

# Preliminary Unemployment Visualizations

John McCormick

2023-11-07

```
## -- 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 errors
## 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

```
# 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)

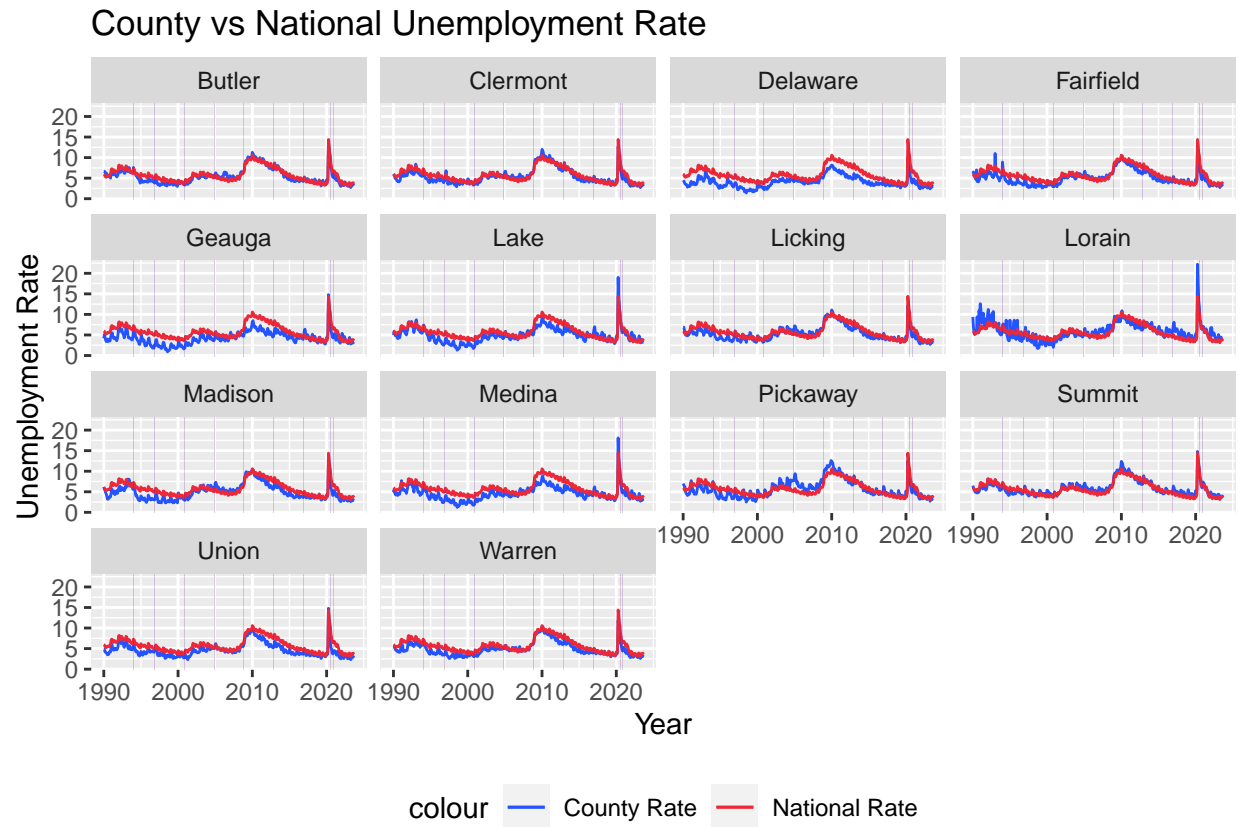
# Now, join this national rate back to the combined data
combinedData <- combinedData %>%
  left_join(national_rates, by = c("Label" = "Label"))

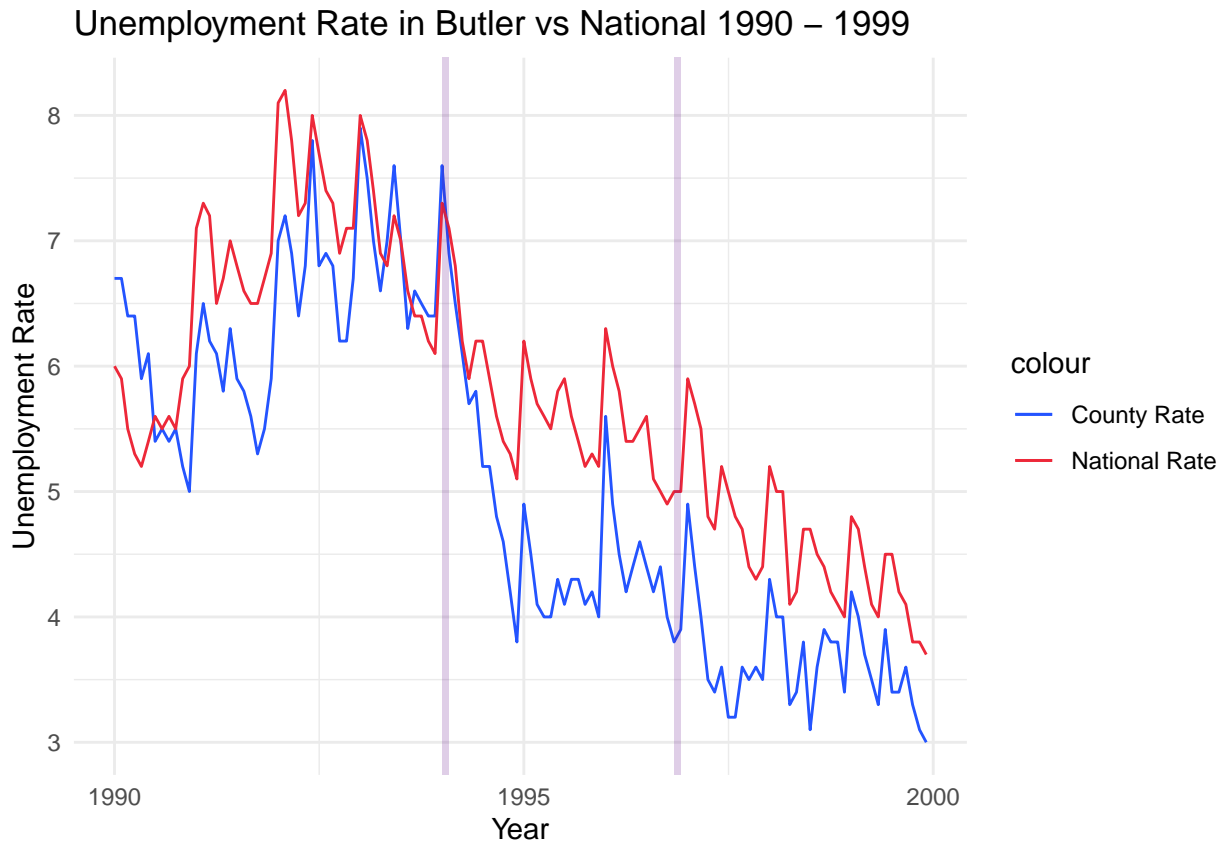
# Subtract the national rate from each county's rate
combinedData <- combinedData %>%
  mutate(relative_unemployment_rate = Value - rate)

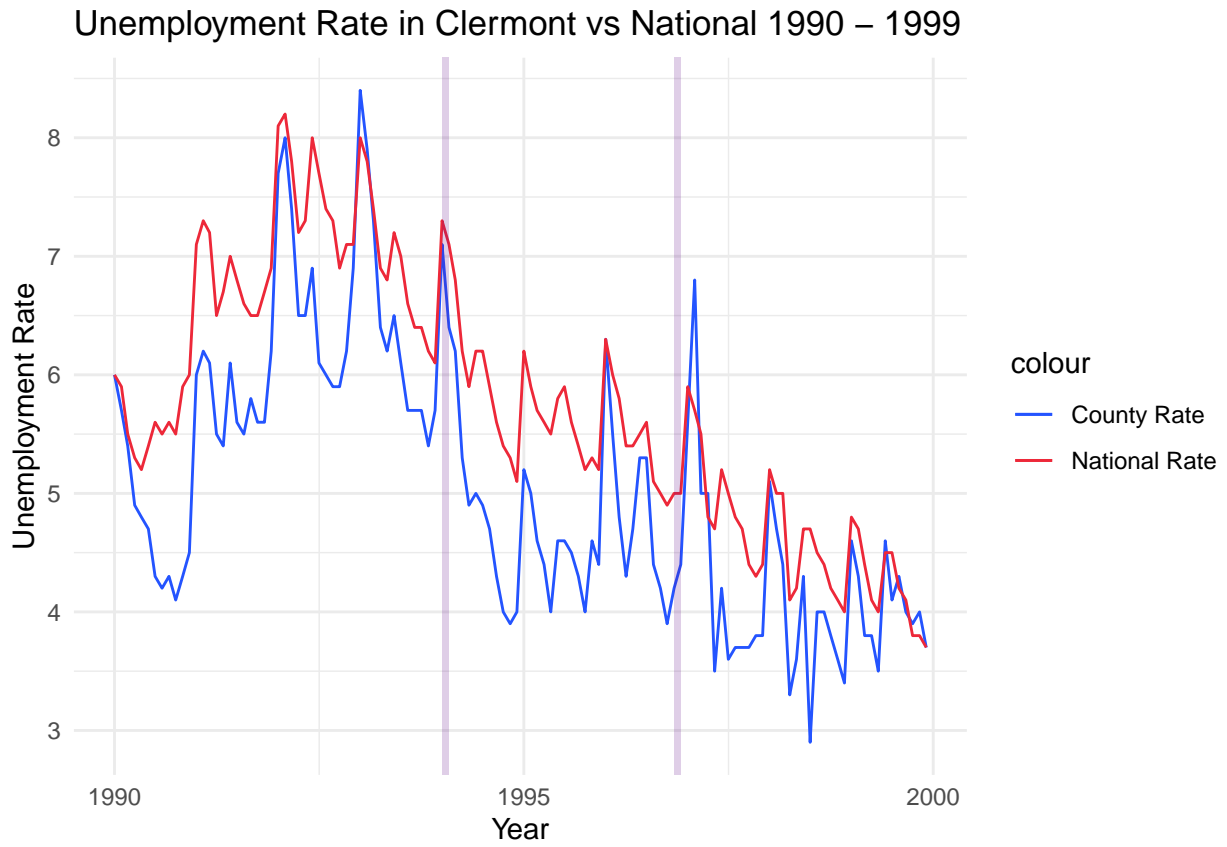
# Remove the national data if you no longer need it for the map
combinedData <- combinedData %>%
  filter(County != "National")

