Evaluating the Impact of Asset Test Elimination in Medicare Savings Program

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Introduction

Medicare provides health insurance to 46 million seniors age over 65. However, on average, Medicare covers only about half of the health care charges. Medicare enrollees have to pay the rest out-of-pocket.

Medicare Savings Programs (MSP) are Medicaid-funded, state-managed programs which help financially poor seniors cover the Medicare share costs.

Asset test often prevents people from enrolling in MSP because

- They don't meet the asset limit
- The procedure are too complicated

As of 2018, ten states have eliminated the MSP asset test.

Hypothesis

- In these states seniors are more likely to be eligible to MSP. Thus asset test removal increased MSP coverage rate, hence reducing seniors' financial difficulty to access health care.

Introduction

Preview of results:
Removing the asset test in MSP program

- increased states' Medicaid coverage rate by 1.69% (out of 11.29%)
- reduced seniors who had experience of "needed to see a doctor but could not because of cost" by 0.46% (out of 4.67%)

Contributions:

- provide causal estimates of the impact of asset test elimination
- provide quantitative recipients' welfare analysis of asset test elimination
- early application of the generalized synthetic control method

Background

Medicare

- Universal federal social insurance program for seniors age over 65
- Original Medicare covers inpatient hospital care and outpatient medical care
- The out-of-pocket (OOP) expenditure of original Medicare is uncapped
- People often purchase additional insurance plans to fill original Medicare's coverage gap and OOP gap (e.g. Medigap plans, Medicare Advantage plans, prescription drug plans, etc)

Medicaid

- Means-tested program for seniors have very few income and resources
- Jointly funded and managed by federal and states
- Provide more comprehensive coverage than Medicare (e.g. dental, vision, nursing home, etc)
- Can pay the Medicare share cost
- Medicare Savings Program (MSP) offers partial Medicaid benefit (only covers Medicare share costs)

Original Medicare

Part A (inpatient hospital insurance)

- No premium as long as an individual has been working and paying Medicare taxes for at least 10 years
- $1316 deductible for a hospital stay of days 1-60
- co-pay is $322 per day for days 61-90, and $658 per day for days 91-150
- no deductible and co-pay for the first 20 days of skilled nursing care
- co-pay is $164.5 per day for days 21-100

Part B (outpatient medical insurance)

- Optional, $134 monthly standard premium
- $183 yearly deductible, 20% co-insurance

In average, $5374 annual OOP expenditure for seniors who only have Medicare as health insurance. (Schoen et al.(2017))

Medicare Savings Programs

Qualified Medicare Beneficiary (QMB) Program

- Part A premiums
- Part B premiums
- Deductibles, coinsurance, and copayments
- Federal income limit 100% Federal Poverty Line (FPL)
  Federal asset limit \$7280/\$10930 in 2015

Specified Low-Income Medicare Beneficiary (SLMB) Program

- Part B premiums only

Qualifying Individual (QI) Program

- Part B premiums only

Qualified Disabled and Working Individuals (QDWI) Program

- Part A premiums only

Medicare Savings Programs

History of QMB program

- The Omnibus Reconciliation Act of 1986 (OBRA) gave states the option to introduce QMB.
- In 1987,seven states (AK, CA, CT, DC, FL, MA, NJ) started to implement the option.
- In 1988, three additional states (AR, CO, ME) introduced QMB.
- The Medicare Catastrophic Coverage Act of 1988 (MCCA) made the QMB option mandatory.
- Since 1989, all states have their own QMB program.
- The federal asset limit of QMB program had been \$4000/\$6000 since introduction (not inflation-adjusted).
- In 1998, Alabama became the first state to remove asset test
- In 2010, the federal asset limit was aligned to the Medicare Part D Low Income Subsidy (LIS) program (inflation-adjusted).
- In 2016, Oregon became the last state to remove asset test

Asset Test Elimination

Table: State Variation of QMB Asset Test Elimination

State	Time removed
Alabama	1998 July
Mississippi	1999 July
Delaware	2000 May
Arizona[1]	2001 October
Vermont	2006 January
Maine[2]	2006 March
New York	2008 April
DC	2008 November
Connecticut	2009 October
Oregon	2016 January

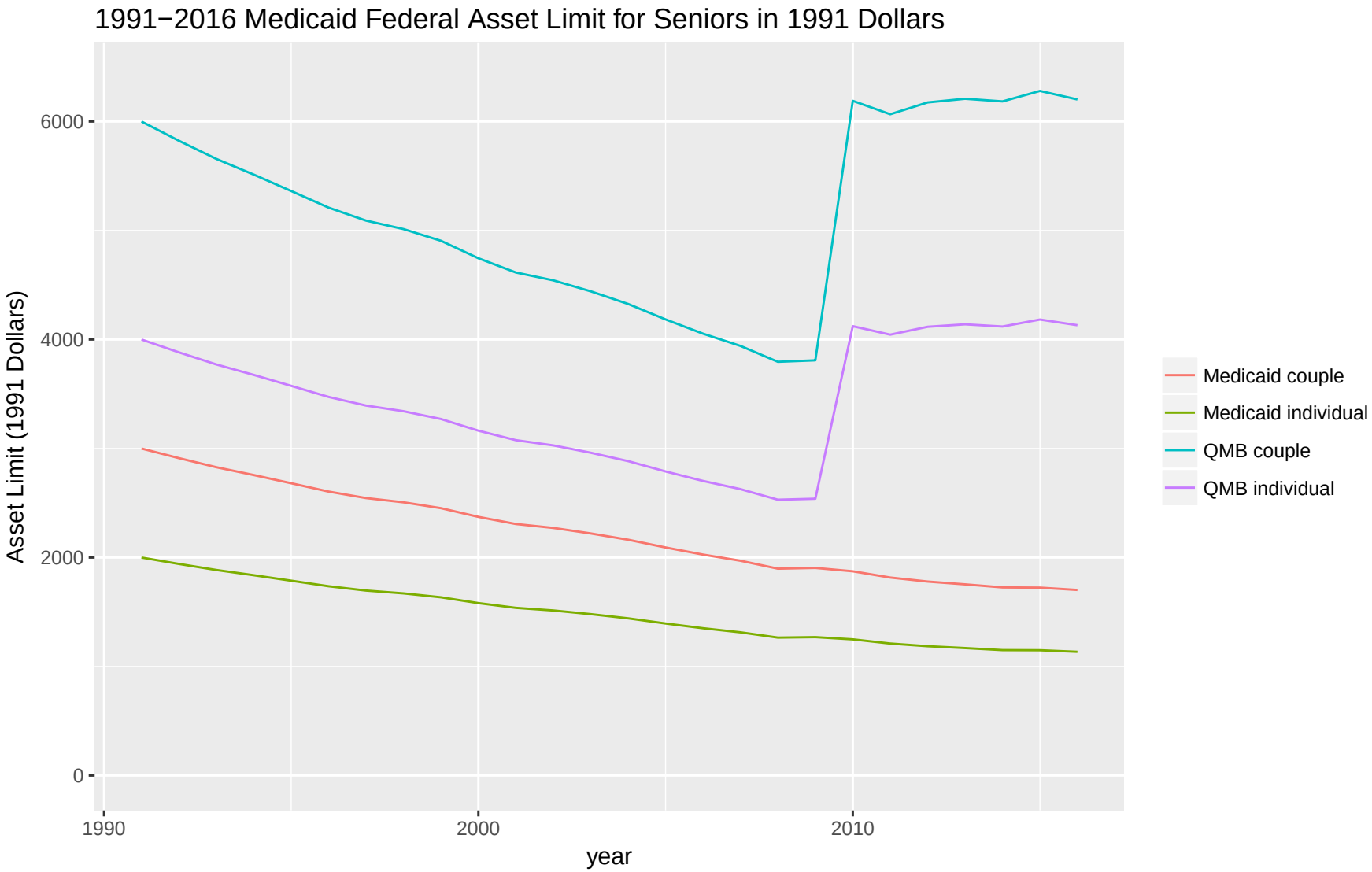
[1] Arizona also removed asset test for full Medicaid at the same time
[2] Maine introduced \$50000/\$70000 liquid asset limit in January 2014
* Minnesota did not eliminate asset test but have increased the asset limit to \$10000/\$18000 since 2001.

