

## **FBI Gun Data and Census Data: Investigate a Dataset Project**

This data comes from the FBI's National Instant Criminal Background Check System (NICS). The NICS is used to determine whether a prospective buyer is eligible to buy firearms or explosives. Gun shops call into this system to ensure that each customer does not have a criminal record or isn't otherwise ineligible to make a purchase. The data has been supplemented with state level data from census.gov.

We will conduct an analysis of US census data in relation to the FBI's NICS gun data by taking a micro approach and focusing on the state of Maryland.

### **Questions:**

- Q1: What was the highest year for gun sales in Maryland?
- Q2: What was the most sold gun type in Maryland during the second highest year for gun sales?
- Q3: What was Maryland's gun per capita in 2016?

### **Methods:**

- Q1: Calculate the average gun sales per year in Maryland and plot the results on a line graph.
- Q2: Use data from Q1 to isolate the second highest year for gun sales in Maryland and figure out what gun type is most sold for that year.
- Q3: Determine gun per capita by dividing the gun sales by the population. This required additional data cleaning.

### **Data Wrangling:**

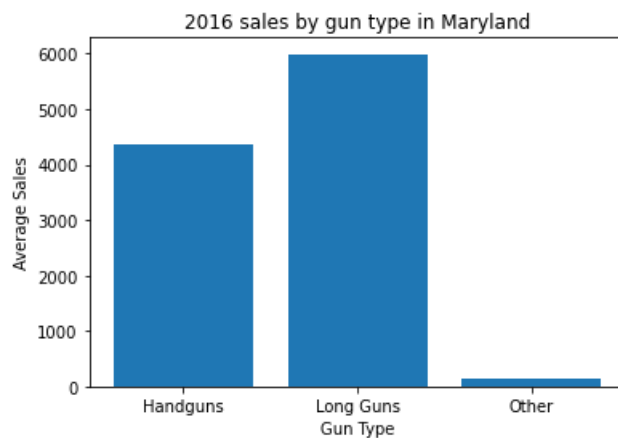
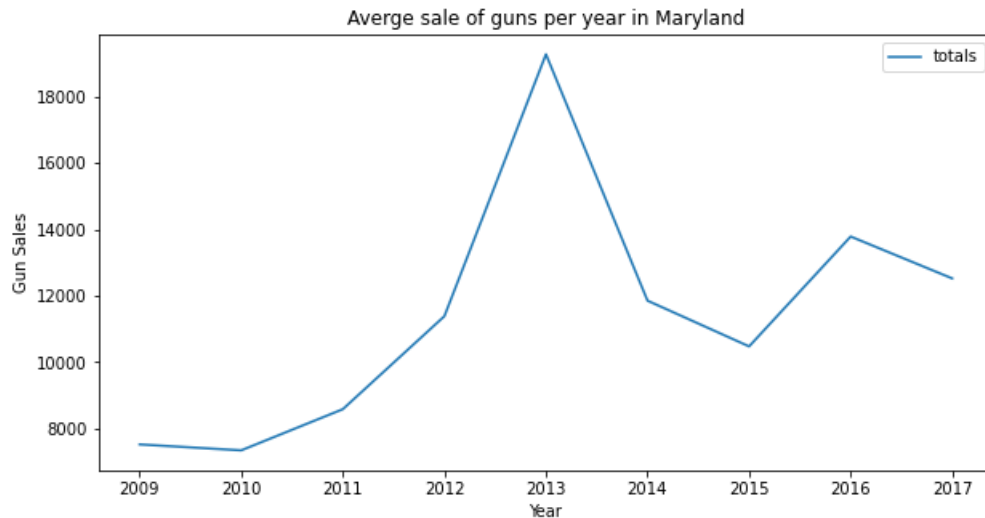
- The gun data was filtered, had columns modified, index reset, and datatypes converted.
- The census data was filtered, had its index and columns transposed, the columns were also reformatted and renamed, and its index was reset.

### **Summary of statistics:**

- Q1: The answer to this is quite startling as the answer is resounding. 2013 is the highest year for gun sales in Maryland. After reviewing Maryland gun law legislation, it appears as though 2013 was the year the Maryland General Assembly approved the Firearm Safety Act of 2013. This is legislation imposing restrictions on gun ownership and was considered controversial at the time.
  - An interesting correlation to make is the link between media coverage of gun control and increases in gun sales, as we see is the case in Maryland in 2013. A [New York Times article published in 2016](<https://www.nytimes.com/interactive/2015/12/10/us/gun-sales-terrorism-obama-restrictions.html>) details the national trend of gun sales in relation to terrorist events and Barack Obamas elections in which he called for tighter gun control laws.
- Q2: Long guns were the most sold gun type in Maryland in 2016. [Long guns]([https://en.wikipedia.org/wiki/Long\\_gun](https://en.wikipedia.org/wiki/Long_gun)) are defined as firearms with longer barrels and are generally designed to be held by both hands. According to the [FBI / NICS report]([https://www.fbi.gov/file-repository/nics\\_firearm\\_checks\\_-\\_month\\_year\\_by\\_state\\_type.pdf/view](https://www.fbi.gov/file-repository/nics_firearm_checks_-_month_year_by_state_type.pdf/view)) "other" includes all other firearms that do not fall into either the "Handgun" or "Long Gun" category.

- Q3: The gun per capita of Maryland in 2016 is 82. So in 2016, for every 1000 people in Maryland, 82 of them have firearms.

#### Plots:



	state	year	population	total_gun_sales	guns_per_1000
0	Maryland	2016	6016447.0	496101.0	82.45747

#### Sources and references:

- <https://github.com/BuzzFeedNews/nics-firearm-background-checks>
- <https://github.com/nytimes/gunsales#getting-gun-sales-estimates-from-background-checks>
- [https://www.fbi.gov/file-repository/nics\\_firearm\\_checks\\_-\\_month\\_year\\_by\\_state\\_type.pdf/view](https://www.fbi.gov/file-repository/nics_firearm_checks_-_month_year_by_state_type.pdf/view)