

Preliminary Unemployment Visualizations

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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)

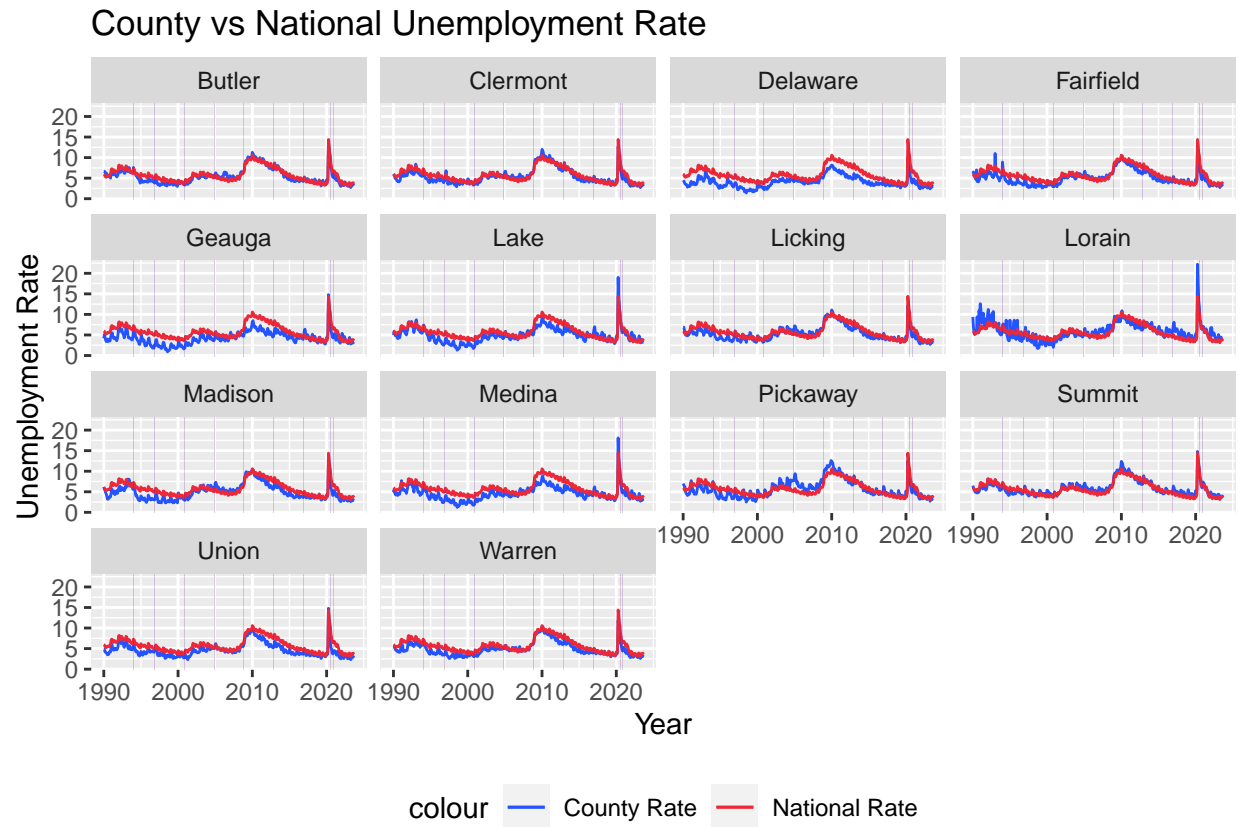
# Now, join this national rate back to the combined data
combinedData <- combinedData %>%
  left_join(national_rates, by = c("Label" = "Label"))

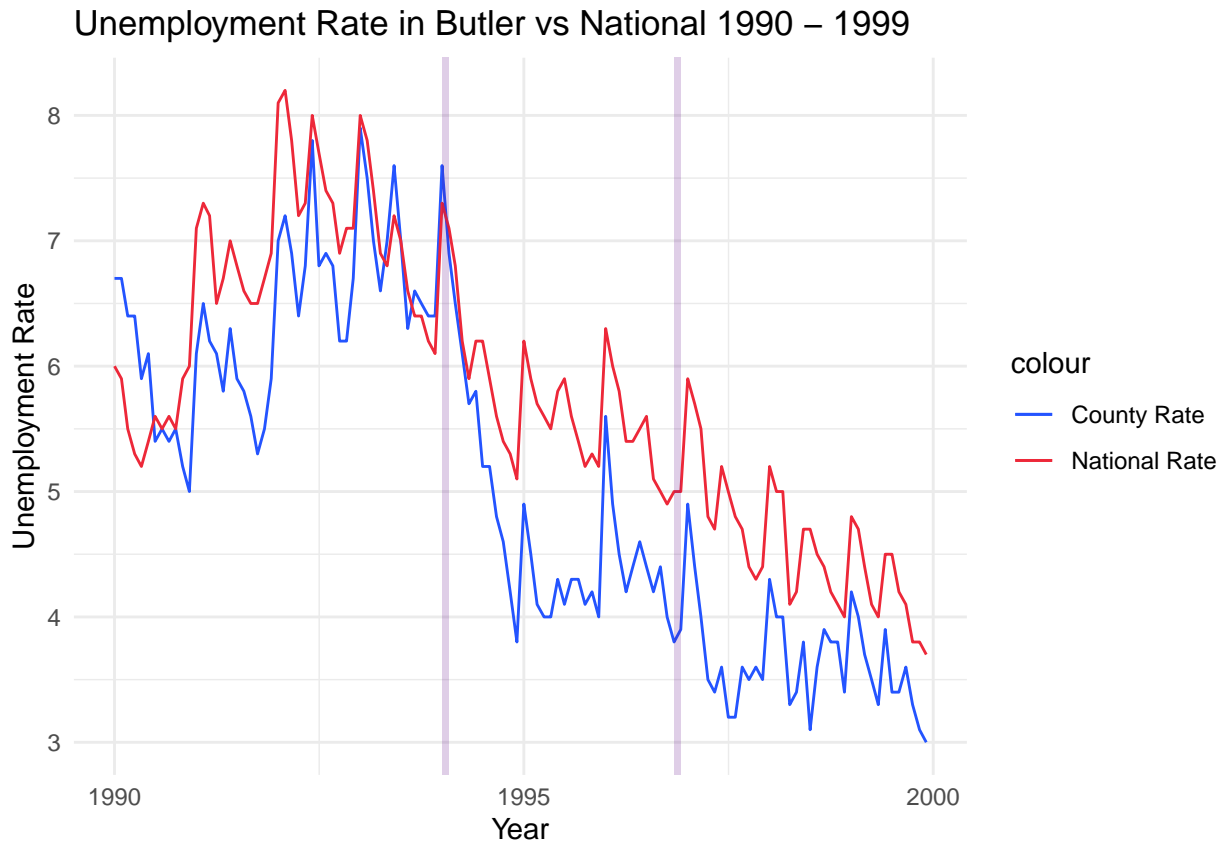