Asset Test Elimination

States' incentive to remove MSP asset test

- Save administrative cost
  - Alabama found that only a few income-eligible applicants exceeded the asset limits (Lipson et al.(2007)).
  - Arizona found that the costs related to documenting assets roughly equaled the costs of enrolling additional people blocked by the asset test. (Glaun (2003))
- Vermont and Maine eliminated the asset test in 2006 when Medicare Part D was introduced, in order to align the eligibility rule of MSP and Part D (Lipson et al.(2007))

Asset Limit


1991−2016 Medicaid Federal Asset Limit for Seniors in 1991 Dollars
Asset Limit (1991 Dollars)
6000
4000
2000
0
1990
2000
2010
year
Medicaid couple
Medicaid individual
QMB couple
QMB individual

Medicaid Eligibility

Three major channels for seniors to receive Medicaid

- Supplemental Security Income (SSI)
- Medically needy
- Medicare Savings Programs

Table: Medicaid Eligibility for Seniors

	SSI	Medically Needy[1]	QMB
Income limit (%FPL)			
Federal	73%	$\leq$ 133%	100%
State	52% - 100%	10% - 110%	100% - 300%
Asset limit			
Federal	\$2000/\$3000	\$2000/\$3000	\$4000/\$6000[2]

Source: Kaiser Family Foundation. 2015 income limit data for MN and QMB; 2017 data for SSI.
1. As of 2015, 33 states have Medically Needy program.
2. Adapted to the asset limit of Part D LIS program after 2010.

Asset Test

Summer and Friedland (2002)

- Asset test was the major hurdle to block people from enrolling in MSP
  - MSP asset limit was not inflation-adjusted
  - 52% of people who met income eligibility did not meet the asset eligibility
  - The verification process was too complicated
- Removing the asset test would potentially increase the eligible population by 6 million in 2002
- Asset test prevents from retirement savings

Data

Medicaid coverage rate

- Current Population Survey 1991-2016 data (CPS)

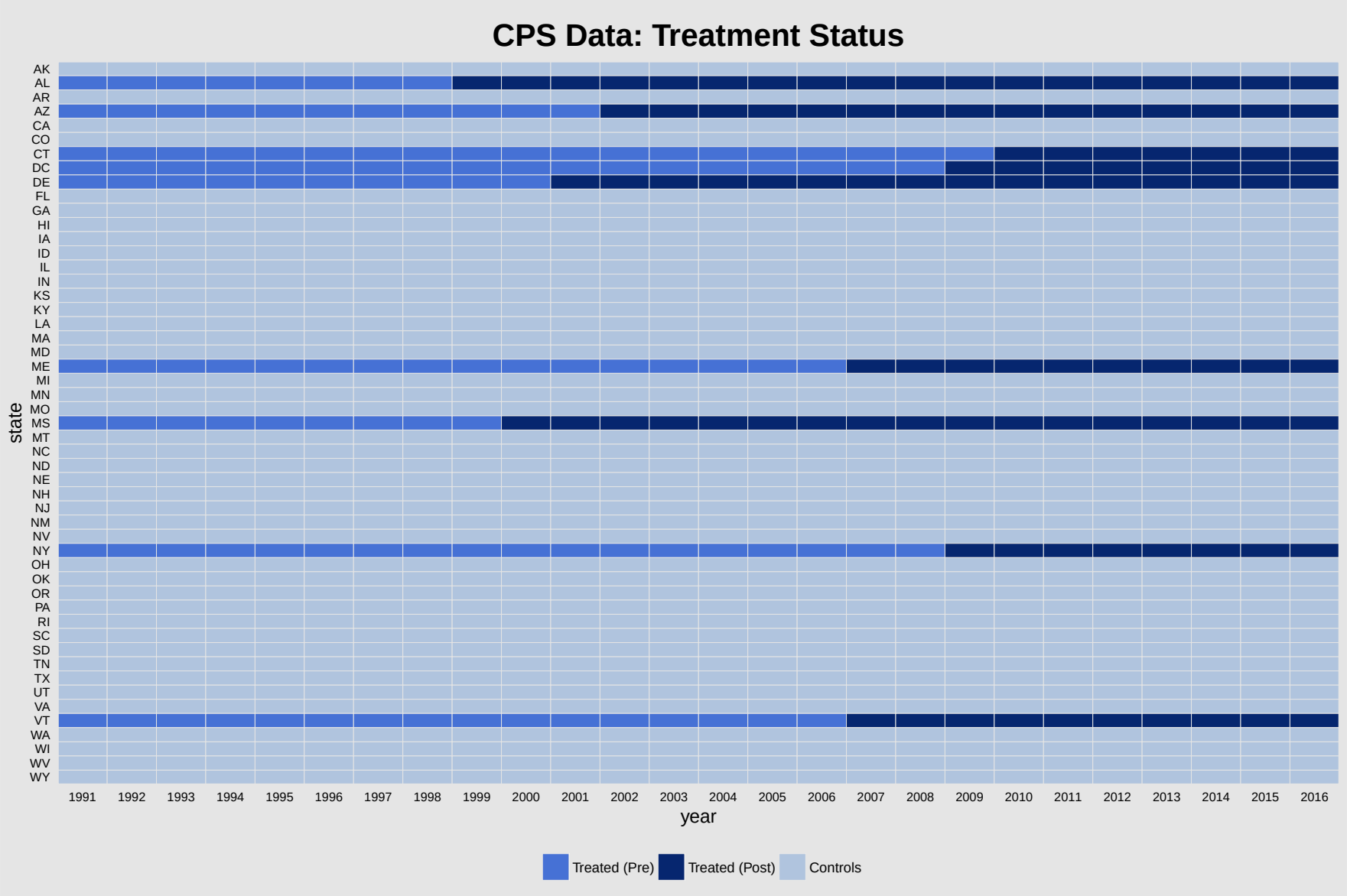
Access to health care

- MEDCOST: "Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?"
  - Better measures subjective utility
- Behavioral Risk Factor Surveillance System 1991-2016 data (BRFSS) landline sample
- In 2011, BRFSS introduced cellphone interview

