Homework 4

Research Methods, Spring 2024

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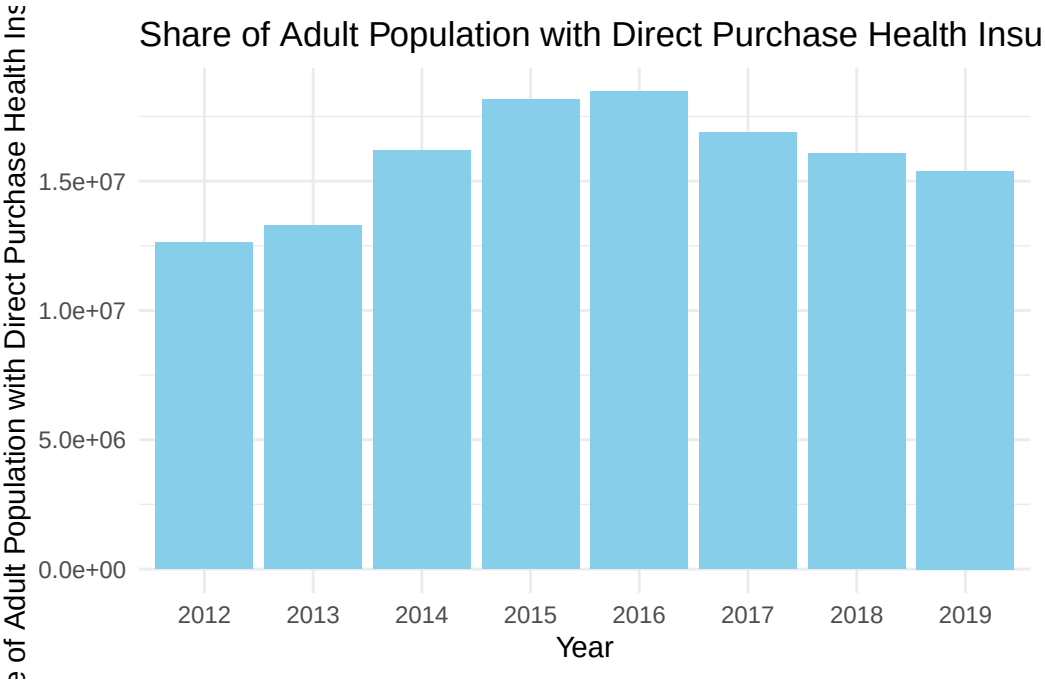
Summarize the Data

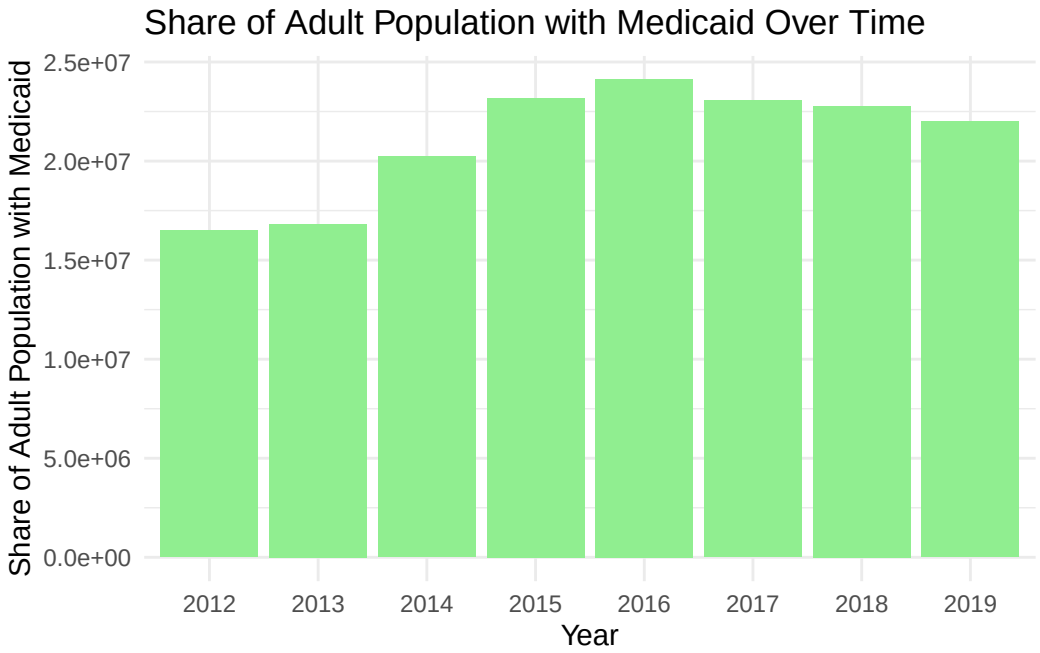
1. Plot the share of the adult population with direct purchase health insurance over time.



