Homework3 Submission1

https://github.com/modugbe/homework3

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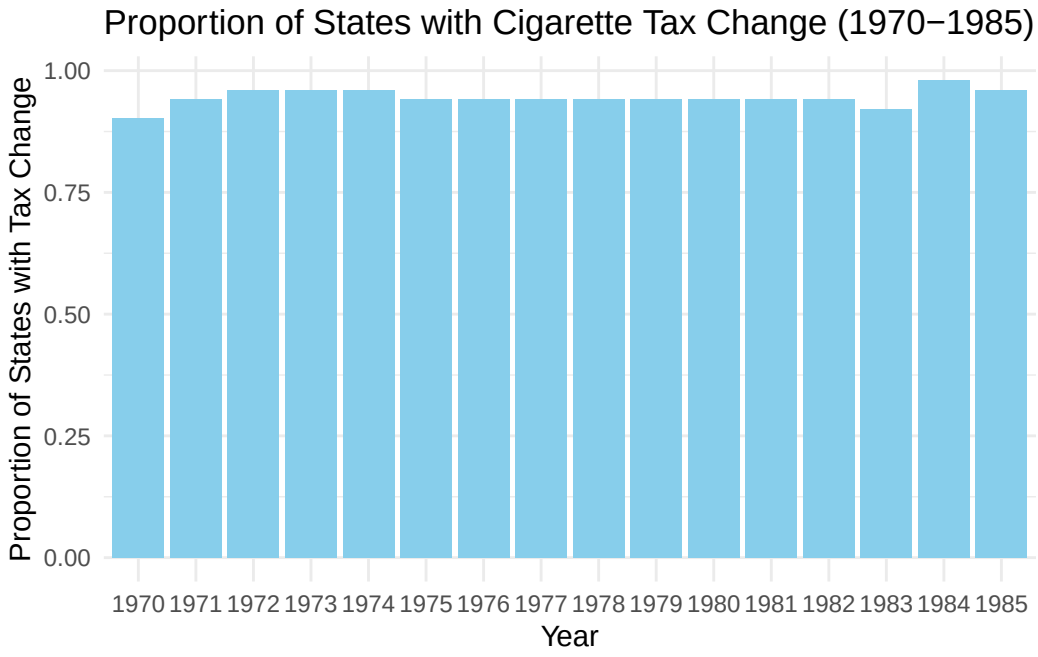
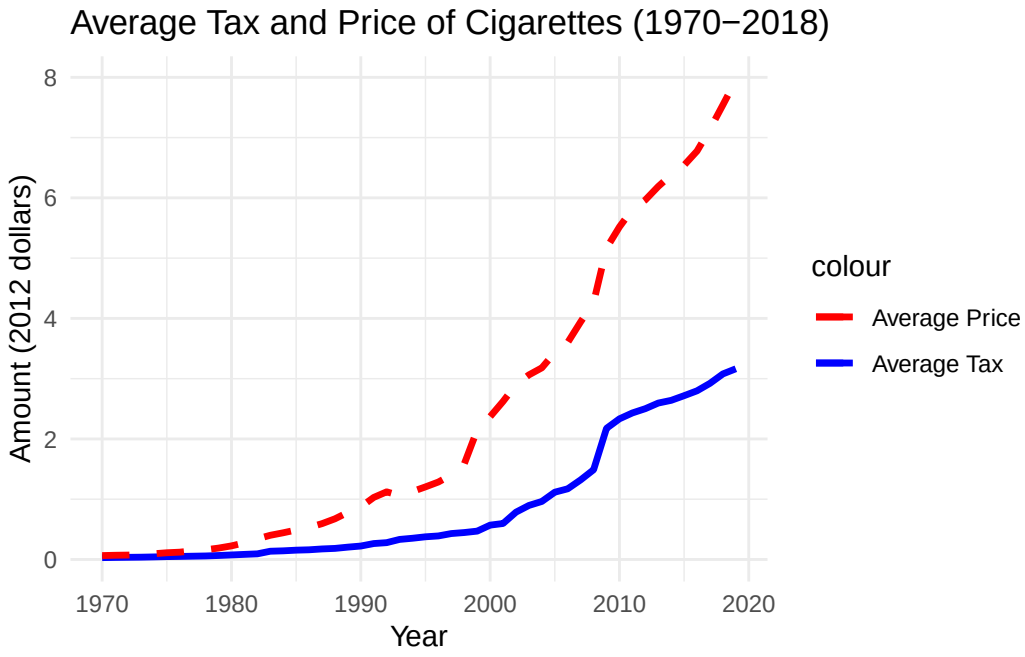
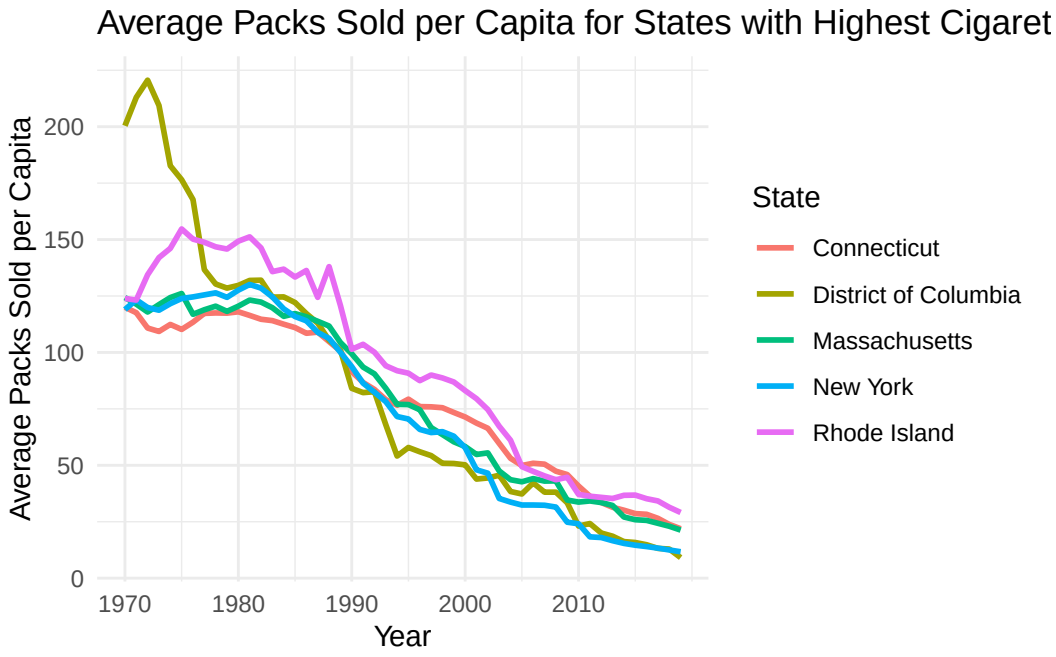
#Question 1