Subsample restricted to population age over 65

Create a panel with 26 years, 51 states

Data


CPS Data: Treatment Status
state
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IN
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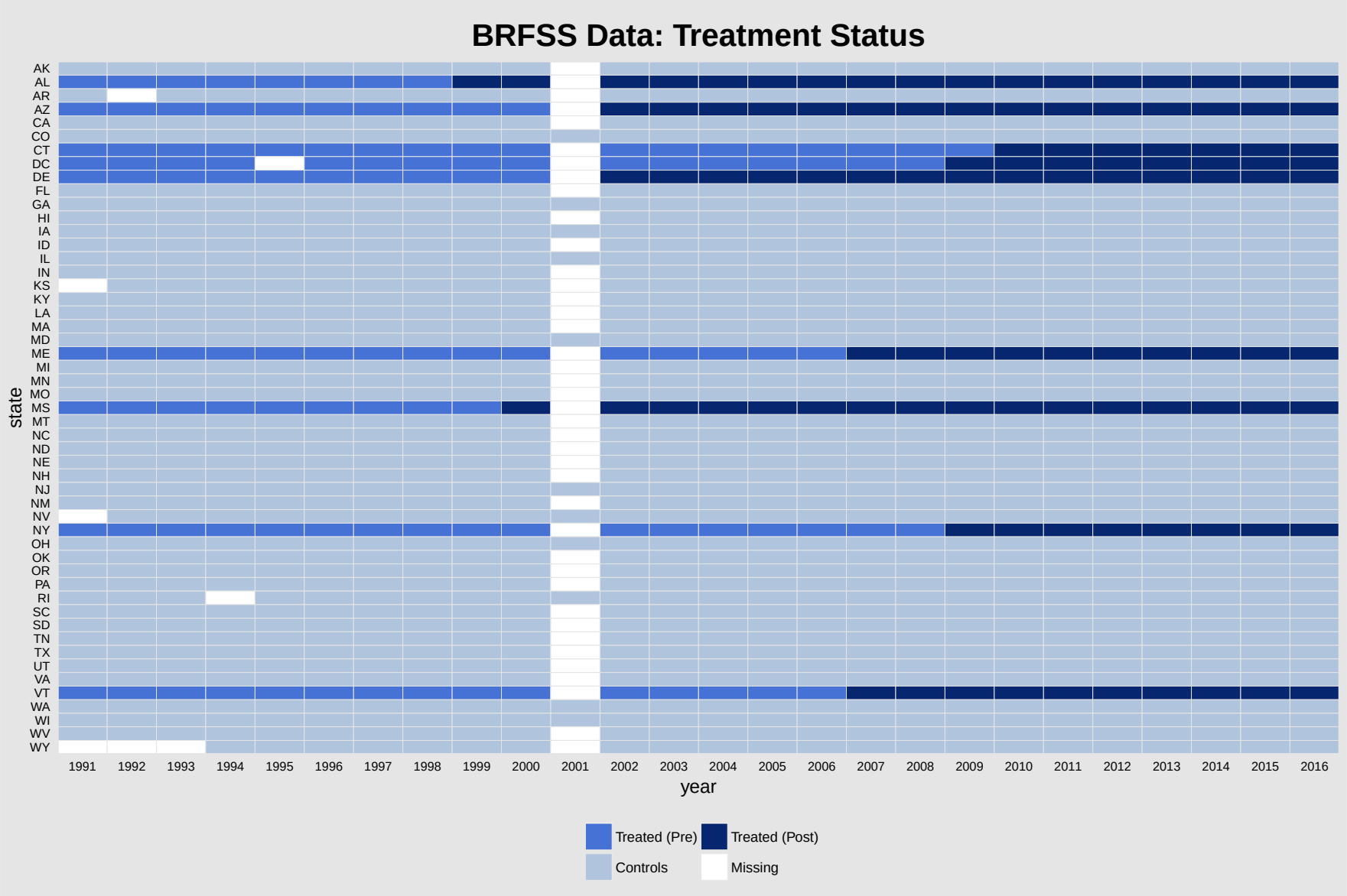
year
Treated (Pre)
Treated (Post)
Controls

Data


BRFSS Data: Treatment Status
state
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year
Treated (Pre)
Treated (Post)
Controls
Missing

Econometric Method

Difference-in-difference (DID)

$$Y_{it} = \alpha_i + \theta_t + \delta D_{it} + X_{it}\beta + \epsilon_{it}$$

Event study

$$Y_{it} = \alpha_i + \theta_t + \sum_{\tau} \delta_\tau \cdot 1(EventTime_{it} = \tau) + X_{it}\beta + \epsilon_{it}$$

- Y_{it} is the outcome variable in state i in year t
- α_i, θ_t are state, year fixed effects
- $D_{it} = 1$ if state i has removed the asset test in year t
- $EventTime_{it}$ is how many years after or before the removal in state i in year t
- X_{it} are control variables (percentage female, percentage white, percentage collge educated, percentage married)