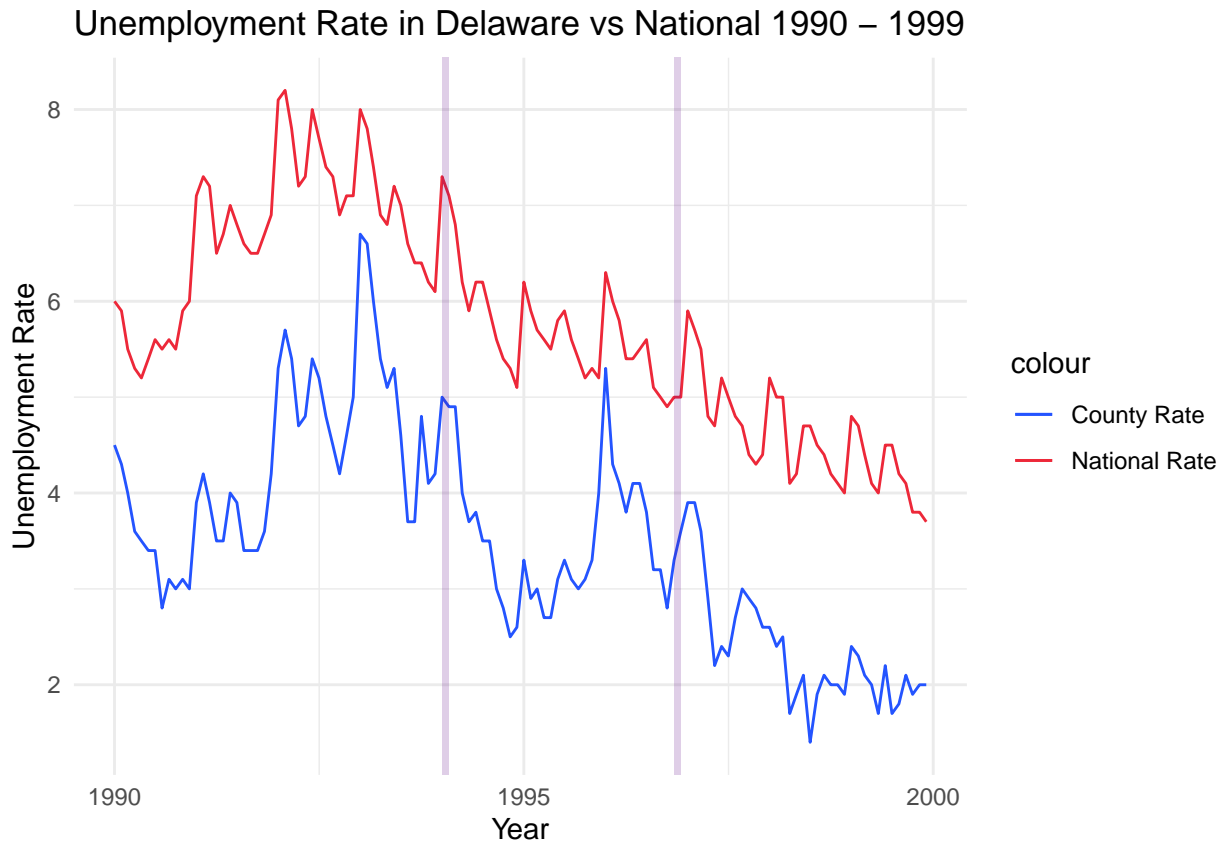
# Merge the spatial data with the filtered unemployment data
ohio_unemployment <- ohio_counties %>%
  left_join(combinedData, by = c("NAME" = "County"))
```

```
# 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()
```

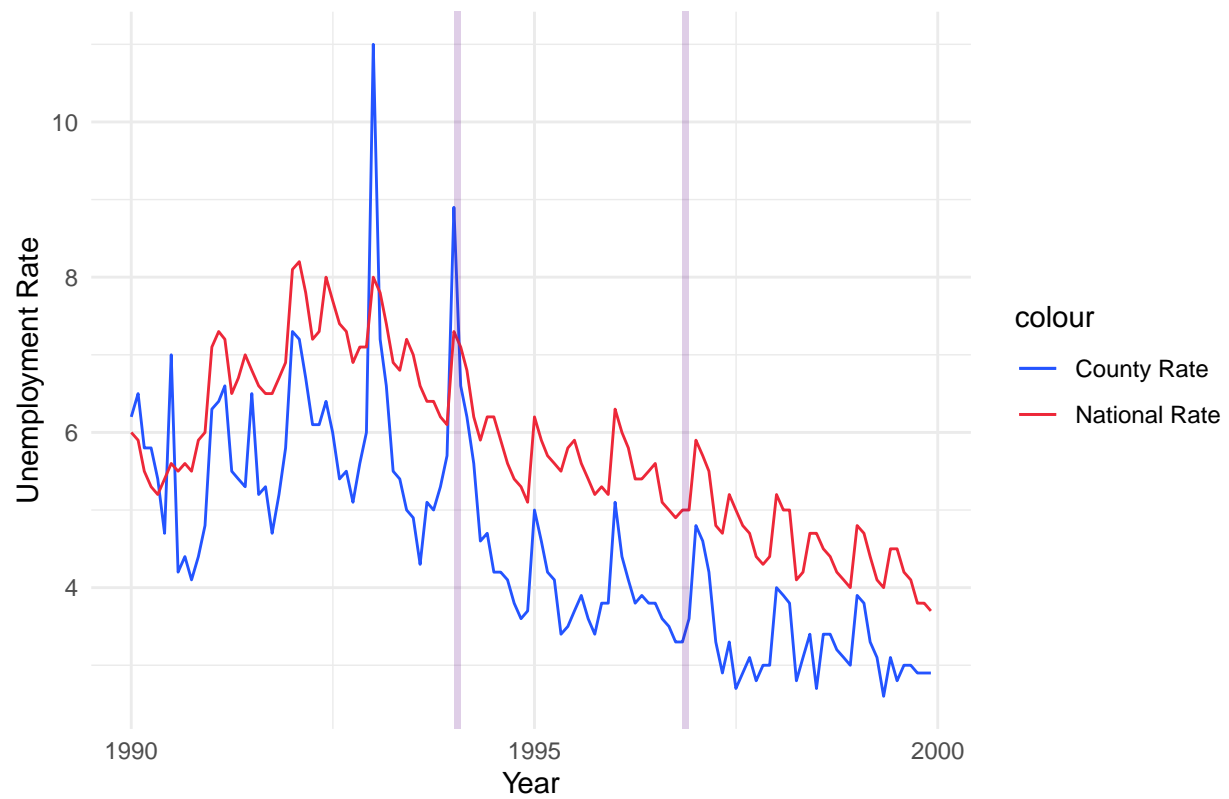


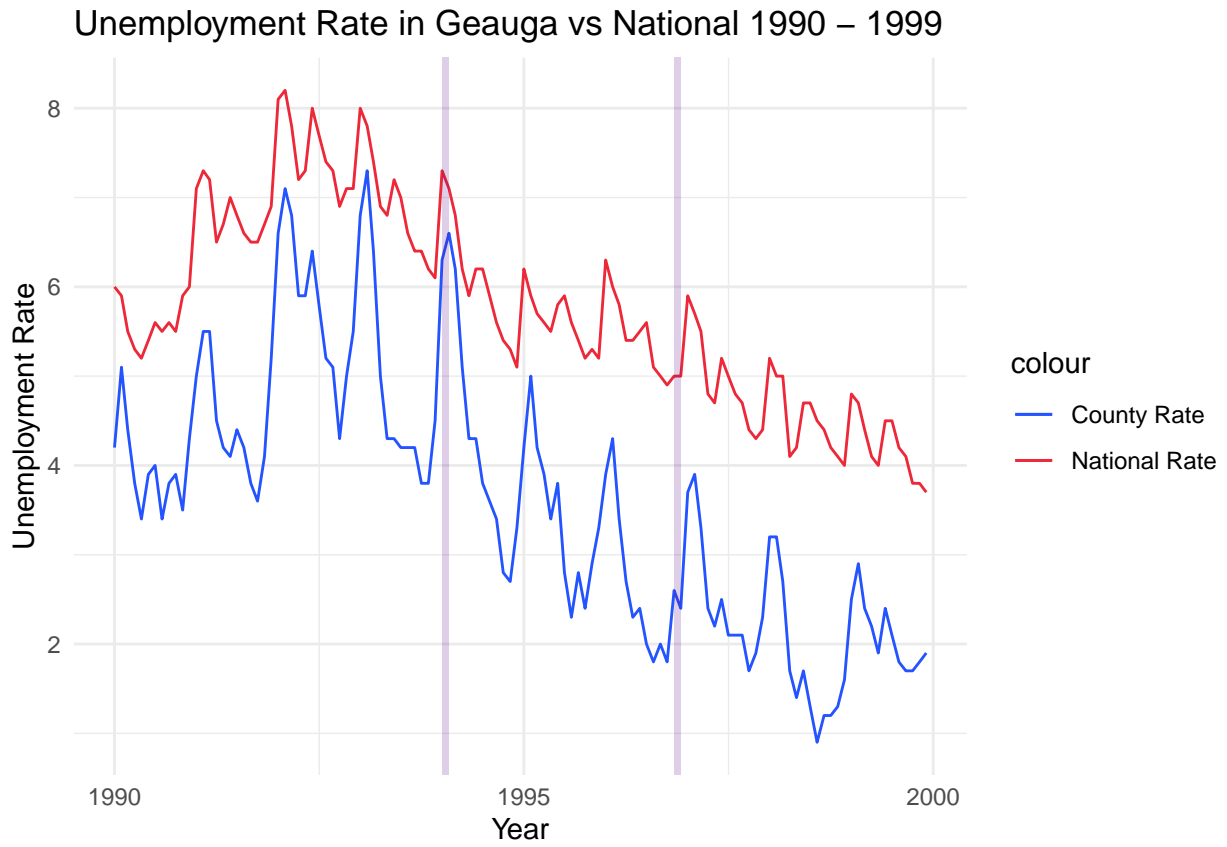




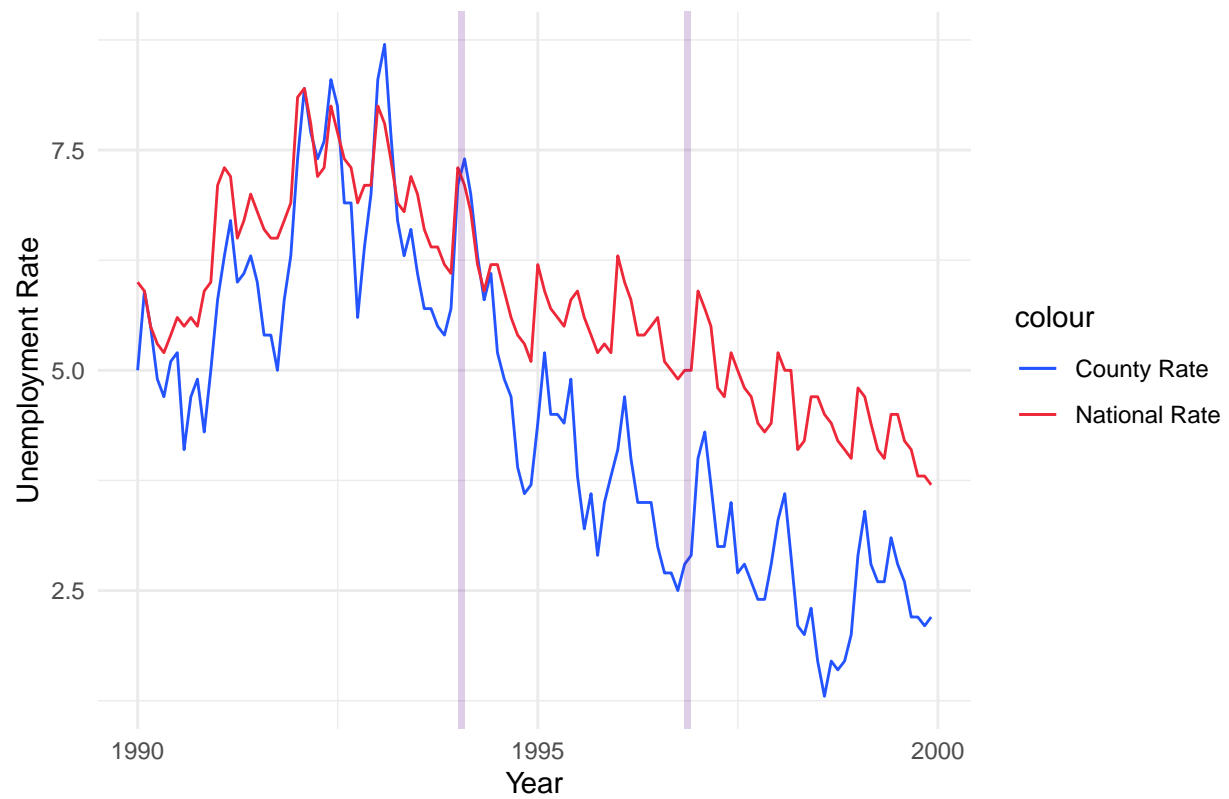


Unemployment Rate in Fairfield vs National 1990 – 1999

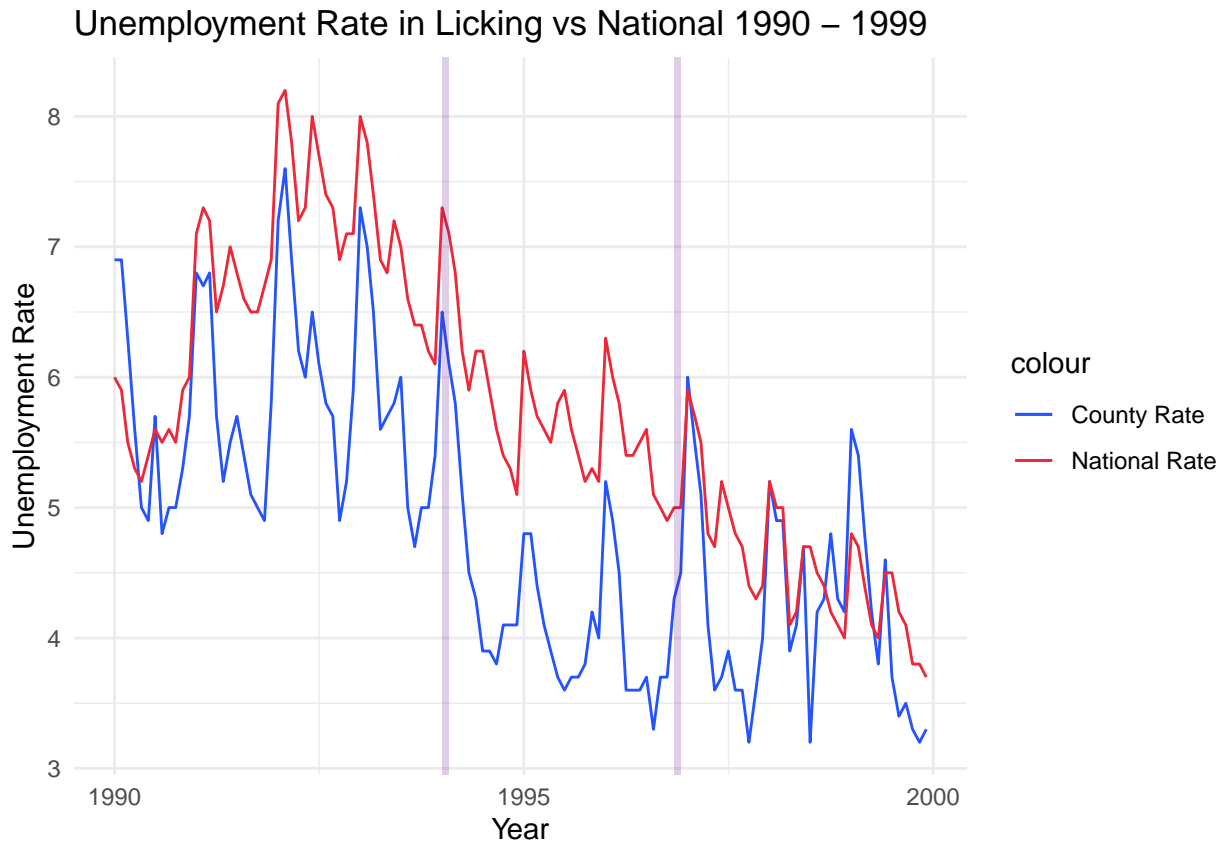


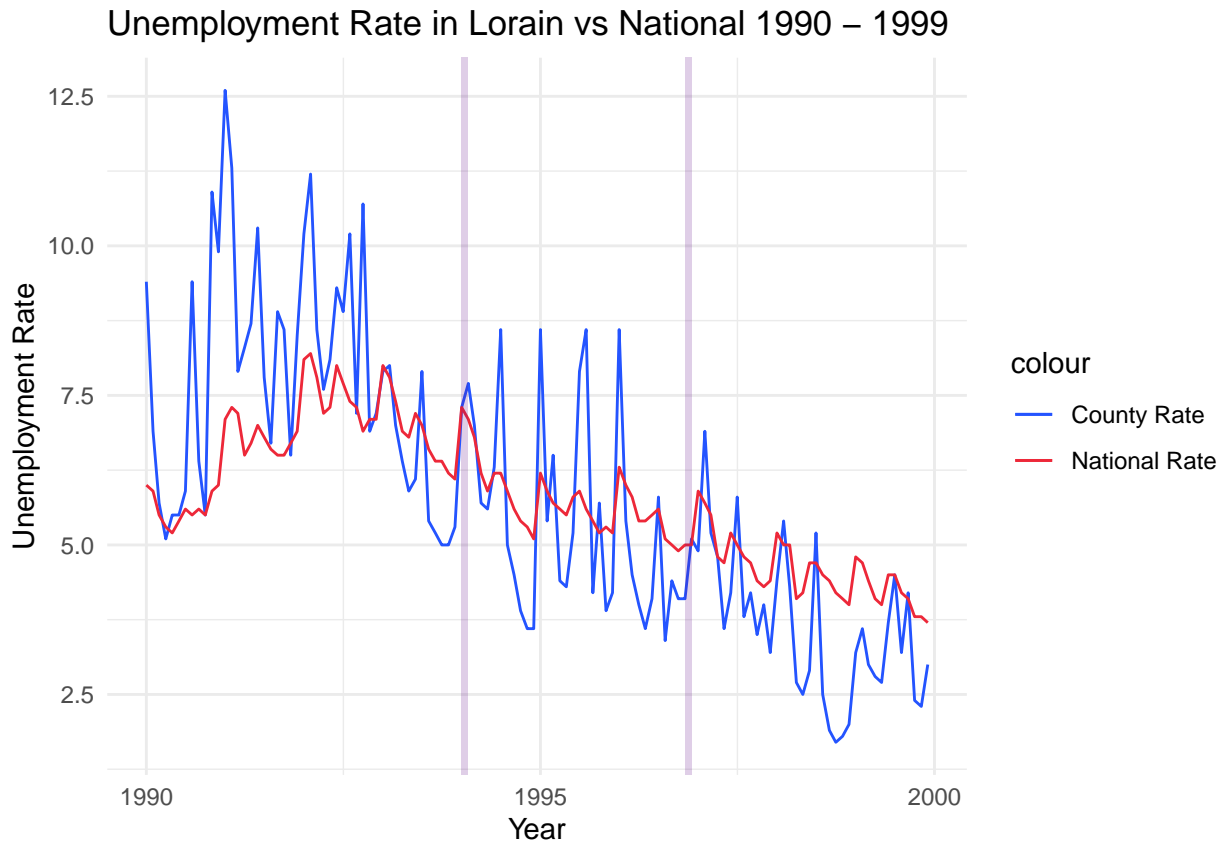


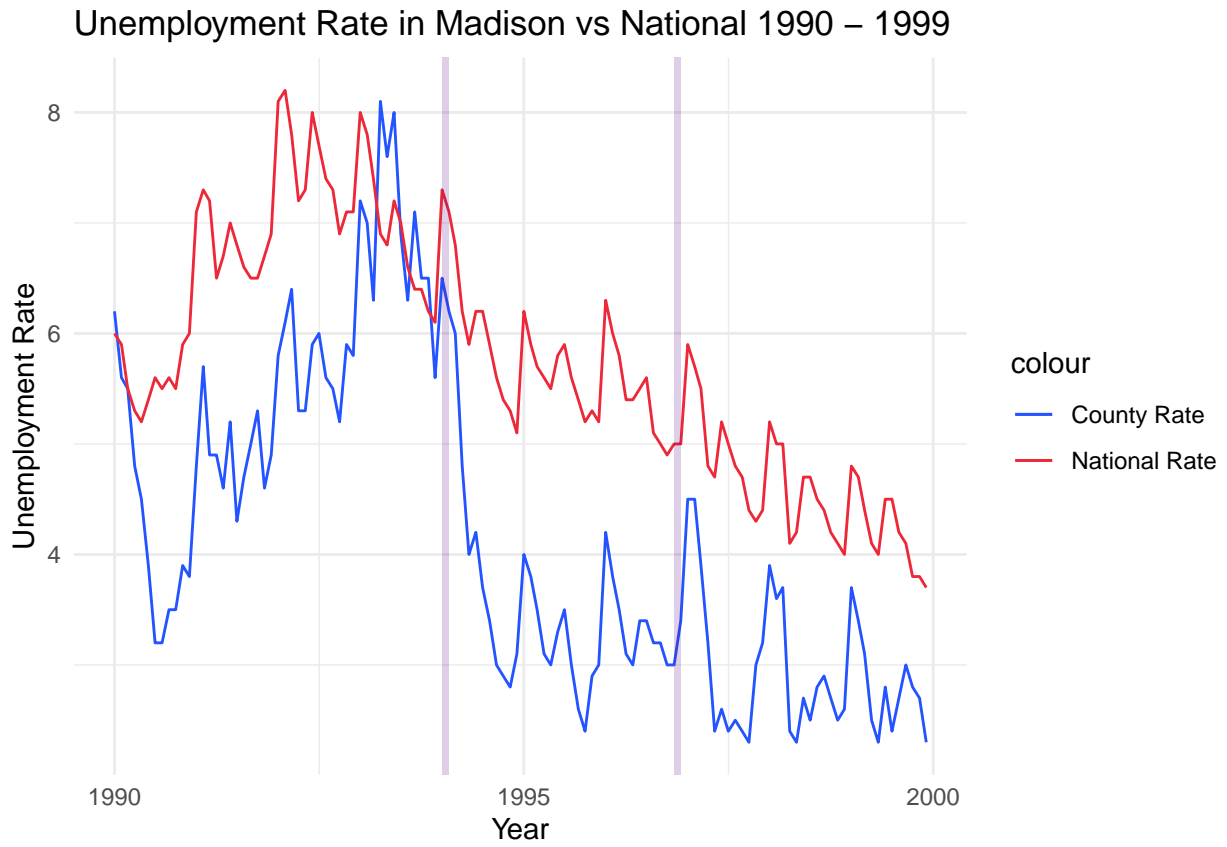
Unemployment Rate in Lake vs National 1990 – 1999

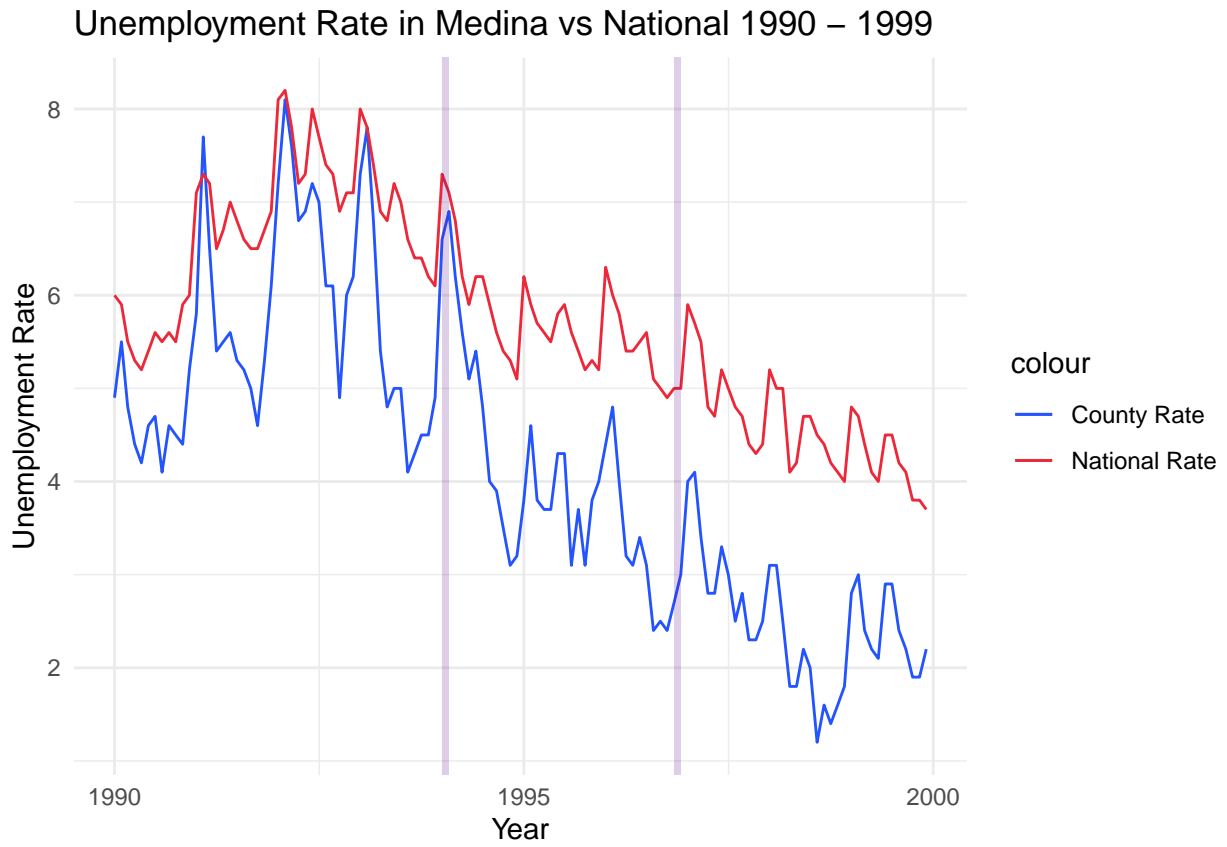


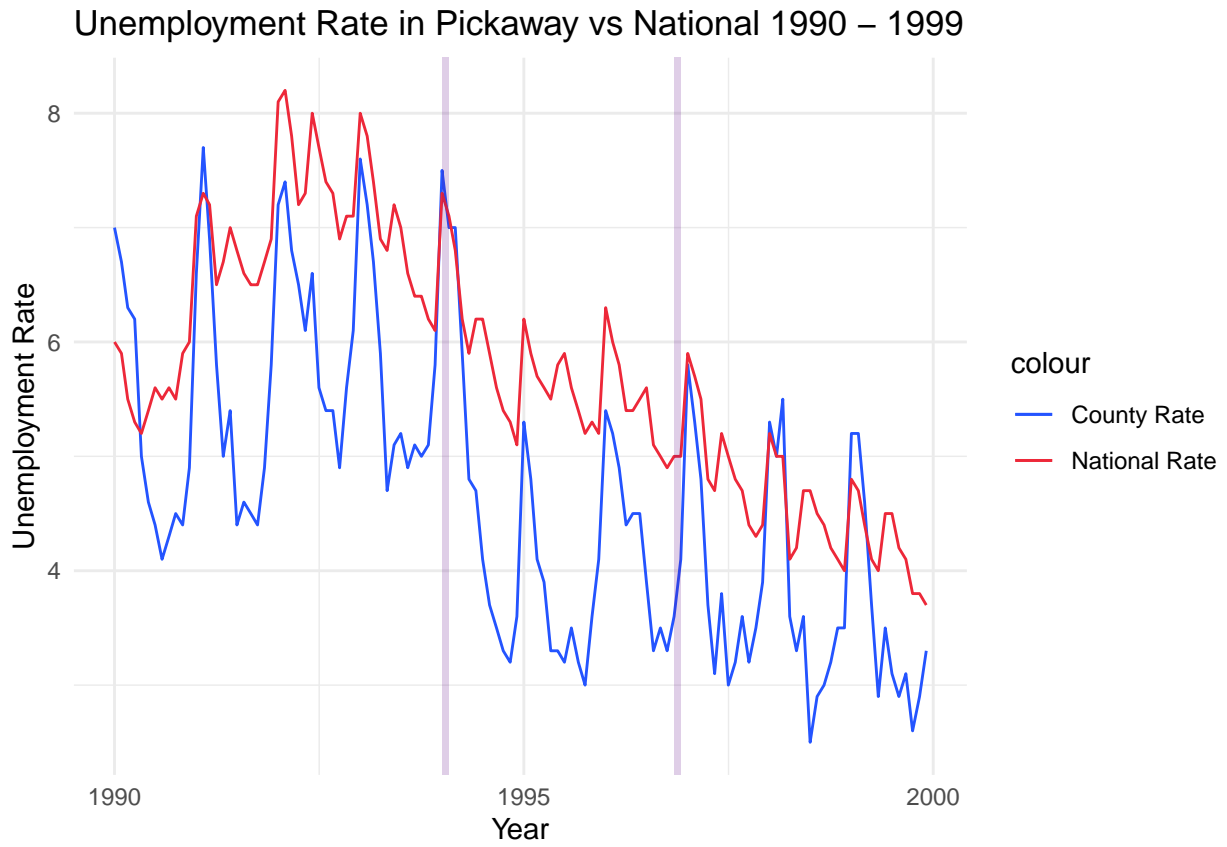


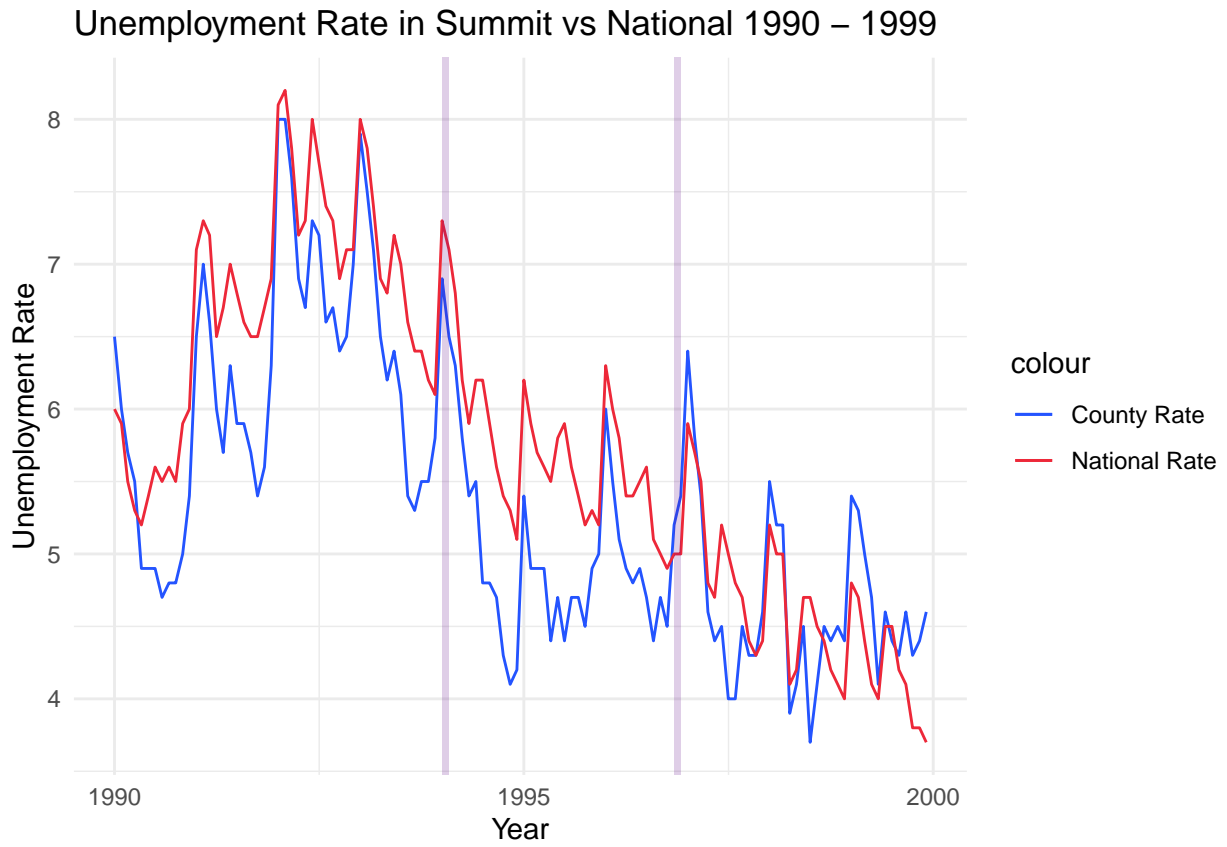


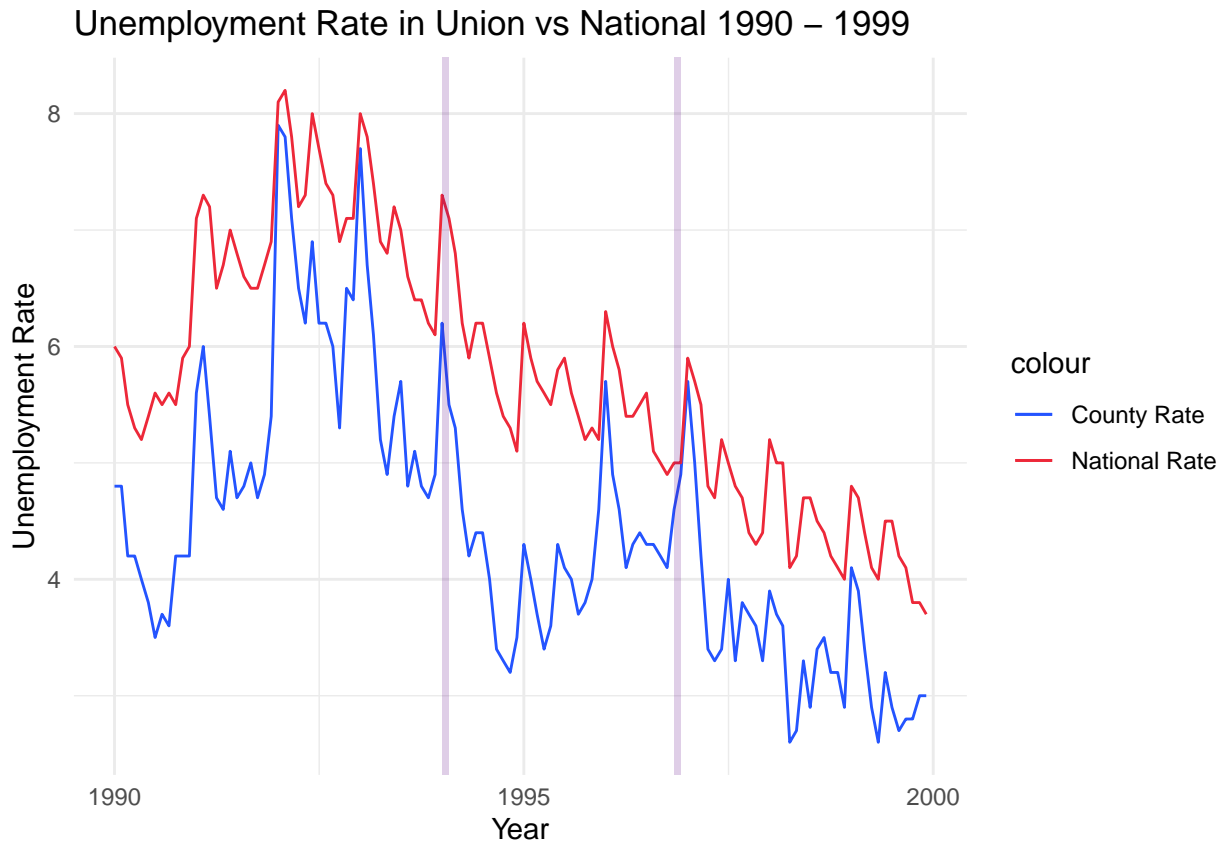


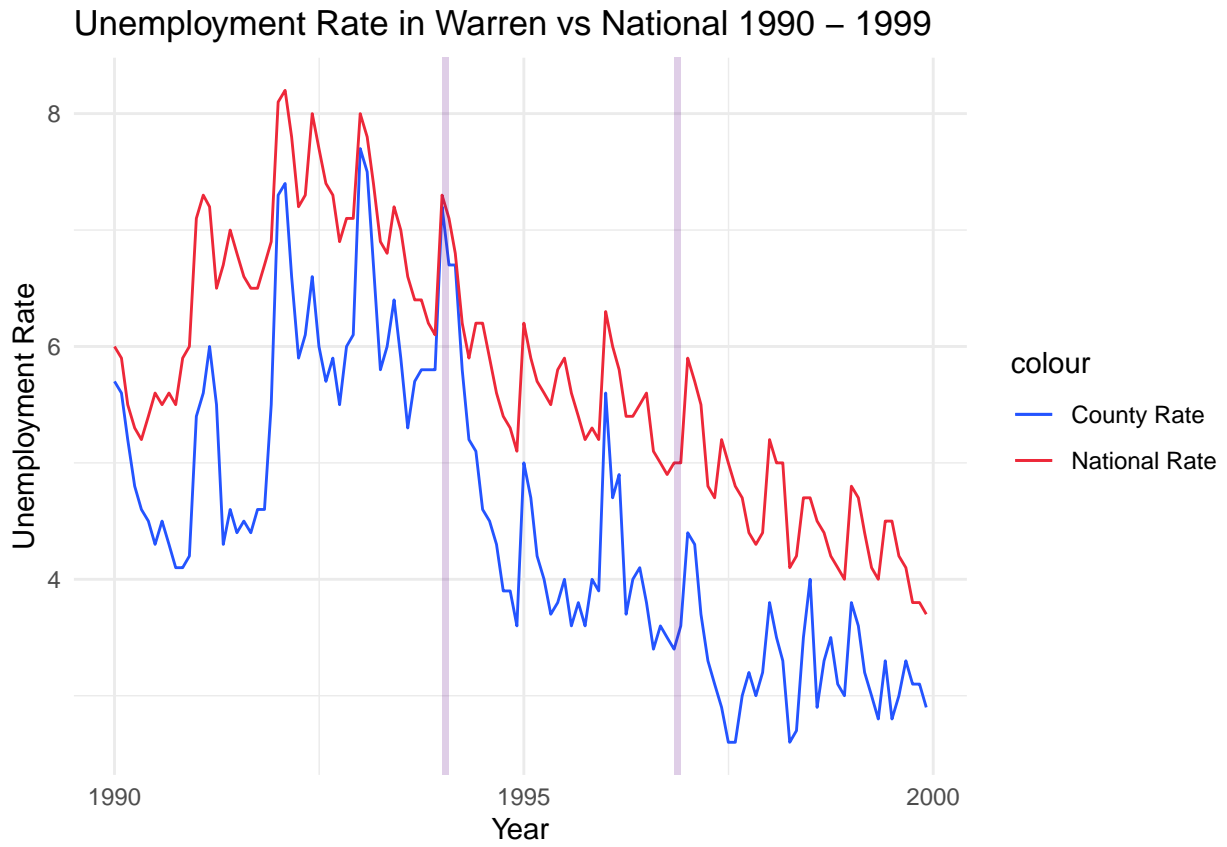






