

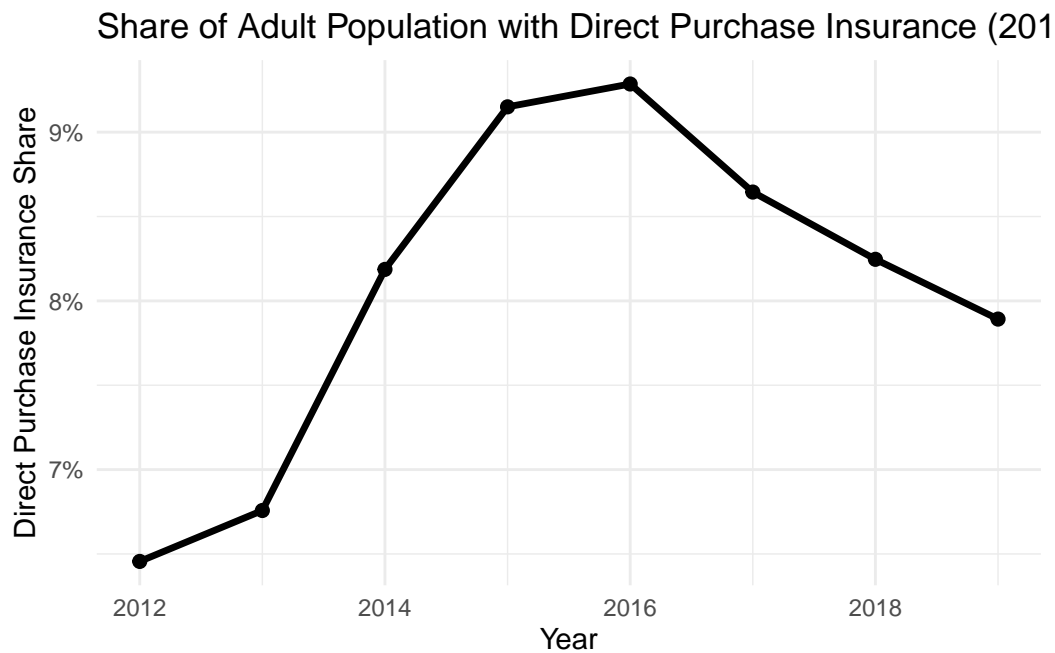
Homework 5

Research Methods, Spring 2025

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My analysis code can be found at my GitHub repository, linked [here](#).

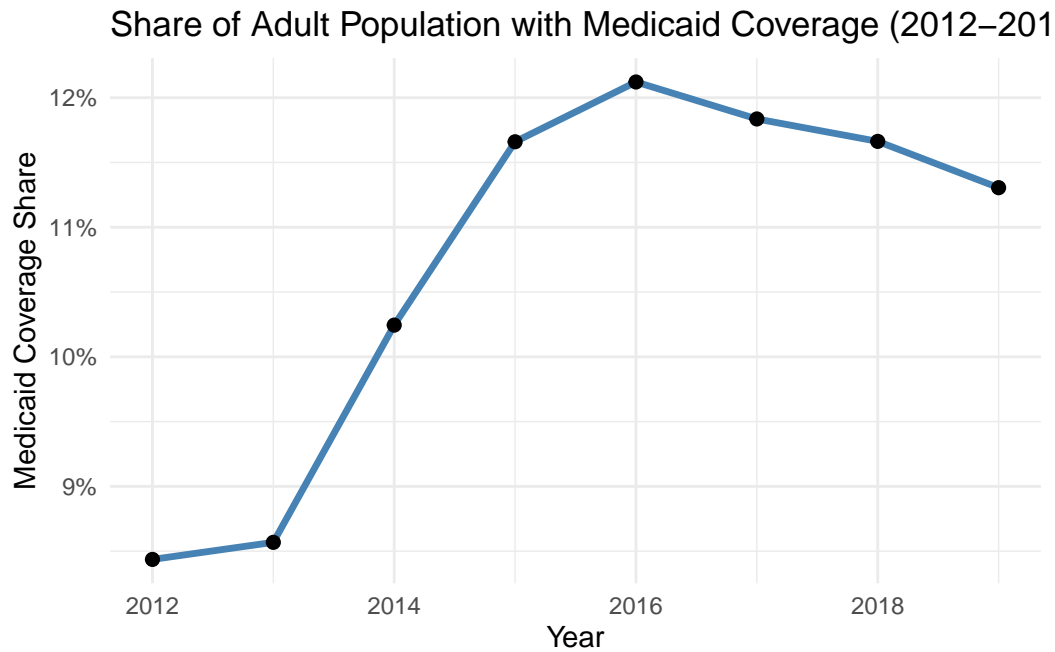
1. Plot the share of the adult population with direct purchase health insurance over time.