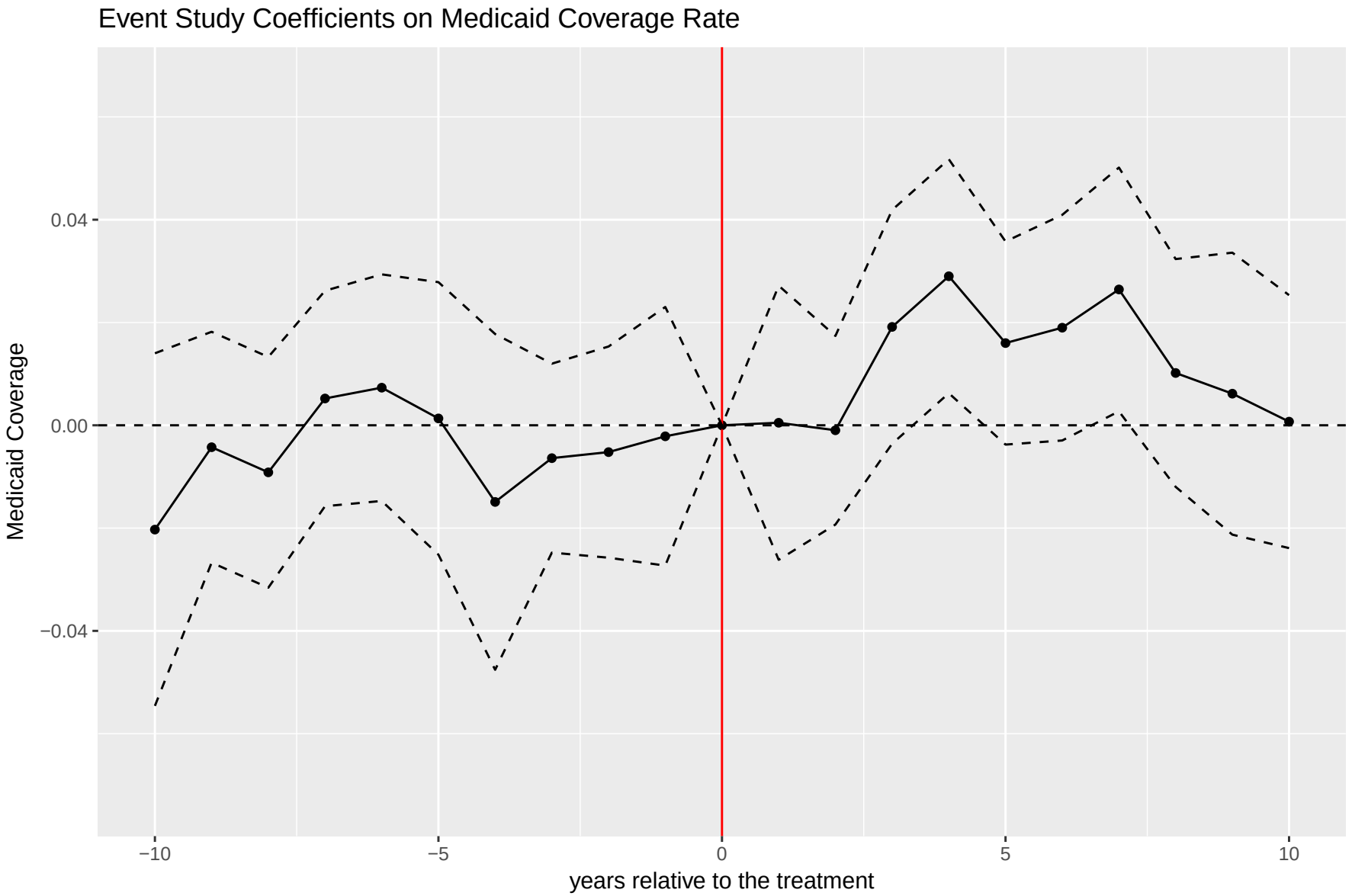
DID Results

Table: Difference-in-Difference Estimates

Dependent variable:	Medicaid Coverage			MEDCOST		
	(1)	(2)	(3)	(4)	(5)	(6)
Post_Treatment	1.69***	1.69***	1.67***	−0.46***	−0.46**	−0.45**
	(0.36)	(0.44)	(0.40)	(0.18)	(0.22)	(0.22)
Baseline level	11.29	11.29	11.29	4.67	4.67	4.67
Year FE	x	x	x	x	x	x
State FE	x	x	x	x	x	x
Clustered SE		x	x		x	x
Controls			x			x
Observations	1326	1326	1326	1278	1278	1278

* The estimates are reported in terms of percentage points. The estimates are based on pooled 1991-2016 CPS and BRFSS data. Standard errors are reported in parentheses. (* 0.1, ** 0.05, *** 0.01)