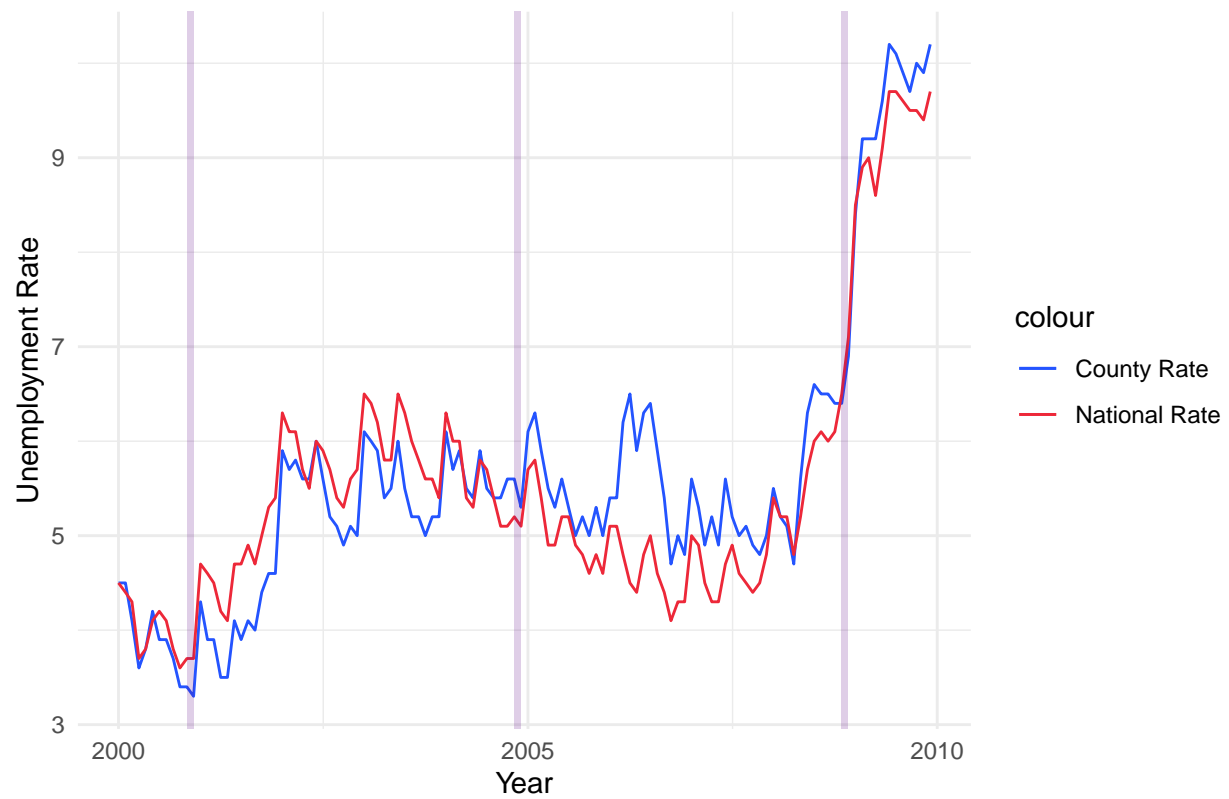




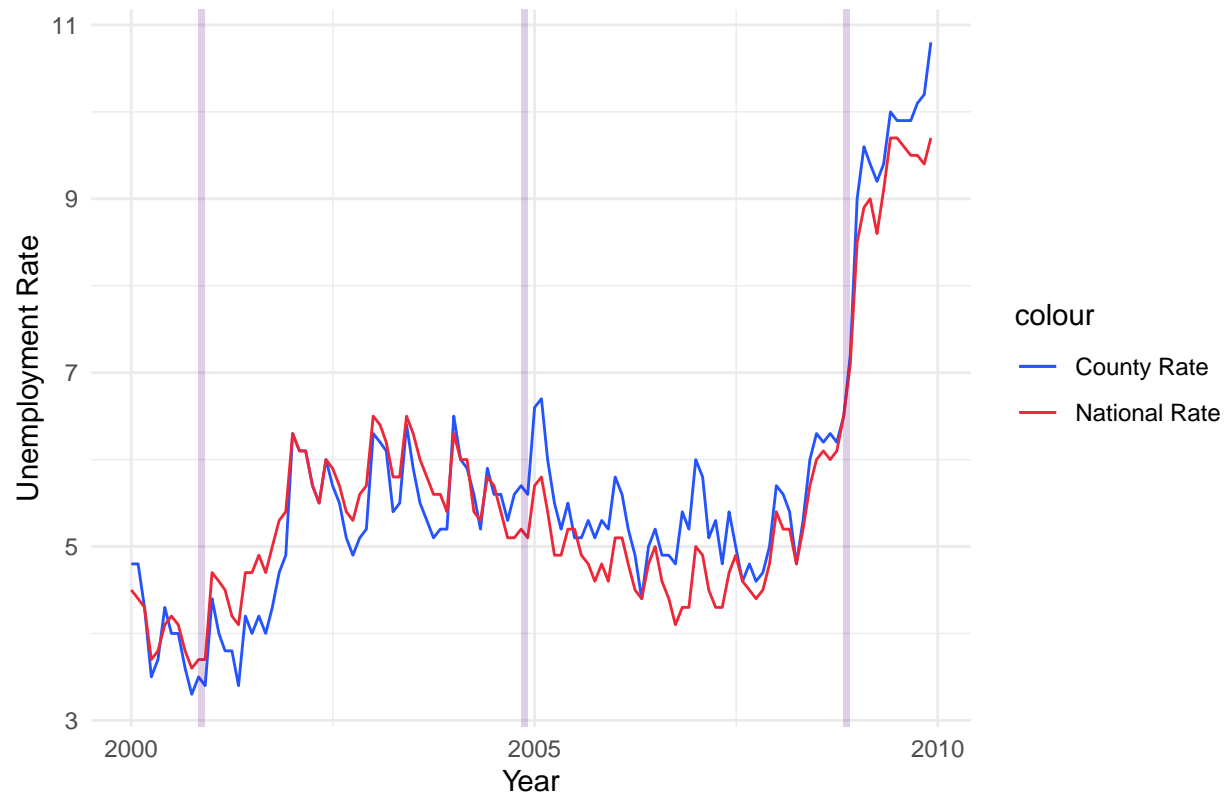


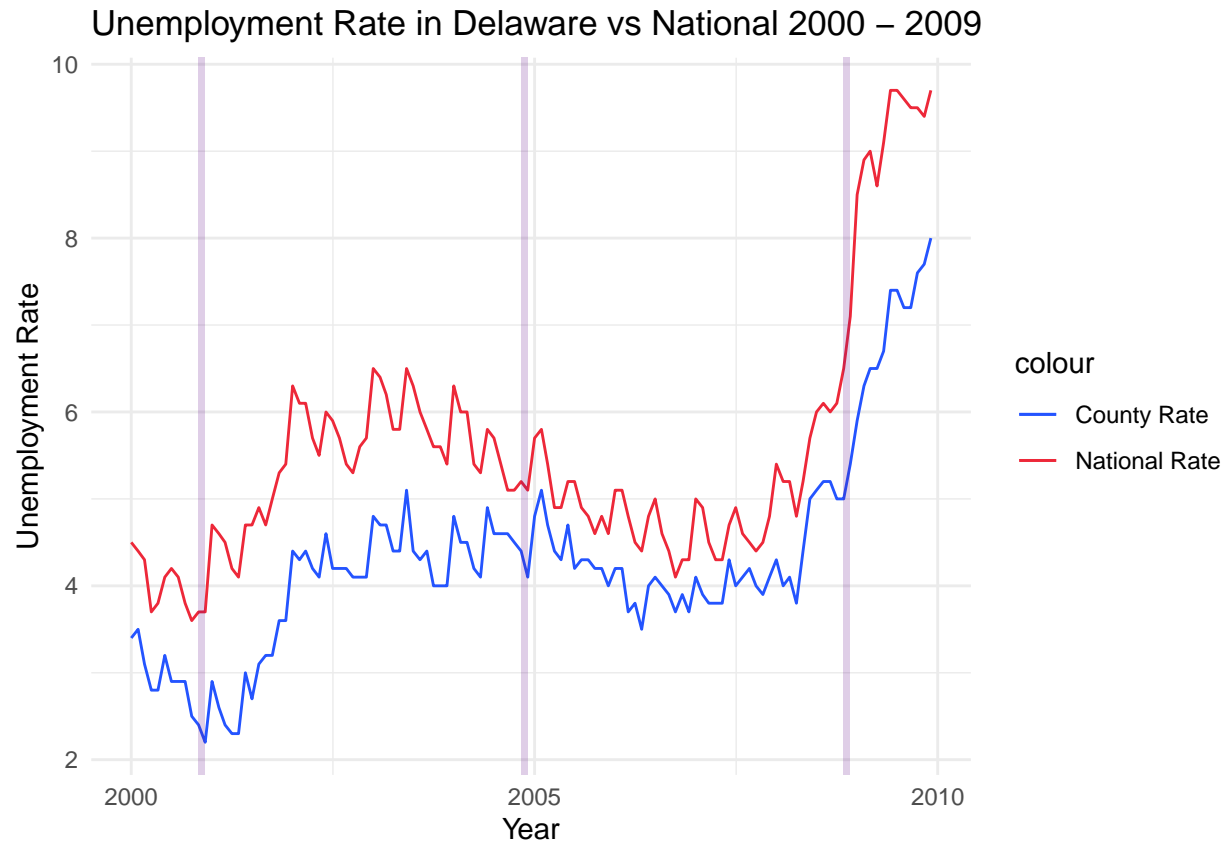


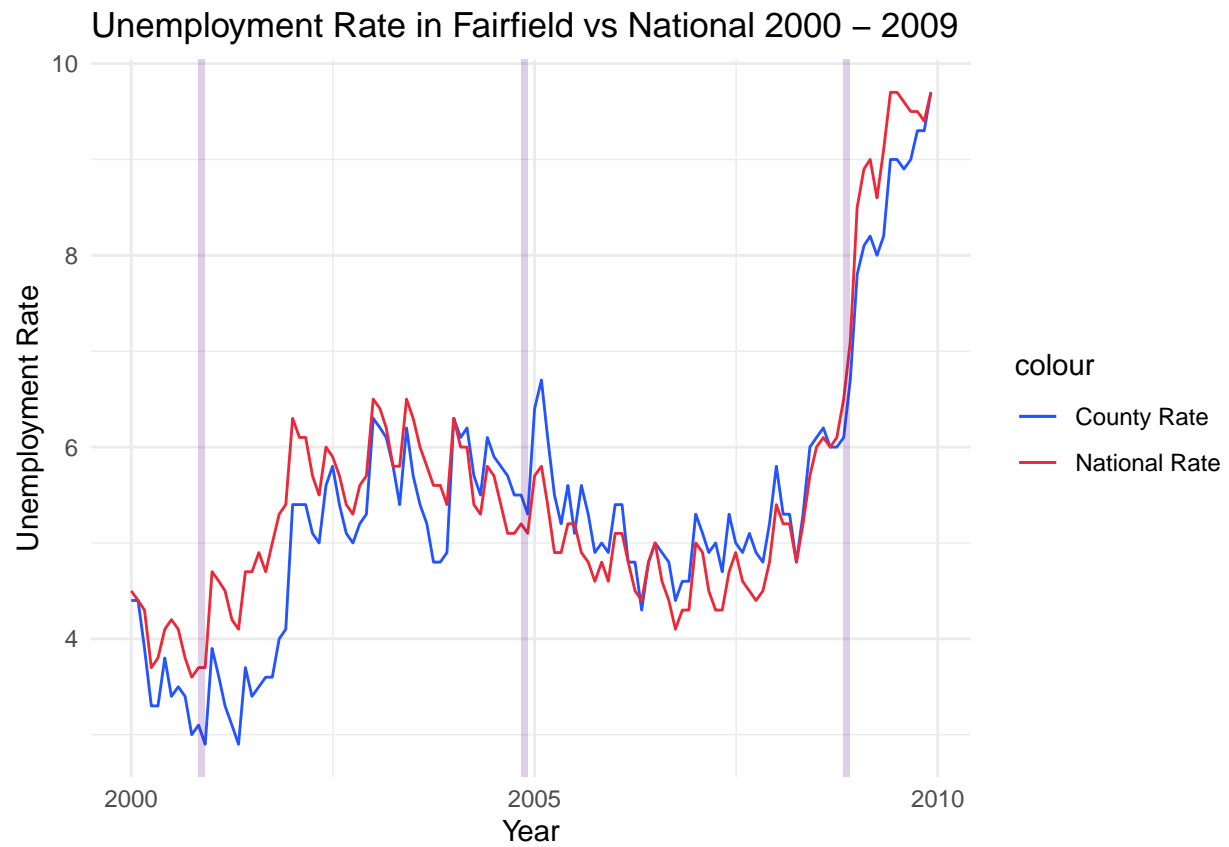
Unemployment Rate in Butler vs National 2000 – 2009

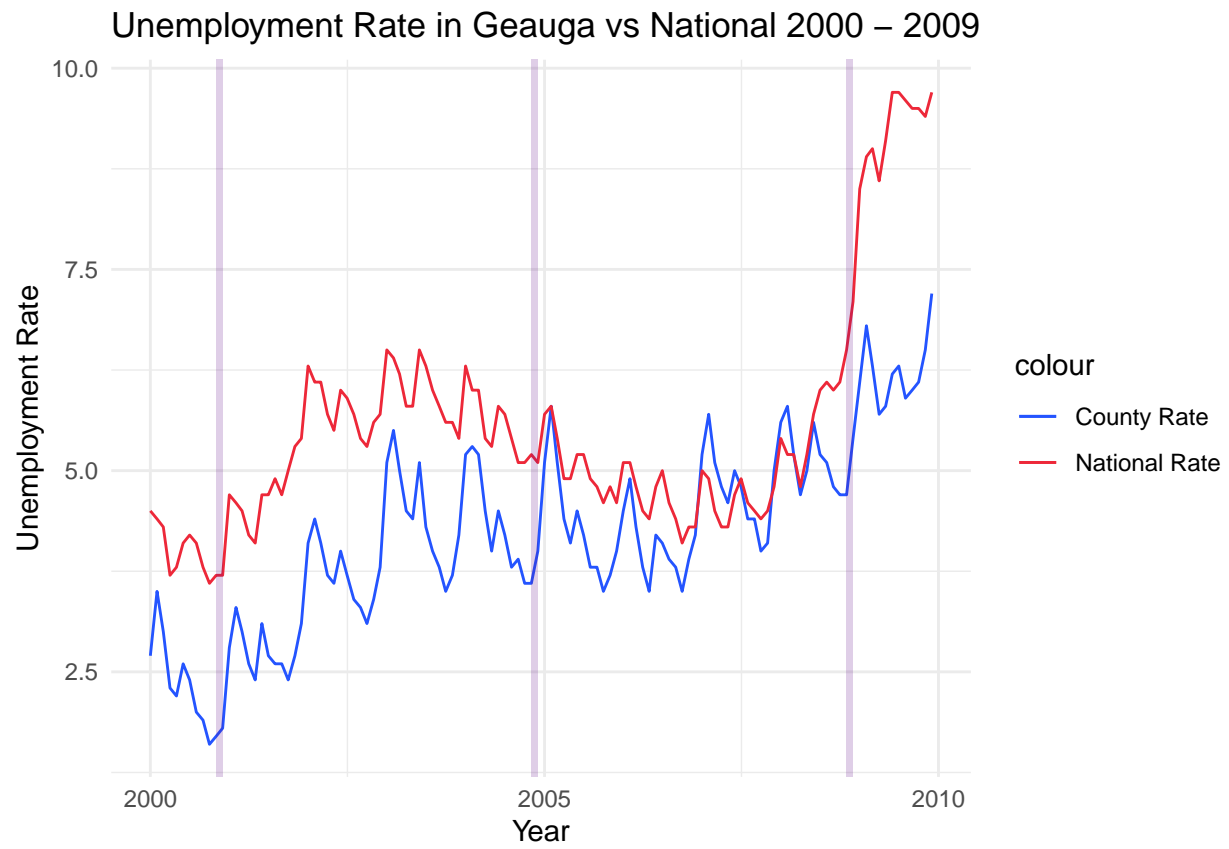


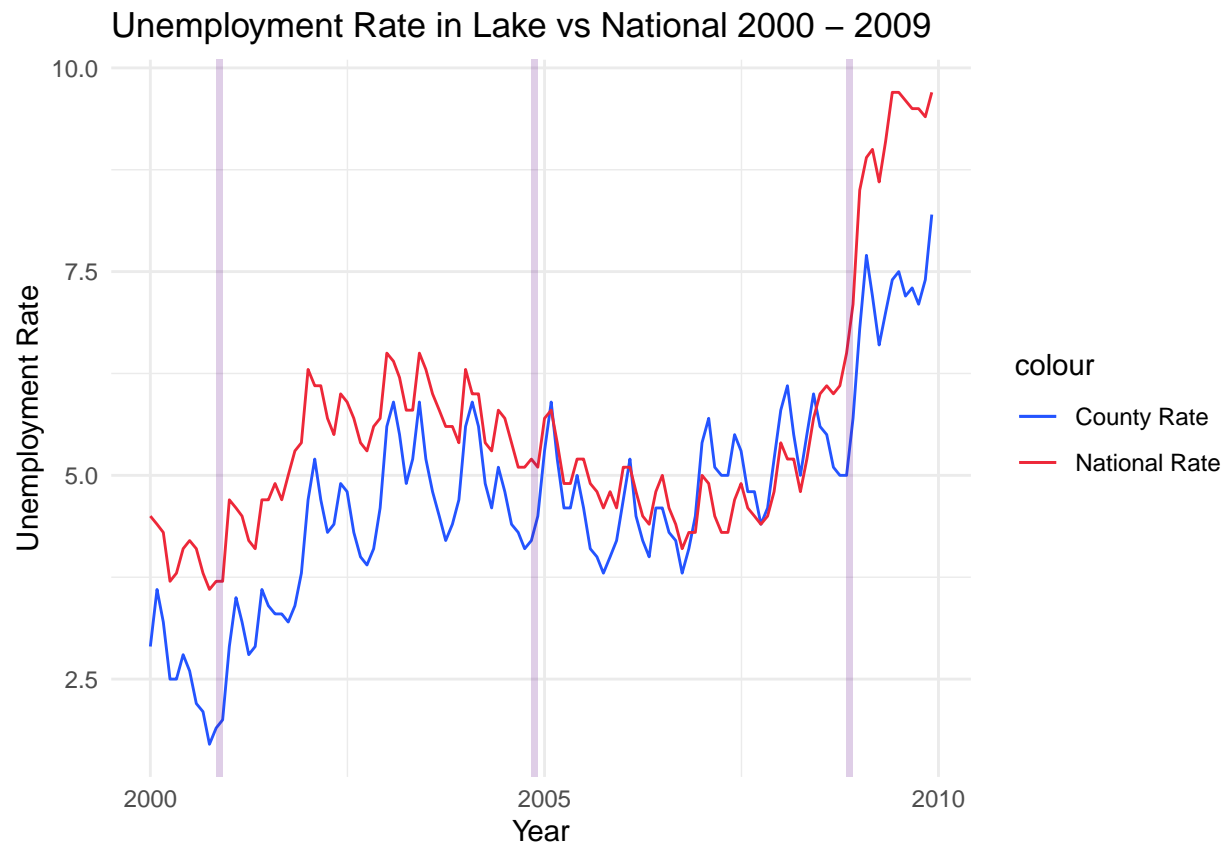
Unemployment Rate in Clermont vs National 2000 – 2009



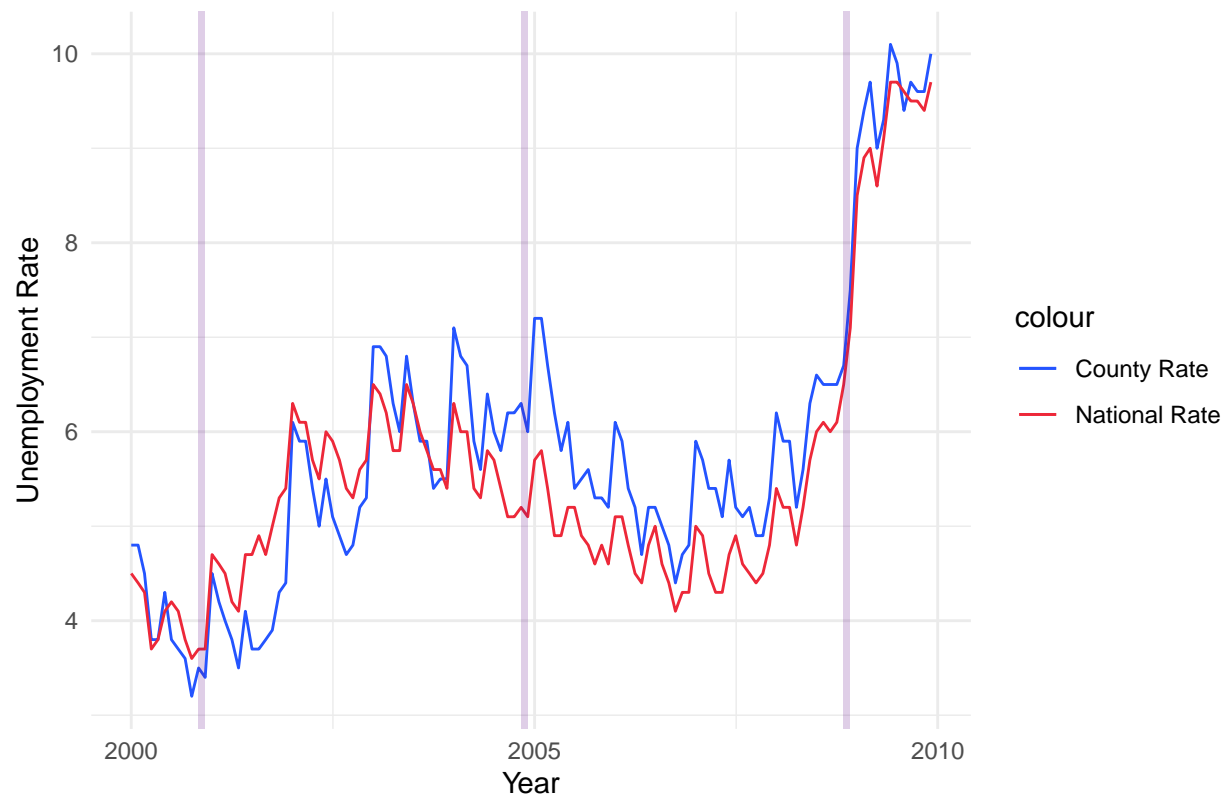


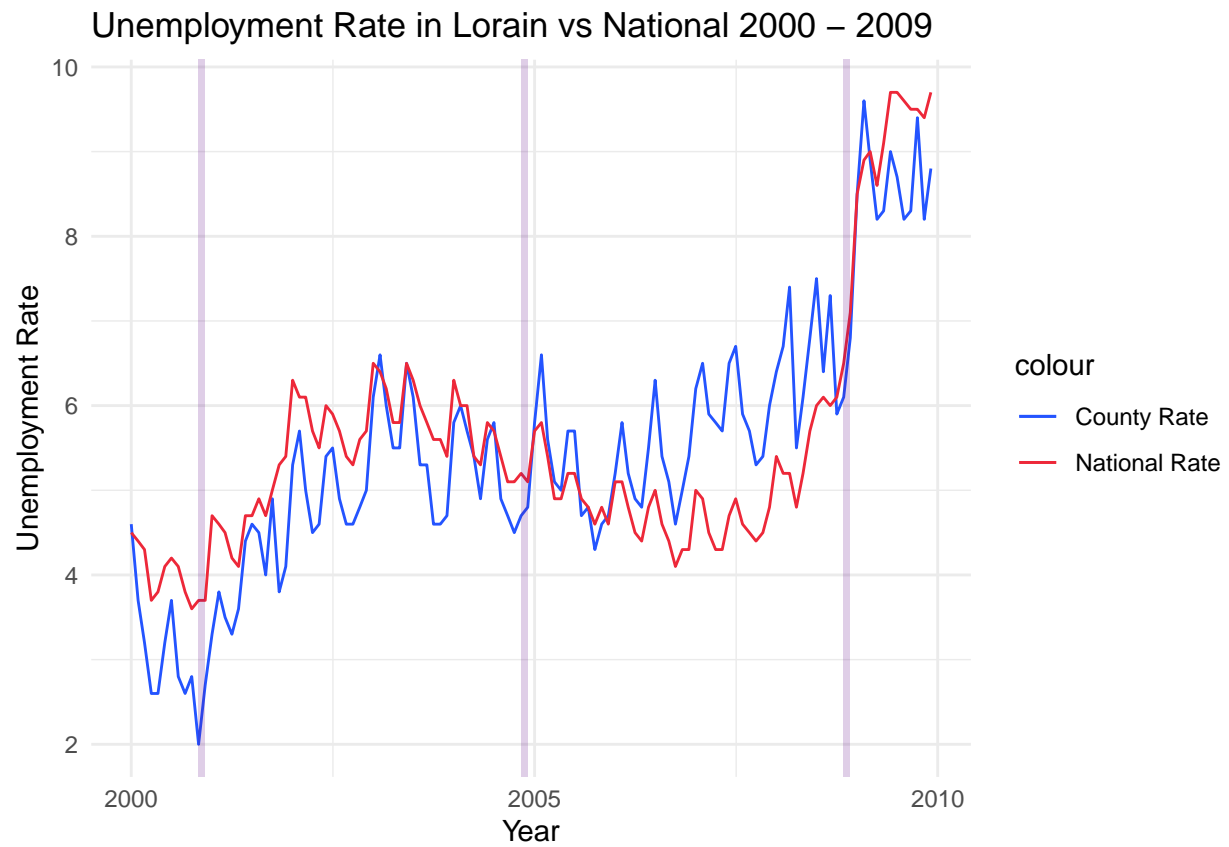






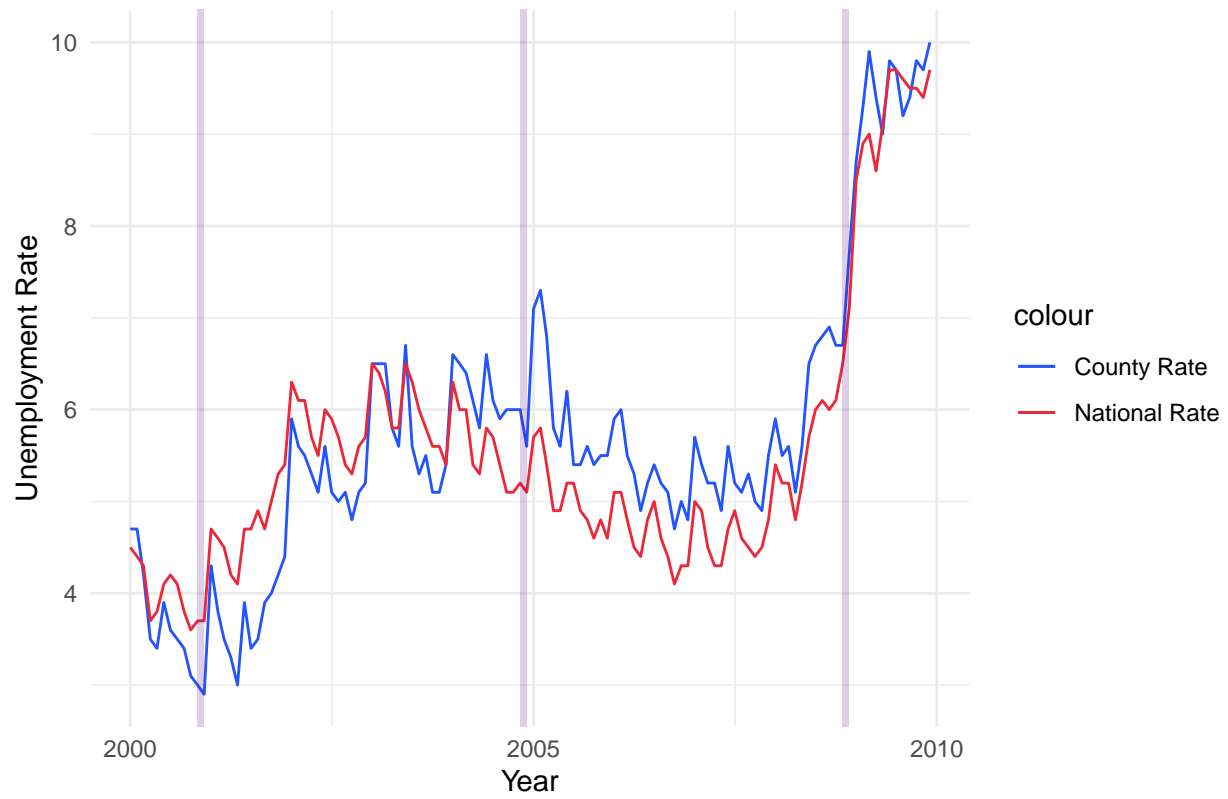
Unemployment Rate in Licking vs National 2000 – 2009

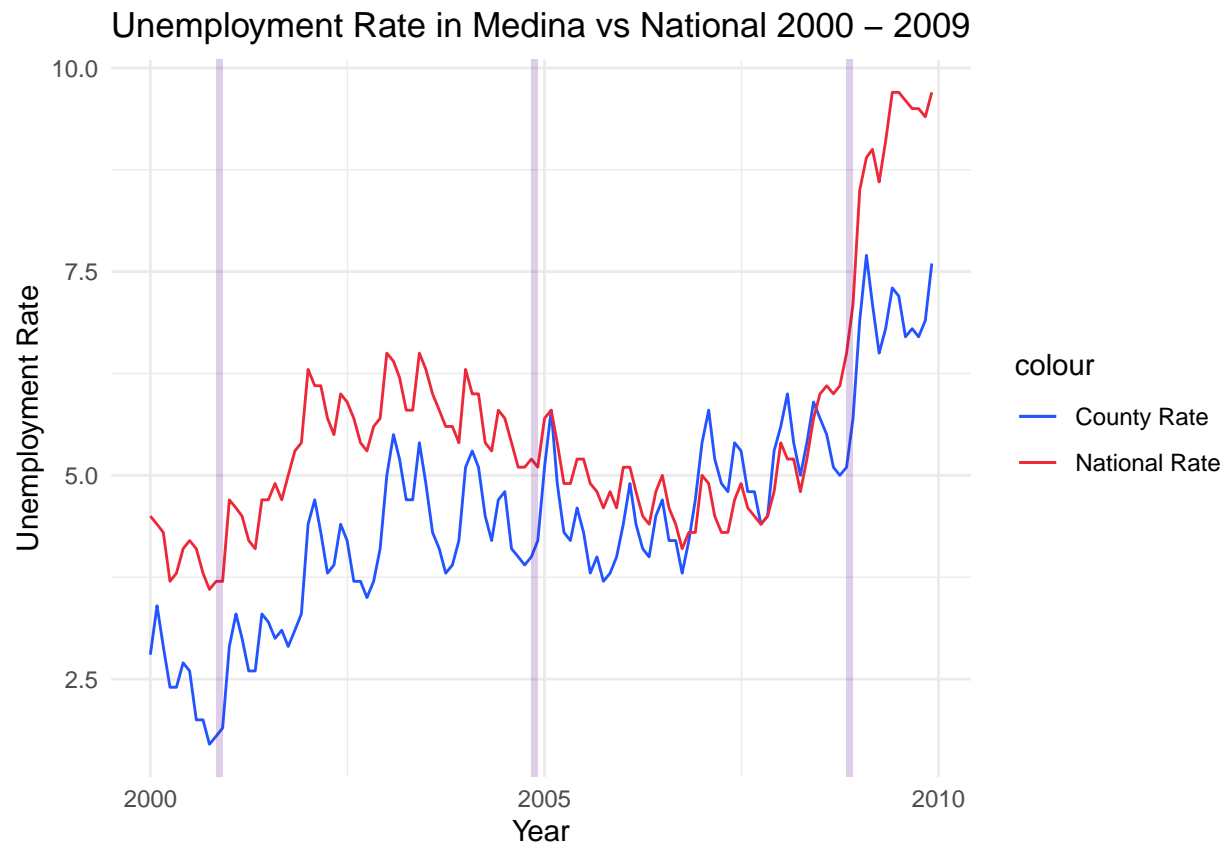




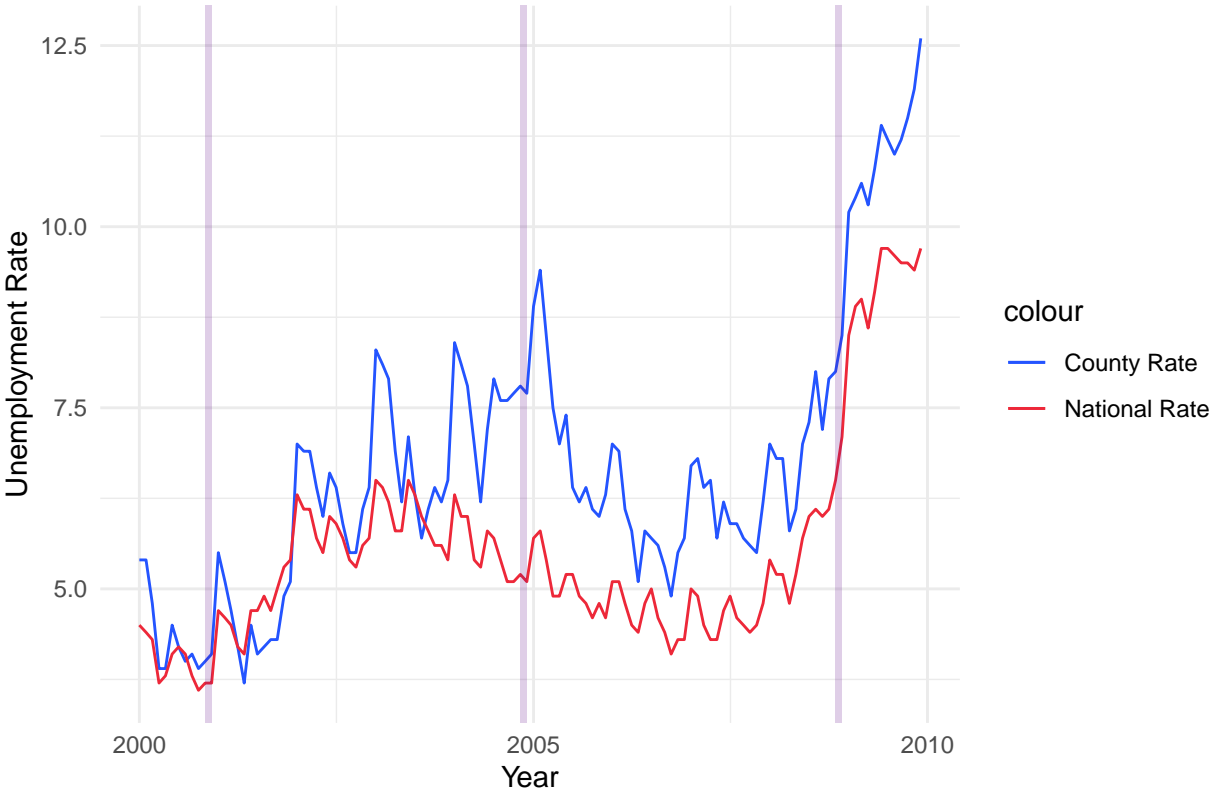


Unemployment Rate in Madison vs National 2000 – 2009

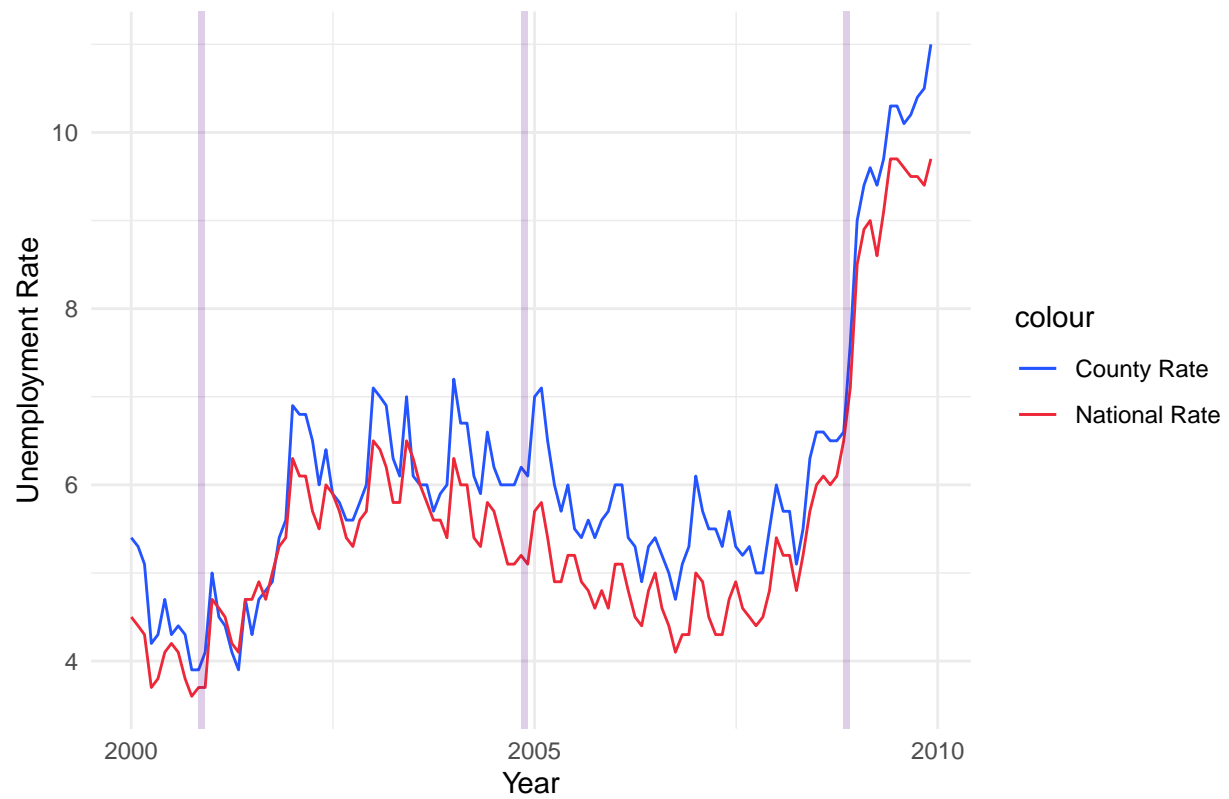


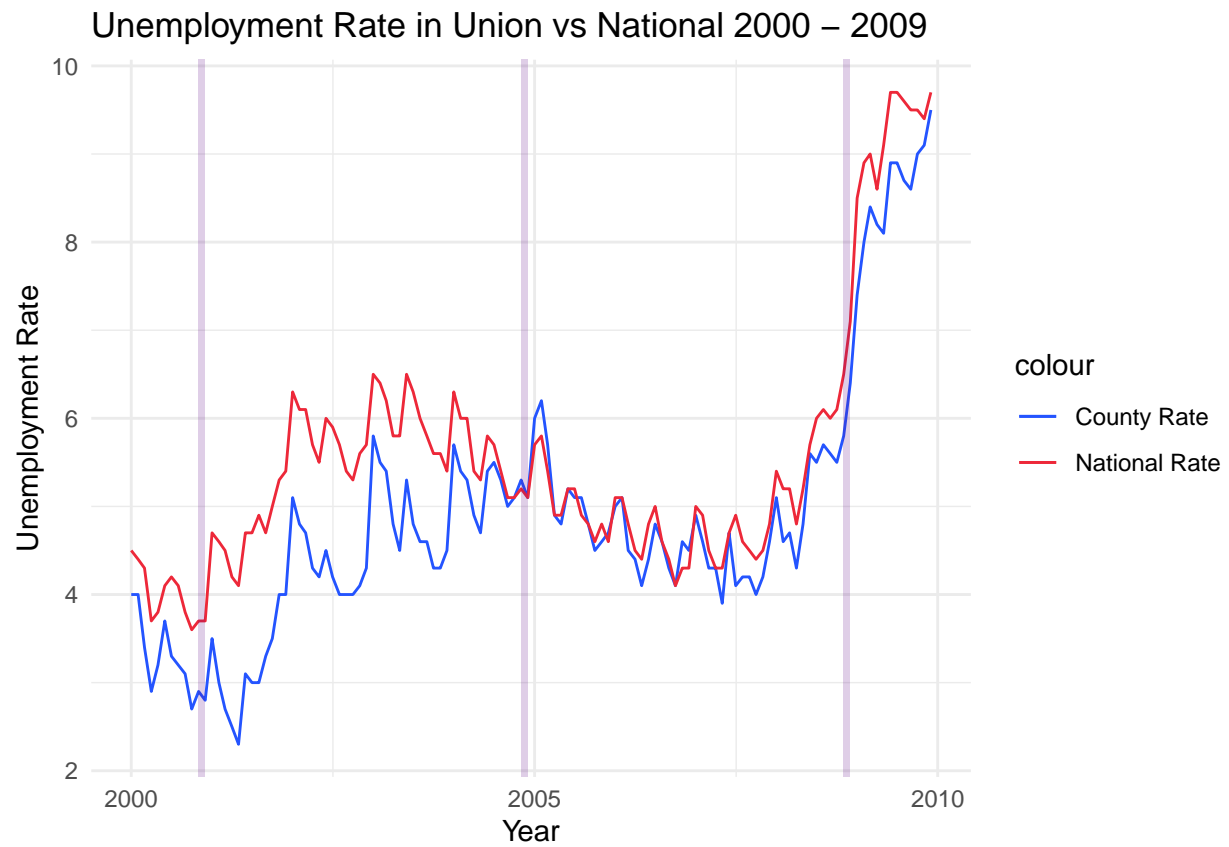


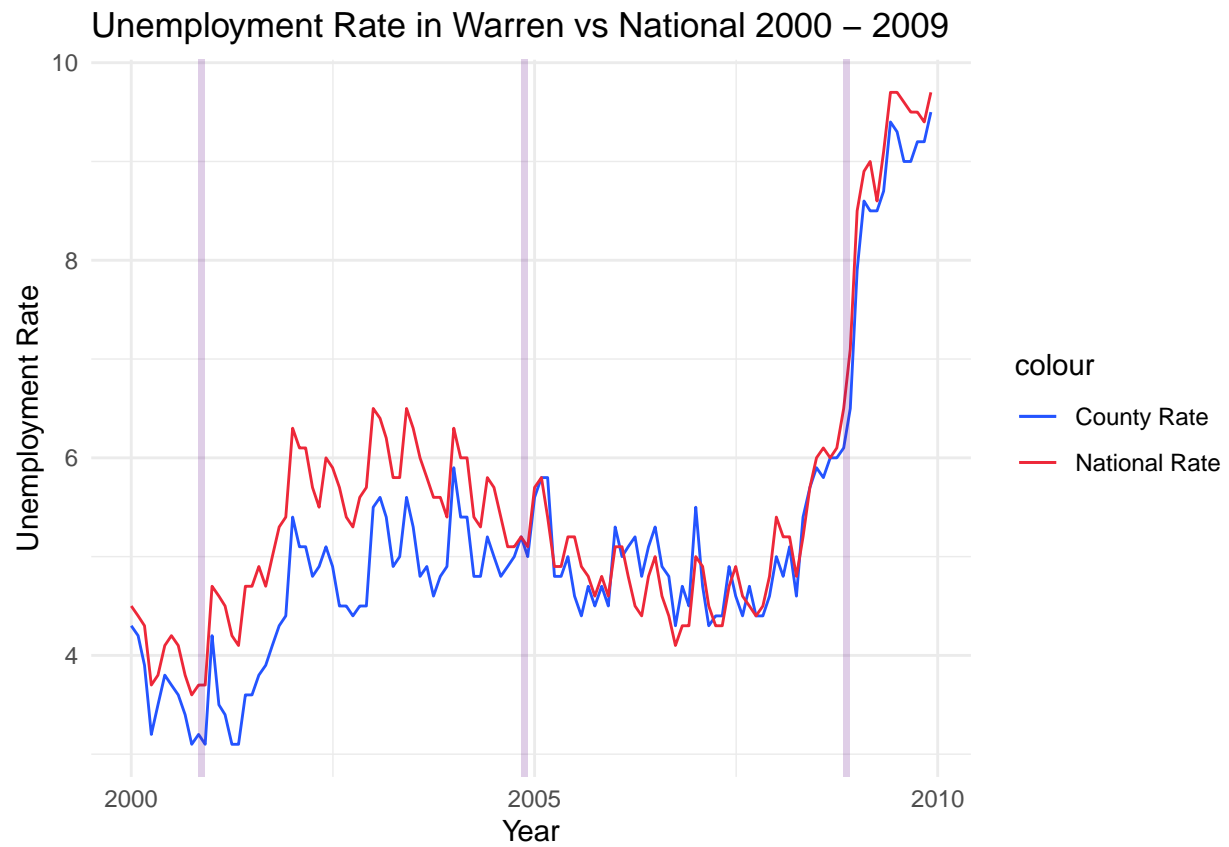
