Module 4: Difference-in-Differences and Effects of Medicaid Expansion

Part 1: Medicaid Expansion and the ACA

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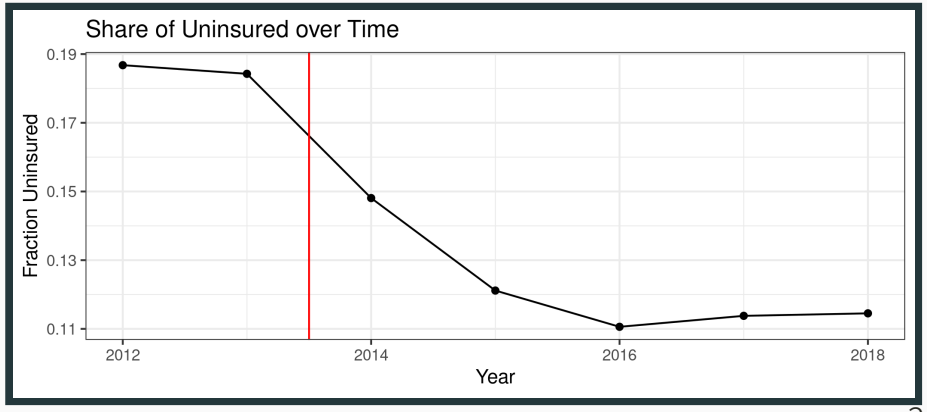
Econ 470 & HLTH 470

