Homework 5

Research Methods, Spring 2024

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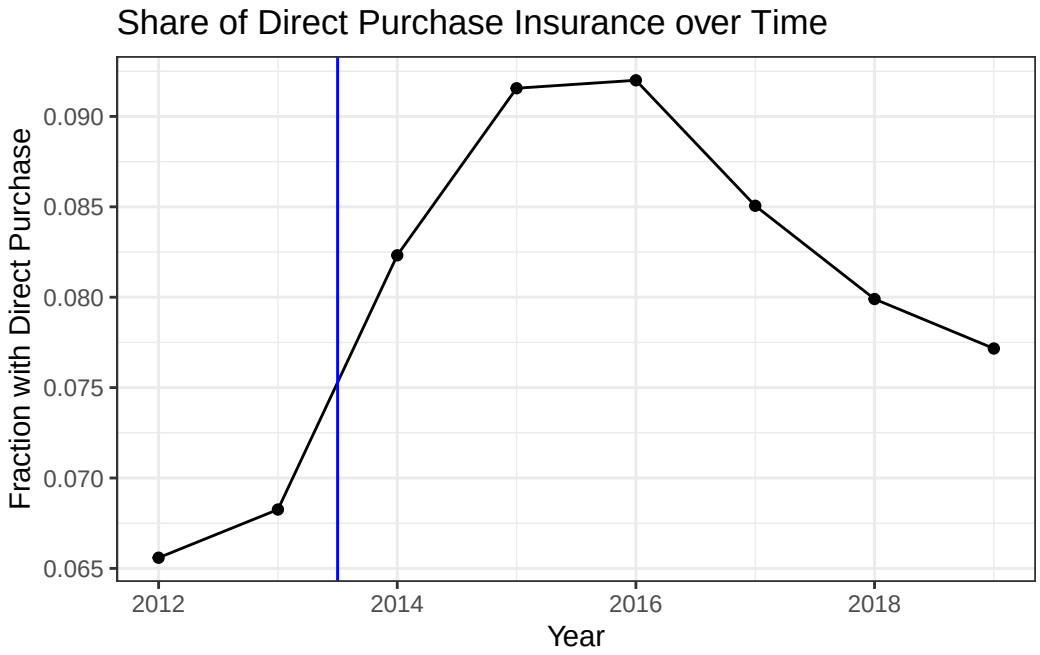
Summarize the Data

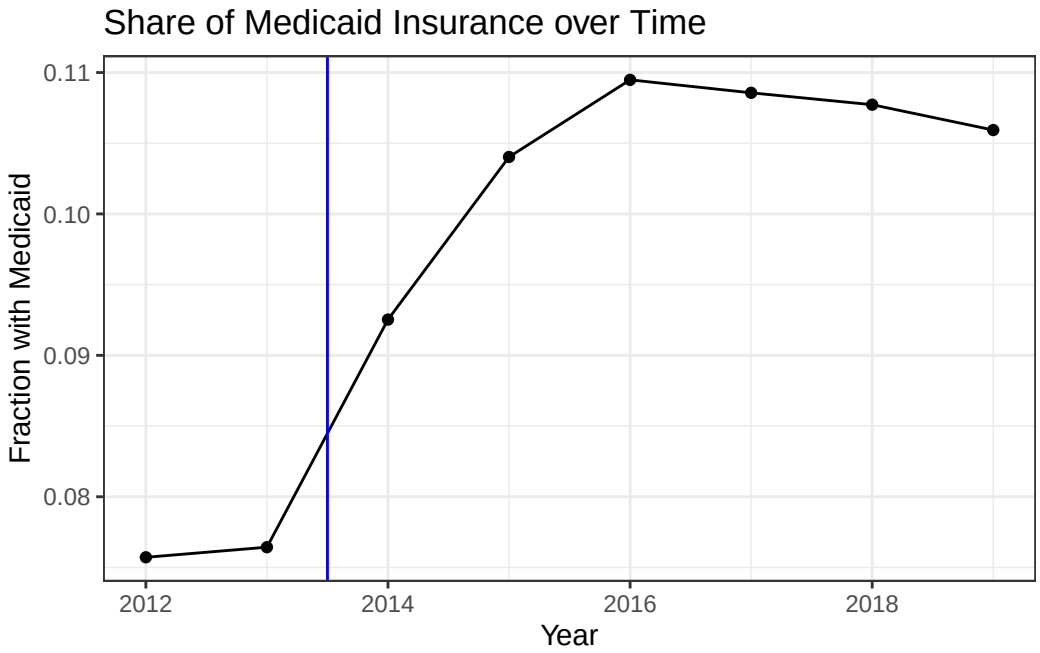
1. Plot the share of the adult population with direct purchase health insurance over time.



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?