Unemployment Rate in Pickaway vs National 2000 – 2009



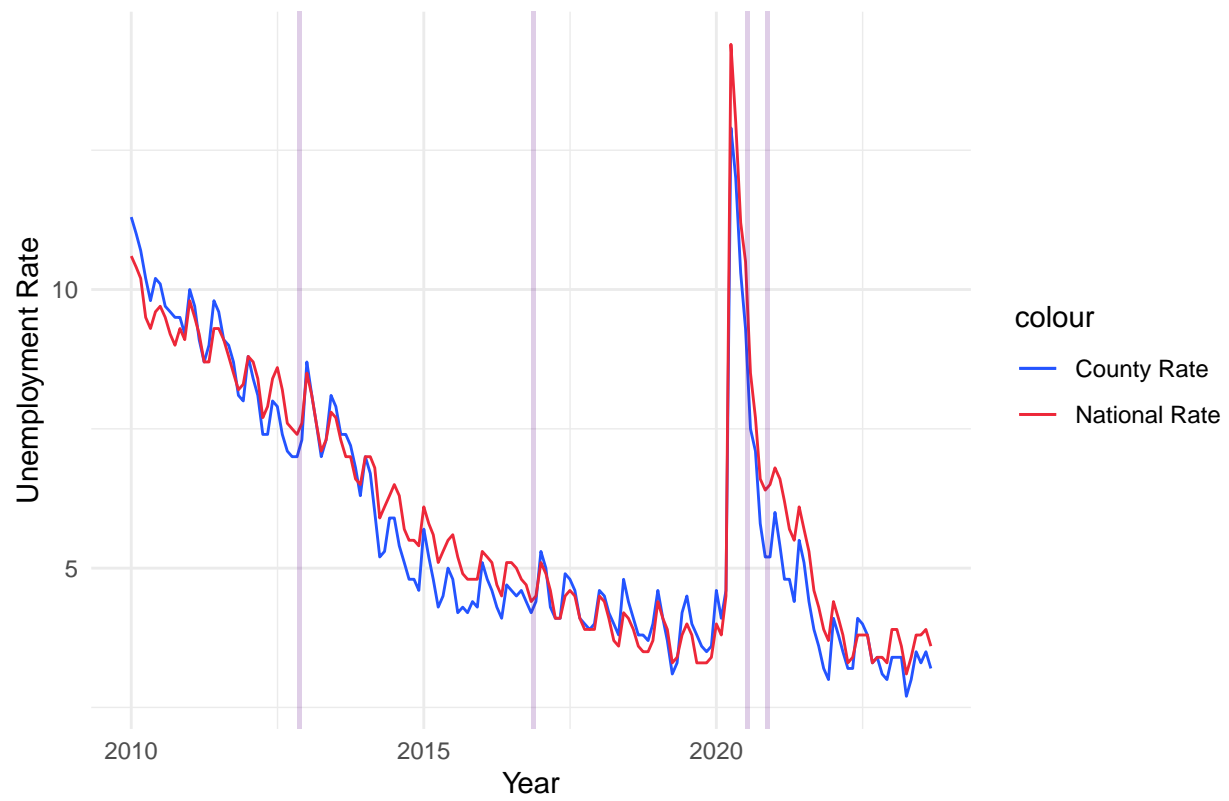
Unemployment Rate in Summit vs National 2000 – 2009



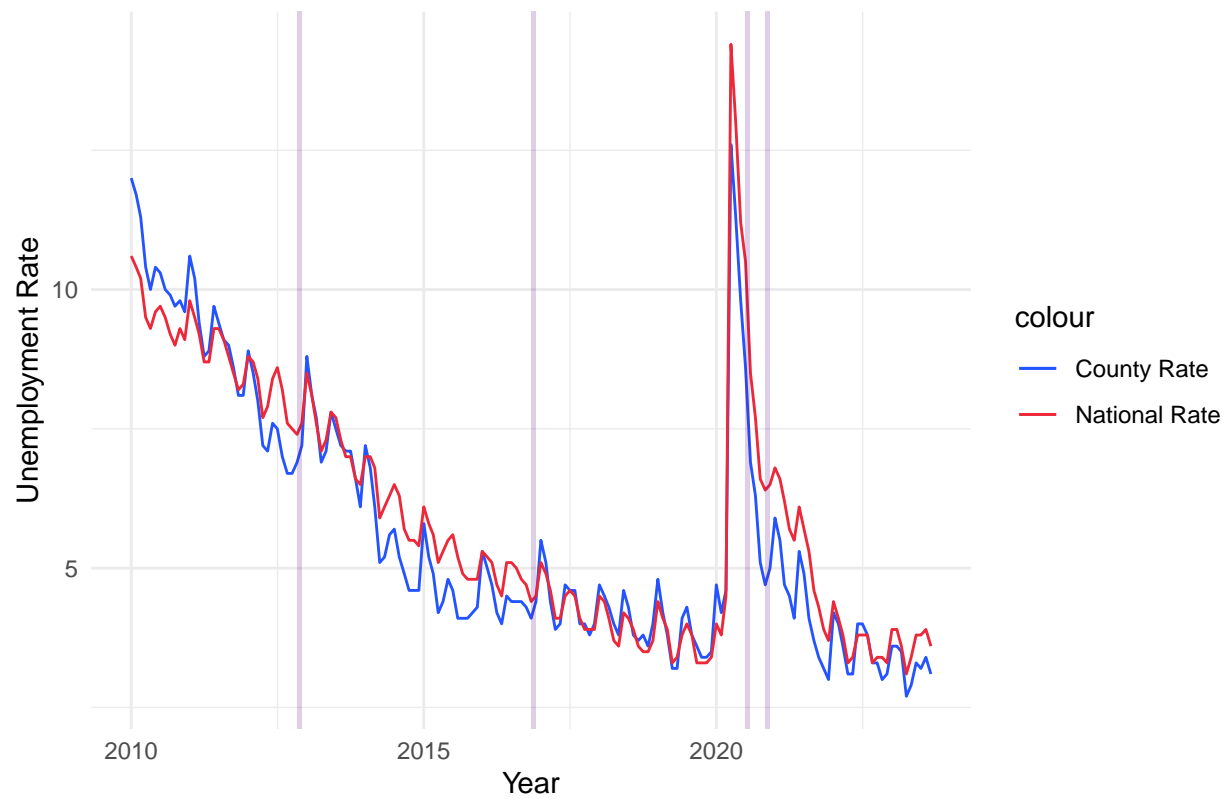




Unemployment Rate in Butler vs National 2009 – Present

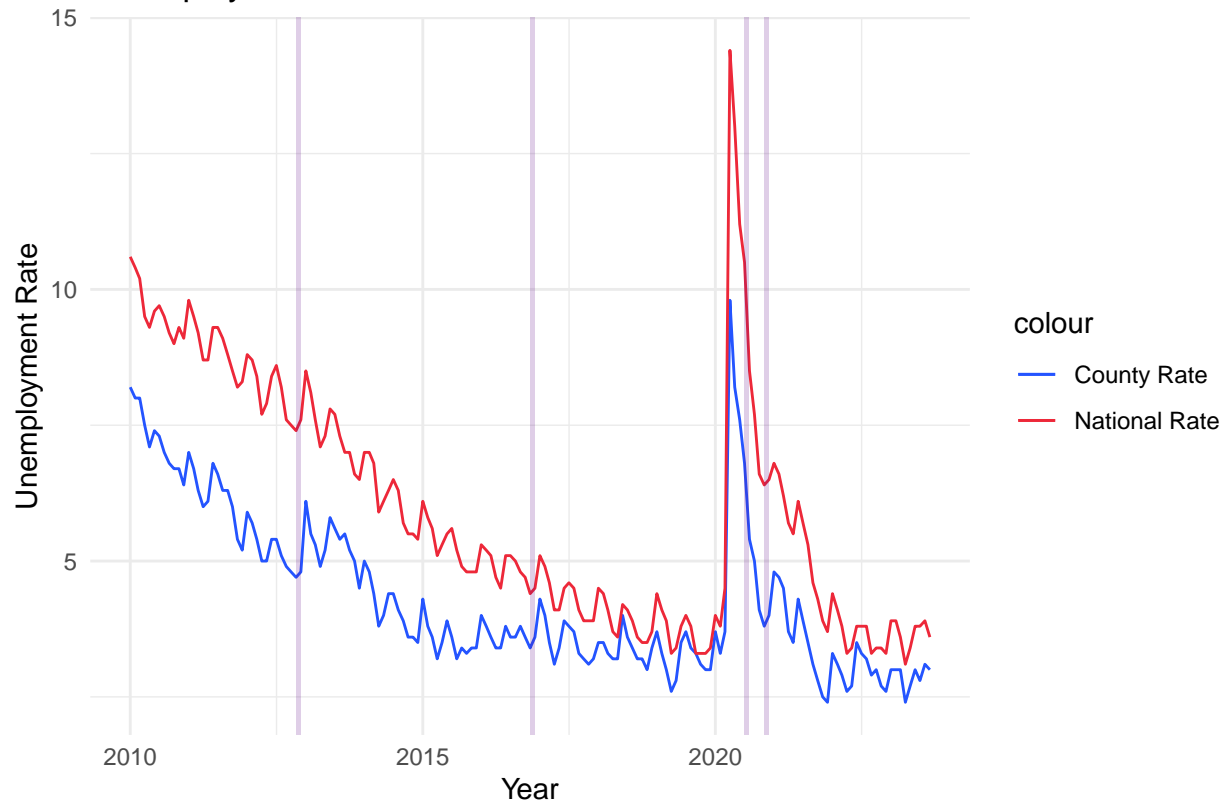


Unemployment Rate in Clermont vs National 2009 – Present

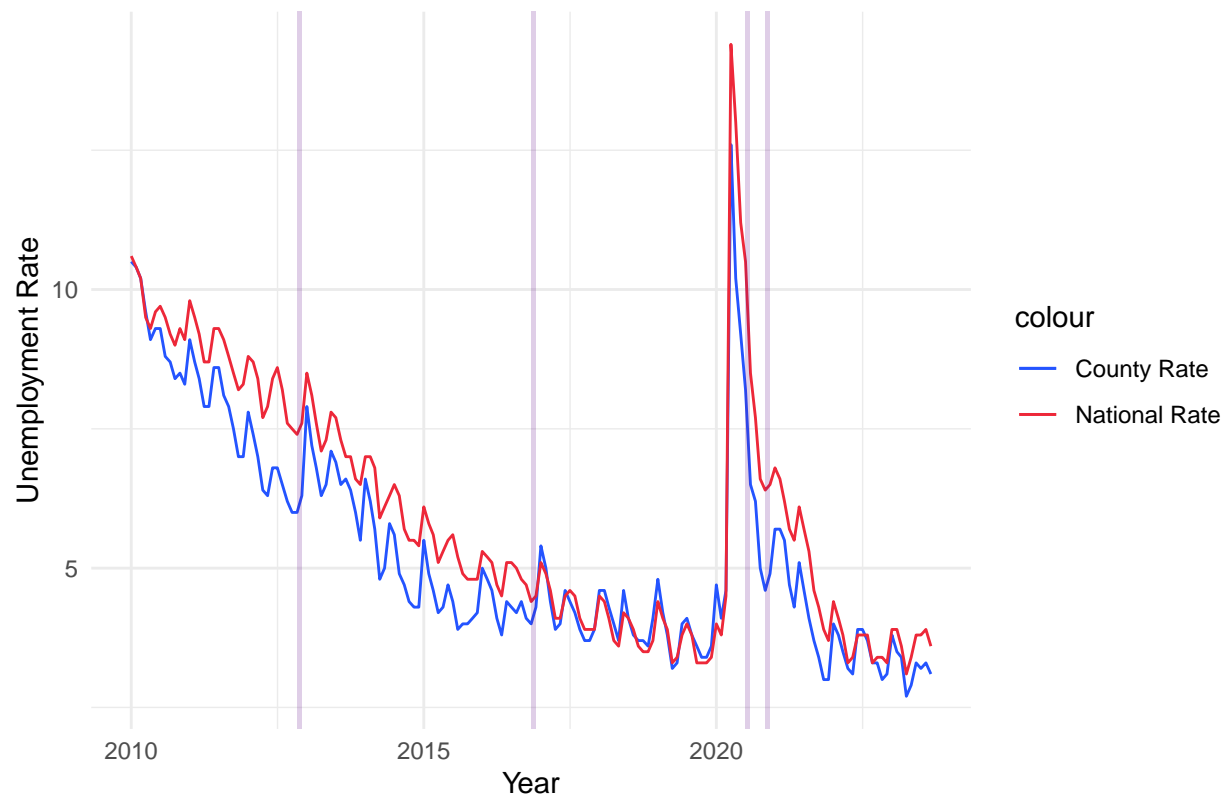




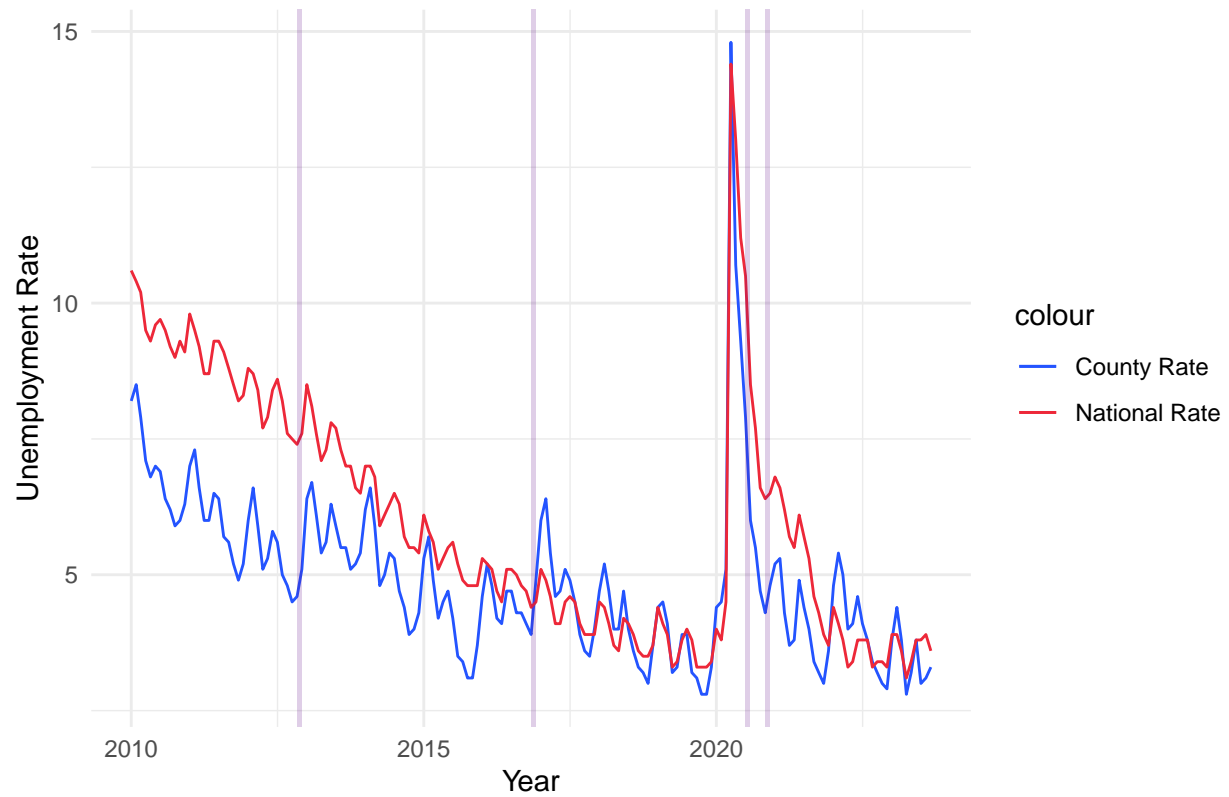
Unemployment Rate in Delaware vs National 2009 – Present



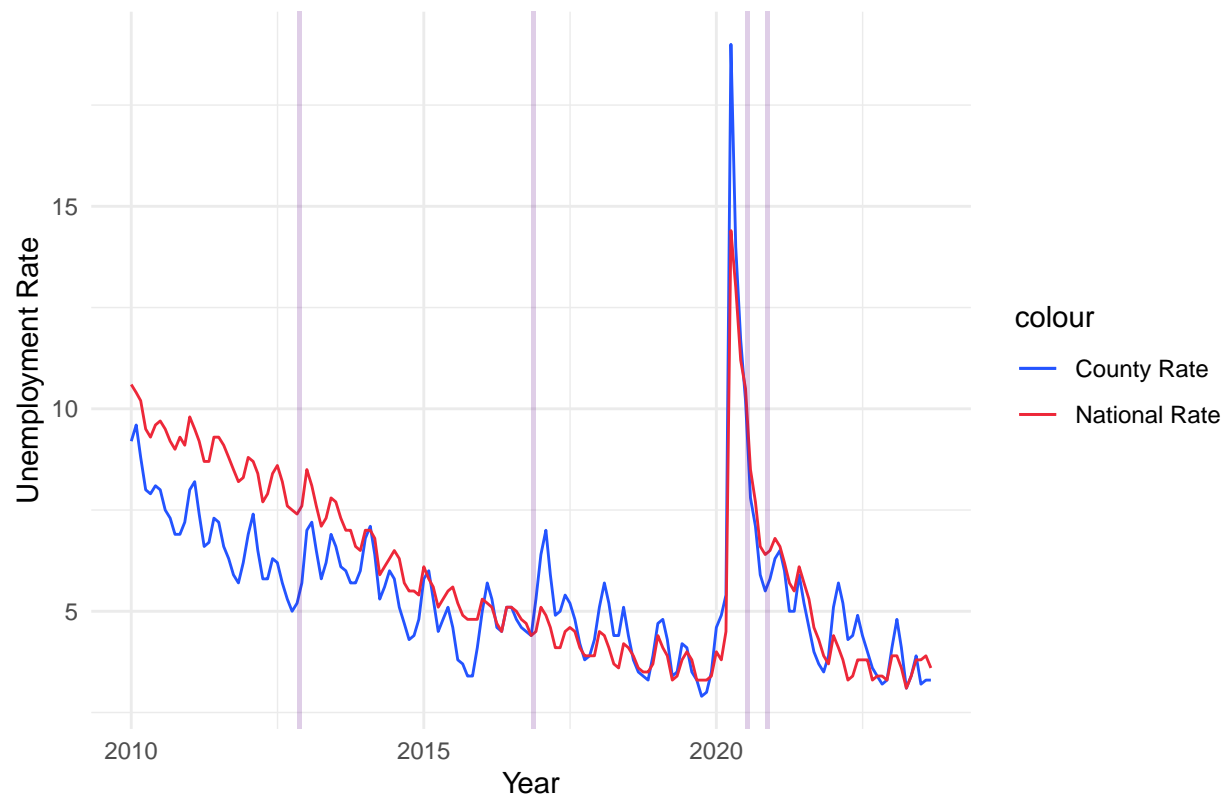
Unemployment Rate in Fairfield vs National 2009 – Present



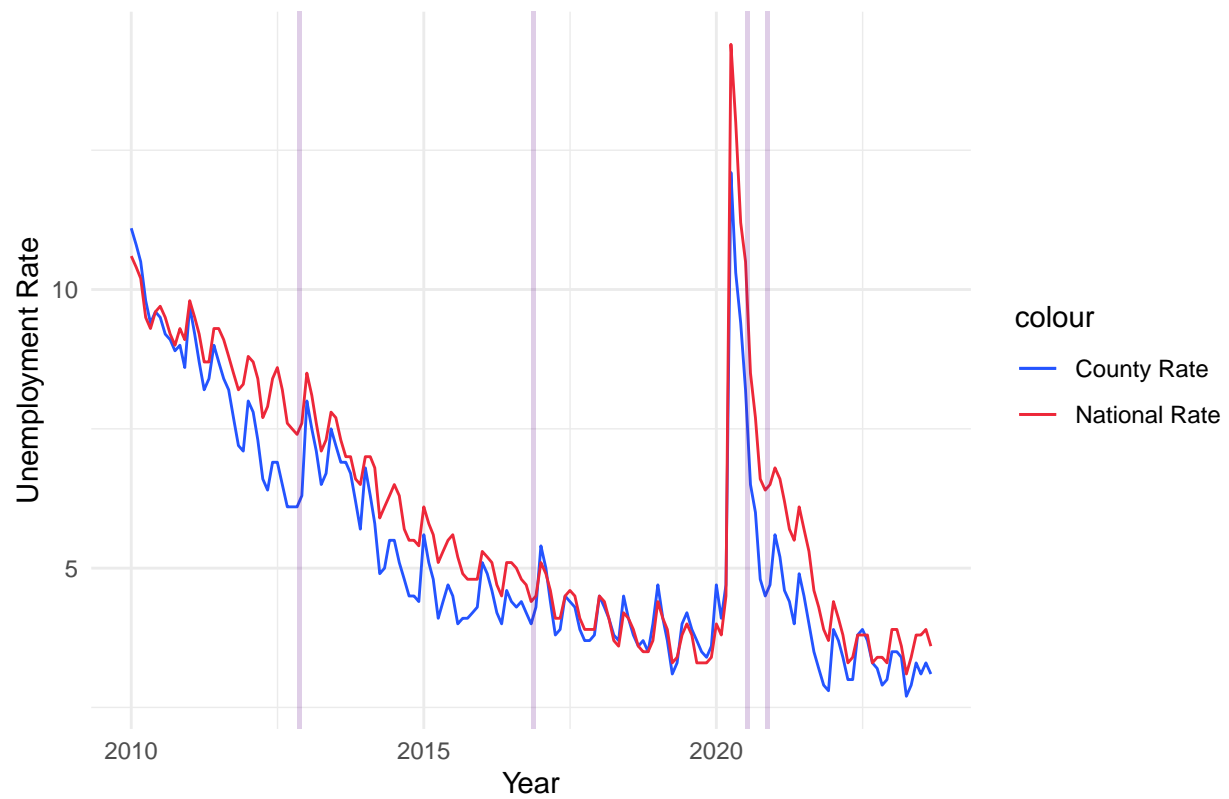
Unemployment Rate in Geauga vs National 2009 – Present



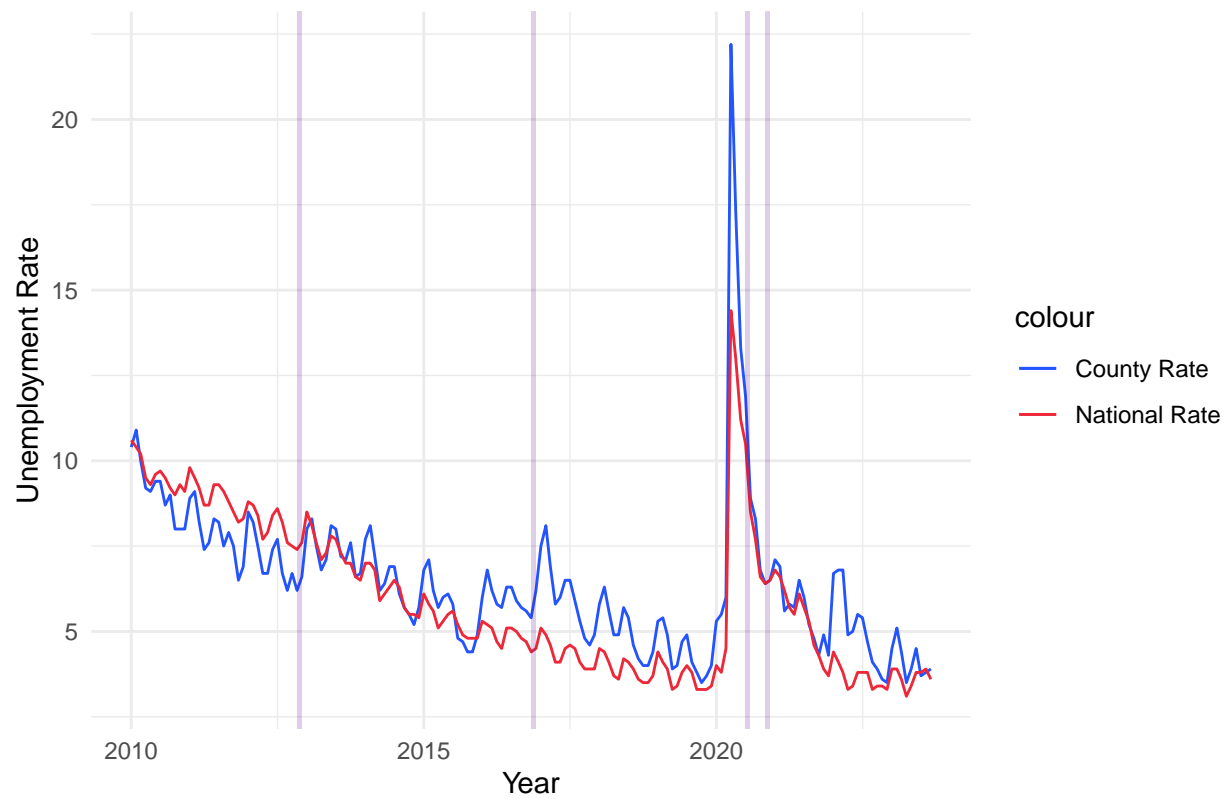
Unemployment Rate in Lake vs National 2009 – Present



