

A Beginner's Guide to Accessing and Using Home Mortgage Disclosure Act Data

Table of Contents

Table of Contents	1
1. Purpose	2
2. What are HMDA data?	3
2.1 Where to find HMDA data	3
2.2 Who reports HMDA data	4
2.3 HMDA data points.....	5
2.4 Public access to HMDA data	5
3. Step-by-Step Guide	6
3.1 Using the Data Browser to filter and download a dataset	6
3.2 Using Excel to understand your data: Introduction to pivot tables	10
3.3 Grouping in Excel	16
3.4 Using the VLOOKUP function in Excel to match different datasets	18
4. Conclusion	28

1. Purpose

Mortgage lending data reported in accordance with the Home Mortgage Disclosure Act (HMDA), commonly called “HMDA data,” is the largest source of publicly available data on mortgage lending in the United States.

The purpose of this guide is to introduce this data to potential users who have little to no experience with handling and analyzing raw data. This guide covers the basics of what HMDA data are and how to access the data, as well as a step-by-step guide for using HMDA data. The guide will instruct the beginner user how to find and download HMDA data, select subsets and filters for the data, and begin to analyze the HMDA data using pivot tables, grouping data together, and matching data across datasets. For these exercises, you will need a computer with internet access and Microsoft Excel.

The methods described are examples only of how to understand the HMDA data and do not describe all the ways the data can be used and understood. In addition, we caution against drawing legal conclusions from a particular analysis suggested in this guide. Legal compliance may depend on a variety of factors that may not be accounted for in an analysis provided using the methods described here.

2. What are HMDA data?

The Home Mortgage Disclosure Act requires financial institutions to maintain, report, and publicly disclose loan-level information about mortgages. These data help show whether lenders are serving the housing needs of their communities; give a range of stakeholders information that helps them make recommendations, decisions and policies; and shed light on lending patterns that could be discriminatory. The CFPB modifies publicly released data to protect applicant and borrower privacy.

HMDA was originally enacted by Congress in 1975 and is implemented by Regulation C.¹ HMDA has been amended by Congress several times since it was enacted, and federal agencies have issued multiple regulatory changes to Regulation C as well. Collectively, the Board of Governors of the Federal Reserve System (FRB), the Federal Deposit Insurance Corporation (FDIC), the National Credit Union Administration (NCUA), the Office of the Comptroller of the Currency (OCC), and the CFPB comprise the Federal Financial Institutions Examination Council (FFIEC), a governmental interagency body that facilitates public access to the data.

Over the years, amendments to HMDA and agency rulemakings have changed which financial institutions are required to report, and the data they are required to report under HMDA.

2.1 Where to find HMDA data

HMDA data is available at <https://ffiec.cfpb.gov/>. They can be accessed by using:

- The [HMDA Data Browser](#) ; the entire static HMDA dataset or custom datasets and summary tables are available at this site.
- The [Dynamic National Loan Level Dataset](#).

These resources help provide additional background on the HMDA data:

- [HMDA Public Data Fields with Values and Definitions](#) provides an overview of the fields and the content.
- [Public LAR Schema](#) indicates the maximum length of each field.

¹ 12 C.F.R. Part 1003.

- [HMDA “Getting It Right!” Guide](#) is a comprehensive resource explaining what is included in HMDA data, including the meanings of all fields and variables.

If you experience technical problems in accessing the public HMDA data, you can email hmdahelp@cfpb.gov.

2.2 Who reports HMDA data

HMDA requires financial institutions², including depository (e.g. banks) and non-depository (e.g. non-bank mortgage companies) institutions, to report HMDA data. However, not every institution that issues or originates a home mortgage is required by HMDA to report its mortgage data.

For example, an institution must have had a home or branch office location in a metropolitan statistical area (MSA) on the preceding December 31st in order to be covered by HMDA’s requirements.³ In this example, a non-depository financial institution is deemed to have a branch office in an MSA if, in the preceding calendar year, it received applications for, originated, or purchased five or more HMDA-reportable loans related to property located in that MSA, even if it does not have an office in that MSA.⁴

Similarly, the depository or non-depository institution must have originated at least 100 closed-end mortgage loans in each of the two preceding calendar years or have originated at least 200 open-end lines of credit in each of the two preceding calendar years in order to be covered by HMDA’s reporting requirements.

Other institutional coverage rules apply. A chart summarizing HMDA institutional coverage is available [here](#). In addition, for those institutions that are covered, only loans that meet Regulation C’s transactional coverage requirements must be reported.⁵ A chart summarizing HMDA transactional coverage is found [here](#).

² Regulation C defines “financial institutions” at [12.CFR §.1003.2\(g\)](#).

³ 12 CFR 1003.2(g)(1)(ii).

⁴ 12 CFR 1003.2(c)(2).

⁵ Regulation C’s transactional coverage criteria is generally found within the definition of “Covered Loan,” located at 12 CFR 1003.2(e) and the associated commentary.

2.3 HMDA data points

Financial institutions subject to HMDA’s requirements report up to 110 different data points for each mortgage application they receive. Collectively, the data points for each application are referred to as a “loan/application register” or “LAR.” Among the data points are loan type, loan purpose, demographic information of the borrower or co-borrowers including race, ethnicity, sex and age, the location of the dwelling, the action the financial institution took on the application, the loan amount, the interest rate, any points and fees charged in connection with the loan, and the property value.

For some transactions, a certain data point may not be applicable. For example, if a borrower withdrew a mortgage application before the institution made a credit decision, the institution would report the code for “not applicable” for the interest rate data point. HMDA also provides that certain financial institutions may be eligible for partial exemptions for certain transactions. If a financial institution is eligible for a partial exemption for a specific transaction, then the financial institution is not required to collect, record, or report certain data points for the transaction.

2.4 Public access to HMDA data

Financial institutions are required to submit annual HMDA LAR in electronic format by March 1 of the year following the calendar year for which the data are collected.⁶ The CFPB releases the data to the public on or before March 31 following data collection.

In order to protect borrower and applicant privacy, the publicly-released data exclude or modify several data points reported by financial institutions, such as the universal loan identifier, the date the application was received or the date shown on the application form, the address of the property, the credit score or scores relied on in making the credit decision, and applicant borrower or ethnicity free-form text field.⁷

⁶ 12 CFR 1003.5(a)(1)(i).

⁷ CFPB, Disclosure of Loan-Level HMDA Data, 84 FR 649 (Jan. 31, 2019). Note that the above is not a comprehensive list of excluded data points.

3. Step-by-Step Guide

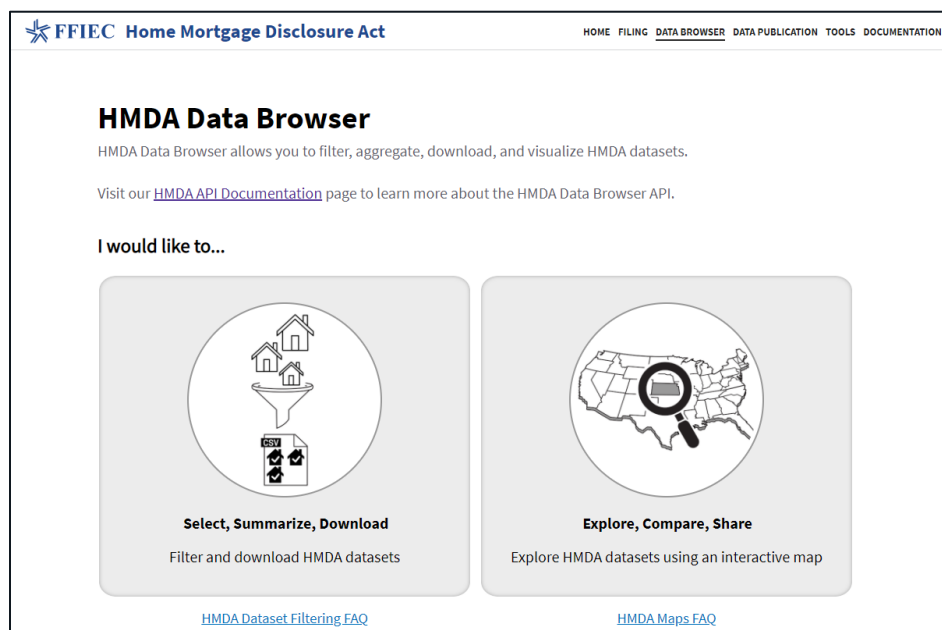
Below is a sample exercise to explain how to find, download, and begin to analyze available HMDA data. You'll need access to the internet and Microsoft Excel to follow this example.