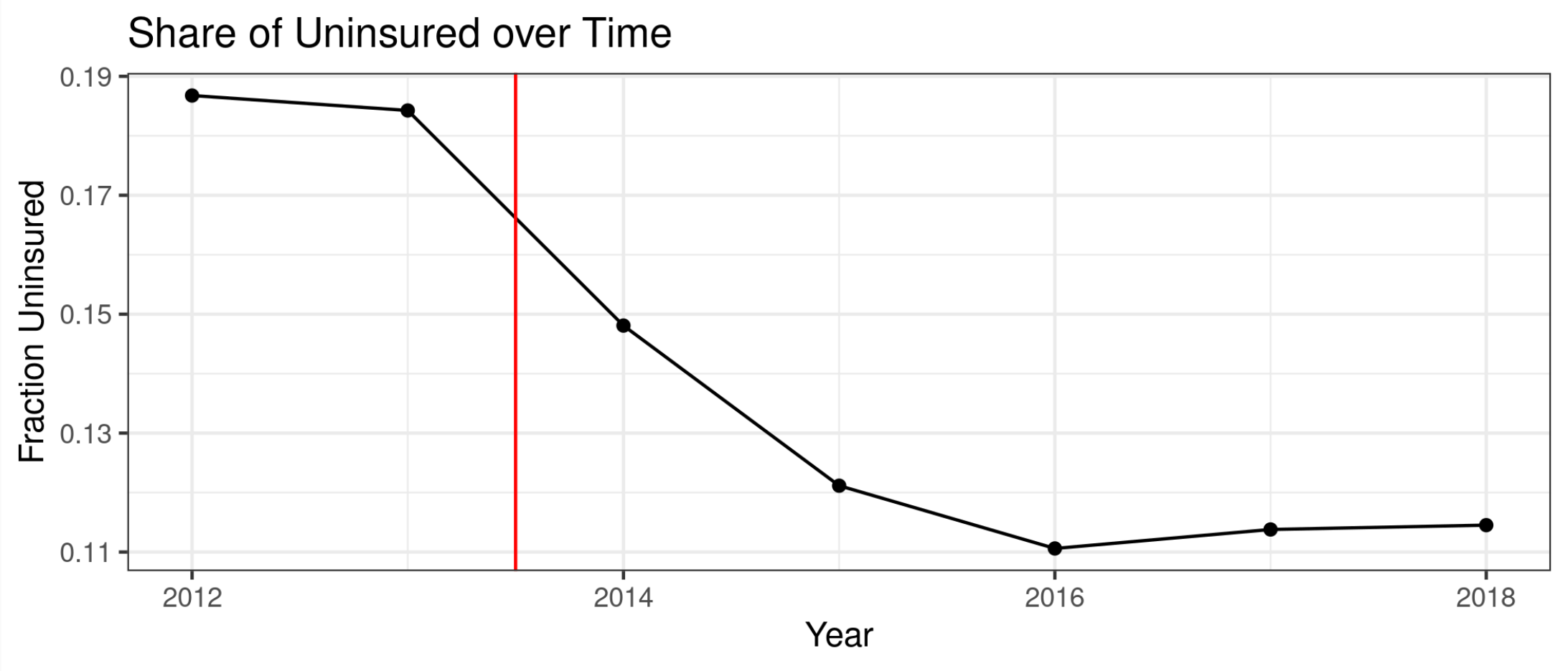
Affordable Care Act

Background

1. What percent of people are uninsured?



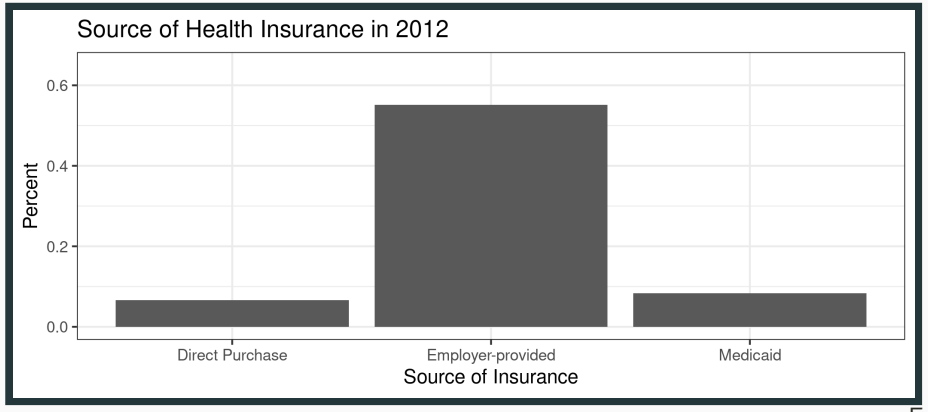
What percent of people are uninsured?



