Preliminary Unemployment Visualizations

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```
## -- Attaching core tidyverse packages ----------------------- tidyverse 2.0.0 --
## v dplyr     1.1.3     v readr     2.1.4
## v forcats   1.0.0     v stringr   1.5.0
## v lubridate 1.9.3     v tibble    3.2.1
## v purrr     1.0.2     v tidyr     1.3.0
## -- Conflicts ------------------------------------------- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become error:
## Linking to GEOS 3.11.0, GDAL 3.5.3, PROJ 9.1.0; sf_use_s2() is TRUE
```

Map showing unemployment in election years compared to national average

```r
# Load spatial data for Ohio counties
ohio_counties <- st_read("tl_2016_39_cousub.shp", options = "SHAPE_RESTORE_SHX=YES")

# Define the election years of interest
election_years <- seq(from = 2020, to = 1992, by = -4)

combinedData <- combinedData %>%
  filter(Year %in% election_years)

national_rates <- combinedData %>%
  filter(County == "National") %>%
  select(Label, rate = Value)

# Now, join this national rate back to the combined data
combinedData <- combinedData %>%
  left_join(national_rates, by = c("Label" = "Label"))

# Subtract the national rate from each county's rate
combinedData <- combinedData %>%
  mutate(relative_unemployment_rate = Value - rate)

# Remove the national data if you no longer need it for the map
combinedData <- combinedData %>%
  filter(County != "National")

# Merge the spatial data with the filtered unemployment data
ohio_unemployment <- ohio_counties %>%
  left_join(combinedData, by = c("NAME" = "County"))
```
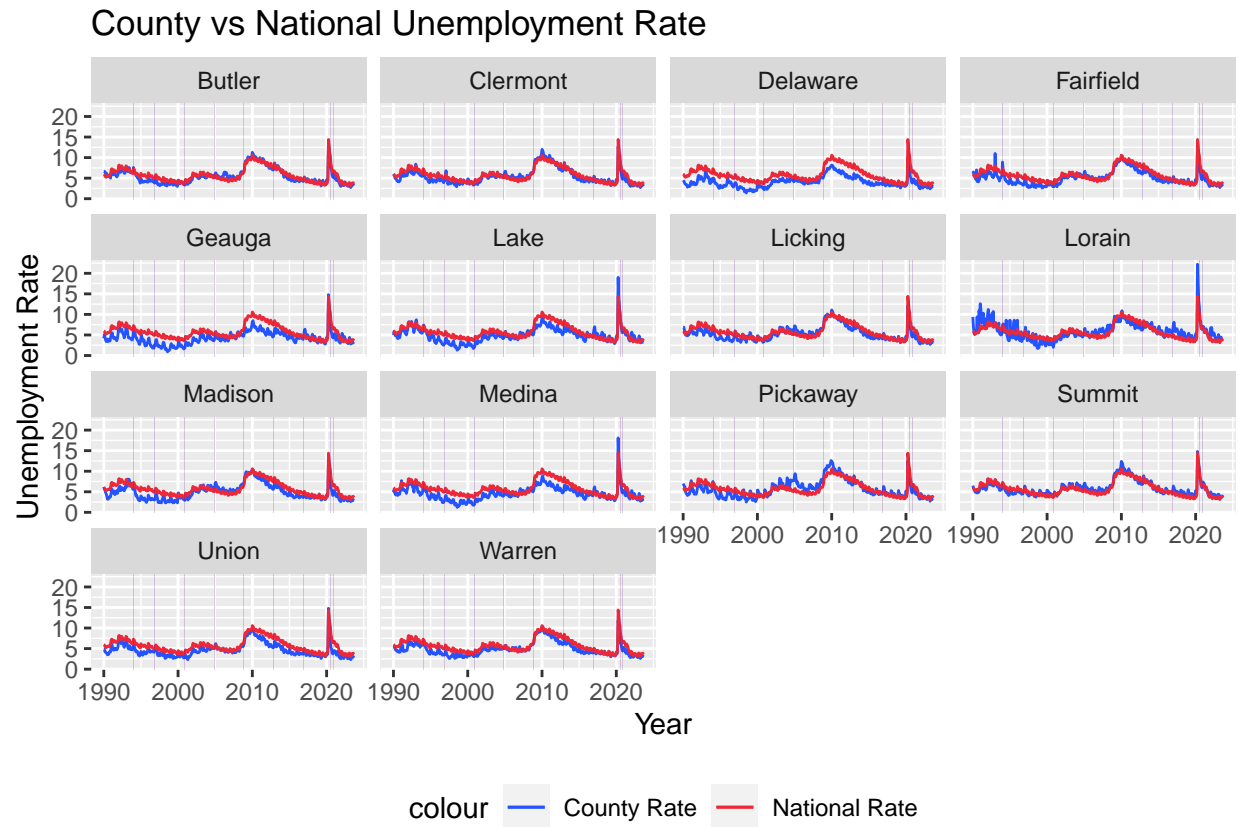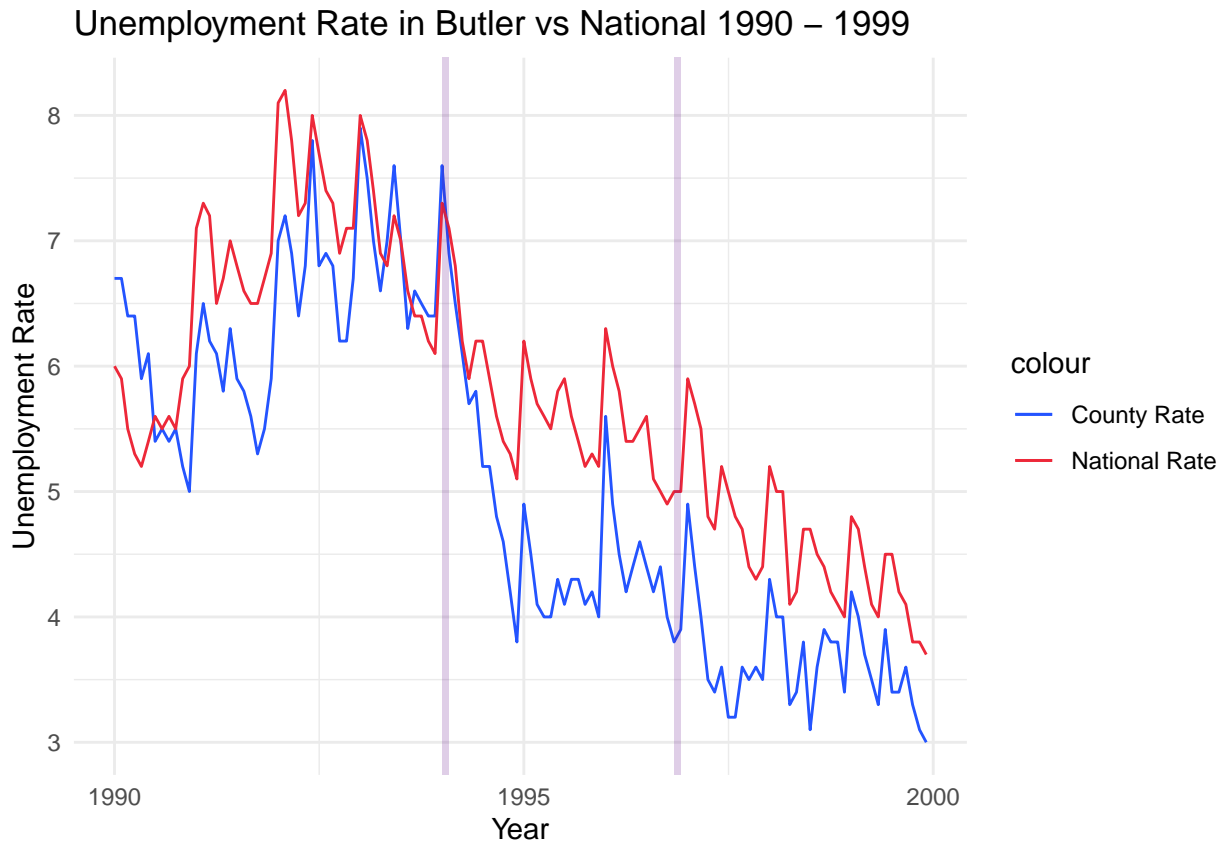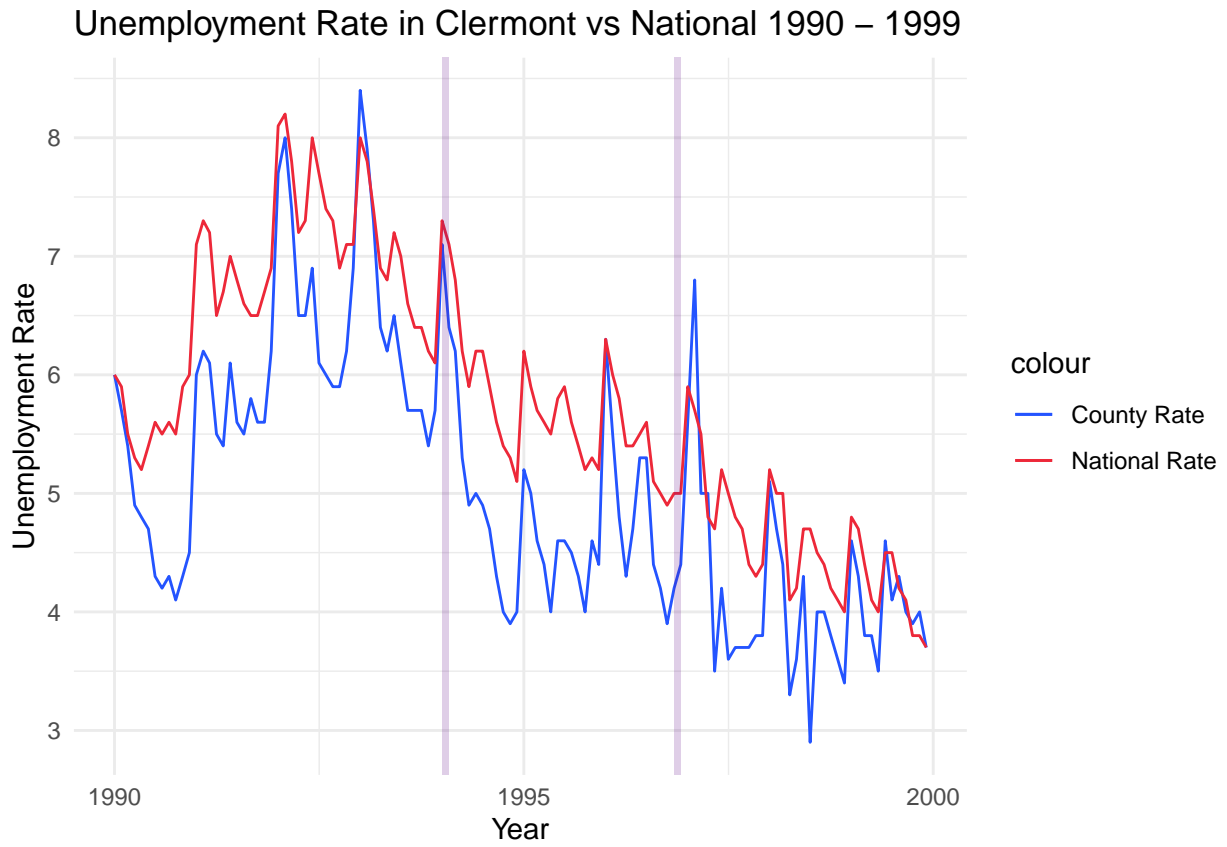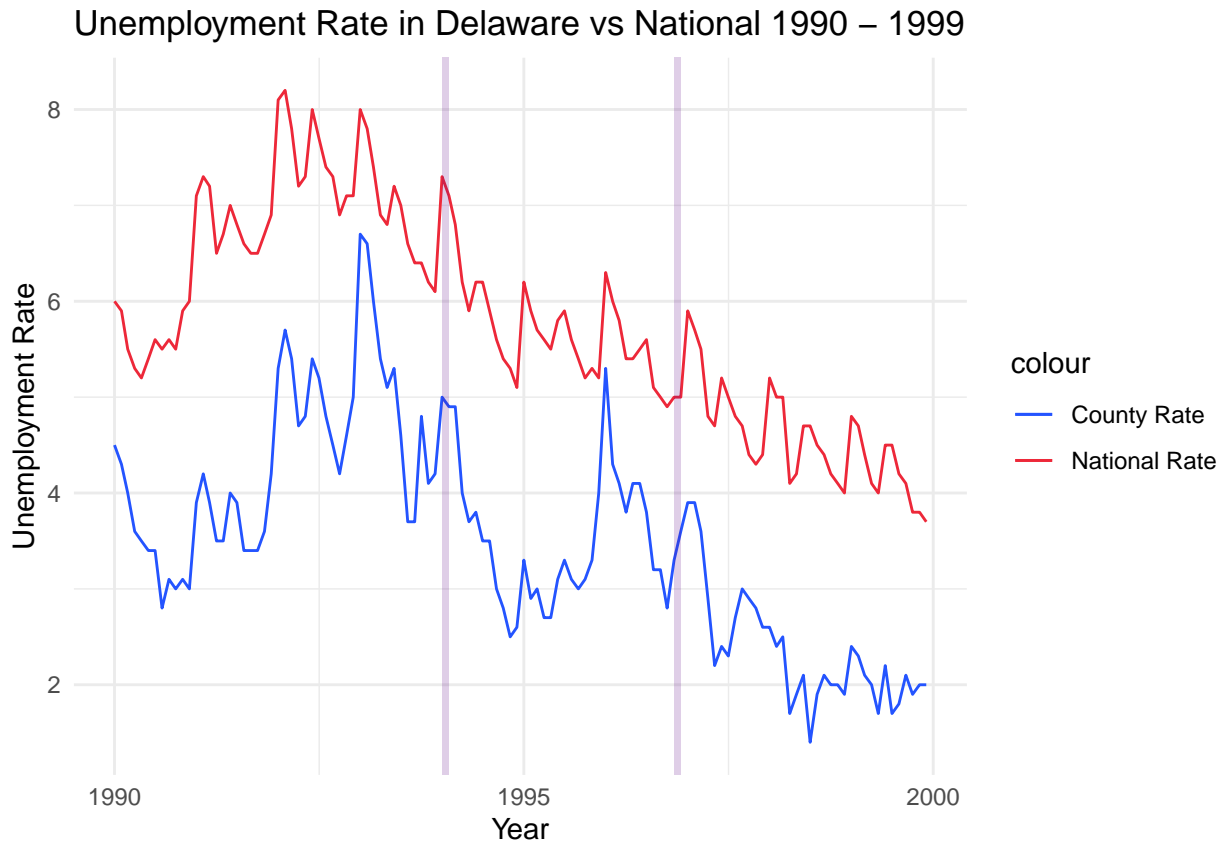
```
# Plot the map with facets for election years
ggplot(data = ohio_unemployment) +
  geom_sf(aes(fill = relative_unemployment_rate, color = relative_unemployment_rate)) +
  facet_wrap(~Year)
  scale_fill_viridis_c(option = "C") +
