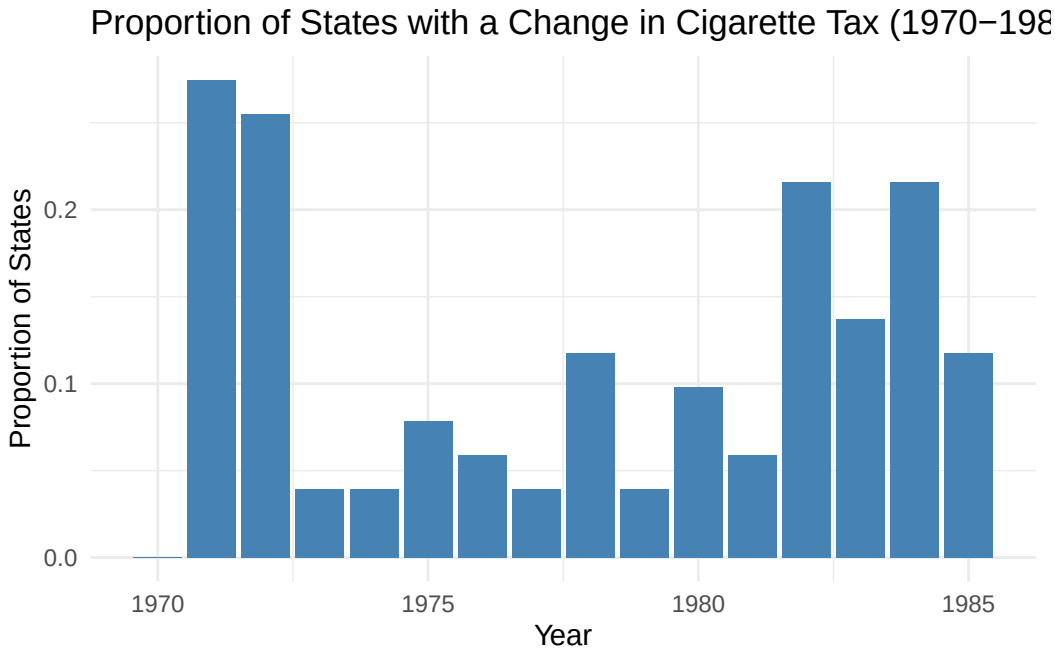
Homework 3

ECON 470, Spring 2025

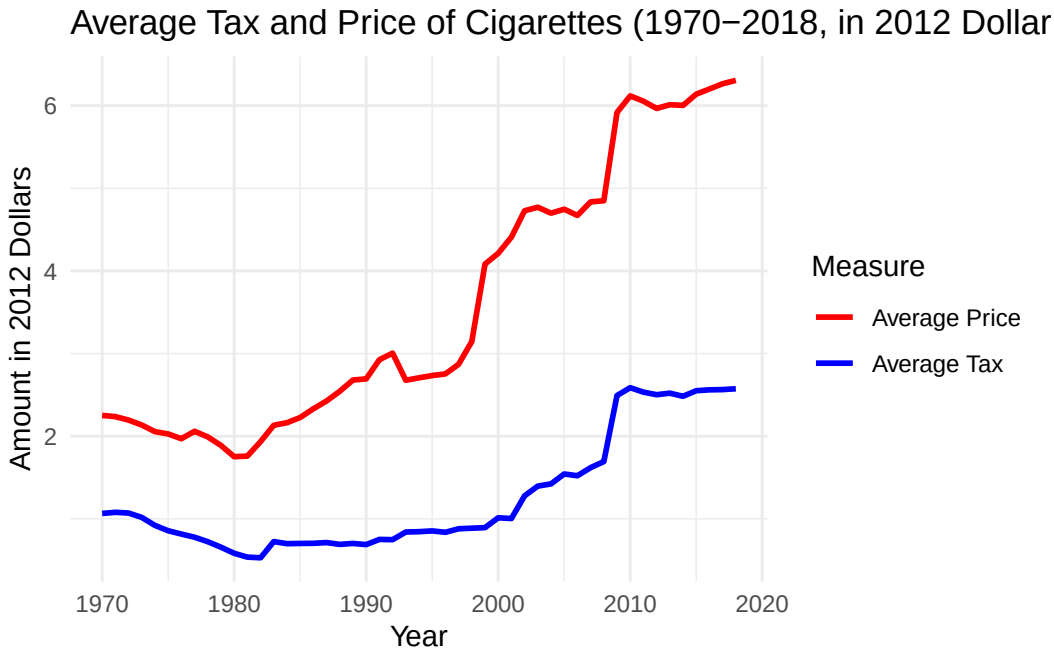
Ethan Murakami

Here is a link to my repository: {https://github.com/bemur3/hmwk3}