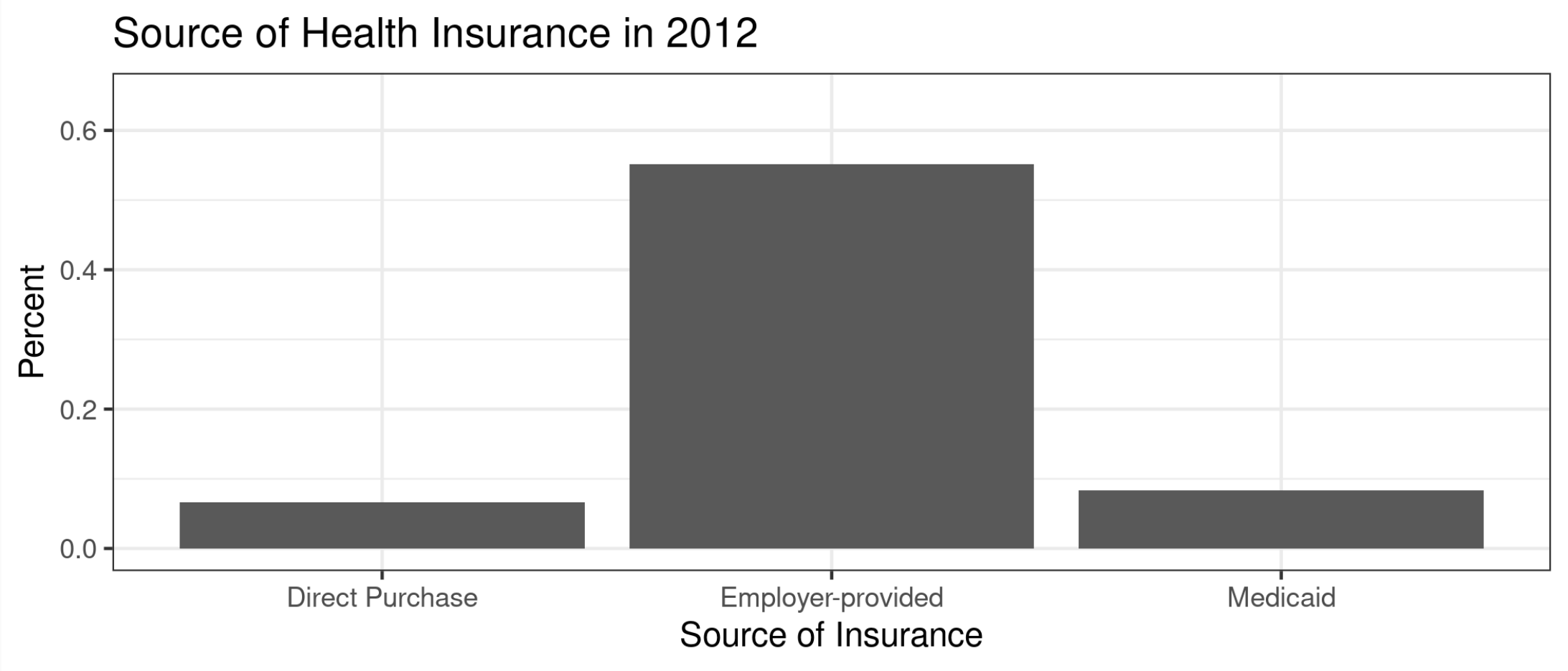
Background

1. What percent of people are uninsured?

2. How do people get health insurance?



How do people get health insurance?



Employer provided insurance

The U.S. still relies heavily on private insurance provided by employers.

Any thoughts on why?

Employer provided insurance

1. Stabalization act of 1942 (wages frozen but not benefits)

2. Tax exclusion for insurance expenditures (1954)

How did the ACA change things?

1. Create health insurance exchanges
    - Individual mandate (since set to $0)
    - Premium and cost-sharing subsidies (some unpaid by Trump administration)
    - Insurance subsidies (removed before intended)
    - Decision assistance
    - Minimum benefits and community ratings