# Subtract the national rate from each county's rate
combinedData <- combinedData %>%
  mutate(relative_unemployment_rate = Value - rate)

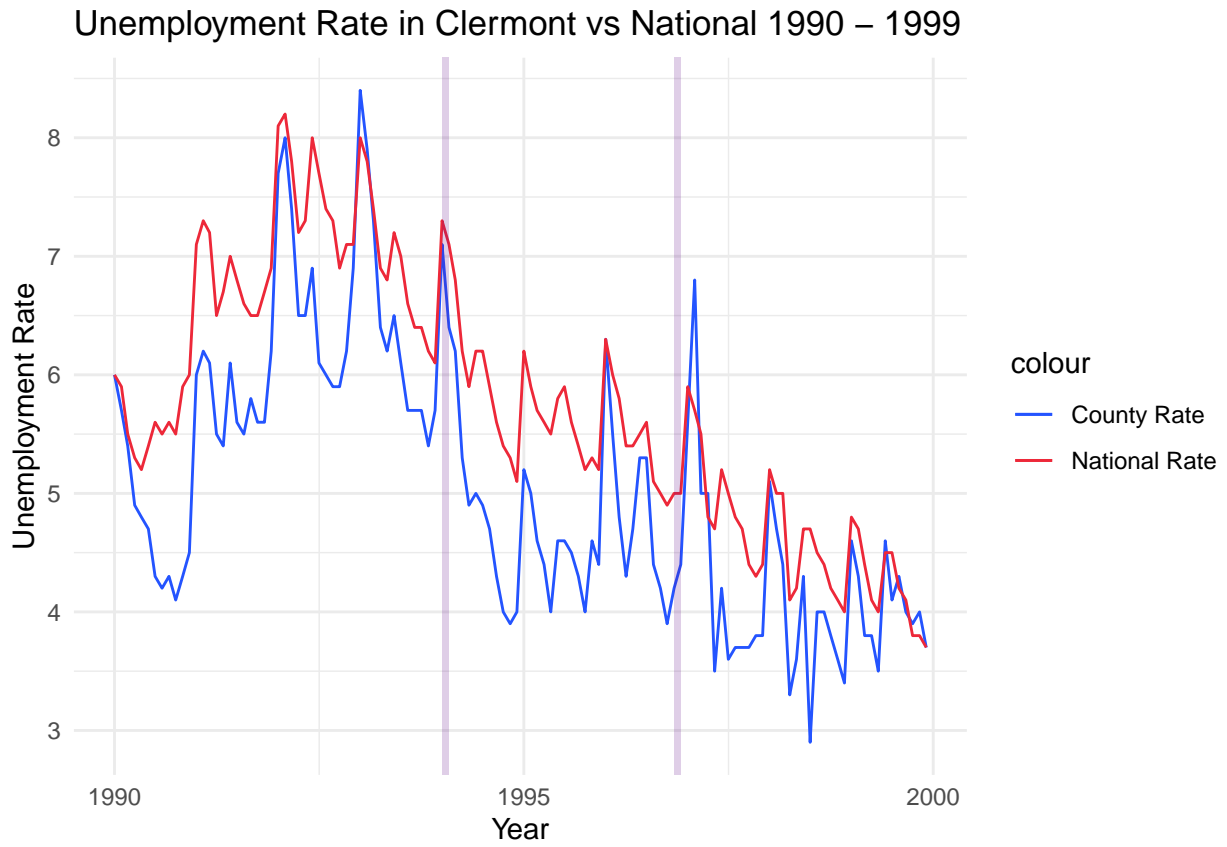
# Remove the national data if you no longer need it for the map
combinedData <- combinedData %>%
  filter(County != "National")

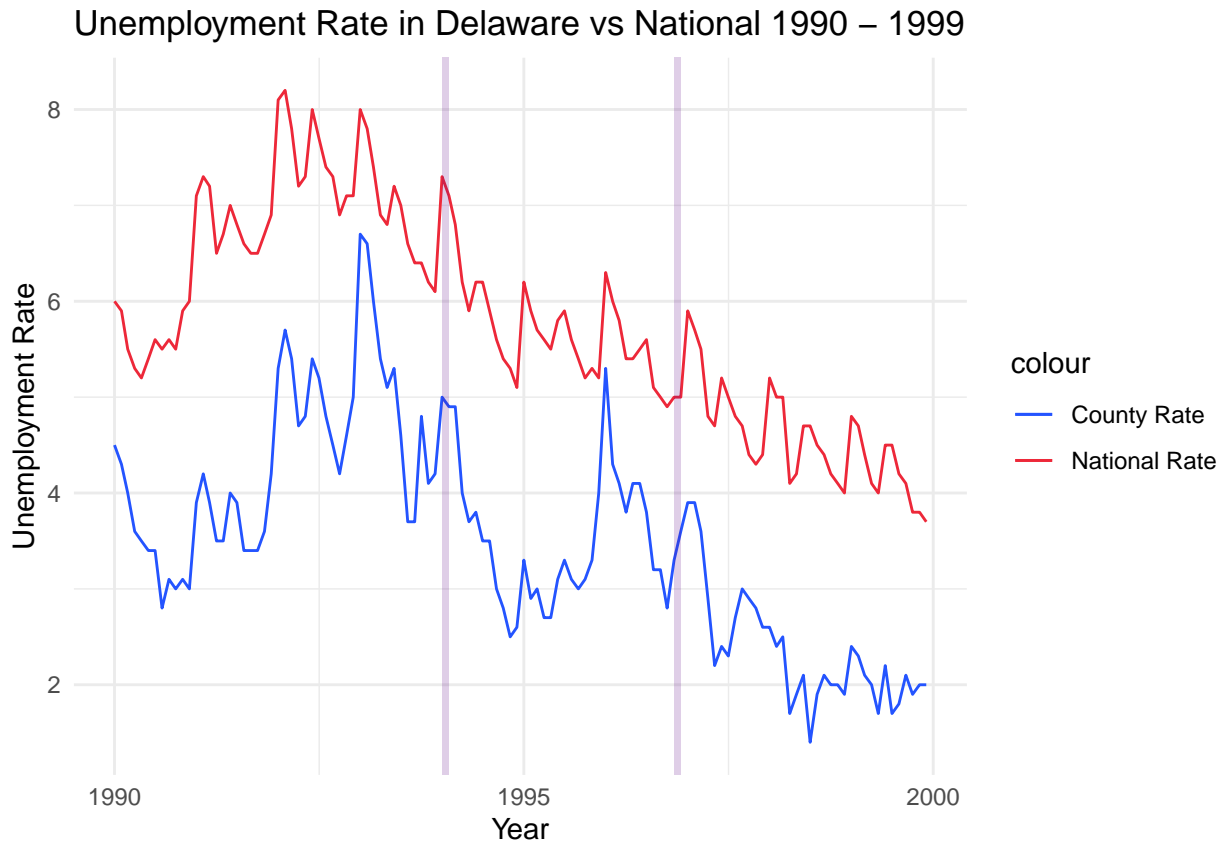