  labs(fill = "Unemployment Compared to National Average") +
  theme_minimal()
```
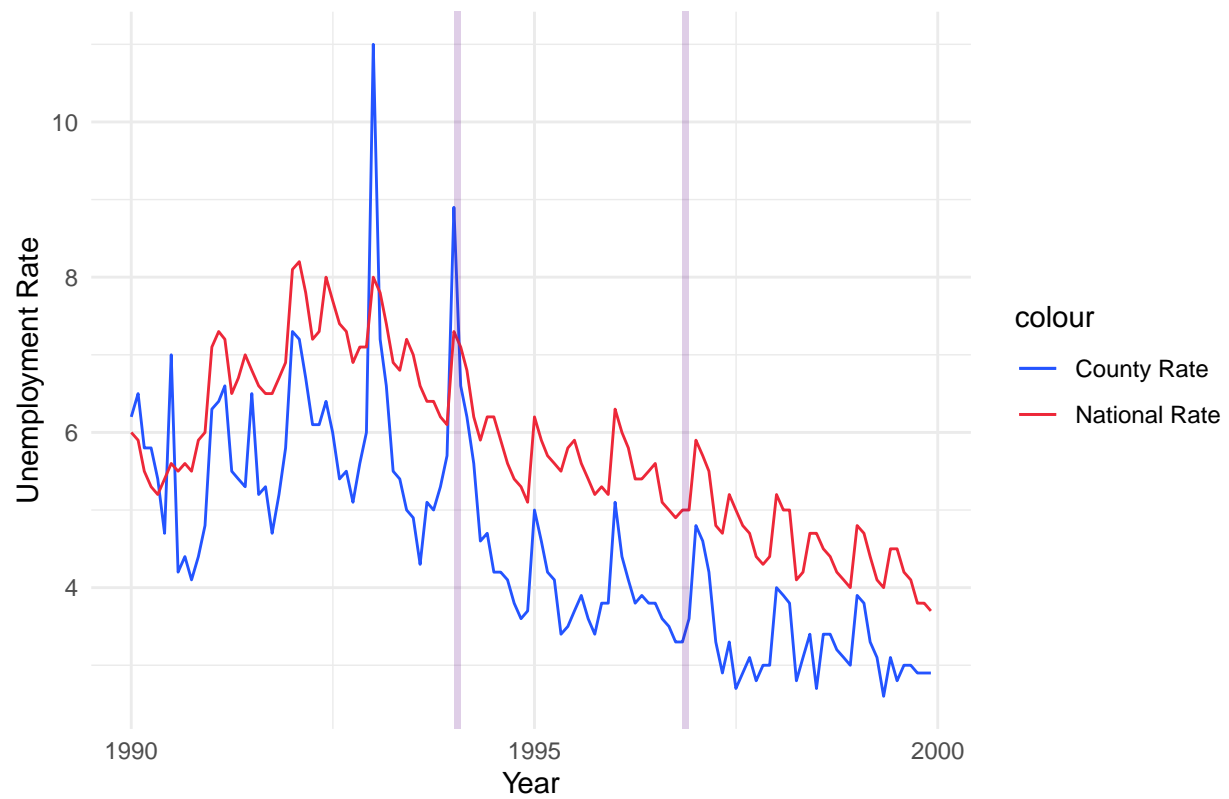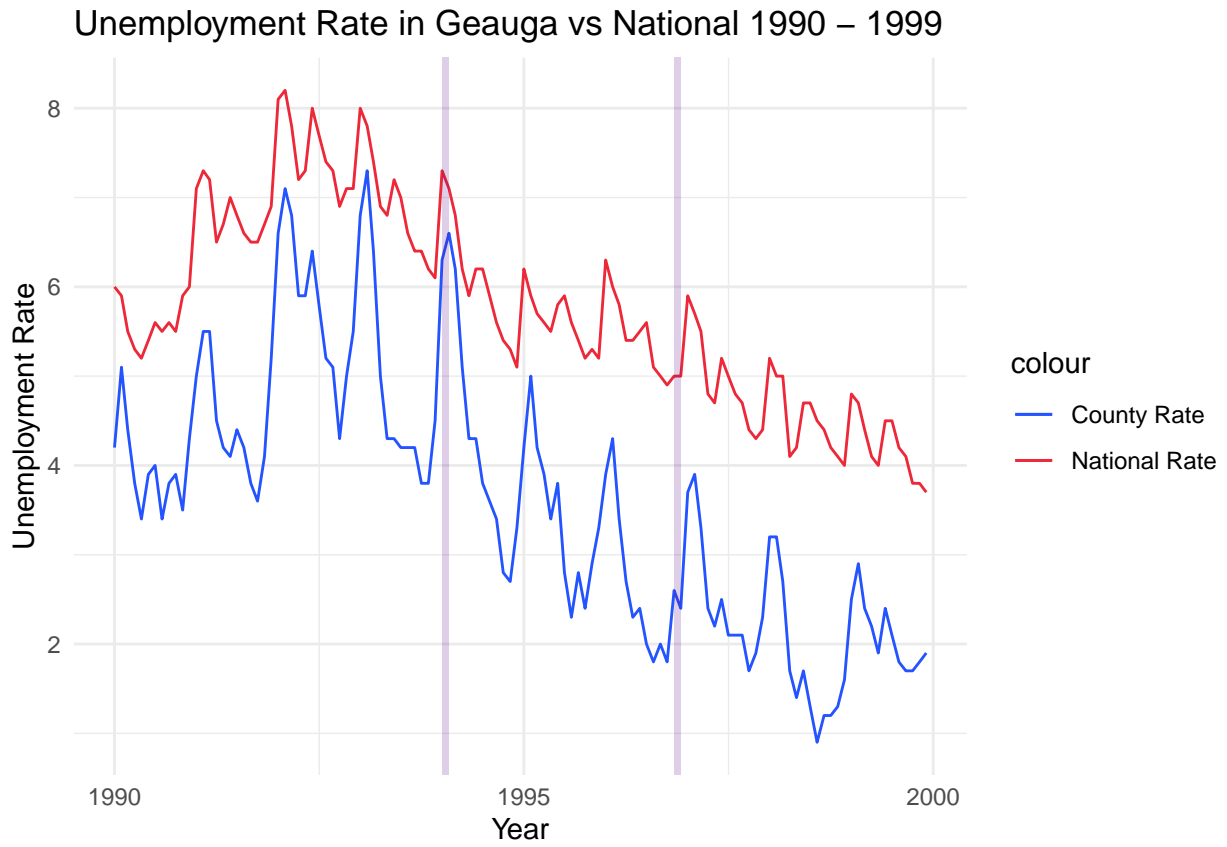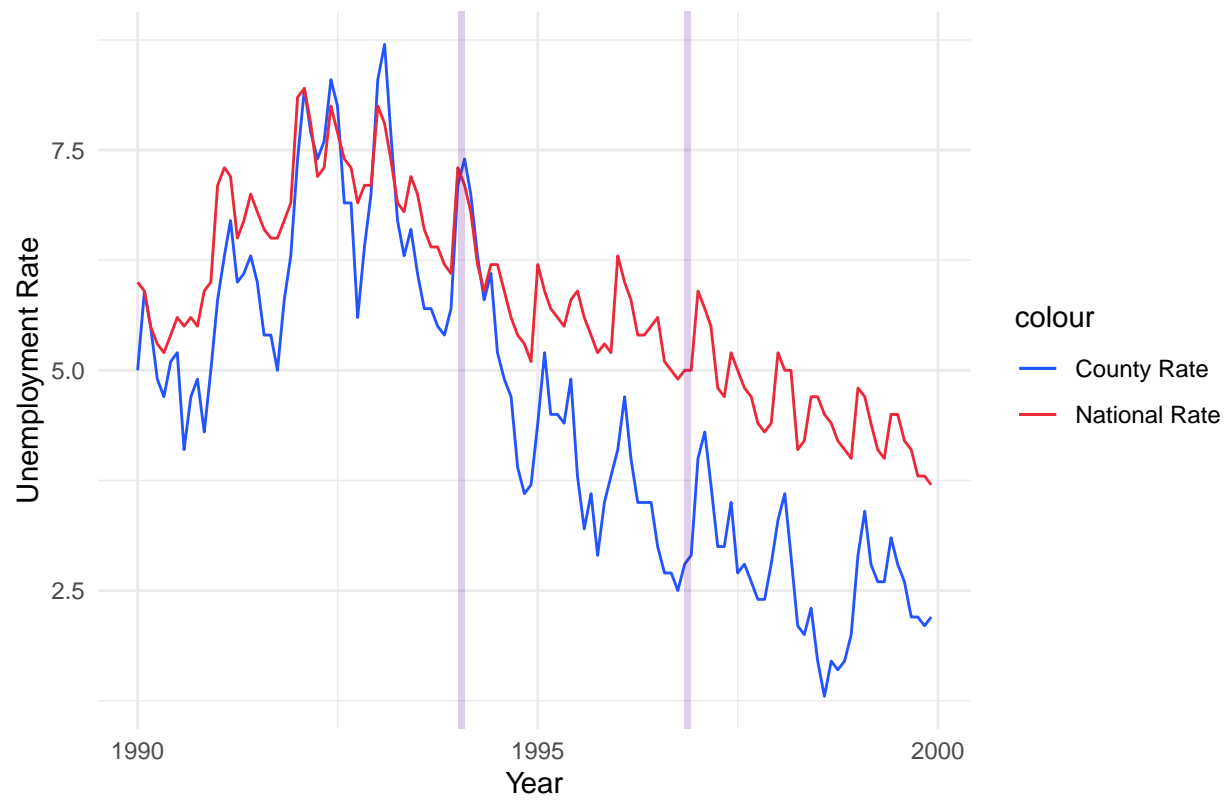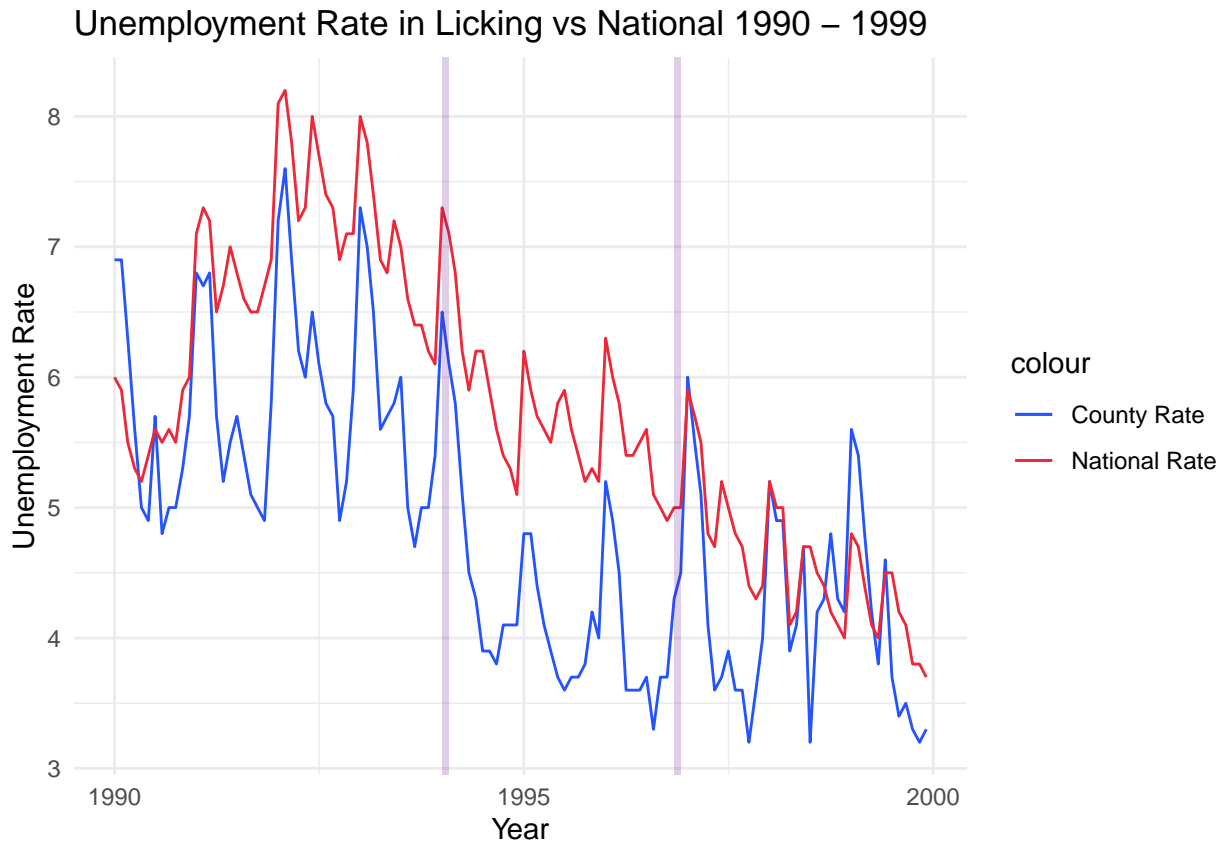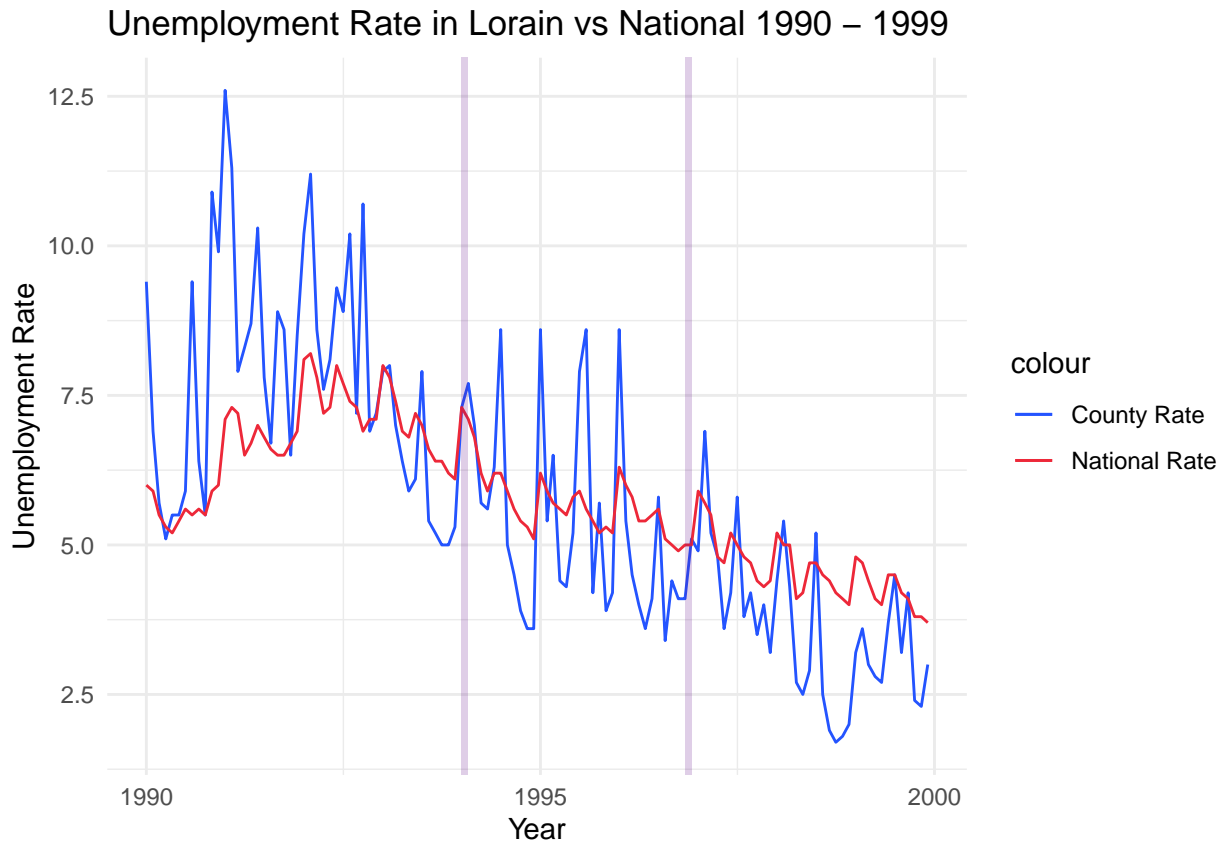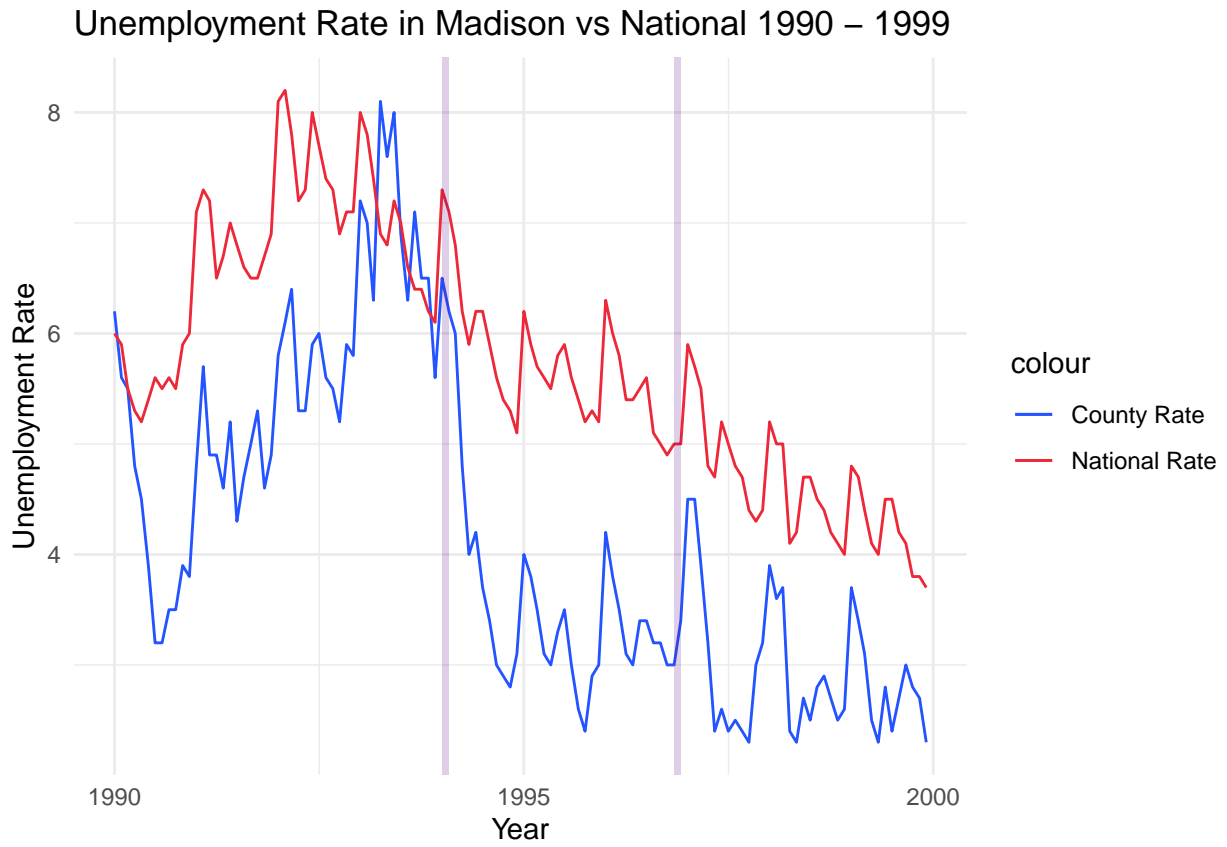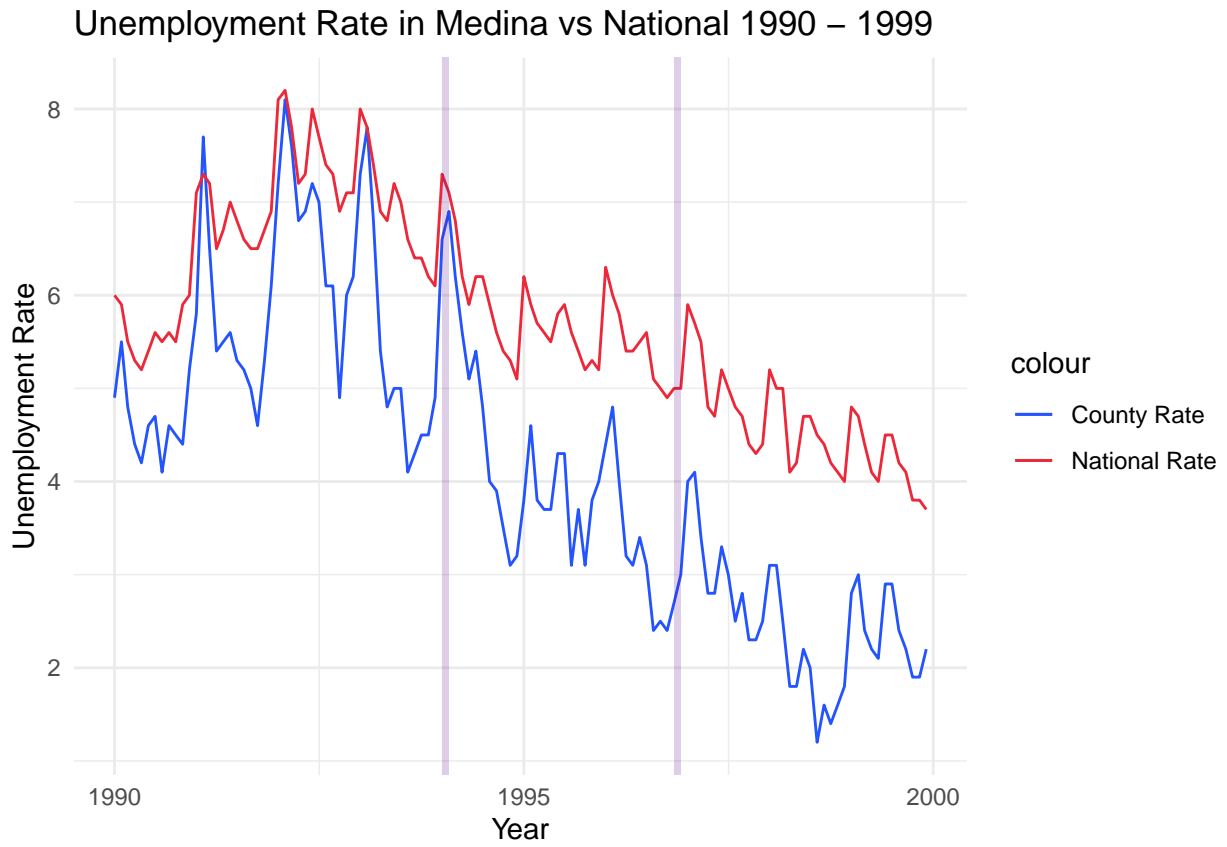
County vs National Unemployment Rate

Unemployment Rate in Butler vs National 1990 – 1999
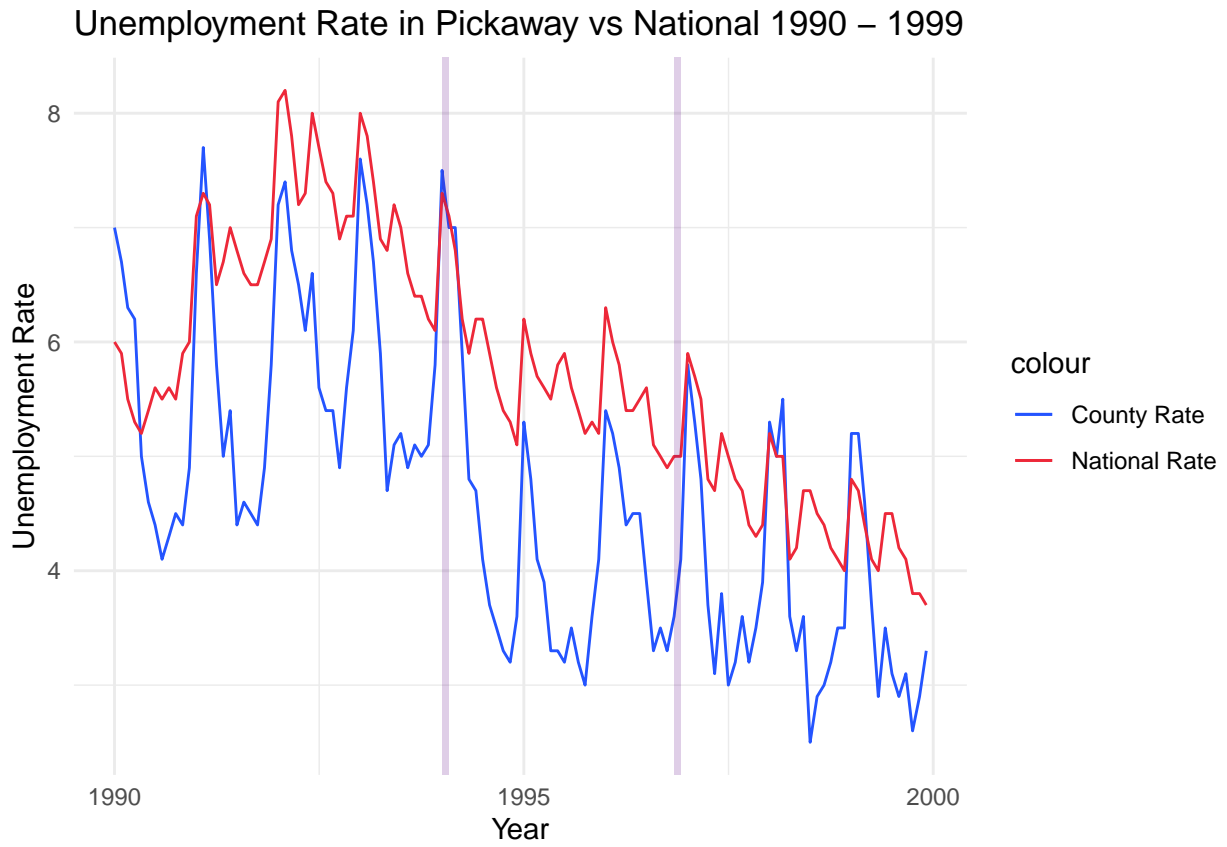
Unemployment Rate in Clermont vs National 1990 − 1999

Unemployment Rate in Delaware vs National 1990 – 1999

Unemployment Rate in Fairfield vs National 1990 – 1999

Unemployment Rate in Geauga vs National 1990 – 1999

Unemployment Rate in Lake vs National 1990 – 1999

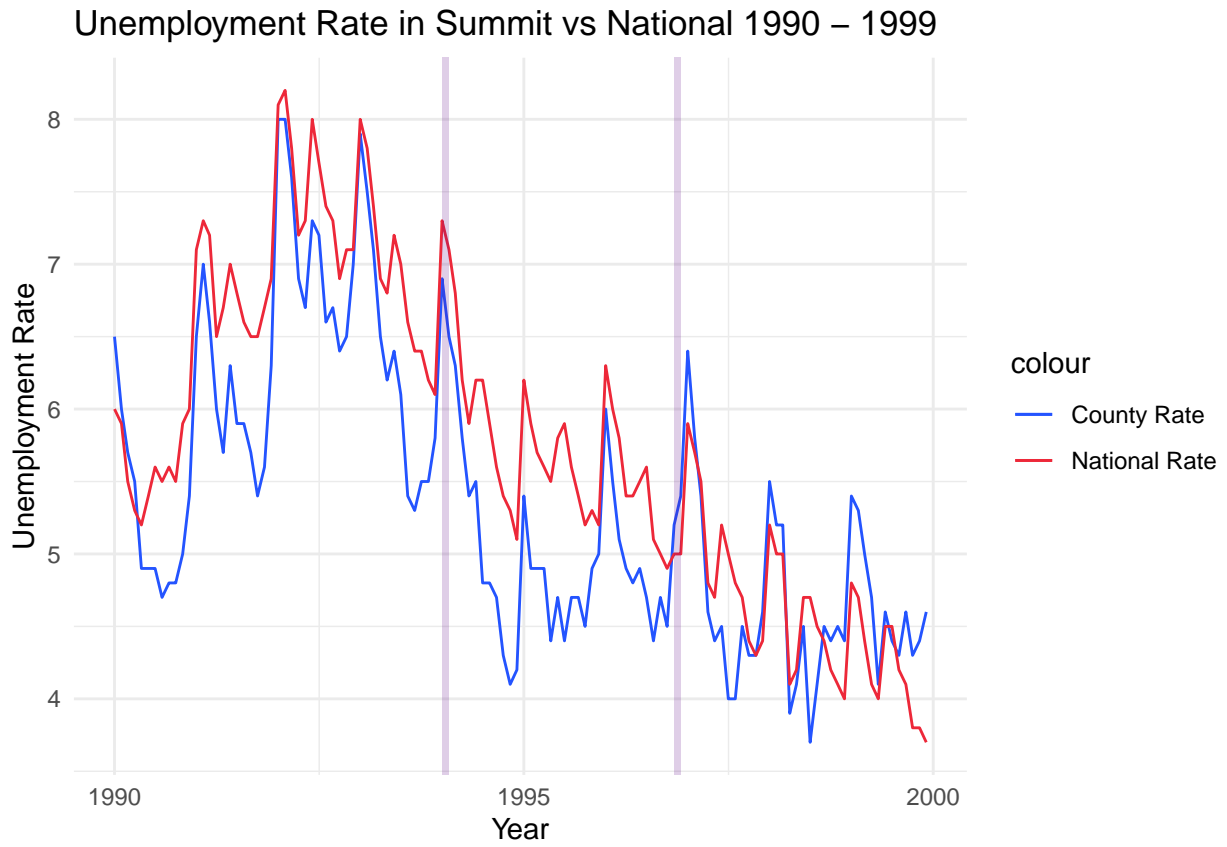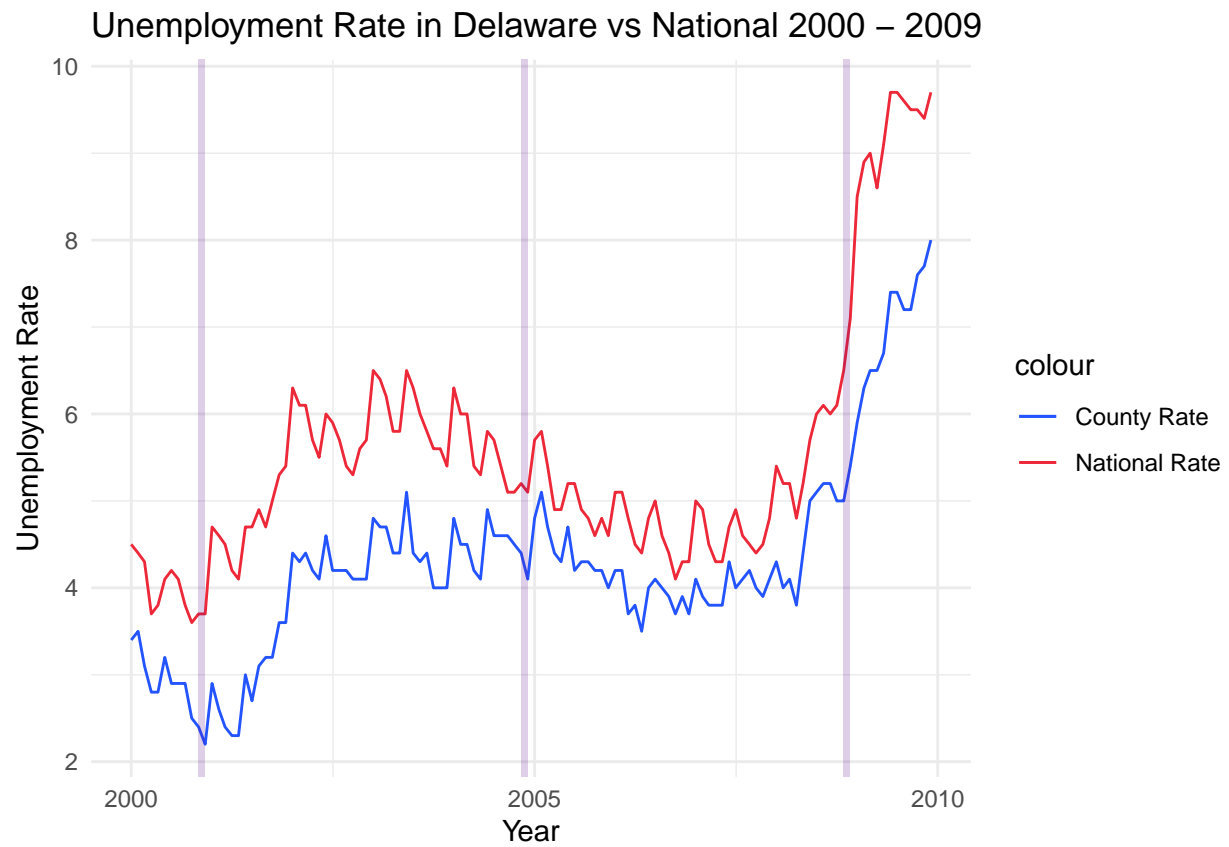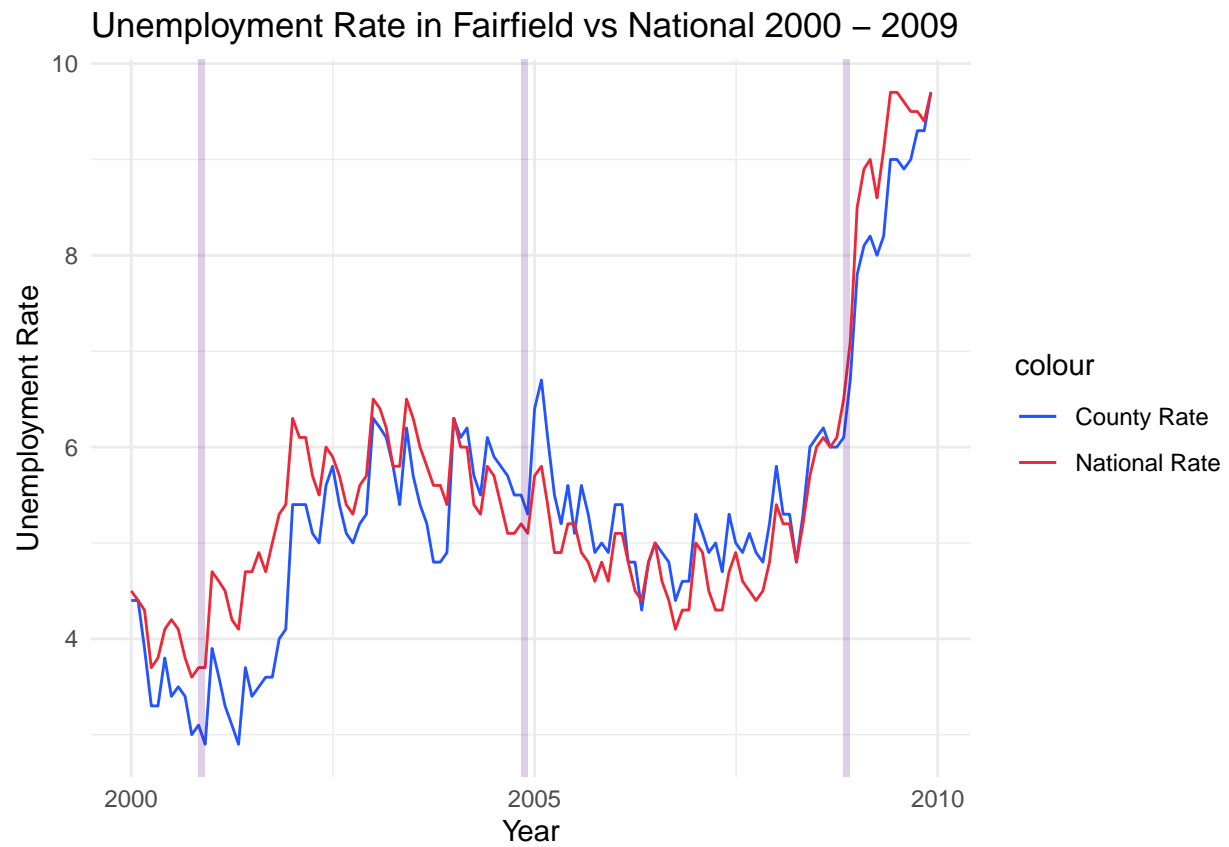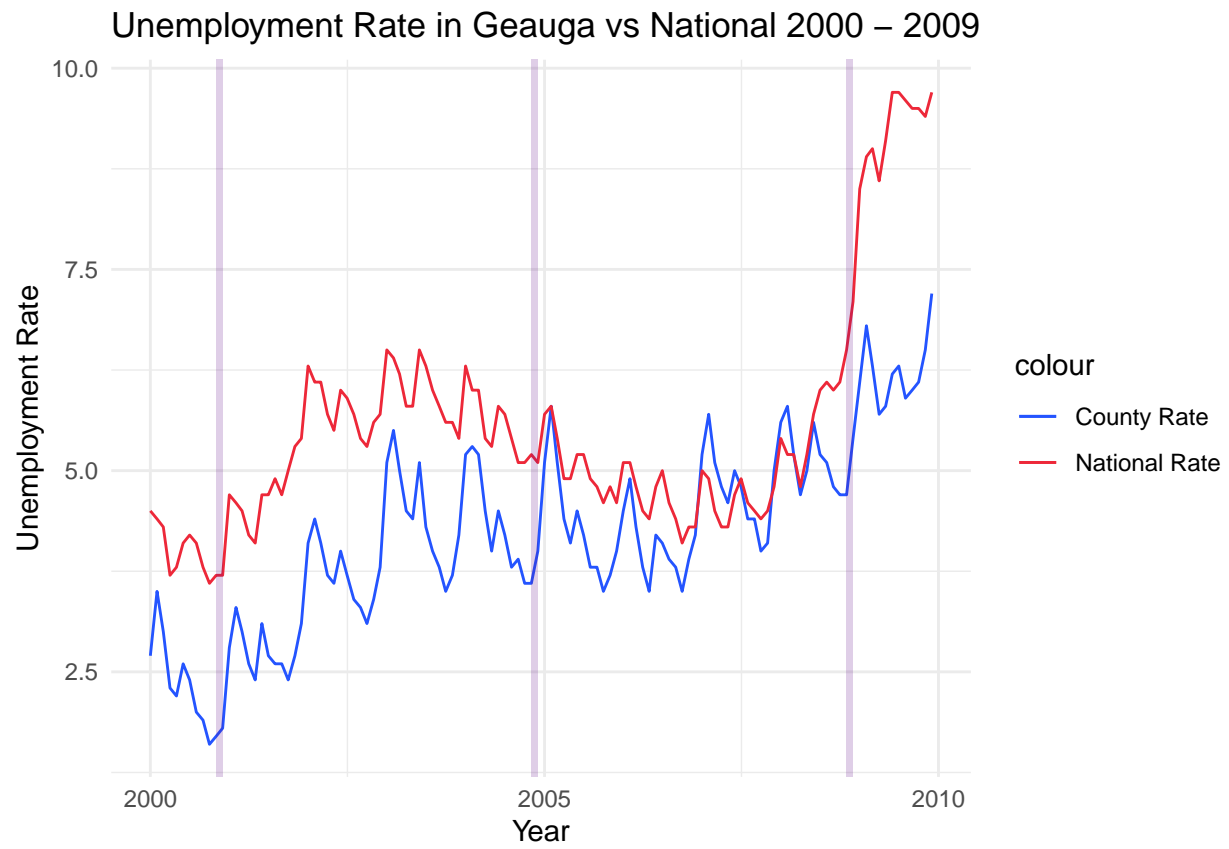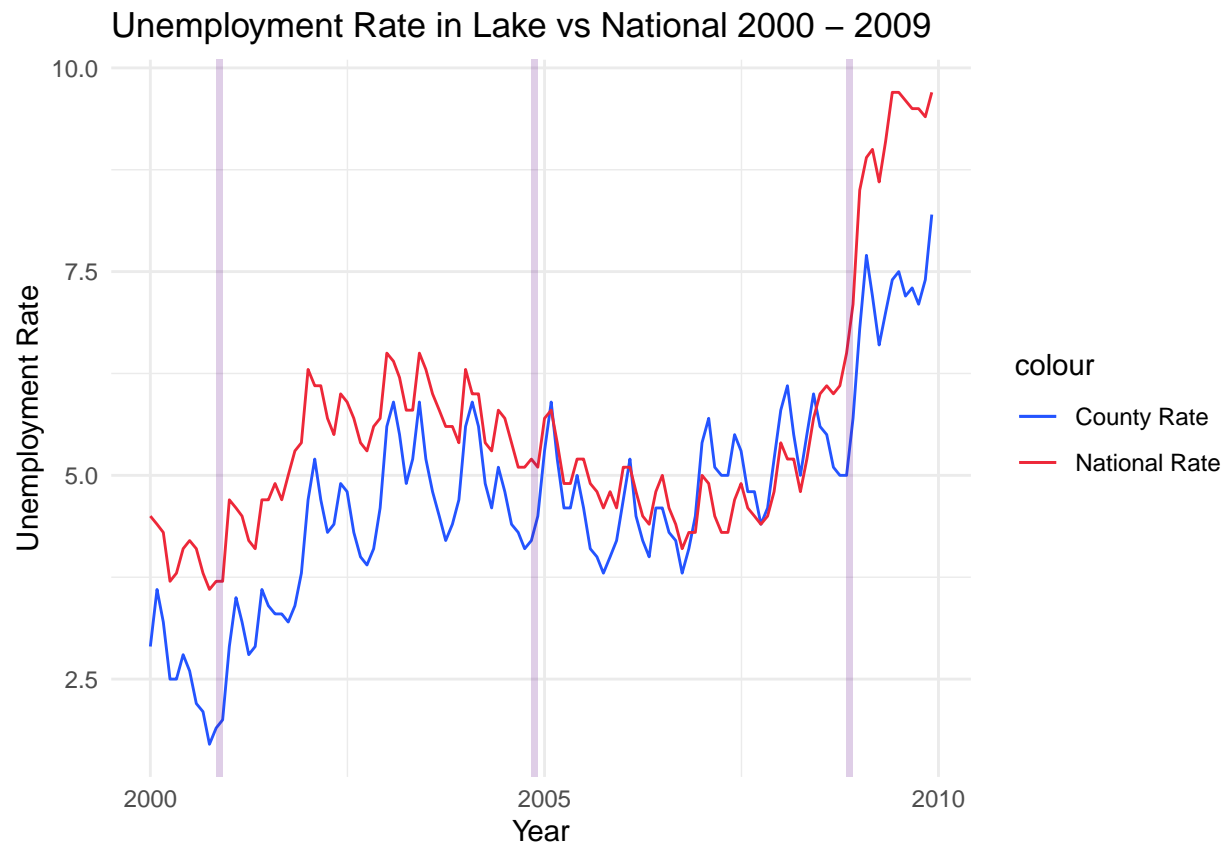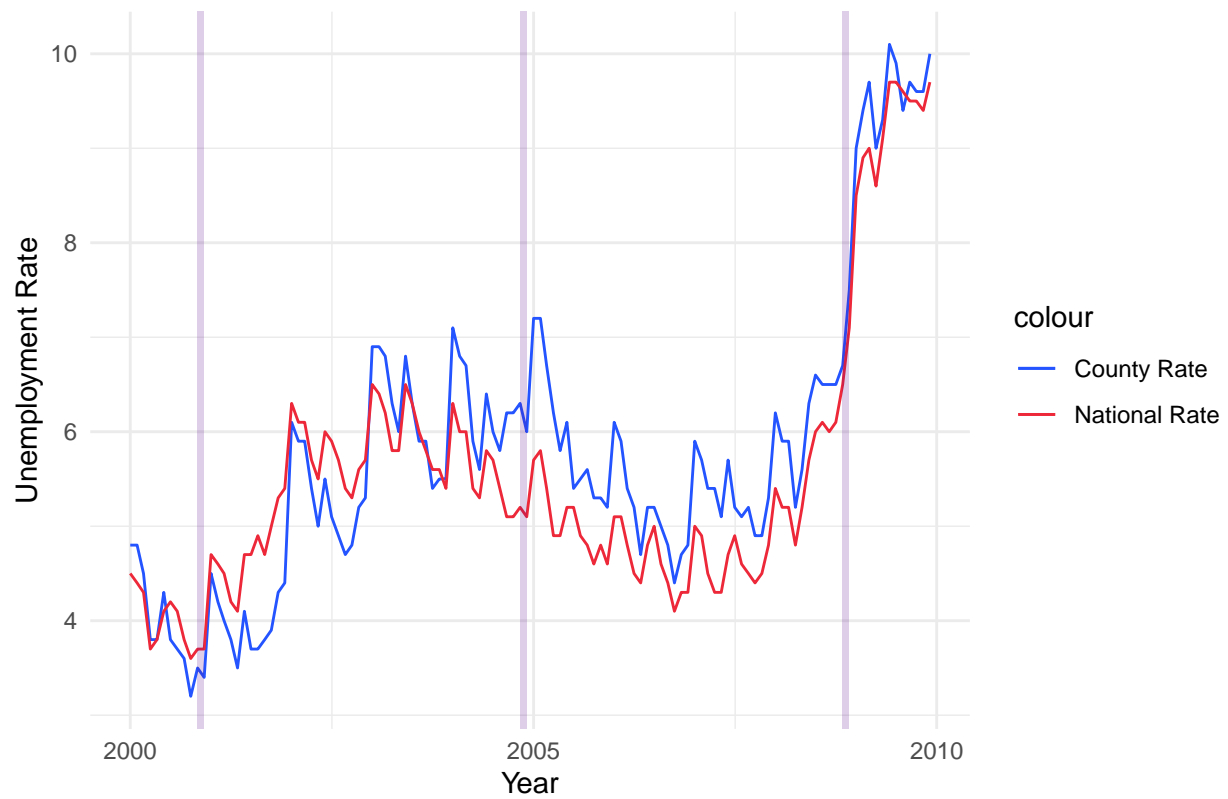Unemployment Rate in Licking vs National 1990 – 1999

