**Fields to Include**

activity\_year (*We do not need to keep this field for analysis after we verify that all records equal 2019.)*

derived\_msa-md

state\_code (*We do not need to keep this field for analysis after we verify that all records equal CA.)*

county\_code

census\_tract

conforming\_loan\_limit

derived\_loan\_product\_type

derived\_dwelling\_category

action\_taken\* (*This is our response variable. We can discuss later how to recode this variable in a way that makes sense for our analysis.*)

preapproval

loan\_type

loan\_purpose

lien\_status

business\_or\_commercial\_purpose

loan\_amount

combined\_loan\_to\_value\_ratio

interest\_rate

total\_loan\_costs

loan\_term

property\_value

occupancy\_type

total\_units

income

debt\_to\_income\_ratio

applicant\_ethnicity-1

applicant\_ethnicity-2

applicant\_race-1

applicant\_race-2

applicant\_sex

co-applicant\_sex

applicant\_age

co-applicant\_age

aus-1

denial\_reason-1

denial\_reason-2

denial\_reason-3

*Census fields produced by the U.S. Census Bureau and appended to public HMDA Data*

tract\_population

tract\_minority\_population\_percent

ffiec\_msa\_md\_median\_family\_income

tract\_to\_msa\_income\_percentage

tract\_owner\_occupied\_units

*Fields that are potential candidates for inclusion*

purchaser\_type

intro\_rate\_period

interest\_only\_payment

balloon\_payment

**Definitions**

*from* [*https://ffiec.cfpb.gov/documentation/2019/panel-data-fields/*](https://ffiec.cfpb.gov/documentation/2019/panel-data-fields/)

***activity\_year***

Description: The calendar year the data submission covers

Values:

2019

*We do not need to keep this field for analysis after we verify that all records equal 2019.*

**derived\_msa-md**

Description: The 5 digit derived MSA (metropolitan statistical area) or MD (metropolitan division) code. An MSA/MD is an area that has at least one urbanized area of 50,000 or more population.

Values:

Varying values

**state\_code**

Description: Two-letter state code

Values:

CA

*We do not need to keep this field for analysis after we verify that all records equal CA.*

**county\_code**

Description: State-county FIPS code

Values:

Varying values

**census\_tract**

Description: 11 digit census tract number

Values:

Varying values

**conforming\_loan\_limit**

Description: Indicates whether the reported loan amount exceeds the GSE (government sponsored enterprise) conforming loan limit

Values:

C (Conforming)

NC (Nonconforming)

U (Undetermined)

NA (Not Applicable)

**derived\_loan\_product\_type**

Description: Derived loan product type from Loan Type and Lien Status fields for easier querying of specific records

Values:

Conventional:First Lien

FHA:First Lien

VA:First Lien

FSA/RHS:First Lien

Conventional:Subordinate Lien

FHA:Subordinate Lien

VA:Subordinate Lien

FSA/RHS:Subordinate Lien

**derived\_dwelling\_category**

Description: Derived dwelling type from Construction Method and Total Units fields for easier querying of specific records

Values:

Single Family (1-4 Units):Site-Built

Multifamily:Site-Built (5+ Units)

Single Family (1-4 Units):Manufactured

Multifamily:Manufactured (5+ Units)

**action\_taken\***

Description: The action taken on the covered loan or application

Values:

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

*This is our response variable. We can discuss later how to recode this variable in a way that makes sense for our analysis.*

purchaser\_type

Description: Type of entity purchasing a covered loan from the institution

Values:

0 - Not applicable

1 - Fannie Mae

2 - Ginnie Mae

3 - Freddie Mac

4 - Farmer Mac

5 - Private securitizer

6 - Commercial bank, savings bank, or savings association

71 - Credit union, mortgage company, or finance company

72 - Life insurance company

8 - Affiliate institution

9 - Other type of purchaser

**preapproval**

Description: Whether the covered loan or application involved a request for a preapproval of a home purchase loan under a preapproval program

Values:

1 - Preapproval requested

2 - Preapproval not requested

**loan\_type**

Description: The type of covered loan or application

Values:

1 - Conventional (not insured or guaranteed by FHA, VA, RHS, or FSA)

2 - Federal Housing Administration insured (FHA)

3 - Veterans Affairs guaranteed (VA)

4 - USDA Rural Housing Service or Farm Service Agency guaranteed (RHS or FSA)

**loan\_purpose**

Description: The purpose of covered loan or application

Values:

1 - Home purchase

2 - Home improvement

31 - Refinancing

32 - Cash-out refinancing

4 - Other purpose

5 - Not applicable

**lien\_status**

Description: Lien status of the property securing the covered loan, or in the case of an application, proposed to secure the covered loan

Values:

1 - Secured by a first lien

2 - Secured by a subordinate lien

**business\_or\_commercial\_purpose**

Description: Whether the covered loan or application is primarily for a business or commercial purpose

Values:

1 - Primarily for a business or commercial purpose

2 - Not primarily for a business or commercial purpose

1111 - Exempt

**loan\_amount**

Description: The amount of the covered loan, or the amount applied for

Values:

Varying values

**combined\_loan\_to\_value\_ratio**

Description: The ratio of the total amount of debt secured by the property to the value of the property relied on in making the credit decision

Values:

Varying values

**interest\_rate**

Description: The interest rate for the covered loan or application

Values:

Varying values

**total\_loan\_costs**

Description: The amount, in dollars, of total loan costs

Values:

Varying values

**loan\_term**

Description: The number of months after which the legal obligation will mature or terminate, or would have matured or terminated

Values:

Varying values

intro\_rate\_period

Description: The number of months, or proposed number of months in the case of an application, until the first date the interest rate may change after closing or account opening

Values:

Varying values

interest\_only\_payment

Description: Whether the contractual terms include, or would have included, interest-only payments

Values:

1 - Interest-only payments

2 - No interest-only payments

1111 - Exempt

balloon\_payment

Description: Whether the contractual terms include, or would have included, a balloon payment

Values:

1 - Balloon payment

2 - No balloon payment

1111 - Exempt

**property\_value**

Description: The value of the property securing the covered loan or, in the case of an application, proposed to secure the covered loan, relied on in making the credit decision

Values:

Varying values; Rounded to the midpoint of the nearest $10,000 interval for which the reported value falls

**occupancy\_type**

Description: Occupancy type for the dwelling

Values:

1 - Principal residence

2 - Second residence

3 - Investment property

total\_units

Description: The number of individual dwelling units related to the property securing the covered loan or, in the case of an application, proposed to secure the covered loan

Values:

1

2

3

4

5-24

25-49

50-99

100-149

>149

**income**

Description: The gross annual income, in thousands of dollars, relied on in making the credit decision, or if a credit decision was not made, the gross annual income relied on in processing the application

Values:

Varying values

**debt\_to\_income\_ratio**

Description: The ratio, as a percentage, of the applicant’s or borrower’s total monthly debt to the total monthly income relied on in making the credit decision

Varying values; Ratios binned are:

<20%

20%-<30%

30%-<36%

37%

38%

39%

40%

41%

42%

43%

44%

45%

46%

47%

48%

49%

50%-60%

>60%

NA

Exempt

**applicant\_ethnicity-1**

Description: Ethnicity of the applicant or borrower

Values:

1 - Hispanic or Latino

11 - Mexican

12 - Puerto Rican

13 - Cuban

14 - Other Hispanic or Latino

2 - Not Hispanic or Latino

3 - Information not provided by applicant in mail, internet, or telephone application

4 - Not applicable

**applicant\_ethnicity-2**

Description: Ethnicity of the applicant or borrower

Values:

1 - Hispanic or Latino

11 - Mexican

12 - Puerto Rican

13 - Cuban

14 - Other Hispanic or Latino

2 - Not Hispanic or Latino

**applicant\_race-1**

Description: Race of the applicant or borrower

Values:

1 - American Indian or Alaska Native

2 - Asian

21 - Asian Indian

22 - Chinese

23 - Filipino

24 - Japanese

25 - Korean

26 - Vietnamese

27 - Other Asian

3 - Black or African American

4 - Native Hawaiian or Other Pacific Islander

41 - Native Hawaiian

42 - Guamanian or Chamorro

43 - Samoan

44 - Other Pacific Islander

5 - White

6 - Information not provided by applicant in mail, internet, or telephone application

7 - Not applicable

**applicant\_race-2**

Description: Race of the applicant or borrower

Values:

1 - American Indian or Alaska Native

2 - Asian

21 - Asian Indian

22 - Chinese

23 - Filipino

24 - Japanese

25 - Korean

26 - Vietnamese

27 - Other Asian

3 - Black or African American

4 - Native Hawaiian or Other Pacific Islander

41 - Native Hawaiian

42 - Guamanian or Chamorro

43 - Samoan

44 - Other Pacific Islander

5 - White

**applicant\_sex**

Description: Sex of the applicant or borrower

Values:

1 - Male

2 - Female

3 - Information not provided by applicant in mail, internet, or telephone application

4 - Not applicable

6 - Applicant selected both male and female

**co-applicant\_sex**

Description: Sex of the first co-applicant or co-borrower

Values:

1 - Male

2 - Female

3 - Information not provided by applicant in mail, internet, or telephone application

4 - Not applicable

5 - No co-applicant

6 - Co-applicant selected both male and female

**applicant\_age**

Description: The age, in years, of the applicant or borrower

Varying values; Ages binned are:

25-34

35-44

45-54

55-64

65-74

**co-applicant\_age**

Description: The age, in years, of the first co-applicant or co-borrower

Varying values; Ages binned are:

25-34

35-44

45-54

55-64

65-74

**aus-1**

Description: The automated underwriting system(s) (AUS) used by the financial institution to evaluate the application

Values:

1 - Desktop Underwriter (DU)

2 - Loan Prospector (LP) or Loan Product Advisor

3 - Technology Open to Approved Lenders (TOTAL) Scorecard

4 - Guaranteed Underwriting System (GUS)

5 - Other

6 - Not applicable

1111 - Exempt

**denial\_reason-1**

Description: The principal reason, or reasons, for denial

Values:

1 - Debt-to-income ratio

2 - Employment history

3 - Credit history

4 - Collateral

5 - Insufficient cash (downpayment, closing costs)

6 - Unverifiable information

7 - Credit application incomplete

8 - Mortgage insurance denied

9 - Other

10 - Not applicable

**denial\_reason-2**

Description: The principal reason, or reasons, for denial

Values:

1 - Debt-to-income ratio

2 - Employment history

3 - Credit history

4 - Collateral

5 - Insufficient cash (downpayment, closing costs)

6 - Unverifiable information

7 - Credit application incomplete

8 - Mortgage insurance denied

9 - Other

denial\_reason-3

Description: The principal reason, or reasons, for denial

Values:

1 - Debt-to-income ratio

2 - Employment history

3 - Credit history

4 - Collateral

5 - Insufficient cash (downpayment, closing costs)

6 - Unverifiable information

7 - Credit application incomplete

8 - Mortgage insurance denied

9 - Other

**Census fields produced by the U.S. Census Bureau and appended to public HMDA Data**

**tract\_population**

Description: Total population in tract

Values:

Varying values

**tract\_minority\_population\_percent**

Description: Percentage of minority population to total population for tract, rounded to two decimal places

Values:

Varying values

**ffiec\_msa\_md\_median\_family\_income**

Description: FFIEC Median family income in dollars for the MSA/MD in which the tract is located (adjusted annually by FFIEC)

Values:

Varying values

**tract\_to\_msa\_income\_percentage**

Description: Percentage of tract median family income compared to MSA/MD median family income

Values:

Varying values

**tract\_owner\_occupied\_units**

Description: Number of dwellings, including individual condominiums, that are lived in by the owner

Values:

Varying values