# Merge the spatial data with the filtered unemployment data
ohio_unemployment <- ohio_counties %>%
  left_join(combinedData, by = c("NAME" = "County"))
```

```
# 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()
```

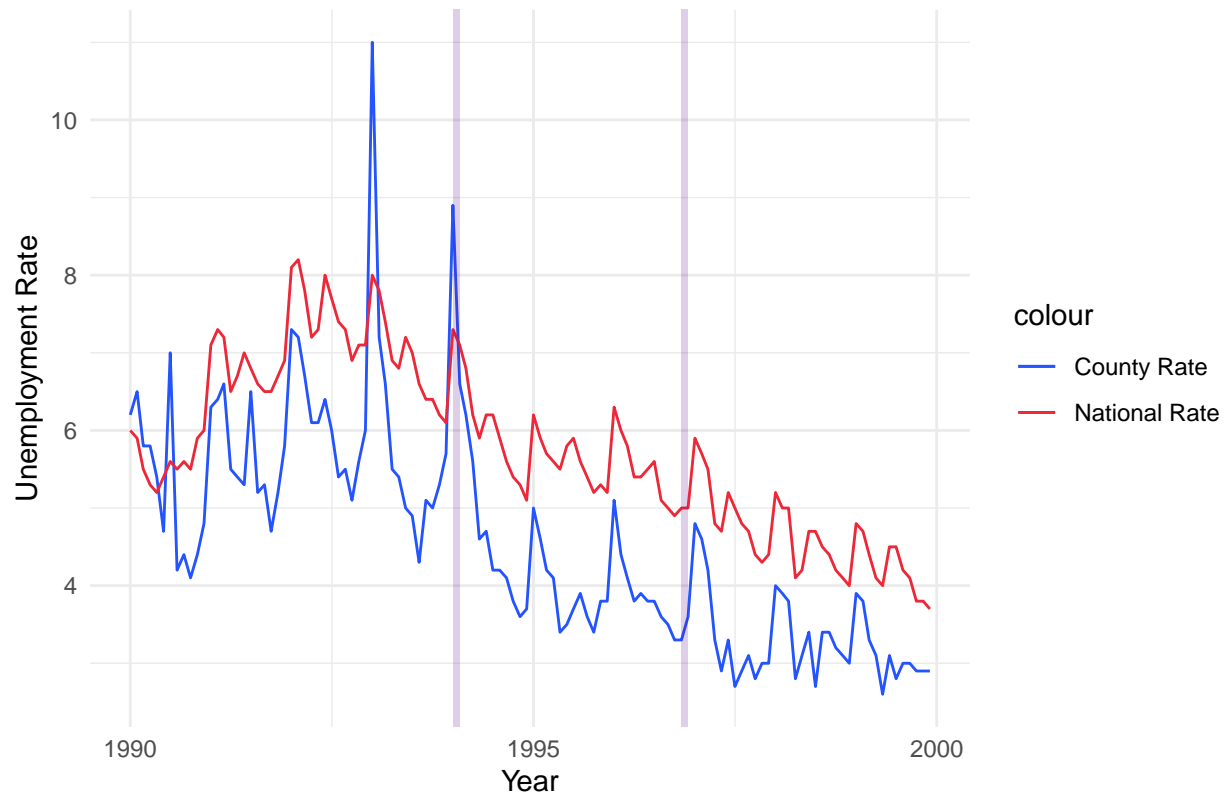


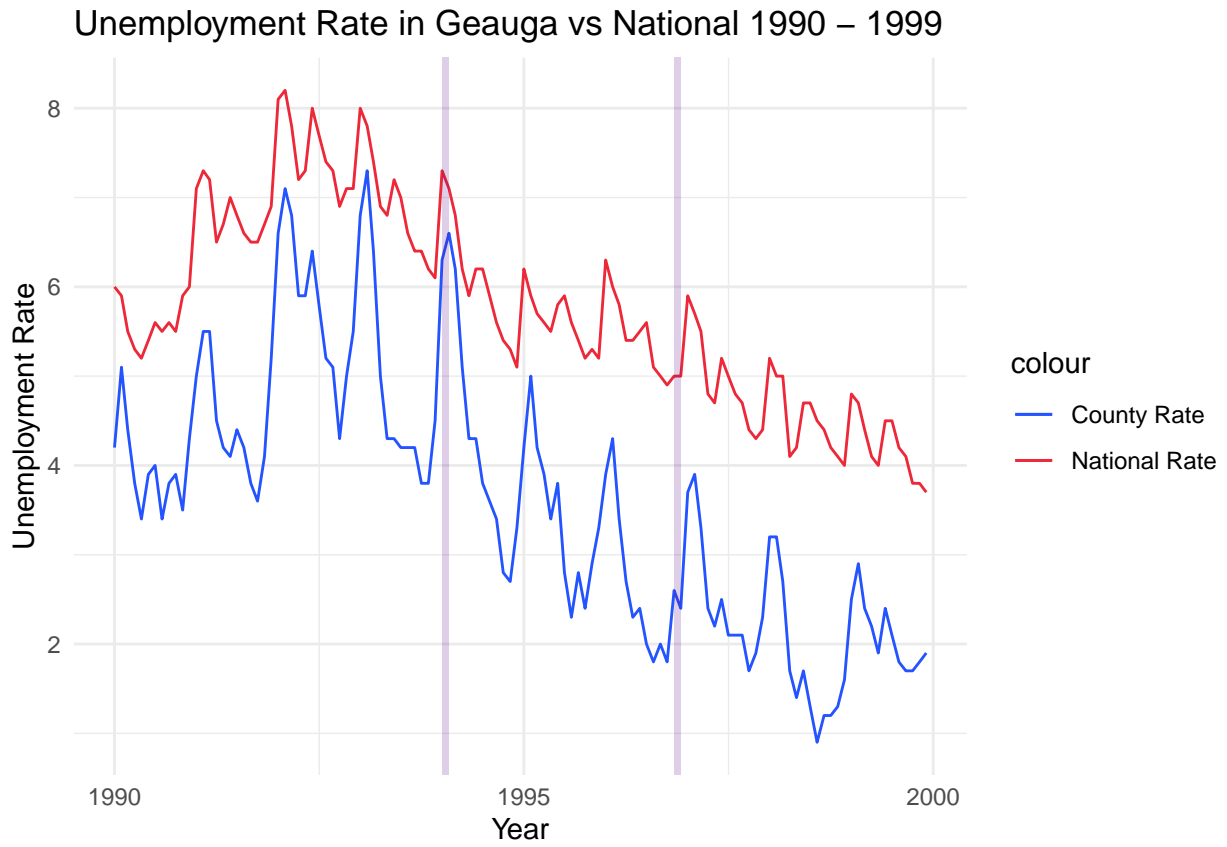




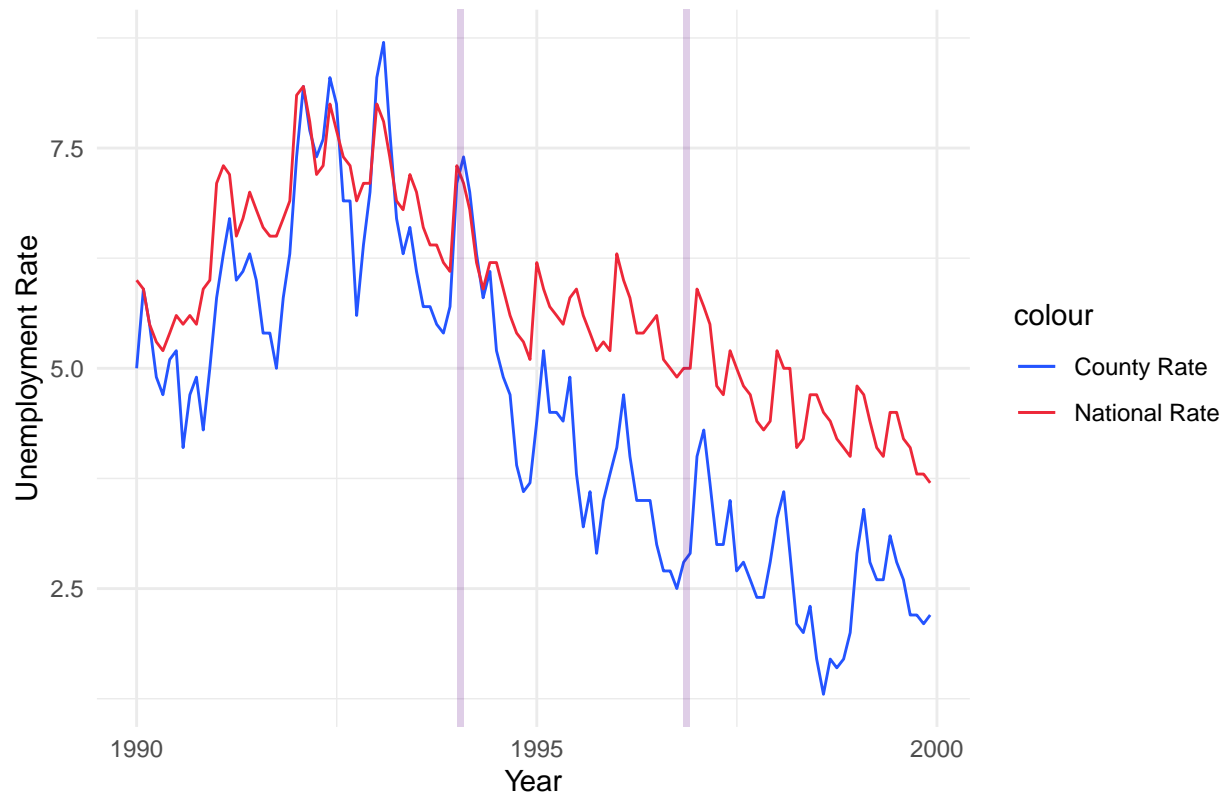


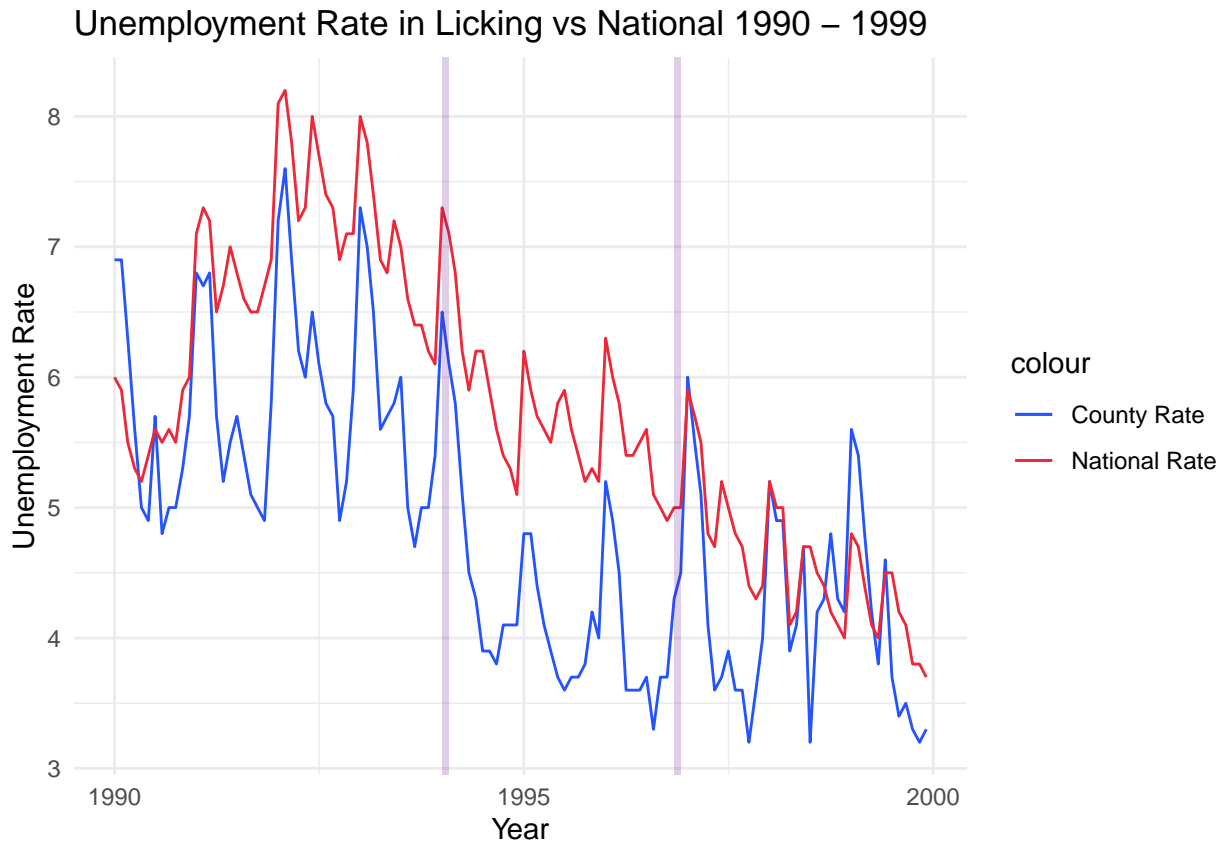