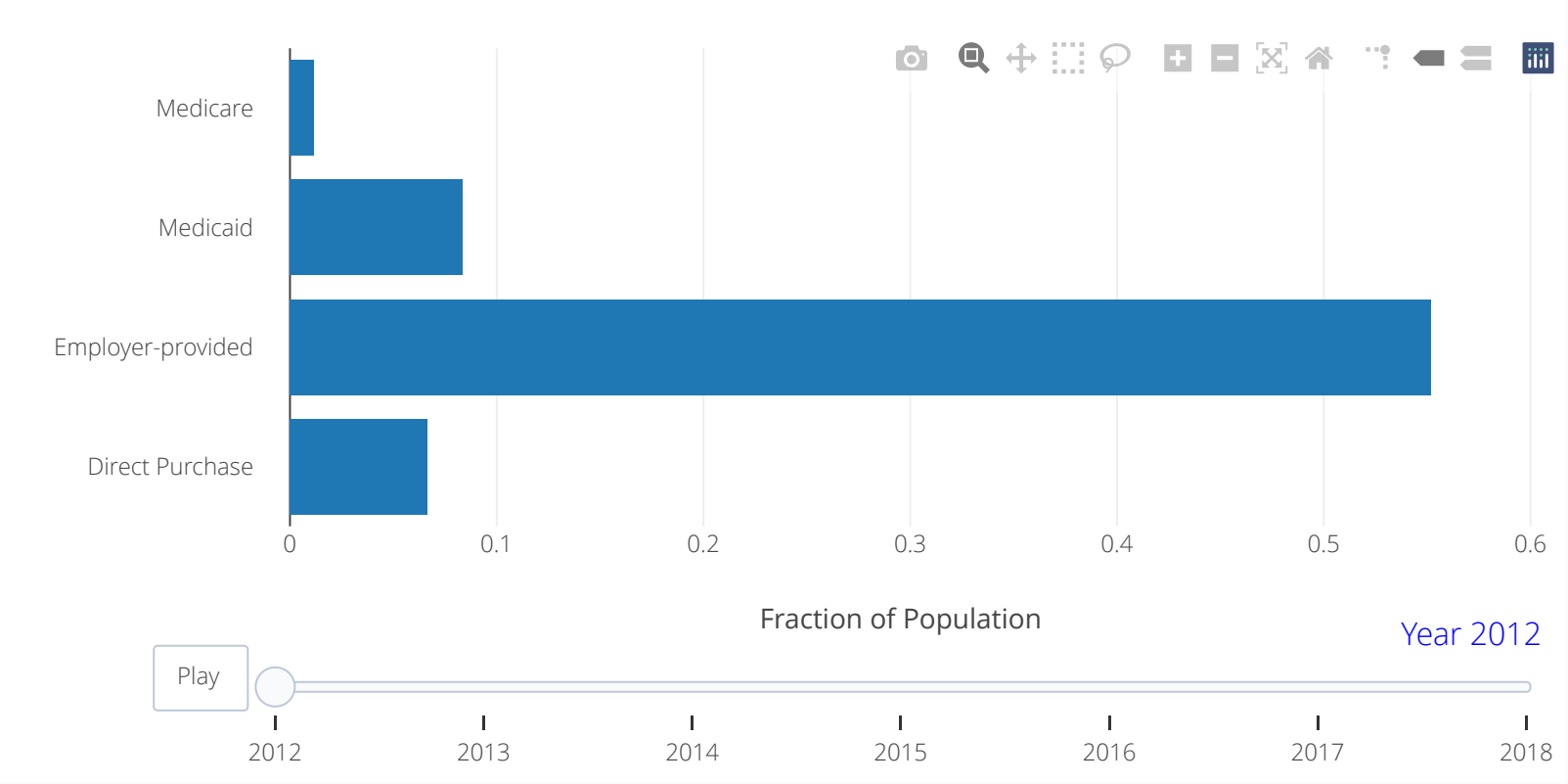
2. Stay on parent's plan to 26

How did the ACA change things?

3. Medicaid Expansion
    - Originally tied to federal funding
    - Made voluntary by supreme court ruling
    - Higher initial federal match rate, decreasing over time

4. Pay-for-performance measures
    - Hospital value-based purchasing
    - Hospital readmission reduction
    - Medicare Advantage quality improvement program
    - Bundled payments and ACOs (related)

Change in Insurance Type over Time



Data sources

We'll use two main data sources here:

1. Data on which states expanded Medicaid (and when
    - Available from *Kaiser Family Foundation*
2. Data on insurance status and source of health insurance by state
    - Available from the *American Community Survey*
    - These data can be tricky to work with due to their size, but there are some handy tricks in `R`

Data sources

Code and links available at the Insurance Access GitHub repository

Medicaid Expansion

- Directly downloaded from KFF website
- Just a raw .csv file

Insurance status and source

- Data from the American Community Survey
- CPS data also available but questions changed in 2014
- Easiest way to access ACS data is through a Census API and the `acs` package...details on the *GitHub* repo