In this exercise, we will use HMDA data to find out how many applications HMDA reporters in Birmingham, Alabama received from minority neighborhoods. For the purpose of this exercise, a minority neighborhood is a census tract where at least 50% of the residents are identified by the U.S. Census Bureau as a racial or ethnic minority (i.e., Black or African American, Hispanic, American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, or some other race)

3.1 Using the Data Browser to filter and download a dataset

STEP 1: Go online and find the [HMDA Data Browser](https://ffiec.cfpb.gov/data-browser/) at <https://ffiec.cfpb.gov/data-browser/>.

STEP 2: Click “Select, Summarize, Download”



STEP 3: Select the year for which you want HMDA data. For our example, click 2020.

Select a year
2020 2019 2018
Step 1: Select Geography

STEP 4: Select a Geography, by State, County, Metropolitan Statistical Area/Metropolitan Division (MSA/MD), or Nationwide. For our example, select “MSA/MD” and start typing “Birmingham,” and you will see the Birmingham-Hoover-Alabama MSA appear for selection.

Step 1: Select Geography
Start by selecting a geography filter using the dropdown menu below. [View more information on the available filters.](#)

MSA/MD | Birm |
13820 - BIRMINGHAM-HOOVER - ALABAMA

Step 2: Select Financial Institution (optional)

STEP 5: Select one or more financial institutions, or leave it blank to see all financial institutions that reported HMDA Data in that geography. For our example, leave this blank.

Step 2: Select Financial Institution (optional)
You can select one or more financial institutions by entering the financial institutions LEI or name.
NOTE: Only institutions that operate in the selected geography are available for selection.

All institutions selected. Select or type the name of one or more LEIs to filter

STEP 6: Select any filters. The filters you apply will directly affect the results you receive. When selecting which filters to apply, you may consider:

- Am I interested only in originated loans? Or all applications? Or all HMDA records including preapprovals and post-origination secondary market loan purchases? The Action Taken filter will be helpful if these are concerns.
- Am I focused only on conventional loans? Or Federal Housing Administration (FHA), Department of Veterans Affairs (VA), or Rural Housing Service (RHS) loans? Find the Loan Type filter if these questions are important to your analysis.

- Am I interested in HMDA records only for purchasing a home? Or refinancing, home improvement loans, or loans for other purposes? The Loan Purpose filter is helpful [here](#).
- Do I want to analyze only manufactured housing in my analysis? Find the Construction Method filter for this.

For our example, both “Action Taken” and “Loan Purpose” filters are selected.

Selections for each filter will appear. For our example, under the Action Taken column, select Loan Originated, Application approved by not accepted, Application denied, Application withdrawn by applicant, and File closed for incompleteness. Under the Loan Purpose column, select Home Purchase.

Step 3: Select a filter (optional)
 Narrow down your selection by filtering on up to two [popular variables](#)

Remove a variable to select another
 ✕
▼

Action Taken ✕

Loan Purpose ✕

Action Taken

- ☒ 1 - Loan Originated
- ☒ 2 - Application approved but not accepted
- ☒ 3 - Application denied
- ☒ 4 - Application withdrawn by applicant
- ☒ 5 - File closed for incompleteness
- ☐ 6 - Purchased loan
- ☐ 7 - Preapproval request denied
- ☐ 8 - Preapproval request approved but not accepted

Loan Purpose

- ☒ 1 - Home Purchase
- ☐ 2 - Home Improvement
- ☐ 31 - Refinancing
- ☐ 32 - Cash Out Refinancing
- ☐ 4 - Other Purpose
- ☐ 5 - Not Applicable

Download Dataset

View Summary Table

STEP 7: Click “View Summary Table” to see a summary of the data you are about to download. Make sure that the total record count does not exceed Excel’s capacity (which is normally a few hundred thousand records). Beyond this number, you will need other software to download and analyze the data. Here is the summary that will appear, based on the choices you made thus far:

Data Summary

MSA/MD:
13820 - BIRMINGHAM-HOOVER

Action Taken:
Loan Originated
Application approved but not accepted
Application denied
Application withdrawn by applicant
File closed for incompleteness

Loan Purpose:
Home Purchase

Selected Variables	# of Records	\$ Amount
Loan Originated, Home Purchase	19,165	4,606,665,000
Application approved but not accepted, Home Purchase	776	140,520,000
Application denied, Home Purchase	2,961	437,135,000
Application withdrawn by applicant, Home Purchase	4,086	935,810,000
File closed for incompleteness, Home Purchase	1,012	132,710,000

The filtered data contains **28,000** rows, each with all 99 public data fields.

Download Dataset

STEP 8: Next, you can click the “Download Dataset” button to download the dataset to conduct further analysis. The default download is into a comma separated values (CSV) file that can be opened and used in Excel and similar types of software. Note that it may take a few minutes to download the file.

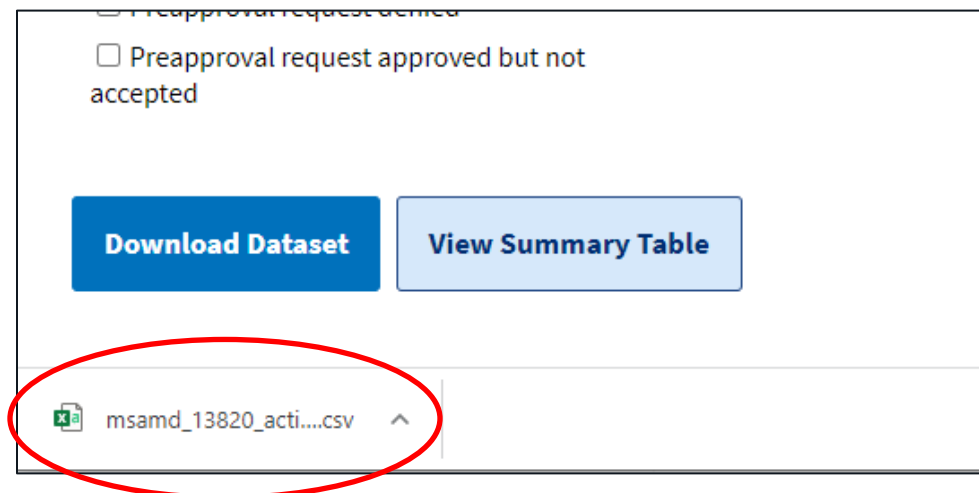
The filtered data contains **28,000** rows, each with all 99 public data fields.

Download Dataset

3.2 Using Excel to understand your data: Introduction to pivot tables

One way to work with large amounts of HMDA data in a manageable way is with “pivot tables” in Microsoft Excel. There are many online resources to learn how to use Excel, including [free tutorial videos](#).

STEP 1: Open the CSV file you just downloaded by clicking on Excel file that appears in the lower left hand of your screen after you click the “Download Dataset” button.



