

# REPORT

## What data is used?

\* [gun-data](#) from FBI's National Instant Criminal Background Check System (NICS).

## Investigation

\* Which states (top 5) have most gun checks/registrations over years?

Below figure shows that California, Illinois, Kentucky, Pennsylvania, and Texas are the top 5 states that have the most gun checks/registrations over years.

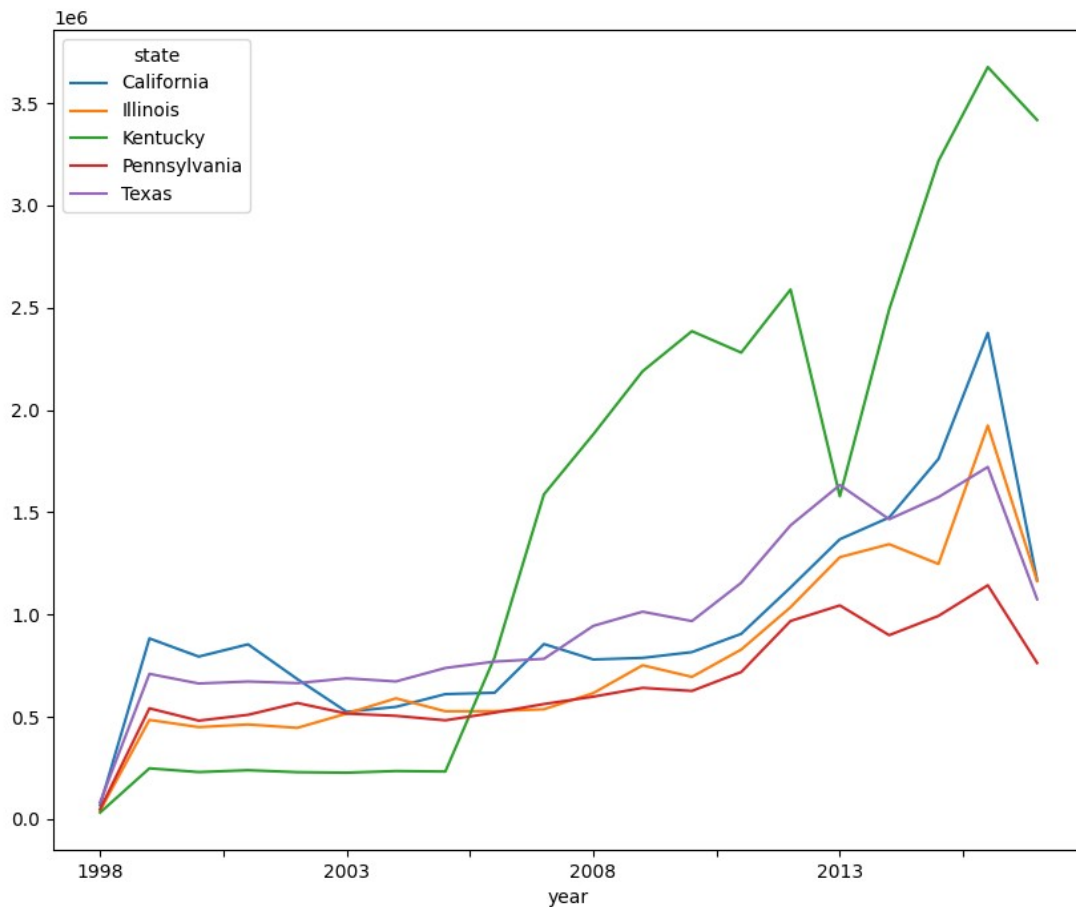


Figure 1

\* What are types of gun checks/registrations done in the top state?

From Figure 1, Kentucky seems to be top state that has highest gun check/registrations.

Below figure shows that permit checks takes the highest portion of gun checks followed by handgun registrations in Kentucky.