2. Discuss the reduction in direct purchase health insurance in later years. Can you list a couple of policies that might have affected the success of the direct purchase insurance market?

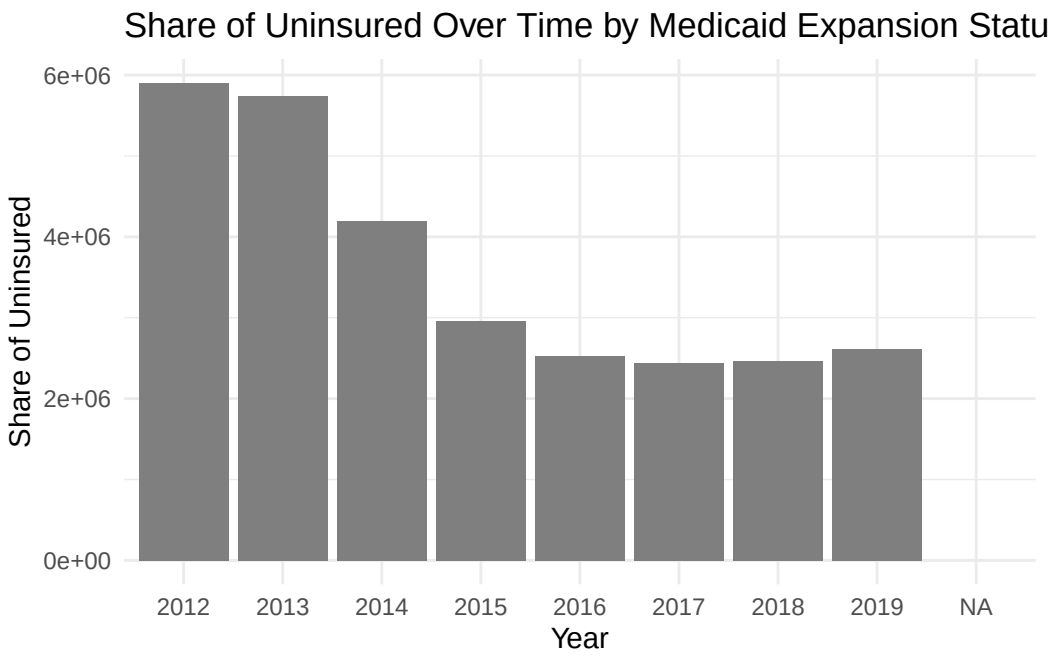
The reduction in direct purchase health insurance in later years could be attributed to key policies like the Affordable Care Act (ACA) and the expansion of Medicaid. The ACA's introduction of subsidized health insurance plans through marketplaces provided an alternative for individuals seeking coverage, potentially diminishing the appeal of direct purchase insurance. Additionally, the expansion of Medicaid eligibility under the ACA extended low-cost or free coverage to more individuals, reducing the need for direct purchase insurance among certain demographics. These policies aimed to increase access to affordable health insurance options and decrease the number of uninsured individuals, thus impacting the dynamics of the direct purchase insurance market.

3.Plot the share of the adult population with Medicaid over time.