What is an API?

- Stands for application programming interface
- An official way for one computer to request information from another
- Often requires a code for external program/server to validate the request

Describing the data

First let's take a look at the final dataset

```
head(ins.dat %>% arrange(year, State))
```

```
## # A tibble: 6 × 20
##   State       year adult_pop ins_employer ins_direct ins_medicare ins_medicaid
##   <chr>      <int>     <dbl>        <dbl>      <dbl>        <dbl>        <dbl>
## 1 Alabama     2012   2937335      1528419     180043        56890       190312
## 2 Alaska      2012    460946       222769      15608         2027        28177
## 3 Arizona     2012   3866694      1867954     263076        41042       428972
## 4 Arkansas    2012   1761365       871970     106277        39157       114012
## 5 California  2012  23798381     12015639    1824564       180861      2275053
## 6 Colorado    2012   3270163      1801613     303179        27254       213045
## # … with 13 more variables: uninsured <dbl>, expand_ever <lgl>,
## #   date_adopted <date>, expand_year <dbl>, expand <lgl>, perc_private <dbl>,
## #   perc_public <dbl>, perc_ins <dbl>, perc_unins <dbl>, perc_employer <dbl>,
## #   perc_medicaid <dbl>, perc_medicare <dbl>, perc_direct <dbl>
```