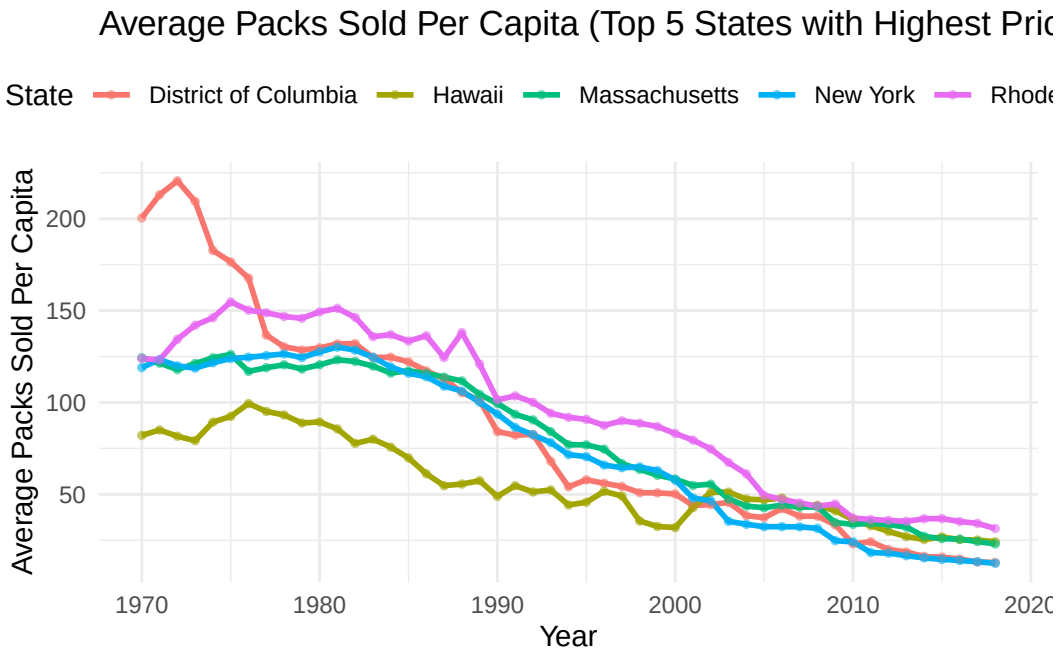
1. Present a bar graph showing the proportion of states with a change in their cigarette tax in each year from 1970 to 1985.



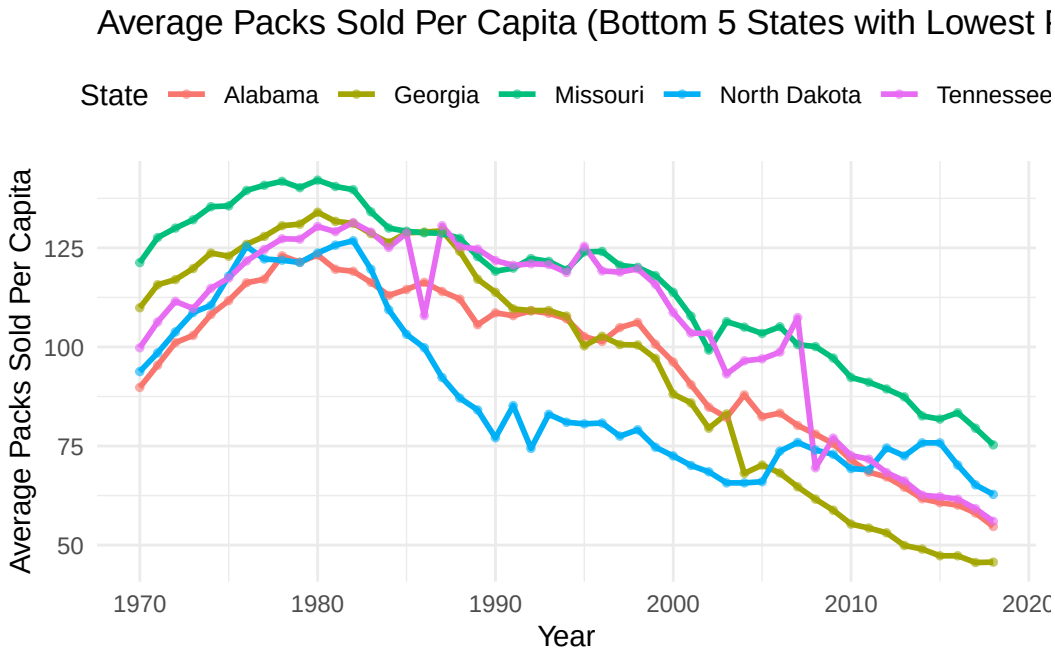
2.