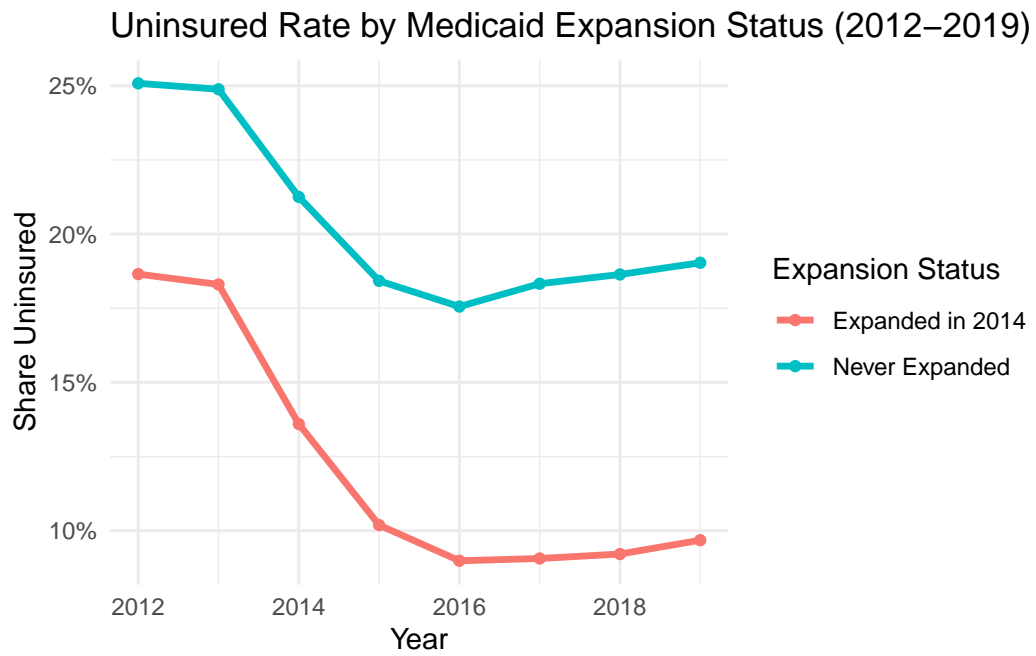
2. Discuss the reduction in direct purchase health insurance in later years. Can you list a couple of policies that might have affected the success of the direct purchase insurance market?

Since 2016, the share of adults with direct purchase insurance has decreased. The Tax Cuts and Jobs Act of 2017 eliminated the penalty for not having insurance starting in 2019. Without this mandate, fewer healthy individuals opted into coverage because there was no penalty.

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.



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: Difference-in-Differences Table of Average Uninsured Rate

Group	Pre	Post
Expanded in 2014	0.19	0.10
Never Expanded	0.25	0.18

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

Table 3: Table 2: DD Estimates for Medicaid Expansion

	(1)
(Intercept)	0.211*** (0.009)
Treatment Group	-0.044*** (0.011)
Post-2014	-0.052*** (0.011)
Interaction (Treatment \times Post)	-0.021+ (0.013)
Num.Obs.	304
R2	0.455
RMSE	0.04
Std.Errors	IID
+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$	

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 4: DD Estimates with State and Year Fixed Effects

Table 5: Table 3: DD with State & Year Fixed Effects

	Standard DD	TWFE
(Intercept)	0.211*** (0.009)	
Treatment Group	−0.044*** (0.011)	
Post-2014	−0.052*** (0.011)	
Interaction (Treatment \times Post)	−0.021+ (0.013)	−0.021* (0.009)
Num.Obs.	304	304
R2	0.455	0.944
R2 Within		0.082
RMSE	0.04	0.01
Std.Errors	IID	by: State
FE: State		X
FE: year		X
+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$		

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

Yes, the results differ slightly when we include all states, including those that expanded Medicaid after 2014. This is because the timing of Medicaid expansion varies across states. States that expanded later may have had different baseline uninsurance rates, economic conditions, or implementation processes, all of which can influence the estimated average treatment effect. By accounting for staggered treatment timing, the model captures a time-varying impact of Medicaid expansion compared to a simple pre/post framework.

Table 6: DD Estimates with Staggered Treatment Timing

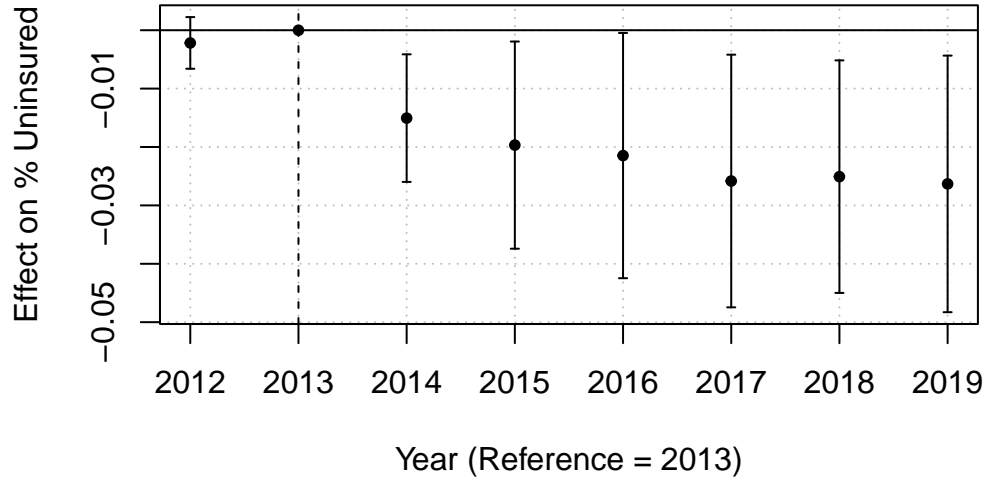
Table 7: Table 4: DD with Staggered Expansion

	Standard DD	TWFE	Staggered Treatment
(Intercept)	0.211*** (0.009)		
Treatment Effect	−0.044*** (0.011)		−0.024*** (0.006)
post	−0.052*** (0.011)		
Treatment Effect:post	−0.021+ (0.013)	−0.021* (0.009)	
Num.Obs.	304	304	416
R2	0.455	0.944	0.946
R2 Within		0.082	0.156
RMSE	0.04	0.01	0.01
Std.Errors	IID	by: State	by: State
FE: State		X	X
FE: year		X	X

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

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.

Event Study: Effect of Medicaid Expansion on Uninsured



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.

Event Study: Medicaid Expansion (All States, Event Time)

