# Homework 5

## ECON 470 Spring 2025

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Here is a link to my repository: {https://github.com/ctcasta/homework5/blob/main/submission2/results/home

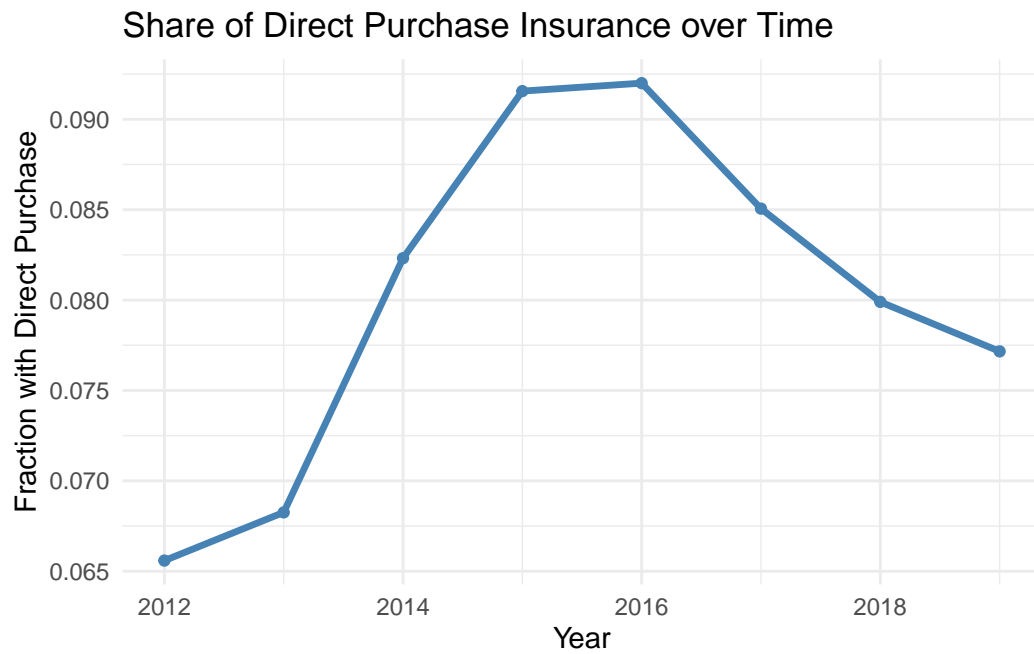**1. Plot the share of the adult population with direct purchase health insurance over time.**



Figure 1: Share of Individuals with Direct Purchase

**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?**

Over the years direct purchase health insurance dropped off mainly because more people started getting coverage elsewhere. This is due to the Medicaid expansion under the Affordable Care Act, which made a lot more low-income individuals eligible for free or low-cost insurance, and they didn't have to buy plans on their own. Additionally, with more employers offering health insurance because of the ACA's employer mandate fewer people needed to look for coverage on the individual market.

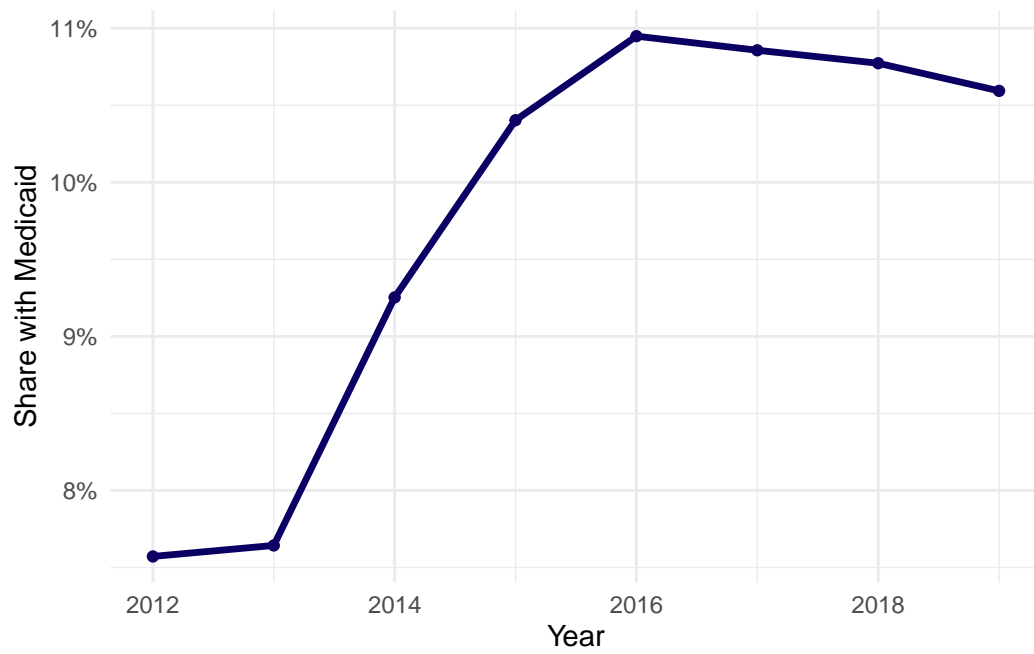**3. Plot the share of the adult population with Medicaid over time.**