Event Study Results



Event Study Results

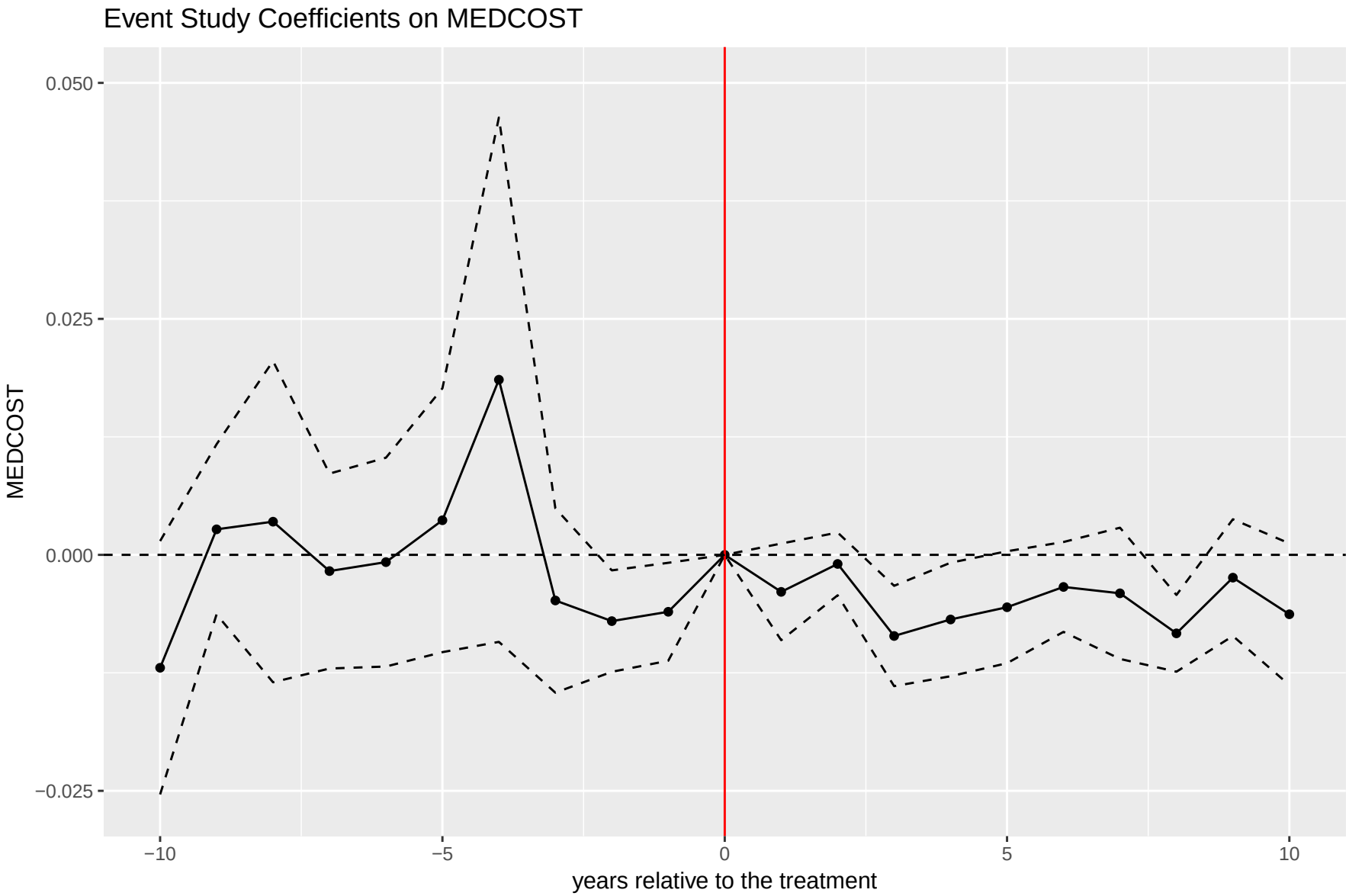


Table: Event-study Estimates

Dependent variable:	Medicaid Coverage			MEDCOST		
	(1)	(2)	(3)	(4)	(5)	(6)
EventTime -9	-0.43	-0.43	-1.02	0.27	0.27	-0.16
	(1.38)	(1.15)	(1.12)	(0.81)	(0.46)	(0.50)
EventTime -8	-0.92	-0.92	-1.60	0.35	0.35	0.18
	(1.32)	(1.15)	(1.20)	(0.83)	(0.87)	(0.82)
EventTime -7	0.52	0.52	-0.21	-0.17	-0.17	-0.26
	(1.28)	(1.07)	(1.01)	(0.75)	(0.53)	(0.51)
EventTime -6	0.73	0.73	0.06	-0.08	-0.08	-0.09
	(1.28)	(1.12)	(1.13)	(0.65)	(0.56)	(0.59)
EventTime -5	0.13	0.13	-0.38	0.37	0.37	0.45
	(1.28)	(1.35)	(1.32)	(0.69)	(0.71)	(0.71)
EventTime -4	-1.49	-1.49	-1.69	1.86***	1.86	1.83
	(1.29)	(1.67)	(1.50)	(0.62)	(1.42)	(1.38)
EventTime -3	0.64	0.64	-0.77	0.48	0.48	-0.64
	(1.28)	(0.94)	(0.93)	(0.58)	(0.50)	(0.46)
EventTime -2	-0.52	-0.52	-0.55	-0.70	−0.70**	−0.82**
	(1.28)	(1.05)	(1.03)	(0.56)	(0.27)	(0.34)
EventTime -1	-0.21	-0.21	-0.45	-0.60	−0.60**	−0.64**
	(1.28)	(1.28)	(1.22)	(0.55)	(0.26)	(0.30)
Year FE	x	x	x	x	x	x
State FE	x	x	x	x	x	x
Clustered SE		x	x		x	x
Controls			x			x
Observations	1326	1326	1326	1278	1278	1278

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Table: Event-study Estimates

Dependent variable:	Medicaid Coverage			MEDCOST		
	(1)	(2)	(3)	(4)	(5)	(6)
EventTime 1	0.05	0.05	-0.35	-0.39	-0.39	-0.41
	(1.28)	(1.36)	(1.27)	(0.53)	(0.26)	(0.33)
EventTime 2	-0.10	-0.10	-0.13	-0.10	-0.10	-0.15
	(1.28)	(0.94)	(0.93)	(0.52)	(0.17)	(0.18)
EventTime 3	1.91	1.91*	1.63	−0.86*	−0.86***	−1.05***
	(1.28)	(1.16)	(1.17)	(0.51)	(0.27)	(0.27)
EventTime 4	2.90**	2.90**	2.56**	-0.68	−0.68**	−0.78**
	(1.29)	(1.16)	(1.18)	(0.51)	(0.31)	(0.31)
EventTime 5	1.60	1.60	1.17	-0.55	−0.55*	−0.69**
	(1.28)	(1.01)	(1.07)	(0.49)	(0.30)	(0.34)
EventTime 6	1.90	1.90*	1.39	-0.34	-0.34	−0.49*
	(1.28)	(1.12)	(1.24)	(0.49)	(0.24)	(0.27)
EventTime 7	2.64**	2.64**	2.06	-0.41	-0.41	-0.51
	(1.28)	(1.21)	(1.29)	(0.48)	(0.35)	(0.35)
EventTime 8	1.02	1.02	0.77	−0.83*	−0.83***	−0.85***
	(1.32)	(1.13)	(1.05)	(0.48)	(0.21)	(0.27)
EventTime 9	0.62	0.62	0.40	-0.24	-0.24	-0.24
	(1.44)	(1.40)	(1.47)	(0.53)	(0.32)	(0.33)
Year FE	×	×	×	×	×	×
State FE	×	×	×	×	×	×
Clustered SE		×	×		×	×
Controls			×			×
Observations	1326	1326	1326	1278	1278	1278

* The estimates are reported in terms of percentage points. The estimates are based on pooled 1991-2016 CPS and BRFSS data. Standard errors are reported in parentheses. (* 0.1, ** 0.05, *** 0.01)

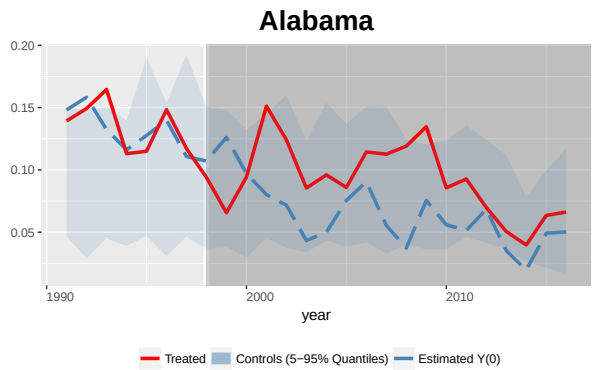
Econometric Method

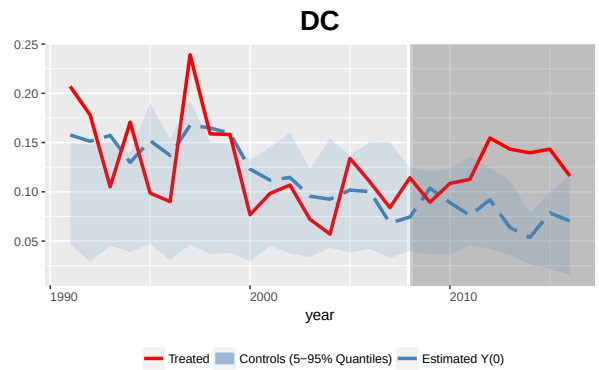
Generalized synthetic control (GSC)

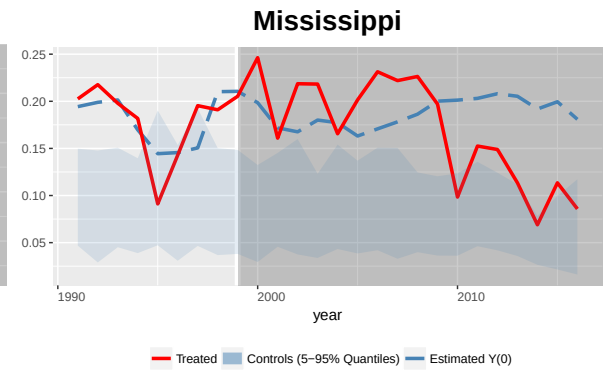
$$Y_{it} = \lambda_i' f_t + \delta_{it} D_{it} + X_{it}\beta + \epsilon_{it}$$

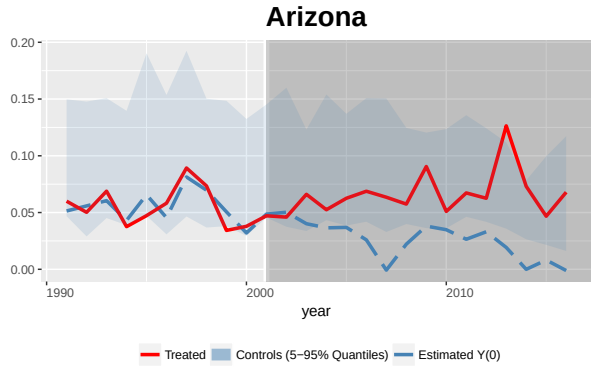
- See Xu (2017), Athey et al.(2017).
- Generalization of synthetic control method (Abadie et al.(2010)) and interactive fixed effect factor model (Bai (2009)).
- Suitable when the number of treated states is small but greater than one.
- Assume each year there are common factors f_t to drive the national (counterfactual) untreated outcome $Y(0)$;
  Each state has its own factor loading λ_i on the factors.
- Use all control group data to estimate the factors f_t in all years;
  Use pre-treatment treated group data to estimate the loadings λ_i for the treated group;
  Then use post-treatment f_t and λ_i to impute the treated group counterfactual $\hat{Y}_{it}(0)$ in post-treatment years.
- $\hat{\delta}_{it} = Y_{it} - \hat{Y}_{it}(0)$