An Excel file should open that looks like this⁸:

AutoSave

msamnd_13820_actions_taken_1-2-3-4-5_loan_purposes_1 - Excel

Ryan, Hallie (CFPB)

FileHomeInsertPage LayoutFormulasDataReviewViewHelp

Acrobat

ShareComments

Paste

Clipboard

Calibri11A⁺A⁻

BBIU

Font

Alignment

General

Conditional Formatting

Format as Table

Cell Styles

Styles

Insert

Delete

Format

Cells

Σ

Sort & Find & Filter

Filter & Select

Editing

A1

activity_year

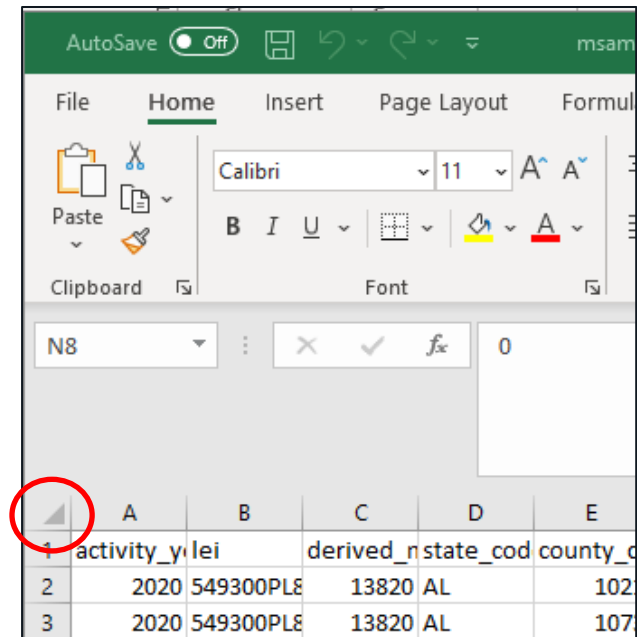
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	activity_year	derived_state_cod	county_cc	census_tr	conformir	derived_l	derived_c	derived_e	derived_r	derived_s	action_tal	purchaser	preapprov	loan_type	lo		
2	2020	549300PL	13820	AL	1021	1.02E+09	C	FSA/RHS:f	Single Far	Not Hispa	White	Female	4	0	2	4	
3	2020	549300PL	13820	AL	1073	1.07E+09	C	FHA:First	Single Far	Not Hispa	White	Female	4	0	2	2	
4	2020	549300PL	13820	AL	1117	1.12E+09	C	Conventic	Single Far	Not Hispa	Asian	Female	3	0	2	1	
5	2020	549300PL	13820	AL	1117	1.12E+09	C	FHA:First	Single Far	Not Hispa	Joint	Joint	1	2	2	2	
6	2020	549300PL	13820	AL	1021	1.02E+09	C	Conventic	Single Far	Not Hispa	White	Male	4	0	2	1	
7	2020	549300PL	13820	AL	1073	1.07E+09	C	FHA:First	Single Far	Hispanic c	White	Male	1	71	2	2	
8	2020	549300PL	13820	AL	1117	1.12E+09	C	Conventic	Single Far	Not Hispa	White	Male	1	0	2	1	
9	2020	549300PL	13820	AL	1021	1.02E+09	C	Conventic	Single Far	Not Hispa	White	Male	1	1	2	1	
10	2020	549300PL	13820	AL	1021	1.02E+09	C	FSA/RHS:f	Single Far	Not Hispa	White	Joint	1	71	2	4	
11	2020	549300PL	13820	AL	1073	1.07E+09	C	FHA:First	Single Far	Not Hispa	White	Female	4	0	2	2	
12	2020	549300WC	13820	AL	1007	1.01E+09	C	Conventic	Single Far	Not Hispa	White	Male	1	0	2	1	
13	2020	549300WC	13820	AL	1073	1.07E+09	C	Conventic	Single Far	Not Hispa	White	Male	1	0	2	1	
14	2020	549300WC	13820	AL	1073	1.07E+09	C	Conventic	Single Far	Not Hispa	White	Male	1	0	2	1	
15	2020	549300WC	13820	AL	1117	1.12E+09	NC	Conventic	Single Far	Not Hispa	White	Male	1	0	2	1	
16	2020	549300WC	13820	AL	1007	1.01E+09	C	Conventic	Single Far	Not Hispa	White	Joint	1	0	2	1	
17	2020	549300WC	13820	AL	1073	1.07E+09	C	Conventic	Single Far	Not Hispa	White	Joint	1	0	2	1	
18	2020	549300WC	13820	AL	1007	1.01E+09	C	Conventic	Single Far	Not Hispa	White	Male	1	0	2	1	
19	2020	549300WC	13820	AL	1117	1.12E+09	C	Conventic	Single Far	Not Hispa	Race Not	Joint	1	0	2	1	
20	2020	549300WC	13820	AL	1073	1.07E+09	C	Conventic	Single Far	Not Hispa	White	Female	1	0	2	1	
21	2020	549300WC	13820	AL	1073	1.07E+09	C	Conventic	Single Far	Not Hispa	Black or A	Male	1	0	2	1	

msamnd_13820_actions_taken_1-2-3

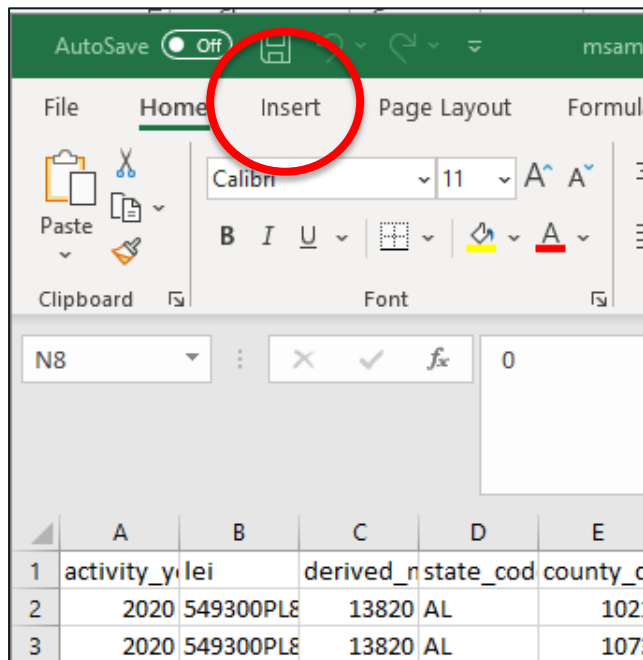
Ready

⁸ Note that different versions of Microsoft Excel may look slightly different from the images in this guide.

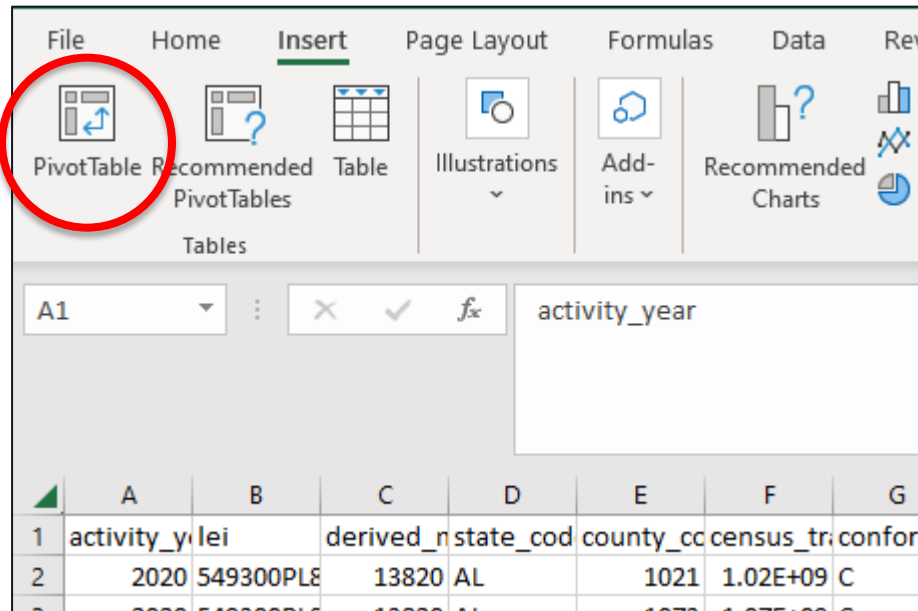
STEP 2: Click on the triangle in the upper left-hand corner of the table. This will select all of the data in the file.