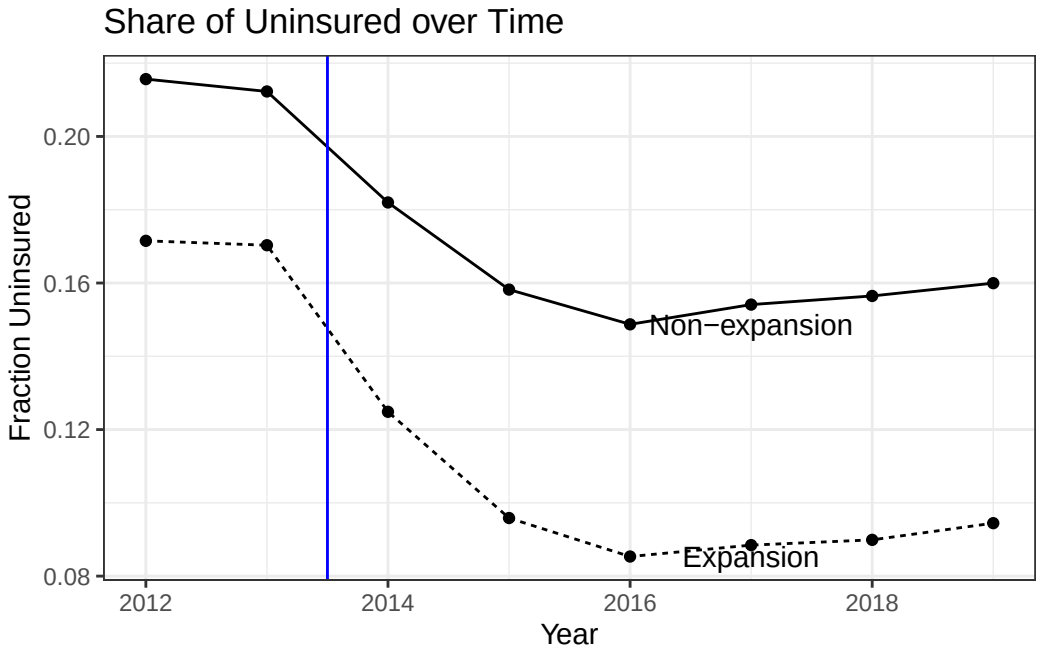
Based on research, two policies that affected the success of the direct puchase insurance market are all connected to ACA and they are the following: (1) denial of funding marketing, which lower the public awareness about ACA, and (2) promotion of AHPs and HRAs, which offered more affordable plans, affecting the direct purchase in health insurance.

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.

```
`summarise()` has grouped output by 'expand_ever'. You can override using the
`.groups` argument.
```



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.

```
`summarise()` has grouped output by 'expand_ever'. You can override using the
`.groups` argument.
```

Group	Pre	Post
Non-expansion	0.22	0.16
Expansion	0.17	0.10

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.data)

Residuals:
      Min        1Q    Median        3Q       Max
-0.118940 -0.024862 -0.005777  0.026277  0.114323

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)      0.213965   0.006908  30.974  < 2e-16 ***
postTRUE        -0.054057   0.007977  -6.777 5.43e-11 ***
expand_everTRUE -0.043053   0.008884  -4.846 1.92e-06 ***
treat           -0.020378   0.010258  -1.987   0.0478 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.04028 on 340 degrees of freedom
Multiple R-squared:  0.5084,    Adjusted R-squared:  0.504
F-statistic: 117.2 on 3 and 340 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.

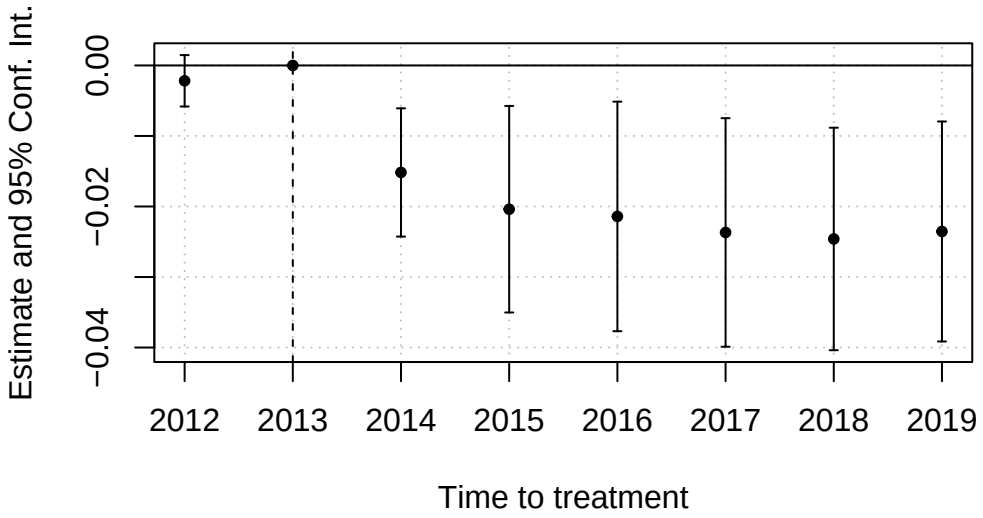
```
OLS estimation, Dep. Var.: perc_unins
Observations: 344
Fixed-effects: State: 43,  year: 8
Standard-errors: Clustered (State)
       Estimate Std. Error  t value  Pr(>|t|)
treat -0.020378   0.007113 -2.86472 0.0064911 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
RMSE: 0.012536     Adj. R2: 0.943601
                 Within R2: 0.105898
```

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: 400
Fixed-effects: State: 50,  year: 8
Standard-errors: Clustered (State)
       Estimate Std. Error  t value   Pr(>|t|)
treat -0.022609   0.005192 -4.35503 6.7699e-05 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
RMSE: 0.012514     Adj. R2: 0.941658
                 Within R2: 0.15512
```

The result is a slightly different since the fixed effect that is added is giving more accuracy to the data analysis. Also, having more observation can also affect the result slightly.

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.