MIR, see Bode and Beier (2016) for further information on this data source), which is a stratified sample of the German banking sector used for supervisory activities and gives the amounts and the interest rates per bank and per month applied to nonconstruction consumer credit (outstanding and new business) for different maturities (overdraft, up to one year, and more than one year).\textsuperscript{20} The statistics are composed of monthly observations between January 2010 and September 2014. The second is the dataset from the Balance Sheet Statistics (BISTA; see Beier, Krüger, and Schneider (2016) for further information on this data source), which gives information on write-ups and write-downs, from which we derive the banks’ loan loss provisions.

Our analysis is at the bank-state level. The regional differentiation of bank loans is possible because of a feature of the German banking system: the presence of Sparkassen (savings banks) and Volksbanken (cooperative banks). Each bank is only present in one German state. Sparkassen are geographically restricted banks with a legal mandate to provide bank services to all creditworthy

\textsuperscript{20}Schufa is a German private credit bureau with 479 million records on 66.2 million natural persons. Schufa provides credit ratings for each person requesting a loan and Auxmoney provides the Schufa score of each credit application.
\textsuperscript{21}For reasons of data confidentiality, Auxmoney provides its credit intermediation by month and state only if five or more loans were made in that month in that state.
\textsuperscript{22}The Interest Rates Statistics (MIR) is the German part of a larger dataset that is used by the ECB for regulatory purposes. It does not cover the whole German banking sector, only a stratified sample. For this reason, our sample does not cover all Sparkassen and Volksbanken in Germany, just the ones present in this data source.
Step 1: Competition (2)

Datasets

Topics

Methods

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P2P Lenders versus Banks:
Cream Skimming or Bottom Fishing?*

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THIS VERSION: April 18, 2018

Abstract

We develop a simple theoretical model to motivate testable hypotheses about how P2P-
platforms compete with banks for loans. The model predicts that (i) P2P lending grows when
some banks are faced with exogenously higher regulatory costs; (ii) P2P loans are riskier than
bank loans; and (iii) the risk-adjusted interest rates on P2P loans are lower than those on bank
loans. We confront these predictions with data on P2P lending and the consumer bank credit
market in Germany and find empirical support. Overall, our analysis indicates the P2P-lenders
are bottom fishing when regulatory shocks create a competitive disadvantage for some banks.

Keywords: P2P lending, bank lending, competition

JEL Classification: G21

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are responsible for all remaining errors.
Step 1: Competition (3)

capital as a percentage of total assets by 2.69% (from 6.01% to 9%) and HELABA had to increase its by 2.67% (from 6.35% to 9%). Both represented substantial increases. Landesbank are also known as the “central bank” of savings banks and they are jointly owned by state governments and local savings banks. NordLB covers savings banks in Lower Saxony, Saxony-Anhalt, and Mecklenburg-Western Pomerania, whereas HELABA covers savings banks in Hesse and Thuringia. We follow Puri, Rocholl, and Stiefen (2011) and link the savings banks to their respective Landesbank. When a Landesbank is required to raise more capital, the savings banks of these states are also faced with higher regulatory costs due to their links with their Landesbank since much of the additional capital is provided by their local savings banks. This has two effects on the savings banks that work in the same direction to reduce lending by these banks. One effect is direct — these banks are using loanable funds to purchase equity in their Landesbank rather than lending the money. The other effect is indirect — the equity investment increases the risk of the savings banks and requires a higher capital ratio, which de facto increases regulatory costs.

Thus, our empirical strategy is to test whether savings banks linked to NordLB and HELABA versus other saving banks and cooperative banks decreased their lending after the capital exercise.

Moreover, we test (i) if P2P lending rose more in those states, and (ii) whether the P2P market share gain was larger when the unaffected banks in the region were financially weaker (lower capital ratios) and hence less capable of making up for the reduced credit supply from the affected banks.

The capital exercise is a useful shock because it is exogenous to P2P lending and any pre-shock actions of affected banks. We exploit this exogenous variation in the EBA bank selection rule and use a difference-in-differences (diff-in-diff) approach to identify the effect of the capital exercise on (i) overall bank lending in affected states, and (ii) Auxmoney lending activity in affected states.

We find that overall bank lending decreases in states where banks affected by the EBA exercise are present — affected banks reduced their lending more than unaffected banks in those states. Auxmoney also increased its lending in the treated states, and increased it by more if the unaffected banks in these states had low capital ratios.

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6In its 2012 Annual Report, NordLB describes its sources of capital to meet the higher requirements. They included the Association of Savings Banks in Lower Saxony; the Savings Banks Holding Association in Saxony-Anhalt; and the Special Purpose Holding Association of Savings Banks in Mecklenburg-Western Pomerania, State of Lower Saxony, State of Brandenburg. The EBA was each injection and conversion of silent participations and other capital instruments. 7The impact of higher capital requirements on bank lending has been examined in numerous papers. See, for example, Cropp, Mosk, Organski, and Wei (2016), who specifically examine the credit supply effect of the EBA exercise.

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November 2018, Washington

P2P Lenders versus Banks: Cream Skimming or Bottom Fishing?
Step 1: Competition (4)

- Related to data you've viewed
- New data similar to data you've used
- What others have done with similar data (recipes)
- Recipes like yours
Alexander King (MFA ’17)

Alexander King is an independent developer, freelance game designer and consultant. His work centers on data-driven design and simulation, and his games have been featured in festivals like ALTCTRL.GDC and IndieCade. Alexander has an MFA in Game Design from the NYU Game Center. Before working in games, Alexander was an analytics consultant working in finance and e-commerce. Now the economies he models are largely fictional ones.
A Game Designer’s View of Engagement

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Thank you!

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