**Census Data Details**

**Data Source**: <https://api.census.gov/data/timeseries/eits/mrts?get=data_type_code,time_slot_id,seasonally_adj,category_code,cell_value&time=2010&key=>

**Programs (\*.ipynb)**:

\***Note**: Before running the ‘Census API’ pgm you will need to execute the following command in a command line window while in the directory you will be opening jupyter notebook in “**jupyter notebook --NotebookApp.iopub\_data\_rate\_limit=1.0e10”.**  Also, you will need an Api key for USCensus, placed in the ‘config’ file.

**Census API**: call to census.gov for Monthly Retail Trade and Food Services (MRTFS) data since 2010. Clean data, edit out unnecessary records, and write out “censusdata\_complete.csv”. Create condensed monthly and annual summary files, write out “censusdata\_monthly\_sum.csv” and “censusdata\_annual\_sum.csv”.

**Ecomm\_graphing**: Read in the three censusdata files created in Census ApI program. Extract, aggregate, group, and filter data to produce dataframes and graphs. Write graphs as .png files to ‘Data’ folder for evaluation. Create monthlyecomm\_perchange\_1520\_JanMay2.csv.

**Information Available to us**: We evaluated non-seasonally adjusted values for NAIC code 4541 - electronic shopping and mail order sales and code 44W72 - MRTFS excluding automotive and fuel sales, between 2010 and 2020 (inclusive). We did not include automobile and fuel numbers in our comparison to code 4541 because automobile dealerships are classified under section 4411, and fuel dealers in 45431.

**Working Files**:

**Censusdata\_complete.csv**: {column1: month, column2: year, column3: amount, column4: dt\_code, column5: cat\_code}

**Censusdata\_monthly\_sum**: {column1: month, column2: year, column3: ecomm sales(MIL$), column4: instore sales(MIL$), column5: ecomm %, column6: instore %, column7: total sales}

**Censusdata\_yearly\_sum**: {column1: year, column2: ecomm sales(MIL$), column3: instore sales(MIL$), column4: ecomm %, column5: instore %, column6: total sales}

**monthlyecomm\_perchange\_1520\_JanMay.csv**: Monthly percentage of change from previous month sales for the first five months from 2015 to 2020. Showing not only a larger than average growth rate for March and an abnormally high growth rate for April, but also a return to a normal growth pattern in May, suggesting that consumers are comfortable with the substantial shift upward towards increasingly larger shares of the total retail market.