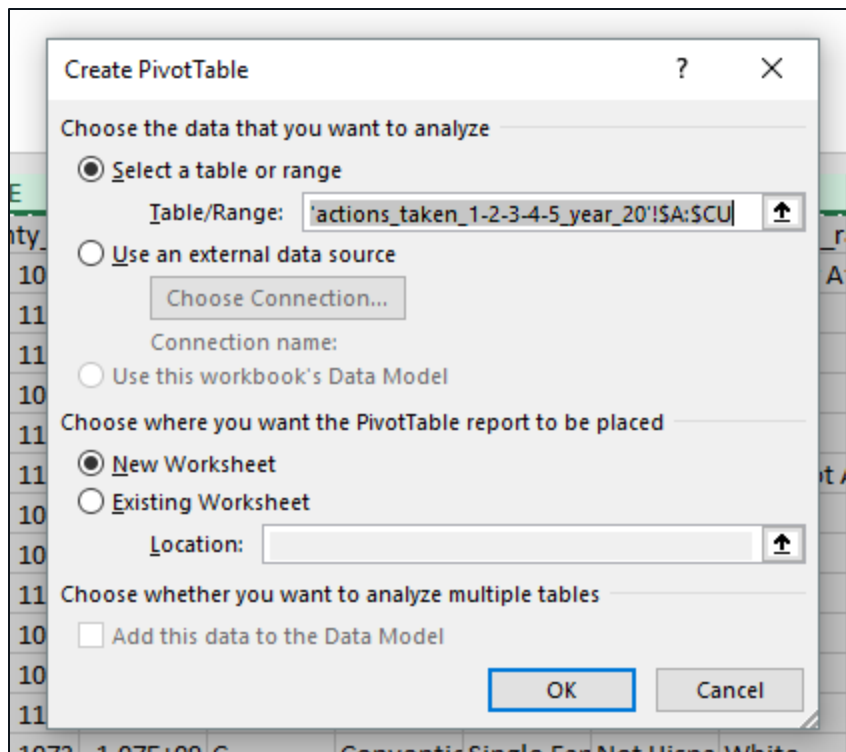
STEP 3: Click "Insert"



STEP 4: Click “Pivot Table.”

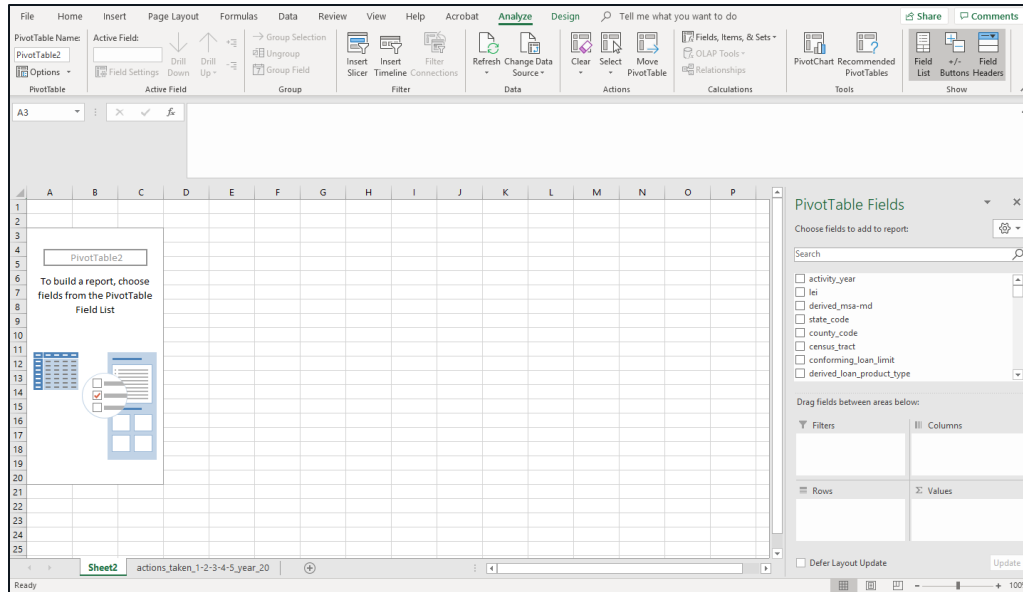


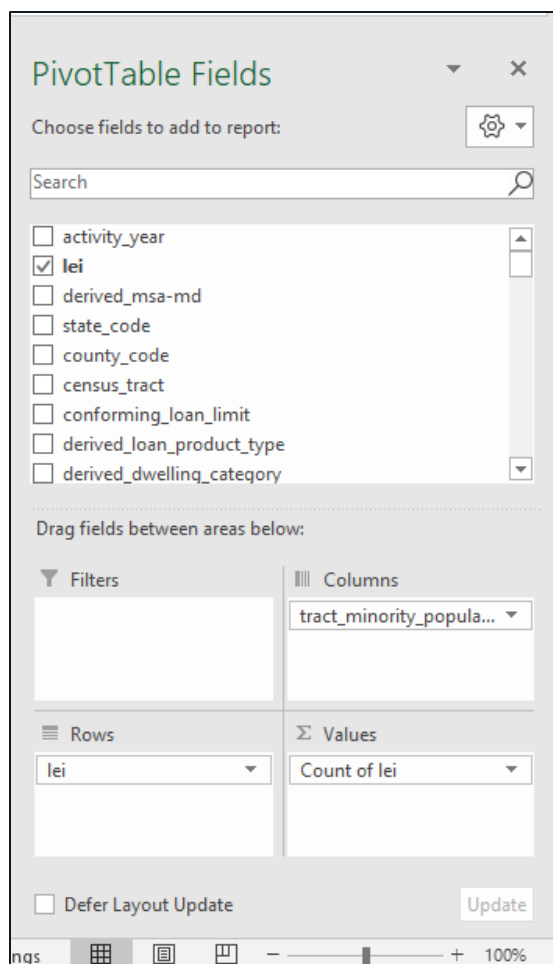
You will see a dialog box pop up:



If you are new to using pivot tables, use all of the pre-selected default settings and click “OK.” With experience, you may want to consider changing some of these settings.

The pivot table will open in a new tab and will look like this:





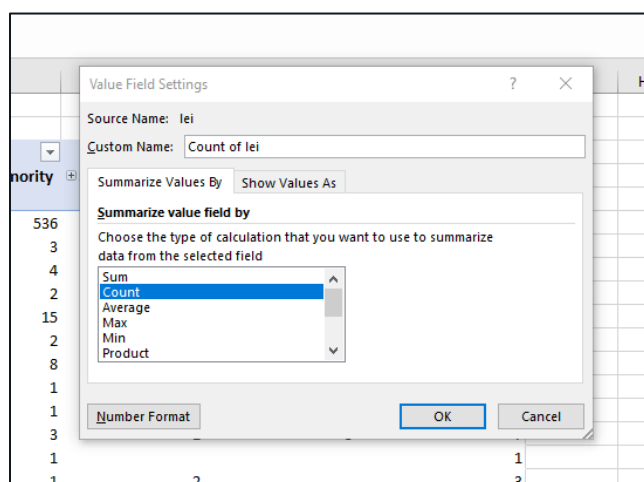
STEP 5: Using the PivotTable Fields section appearing along the right side of your screen, select and drag the fields you want into the rows, columns, and values section to see summary tables of your dataset.

For this example, we want to determine the number of applications that each lender in the Birmingham MSA received from minority neighborhoods. To do so, you will need the unique identifier for each financial institution—called the Legal Entity Identifier (LEI). To add it, click on the “lel” field and drag into the “Rows” box below.

To find whether an application came from a minority census tract, select the “tract_minority_pop_percent” field and drag that in the “Columns” box.