Proportion of States with Cigarette Tax Change (1970−1985)
Proportion of States with Tax Change
1.00
0.75
0.50
0.25
0.00
1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985
Year

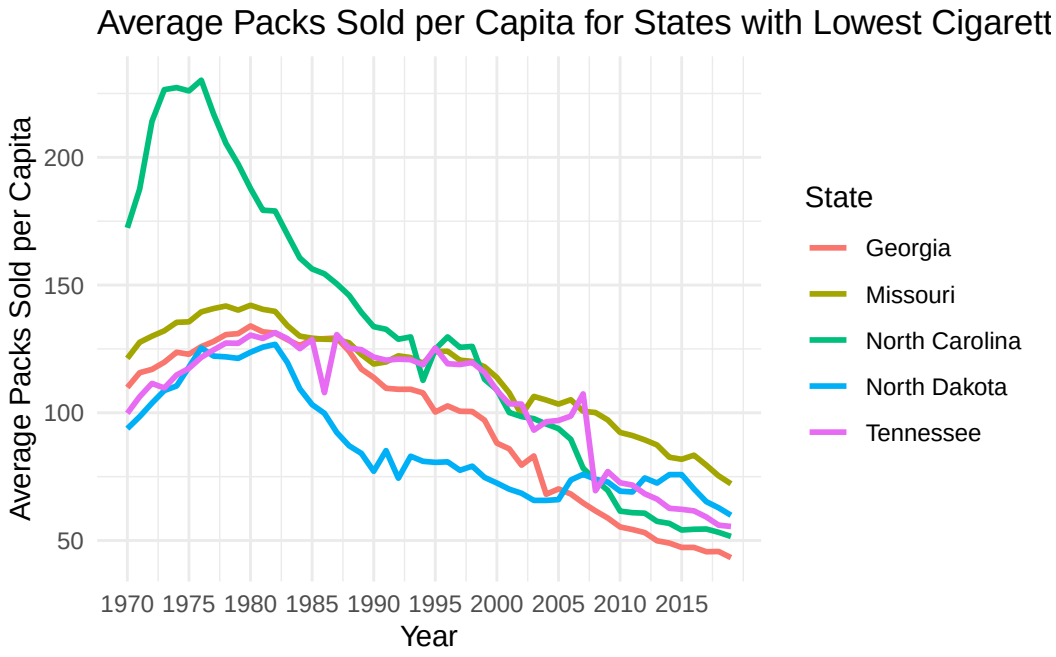
#Question 2


Average Tax and Price of Cigarettes (1970−2018)
Amount (2012 dollars)
8
6
4
2
0
1970
1980
1990
2000
2010
2020
Year
colour
Average Price
Average Tax

#Question 3


Average Packs Sold per Capita for States with Highest Cigaret
Average Packs Sold per Capita
200
150
100
50
0
1970
1980
1990
2000
2010
Year
State
Connecticut
District of Columbia
Massachusetts
New York
Rhode Island

#Question 4


Average Packs Sold per Capita for States with Lowest Cigarett
Average Packs Sold per Capita
200
150
100
50
1970 1975 1980 1985 1990 1995 2000 2005 2010 2015
Year
State
Georgia
Missouri
North Carolina
North Dakota
Tennessee

#Question 5 Both groups of states have similar sales on average that decrease as years or as the taxes increase. This somewhat uniform trend between the groups can be explained by the type of good cigarette is.

#Question 6 See Table 1

Call: lm(formula = log(sales_per_capita) ~ log(price_cpi), data = subset_data)

Coefficients: (Intercept) log(price_cpi)
4.69884 -0.07649

#Question 7 See Table 1

#Question 8 See Table 1

#Question 9 See Table 1

#Question 10

Table 1: Estimation results

	Period	Price_Elasticity	IV_Elasticity	First_Stage_R2	Reduced_Form_R2
log(price_cpi)	1970-1990	-0.0764933	-0.1680589	0.5792435	0.2360606
log(price_cpi)1	1991-2015	-0.0764933	-0.5800739	0.8427683	0.6076822

While the naive regression estimates are the same, the IV estimates are different. The estimates have the same signs that can tell us about elasticity.