Homework 5

Submission 1

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First submission of homework 5.

Link to Github

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

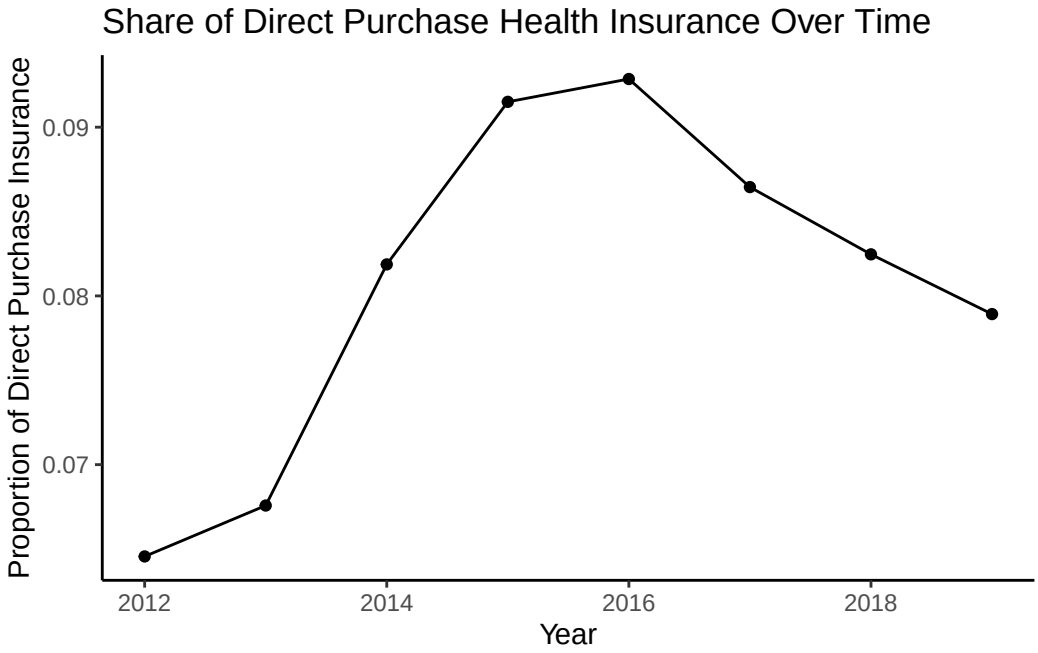

Figure 1: Direct Purchase Over Time

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?

Direct purchase plans experiencing a decline after 2016 may be attributed to many factors. Most significant is likely the repeal of the individual mandate under the Affordable Care Act (ACA) in 2017. This required the majority of Americans to have health insurance or face a penalty. The removal of this mandate eliminated a financial incentive for healthy individuals to purchase insurance.

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

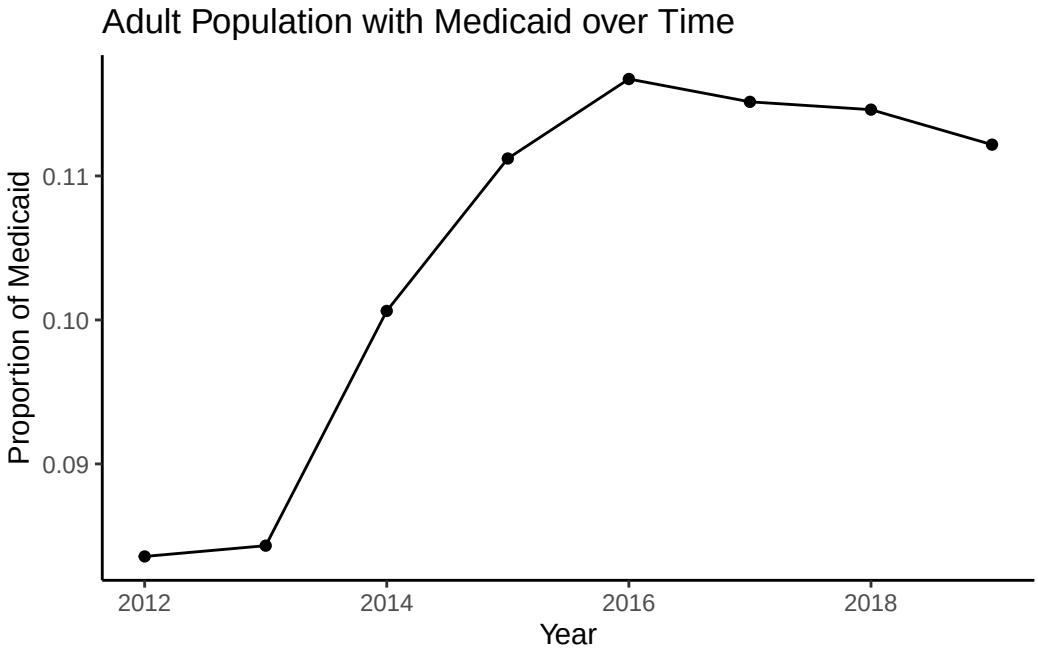

Figure 2: Medicaid Over Time

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.