Summary stats

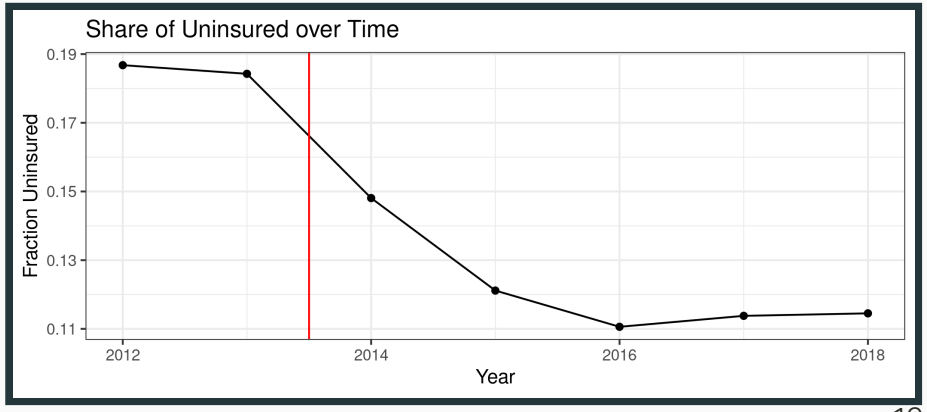
And now for some basic summary stats (pooling all years):

```
stargazer(as.data.frame(ins.dat %>% select(perc_unins, perc_direct, perc_medicaid)), type="html")
```

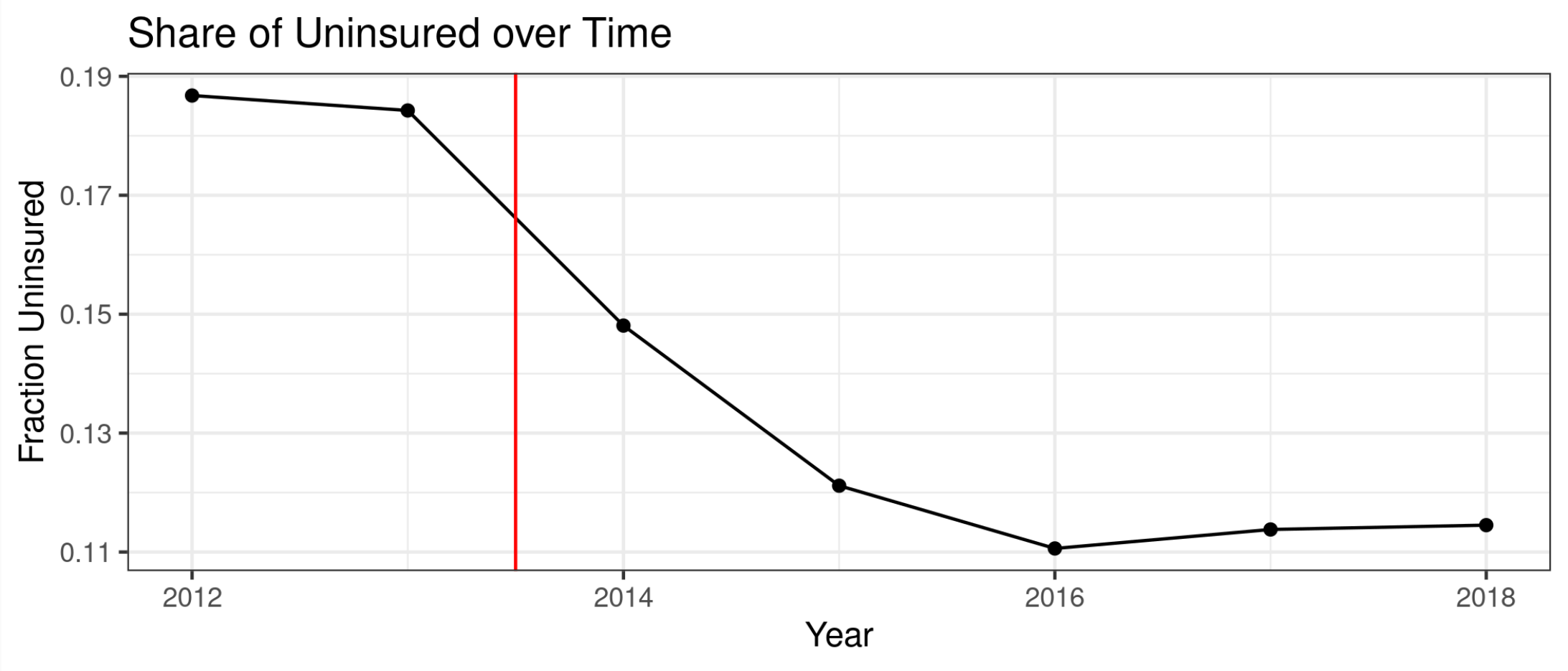
Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
perc_unins	364	0.140	0.058	0.036	0.093	0.181	0.305
perc_direct	364	0.081	0.020	0.030	0.067	0.093	0.141
perc_medicaid	364	0.104	0.060	0.028	0.062	0.132	0.417

