

Report on Gun Murders

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Introduction

This is a report on 2010 gun murder rates obtained from FBI reports. The original data was obtained from this Wikipedia page.

We are going to use the following library:

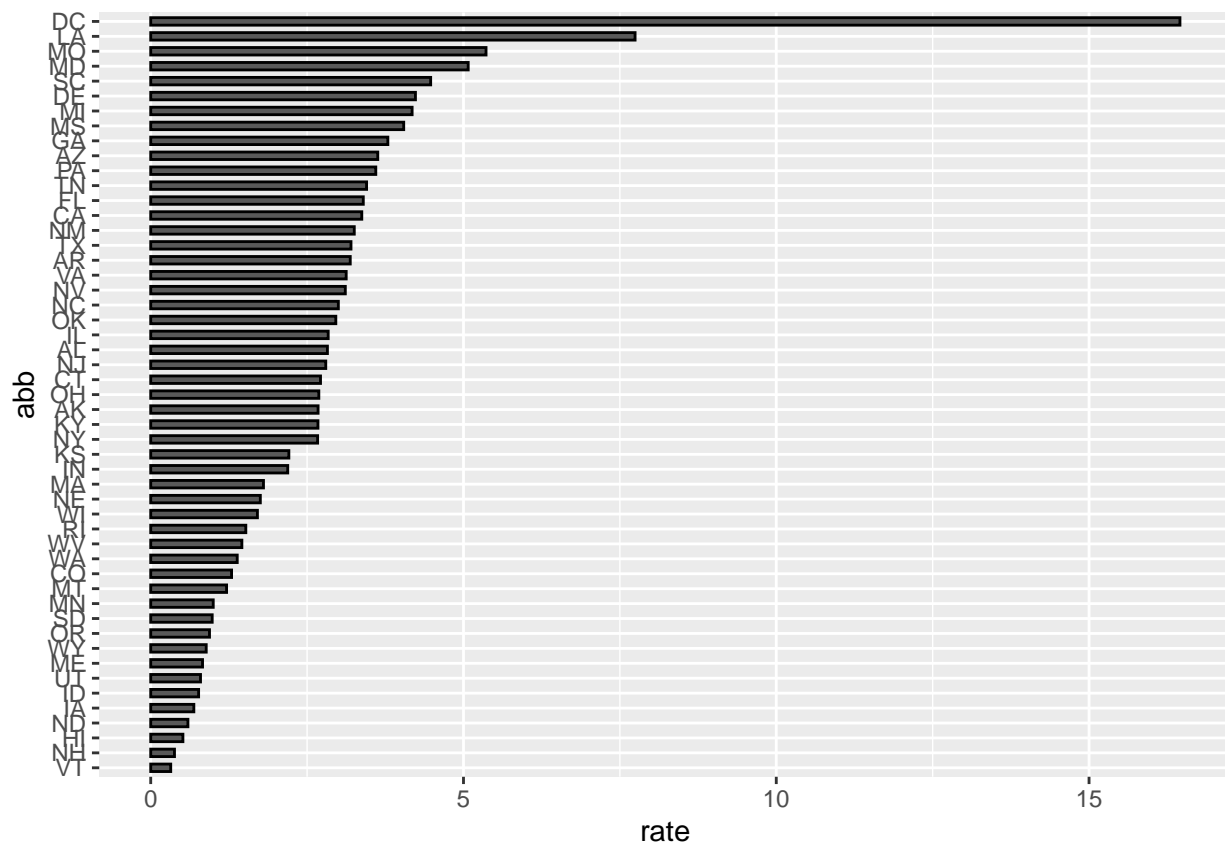
```
library(tidyverse)
```

and load the data we already wrangled:

```
load("rda/murders.rda")
```

Murder rate by state

We note the large state to state variability by generating a barplot showing the murder rate by state:



Shrinking core model

$$x(t, R) = 1 - (1 - \frac{t}{\tau})^3; t \leq \tau$$

Where $x(t, R)$ is the fraction reacted at elapsed time t (particle of radius R), t is time, R particle radius, τ is the time required for complete reaction:

$$\tau = \frac{K * Au * R}{[CN^-]}$$