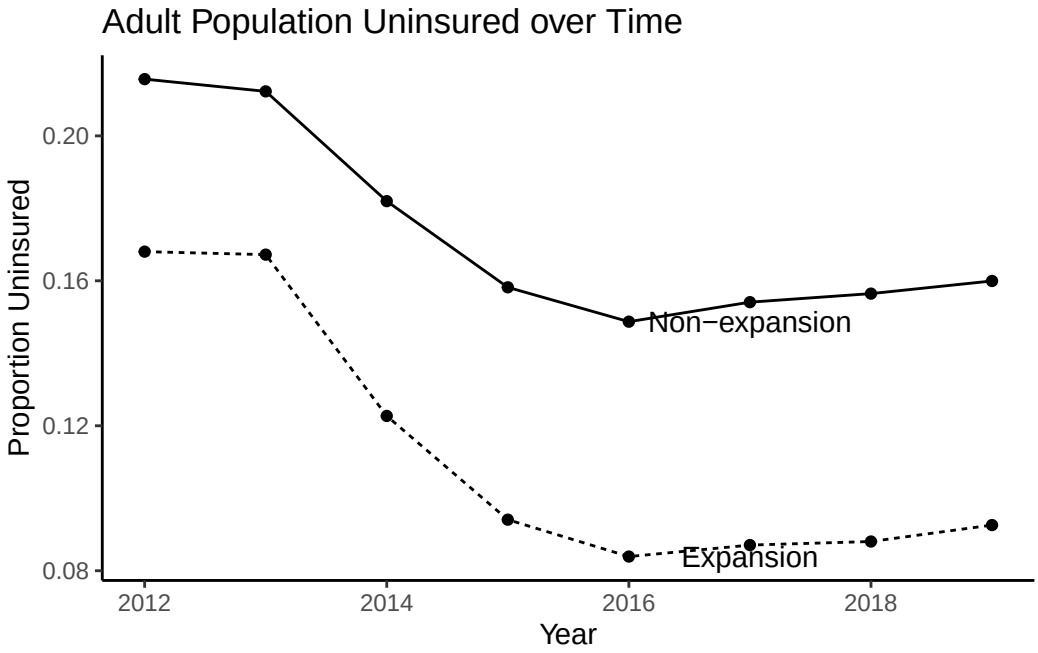

Figure 3: Medicaid Uinsured (2014)

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.

```
# A tibble: 90 x 13
   State       adult_pop ins_employer ins_direct ins_medicare ins_medicaid Group
   <chr>           <dbl>        <dbl>      <dbl>        <dbl>        <dbl> <chr>
 1 Alabama       2937335      1528419     180043        56890       190312 Non-~
 2 Arizona       3866694      1867954     263076        41042       428972 Expa~
 3 Arkansas      1761365       871970     106277        39157       114012 Expa~
 4 California   23798381     12015639    1824564       180861      2275053 Expa~
 5 Colorado      3270163      1801613     303179        27254       213045 Expa~
 6 Delaware       561217       334373      27507         7529        66440 Expa~
 7 District o~    442390       244553      33871         1884        72620 Expa~
 8 Connecticut   2233159      1404588     131145        23034       225991 Expa~
 9 Florida      11578613      5365172     860060       148499       839467 Non-~
10 Georgia       6117277      3181157     345523        82211       332449 Non-~
# i 80 more rows
# i 6 more variables: date_adopted <date>, expand_year <dbl>, expand <lgl>,
#   share_medicaid <dbl>, Pre <dbl>, Post <dbl>
```

Not coming out right (need to fix)

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.

Table 1: Effect of Medicaid Expansion on Uninsurance

	(1)
(Intercept)	0.214
	(0.007)
postTRUE	−0.054
	(0.008)
expand_everTRUE	−0.046
	(0.009)
postTRUE × expand_everTRUE	−0.019
	(0.010)
Num.Obs.	352
R2	0.506
R2 Adj.	0.502
AIC	−1246.9
BIC	−1227.6
Log.Lik.	628.450
F	118.986
RMSE	0.04

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.

