

Homework 5

Martinna Roldan

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Summarize the Data

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

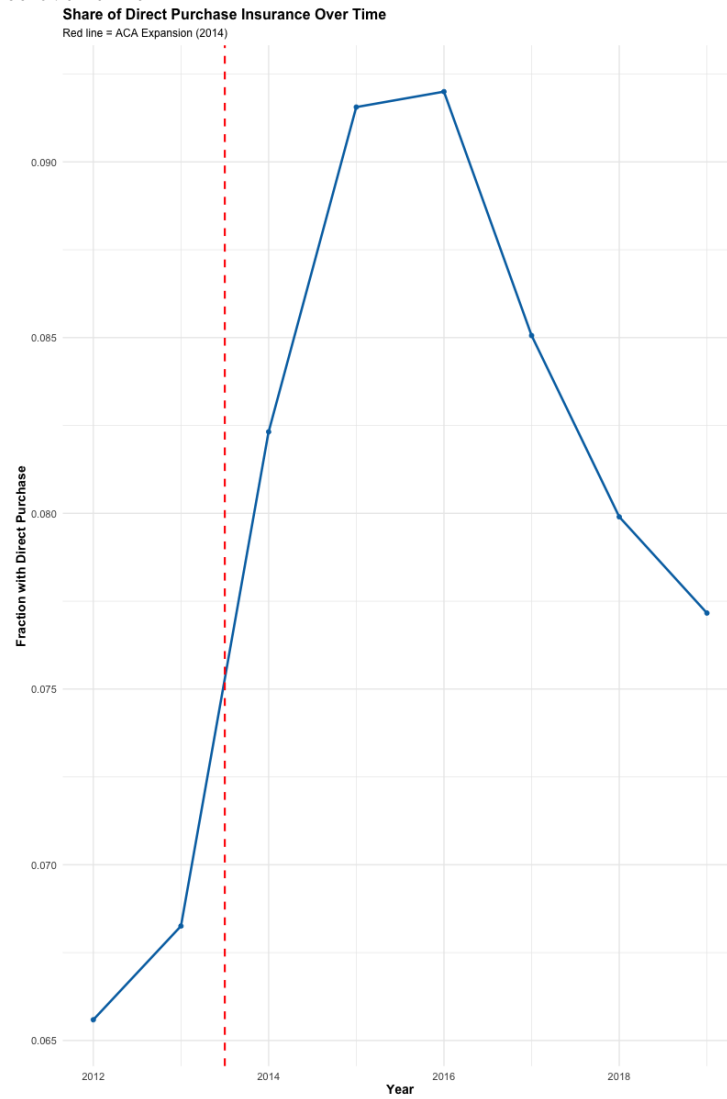


Figure 1: Share of Individuals with Direct Purchase

Question 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?

There were several policies that contributed to the decline in direct purchase health insurance enrollment in the later years. Most notably, many of these actions were tied to efforts by the Trump administration to weaken the Affordable Care Act (ACA). Enrollment in ACA marketplace plans fell between 2016 and 2017 and continued declining into 2018. Two major policy changes played a key role:

- Funding for navigators and outreach marketing was significantly cut, making it harder for consumers to learn about or sign up for coverage.
- The federal government chose not to enforce the individual mandate penalty, and later, as of 2020, the penalty was officially reduced to zero, removing a major incentive for healthy individuals to maintain insurance.

In addition to these measures, uncertainty over the future of the ACA likely discouraged insurers from participating in exchanges or led them to increase premiums, making direct purchase coverage less attractive.