Unemployment Rate in Fairfield vs National 1990 – 1999

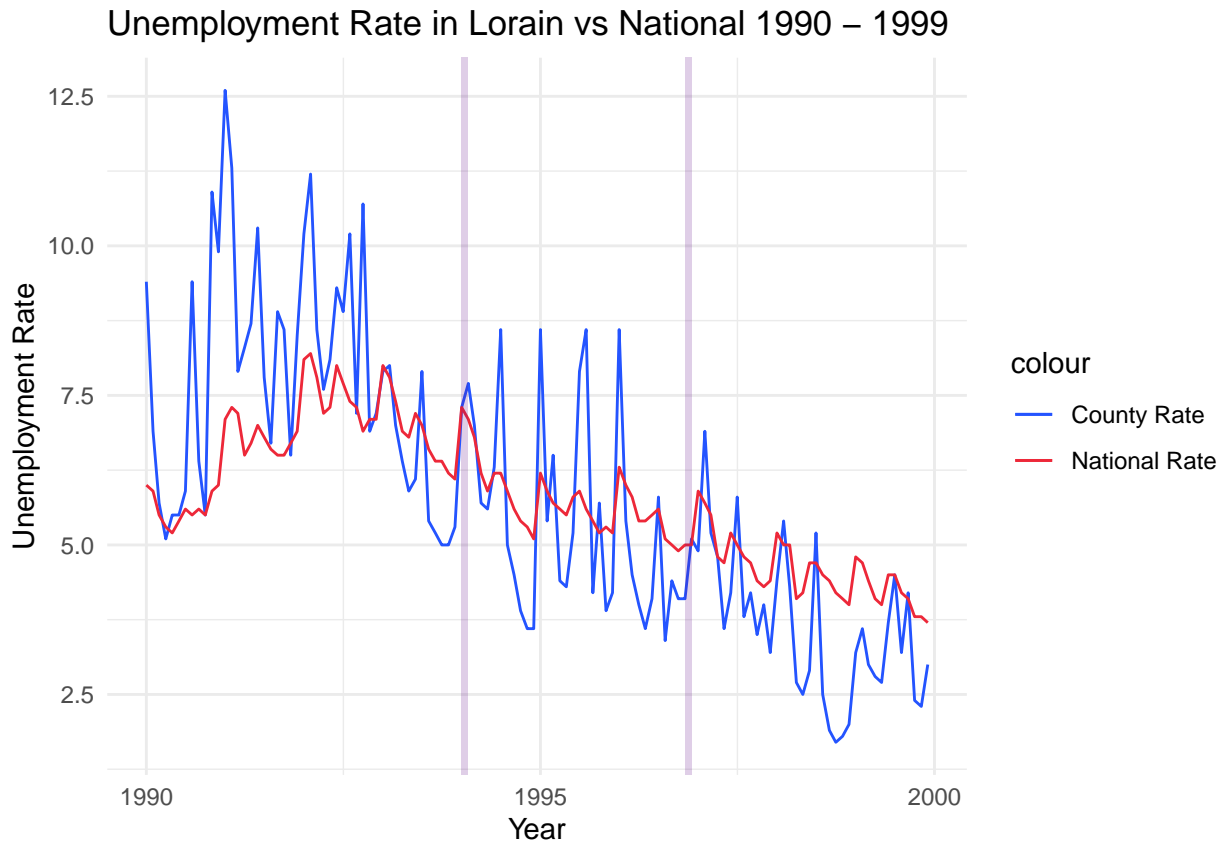


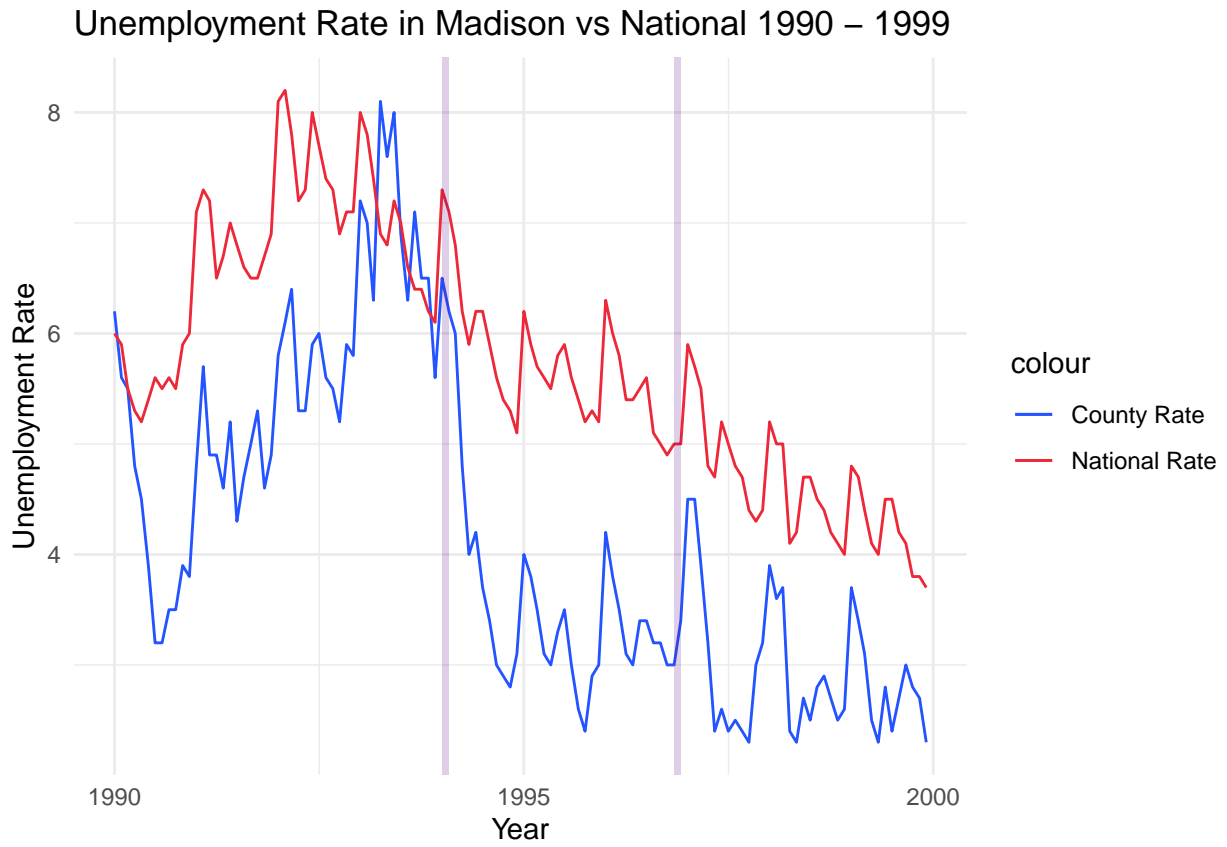


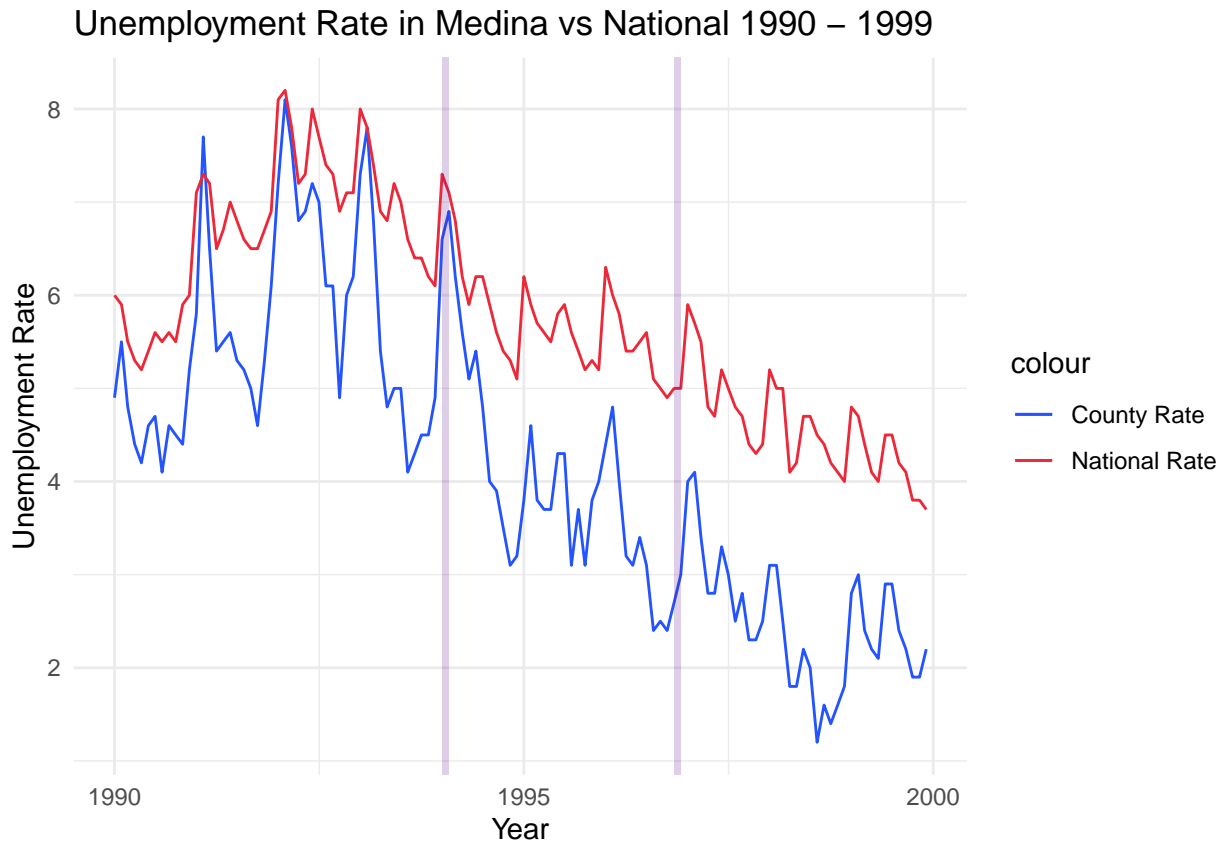
Unemployment Rate in Lake vs National 1990 – 1999

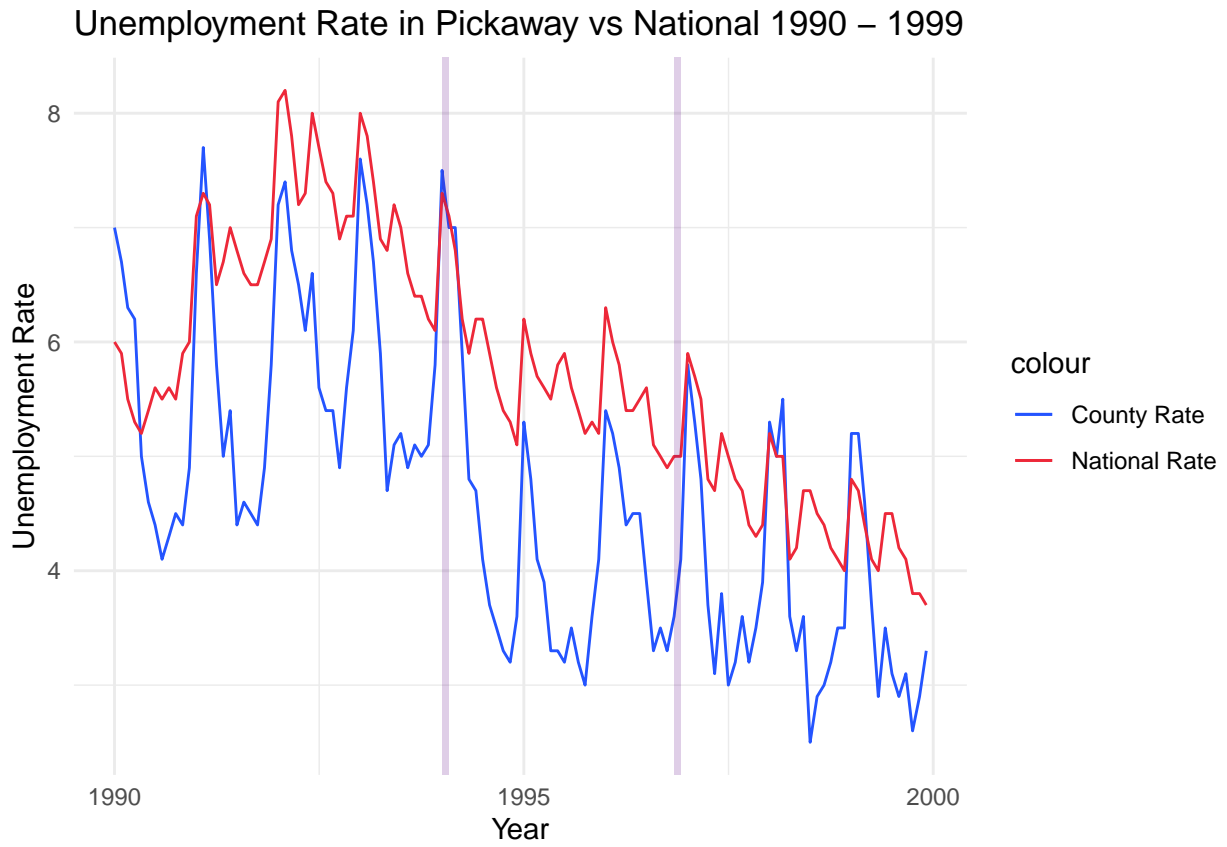


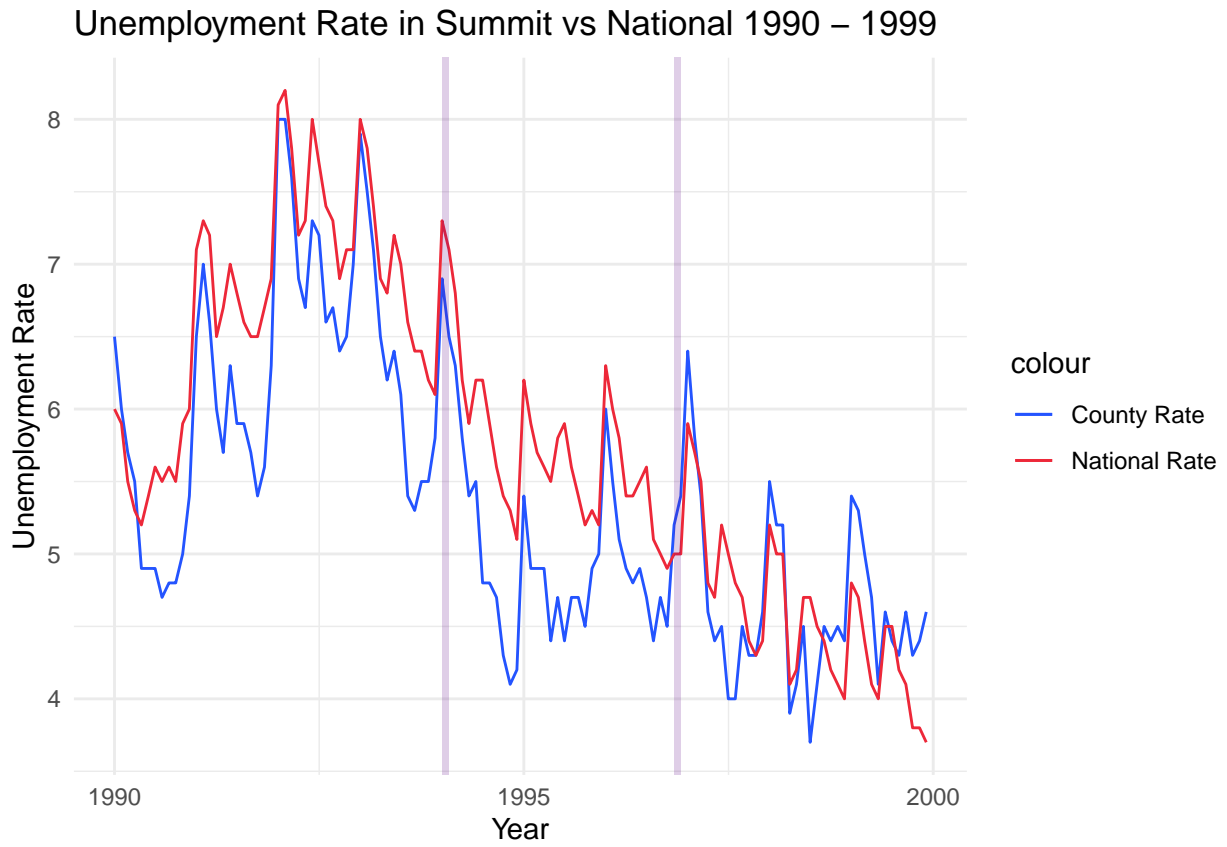


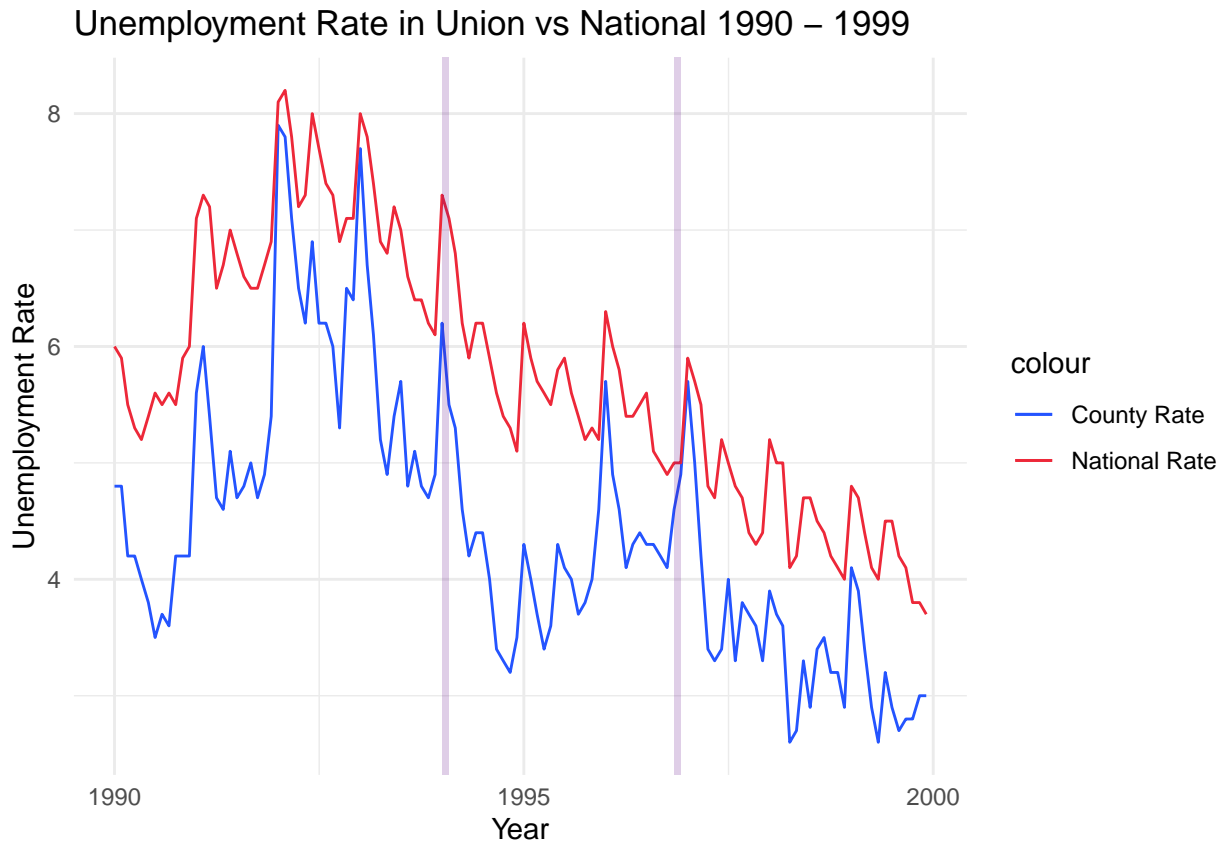


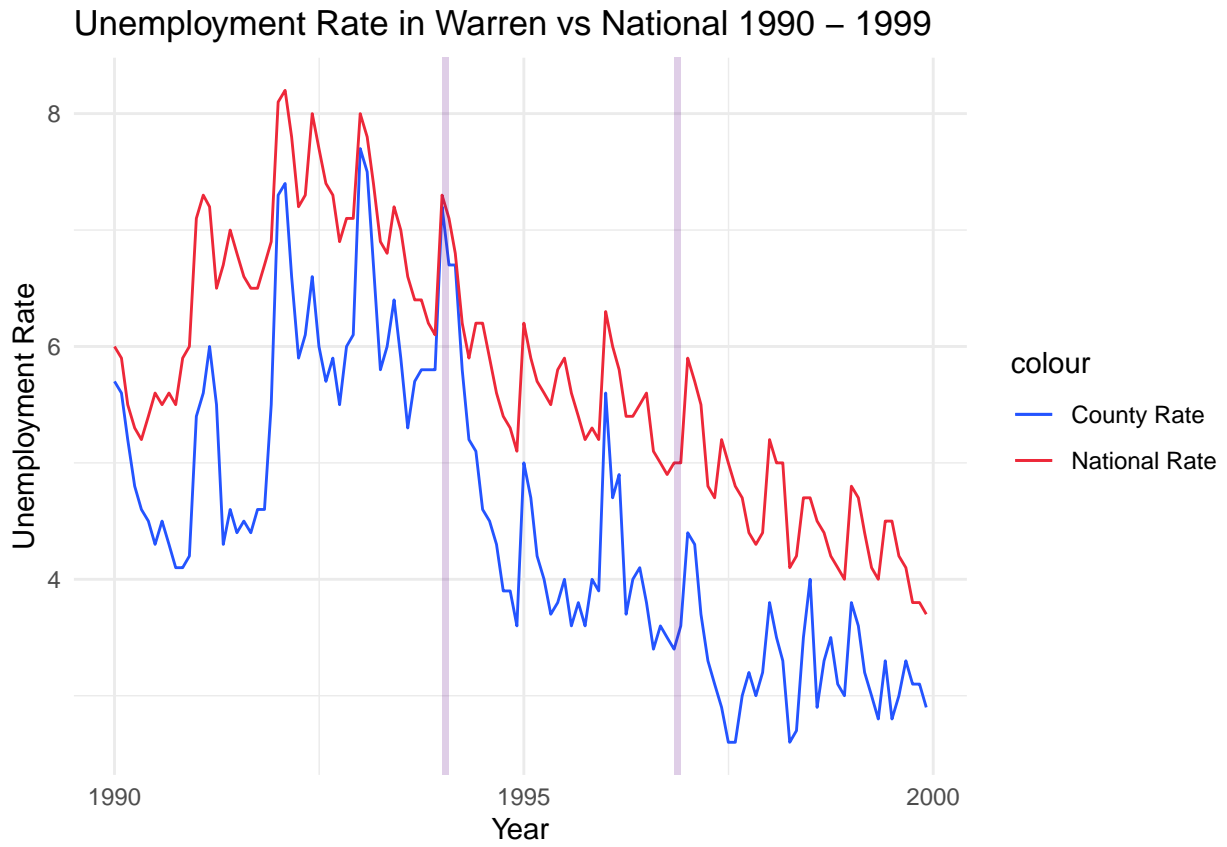