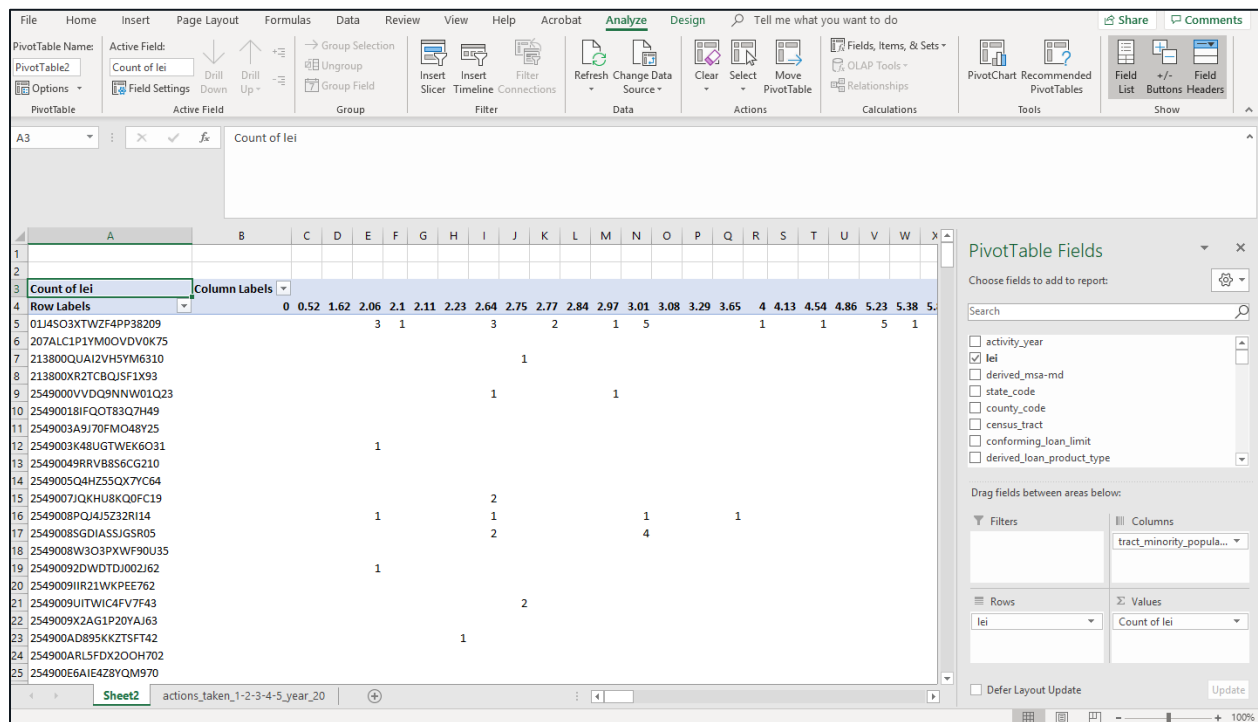
Finally, you will need to select the “Values” you want displayed in the pivot table. Here, we are going to select LEI because each application will have that value. Click and drag “lel” to the Values box.

The Custom Name should pre-populate with “Count of lel” (as in the photo immediately above) but if it displays something different, click on the small down arrow to the right and select “Value Field Settings.” A box will appear. Select “Count” from the list of options and click “OK.”



3.3 Grouping in Excel

At this point, you should see a table something like the one below. Each column represents a census tract identified with its percentage of minority residents. Each row represents a mortgage lender who reported loans for the Birmingham MSA. The values in the table represent how many applications were received and loans were originated in each census tract by each lender.



To better visualize the data, you can group data together in Excel. In this example, we will group the “tract minority population” columns to analyze whether loan applications are coming from low minority neighborhoods (0-49% minority), majority minority neighborhoods (50-79% minority), or high minority neighborhoods (80-100% minority).

STEP 1: Select all of the values that you want to group together. In this case, for the first group that includes census tracts for what we are calling low minority neighborhoods (meaning 0-49% minority), click and drag your cursor on the values in the “Row Labels” rows from 0 all the way up to (but not including) 50. Right click on the selected group, and select “Group.”

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2													
3	Count of lei	Column Labels											
4	Row Labels	0	1.62	2.06	2.1	2.11	2.23	2.64	2.75	2.77	2.97	3.01	3.0
5	01J4SO3XTWZF4PP38209					1	1	3		3	2	4	
6	1IE8VN30JCEQV1H4R804											1	
7	207ALC1P1YM0OVDV0K75												
8	213800QUAI2VH5YM6310												

A new row will appear with a place to name that group.

	A	B	C	D	E	F	G	H	I
1									
2									
3	Count of lei	Column Labels							
4		Group1							
5	Row Labels	0	0.52	1.62	2.06	2.1	2.11	2.23	2.64
6	01J4SO3XTWZF4PP38209				3	1			3
7	207ALC1P1YM0OVDV0K75								
8	213800QUAI2VH5YM6310								
9	213800XR2TCBQJSF1X93								
10	2549000VVDQ9NNW01Q23								1
11	25490018IFQOT83Q7H49								
12	2549003A9J70FMO48Y25								
13	2549003K48UGTWEK6O31				1				

Click on the cell that says “Group1” and insert your new group name. You may want to refer to it as “0-49% Minority.” Click on the minus sign to collapse the table and consolidate all of the values that you just grouped together into the new “0-49% Minority” column.

	A	B	C
1			
2			
3	Count of lei	Column Labels	
4		0-49% Minority	
5	Row Labels	0	1.62 2
6	01J4SO3XTWZF4PP38209		
7	1IE8VN30JCEQV1H4R804		

STEP 2: Repeat this step with the other minority groupings for 50-79% and 80-100%. This will result in a list of each financial institution (by LEI) and the number of applications they received from minority neighborhoods.

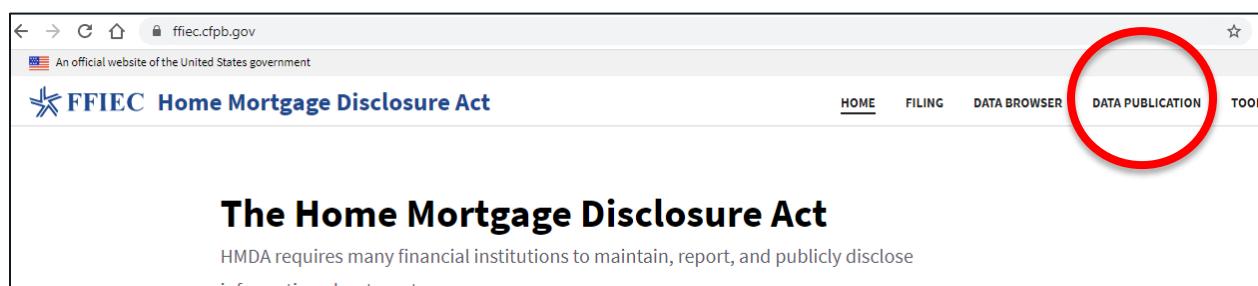
	A	B	C	D	E	F
1						
2						
3	Count of lei	Column Labels ▾				
4		⊕ 0-49% Minority ⊕ 50-79% Minority ⊕ 80-100% Minority ⊕ (blank) Grand Total				
5	Row Labels ▾					
6	01J4SO3XTWZF4PP38209	368	19		1	388
7	207ALC1P1YM0QVDV0K75	2			2	4
8	213800QUAI2VH5YM6310	8	4		2	14
9	213800XR2TCBQJSF1X93	30				30
10	2549000VVDQ9NNW01Q23	4	1			5
11	25490018IFQOT83Q7H49	3			1	4
12	2549003A9J70FMO48Y25	6				6
13	2549003K48UGTWEK6O31	4	2		3	9
14	25490049RRVB8S6CG210				1	1

However, the HMDA data only have the legal entity identifier (LEI), not the institution name.

3.4 Using the VLOOKUP function in Excel to match different datasets

In order to see the names of all the institutions, you may use the VLOOKUP function, which matches data in your dataset with another.

STEP 1: First, you need to find the dataset with institution names that you want to use to match to the LEI in your spreadsheet. This can be found in the HMDA transmittal sheet. Go back to <https://ffiec.cfpb.gov/> and select “Data Publication.”



Then select “Snapshot National Loan-Level Dataset.”

An official website of the United States government

FFIEC Home Mortgage Disclosure Act

HOME FILING DATA BROWSER DATA PUBLICATION

HMDA Data Publication

The HMDA data and reports are the most comprehensive publicly available information on mortgage market activity. The data and reports can be used along with the [Census](#) demographic information for data analysis purposes. Available below are the data and reports for HMDA data collected in or after 2017. For HMDA data and reports for prior years, visit <https://www.ffiec.gov/hmda/hmdaproducts.htm>.

[Modified Loan/Application Register \(LAR\)](#)
The modified LAR provides loan-level data for an individual financial institution, as modified by the Bureau to protect applicant and borrower privacy.

[Disclosure Reports](#)
These reports summarize lending activity for individual institutions, both nationwide and by MSA/MD.

[MSA/MD Aggregate Reports](#)
These reports summarize lending activity by MSA/MD.

[National Aggregate Reports](#)
These reports summarize nationwide lending activity. They indicate the

[Snapshot National Loan-Level Dataset](#)
The snapshot files contain the national HMDA datasets as of a fixed date for all

[Dynamic National Loan-Level Dataset](#)
The dynamic files contain the national HMDA datasets, modified by the Bureau

Select the year (and make sure that you are using HMDA data from the same year). For our example, click “2020.”