Uninsurance over time

```
ins.dat %>% group_by(year) %>% summarize(mean=mean(perc_unins)) %>%
  ggplot(aes(x=year,y=mean)) + geom_line() + geom_point() + theme_bw() +
  labs(
    x="Year",
    y="Fraction Uninsured",
    title="Share of Uninsured over Time"
  ) +
  geom_vline(xintercept=2013.5, color="red")
```

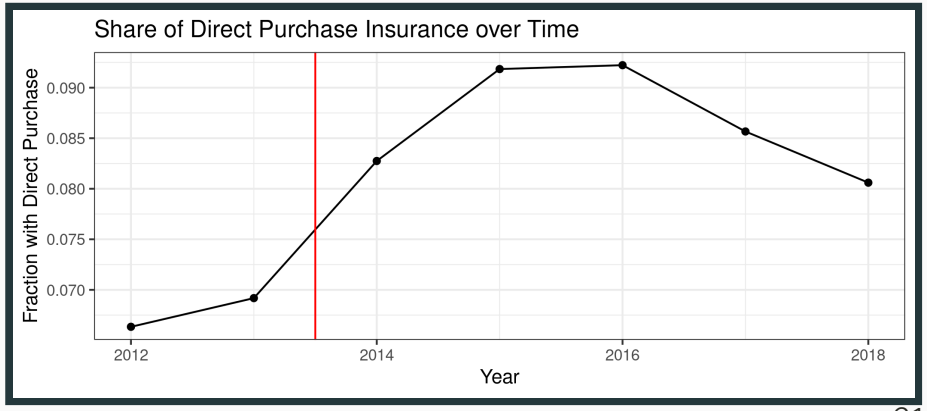


Uninsurance over time

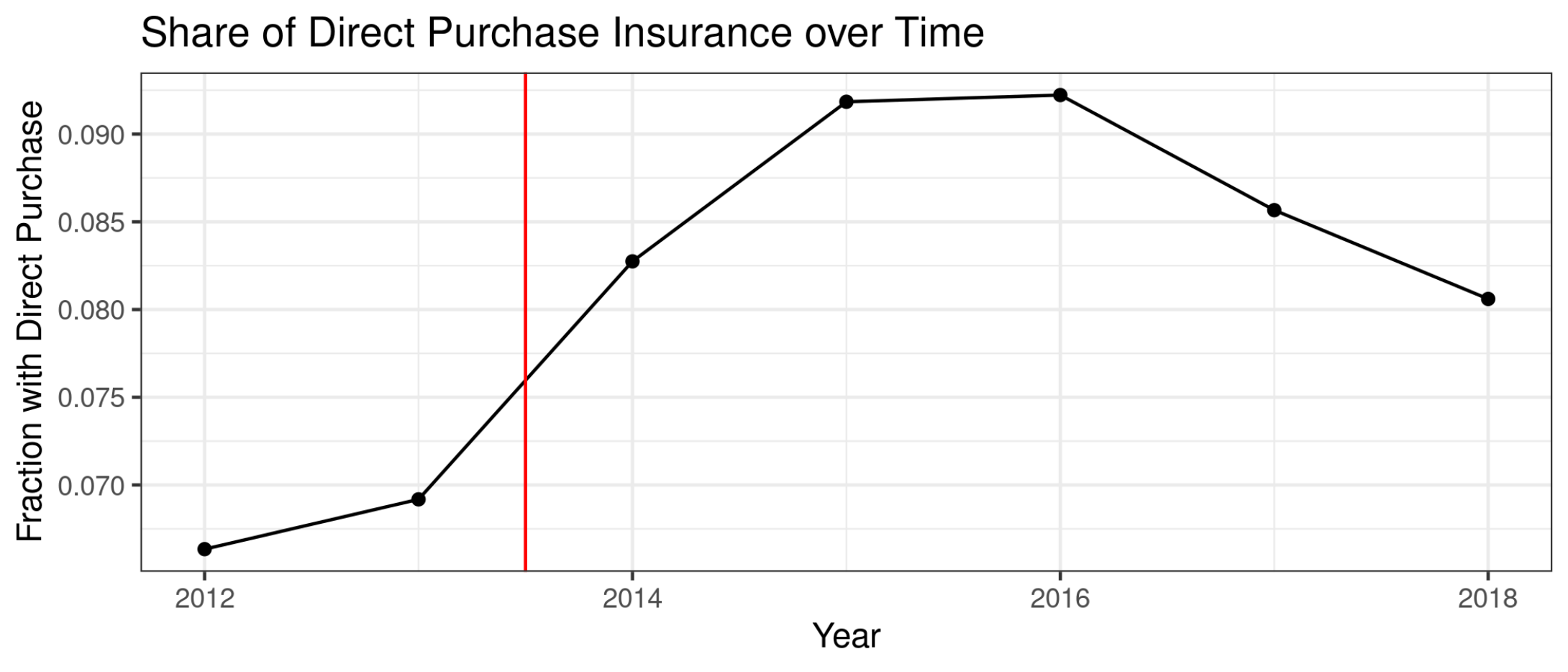


Direct purchase over time

```
ins.dat %>% group_by(year) %>% summarize(mean=mean(perc_direct)) %>%
  ggplot(aes(x=year,y=mean)) + geom_line() + geom_point() + theme_bw() +
  labs(
    x="Year",
    y="Fraction with Direct Purchase",
    title="Share of Direct Purchase Insurance over Time"
  ) +
  geom_vline(xintercept=2013.5, color="red")
```

