

```

1
2  ## variant of R/main.R analysis() using ggplot
3
4
5  ##' This function creates (ggplot2) plots for gunsales analysis.
6  ##'
7  ##' In interactive mode, plot display is paused and the user has to
8  ##' advance by pressing the Return key.
9  ##' @title ggplot2 plots for gunsales analysis
10 ##' @param df A \code{data.frame} as prepared by the
11 ##' \code{\link{analysis}} functions.
12 ##' @param savePlots A boolean toggle to indicate if the plots are to
13 ##' be saved in the \code{out/} directory as a single pdf file,
14 ##' with a default of \code{FALSE}.
15 ##' @param savePNG A boolean toggle to indicate if the plots are to
16 ##' be saved in the \code{out/} directory as individual png files,
17 ##' with a default of \code{FALSE}.
18 ##' @return \code{NULL} is returned invisibly.
19 ##' @author Gregor Aisch and Josh Keller wrote the R code; Dirk
20 ##' Eddelbuettel created and maintains the package.
21 ##' @seealso The NY Times article presenting this analysis undertaken
22 ##' by this package is at
23 ##' \url{http://www.nytimes.com/interactive/2015/12/10/us/gun-sales-terrorism-obama-
24 restrictions.html?}
25 ##' @examples
26 ##' \dontrun{
27 ##'   gs <- analysis()
28 ##'   ggplot_gunsales(gs)
29 ##' }
30
31 ggplot_gunsales <- function(df, savePlots=FALSE, savePNG=FALSE) {
32
33   if (interactive()) {
34     op <- par(ask=TRUE)
35     on.exit(par(op))
36   }
37
38   ## create a Date object suitable for plotting; as.yearmon from zoo
39   df$Date <- as.Date(as.yearmon(df$year + (df$month-1)/12))
40
41   ## save all plots as PDF
42   if (savePlots) pdf("out/ggplots.pdf", width=9, height=4)
43
44   theme_set(theme_bw(base_size=11))
45
46   ## plot total guns sold
47   if (savePNG) png("out/ggplot_total.png", 640, 480)
48   print(ggplot(data=df, aes(x=Date, y=guns_total/1e6)) + geom_line() + scale_x_date() +
49         ggtitle("Total estimated gun sales") + ylab("in million") + xlab(""))
50   if (savePNG) dev.off()
51
52   if (savePNG) png("out/ggplot_total_seasadj.png", 640, 480)
53   print(ggplot(data=df, aes(x=Date, y=guns_total_seas/1e6)) + geom_line() +
54         scale_x_date() +
55         ggtitle("Total estimated gun sales") + ylab("in million") +
56         xlab("seasonally adjusted"))

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55     )
56     if (savePNG) dev.off()
57
58     ## plot gun sales normalized to population
59     if (savePNG) png("out/ggplot_total_popadj.png", 640, 480)
60     print(ggplot(data=df, aes(x=Date)) +
61           geom_line(aes(y=guns_total_per_1000_scaled, colour="black")) +
62           geom_line(aes(y=guns_total_per_1000, colour="red")) +
63           scale_x_date() +
64           ggtitle("Estimated gun sales per 1000") +
65           xlab("red = adjusted for population growth") +
66           ylab("") +
67           theme(legend.position="none") +
68           scale_colour_manual(labels=c("Raw", "Adjusted"), values=c("black", "red"))
69     )
70     if (savePNG) dev.off()
71
72     ## plot handgun/Longgun
73     if (savePNG) png("out/ggplot_hand_vs_long_guns.png", 640, 480)
74     print(ggplot(data=df, aes(x=Date)) +
75           geom_line(aes(y=handgun_share, colour="red")) +
76           geom_line(aes(y=longgun_share, colour="blue")) +
77           scale_x_date() +
78           ggtitle("Long guns vs handguns") +
79           xlab("red = handguns, blue = long guns") + ylab("") +
80           theme(legend.position="none") +
81           scale_colour_manual(labels=c("longgun", "handgun"), values=c("blue", "red"))
82     )
83     if (savePNG) dev.off()
84
85     ## plot percent of national for selected states
86     if (savePNG) png("out/ggplot_six_states.png", 640, 480)
87     show_states <- c('New Jersey', 'Maryland', 'Georgia',
88                     'Louisiana', 'Mississippi', 'Missouri')
89     selected <- gsub(" ", "_", tolower(show_states))
90     ndf <- data.table::data.table(Date=df[, "Date"], df[, selected])
91     ldf <- data.table::melt(ndf, id.vars="Date")
92     print(ggplot(data=ldf, aes(x=Date, y=value)) + geom_line() +
93           facet_wrap( ~ variable) +
94           xlab("Percentage of National Sales") + ylab(""))
95     if (savePNG) dev.off()
96
97     ## compute handgun sales for DC: handung * 1.1 + multiple
98     if (savePNG) png("out/ggplot_dc.png", 640, 480)
99     print(ggplot(data=df, aes(x=Date, y=dc_handguns_per_100k_national_sales)) +
100    geom_line() +
101           ggtitle("Washington D.C.") + xlab("Sales per 100,000 national
102    handguns"))
103     if (savePNG) dev.off()
104
105     ## save plots
106     if (savePlots) dev.off()
107
108     invisible(NULL)
109 }

```