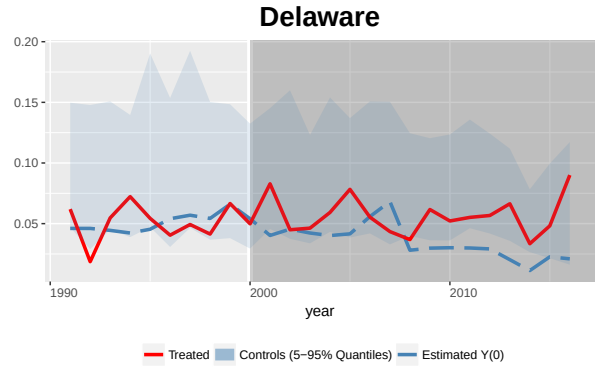
GSC Results: Medicaid Coverage

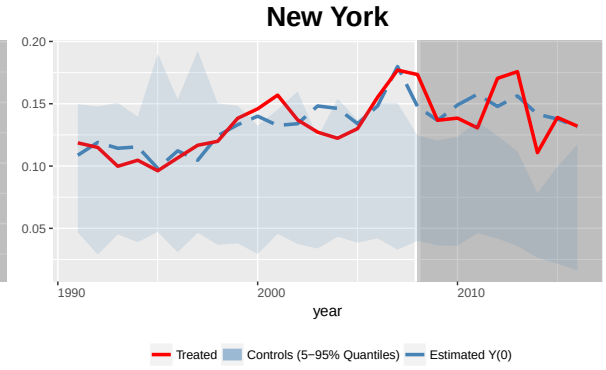


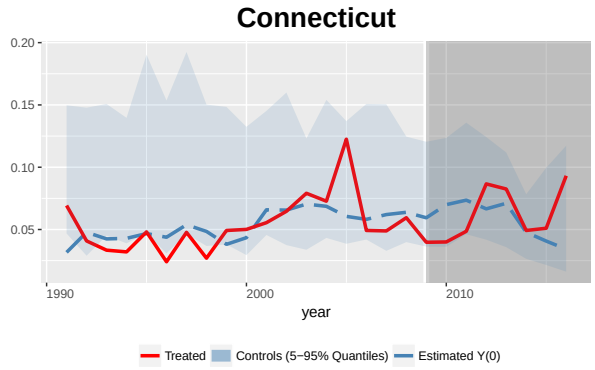


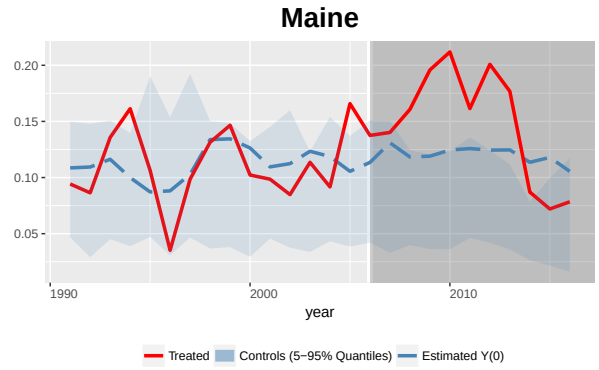


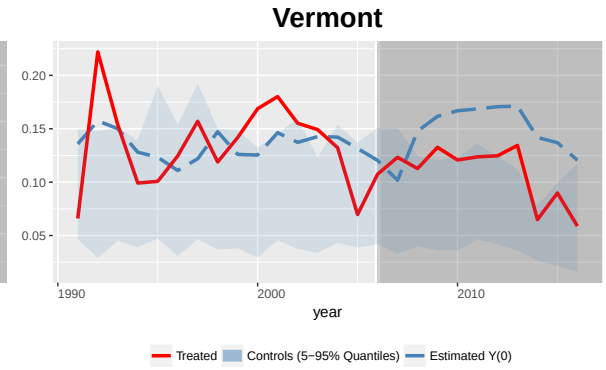




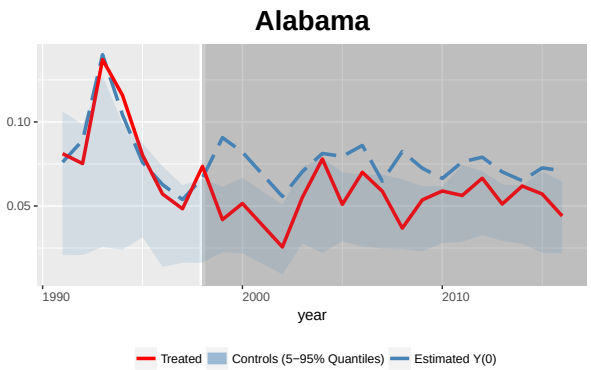


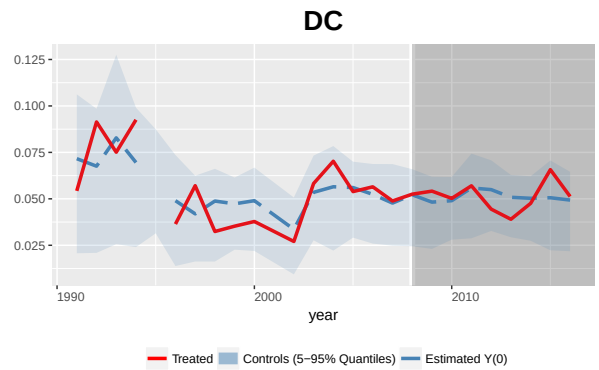


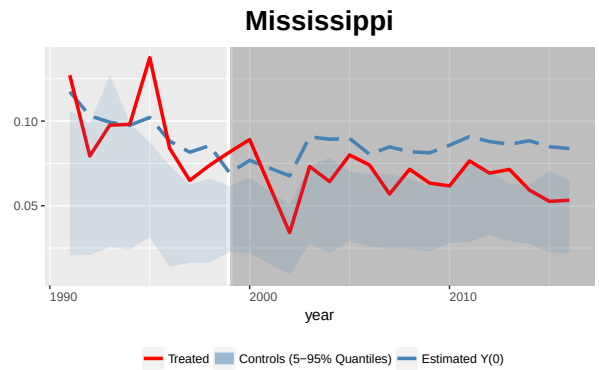


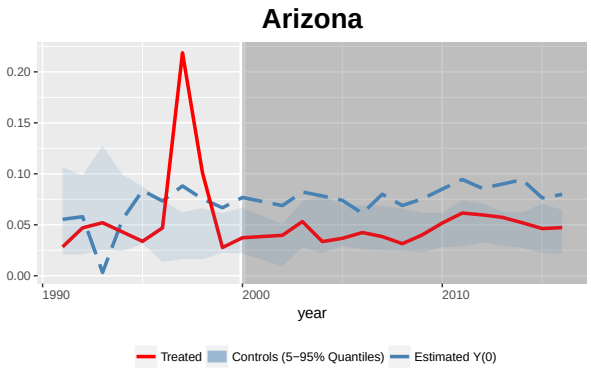


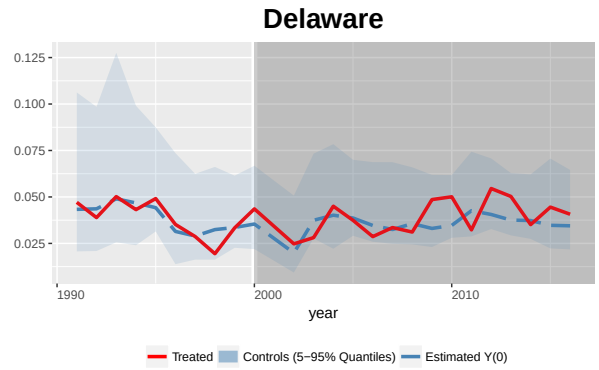
GSC Results: MEDCOST

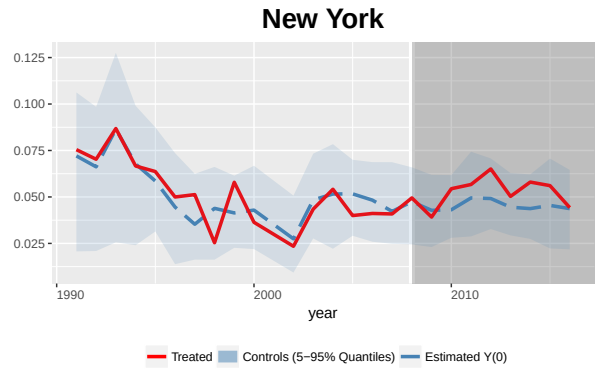


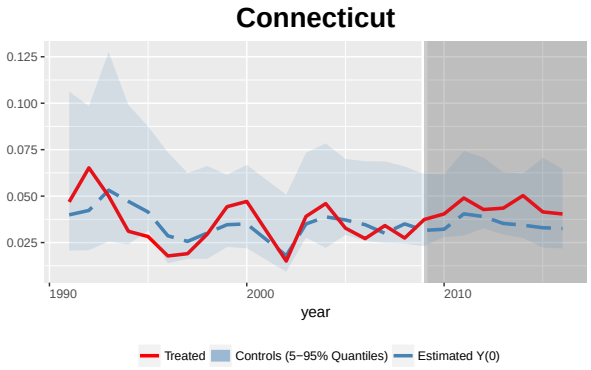


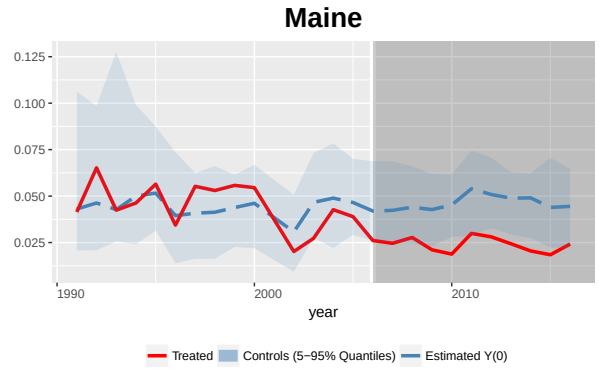


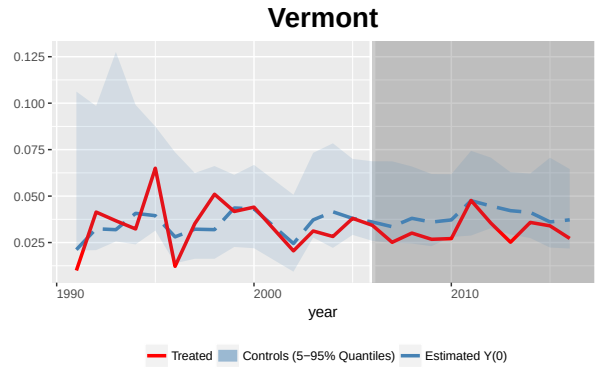




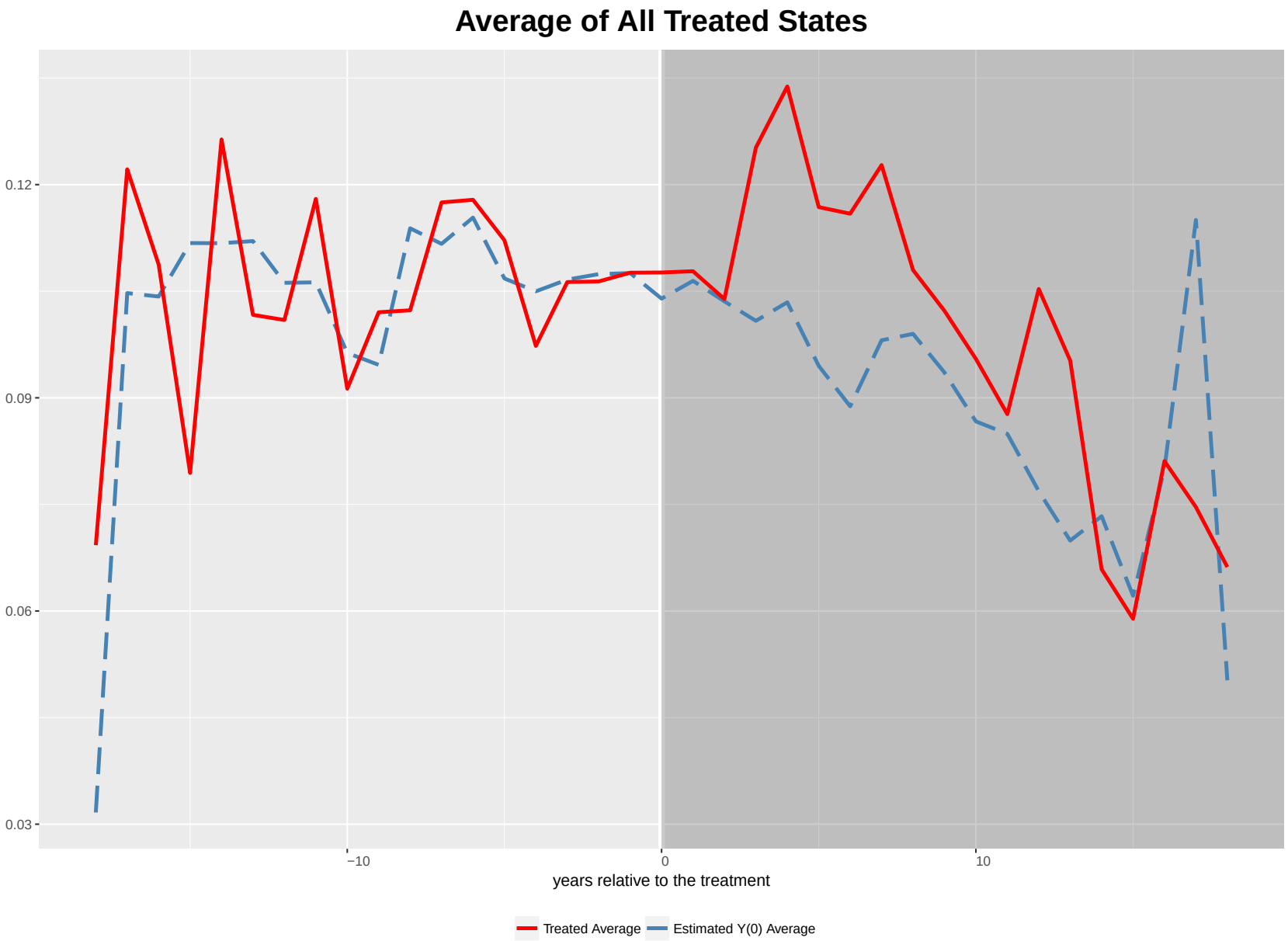




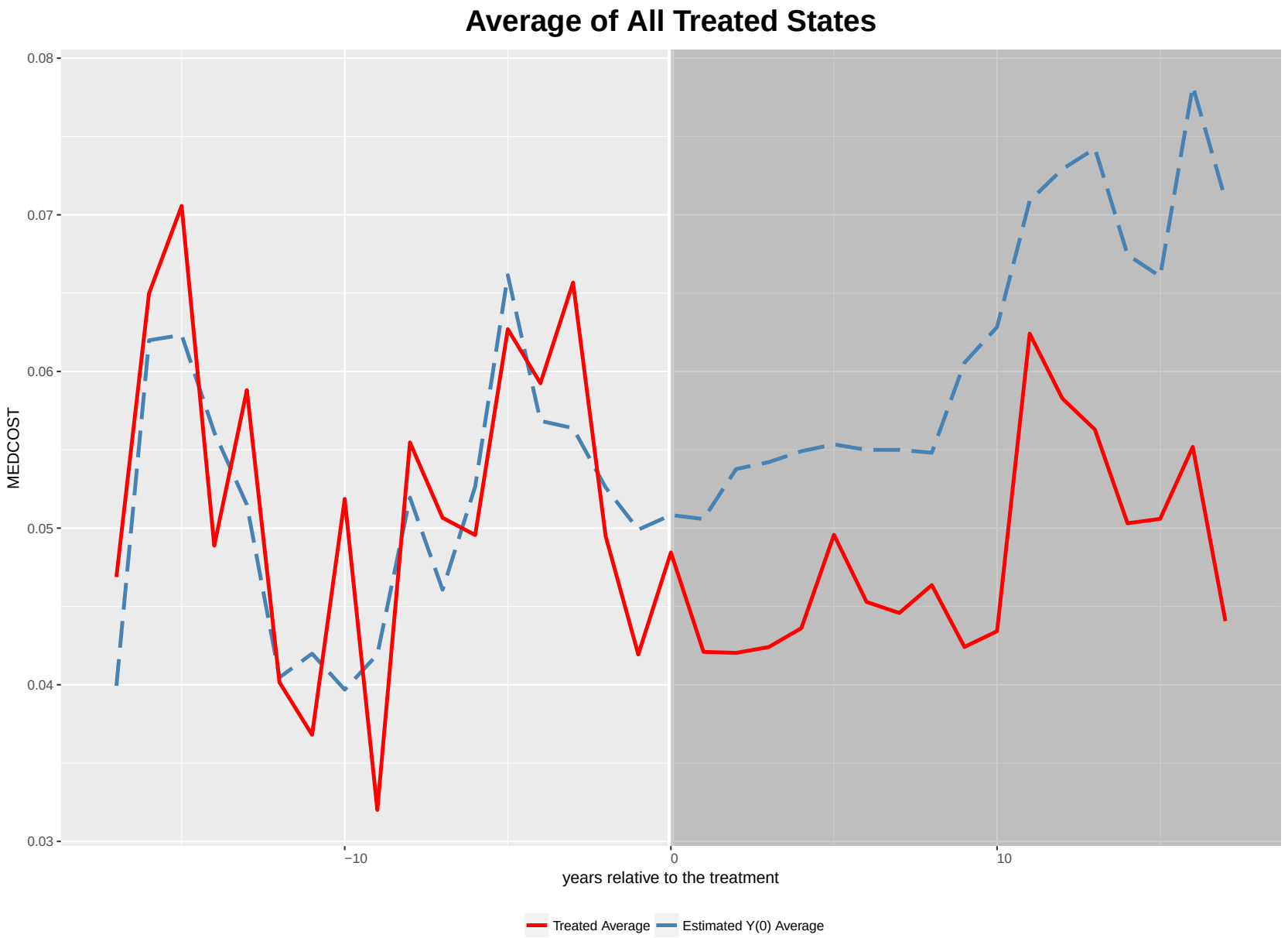




GSC Results: Medicaid Coverage



GSC Results: MEDCOST



Robustness Check

Table: Difference-in-Difference Estimates

Dependent variable:	Medicaid Coverage		MEDCOST		
	Drop Arizona	Only keep Arizona	Drop Arizona	Only keep Arizona	
	(1)	(2)	(3)	(4)	(5)