Unemployment Rate in Lorain vs National 1990 – 1999

Unemployment Rate in Madison vs National 1990 – 1999

Unemployment Rate in Medina vs National 1990 – 1999

Unemployment Rate in Pickaway vs National 1990 – 1999

Unemployment Rate in Summit vs National 1990 – 1999

Unemployment Rate in Union vs National 1990 – 1999

Unemployment Rate in Warren vs National 1990 – 1999

Unemployment Rate in Butler vs National 2000 – 2009
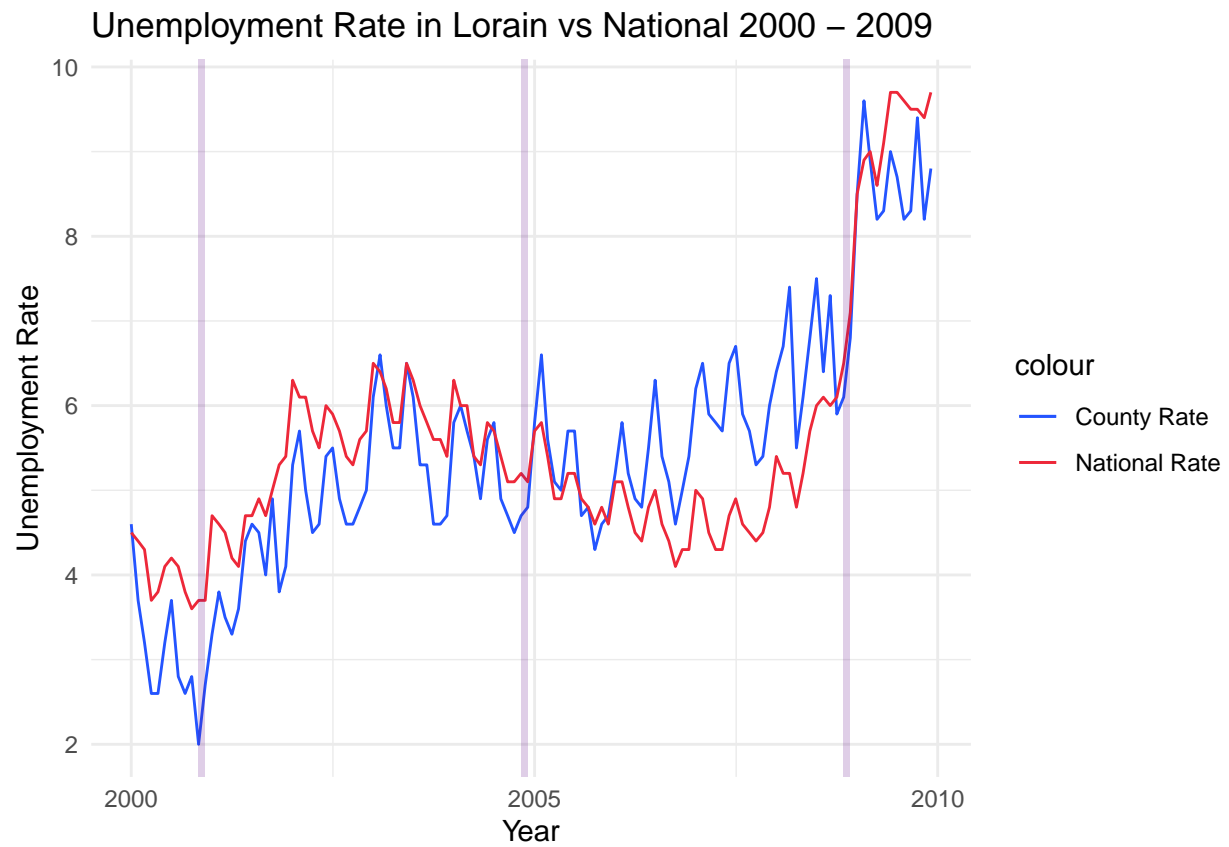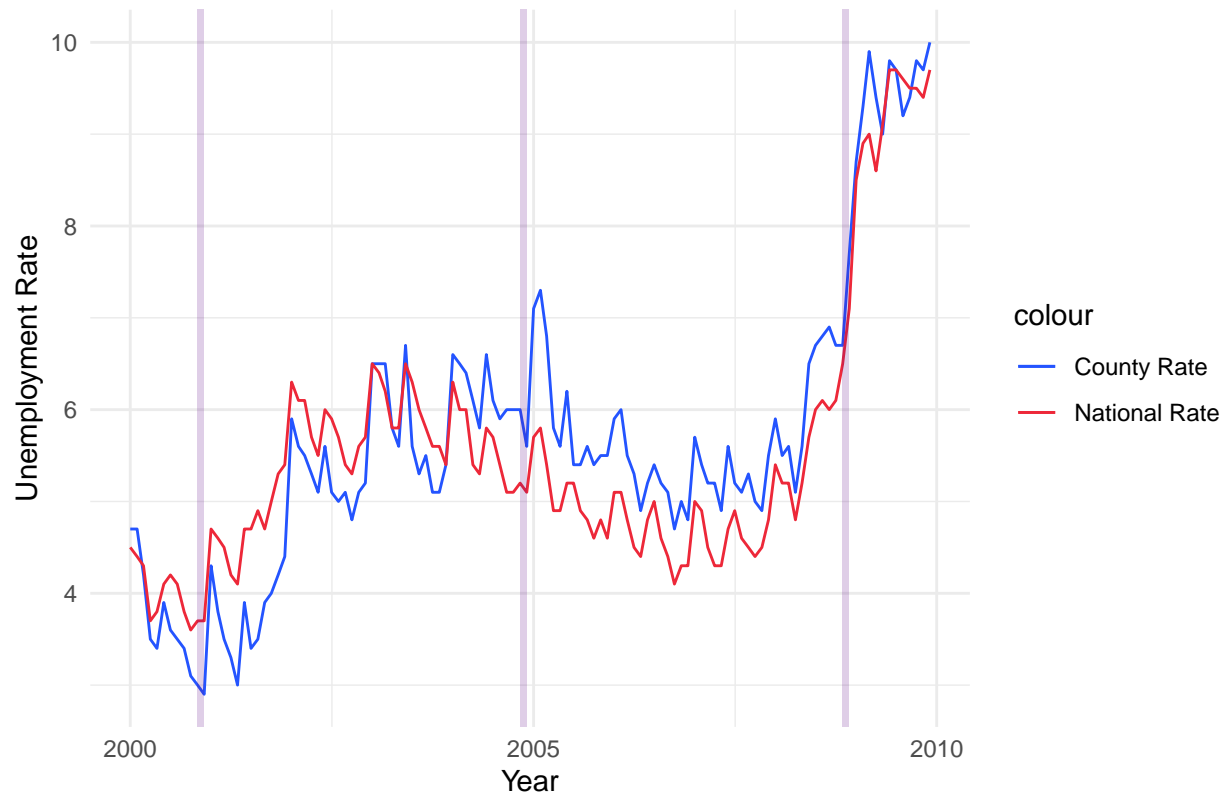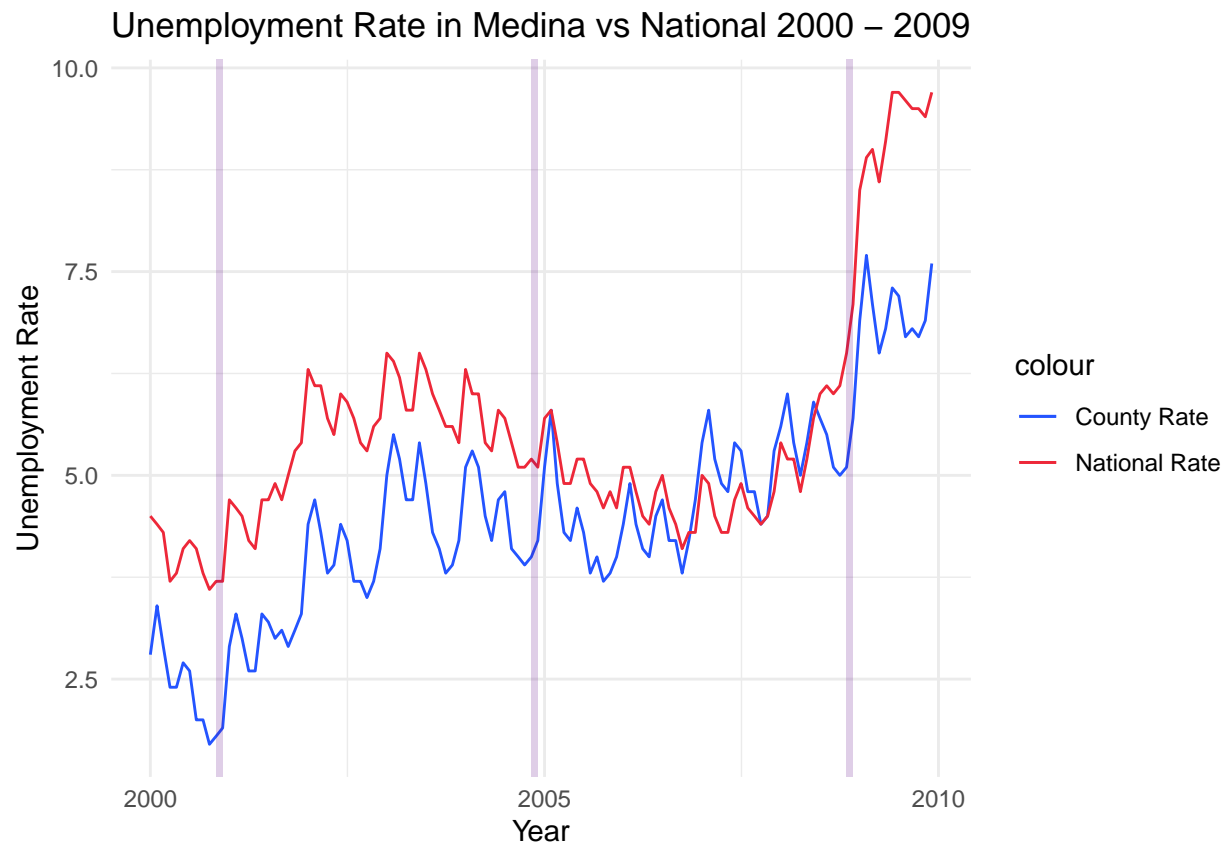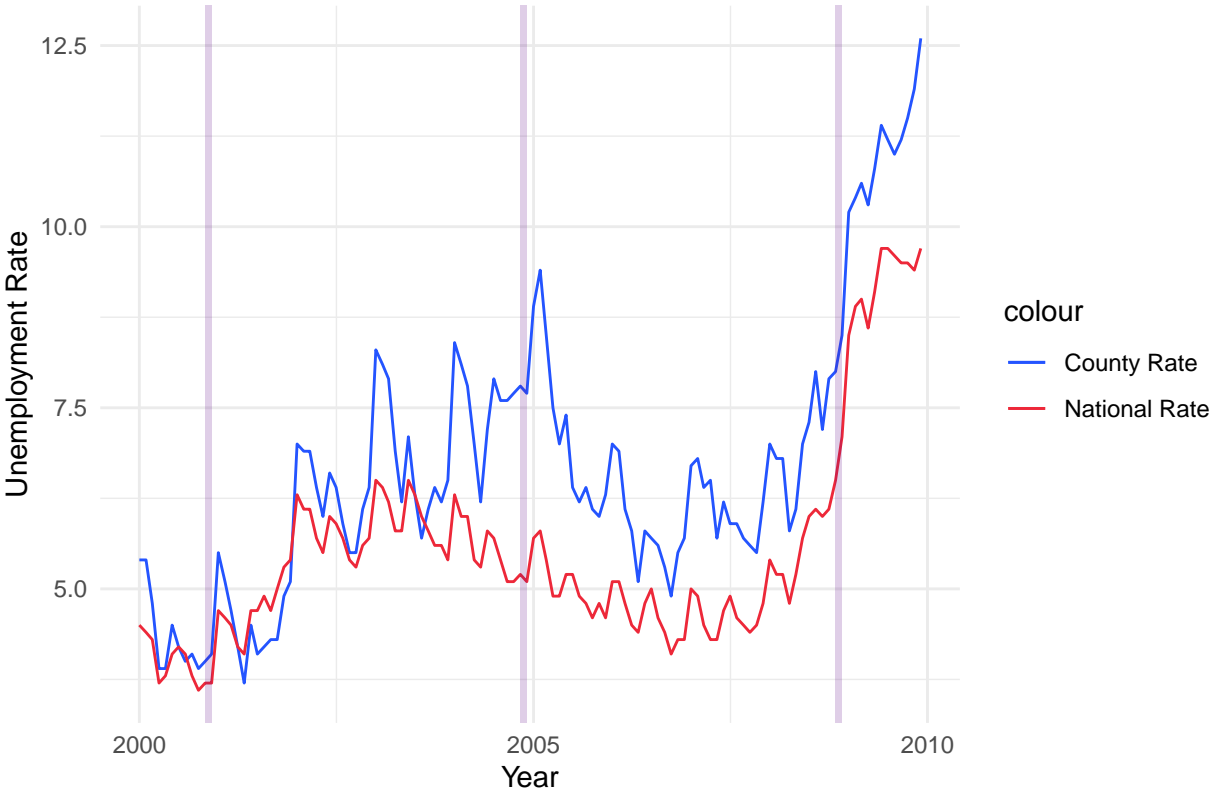
Unemployment Rate in Clermont vs National 2000 – 2009

Unemployment Rate in Delaware vs National 2000 – 2009

Unemployment Rate in Fairfield vs National 2000 – 2009
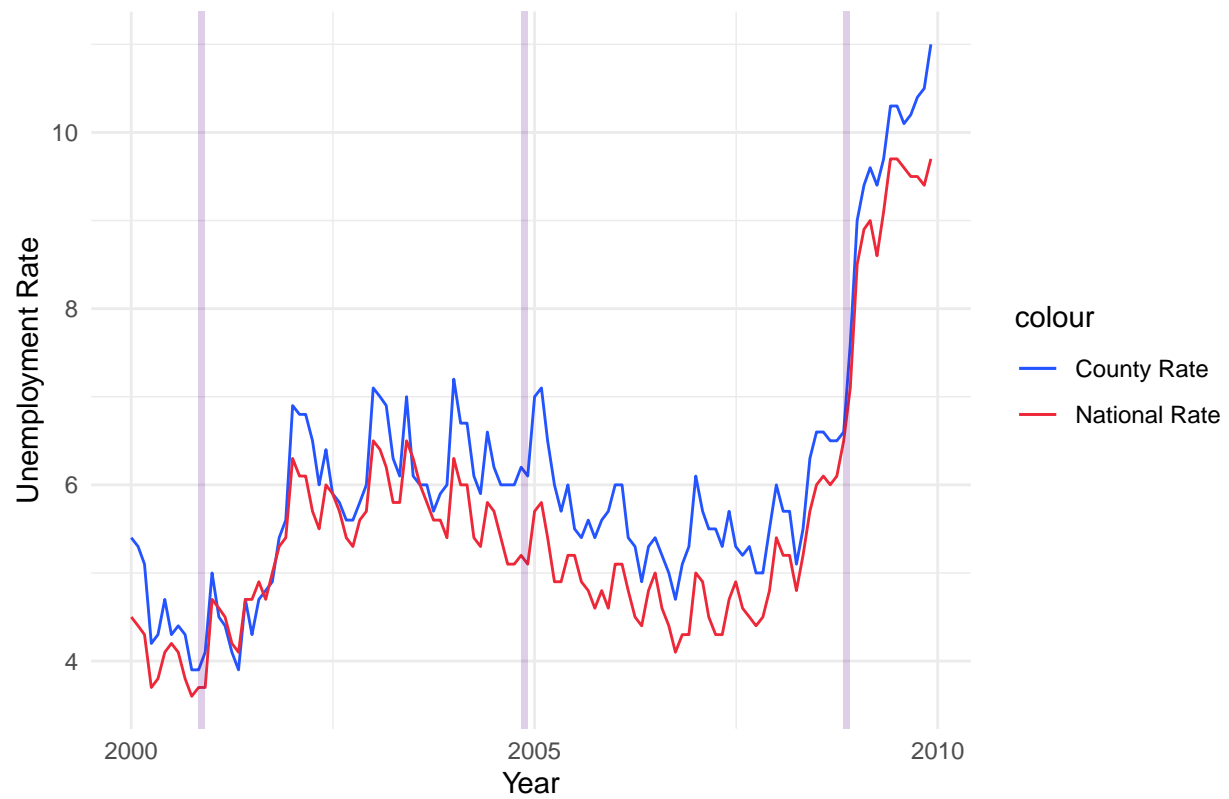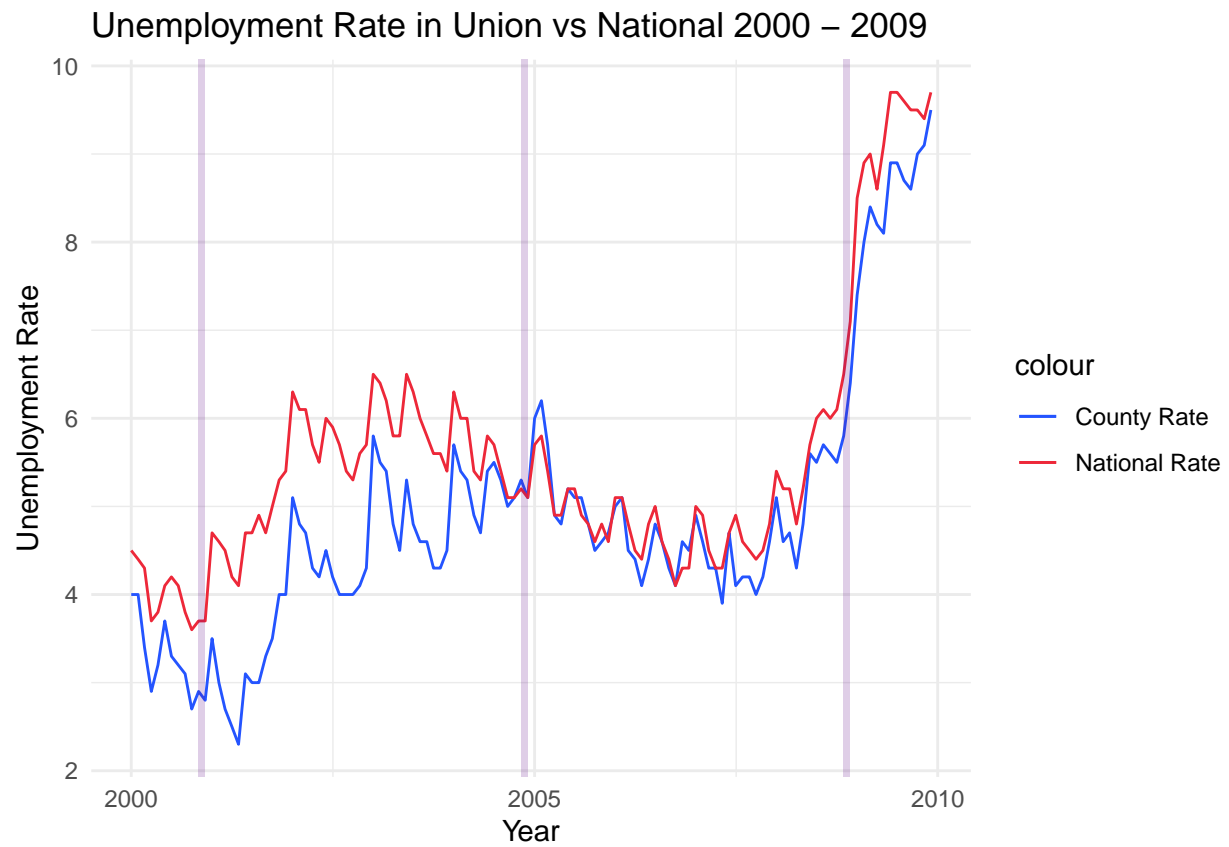
Unemployment Rate in Geauga vs National 2000 – 2009