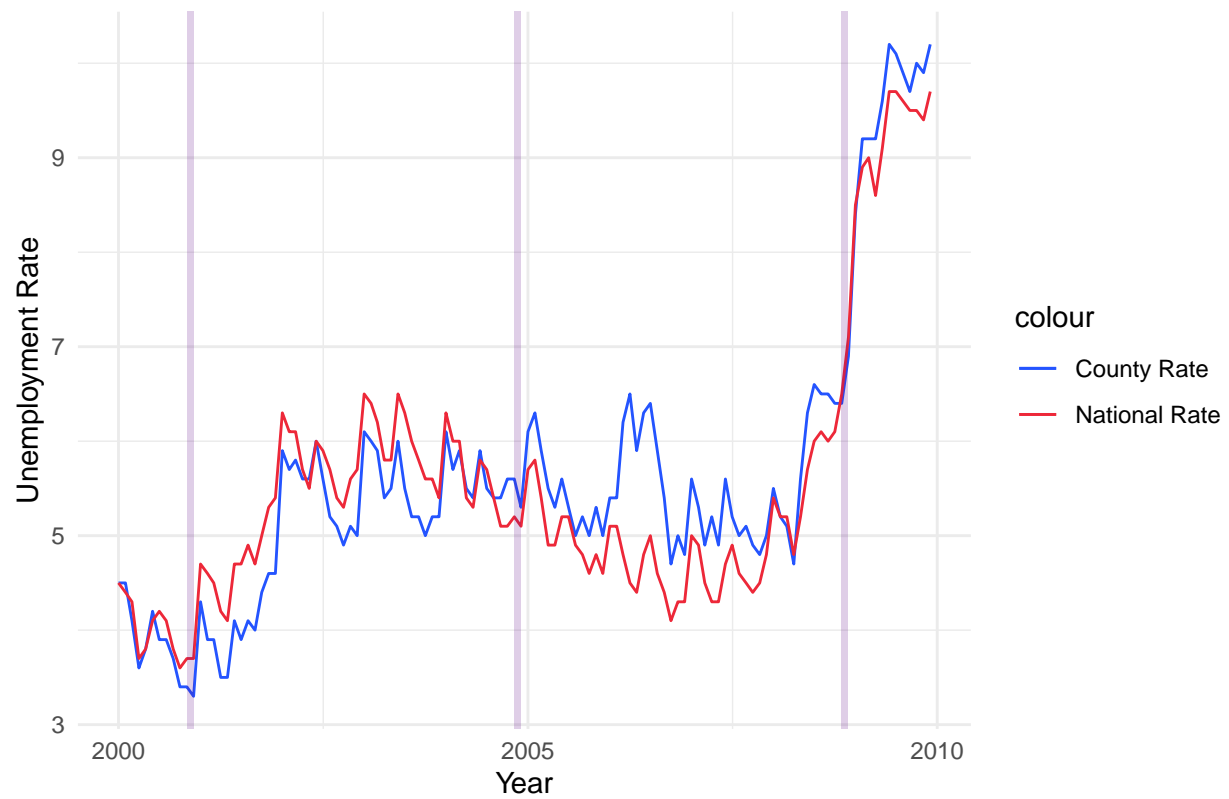




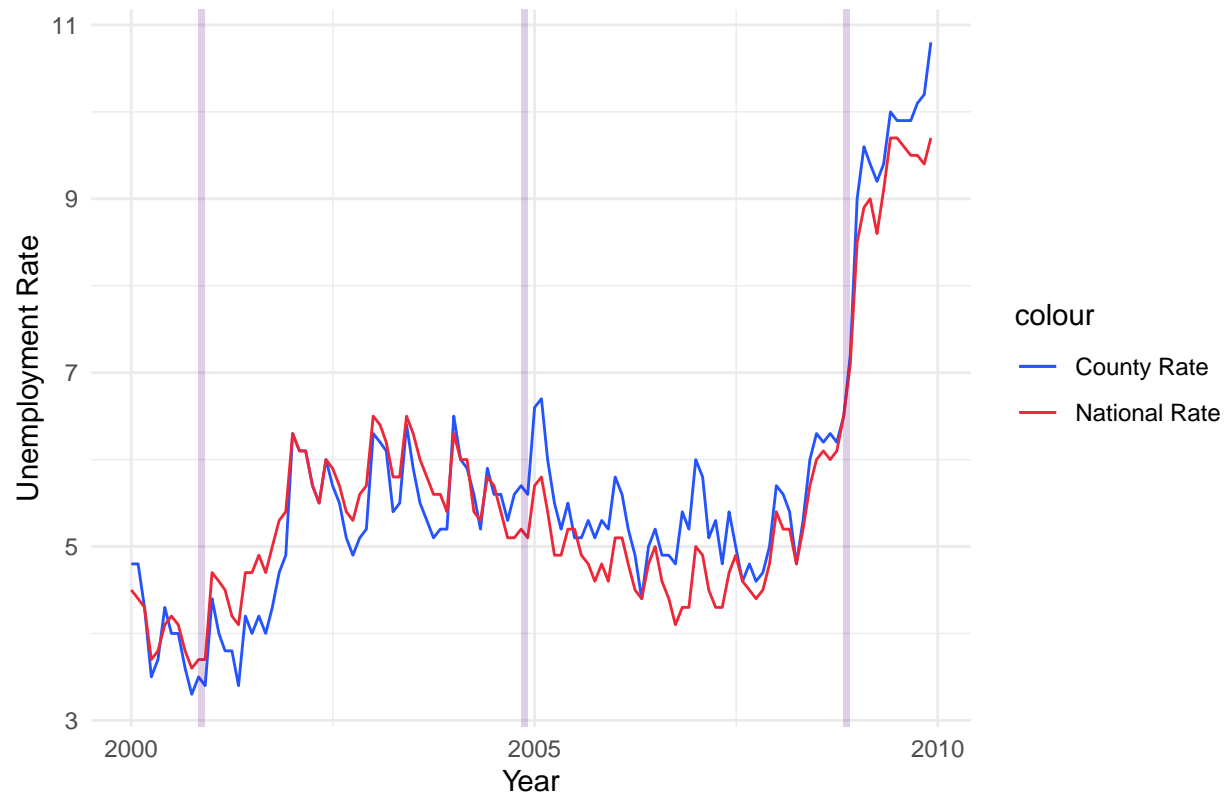


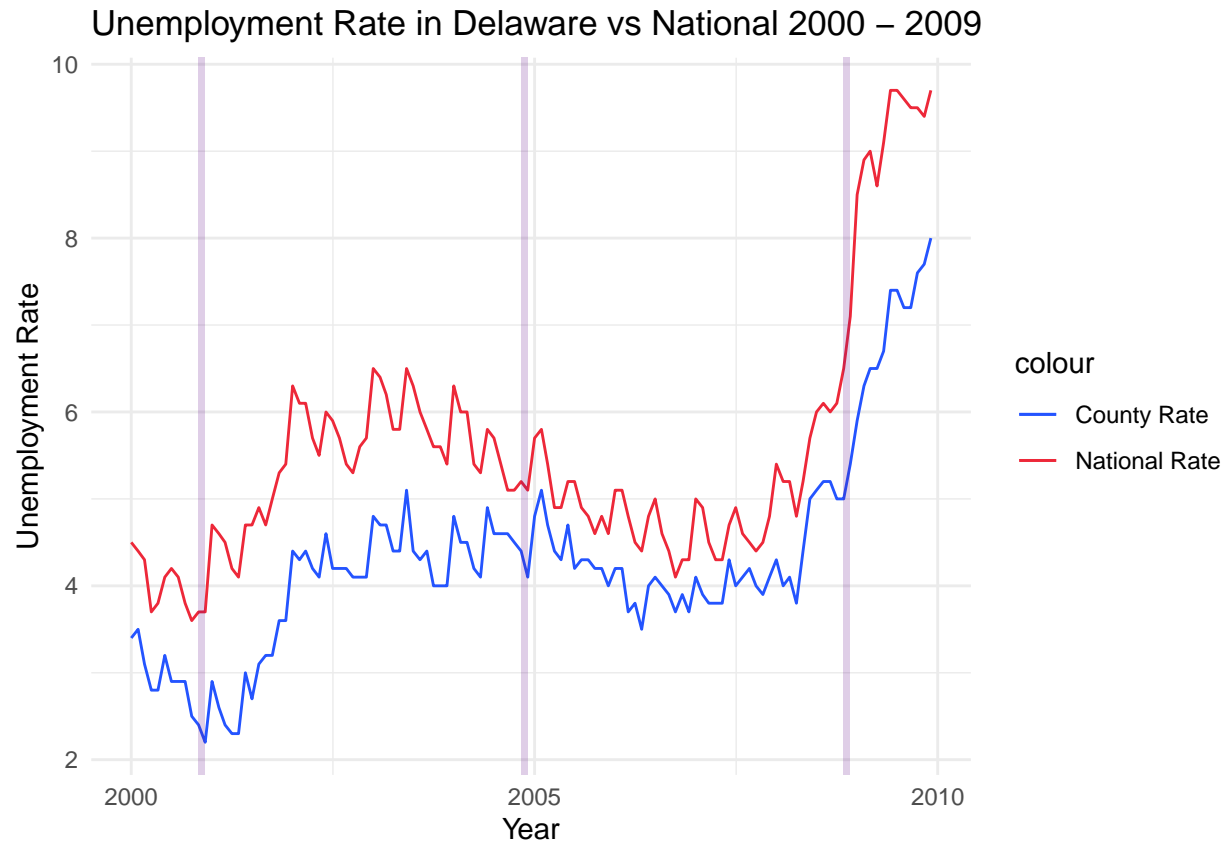


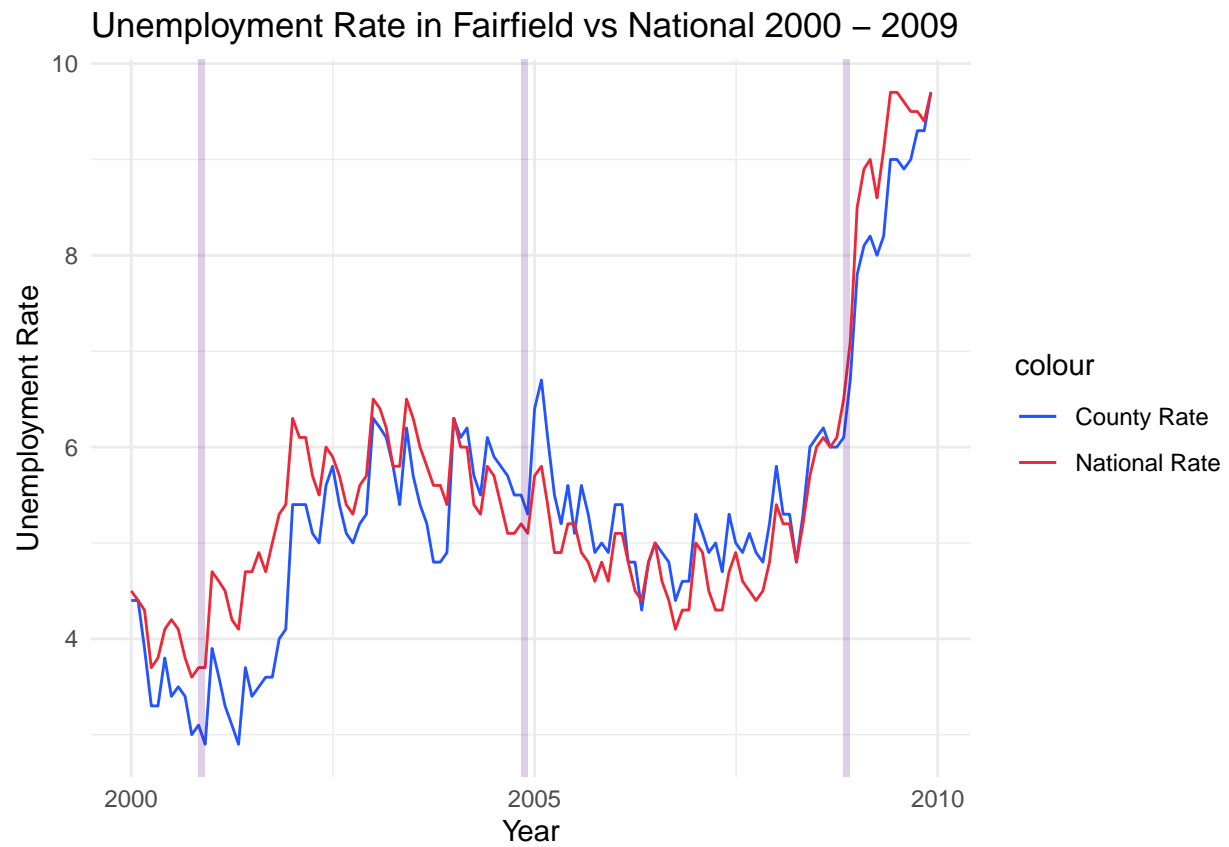
Unemployment Rate in Butler vs National 2000 – 2009

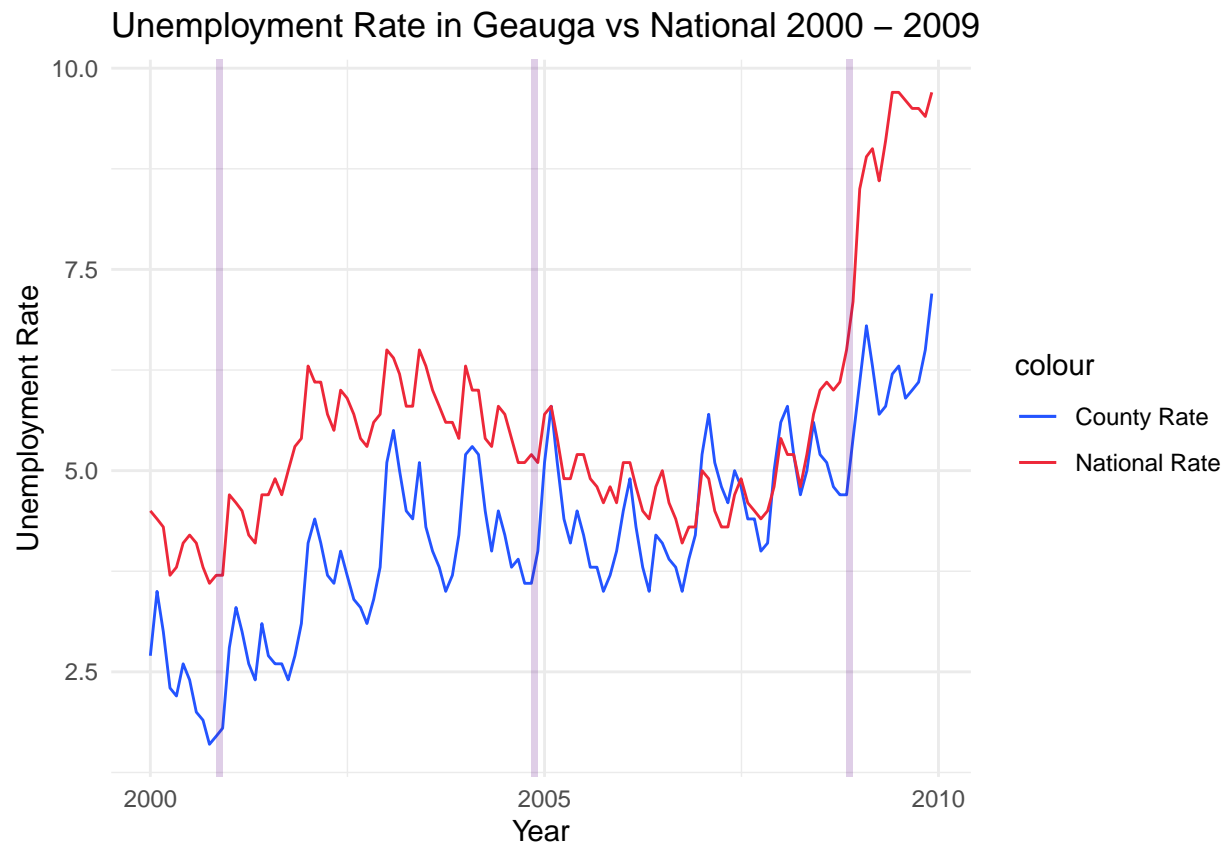


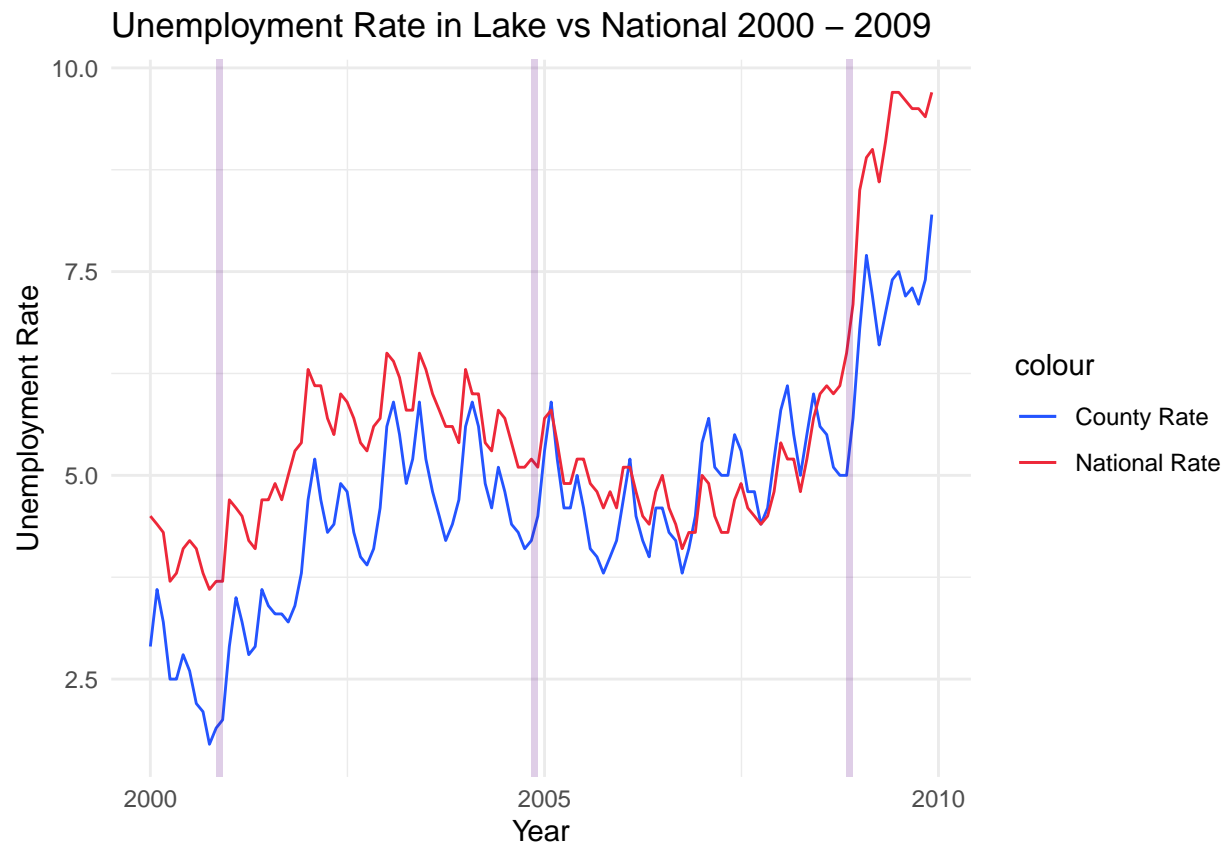
Unemployment Rate in Clermont vs National 2000 – 2009



