# Delays in Banks' Loan Loss Provisioning and Economic Downturns: Evidence from the U.S. Housing Market

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*1. A description of which author(s) handled the data and conducted the analyses.*

The author, Sehwa Kim, handled the data and conducted the analyses.

*2. A detailed description of how the raw data were obtained or generated, including data sources, the specific date(s) on which data were downloaded or obtained, and the instrument used to generate the data (e.g., for surveys or experiments). We recommend that more than one author is able to vouch for the stated source of the raw data.*

The data sources and the years in which data were downloaded or obtained are as follows:

1) Call Reports were obtained from the Federal Reserve Bank of Chicago in 2015.[1]

2) The HMDA data for the 2006-2010 period were obtained from from the Home Mortgage Disclosure Act (HMDA) database.[2] The HMDA data for the 2003-2005 period were obtained from the National Archives website.[3] HMDA provides information at the county and the census tract level, but not at the ZIP level. To construct the ZIP-level data, I match census tracts to ZIP codes using "ZIP Code Tabulation Area (ZCTA) Relationship Files" from the US census.[4] All the data were obtained in 2017.

3) DataQuick is a proprietary data containing information on real estate appraisal and transactions in the U.S., and was made available through the Fama-Miller Center for Research in Finance and the Initiative on Global Markets at the University of Chicago Booth School of Business. The data were obtained through Prof. Eric Zwick's personal server at the University of Chicago Booth School of Business in 2017.

4) Federal Housing Finance Agency (FHFA) Home Price Index is obtained from the website of the Federal Housing Finance Agency (FHFA) in 2017.[5]

[1] https://www.chicagofed.org/banking/financial-institution-reports/commercial-bank-data
[2] https://www.ffiec.gov/hmda/hmdaproducts.htm
[3] https://www.archives.gov/research/catalog
[4] https://www.census.gov/programs-surveys/geography/technical-documentation/records-layout/2010-zcta-record-layout.html
[5] https://www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index-Datasets.aspx#qat

5) CoreLogic price indices are proprietary data, and were made available through the Fama-Miller Center for Research in Finance and the Initiative on Global Markets at the University of Chicago Booth School of Business. The data were obtained in 2017.

6) Geographic control variables were obtained from various sources. The ZIP-level demographics, poverty, and education are from "2007-2011 American Community Survey 5-Year Estimates."[6] The ZIP-level average income and gross income growth rate are from the IRS' Statistics of Income (SOI).[7] The ZIP-level employment and establishment growth rate are from the County Business Patterns (CBP).[8] The state-level coincidence index is from the Federal Reserve Banks of Philadelphia.[9] The data were obtained through 2017 – 2018.

*3. If the data are obtained from an organization on a proprietary basis, the authors should privately provide the editors with contact information for a representative of the organization who can confirm data were obtained by the authors. The editors would not make this information publicly available. The authors should also provide information to the editors about the data sharing agreement with the organization (e.g., non-disclosure agreements, any restrictions imposed by the organization on the authors, such as restrictions to publish certain results).*

**DataQuick** and **CoreLogic price indices** are proprietary data, and were made available through the Fama-Miller Center for Research in Finance and the Initiative on Global Markets at the University of Chicago Booth School of Business. The Fama-Miller Center acquires and maintains data provided strictly for academic research and cannot be used for commercial purposes. Access to certain data is provided only to those who are affiliated with Booth and the Fama-Miller Center. Contact information: fama-miller@chicagobooth.edu.

*4. A complete description of the steps necessary to collect and process the data used in the final analyses reported in the paper. For experimental and survey papers, we require information about the instructions and instruments used to generate the data, subject eligibility and/or selection, as well as any exclusion criteria. The full set of instructions and instruments can be provided in the online appendix.*

A complete description of the steps necessary to collect and process the data used in the final analyses reported in the paper is provided in Section A of the online appendix.

*5. The computer programs or code used to convert the raw data into the final dataset used in the analysis plus a brief description that enables other researchers to use this program. The purpose of this requirement is to facilitate replication and to help other researchers understand in detail how the raw data were processed, the final sample was formed, variables were defined, outliers*

[6] https://factfinder.census.gov/
[7] https://www.irs.gov/statistics/soi-tax-stats-individual-income-tax-statistics-zip-code-data-soi
[8] https://www.census.gov/programs-surveys/cbp/data/datasets.html
[9] https://www.philadelphiafed.org/research-and-data/regional-economy/indexes/coincident

*were treated, etc. This code or programming is in most circumstances not proprietary. However, we recognize that some parts of the code or data generation process may be proprietary, including from the authors' perspective. Therefore, instead of the code or program, researchers can provide a detailed step-by-step description of the code or the relevant parts of the code such that it enables other researchers to arrive at the same final dataset used in the analysis. In such cases, the authors should inform the editors upon initial submission, so that the editors can consider an exemption from the code sharing requirement. Whenever feasible, authors should also provide the identifiers (e.g., CIK, CUSIP) for their final sample. Authors should consult our FAQ Sheet on the JAR website for further details.*

The computer programs used to convert the raw data into the final sample, programs to generate the main tables, and the identifiers for the final sample are provided. The following file names with brief descriptions are provided in *README.txt*:

1.DLR_Kim_Bank_DLR_Construct.sas: Construct Bank-level DLR measure and other variables
2.DLR_Kim_Distressed_Sales_Construct.sas: Construct Bank-level DLR measure and other variables
3.DLR_Kim_Main_Construct.sas: Construct ZIP-Code-level, Bank-ZIP-level, Bank-MSA-level, and Application-level data
4.DLR_Kim_Matched_Loan_Construct.sas: Construct Matched-Loan data
5.DLR_Kim_Analysis.do: Run main regressions

Identifiers of units in the final sample are provided in the following files:

Application_ID.dta: *zcta5* for ZIP-code and *mergeid* for banks
Bank_MSA_ID.dta: *msa_code* for MSA and *mergeid* for banks
Bank_ZIP_ID.dta: *zcta5* for ZIP-code and *mergeid* for banks
ZIP_ID.dta: *zcta5* for ZIP-code

*6. An assurance that the data and programs will be maintained by at least one author (usually the corresponding author) for at least six years, consistent with National Science Foundation guidelines.*

The author agrees to maintain all data and programs for at least six years, consistent with National Science Foundation guidelines.