Unemployment Rate in Lake vs National 2000 – 2009

Unemployment Rate in Licking vs National 2000 – 2009

Unemployment Rate in Lorain vs National 2000 – 2009

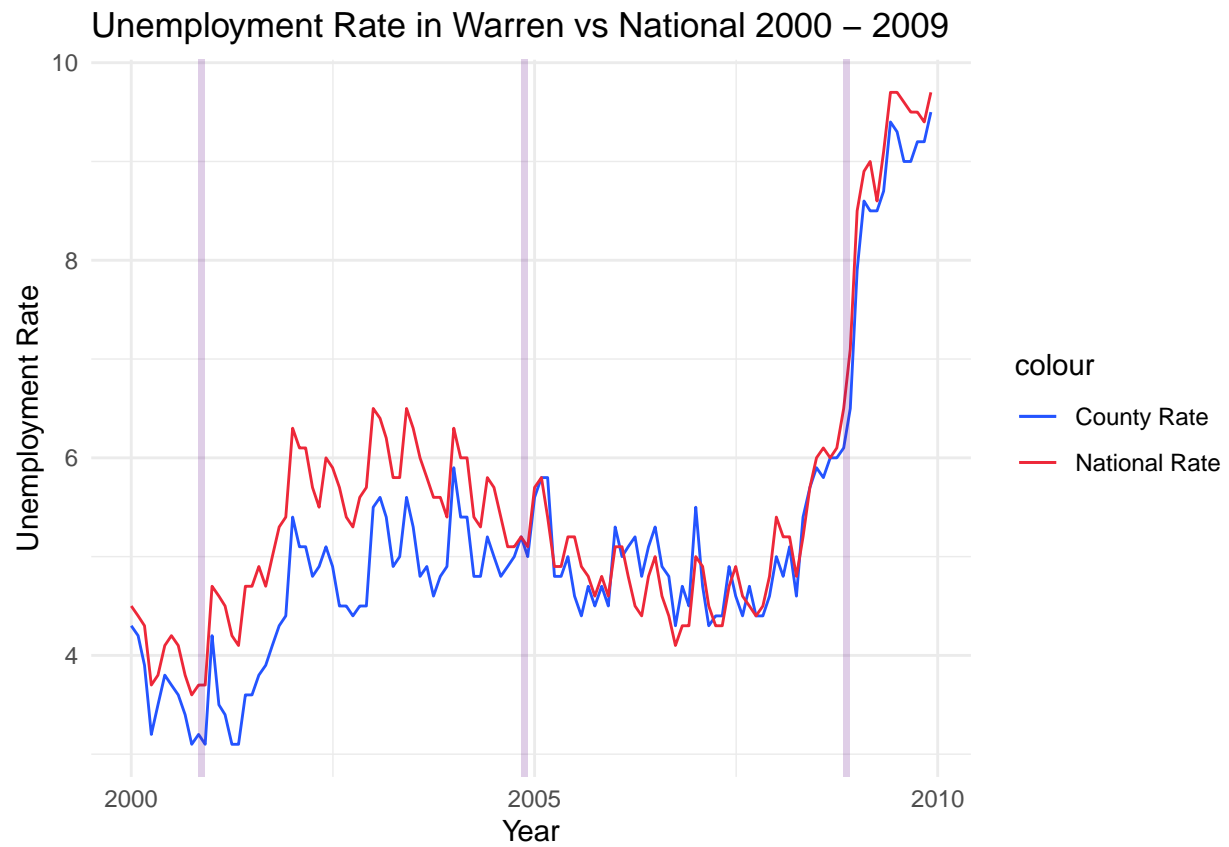Unemployment Rate in Madison vs National 2000 – 2009

Unemployment Rate in Medina vs National 2000 – 2009
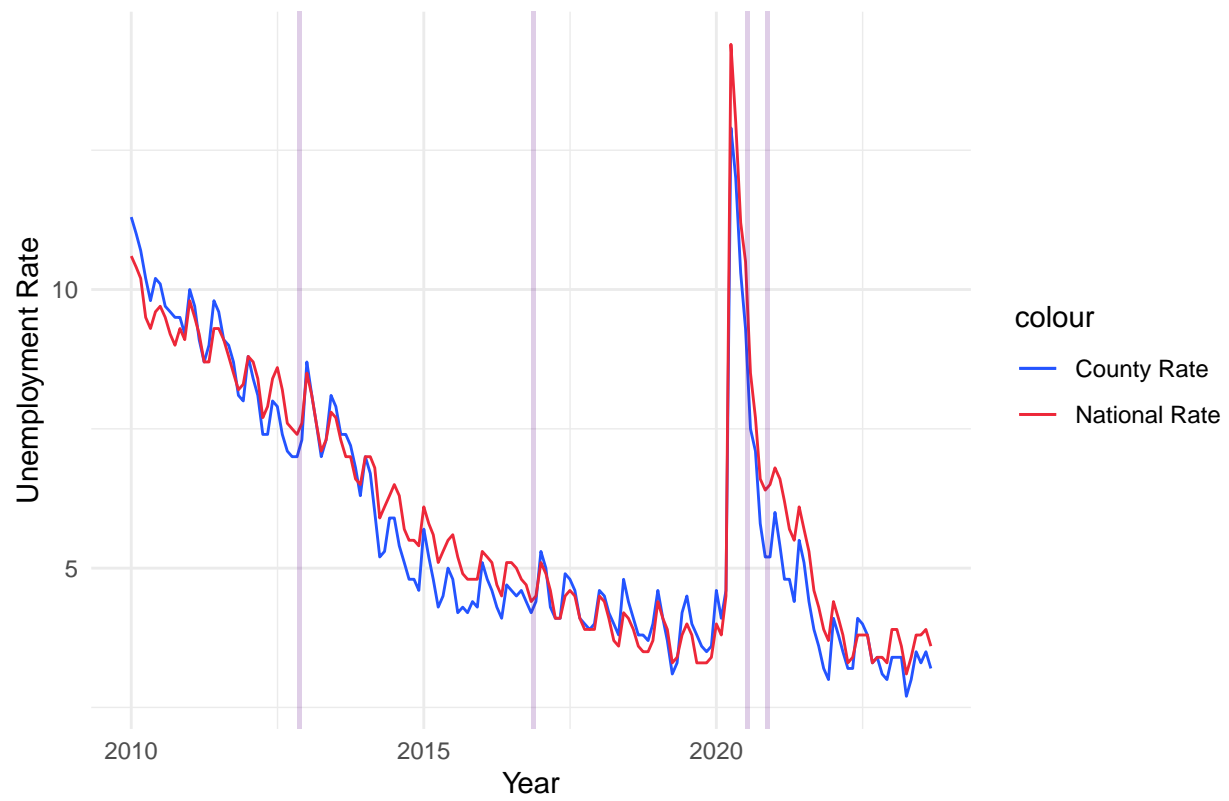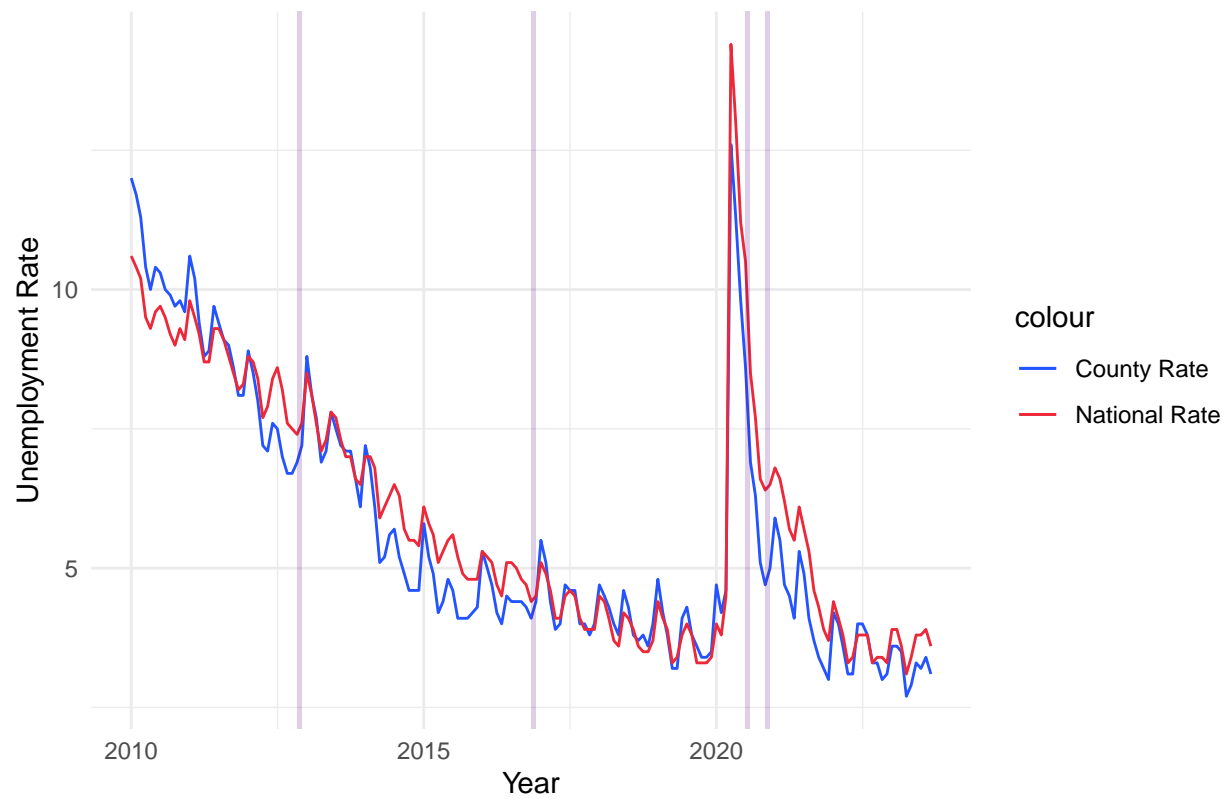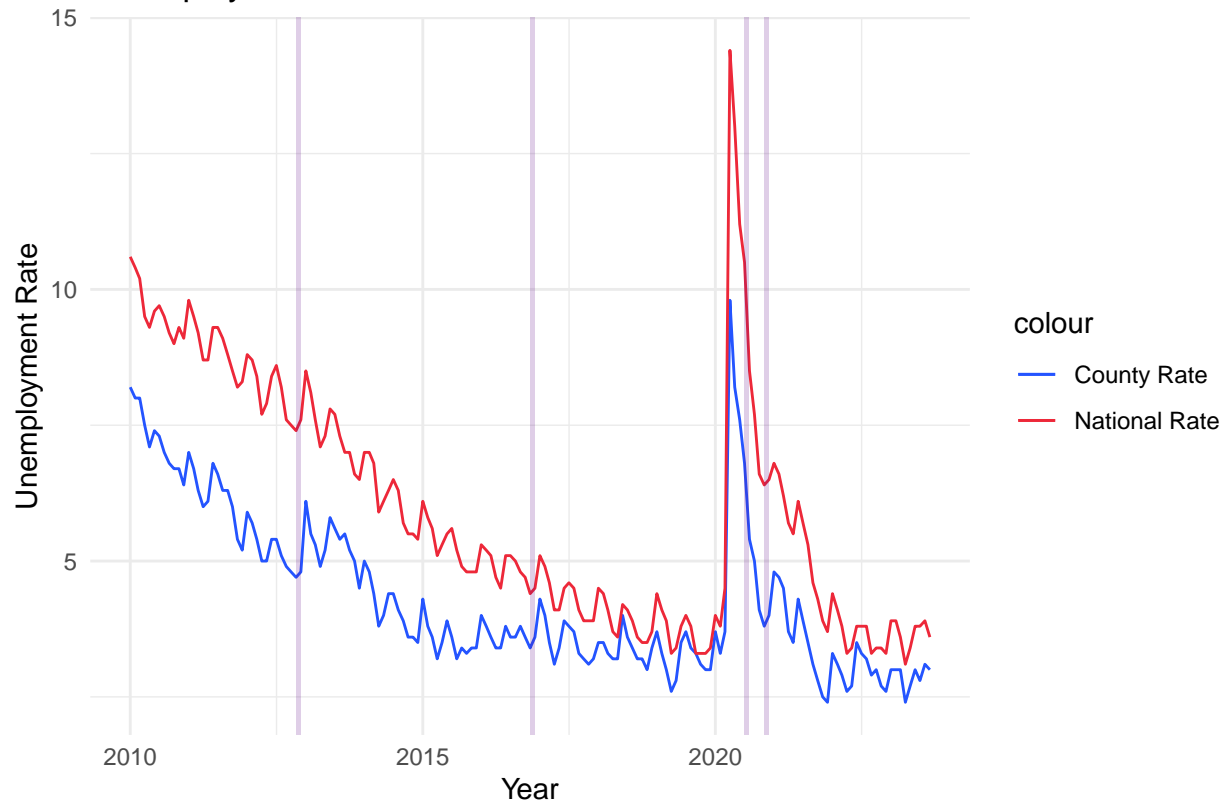
Unemployment Rate in Pickaway vs National 2000 – 2009

Unemployment Rate in Summit vs National 2000 – 2009

Unemployment Rate in Union vs National 2000 – 2009

Unemployment Rate in Warren vs National 2000 – 2009
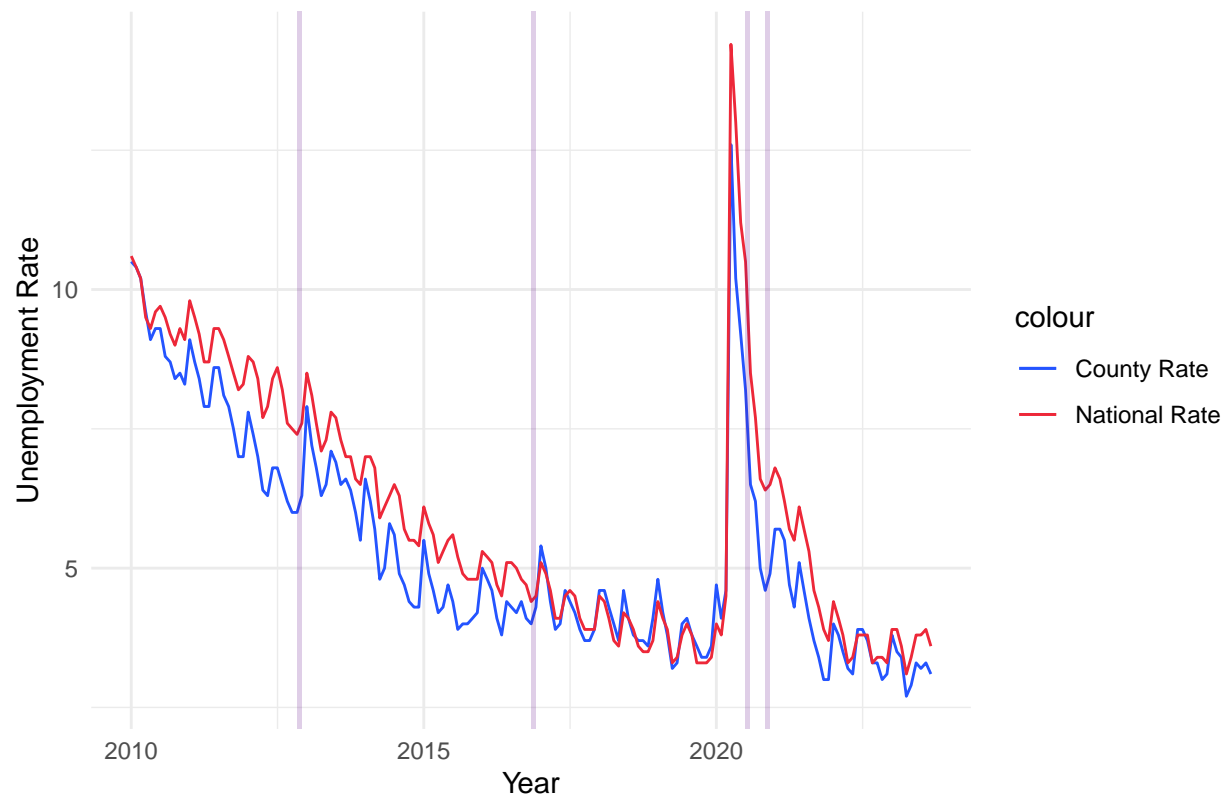
Unemployment Rate in Butler vs National 2009 – Present

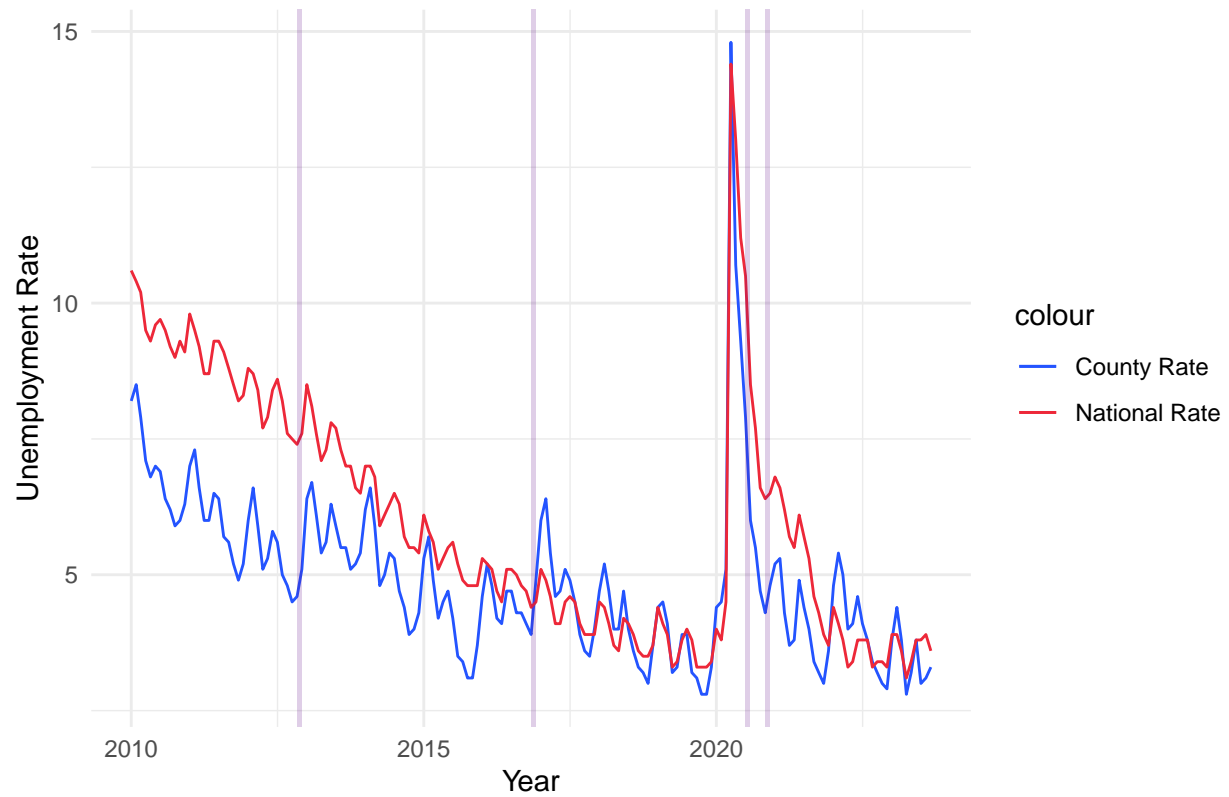Unemployment Rate in Clermont vs National 2009 – Present

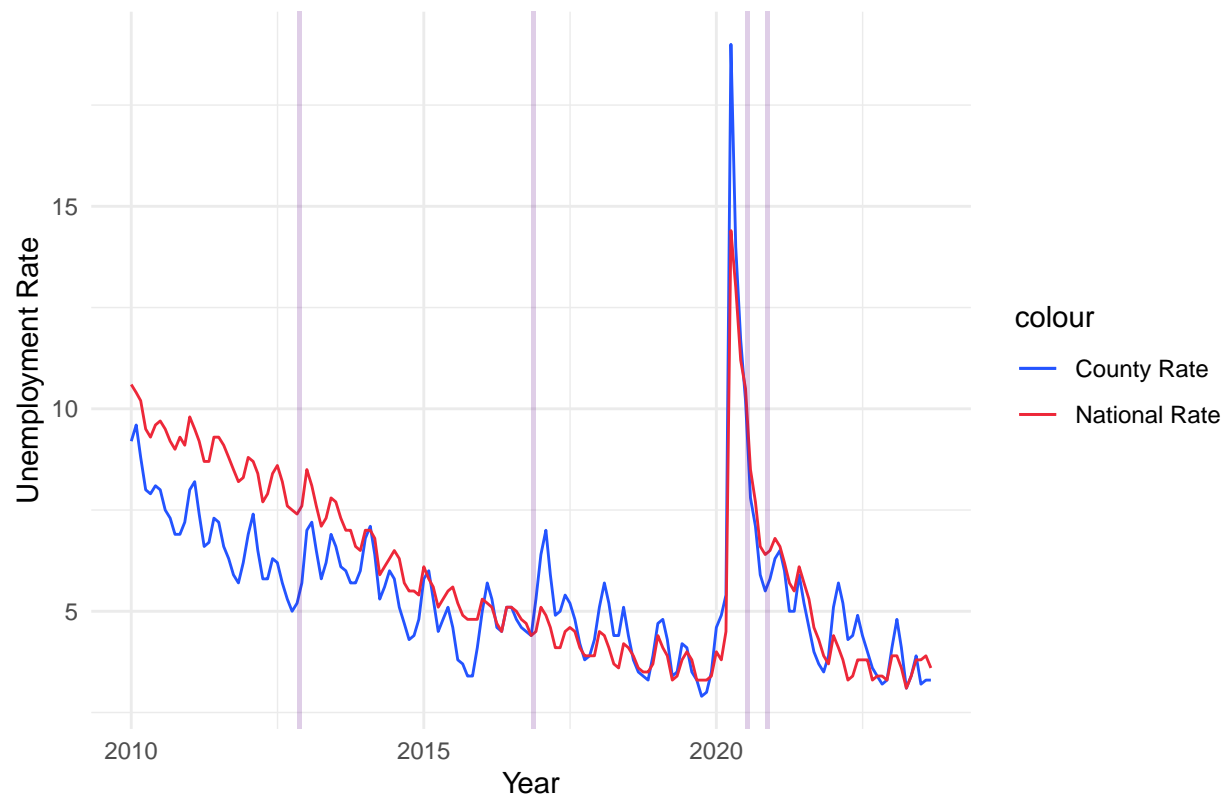Unemployment Rate in Delaware vs National 2009 – Present

Unemployment Rate in Fairfield vs National 2009 – Present