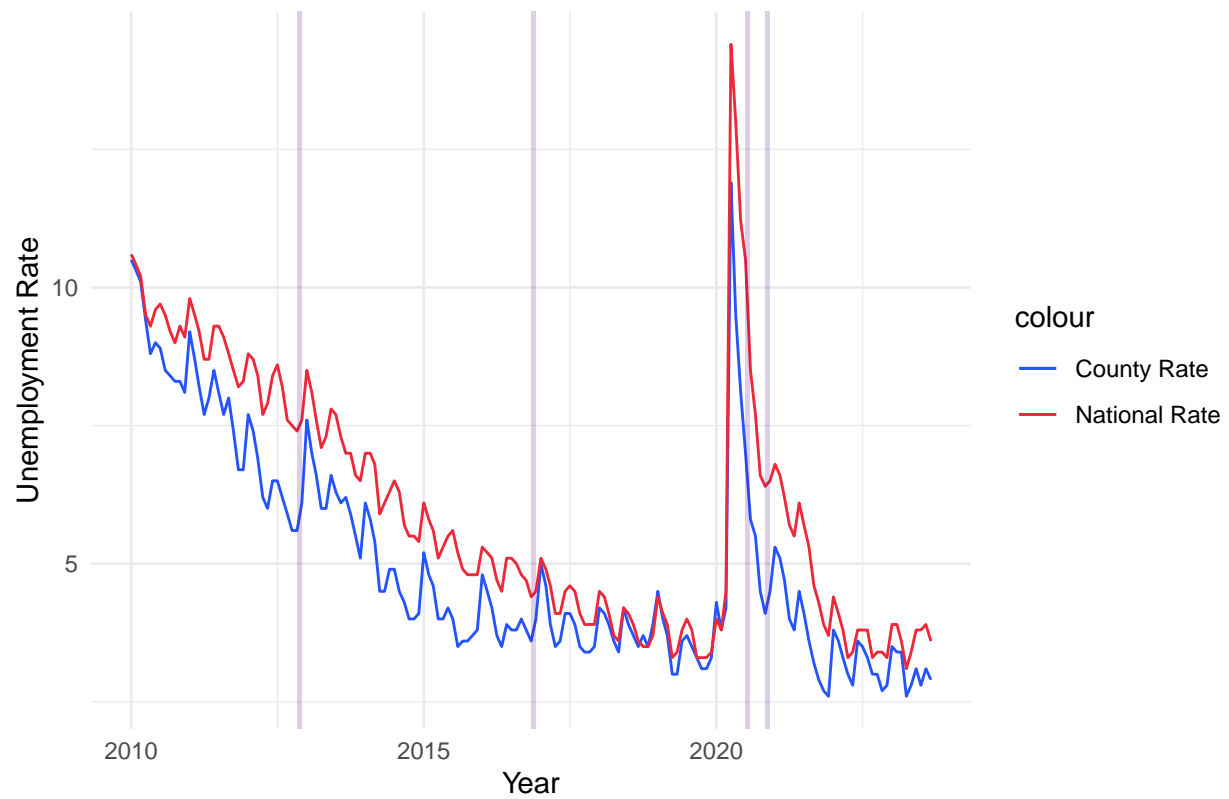
Unemployment Rate in Licking vs National 2009 – Present



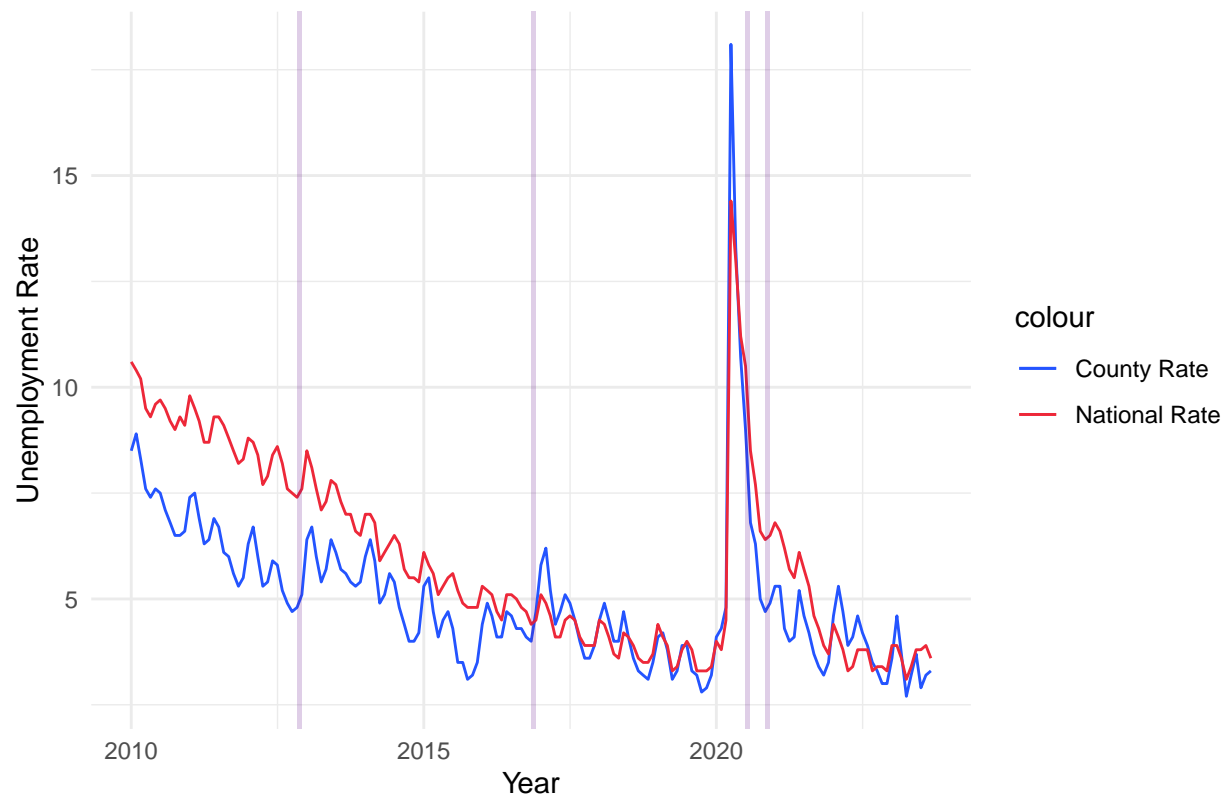
Unemployment Rate in Lorain vs National 2009 – Present



Unemployment Rate in Madison vs National 2009 – Present

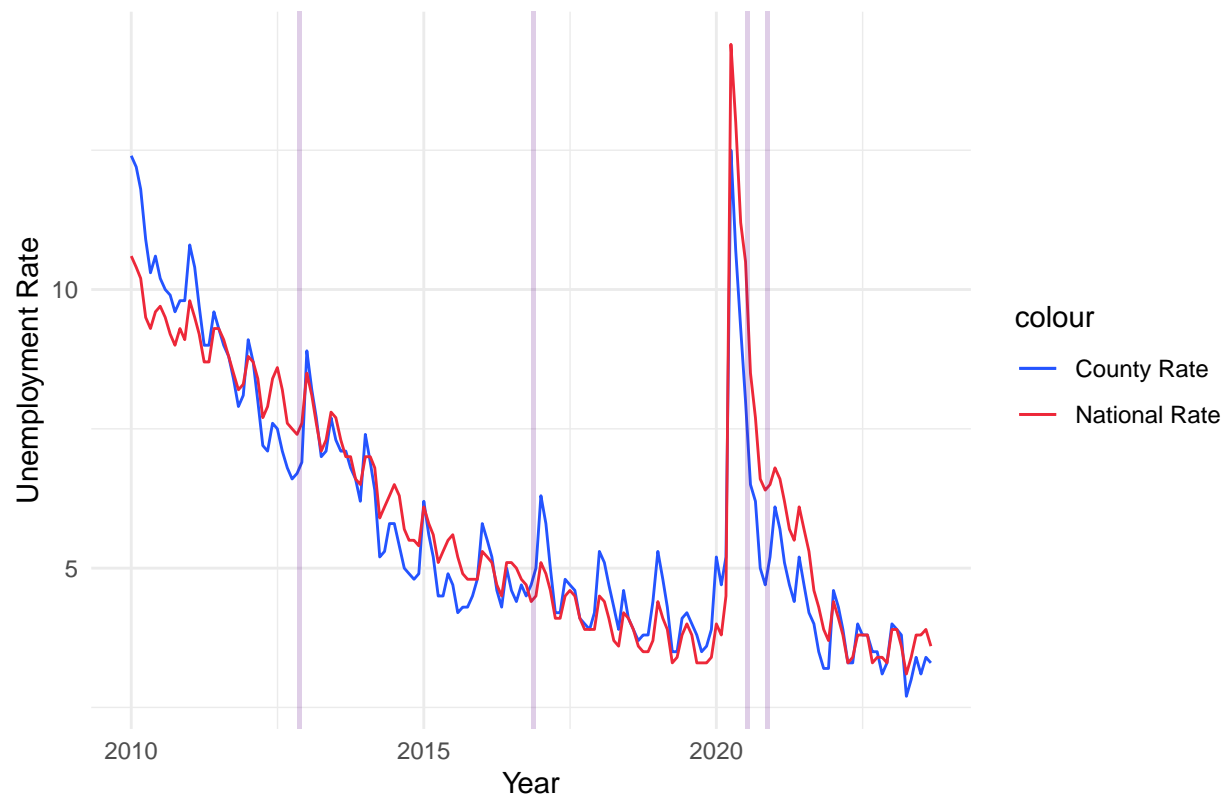


Unemployment Rate in Medina vs National 2009 – Present

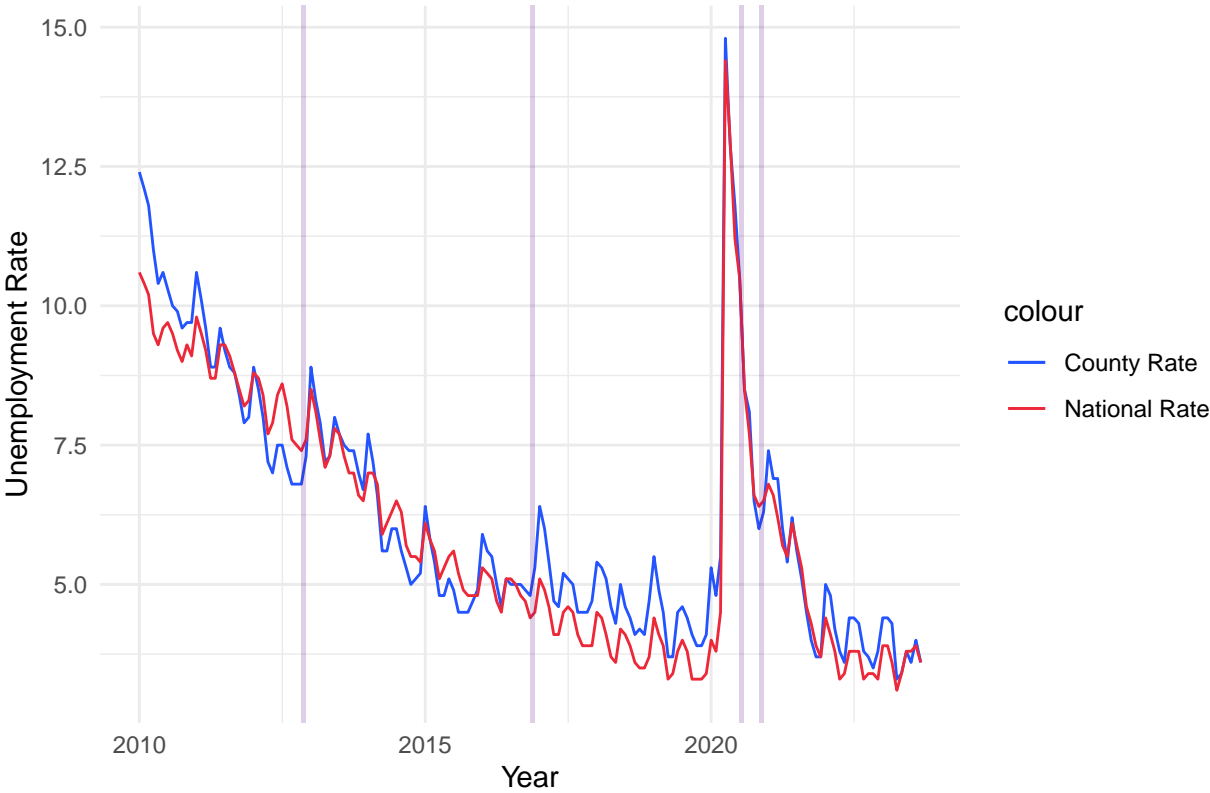




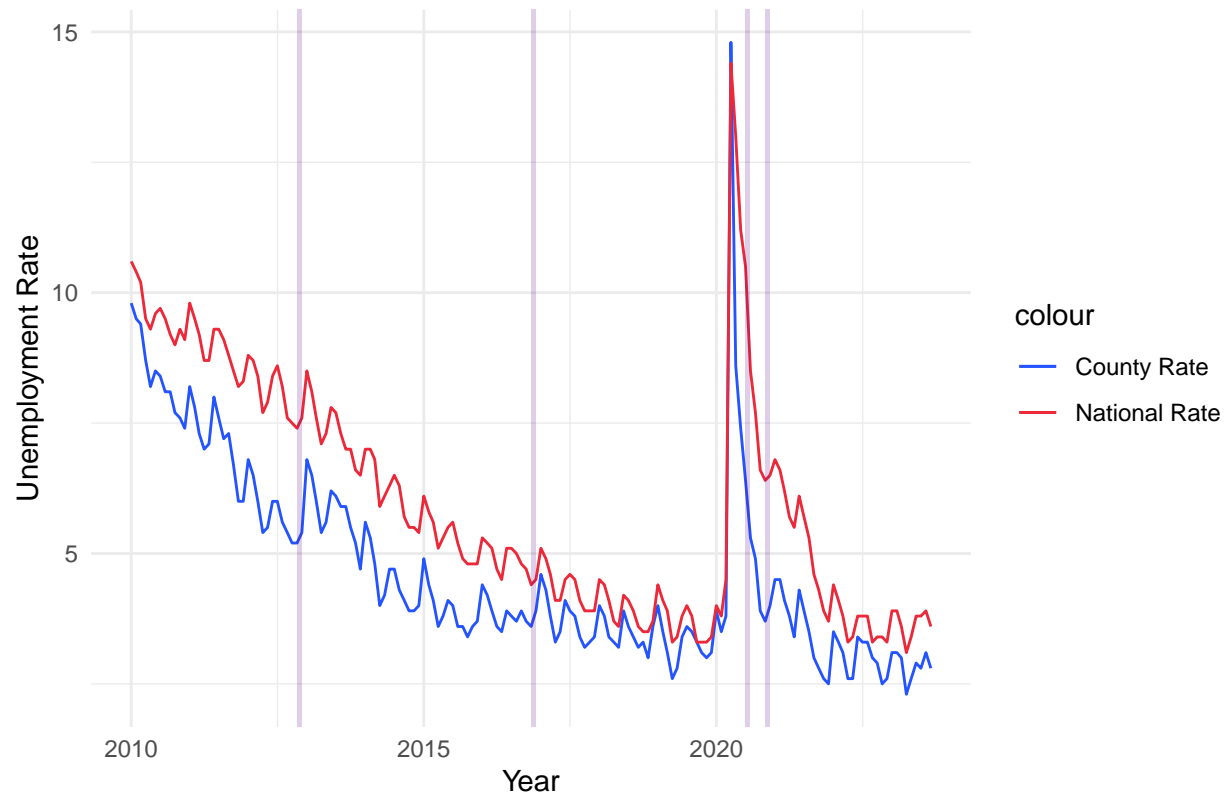
Unemployment Rate in Pickaway vs National 2009 – Present



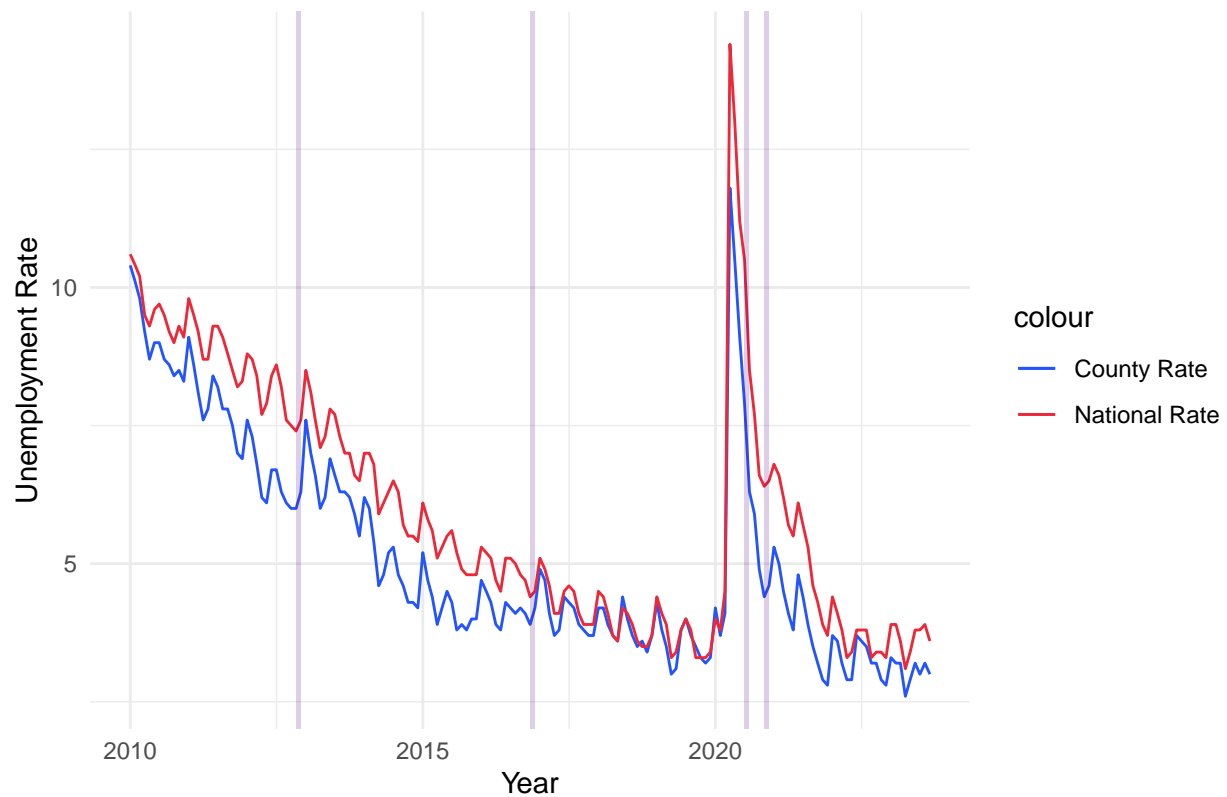
Unemployment Rate in Summit vs National 2009 – Present



Unemployment Rate in Union vs National 2009 – Present



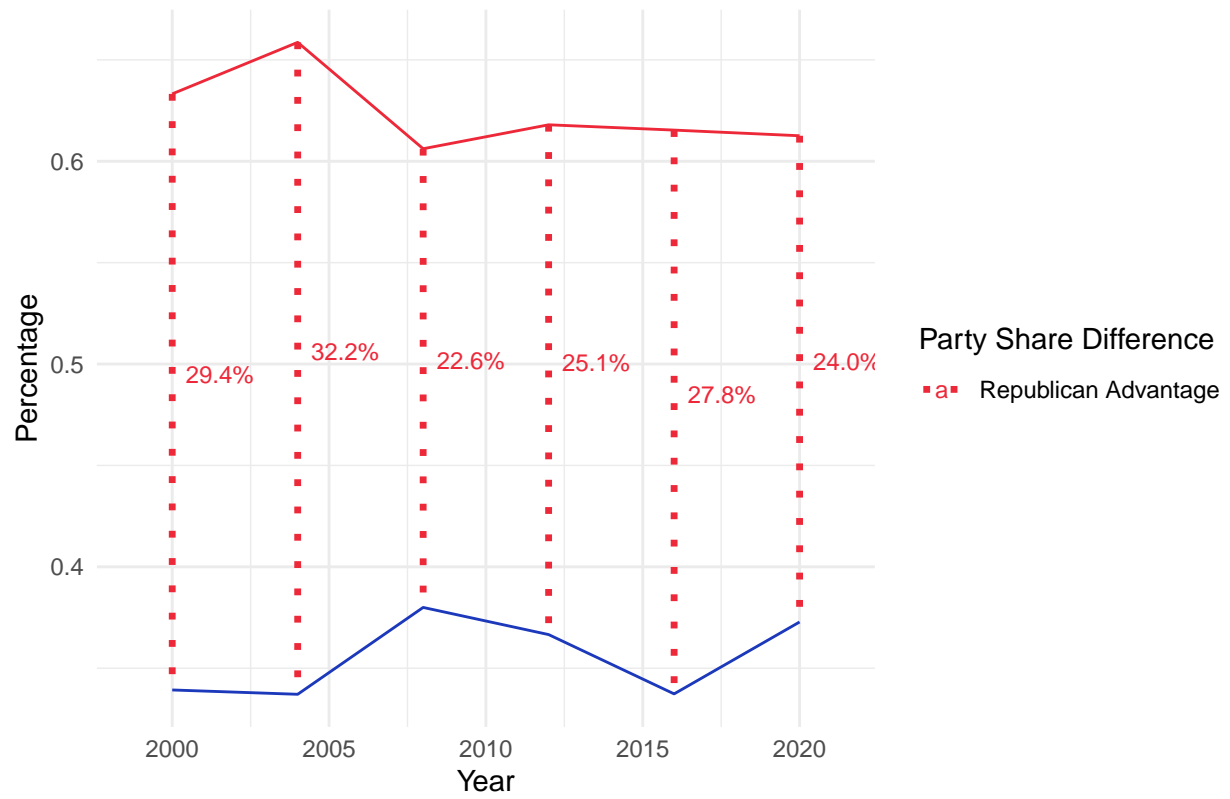
## Unemployment Rate in Warren vs National 2009 – Present



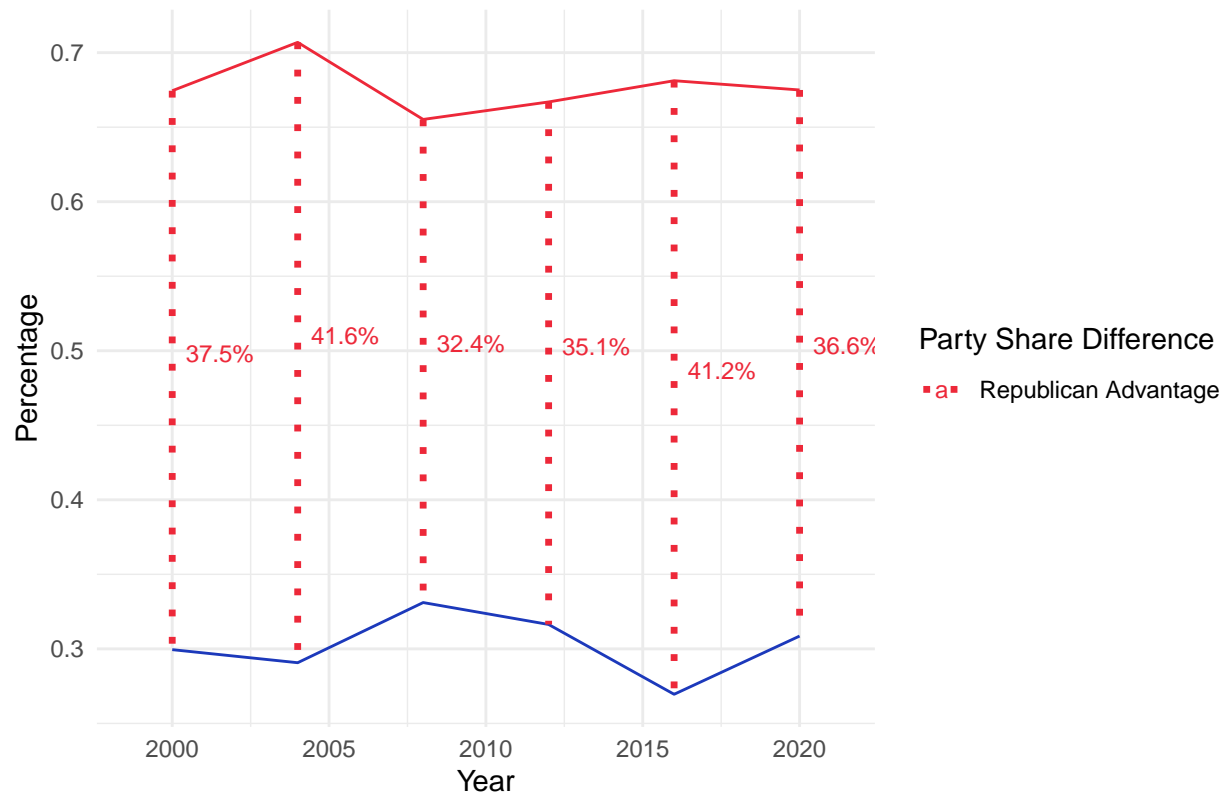
### Political Leanings:

```
## 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.
```

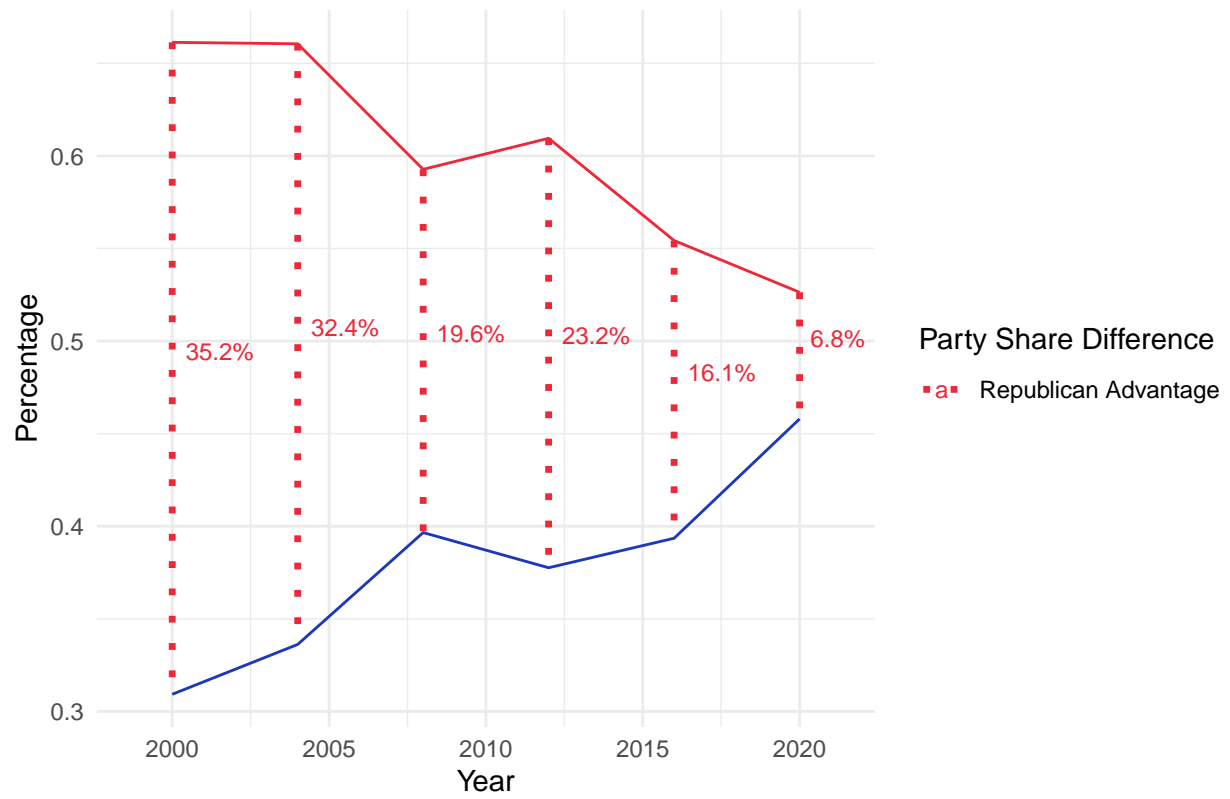
Vote Share in Butler County



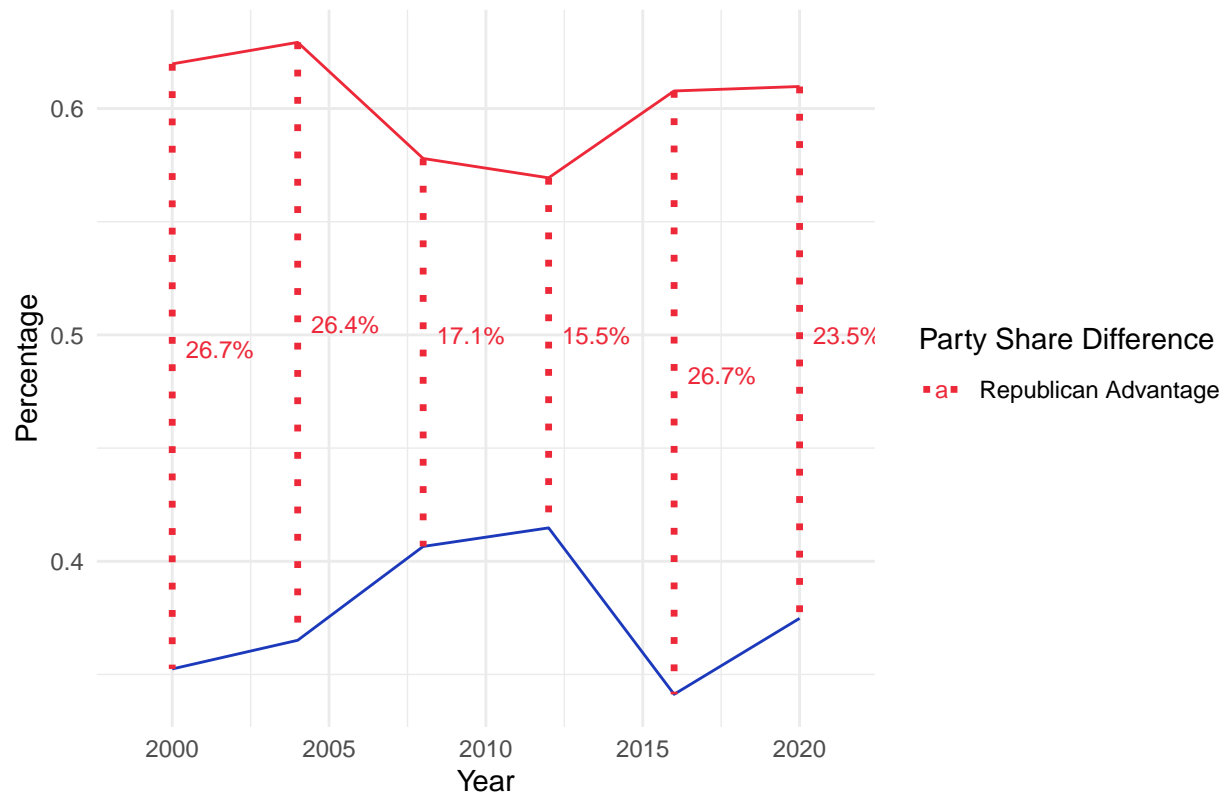
Vote Share in Clermont County



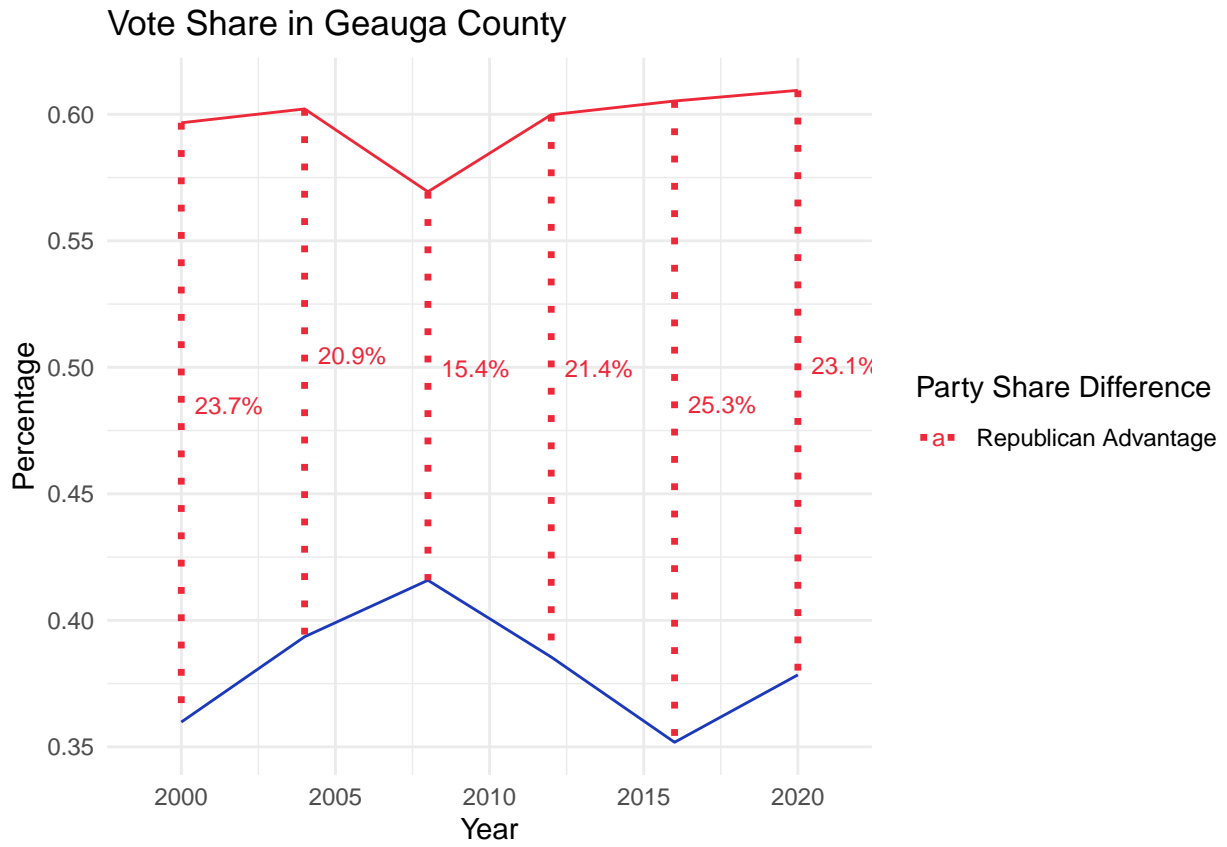
Vote Share in Delaware County

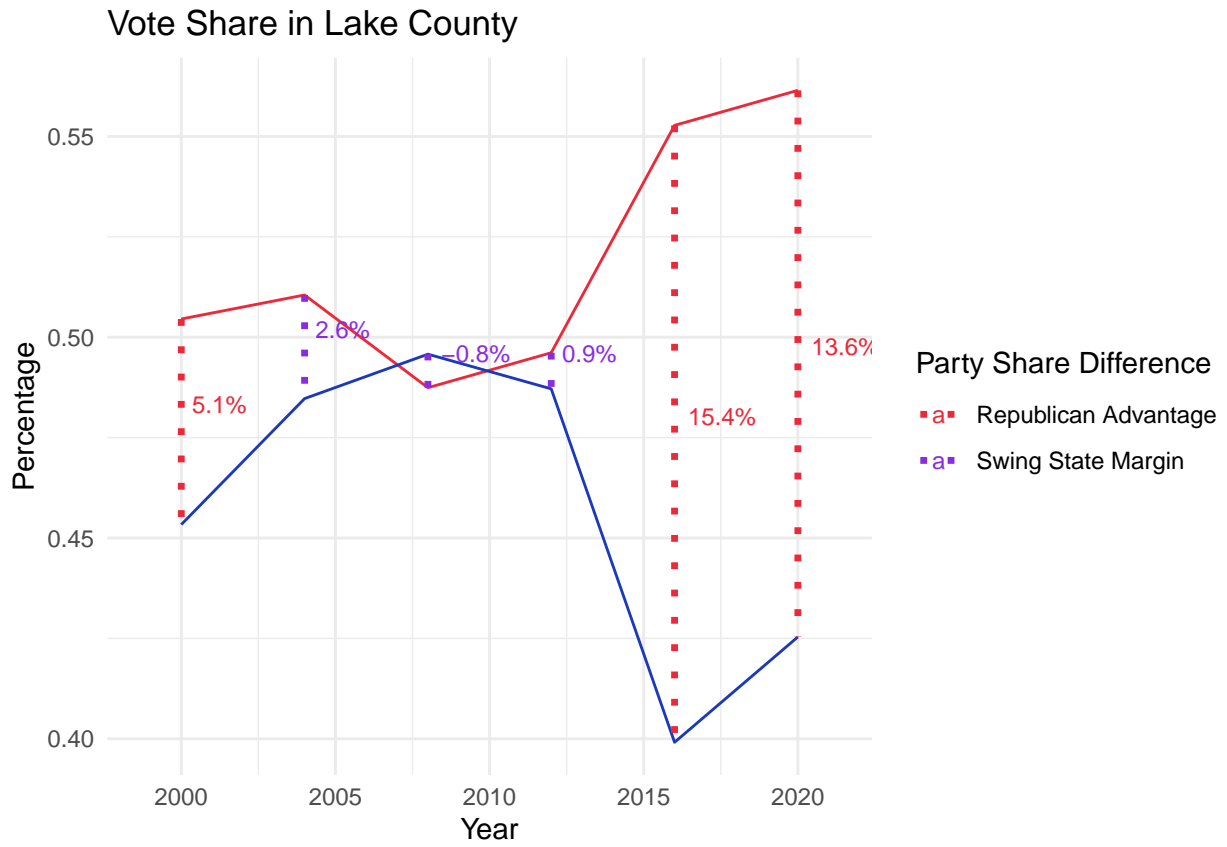


Vote Share in Fairfield County

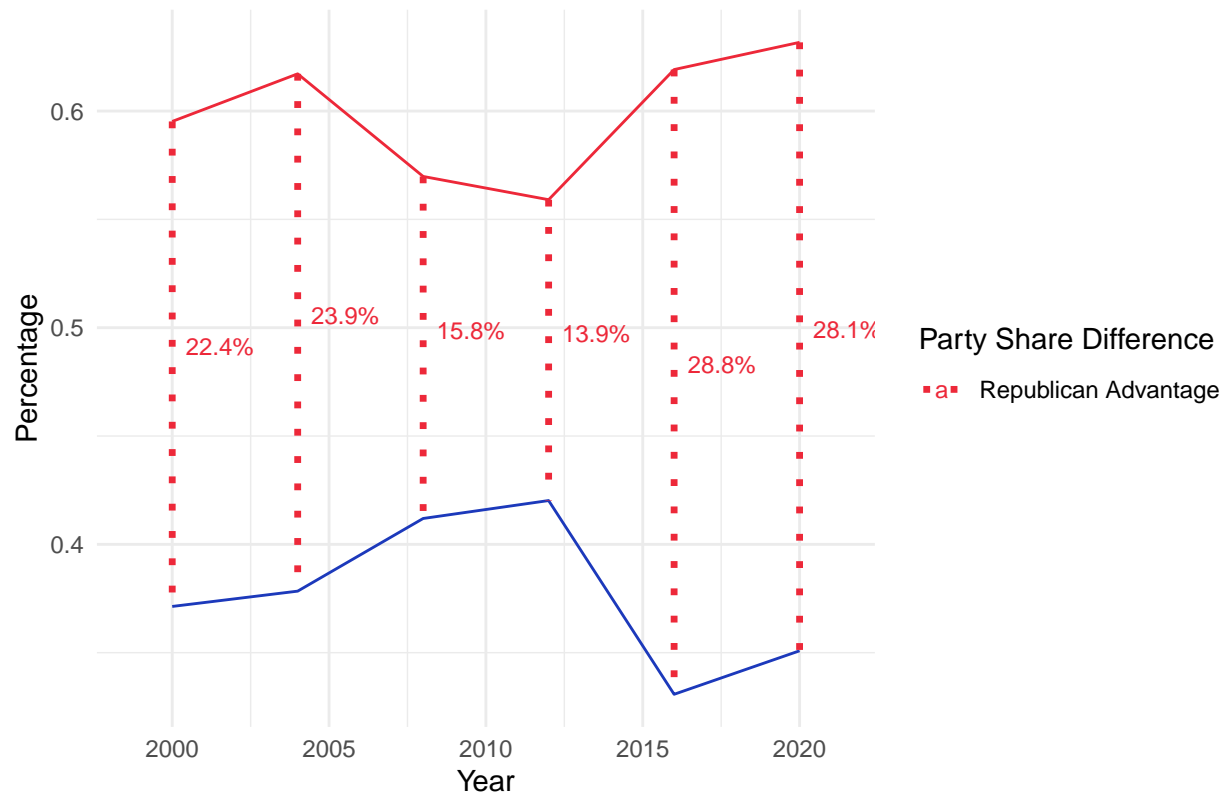


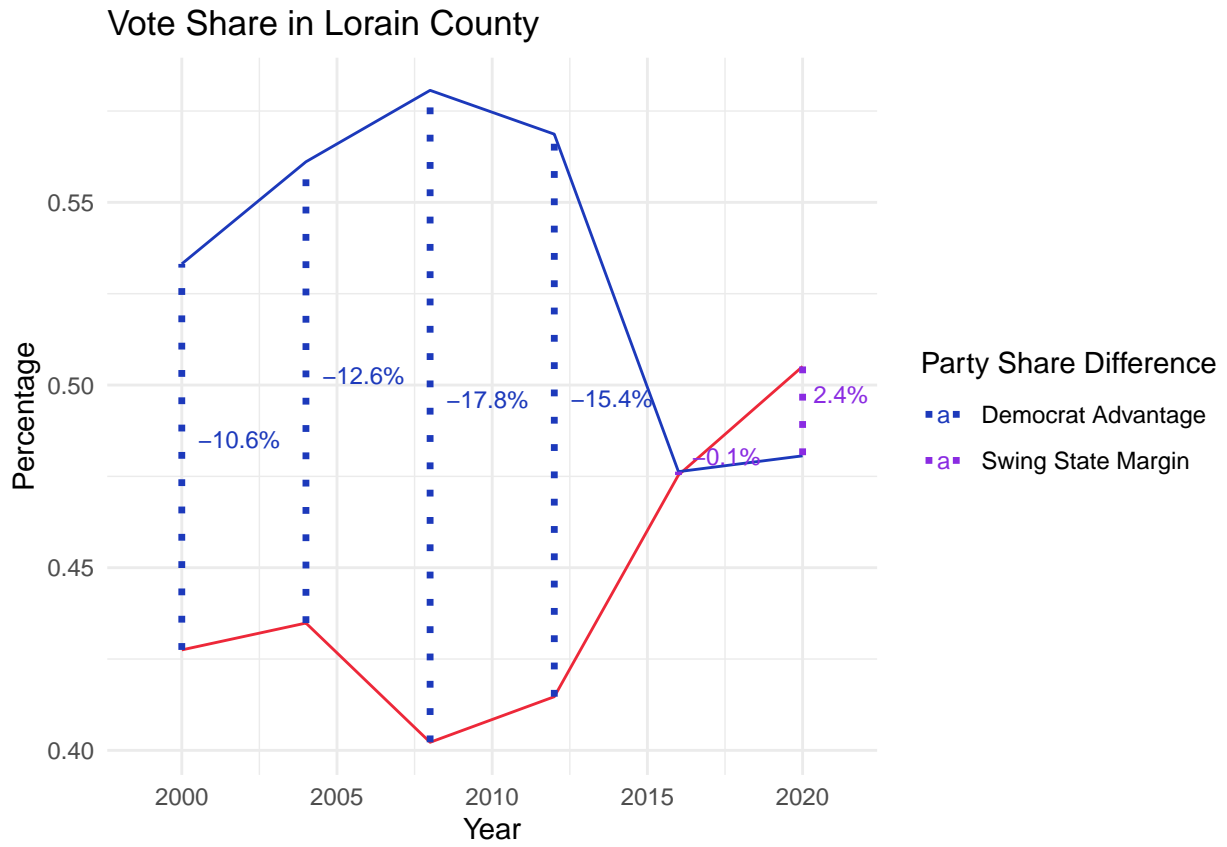


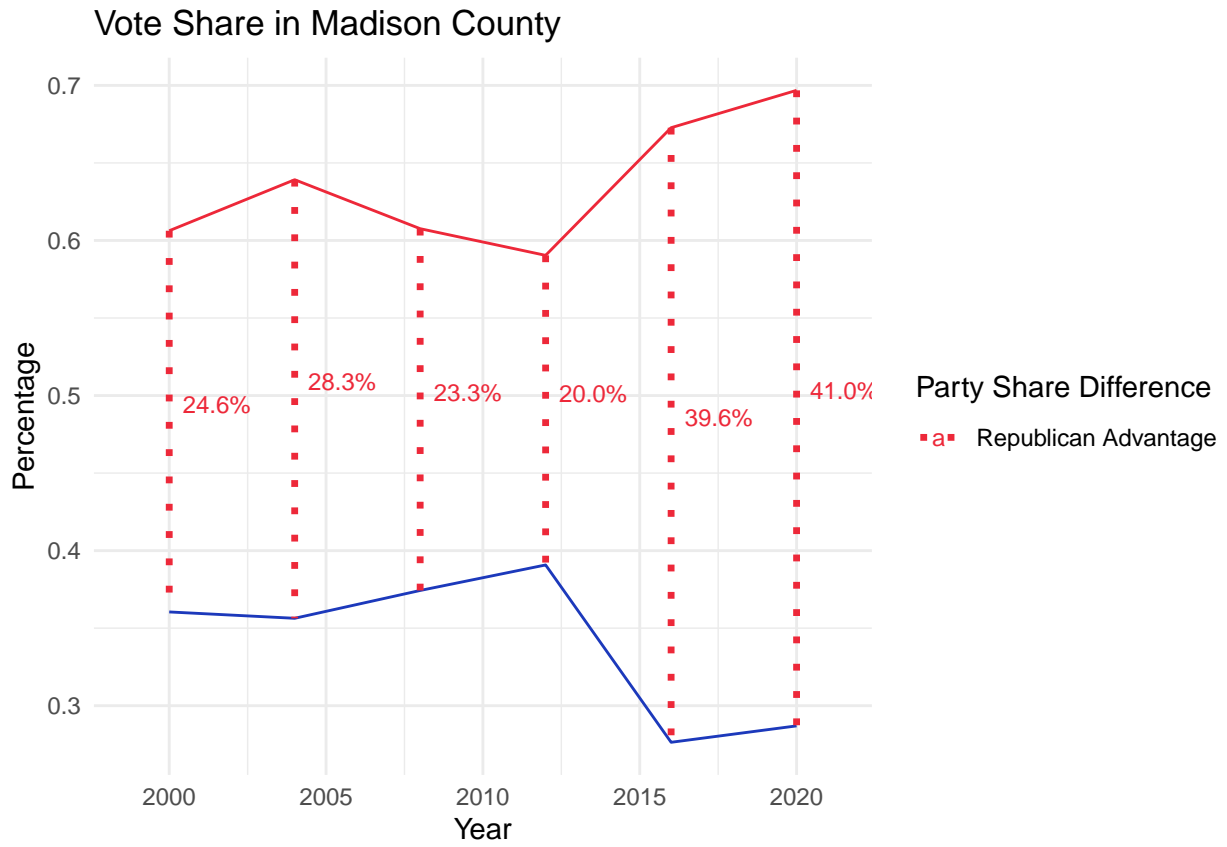


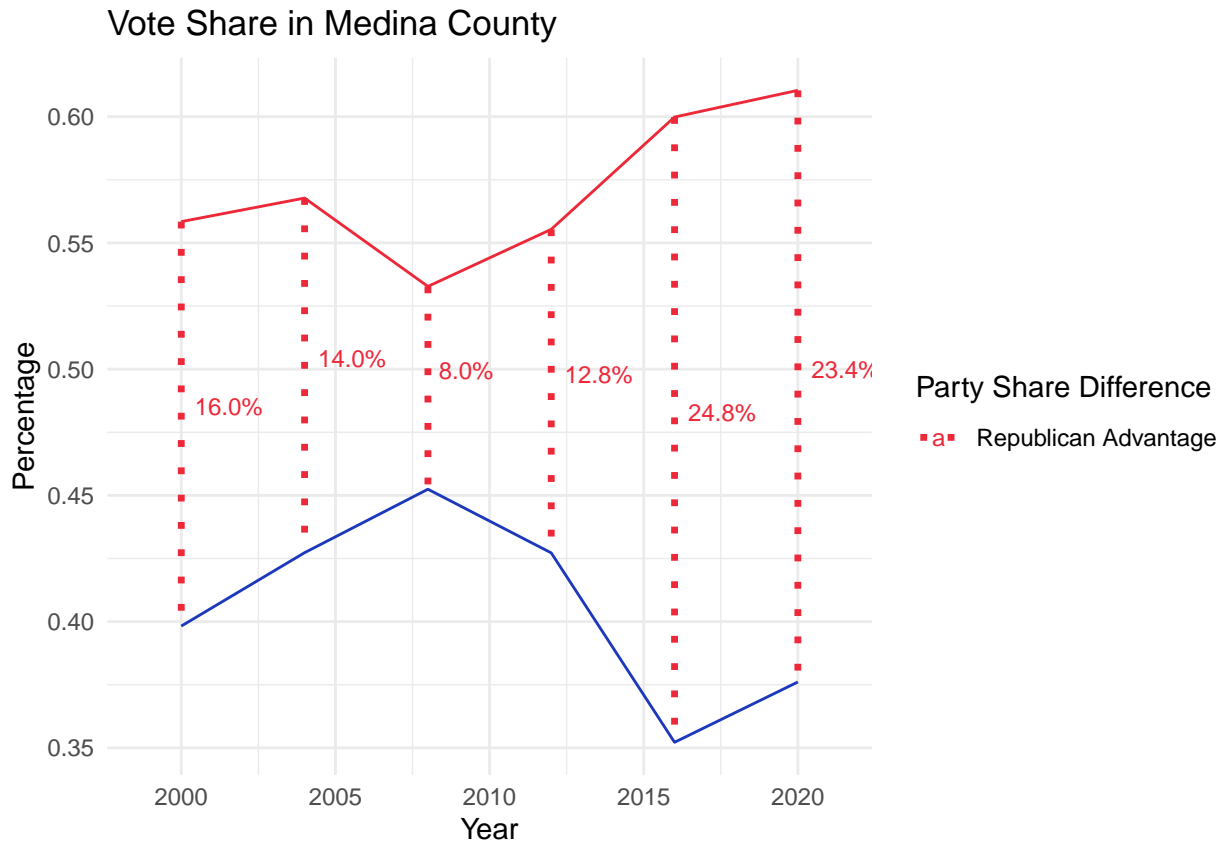


Vote Share in Licking County

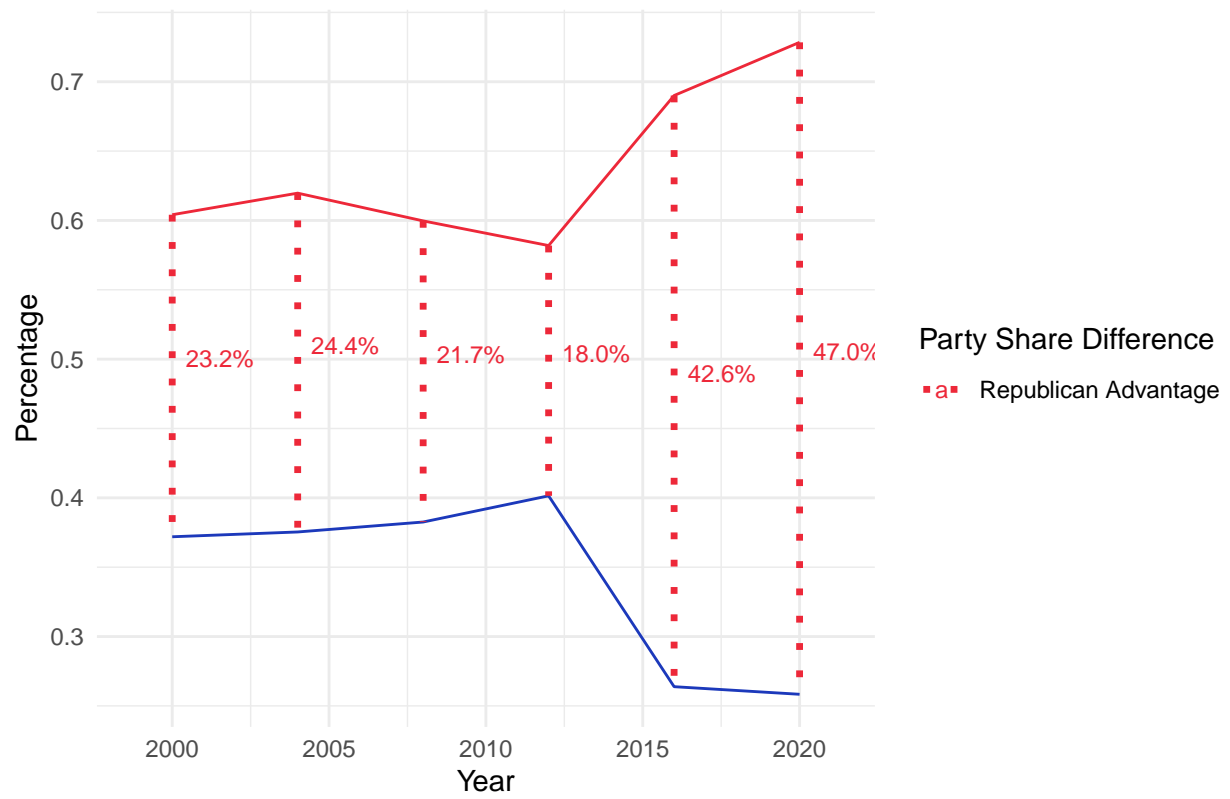


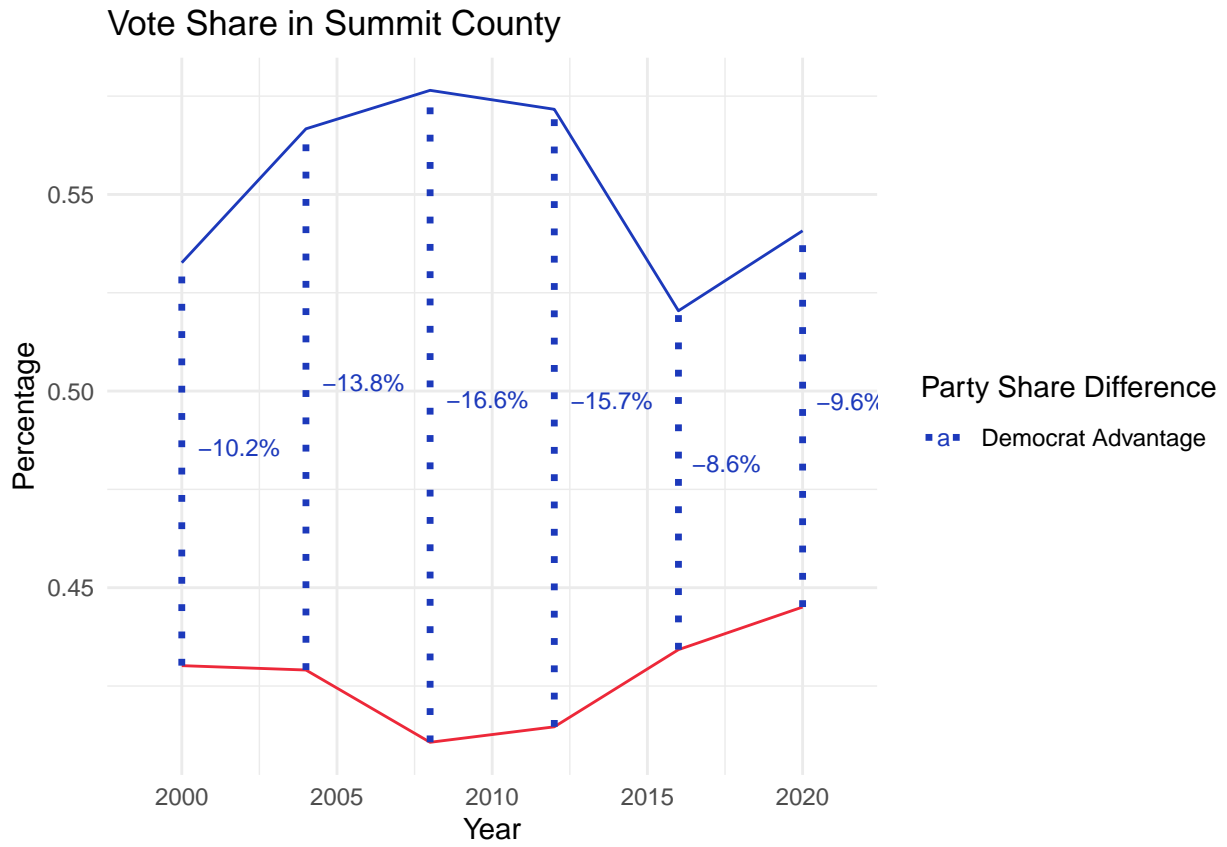