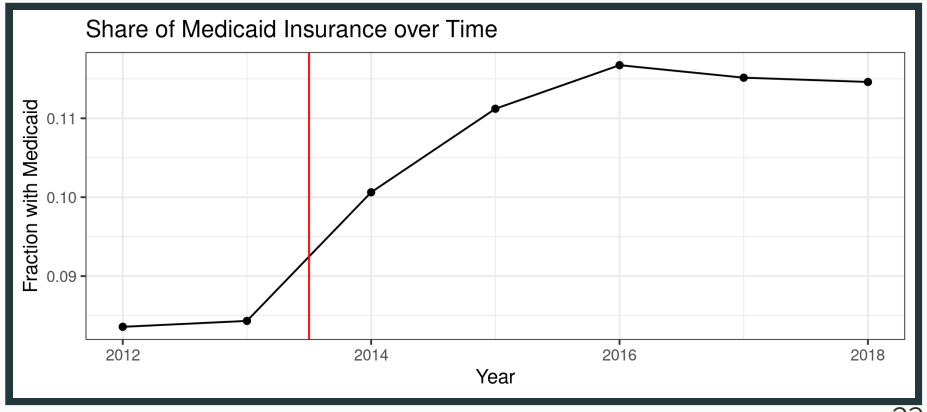


Direct purchase over time

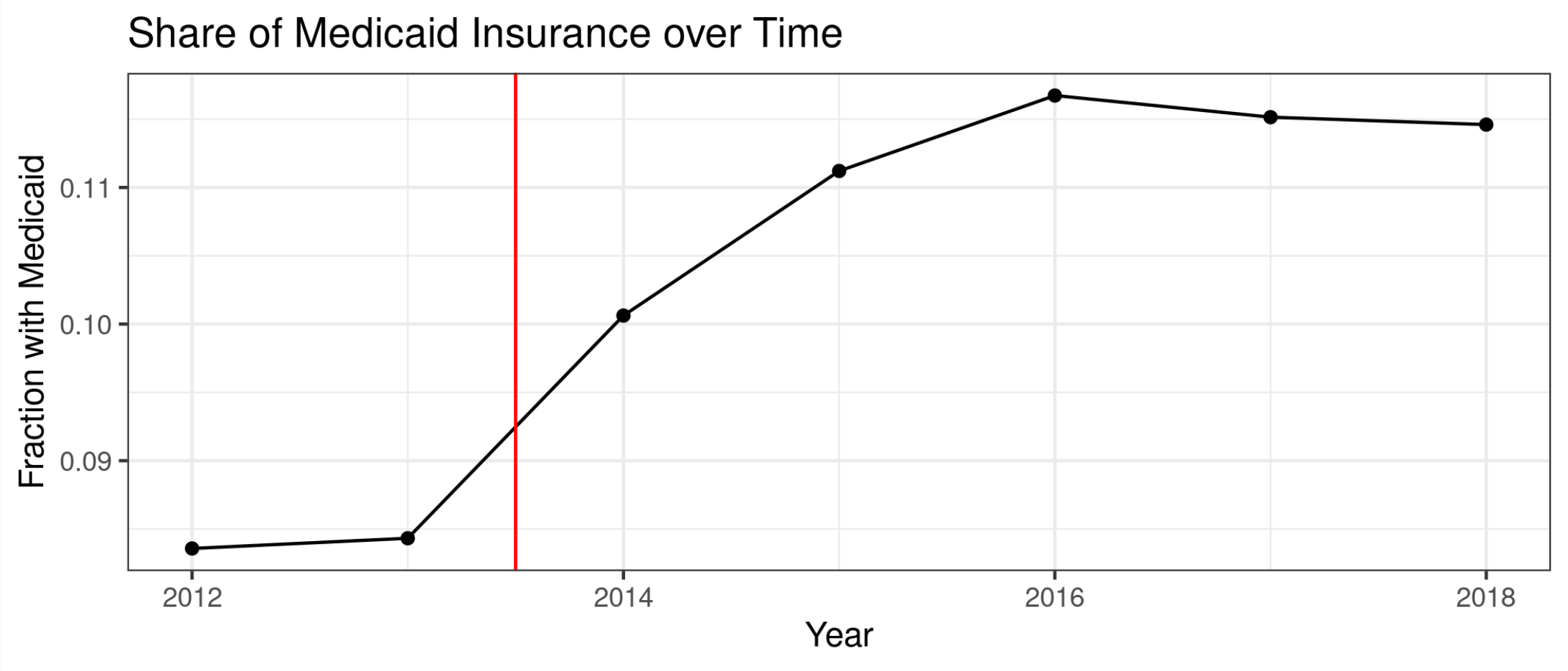


Medicaid over time

```
ins.dat %>% group_by(year) %>% summarize(mean=mean(perc_medicaid)) %>%
  ggplot(aes(x=year,y=mean)) + geom_line() + geom_point() + theme_bw() +
  labs(
    x="Year",
    y="Fraction with Medicaid",
    title="Share of Medicaid Insurance over Time"
  ) +
  geom_vline(xintercept=2013.5, color="red")
```



Medicaid enrollment over time



Main takeaways

1. Large reduction in uninsured population following ACA
2. Biggest gains going to direct purchase (exchanges) and Medicaid (expansion)

But what amount of extra insurance is *due to* Medicaid expansion? In other words, who got insurance through Medicaid that wouldn't have gotten it otherwise?

What does the literature say

The *Kaiser Family Foundation* has some great info on this...

- KFF Medicaid Coverage
- KFF Report on ACA Expansion
- Health Insurance and Mortality (not what we're discussing here but still important)