4.Plot the share of uninsured over time, separately by states that expanded Medicaid in 2014 versus those that did not. Drop all states that expanded after 2014.

```
Warning: Removed 144 rows containing missing values (`geom_bar()`).
```



Estimate ATEs

For the rest of the assignment, we're going to apply the difference-in-differences estimator to the question of Medicaid expansion and uninsurance. 5.Calculate the average percent of

uninsured individuals in 2012 and 2015, separately for expansion and non-expansion states. Present your results in a basic 2x2 DD table.

```
                 Expansion Non_Expansion
Post-Treatment -0.04632619     0.2139653
Pre-Treatment   0.21396534     0.1676391
```

6.Estimate the effect of Medicaid expansion on the uninsurance rate using a standard DD regression estimator, again focusing only on states that expanded in 2014 versus those that never expanded.

```
Call:
lm(formula = perc_unins ~ post + expand_ever + treat, data = reg.dat)

Residuals:
      Min        1Q    Median        3Q       Max
-0.115667 -0.026103 -0.005442  0.027634  0.117597

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)      0.213965   0.007001  30.564  < 2e-16 ***
postTRUE        -0.054057   0.008083  -6.687 9.07e-11 ***
expand_everTRUE -0.046326   0.008937  -5.184 3.69e-07 ***
treat           -0.018842   0.010319  -1.826   0.0687 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.04082 on 348 degrees of freedom
Multiple R-squared:  0.5064,    Adjusted R-squared:  0.5021
F-statistic:   119 on 3 and 348 DF,  p-value: < 2.2e-16
```

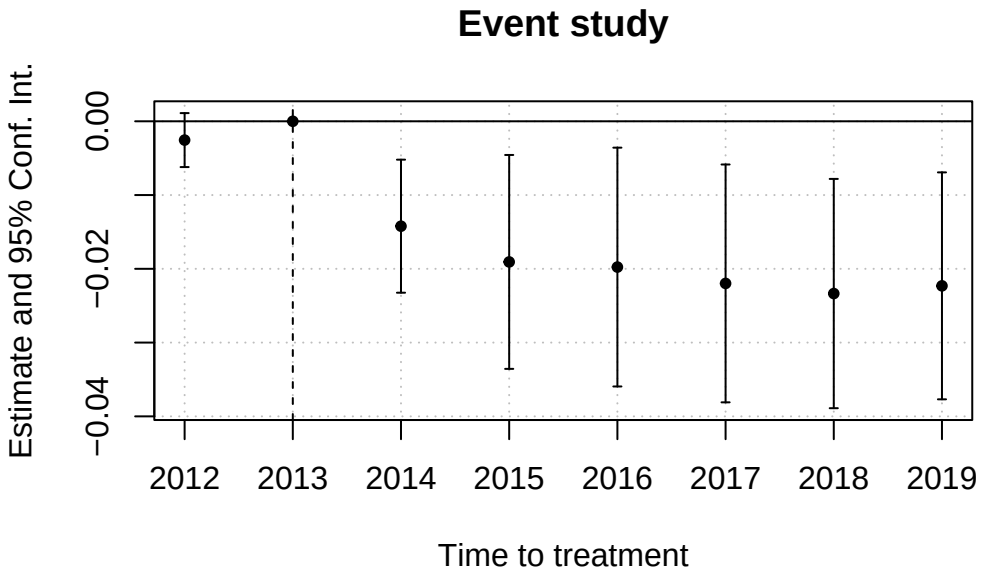
7.Include state and year fixed effects in your estimates. Try using the lfe or fixest package to estimate this instead of directly including the fixed effects.

```
OLS estimation, Dep. Var.: perc_unins
Observations: 352
Fixed-effects: State: 44,  year: 8
Standard-errors: Clustered (State)
       Estimate Std. Error  t value Pr(>|t|)
treat -0.018842   0.007082 -2.66055 0.010921 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
RMSE: 0.012707     Adj. R2: 0.943386
                 Within R2: 0.089032
```

8.Repeat the analysis in question 7 but include all states (even those that expanded after 2014). Are your results different? If so, why?

```
OLS estimation, Dep. Var.: perc_unins
Observations: 408
Fixed-effects: State: 51,  year: 8
Standard-errors: Clustered (State)
       Estimate Std. Error  t value  Pr(>|t|)
treat -0.017404   0.006273 -2.77435 0.0077569 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
RMSE: 0.013187     Adj. R2: 0.936702
                 Within R2: 0.067663
```

9.Provide an "event study" graph showing the effects of Medicaid expansion in each year. Use the specification that includes state and year fixed effects, limited to states that expanded in 2014 or never expanded.



10.Repeat part 9 but again include states that expanded after 2014. Note: this is tricky…you need to put all states onto "event time" to create this graph.

```
The variable 'year::2019:expand_ever' has been removed because of collinearity (see $collin.v
```