Post_Treatment	1.67***	2.14***	−0.37***	−1.55**	-1.55
	(0.48)	(0.75)	(0.17)	(0.62)	(1.92)
Year FE	x	x	x	x	x
State FE	x	x	x	x	x
Clustered SE	x	x	x		x
Observations	1300	1118	1253	1079	1079

* The estimates are reported in terms of percentage points. The estimates are based on pooled 1991-2016 CPS and BRFSS data. Standard errors are reported in parentheses. (* 0.1, ** 0.05, *** 0.01)

Robustness Check

Table: Difference-in-Difference Estimates

Dependent variable:	Medicaid Coverage		MEDCOST	
	Drop Minnesota	Minnesota as treated	Drop Minnesota	Minnesota as treated
	(1)	(2)	(3)	(4)
Post_Treatment	1.69***	1.55***	−0.47**	−0.52**
	(0.44)	(0.41)	(0.22)	(0.21)
Year FE	x	x	x	x
State FE	x	x	x	x
Clustered SE	x	x	x	x
Observations	1300	1326	1253	1278

* The estimates are reported in terms of percentage points. The estimates are based on pooled 1991-2016 CPS and BRFSS data. Standard errors are reported in parentheses. (* 0.1, ** 0.05, *** 0.01)

Robustness Check

Table: Difference-in-Difference Estimates

Dependent variable:	Medicaid Coverage	MEDCOST		
	Drop Alaska	Drop Alaska	Drop 2001	1991-2010 landline
	(1)	(2)	(3)	(4)
Post_Treatment	1.66***	−0.47**	−0.46**	−0.94***
	(0.44)	(0.22)	(0.22)	(0.33)
Year FE	x	x	x	x
State FE	x	x	x	x
Clustered SE	x	x	x	x
Observations	1300	1253	1267	972

* The estimates are reported in terms of percentage points. The estimates are based on pooled 1991-2016 CPS and BRFSS data. Standard errors are reported in parentheses. (* 0.1, ** 0.05, *** 0.01)

Conclusion

Removing the asset test in QMB program

- increased states' Medicaid coverage rate by 1.69% (out of 11.29%)
- reduced MEDCOST issues by 0.46% (out of 4.67%)

If asset test also imposes considerable administrative cost on other states, then state government should consider eliminating the asset test.

Future research

- Disentangle the "eligibility effect" and "ease-to-apply effect".
- Quantify the effect on individual OOP expenditure ($$$) and state-level cost-benefit analysis