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

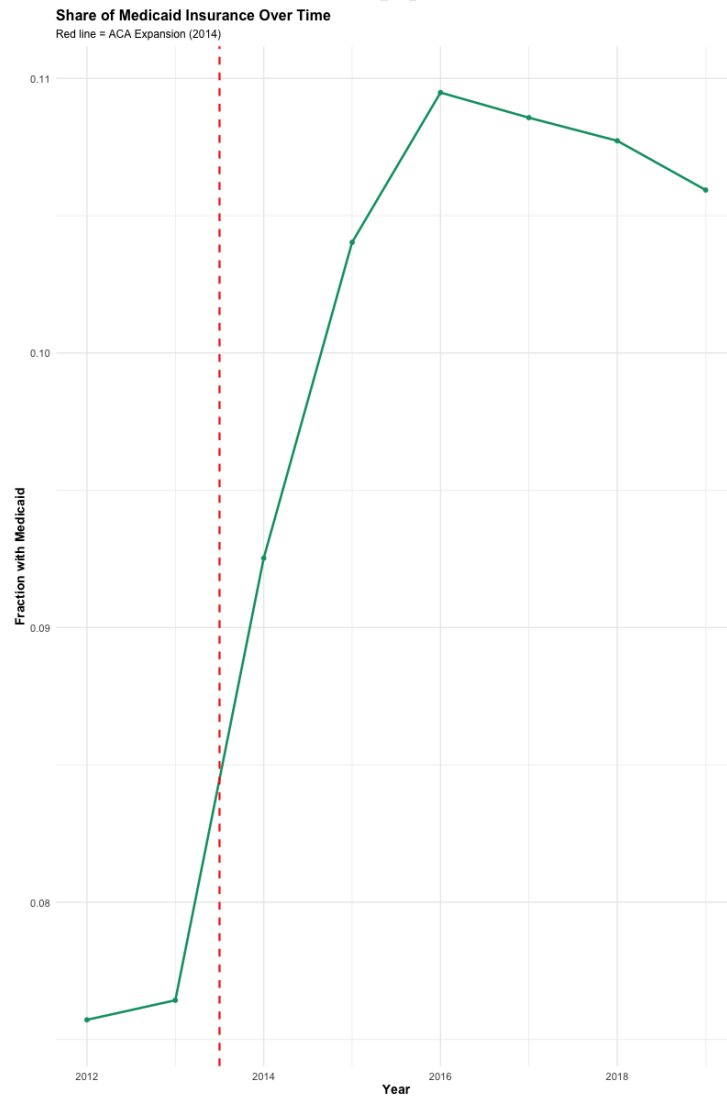


Figure 2: Share of Individuals with Medicaid

Question 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.

