Homework 5: Final Submission
Research Methods, Spring 2024

Leila Mulveny

Homework 5: Repository

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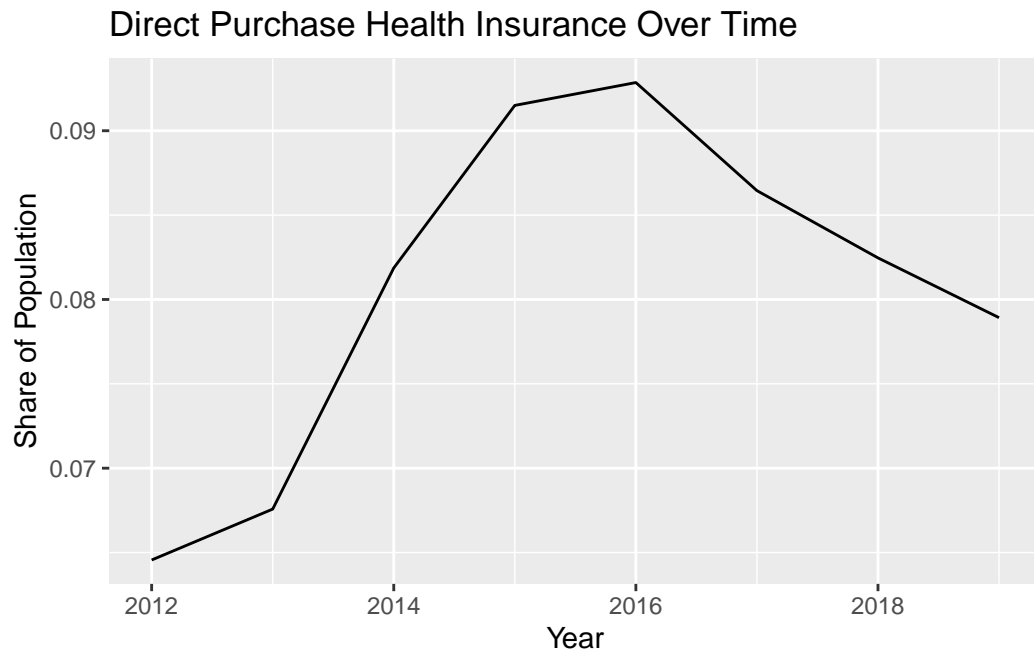
Figure 1:

Figure 1

We observe that the share the adult population with direct purchase health insurance peaks in 2016 and then begins to decrease in the years following.

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 decline in direct purchase health insurance post-2016 may be attributed to several factors. One significant policy change was the repeal of the individual mandate under the Affordable Care Act (ACA) in 2017. This mandate required most Americans to have health insurance or face a tax penalty. Its removal eliminated a financial incentive for healthy individuals to purchase insurance. Market instability and uncertainty following 2016, including regulatory changes, ACA debates, and fluctuating premiums, also contributed to fewer people opting for direct purchase plans.

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

Figure 2:

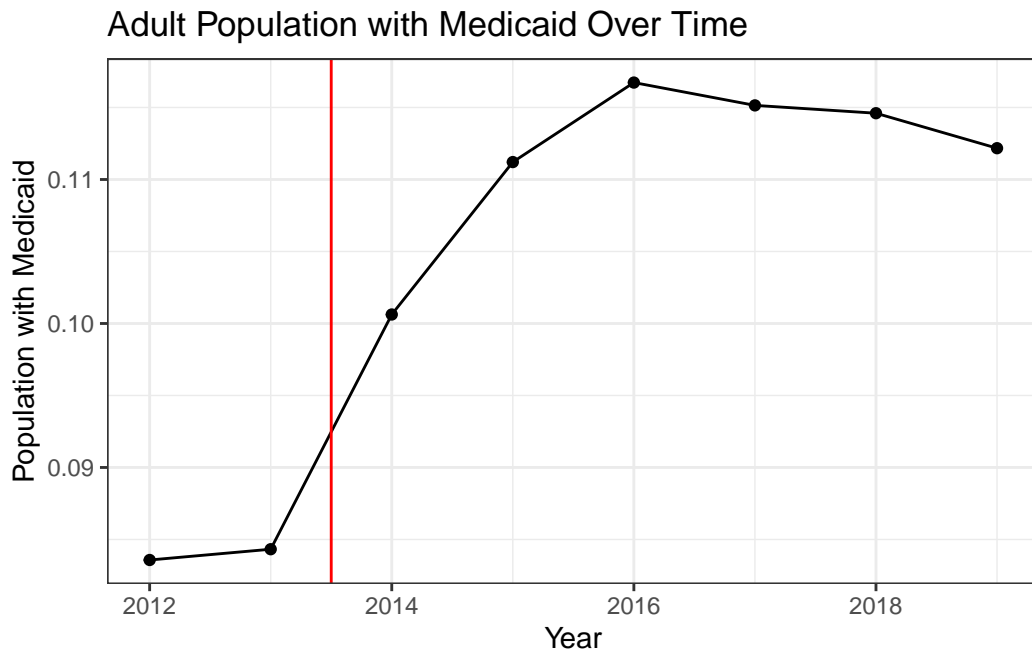### Adult Population with Medicaid Over Time