Average Tax and Price of Cigarettes (1970−2018, in 2012 Dollar
Amount in 2012 Dollars
6
4
2
1970
1980
1990
2000
2010
2020
Year
Measure
Average Price
Average Tax

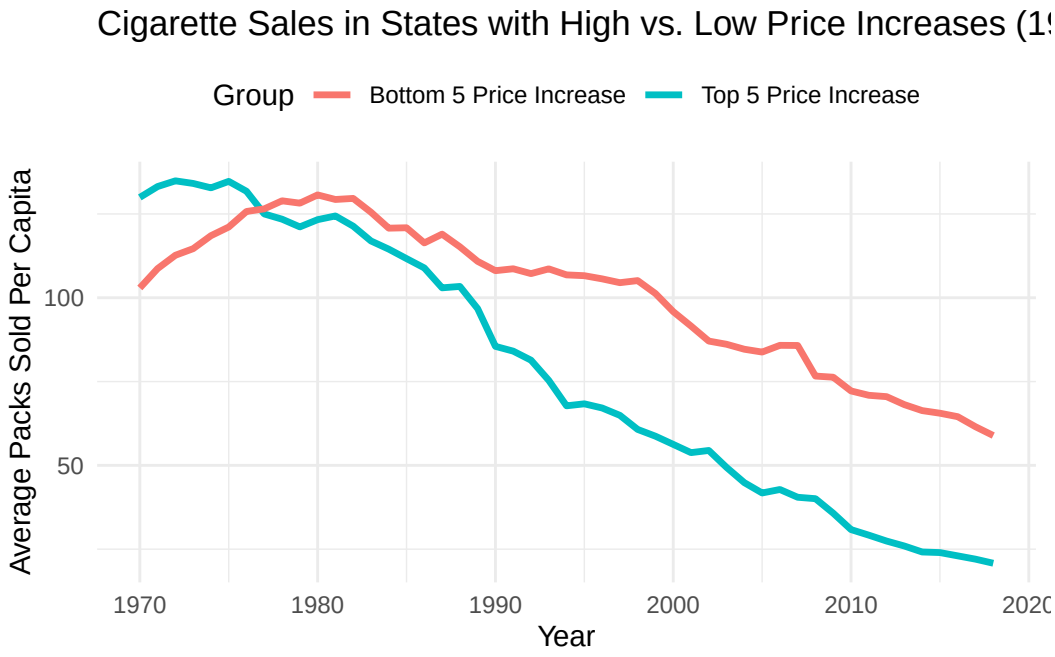
3.


Average Packs Sold Per Capita (Top 5 States with Highest Pric
State
District of Columbia
Hawaii
Massachusetts
New York
Rhode
Average Packs Sold Per Capita
200
150
100
50
1970
1980
1990
2000
2010
2020
Year

4.


Average Packs Sold Per Capita (Bottom 5 States with Lowest I
State
Alabama
Georgia
Missouri
North Dakota
Tennessee
Average Packs Sold Per Capita
125
100
75
50
1970
1980
1990
2000
2010
2020
Year

5.


Cigarette Sales in States with High vs. Low Price Increases (19
Group
Bottom 5 Price Increase
Top 5 Price Increase
Average Packs Sold Per Capita
100
50
1970
1980
1990
2000
2010
202(
Year

6-10 Made summary table but won't load into quarto pdf. putting code below, please view table in submission history on grade scope

Load libraries

library(modelsummary) library(gt)

Create a custom coefficient mapping

coef_map <- c("log_price" = "Log Price", "log_price_b" = "Log Price", "fit_log_price" = "Log Price", # Instrumented log price for IV model "fit_log_price_b" = "Log Price", # Instrumented log price for IV model (1991-2015) "log_tax" = "Total Tax", "log_tax_b" = "Total Tax")

Define the list of models

models <- list("OLS" = elasticity_model, "IV" = iv_model, "First Stage" = first_stage, "Reduced Form" = reduced_form, "OLS" = elasticity_model_b, "IV" = iv_model_b, "First Stage" = first_stage_b, "Reduced Form" = reduced_form_b)

Generate the regression table

modelsummary(models, fmt = 3, # Round to 3 decimal places statistic = "({std.error})", # Show standard errors in parentheses stars = TRUE, # Add significance stars coef_map = coef_map, # Use the corrected coefficient mapping coef_omit = "Intercept", # Remove intercept gof_omit = "IC|Adj|Log|RMSE", # Remove extra goodness-of-fit statistics output = "gt") %>% tab_header(title = "Regression Estimates (OLS & IV)", subtitle = "Comparison of 1970-1990 and 1991-2015") %>% tab_spanner(label = "1970-1990 Models", columns = 2:5) %>% tab_spanner(label = "1991-2015 Models", columns = 6:9) %>% tab_options(table.font.size = "medium")