Figure 2: Share of Individuals with Medicaid

**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.**



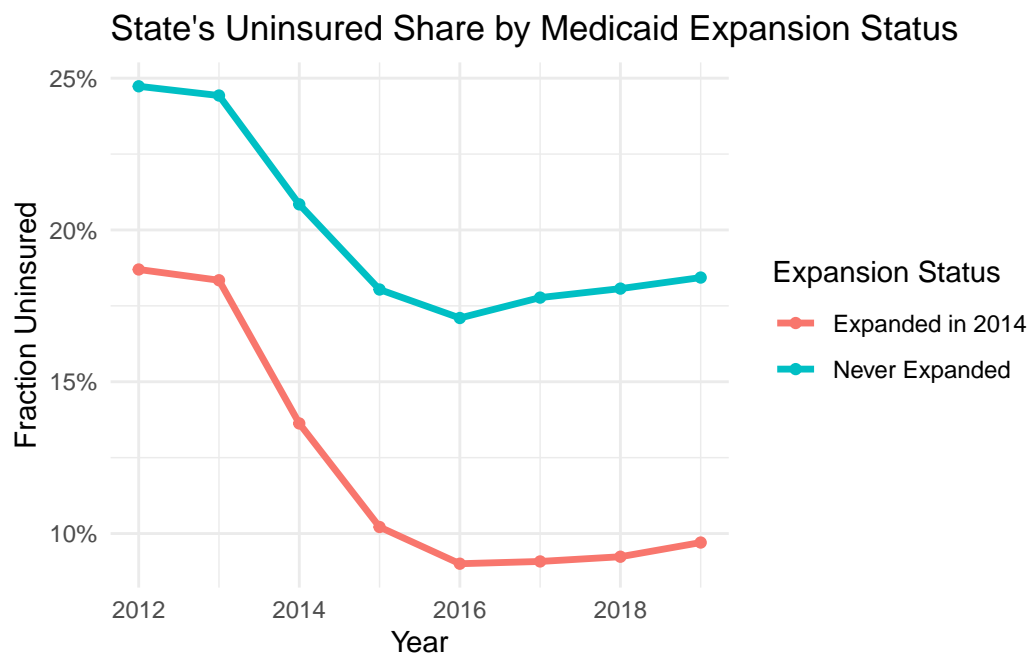Figure 3: Average Uninsured by Medicaid Expansion

**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: DD Table for Medicaid Expansion

| group | 2012 | 2015 | diff |
|---|---|---|---|
| Expansion | 0.187 | 0.102 | -0.085 |
| Non-Expansion | 0.247 | 0.180 | -0.067 |

**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: DD Estimates for Medicaid Expansion

|              | (1)      |
|--------------|----------|
| (Intercept)  | 0.214    |
|              | (0.007)  |
| post         | −0.054   |
|              | (0.008)  |
| expand_ever  | −0.043   |
|              | (0.009)  |
| Post x Expand| −0.020   |
|              | (0.010)  |
| Num.Obs.     | 344      |
| R2           | 0.508    |
| 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: DD Estimates for Medicaid Expansion with TWFE

|  | Standard DD | TWFE |
|---|---|---|
| (Intercept) | 0.214 | |
|  | (0.007) | |
| post | −0.054 | |
|  | (0.008) | |
| expand_ever | −0.043 | |
|  | (0.009) | |
| Post x Expand | −0.020 | −0.020 |
|  | (0.010) | (0.007) |
| Num.Obs. | 344 | 344 |
| R2 | 0.508 | 0.952 |
| R2 Within | | 0.106 |
| 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?**