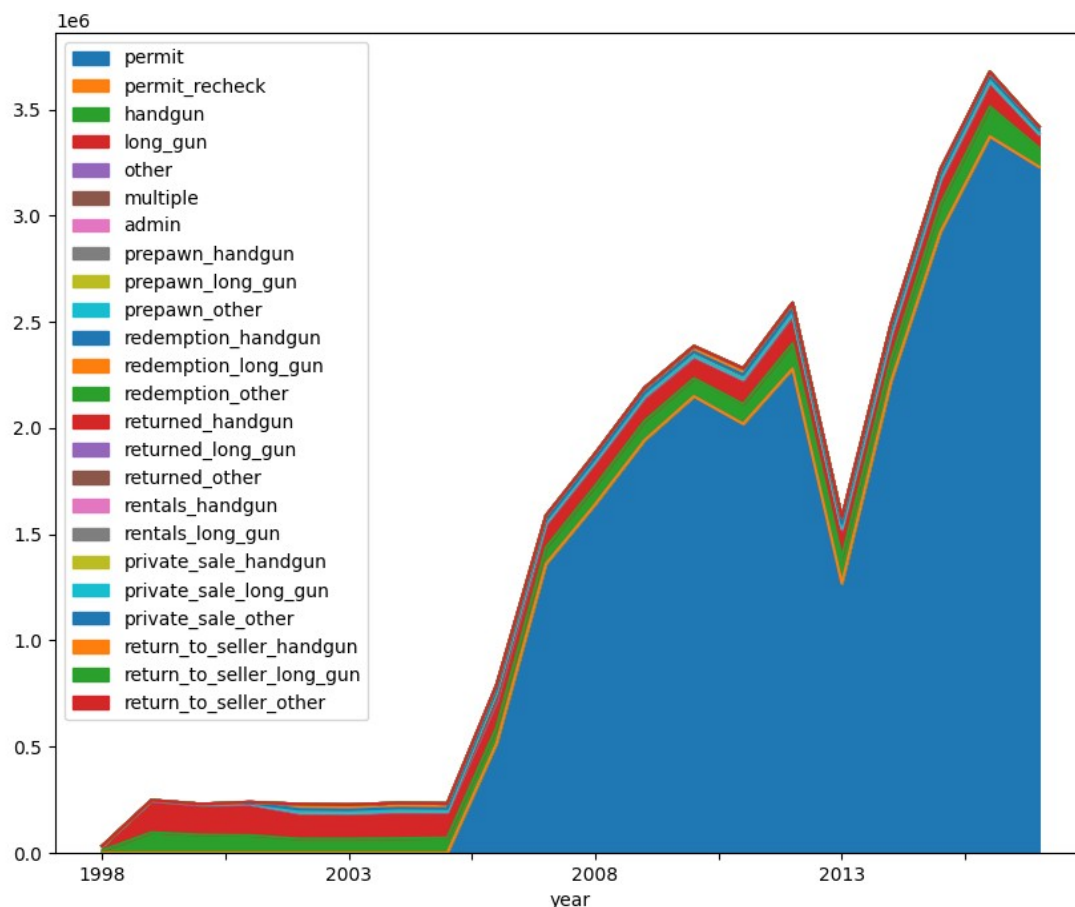


Figure 2

### Data wrangling done

- \* Since data has lots of null values, we have to fill in these cells. O-filling makes sense here because we don't want to make false sum of checks/registrations
- \* Extract year from month column and group data in year-wise will give better visualization.
- \* Group data in year and state to find out top 5 states  
(<https://stackoverflow.com/questions/31569549/how-to-groupby-a-dataframe-in-pandas-and-keep-columns>)
- \* Plot top 5 states (<https://stackoverflow.com/questions/29233283/plotting-multiple-lines-in-different-colors-with-pandas-dataframe>)
- \* Plot check/registration checks in top state to find out trend using area chart  
(<https://pandas.pydata.org/docs/reference/api/pandas.DataFrame.plot.area.html>)