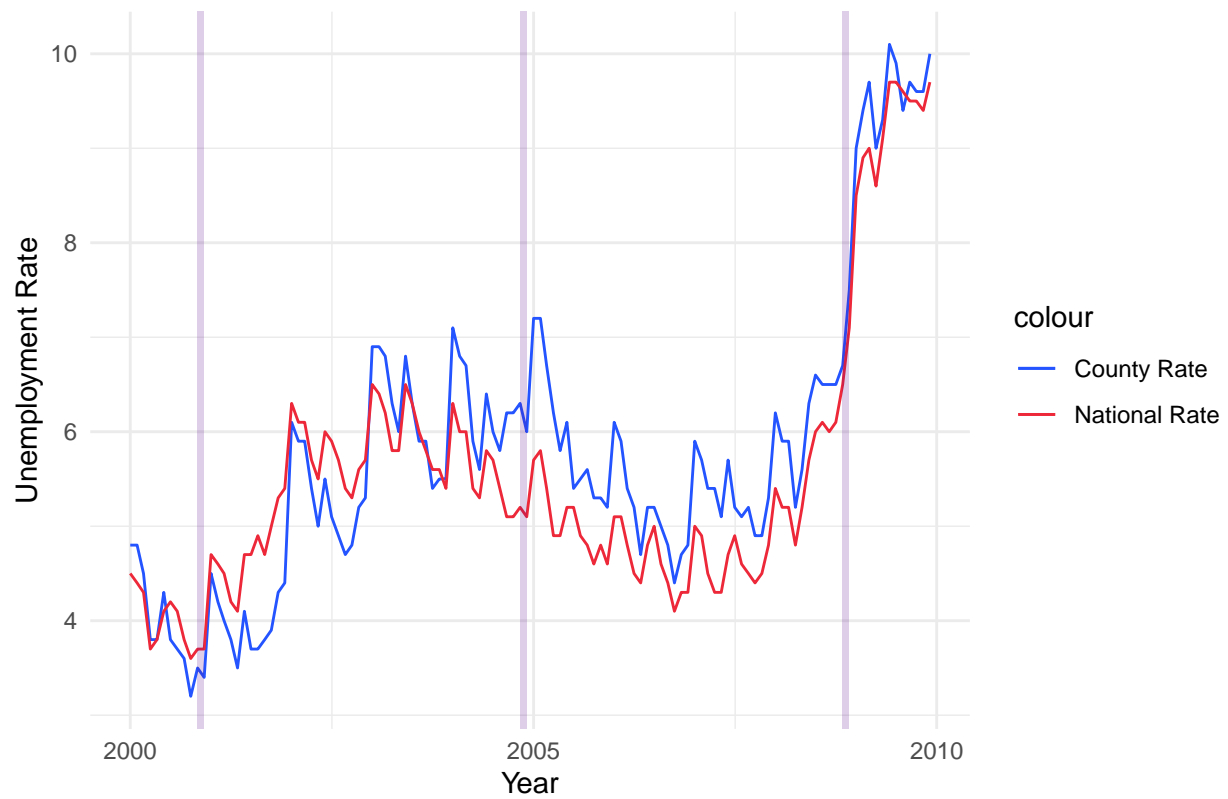


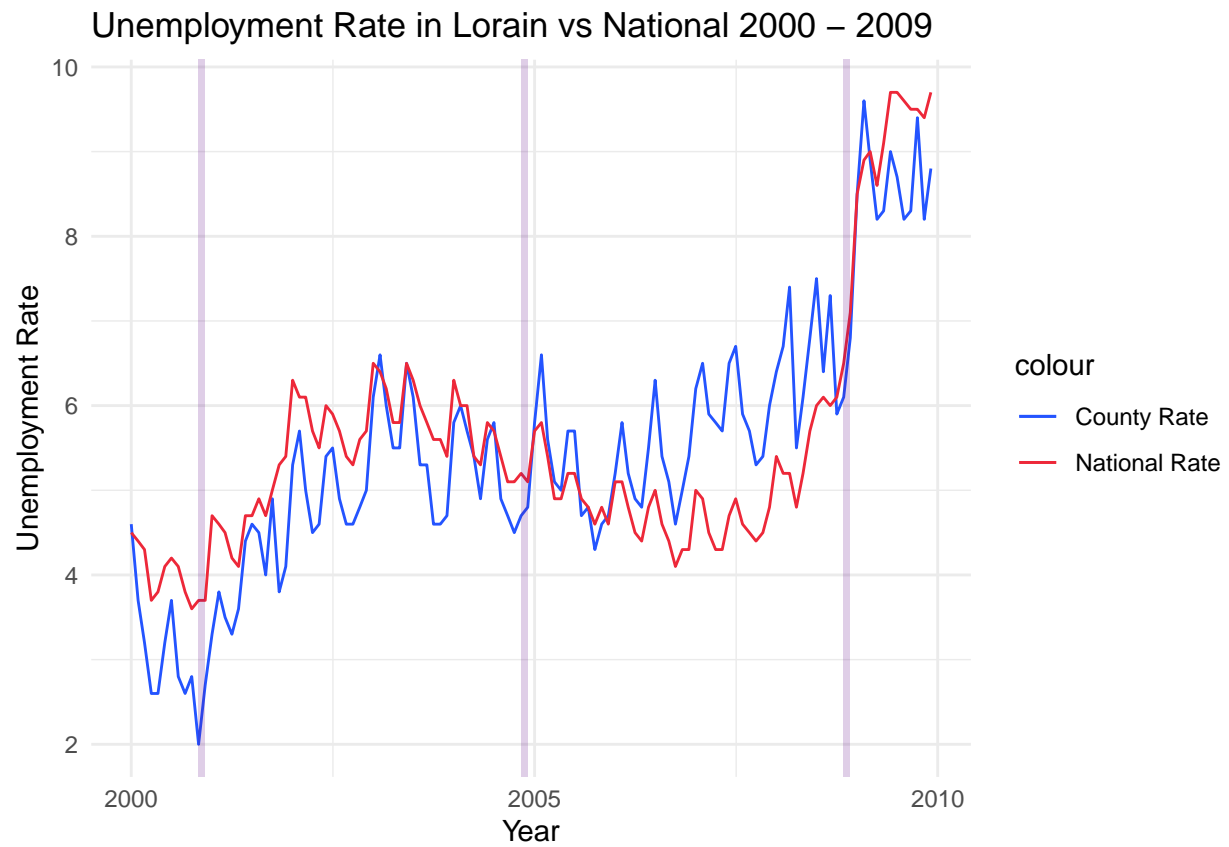




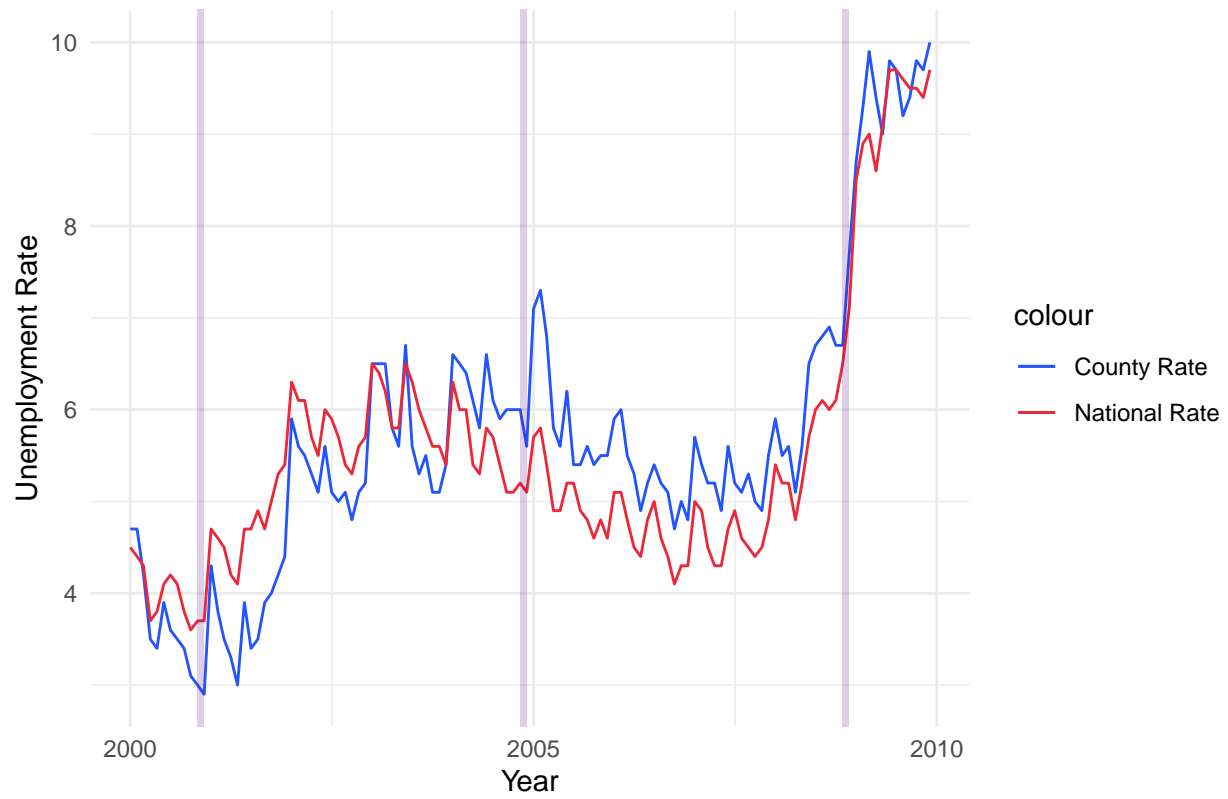


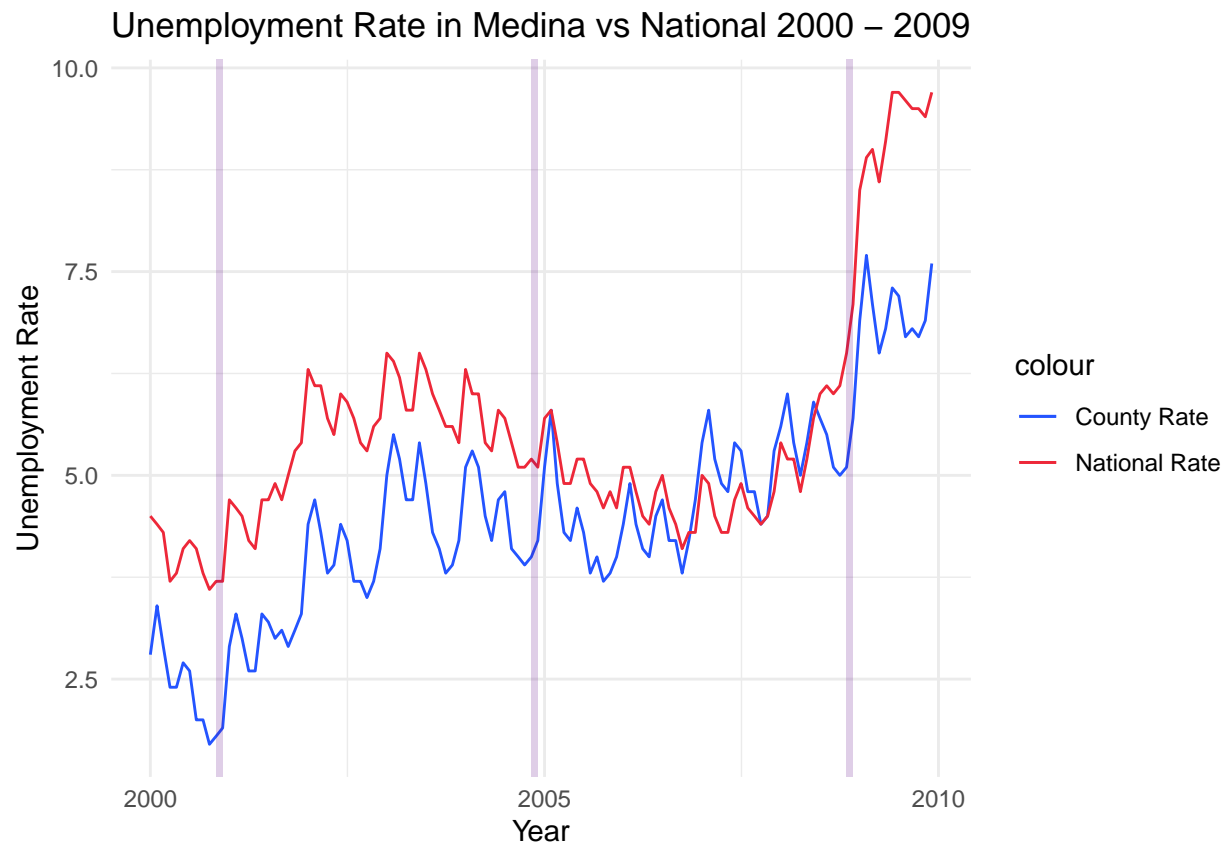
Unemployment Rate in Licking vs National 2000 – 2009



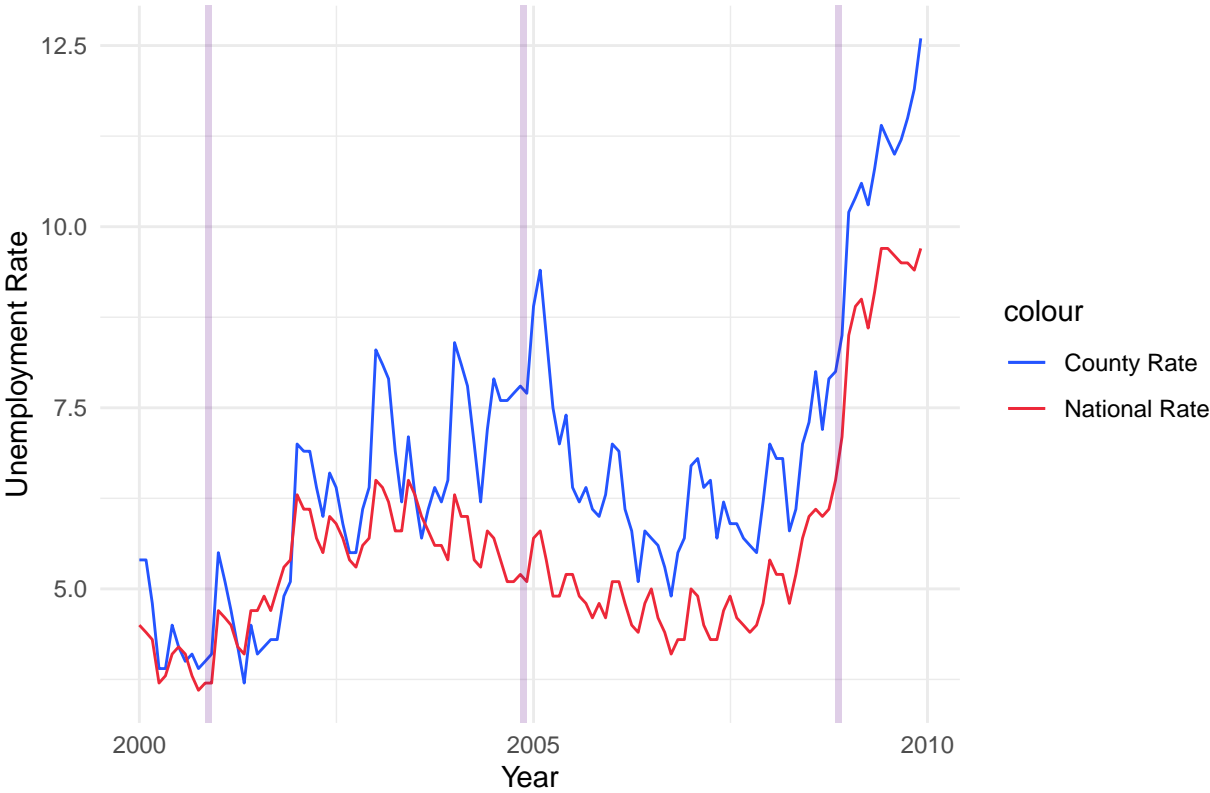


Unemployment Rate in Madison vs National 2000 – 2009

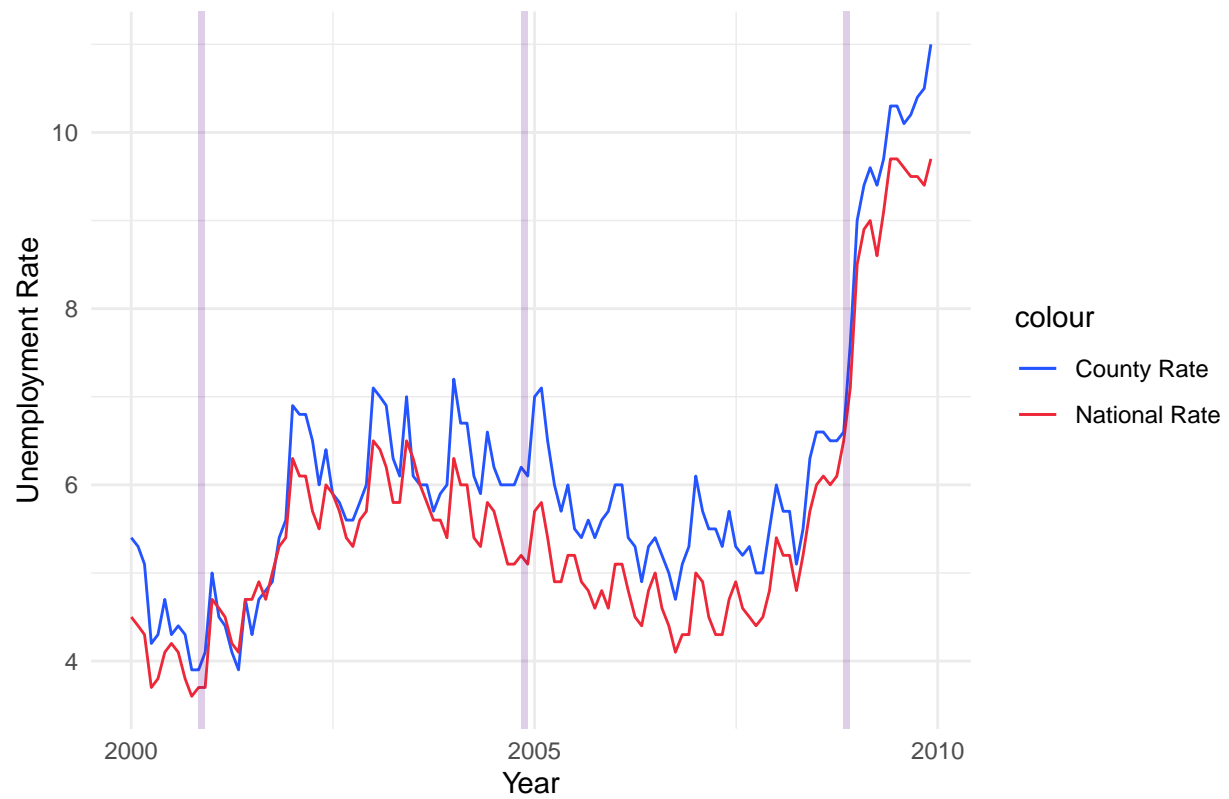