Snapshot National Loan Level Dataset

The snapshot files contain the national HMDA datasets as of May 3, 2021 for all HMDA reporters, as modified by the Bureau to protect applicant and borrower privacy. The snapshot files are available to download in both .csv and pipe delimited text file formats.

Use caution when analyzing loan amount and income, which do not have an upper limit and may contain outliers.

Select a year

2020 2019 2018 2017

2020 Datasets

- Loan/Application Records (LAR)
 - [CSV](#) - Updated: Wed Jun 16 2021
 - [Pipe Delimited](#) - Updated: Wed Jun 16 2021
- Transmittal Sheet Records (TS)
 - [CSV](#) - Updated: Thu Jul 01 2021
 - [Pipe Delimited](#) - Updated: Thu Jul 01 2021
- Reporter Panel
 - [CSV](#) - Updated: Wed Jun 23 2021

2020 File Specifications

- [Public LAR Schema](#)
- [Public Transmittal Sheet Schema](#)
- [Public Panel Schema](#)
- [Public HMDA Data Fields with Values and Definitions](#)
- [Public Panel Values and Definitions](#)
- [ARID2017 to LEI Reference Table Schema](#)


Select the Transmittal Sheet (TS) CSV file to download.

Select a year

2020 2019 2018 2017

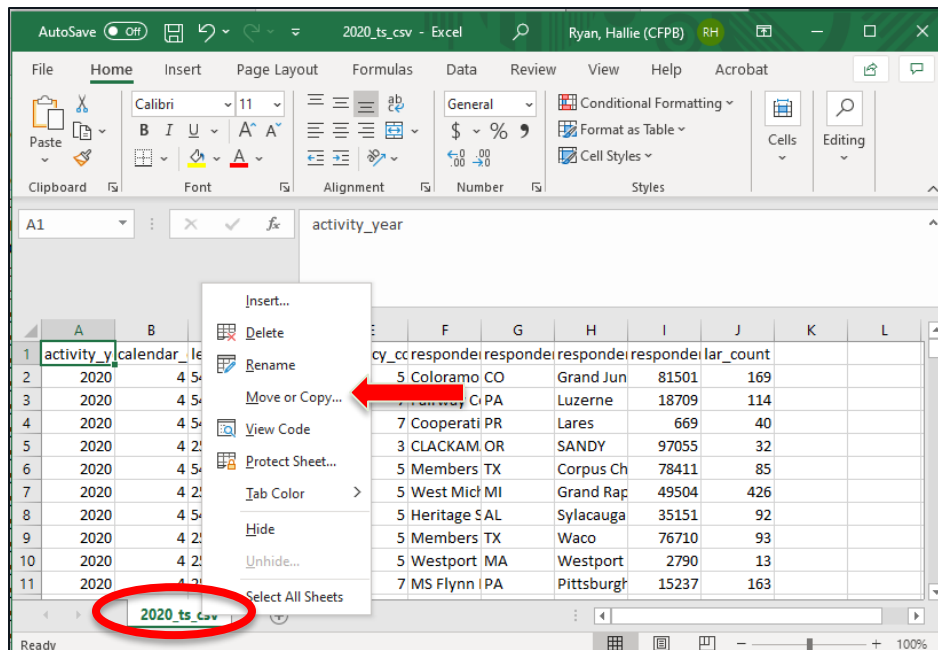
2020 Datasets

- Loan/Application Records (LAR)
 - [CSV](#) - Updated: Wed Jun 16 2021
 - [Pipe Delimited](#) - Updated: Wed Jun 16 2021
- Transmittal Sheet Records (TS)
 - [CSV](#) - Updated: Thu Jul 01 2021
 - [Pipe Delimited](#) - Updated: Thu Jul 01 2021
- Reporter Panel
 - [CSV](#) - Updated: Wed Jun 23 2021

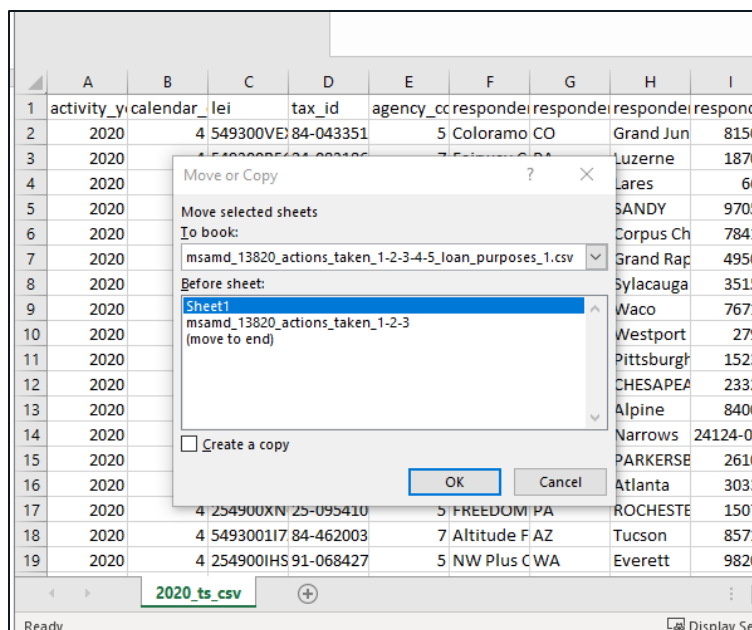
 2020_public_ts_csv....zip

This file will download into a zip file. Open and unzip the file.

STEP 2: Move the new file into the original file you used to build your pivot table as a new tab. Do that by right clicking on the tab at the bottom of the spreadsheet labeled “2020_ts_csv.” Then click “Move or Copy.”



For the top box, you want to move the selected sheet to book “msamd_13820 ...” For the “Before sheet” box, it does not matter where you move it to as long as you can keep track of the sheets, but for ease, choose “move to end.” Click “OK.”



STEP 3: In the original data sheet, called “msamd_13820 ...”, insert a blank column where you want to add the name of the financial institution. Right click on the column, select “Insert Column.”

	A	B	C	D	E	F
1	activity_yr	lei	Institution Name	derived_n	state_cod	county
2	2020	549300PL8ER6H23P0Z91		13820	AL	10
3	2020	549300PL8ER6H23P0Z91		13820	AL	10
4	2020	549300PL8ER6H23P0Z91		13820	AL	11
5	2020	549300PL8ER6H23P0Z91		13820	AL	11
6	2020	549300PL8ER6H23P0Z91		13820	AL	10
7	2020	549300PL8ER6H23P0Z91		13820	AL	10
8	2020	549300PL8ER6H23P0Z91		13820	AL	11
9	2020	549300PL8ER6H23P0Z91		13820	AL	10
10	2020	549300PL8ER6H23P0Z91		13820	AL	10

STEP 4: Name the column (e.g., “Institution Name”).

STEP 5: Begin typing the VLOOKUP statement (=VLOOKUP) in the first empty cell below the column header.

	A	B	C	D
1	activity_yr	lei	Institution Name	derived_n
2	2020	549300AG64NHILB7ZP05	=VLOOKUP(13820
3	2020	549300AG64NHILB7ZP05	VLOOKUP(lookup_value, table_array, co	
4	2020	549300AG64NHILB7ZP05		13820

When you enter the formula into Excel, you will need to include four parts:

1. Lookup value (what field are you using to match between the datasets)
2. Table array (where should Excel look in order to find the new data)
3. Column index number (which column should the new data come from)
4. Range lookup (you can just write “false” here until you get more advanced with Excel)

STEP 6: Select as the lookup value the “lei” (Legal Entity Identifier) by simply clicking on the B2 cell (or by typing “B2”). Type a comma and a space.

	A	B	C	D	E
1	activity_yr	lei	Institution Name	derived_n	state_co
2	2020	549300AG64NHILB7ZP05	=VLOOKUP(B2	13820	AL
3	2020	549300AG64NHILB7ZP05	VLOOKUP(lookup_value, table_array, col_index_n		
4	2020	549300AG64NHILB7ZP05		13820	AL

STEP 7: Select the Table Array – Navigate to the “2020_ts_csv” sheet and select the columns where Excel should be matching the LEI and the institution’s name. For our example, select four columns, from “lei” to “respondent_name,” by clicking on the “C” and drag your cursor to “F.” Type a comma and a space.