Figure 2

We observe that the adult population with Medicaid sharply increases from 2013-2016 and then stays about the same.

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.
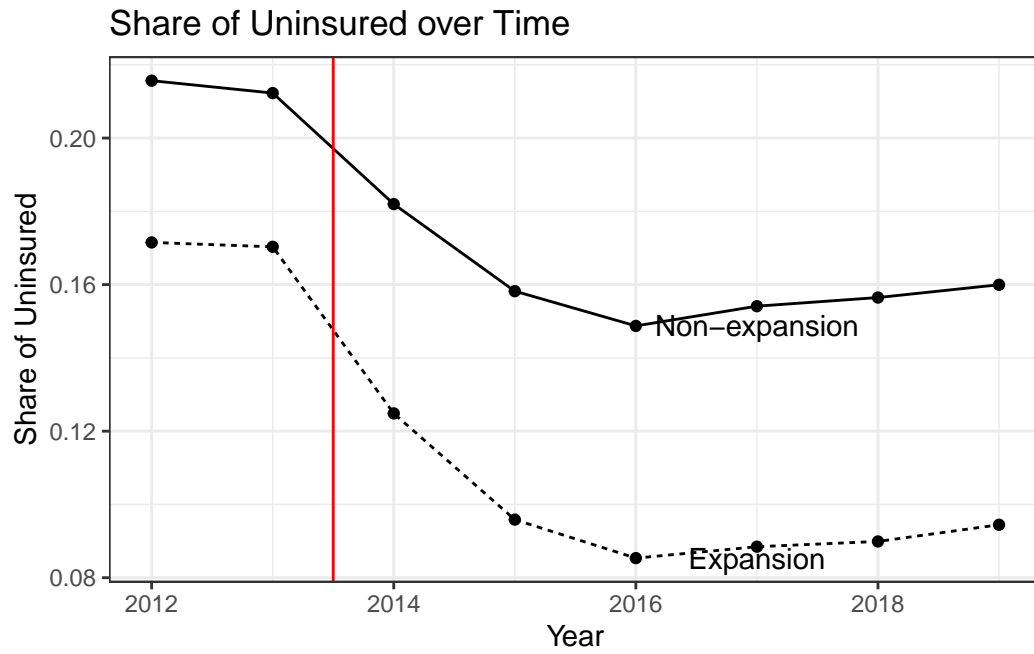
Figure 3:

Share of Uninsured over Time

Figure 3

We see that the share of unisured people has decreased overtime, and that there are parallel trends between non-expansion and expansion states (this is promising for future DID estimation).

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.

Table 1:

Table 1: Average Percent Uninsured in 2012 and 2015 for Expansion vs Non-Expansion

Group	Pre	Post
Non-expansion	0.22	0.16
Expansion	0.18	0.11

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 2

Table 2: 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
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.

Table 3:

Table 3: Effect of Medicaid Expansion on Uninsurance with State and Year FE

	DID	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 Within		0.089
RMSE	0.04	0.01
Std.Errors		by: State

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

Table 4:

Table 4: Effect of

	DID	TWFE	Time-varying Treatment
(Intercept)	0.214		
	(0.007)		
postTRUE	−0.054		
	(0.008)		
expand_everTRUE	−0.046		
	(0.009)		
treat	−0.019	−0.019	−0.024
	(0.010)	(0.007)	(0.006)
Num.Obs.	352	352	416
R2	0.506	0.952	0.946
R2 Within		0.089	0.156
RMSE	0.04	0.01	0.01
Std.Errors		by: State	by: State

The analysis in question 7 revealed that the estimates with year and state fixed effects are identifcal to the standard DID estimate, however in question 8 when we change the treatment interaction term to be sensitive to when states expanded the treatment effect is estimated to be slightly larger in absolute value (-0.023 compared to -0.02). The difference in results is likely due to a change in the treatment interaction term which is now sensitive to when the state expanded.