|               | Standard DD | TWFE     | Time-varying Treatment |
|---------------|-------------|----------|------------------------|
| (Intercept)   | 0.214       |          |                        |
|               | (0.007)     |          |                        |
| post          | −0.054      |          |                        |
|               | (0.008)     |          |                        |
| expand_ever   | −0.043      |          |                        |
|               | (0.009)     |          |                        |
| Post x Expand | −0.020      | −0.020   | −0.023                 |
|               | (0.010)     | (0.007)  | (0.005)                |
| Num.Obs.      | 344         | 344      | 400                    |
| R2            | 0.508       | 0.952    | 0.950                  |
| R2 Within     |             | 0.106    | 0.155                  |
| RMSE          | 0.04        | 0.01     | 0.01                   |
| Std.Errors    |             | by: State| by: State              |

**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.**
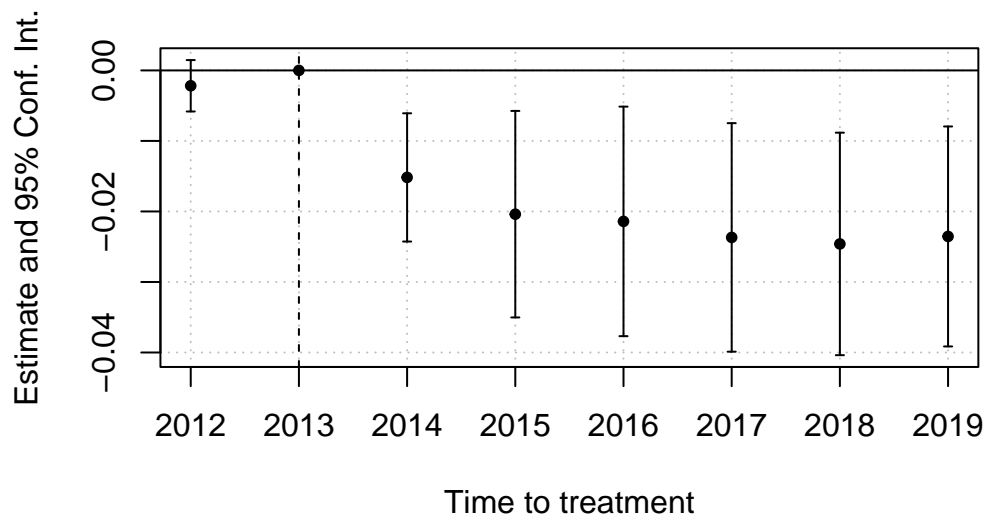


Figure 4: Event Study with Common Treatment Time

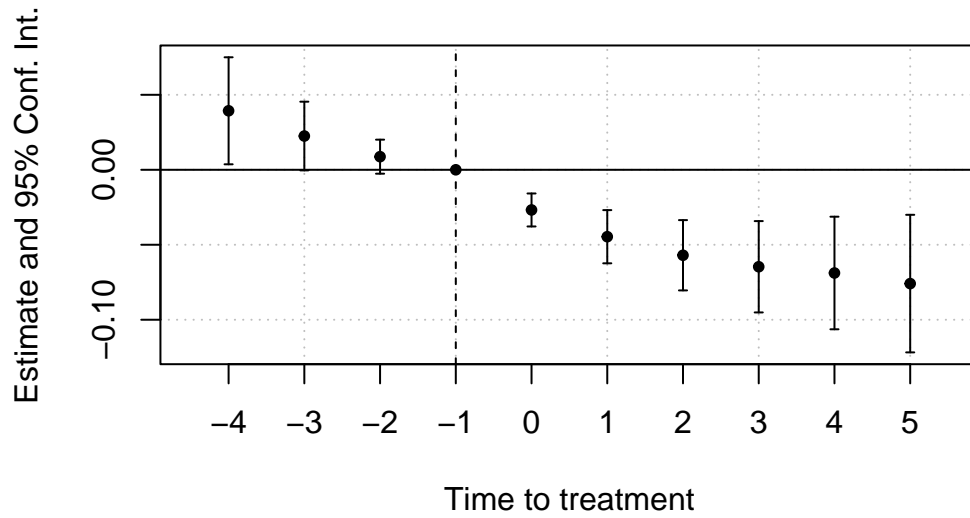**10.Repeat part 9 but again include states that expanded after 2014. Note: this is tricky...you need to put all states onto "event time" to create this graph.**



Figure 5: Event Study with Staggered Treatment