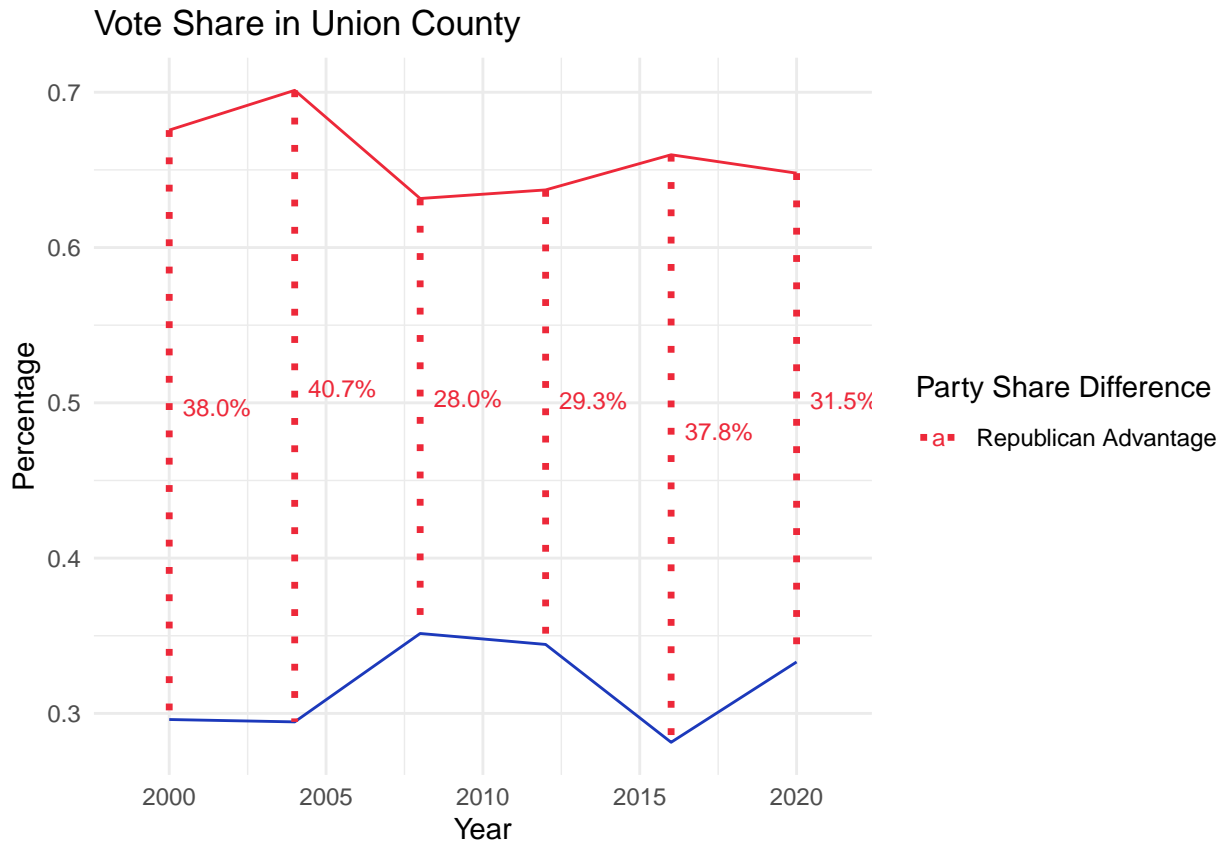


Vote Share in Pickaway County

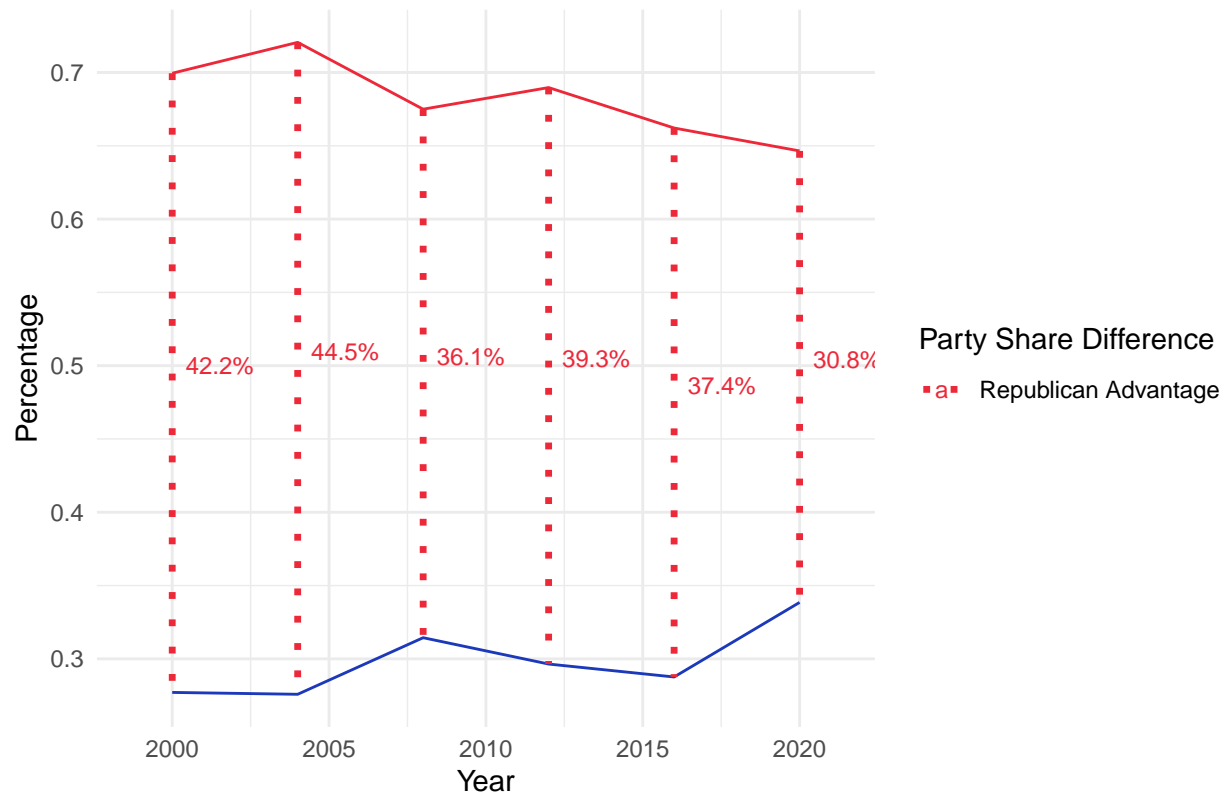


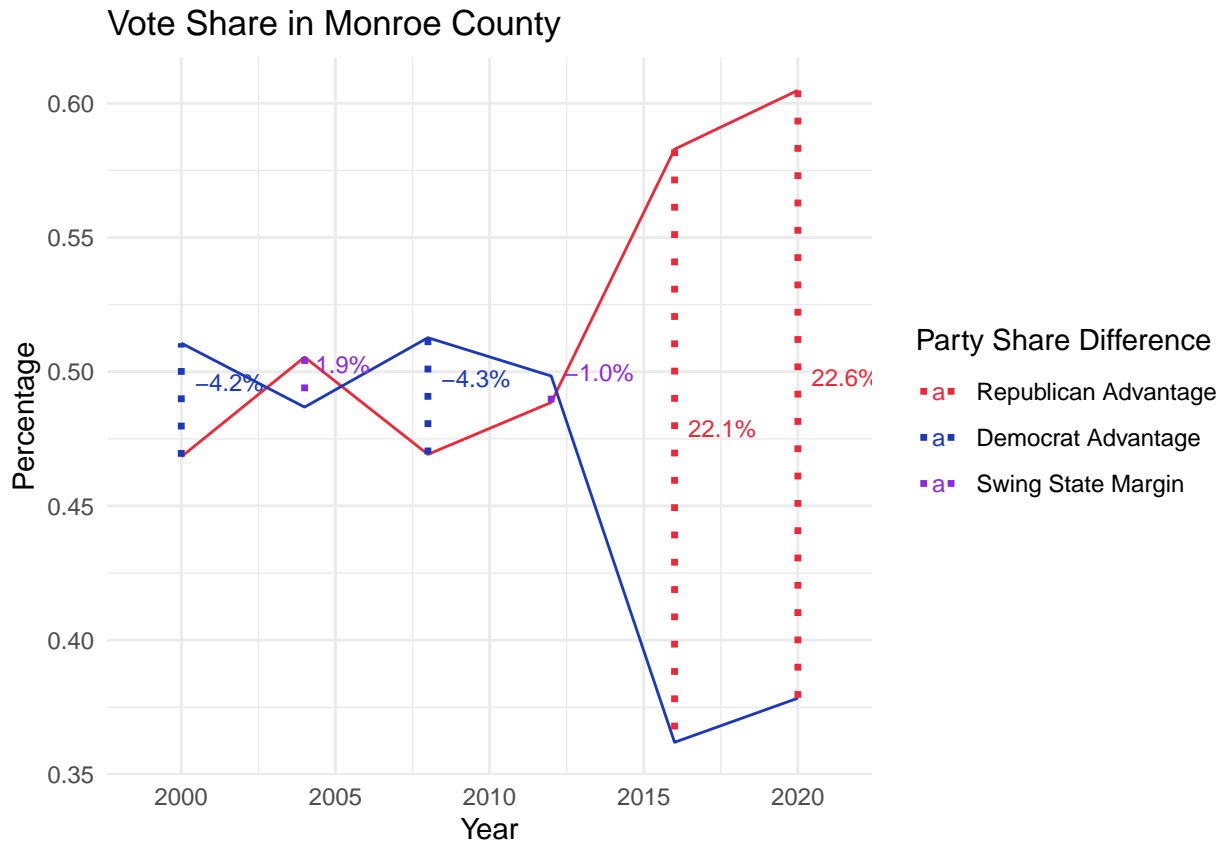


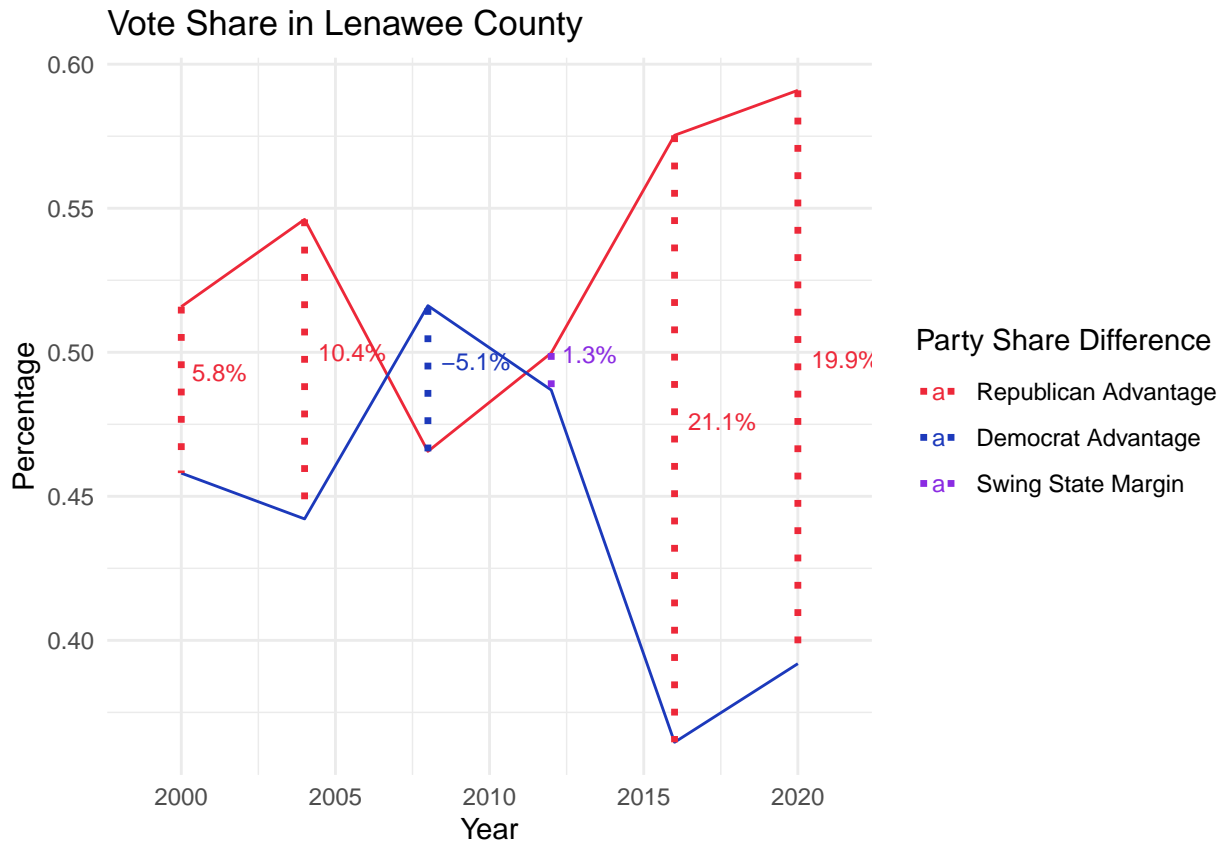




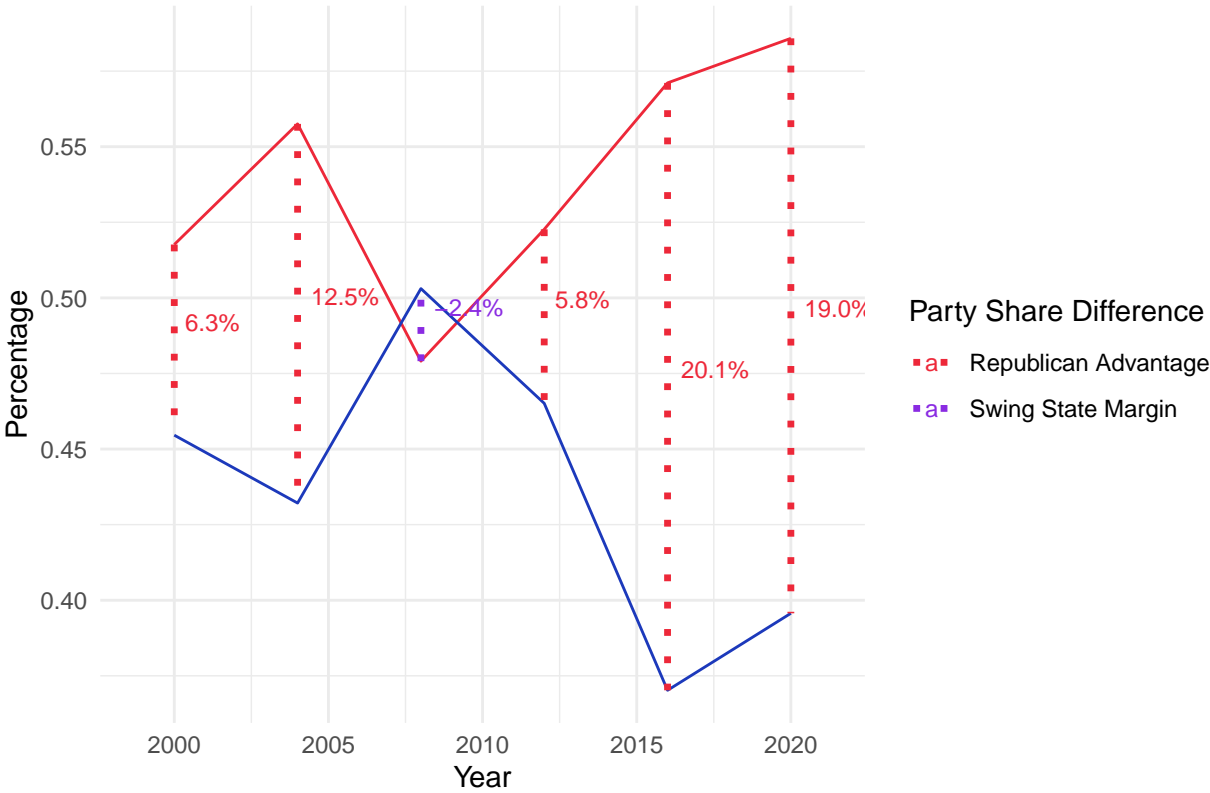
Vote Share in Warren County



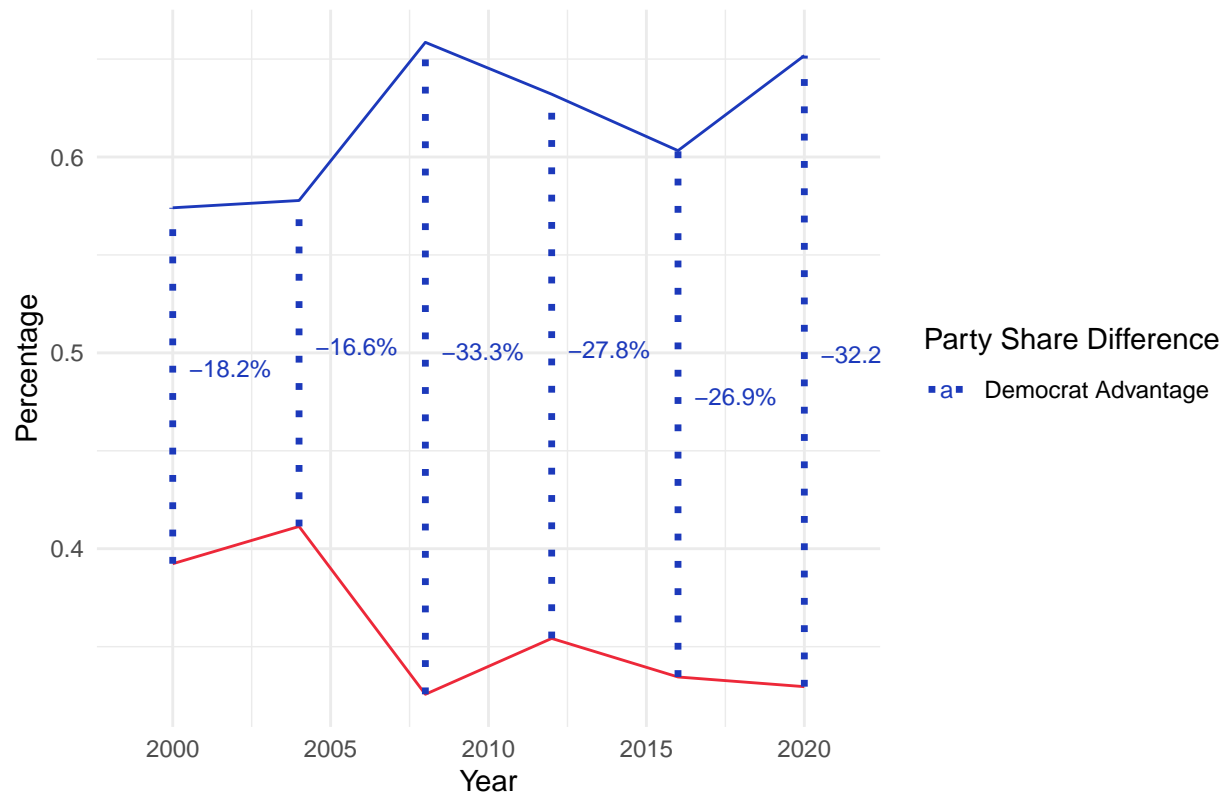




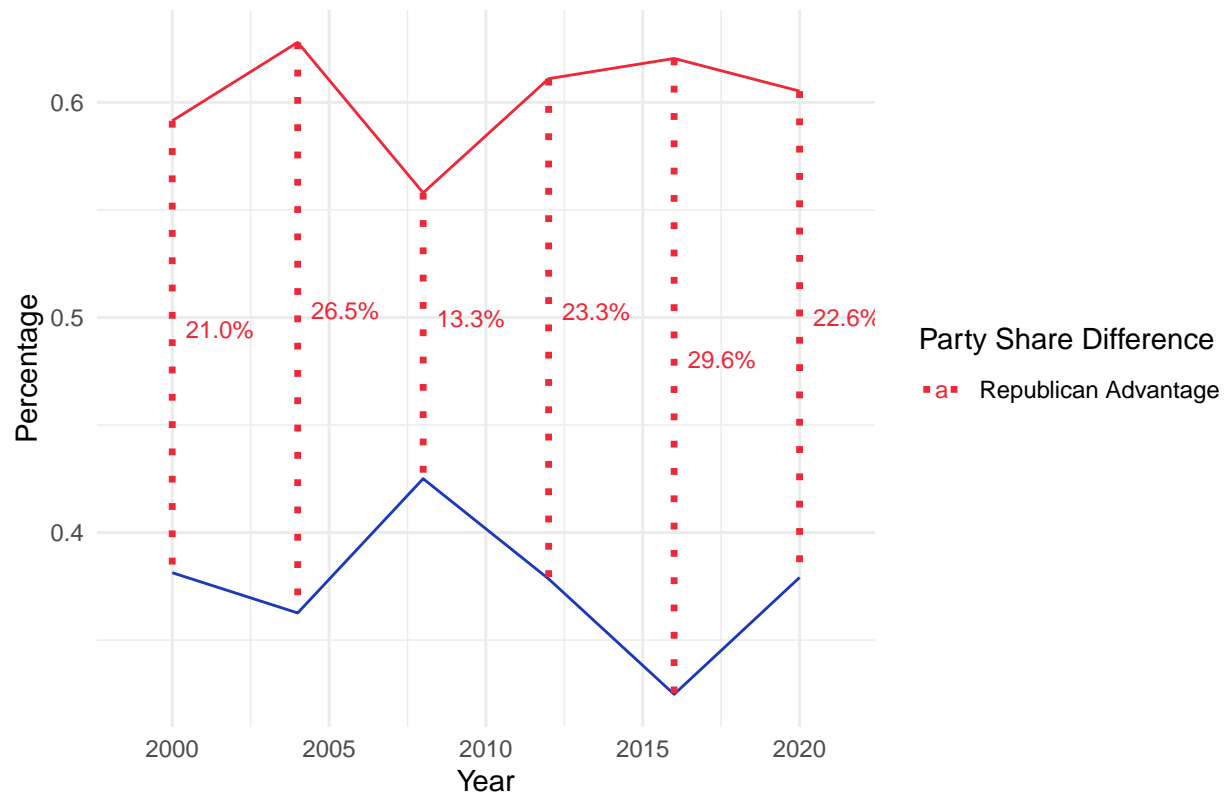
Vote Share in Jackson County

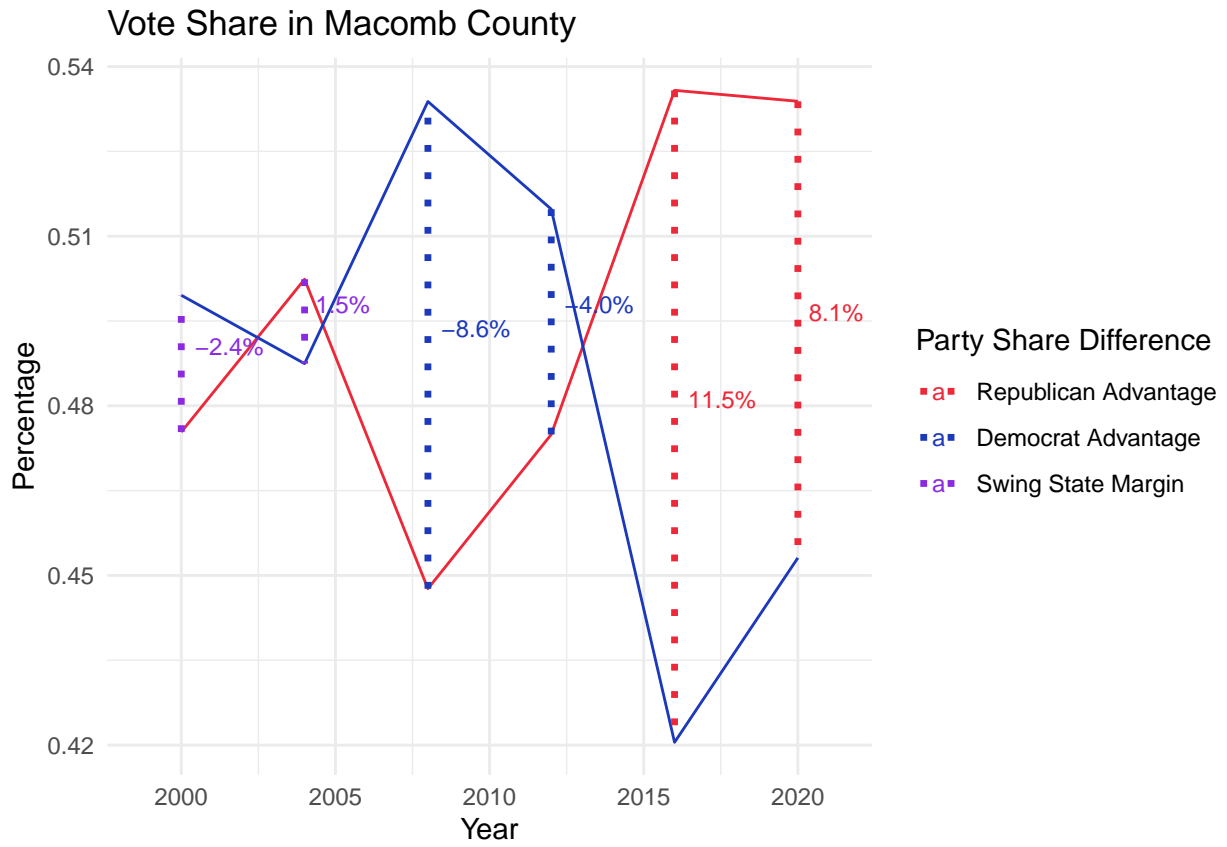


Vote Share in Ingham County



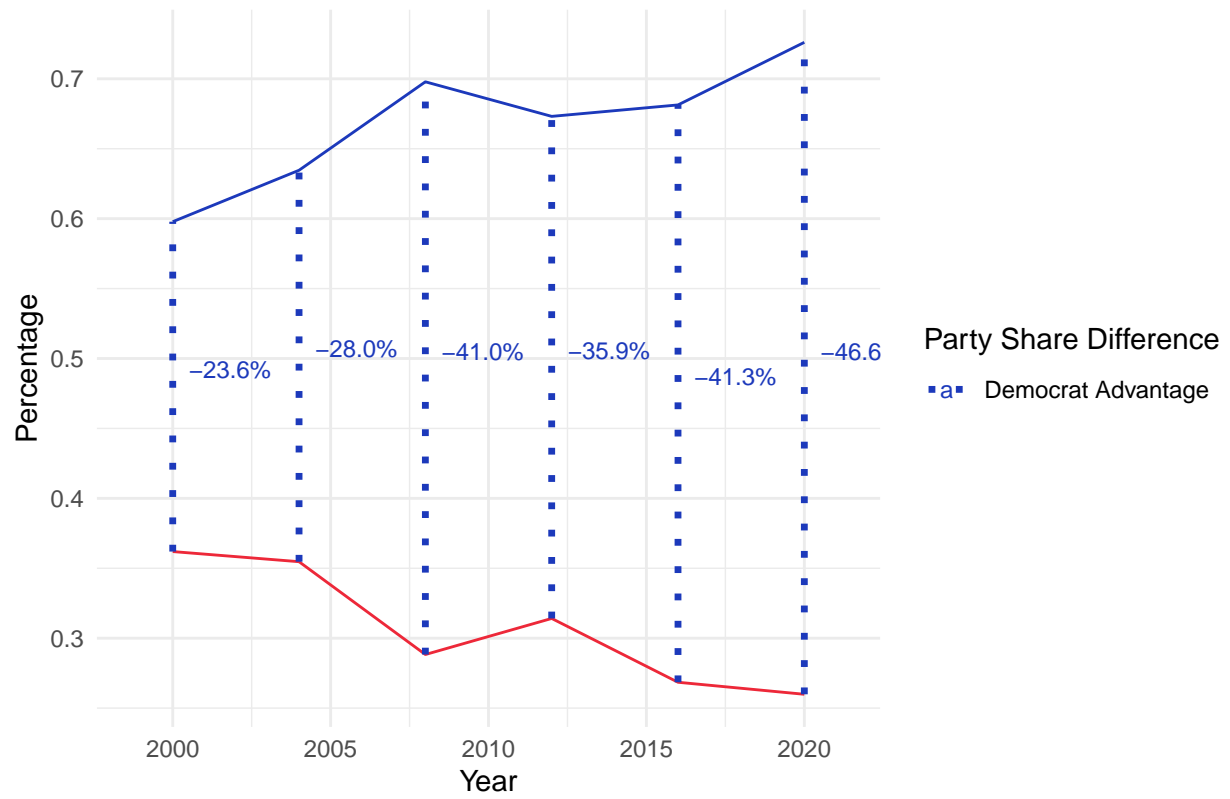
Vote Share in Livingston County

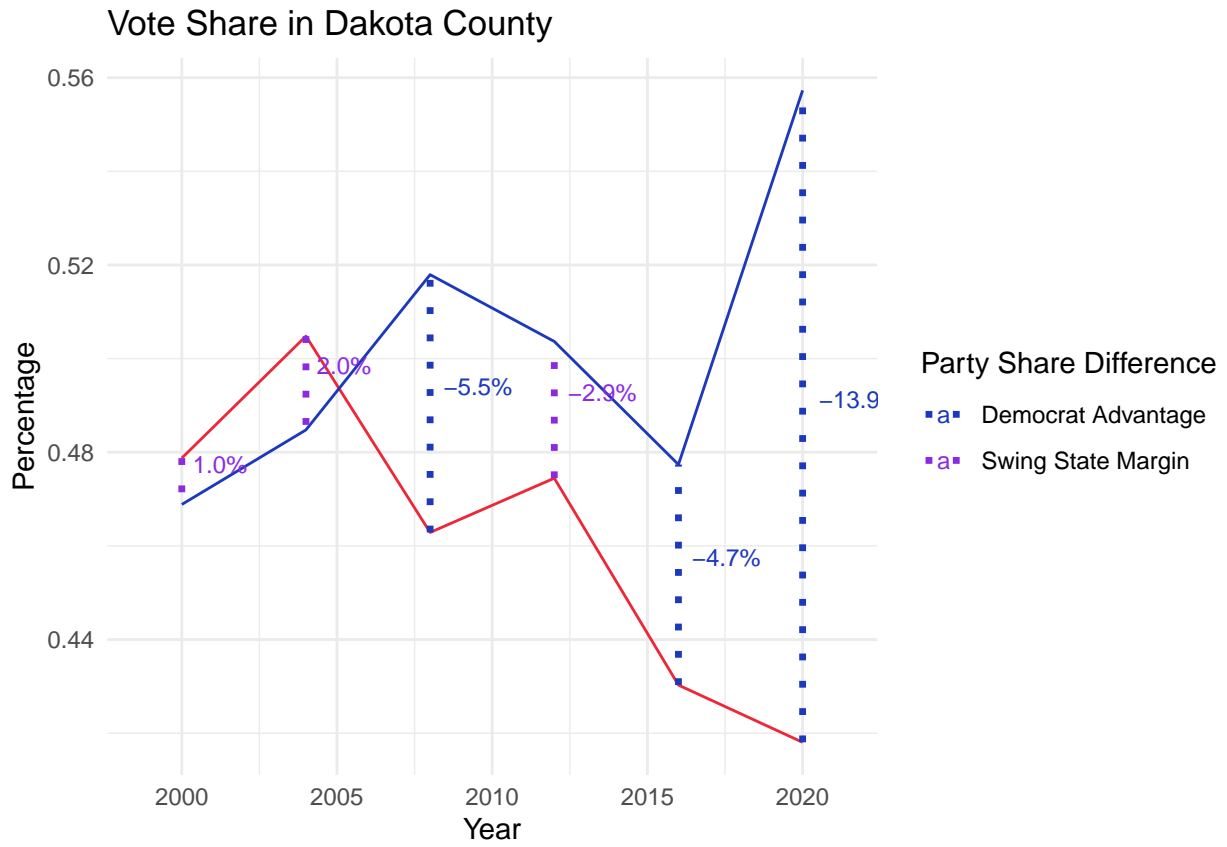


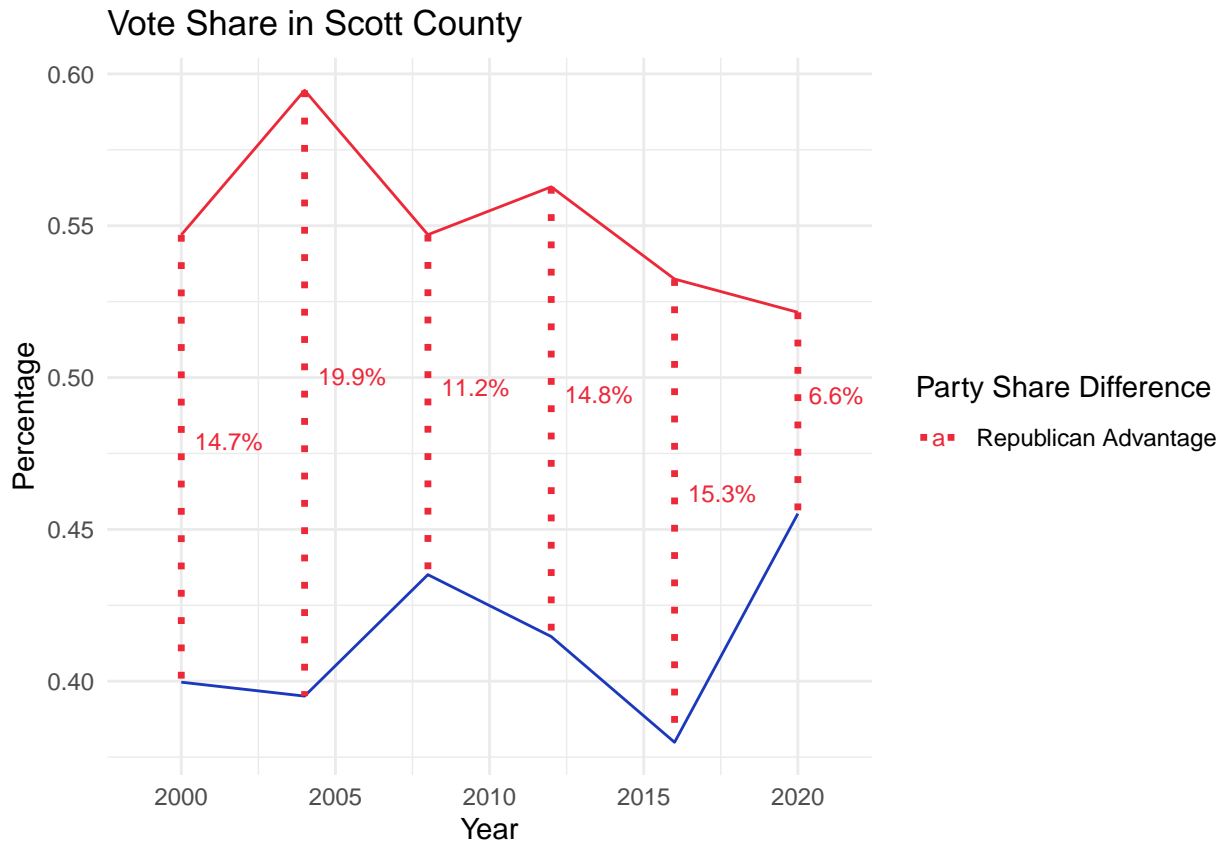


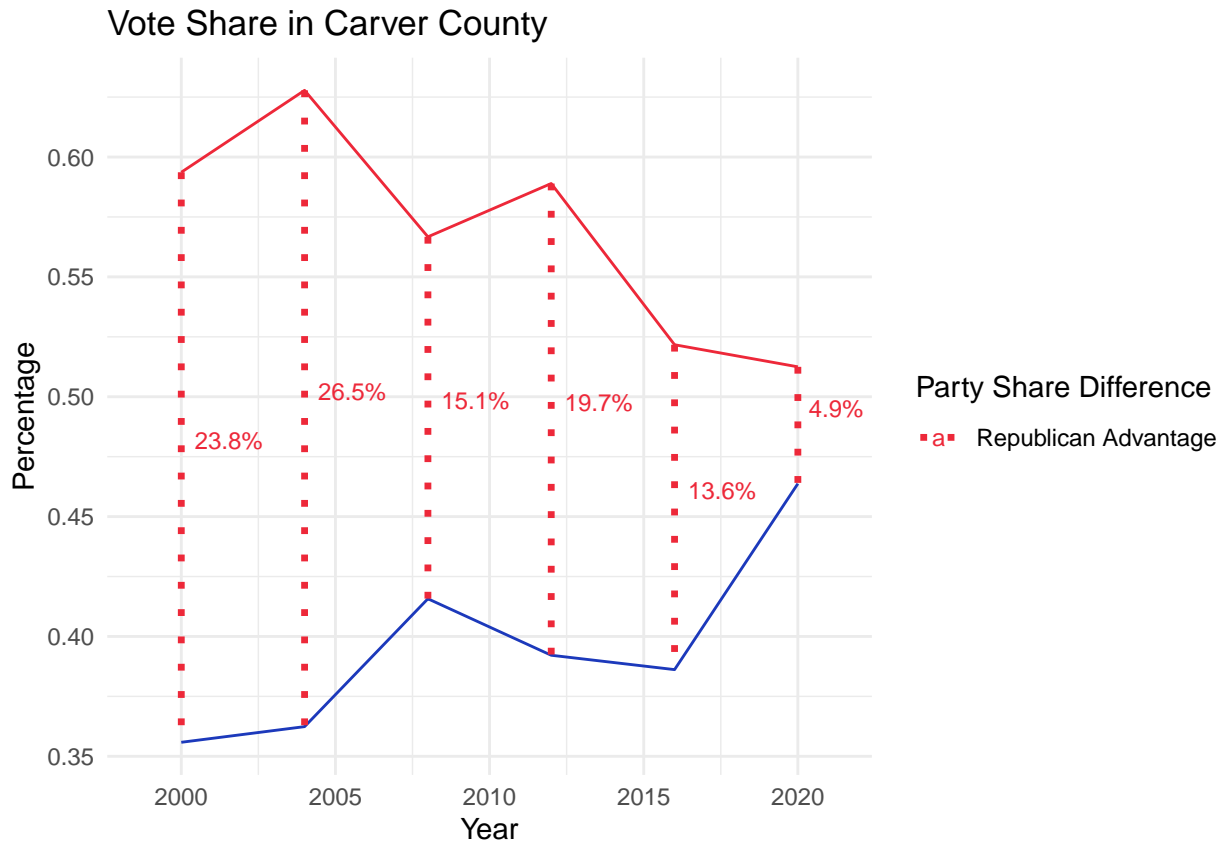