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.
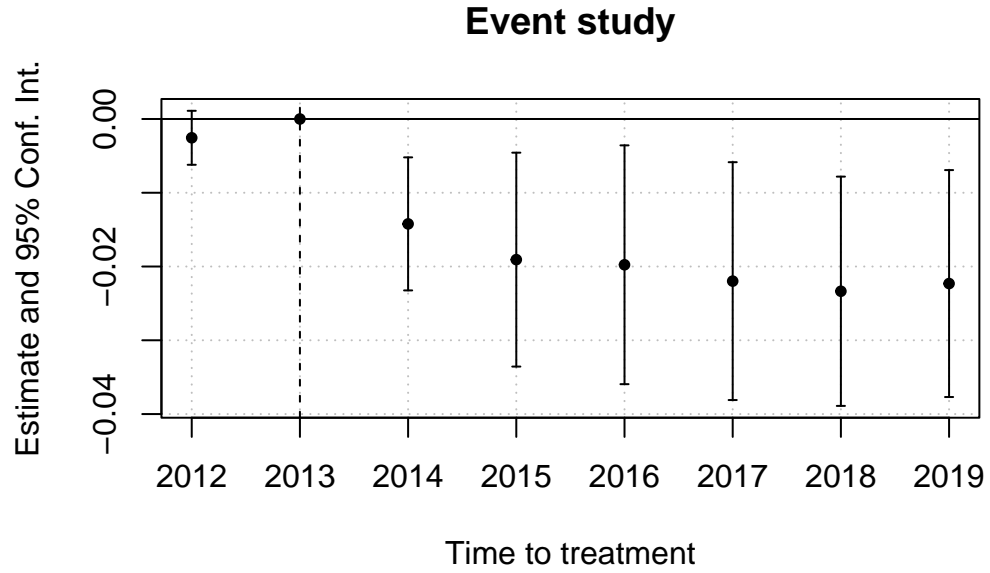
Figure 4

Figure 4: Effects of Medicaid Expansion in Each Year with State and Year FE (States that Expanded in 2014 or Never)

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.
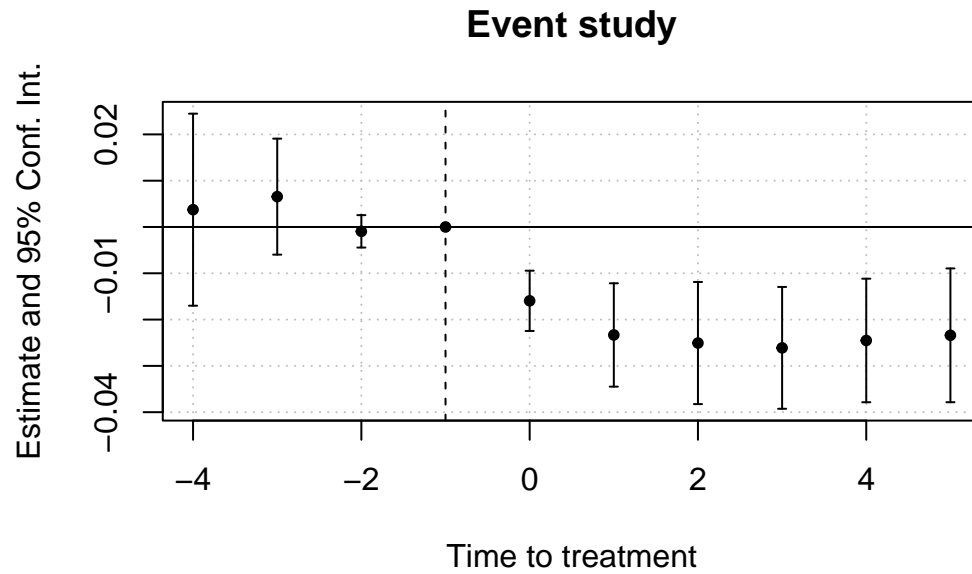
Figure 5

Event study

Figure 5: Effects of Medicaid Expansion in Each Year with State and Year FE on Event Time (States that Expanded in 2014 and After)