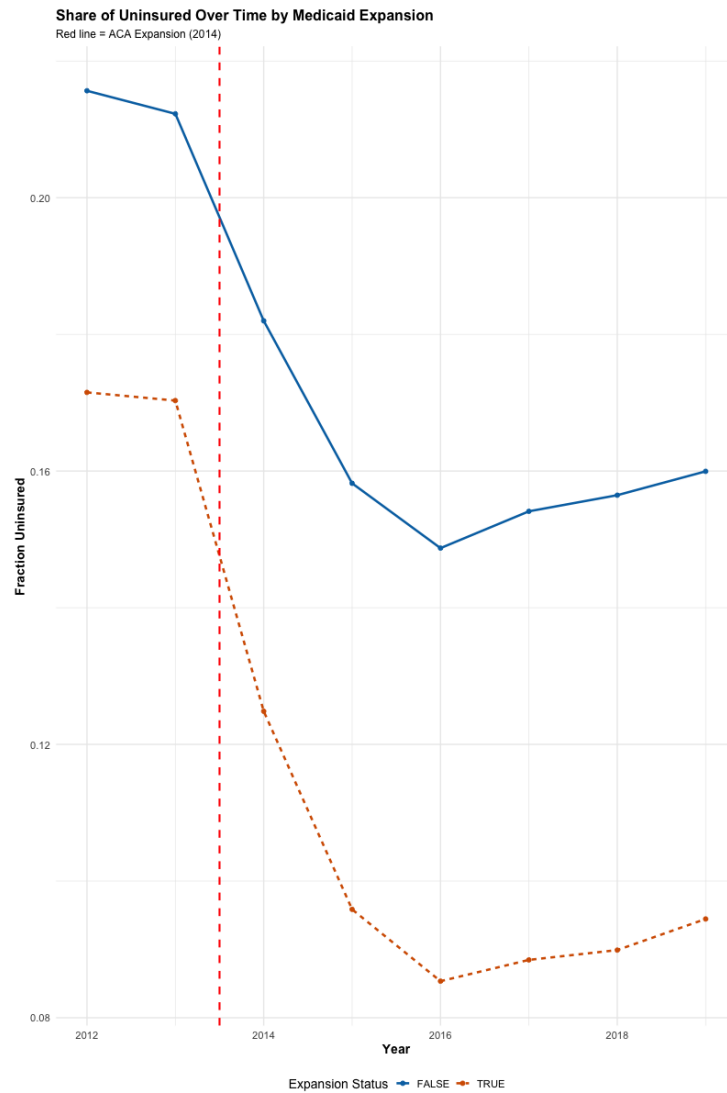


Figure 3: Average Uninsured by Medicaid Expansion

Estimate ATEs

Question 1: 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.

Group	Pre (2012)	Post (2015)
Non-expansion	0.216	0.158
Expansion	0.172	0.0959

Table 1: DD Table for Medicaid Expansion

Question 2: 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.

	(1)
(Intercept)	0.214 (0.007)
Post 2014	-0.054 (0.008)
Expand	-0.043 (0.009)
Post \times Expand	-0.020 (0.010)
Num.Obs.	344
R^2	0.508
RMSE	0.040

Table 2: DD Estimates for Medicaid Expansion

Question 3: 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.

	Standard DD	TWFE
(Intercept)	0.214 (0.007)	—
Post 2014	-0.054 (0.008)	—
Expand	-0.043 (0.009)	—
Post \times Expand	-0.020 (0.010)	-0.020 (0.007)
Num. Obs.	344	344
R^2	0.508	0.944
R^2 Within	—	0.106
RMSE	0.040	0.013
Std. Errors	—	by: State

Table 3: DD Estimates for Medicaid Expansion with TWFE (Corrected)

Question 4: Repeat the analysis in question 7 but include all states (even those that expanded after 2014). Are your results different? If so, why?

	Standard DD	TWFE	Time-varying Treatment
(Intercept)	0.214 (0.007)	—	—
Post 2014	-0.054 (0.008)	—	—
Expand	-0.043 (0.009)	—	—
Post \times Expand	-0.020 (0.010)	-0.020 (0.007)	-0.023 (0.005)
Num. Obs.	344	344	400
R^2	0.508	0.944	0.942
R^2 Within	—	0.106	0.155
RMSE	0.040	0.013	0.013
Std. Errors	—	by: State	by: State

Table 4: DD Estimates for Medicaid Expansion with Staggered Treatment

In this setup, we continue to include both state and year fixed effects, but the way the treatment interaction term is defined changes based on the year each state expanded Medicaid. The interaction term equals 1 starting from the year a state expanded — for example, it is set to 1 from 2014 onward for states that expanded in 2014, from 2015 onward for those that expanded in 2015, and so forth. In all other years and for states that never expanded, the interaction term remains 0.

Question 5: 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.