	DD	TWFE
(Intercept)	0.214	
	(0.007)	
postTRUE	−0.054	
	(0.008)	
expand_everTRUE	−0.046	
	(0.009)	
treat	−0.019	−0.019
	(0.010)	(0.007)
Num.Obs.	352	352
R2	0.506	0.952
R2 Adj.	0.502	0.943
R2 Within		0.089
R2 Within Adj.		0.086
AIC	−1246.9	−1970.4
BIC	−1227.6	−1769.5
Log.Lik.	628.450	
F	118.986	
RMSE	0.04	0.01
Std.Errors		by: State
FE: State		X
FE: year		X

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

	DD	TWFE
(Intercept)	0.214	
	(0.007)	
postTRUE	−0.054	
	(0.008)	
expand_everTRUE	−0.040	
	(0.009)	
treat	−0.017	−0.017
	(0.010)	(0.006)
Num.Obs.	408	408
R2	0.452	0.946
R2 Adj.	0.448	0.937
R2 Within		0.068
R2 Within Adj.		0.065
AIC	−1420.6	−2256.2
BIC	−1400.6	−2019.6
Log.Lik.	715.318	
F	110.941	
RMSE	0.04	0.01
Std.Errors		by: State
FE: State		X
FE: year		X

There is only very slight difference between this and the previous question.

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.

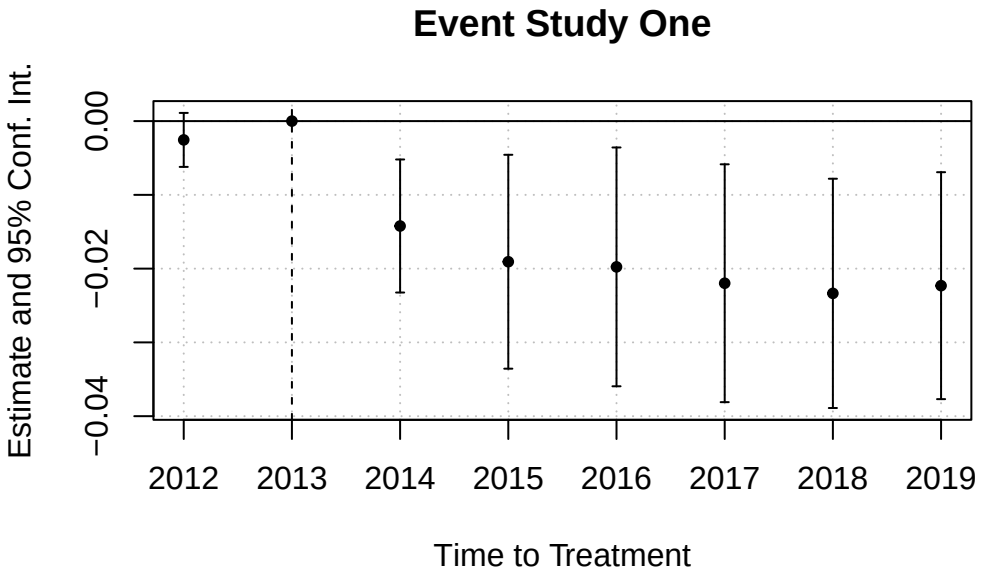

Figure 4: Event Study of Medicaid Expansion (2014)

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.

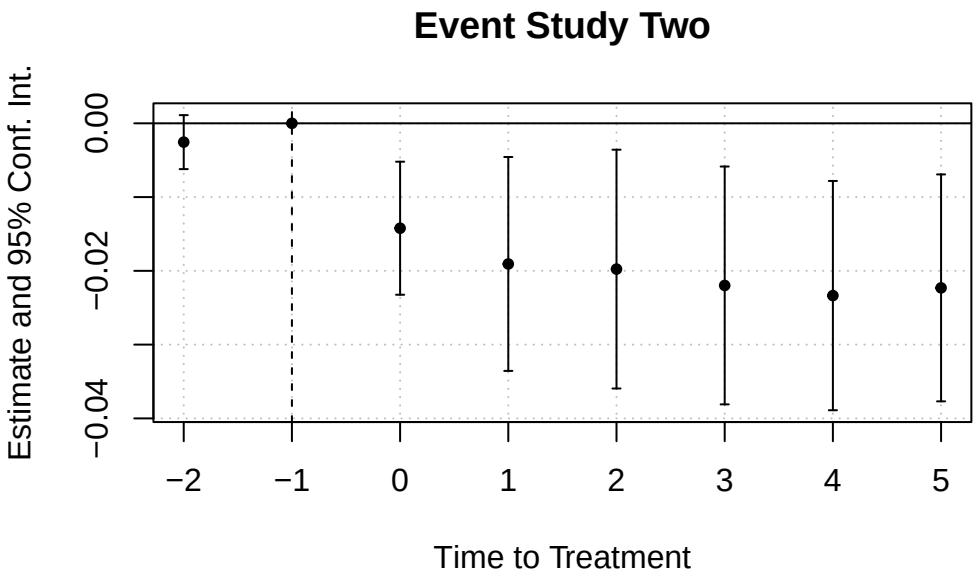

Figure 5: Event Study of Medicaid Expansion over Time