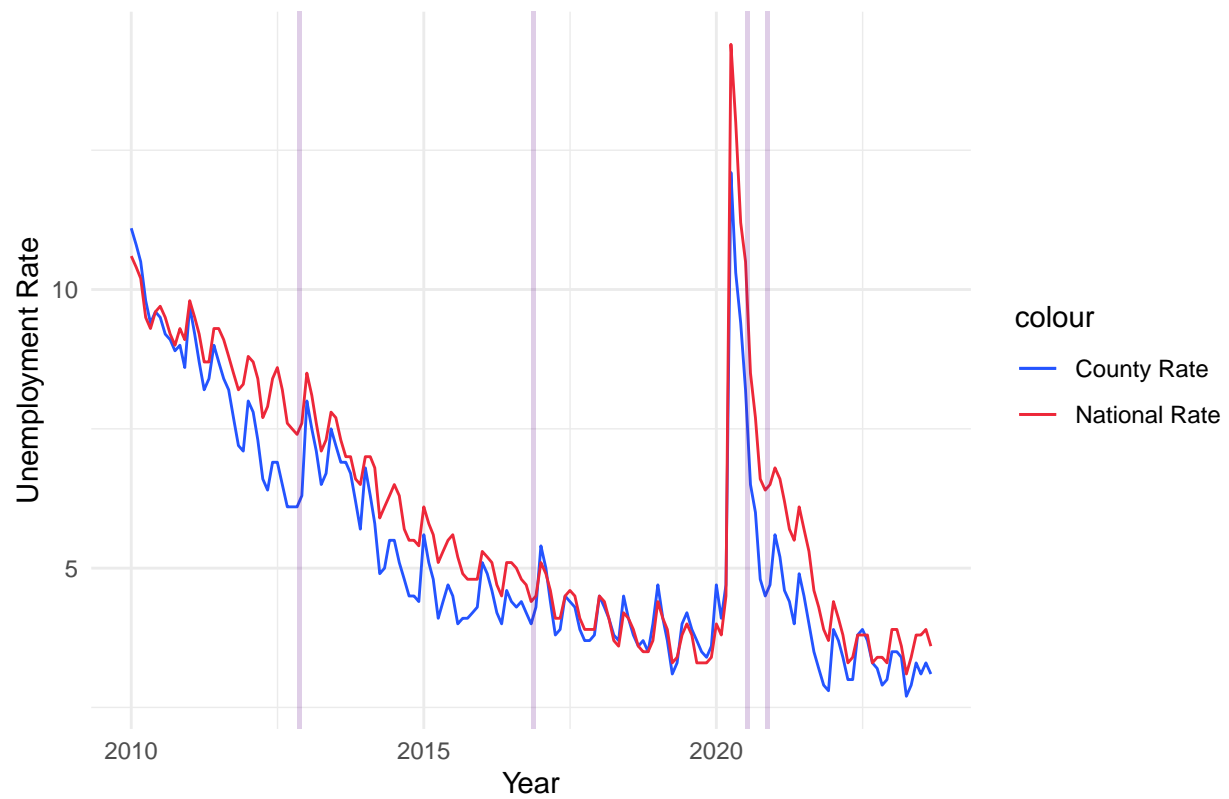
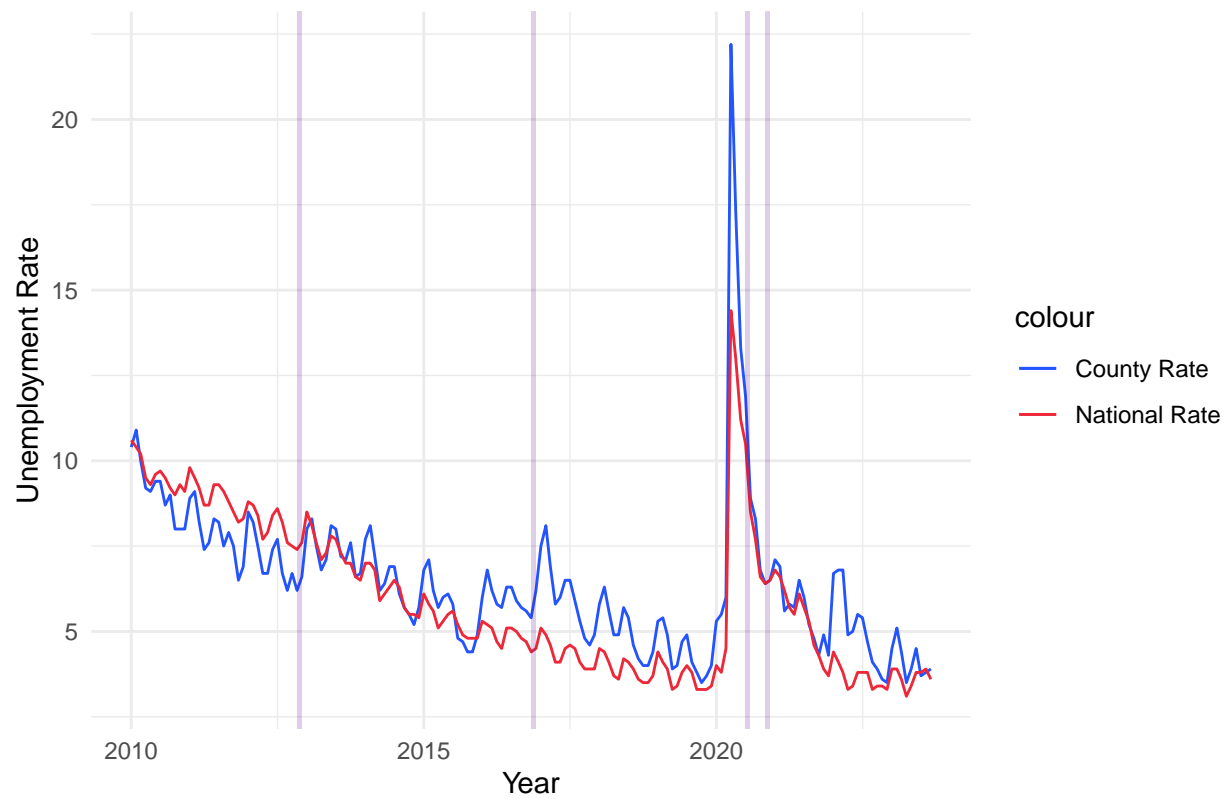Unemployment Rate in Geauga vs National 2009 – Present

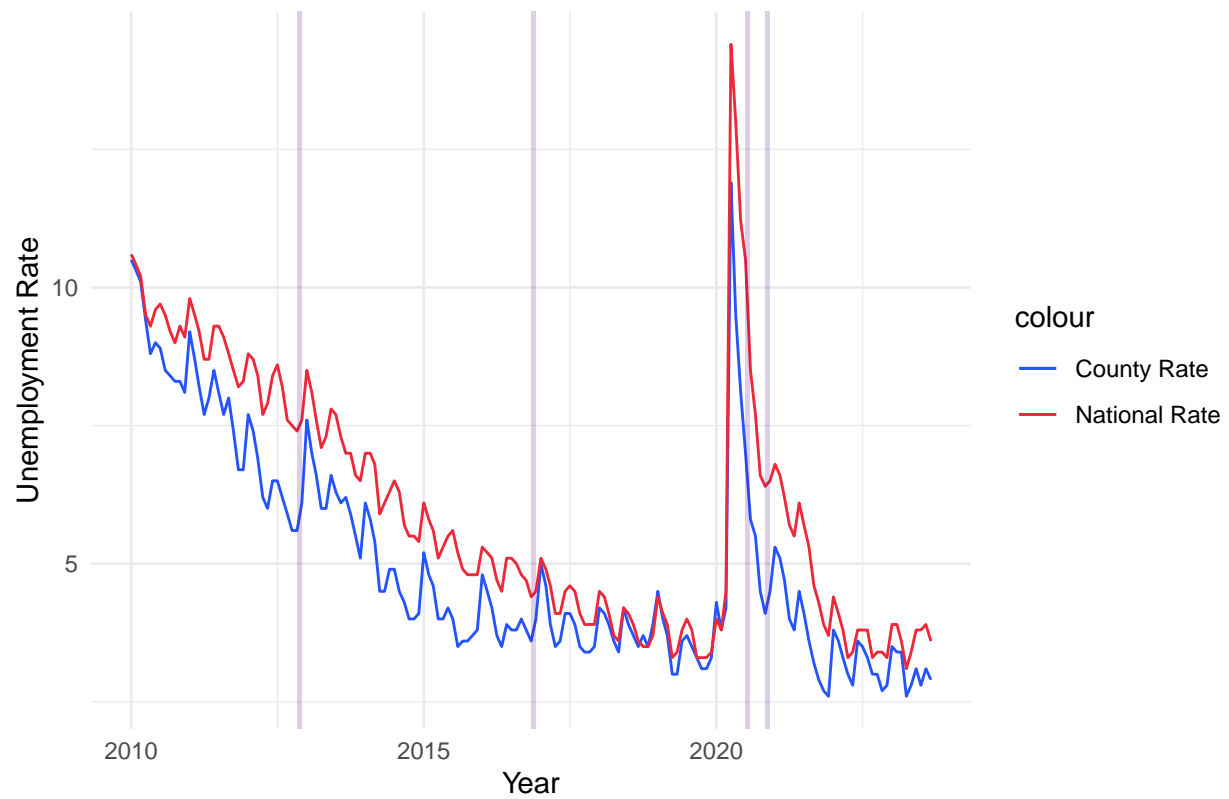Unemployment Rate in Lake vs National 2009 – Present

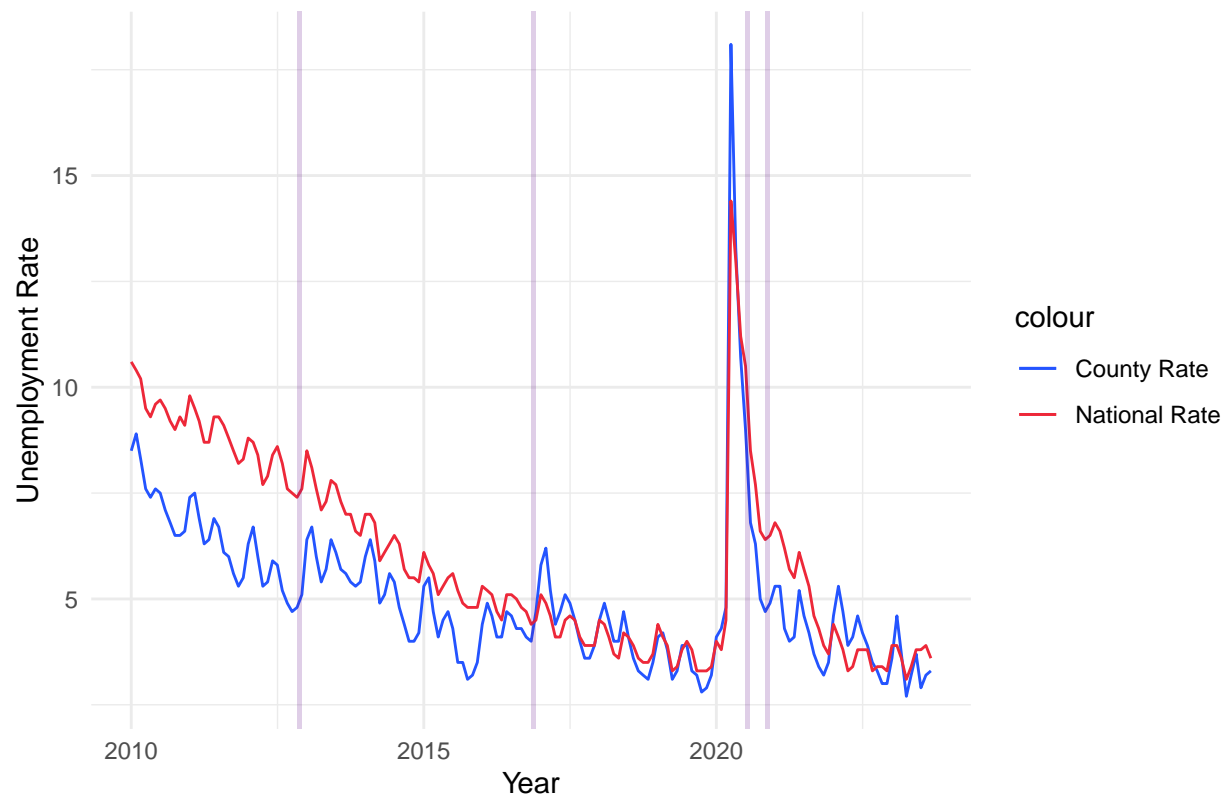Unemployment Rate in Licking vs National 2009 – Present

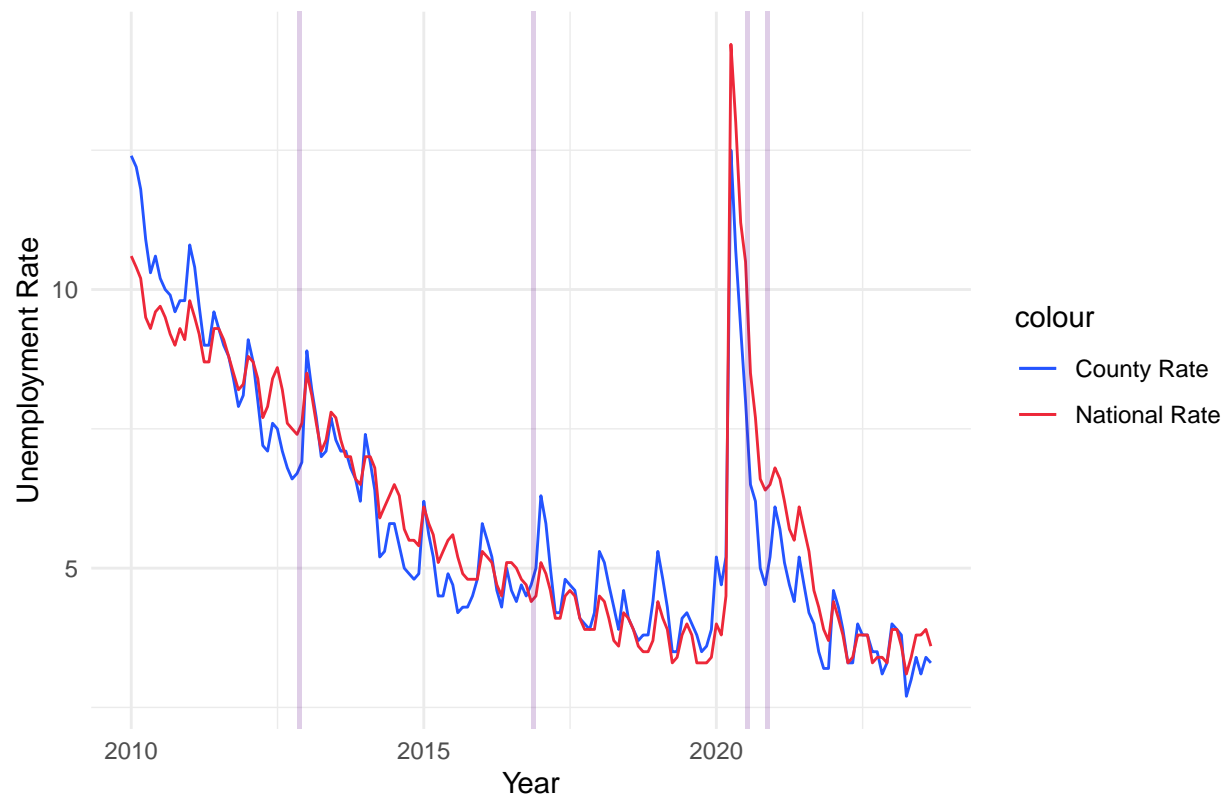Unemployment Rate in Lorain vs National 2009 – Present

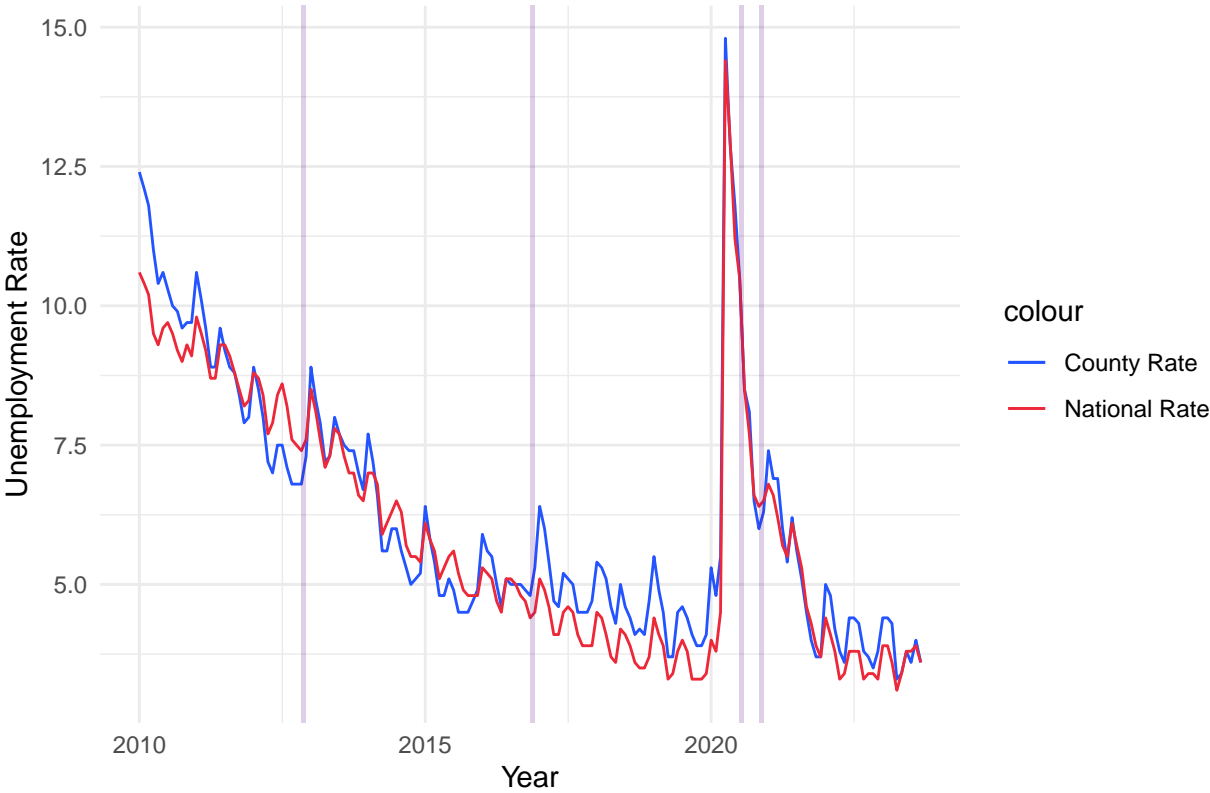Unemployment Rate in Madison vs National 2009 – Present

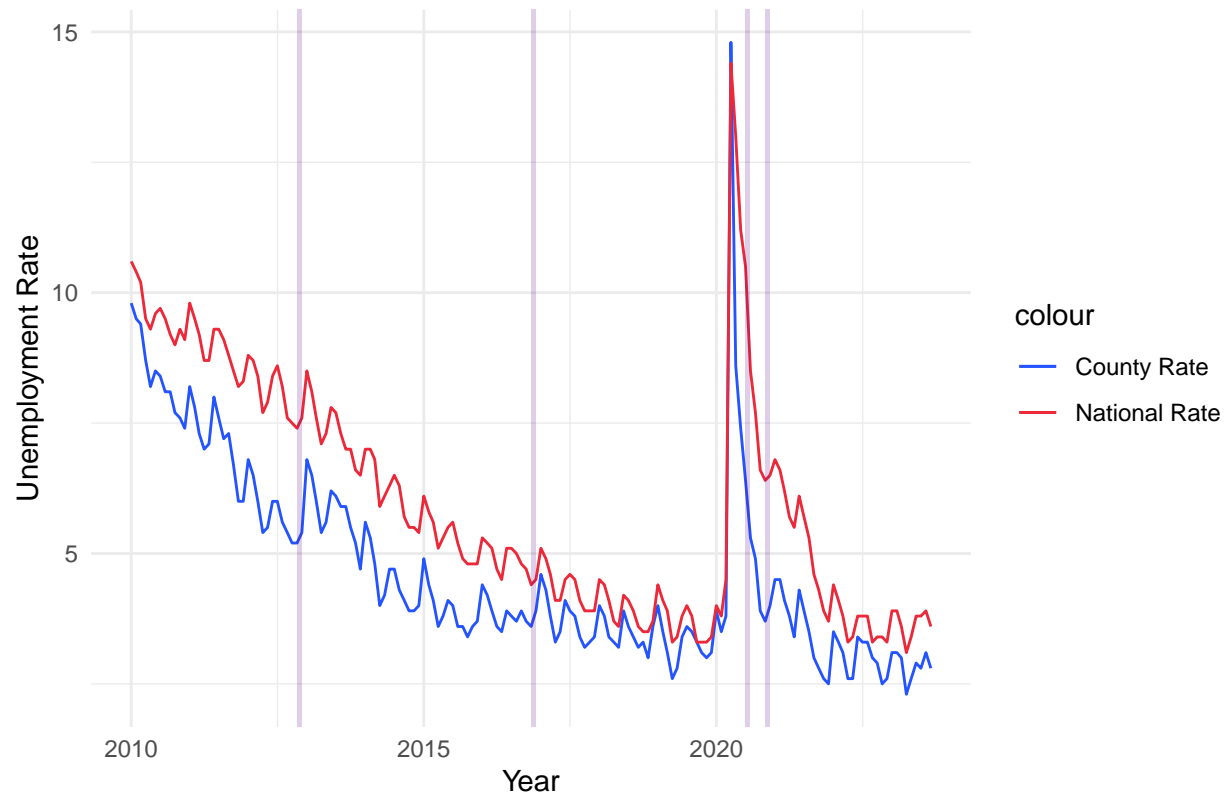Unemployment Rate in Medina vs National 2009 – Present

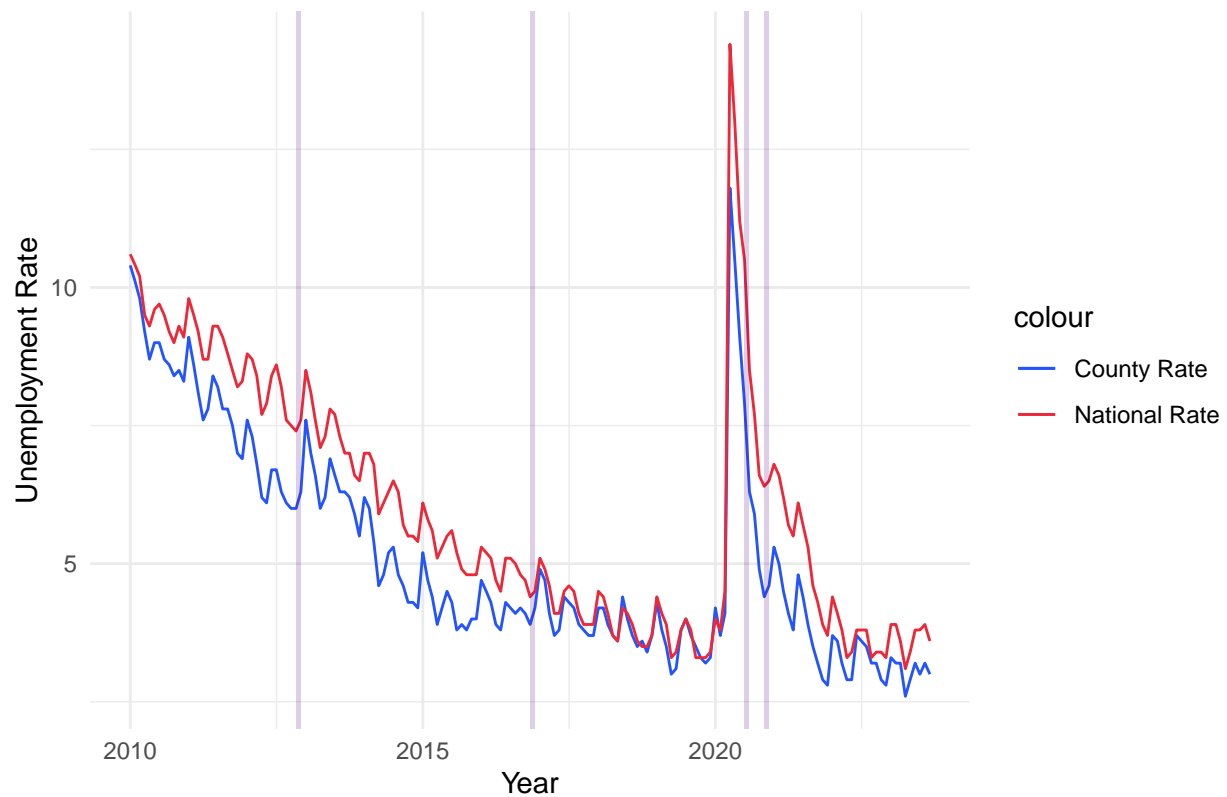Unemployment Rate in Pickaway vs National 2009 – Present

Unemployment Rate in Summit vs National 2009 – Present

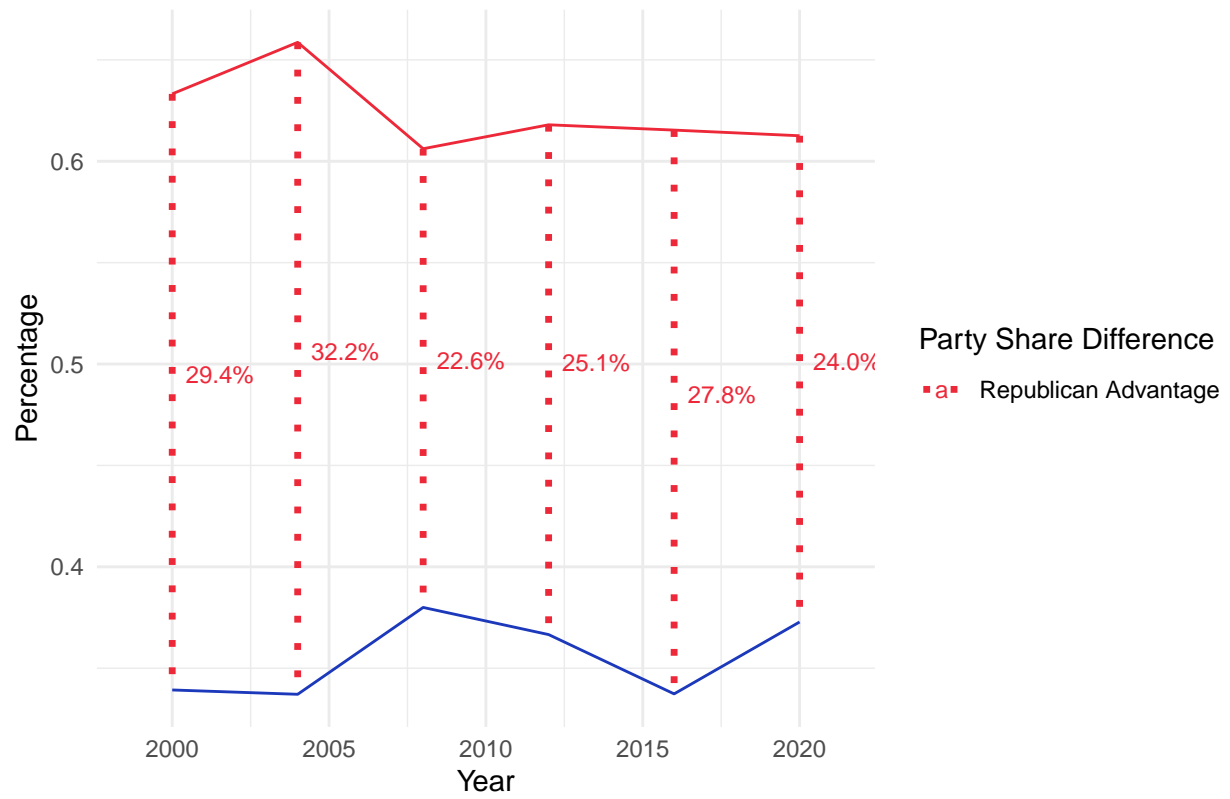Unemployment Rate in Union vs National 2009 – Present

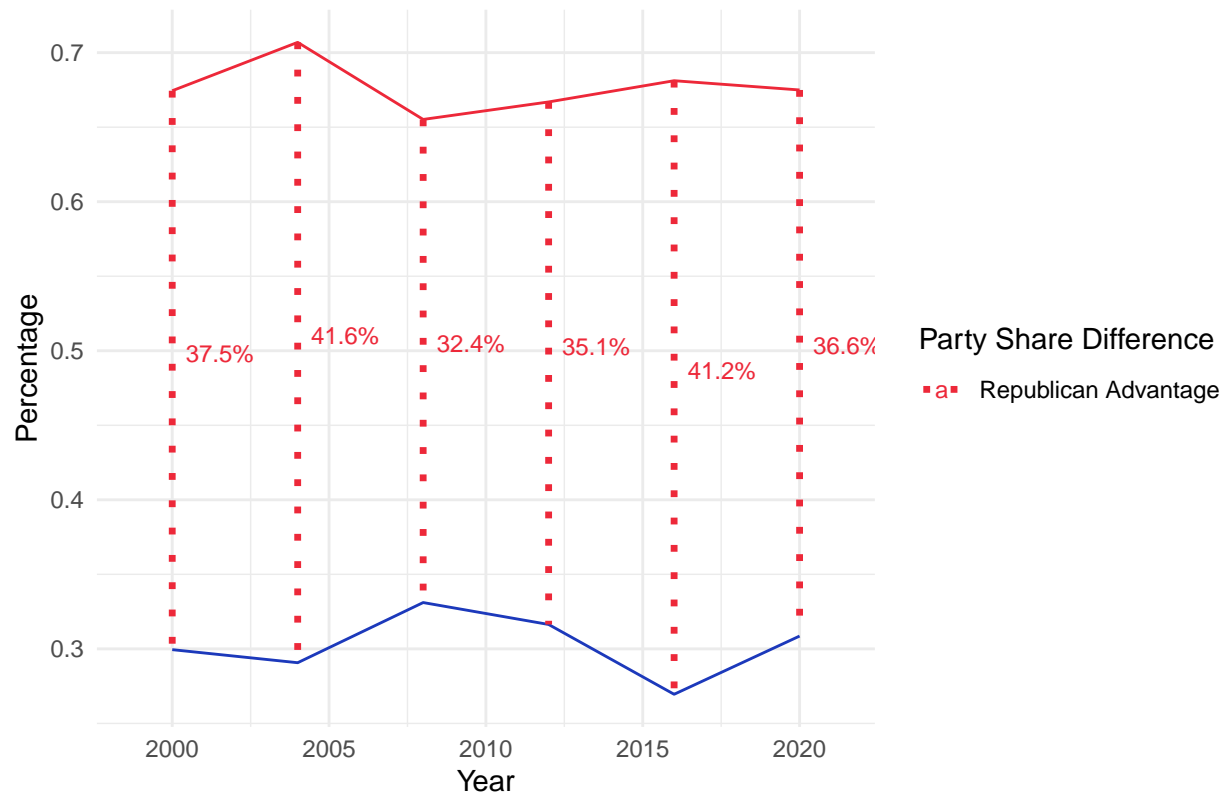## Unemployment Rate in Warren vs National 2009 – Present

Political Leanings:

```
## Warning: Using 'size' aesthetic for lines was deprecated in ggplot2 3.4.0.
## i Please use 'linewidth' instead.
## This warning is displayed once every 8 hours.
## Call 'lifecycle::last_lifecycle_warnings()' to see where this warning was
## generated.
```
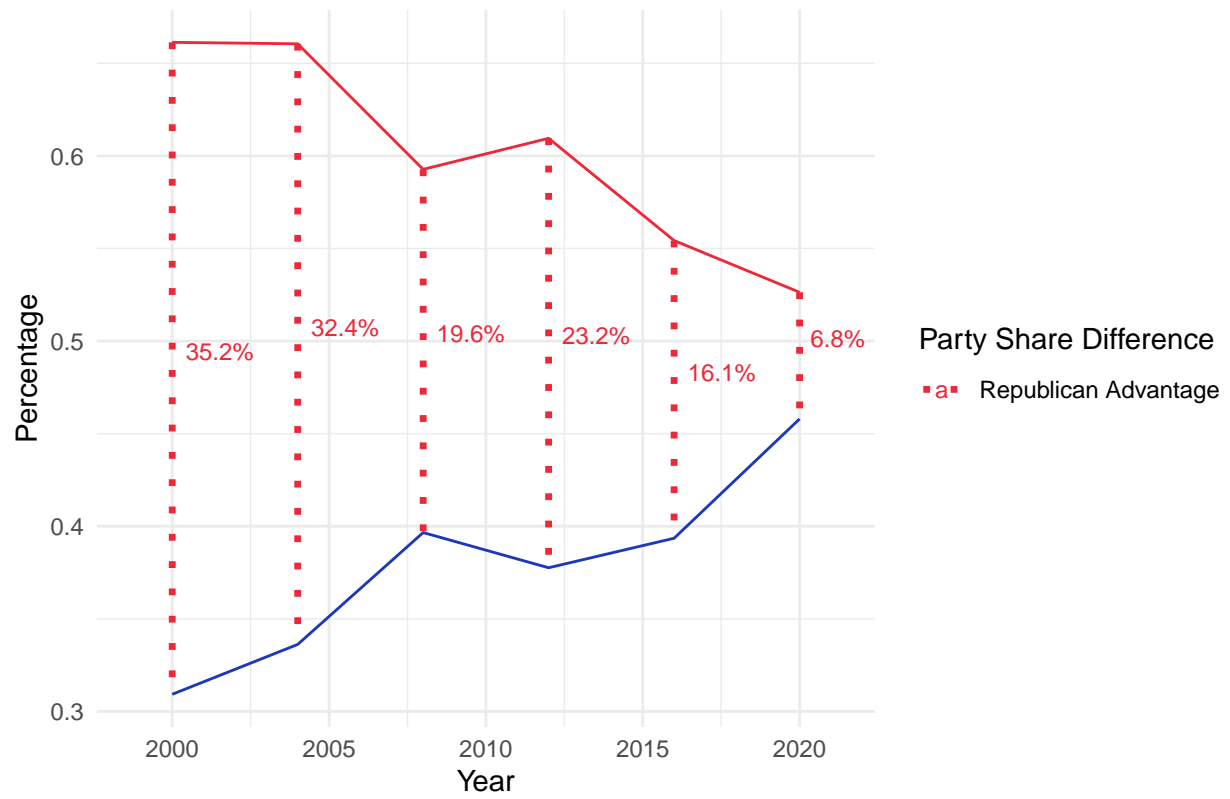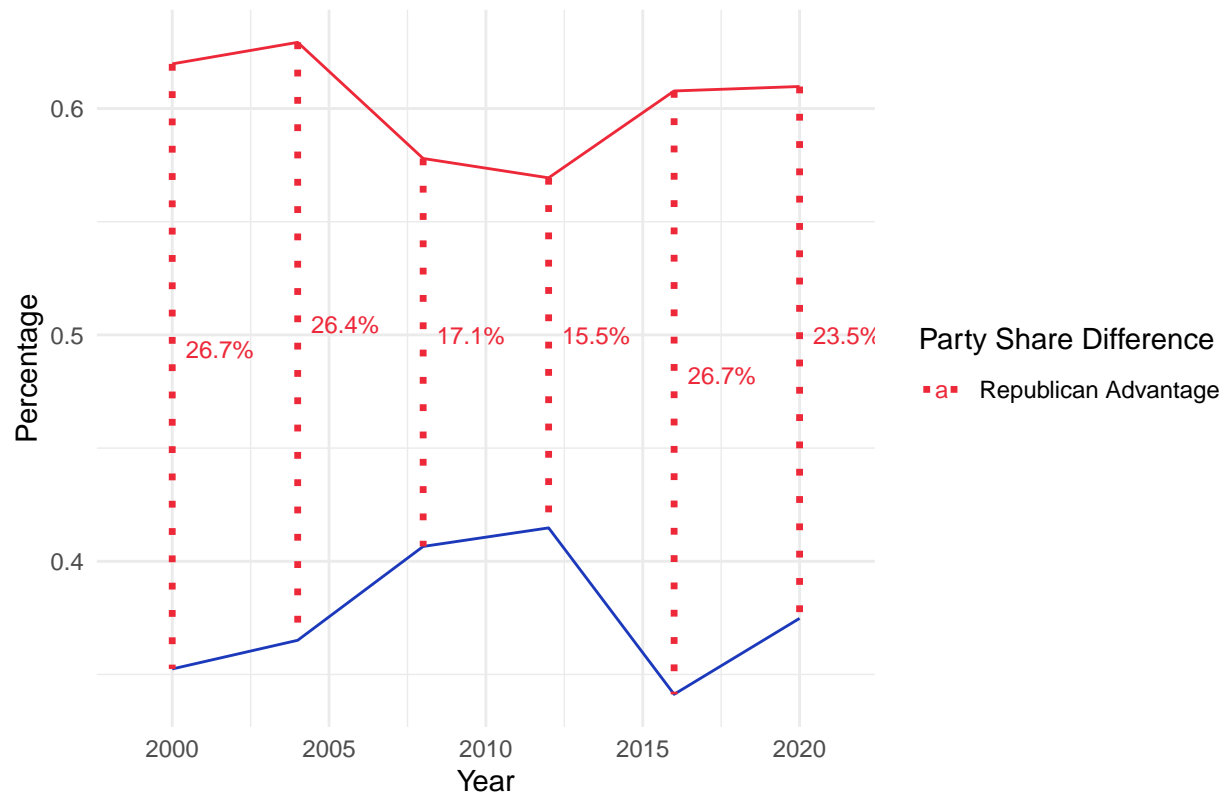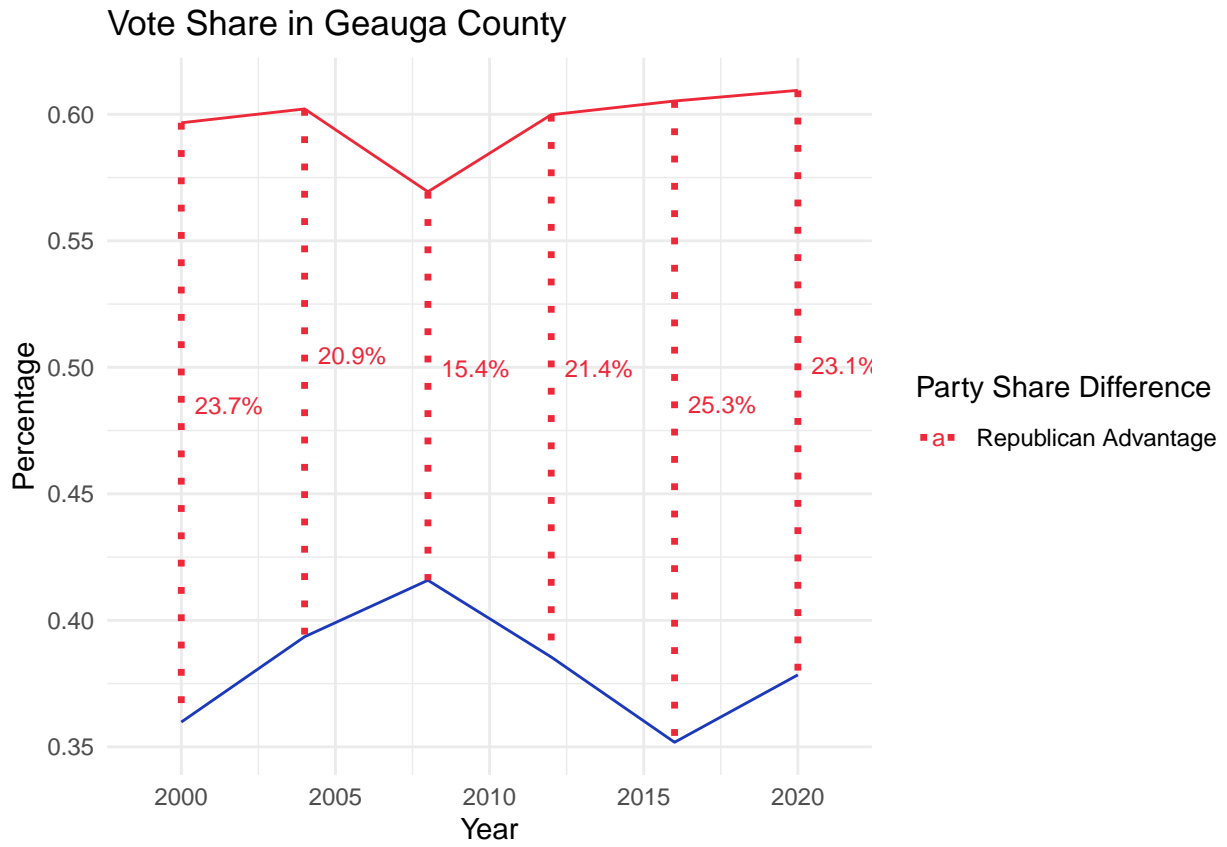
Vote Share in Butler County

Party Share Difference

■ a ■ Republican Advantage

29.4%   32.2%   22.6%   25.1%   24.0%

27.8%

Percentage

0.6

0.5

0.4

2000   2005   2010   2015   2020

Year

Vote Share in Clermont County

Vote Share in Delaware County

35.2%   32.4%   19.6%   23.2%   6.8%
                            16.1%

Percentage

Year

Party Share Difference

a ▪ Republican Advantage