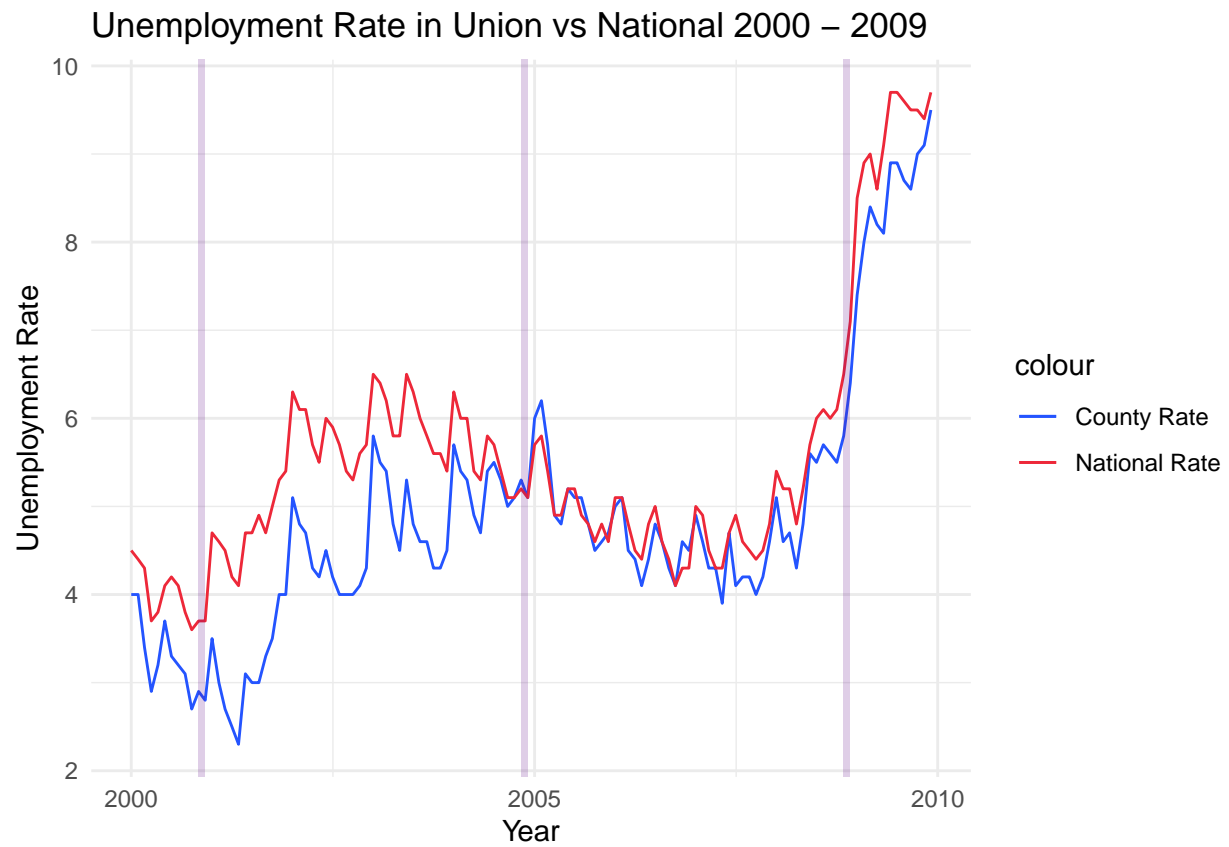


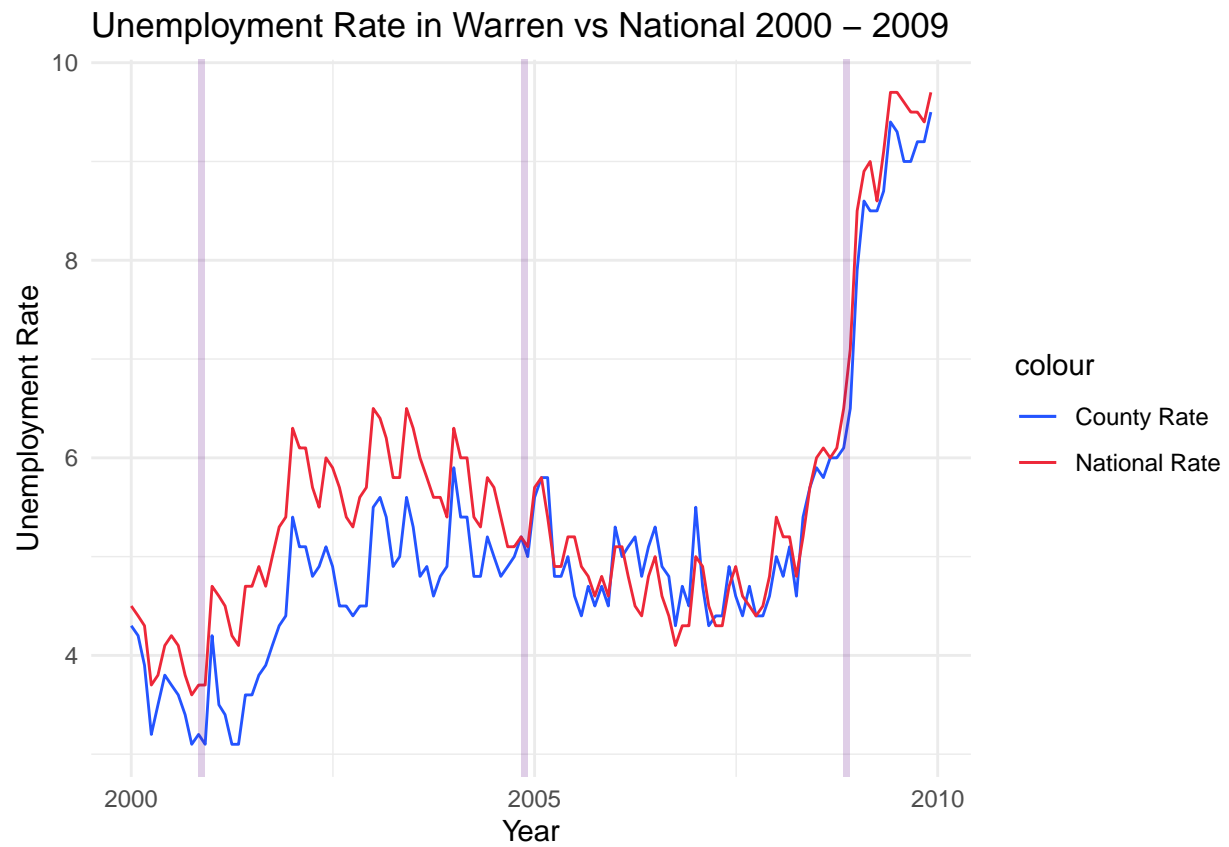
Unemployment Rate in Pickaway vs National 2000 – 2009



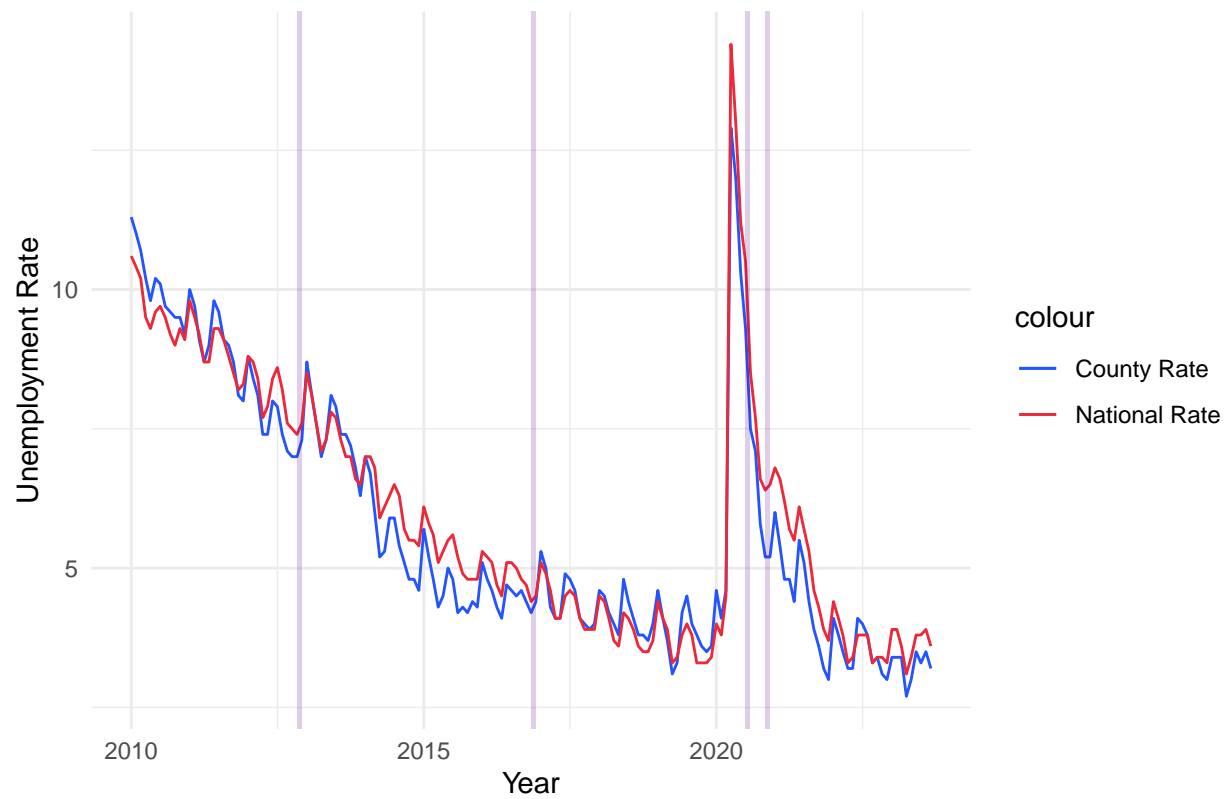
Unemployment Rate in Summit vs National 2000 – 2009



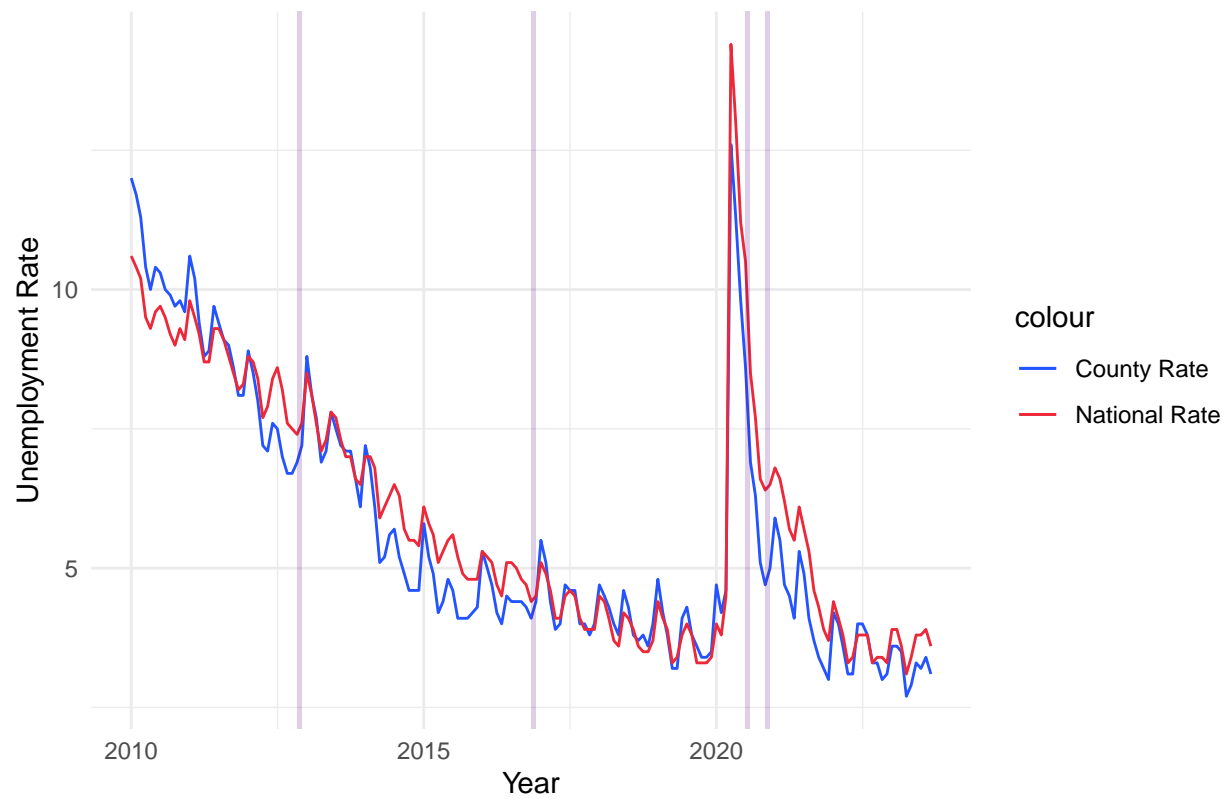




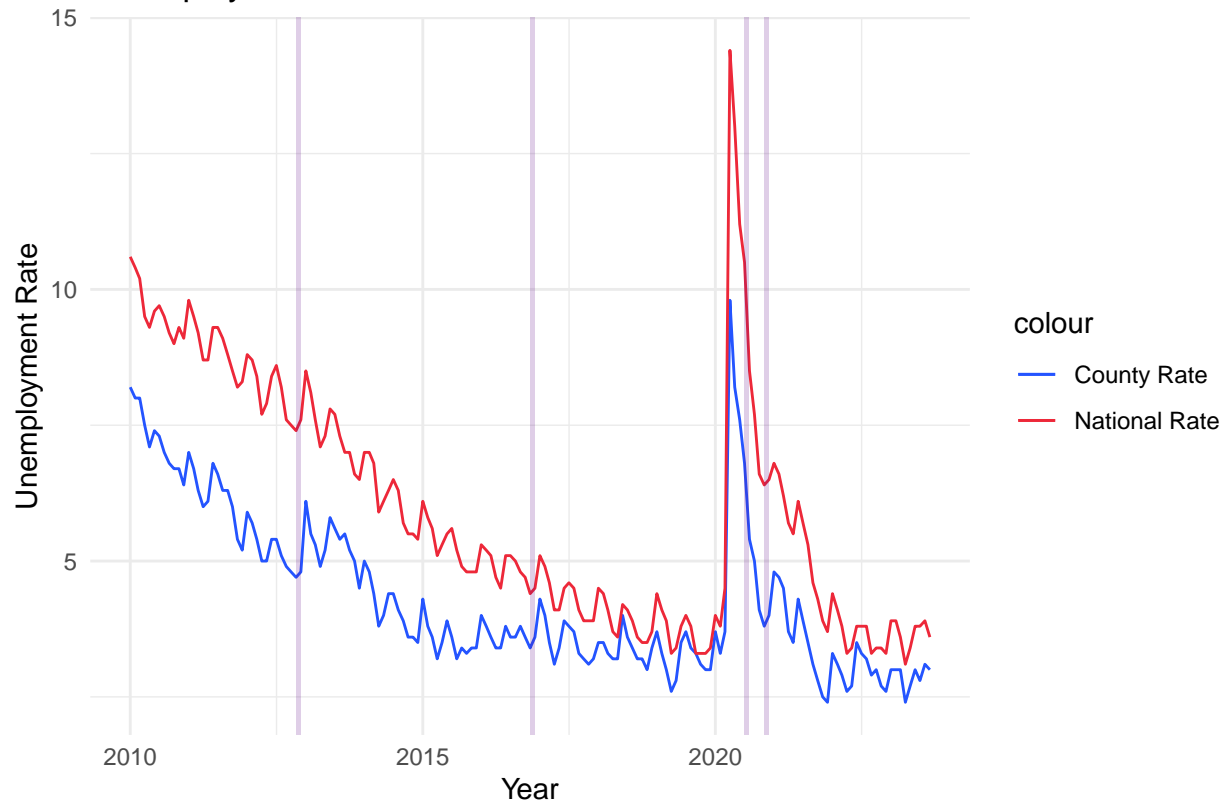
Unemployment Rate in Butler vs National 2009 – Present



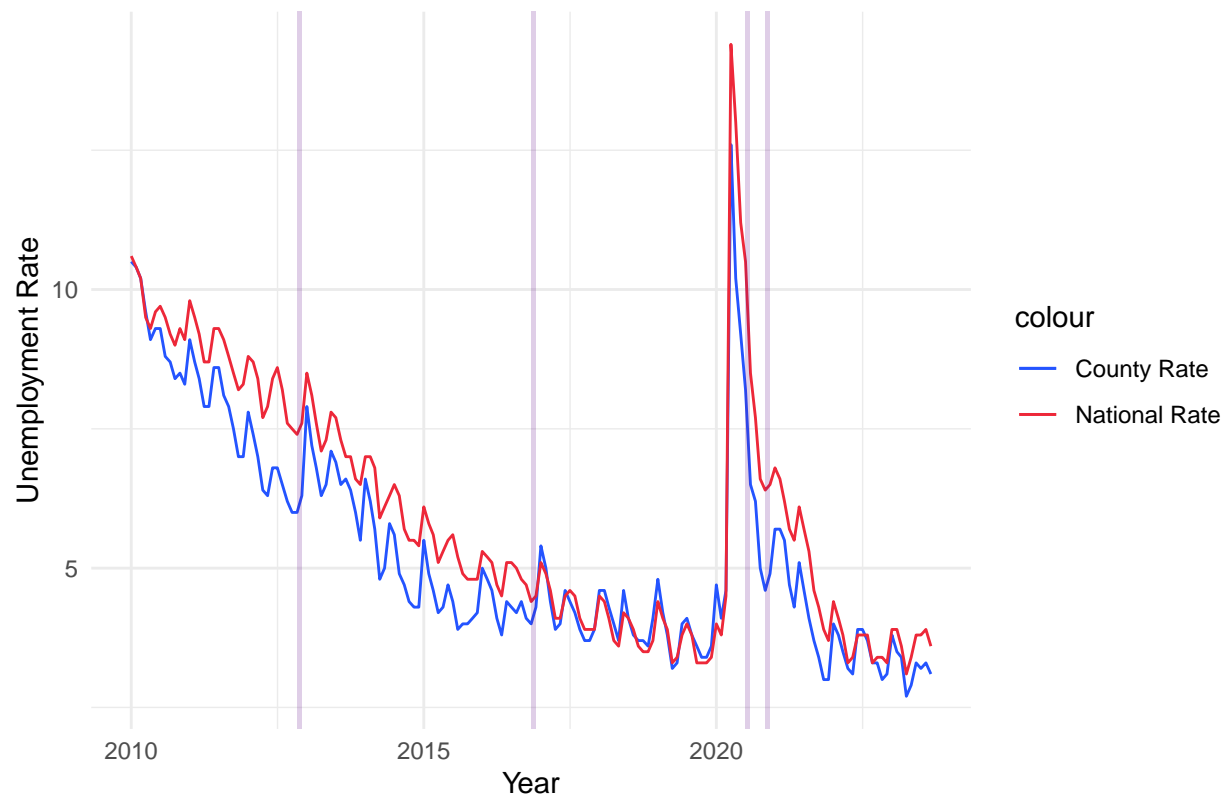