# Vote Share in Washtenaw County

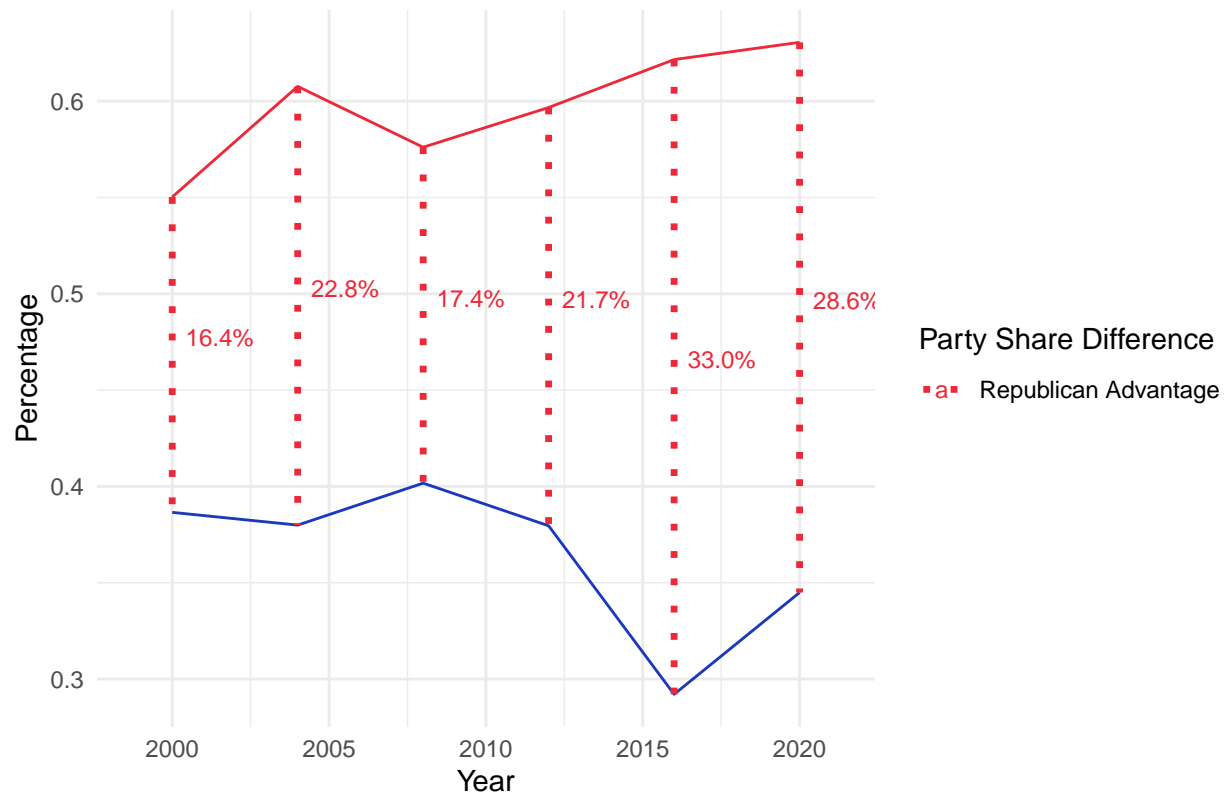




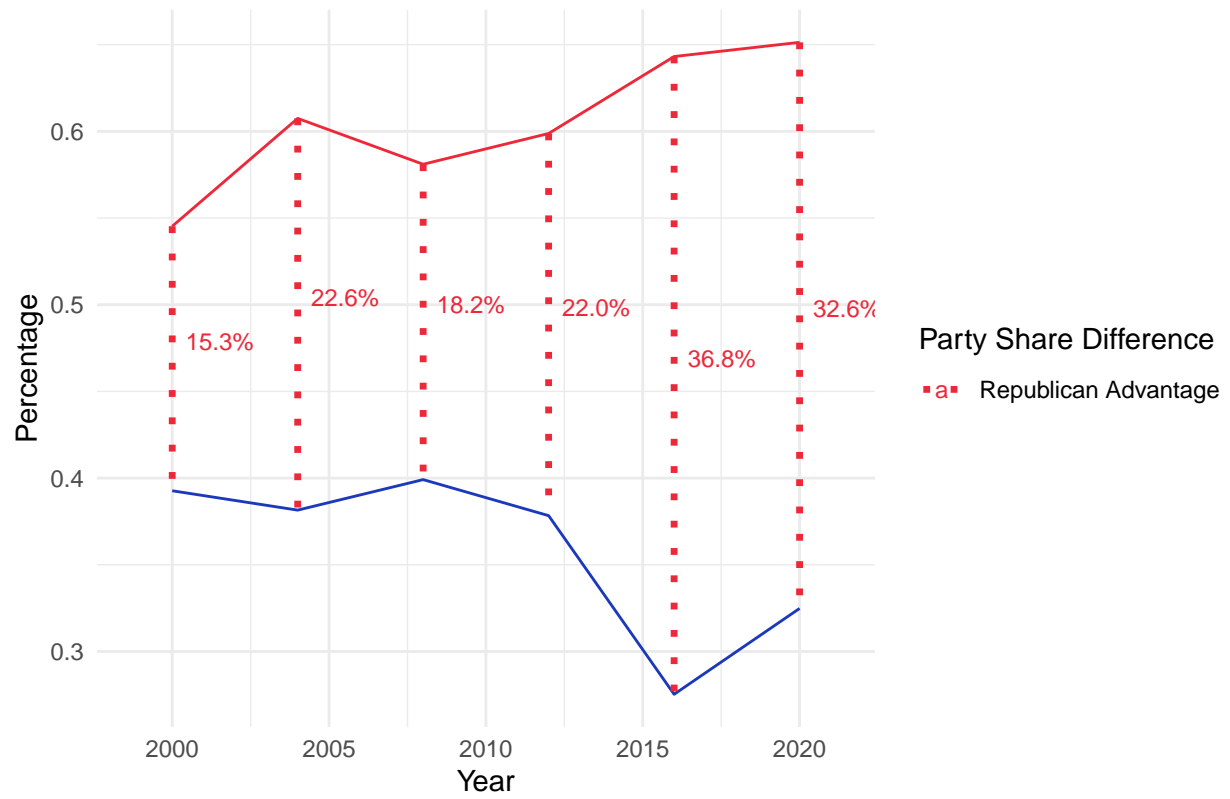




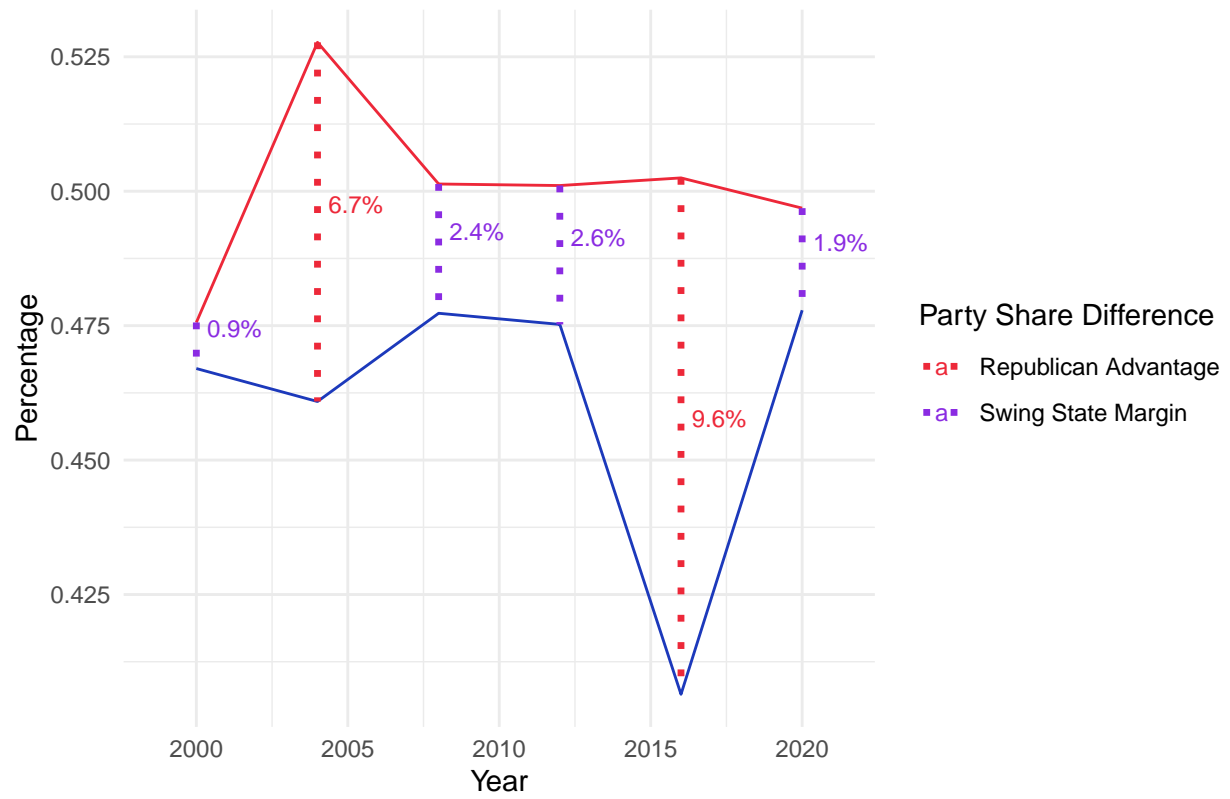
Vote Share in Wright County

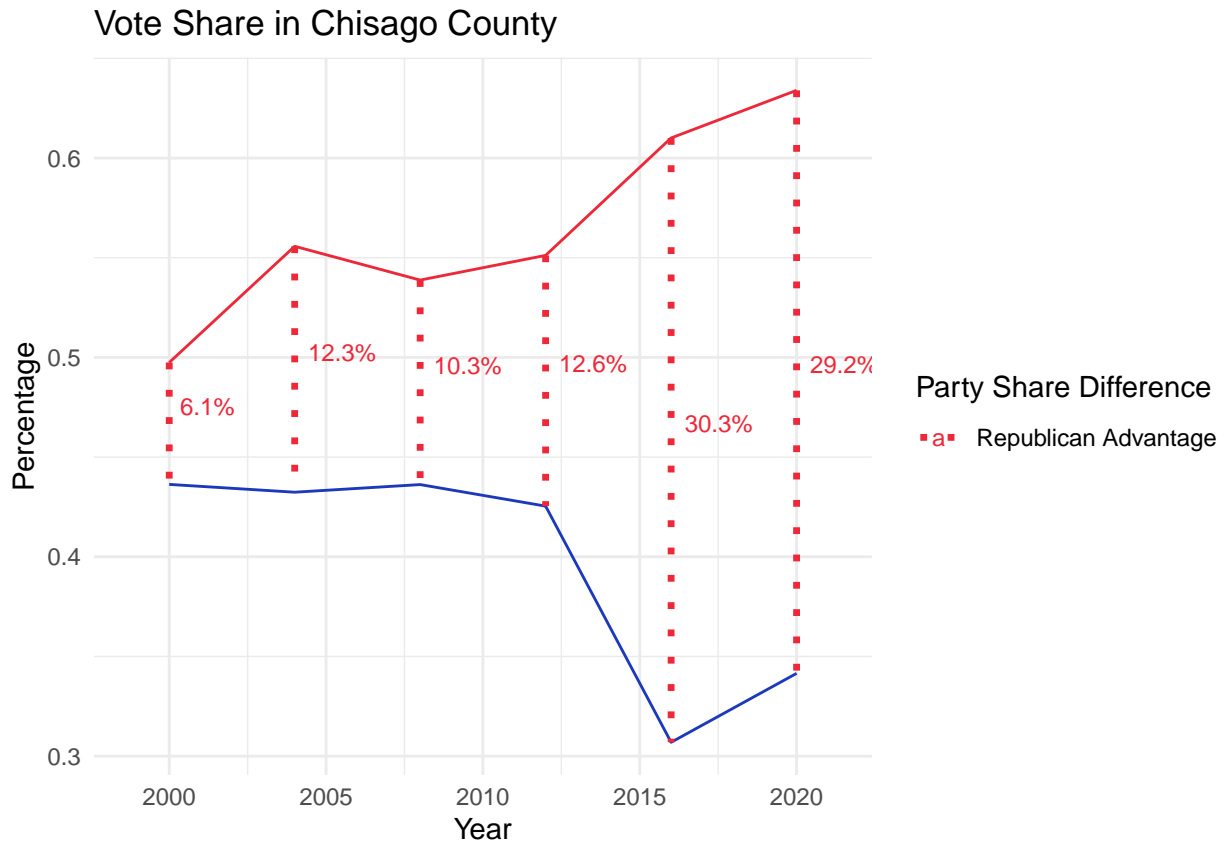


## Vote Share in Sherburne County



Vote Share in Anoka County





```
## Warning in full_join(unemployment, population, by = "County"): Detected an unexpected many-to-many r
## i Row 1 of 'x' matches multiple rows in 'y'.
## i Row 18 of 'y' matches multiple rows in 'x'.
## i If a many-to-many relationship is expected, set 'relationship =
## "many-to-many"' to silence this warning.
```