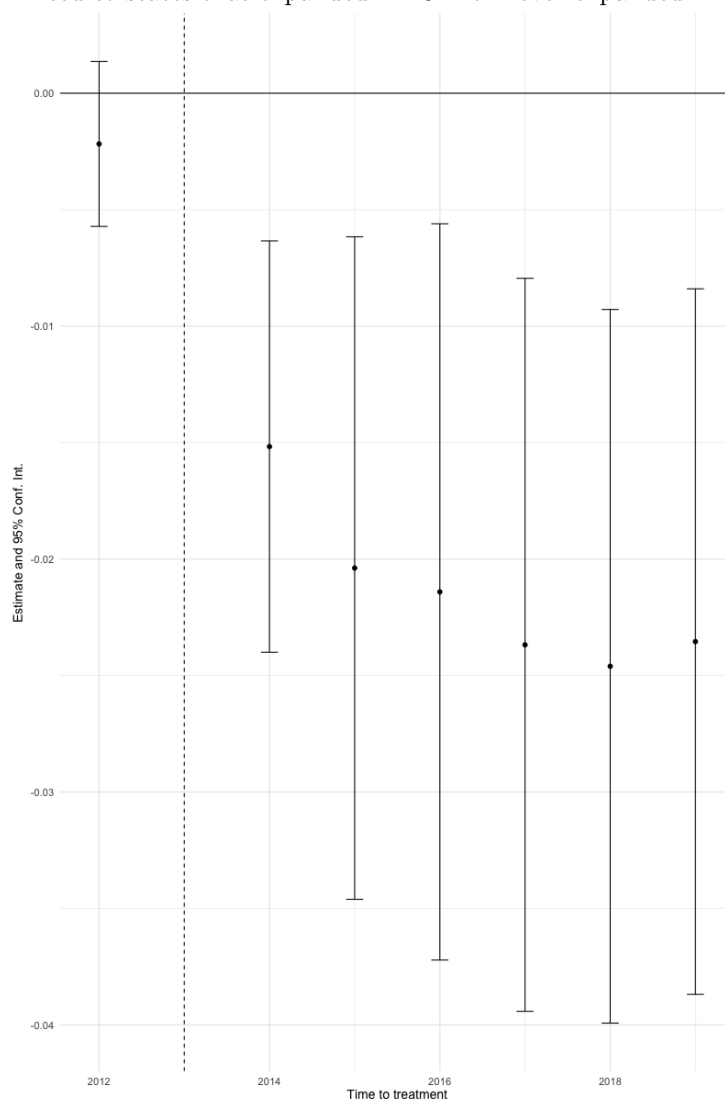


Figure 4: Event Study with Common Treatment Time

Question 6: 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.

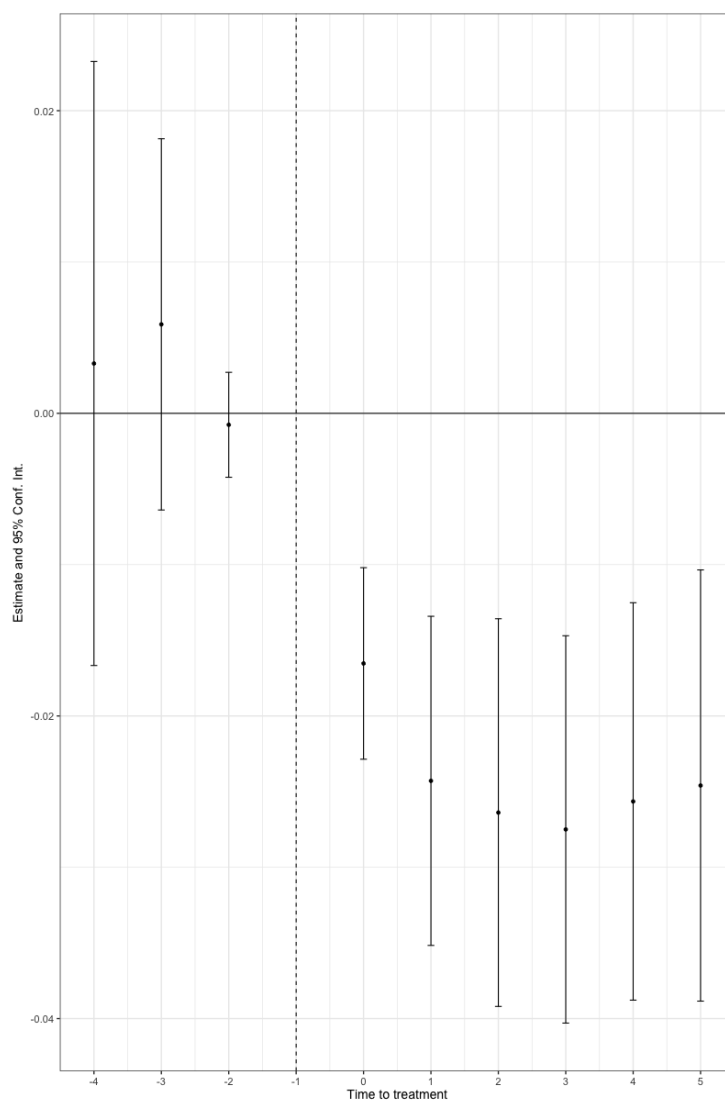


Figure 5: Event Study with Staggered Treatment