Vote Share in Fairfield County

Vote Share in Geauga County
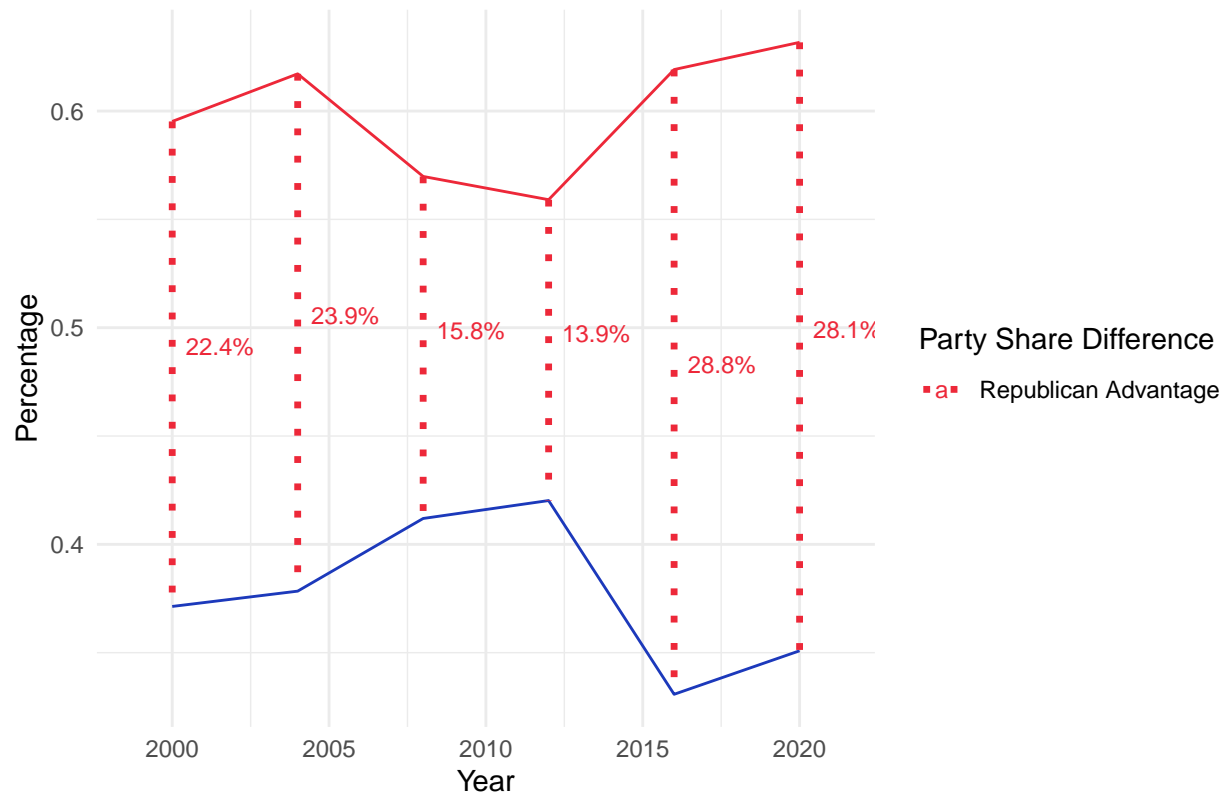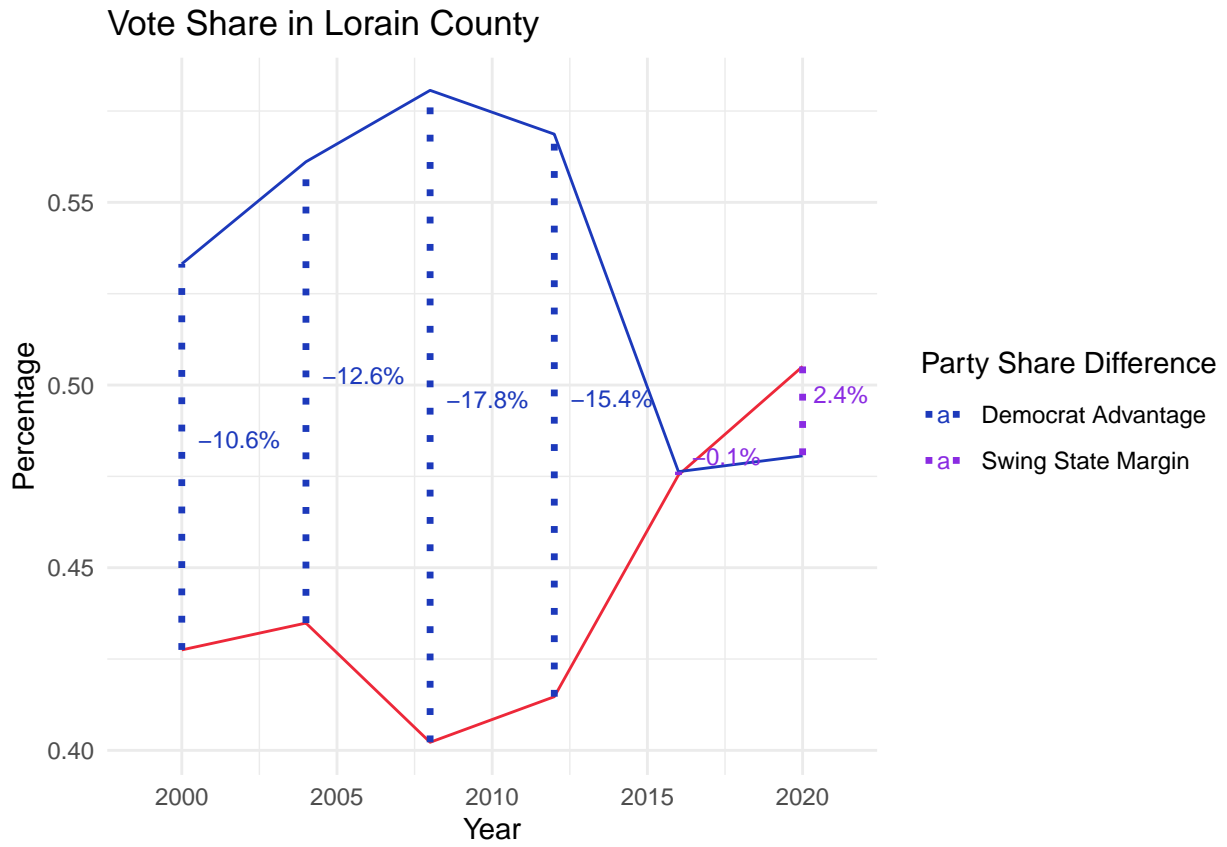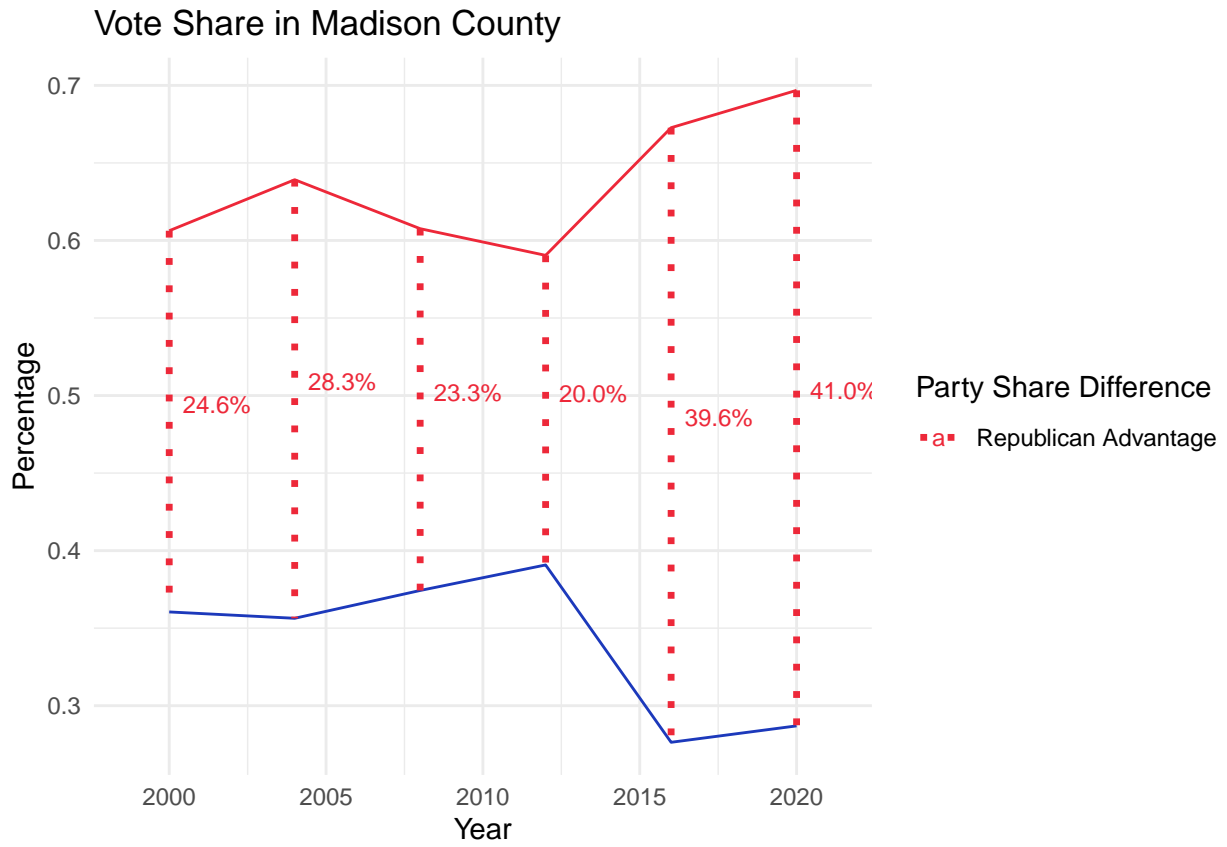
Vote Share in Lake County
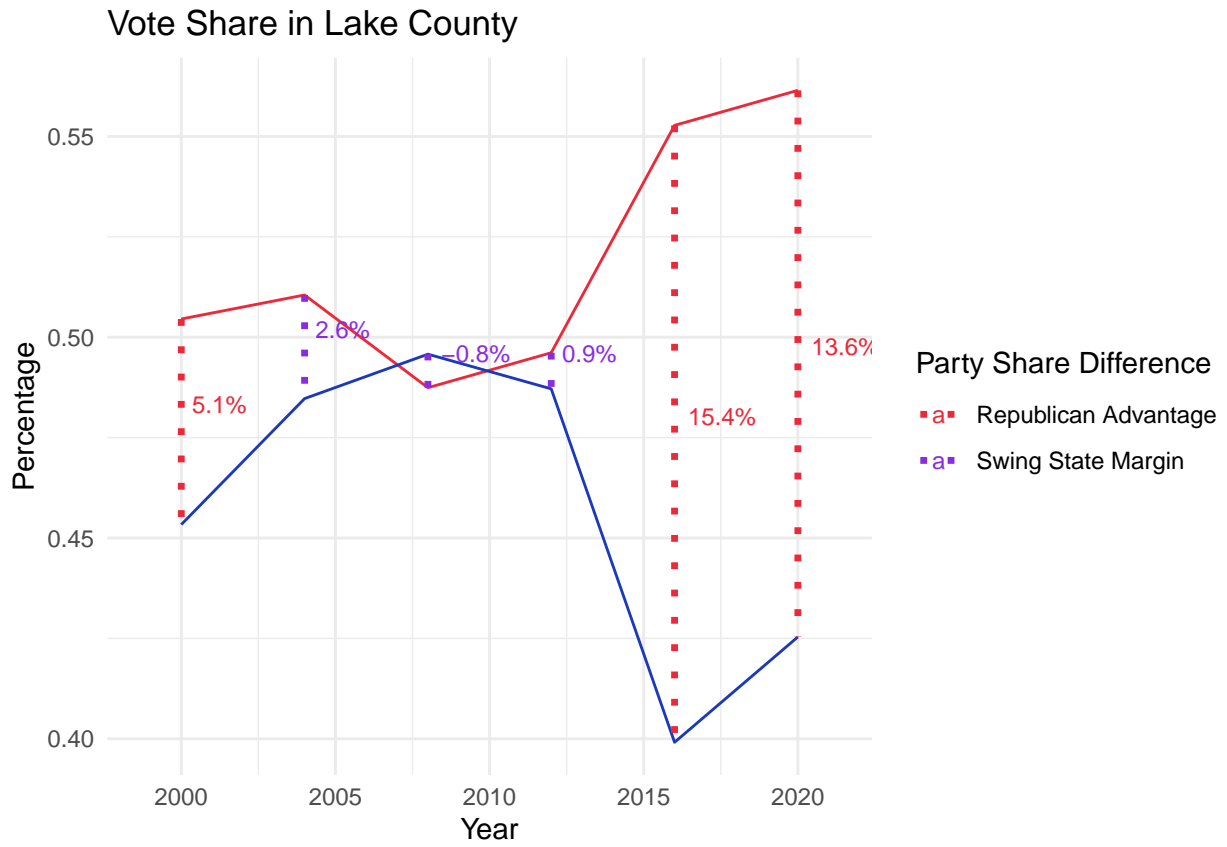
Vote Share in Licking County

Vote Share in Lorain County

−10.6%

−12.6%

−17.8%   −15.4%

−0.1%

2.4%

Party Share Difference

▪a▪ Democrat Advantage

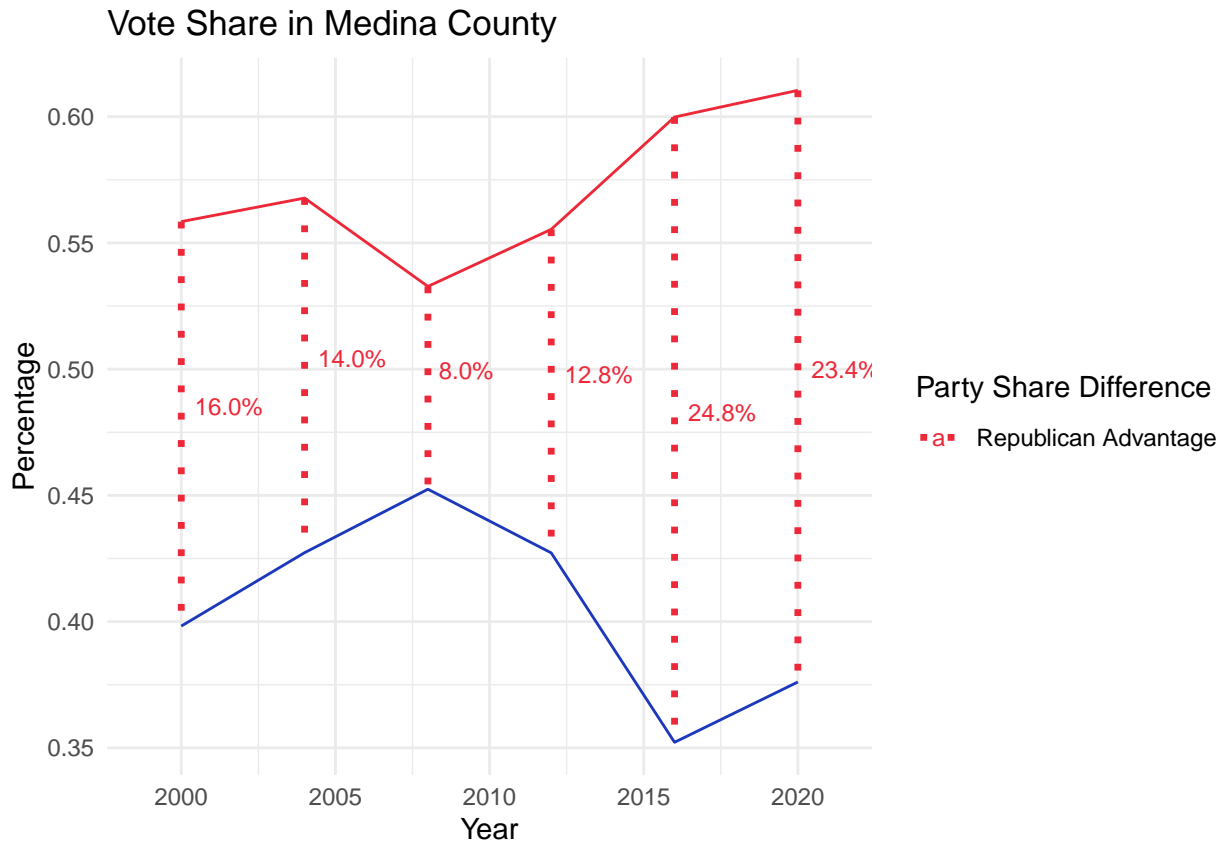▪a▪ Swing State Margin

Percentage

Year

Vote Share in Madison County

Vote Share in Medina County
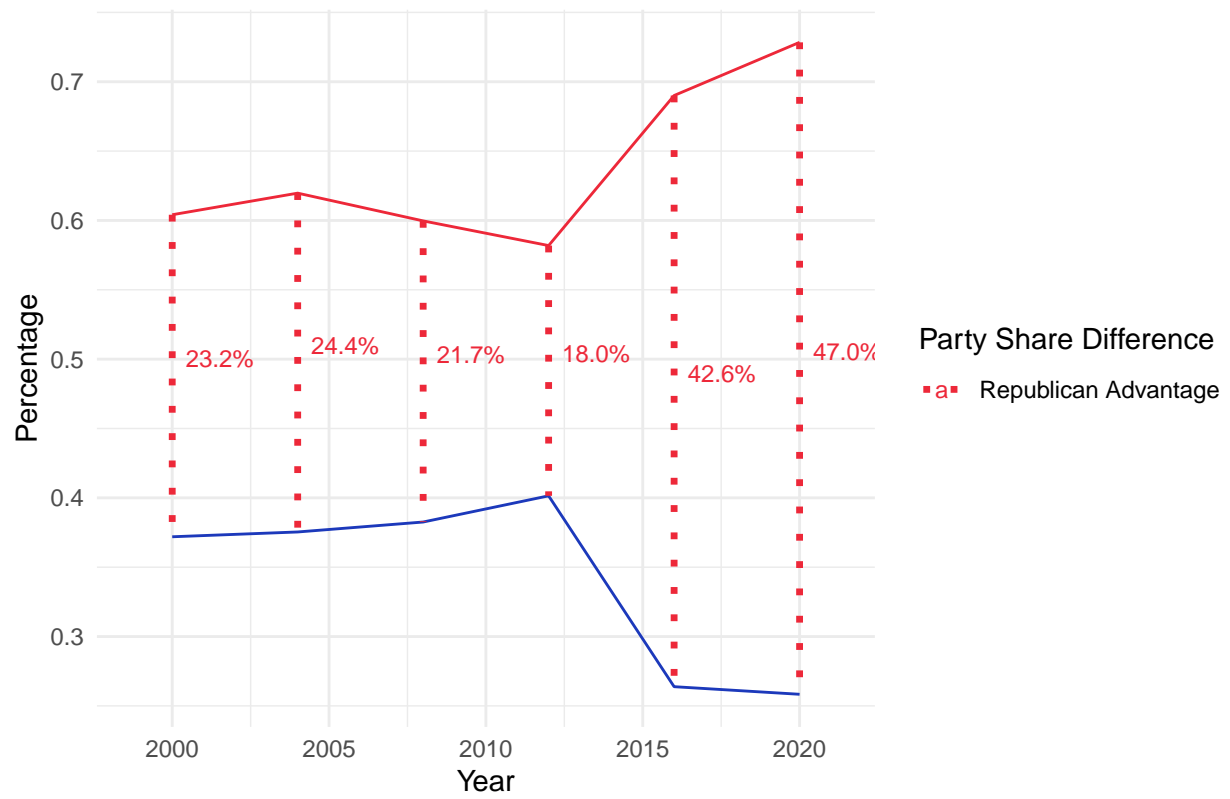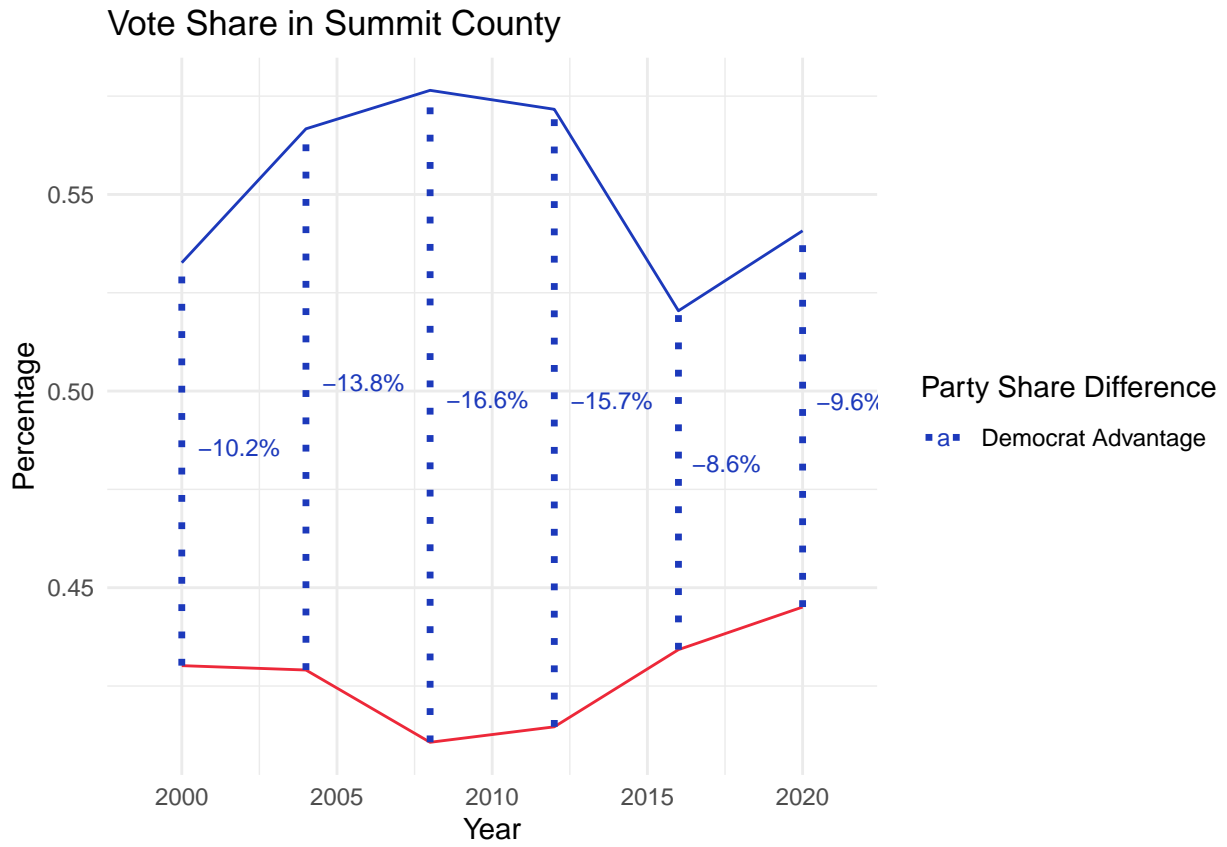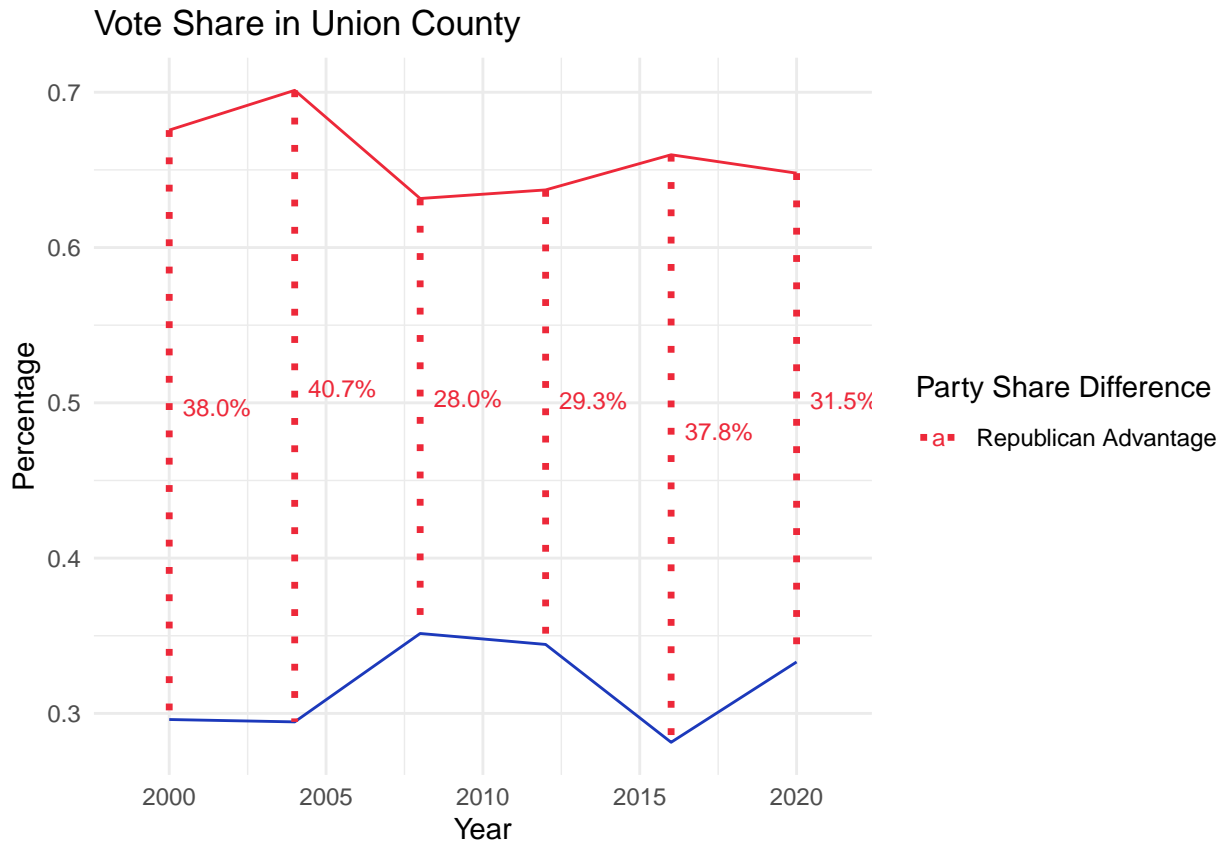
Vote Share in Pickaway County

Vote Share in Summit County

Vote Share in Union County

Vote Share in Warren County