C1		:	X	✓	f _x	=VLOOKUP('2020_ts_csv'!C:F	
			1	2	3	4	
	A	B	C	D	E	F	G
1	activity_yr	calendar_yr	lei	tax_id	agency_cd	respondent_name	respondent_state
2	2020	4	549300VE	84-043351	5	Colorado	CO
3	2020	4	549300B5	24-083186	VLOOKUP(lookup_value, table_array,		

STEP 8: Now add the column of those selected where the name can be found, in this case column 4 by typing “4”. Type a comma and a space.

For the last part of the VLOOKUP, just type “FALSE.” Your complete command should read: =VLOOKUP(B2, '2020_ts_csv'!C:F, 4, FALSE).

	A	B	C	D	E
1	activity_yr	lei	Institution Name	derived_n	state_cod
2	2020	549300AG64NHILB7ZP05	=VLOOKUP(B2, '2020_ts_csv'!C:F, 4, FALSE)		
3	2020	549300AG64NHILB7ZP05		13820	AL
4	2020	549300AG64NHILB7ZP05		13820	AL
5	2020	549300AG64NHILB7ZP05		13820	AL

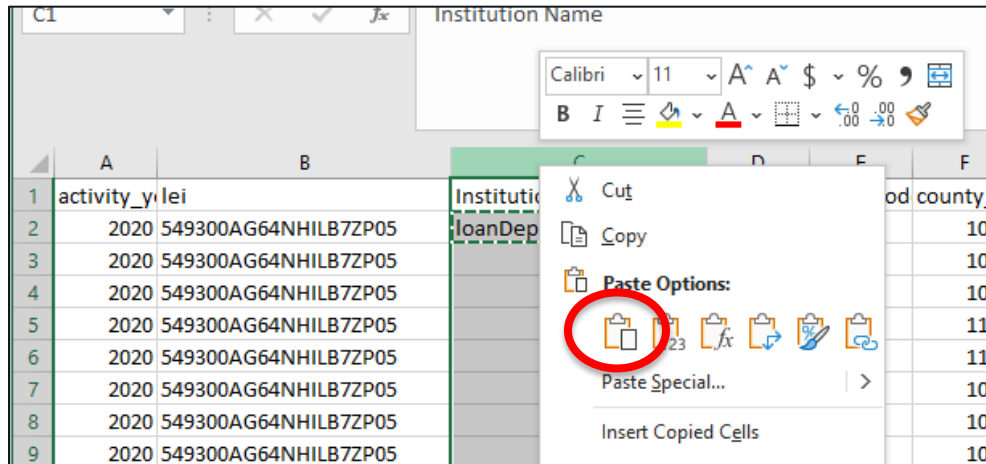
Hit enter to submit the formula and you will be able to see the matched entity name.

	A	B	C	D	E
1	activity_yr	lei	Institution Name	derived_n	state_cod
2	2020	549300AG64NHILB7ZP05	loanDepot.com LLC	13820	AL
3	2020	549300AG64NHILB7ZP05		13820	AL
4	2020	549300AG64NHILB7ZP05		13820	AL
5	2020	549300AG64NHILB7ZP05		13820	AL

STEP 9: Paste the formula into the entire column to match all names. Right click on the cell with the formula (cell C2) and select “Copy” (note: you can also copy by typing Ctrl + C)

	A	B	C	D	E	F	G
1	activity_yr	lei	Institution Name	derived_n	state_cod		
2	2020	549300AG64NHILB7ZP05	loanDepot.com LLC	13820	AL	1073	1.07E
3	2020	549300AG64NHILB7ZP05				1073	1.07E
4	2020	549300AG64NHILB7ZP05				1073	1.07E
5	2020	549300AG64NHILB7ZP05				1115	1.12E
6	2020	549300AG64NHILB7ZP05				1115	1.12E
7	2020	549300AG64NHILB7ZP05				1073	1.07E
8	2020	549300AG64NHILB7ZP05				1073	1.07E

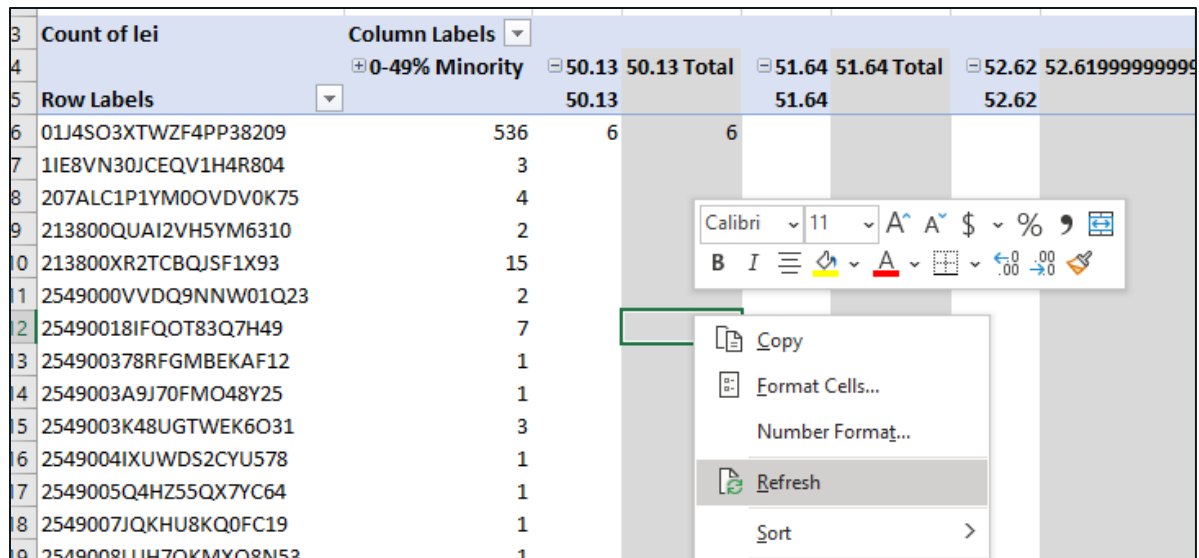
Then right click on the column header “C” and select the Paste icon.



You should now have the name of the institution in column C.

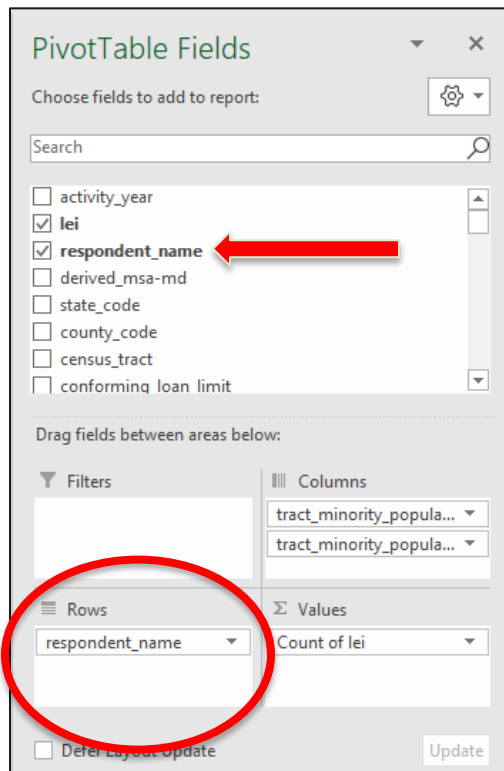
	A	B	C	D
1	activity_y	lei	respondent_name	
2	2020	549300AG64NHILB7ZP05	loanDepot.com LLC	1
3	2020	549300AG64NHILB7ZP05	loanDepot.com LLC	1
4	2020	549300AG64NHILB7ZP05	loanDepot.com LLC	1
5	2020	549300AG64NHILB7ZP05	loanDepot.com LLC	1
6	2020	549300AG64NHILB7ZP05	loanDepot.com LLC	1
7	2020	549300AG64NHILB7ZP05	loanDepot.com LLC	1
8	2020	549300AG64NHILB7ZP05	loanDepot.com LLC	1
9	2020	549300AG64NHILB7ZP05	loanDepot.com LLC	1
10	2020	549300AG64NHILB7ZP05	loanDepot.com LLC	1
11	2020	549300AG64NHILB7ZP05	loanDepot.com LLC	1
12	2020	549300AG64NHILB7ZP05	loanDepot.com LLC	1
13	2020	549300AG64NHILB7ZP05	loanDepot.com LLC	1
14	2020	549300AG64NHILB7ZP05	loanDepot.com LLC	1
15	2020	549300AG64NHILB7ZP05	loanDepot.com LLC	1

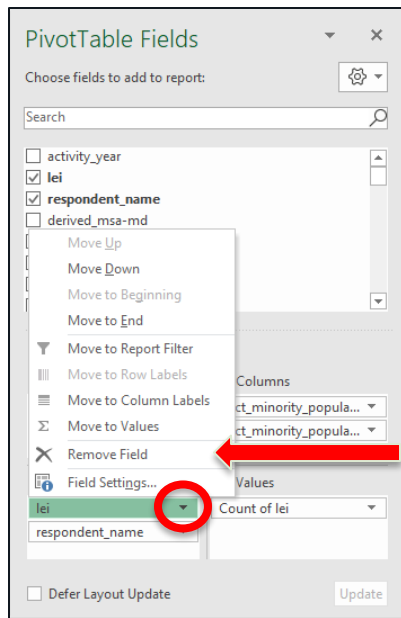
STEP 10: To update your pivot table so that the names of the institutions appear in place of the LEIs, go to the pivot table sheet (here called “Sheet1”). Right click anywhere on the table and select “Refresh.”



Count of lei	Column Labels	0-49% Minority	50.13	50.13 Total	51.64	51.64 Total	52.62	52.619999999999
Row Labels		50.13			51.64		52.62	
01J4SO3XTWZF4PP38209		536	6	6				
11E8VN30JCEQV1H4R804		3						
207ALC1P1YM0OVDV0K75		4						
213800QUAI2VH5YM6310		2						
213800XR2TCBQJSF1X93		15						
2549000VVDQ9NNW01Q23		2						
25490018IFQOT83Q7H49		7						
254900378RFGMBEKA12		1						
2549003A9J70FMO48Y25		1						
2549003K48UGTWK6031		3						
2549004IXUWDS2CYU578		1						
2549005Q4HZ55QX7YC64		1						
2549007JQKHU8KQ0FC19		1						
2549008L1UH7QKMXO8N53		1						

STEP 11: Click on your new “name” field (called “respondent_name”) and drag it to the “Rows” box to replace the LEI with the institution names.





You may need to click on the small black arrow next to “lei” in the Rows box and select “Remove field” in order to remove the “lei.”

Your final pivot table should look something like the below.

This table may be more user-friendly than the one downloaded originally.

The rows of the table represent each HMDA-reporting financial institution with mortgage lending activity in the Birmingham MSA during 2020. The grouped columns are low-, majority-, and high-minority census tracts, and the table numbers represent the number of mortgage applications and originations in each group of tracts.

Count of lei	Column Labels	0-49% Minority	50-80% Minority	80-100% Minority	(blank) Grand Total
1st Franklin Financial Corporation		1			1
21ST MORTGAGE		633	11	3	647
A Mortgage Boutique		101	7	3	111
AAG		1			1
Academy Mortgage Corporation		15			15
Acipco Federal Credit Union		16	1		17
Acopia Capital Group		7			7
AGFIRST FARM CREDIT BANK		1			1
AimLoan.com		11	4	1	16
Alabama Credit Union		12			12
Alabama One Credit Union		10	2		12
Alabama State Employees Credit Union		2			2
Alabama Teachers Credit Union		12		2	14
AlaTrust Credit Union		4			4
ALCOVA Mortgage LLC		5	1		6
All In Federal Credit Union		1		2	3
Allied First BankSB		2			2
Allied Mortgage Group Inc		1			1
ALLY BANK		12	2		14
AITARANK		10	9	3	22

4. Conclusion

We hope users have found this guide useful in understanding how HMDA data may be accessed and analyzed using widely available technology tools. In addition to the techniques described here, we encourage users to explore the many resources provided for HMDA reporters and users alike. FFIEC's [HMDA Maps tool](#) allows you to explore and visualize online subsets of HMDA data, filtered by popular variables. The CFPB also has an array of webinars for HMDA data users available on YouTube at <https://www.youtube.com/user/cfpbvideo/videos>.

Given the importance of accurately reported HMDA data to the CFPB's fair lending mission, the CFPB maintains a comprehensive suite of resources on its public website to help filers fulfill their reporting requirements under HMDA and Regulation C and allowing others to evaluate and study mortgage lending. These resources include: an Executive Summary of HMDA rule changes;⁹ Small Entity Compliance Guide;¹⁰ Key Dates Timeline;¹¹ Institutional and Transactional Coverage Charts;¹² Reportable HMDA Data Chart;¹³ sample data collection form;¹⁴ and FAQs,¹⁵ in addition to downloadable webinars,¹⁶ which provide an overview of the HMDA rule. The CFPB also provides on its website an interactive version of Regulation C that is easier to access and navigate than the printed version of Regulation C.¹⁷

⁹ Consumer Fin. Prot. Bureau, *Executive Summary of the 2020 Home Mortgage Disclosure Act (Regulation C) Final Rule* (Apr. 16, 2020), https://files.consumerfinance.gov/f/documents/cfpb_hmda_executive-summary_2020-04.pdf.

¹⁰ Consumer Fin. Prot. Bureau, *Home Mortgage Disclosure (Regulation C) Small Entity Compliance Guide* (May 2020), https://files.consumerfinance.gov/f/documents/cfpb_hmda_small-entity-compliance-guide.pdf.

¹¹ Consumer Fin. Prot. Bureau, *HMDA Rule Key Dates Timeline, January 1, 2020 to December 31, 2022*, https://files.consumerfinance.gov/f/documents/cfpb_hmda-key-dates-timeline-2020-2022.pdf.

¹² Consumer Fin. Prot. Bureau, *HMDA Institutional Coverage Chart*, https://www.consumerfinance.gov/documents/9568/cfpb_2020-hmda-institutional-coverage_03-2021.pdf; Consumer Fin. Prot. Bureau, *HMDA Transactional Coverage Chart*, https://www.consumerfinance.gov/documents/8724/cfpb_2020-hmda-transactional-coverage.pdf.

¹³ Consumer Fin. Prot. Bureau, *Reportable HMDA Data: A Regulatory and Reporting Overview Reference Chart for HMDA Data Collected in 2021*, https://files.consumerfinance.gov/f/documents/cfpb_2021-reportable-hmda-data.pdf.

¹⁴ Consumer Fin. Prot. Bureau, *Sample Data Collection Form*, https://files.consumerfinance.gov/f/documents/201708_cfpb_hmda-sample-data-collection-form.pdf.

¹⁵ Consumer Fin. Prot. Bureau, *Home Mortgage Disclosure Act FAQs*, <https://www.consumerfinance.gov/compliance/compliance-resources/mortgage-resources/hmda-reporting-requirements/home-mortgage-disclosure-act-faqs/>.

¹⁶ Consumer Fin. Prot. Bureau, *HMDA Webinars*, <https://www.consumerfinance.gov/compliance/compliance-resources/mortgage-resources/hmda-reporting-requirements/webinars/>.

¹⁷ See, *Interactive Bureau Regulations, Regulation C*, <https://www.consumerfinance.gov/rules-policy/regulations/1003/>.

Together with the FFIEC, the CFPB also routinely updates its HMDA resources throughout the year to ensure HMDA reporters have the most up-to-date information. The agency also works with the FFIEC to publish data submission resources for HMDA filers and vendors on its [Resources for HMDA Filers](#) website.

In addition, HMDA users and reporters can ask questions about HMDA and Regulation C, including how to submit HMDA data, by emailing the CFPB's HMDA Help at HMDAHelp@cfpb.gov. The agency also offers financial institutions, service providers, and others, informal staff guidance on specific questions about the statutes and rules the CFPB implements, including ECOA and Regulation B and HMDA and Regulation C, through its [Regulation Inquiries](#) platform.