Unemployment Rate in Clermont vs National 2009 – Present



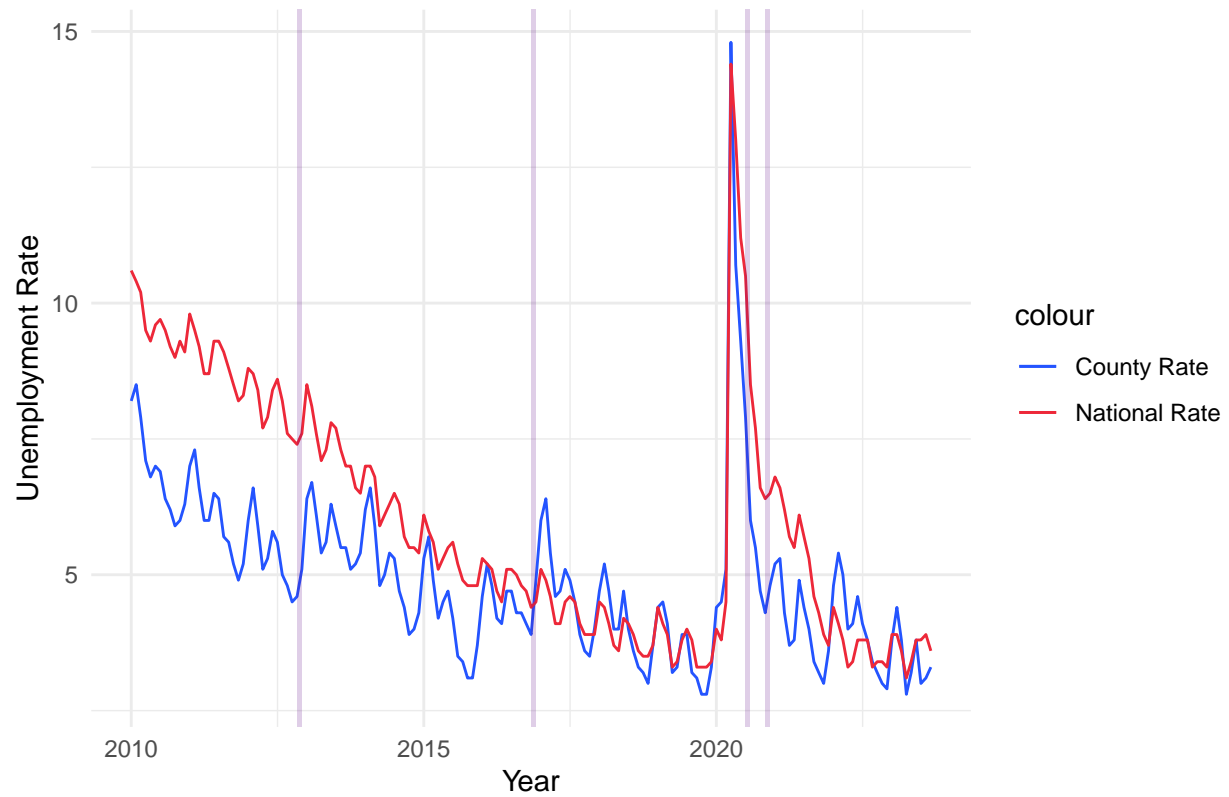
Unemployment Rate in Delaware vs National 2009 – Present



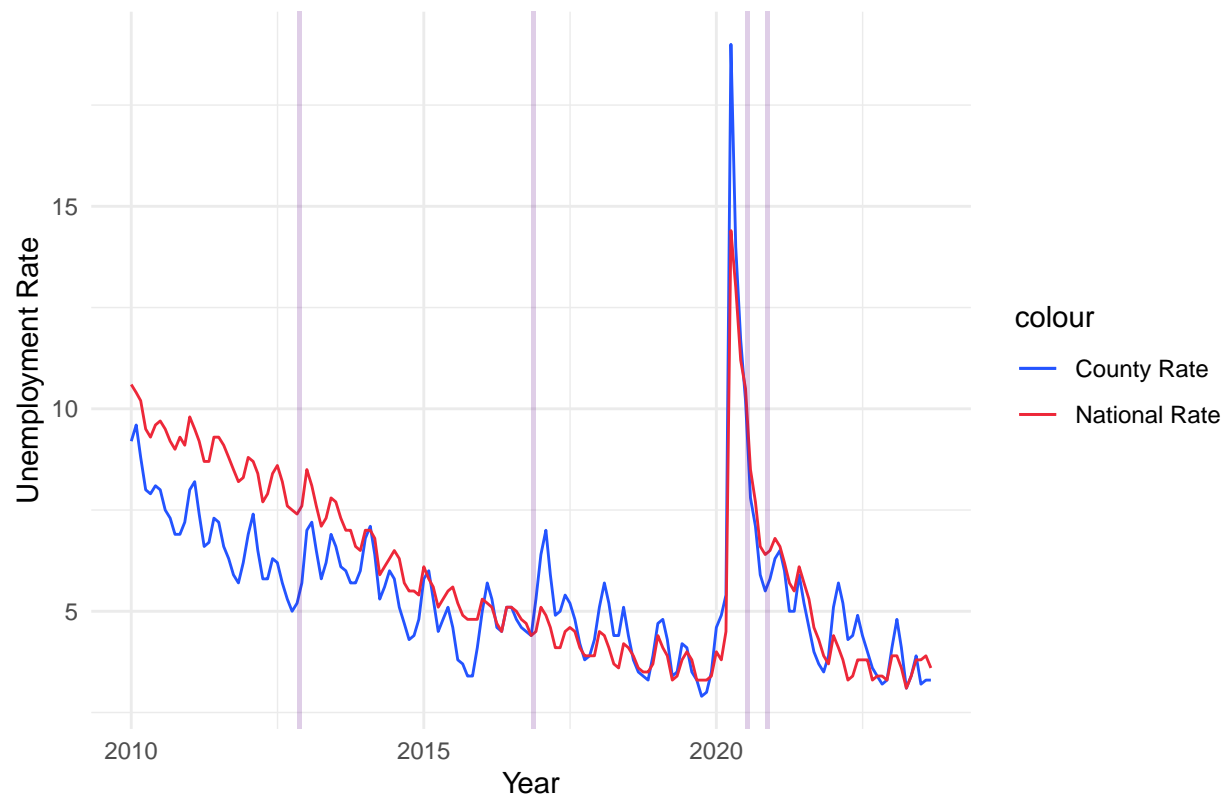
Unemployment Rate in Fairfield vs National 2009 – Present



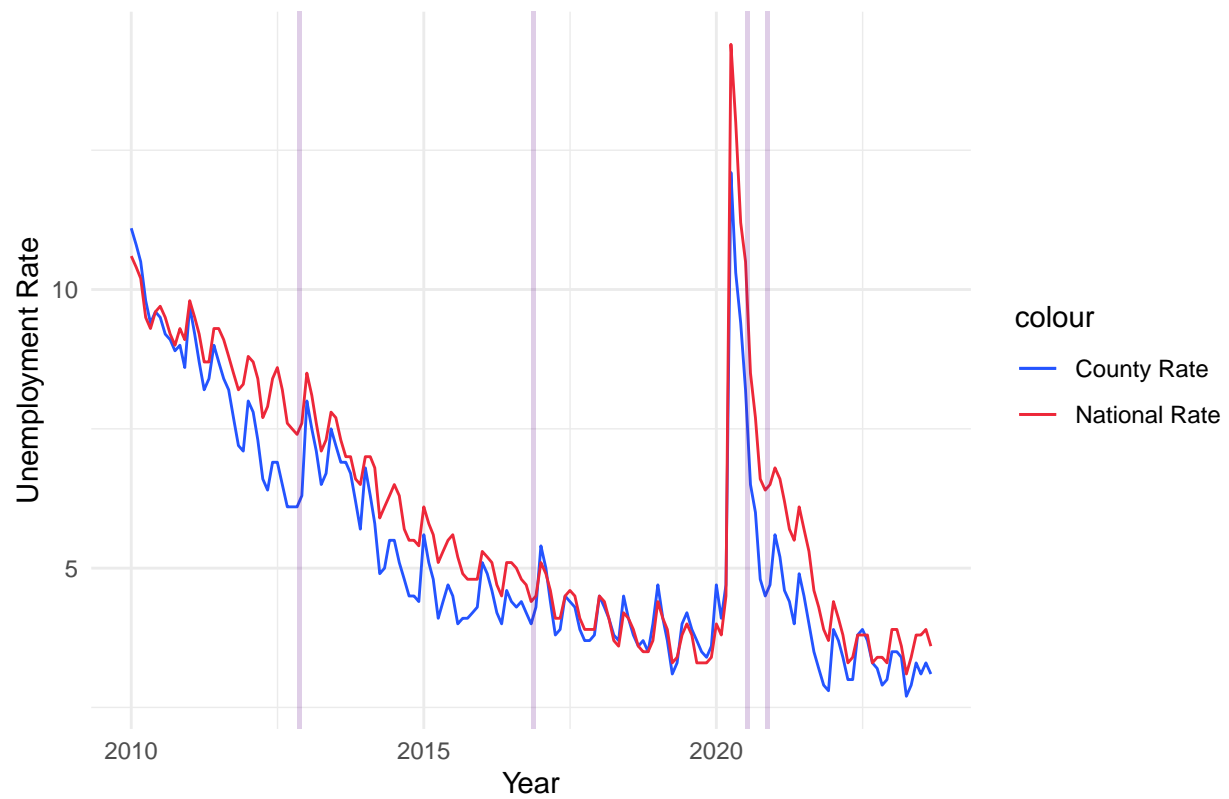
Unemployment Rate in Geauga vs National 2009 – Present



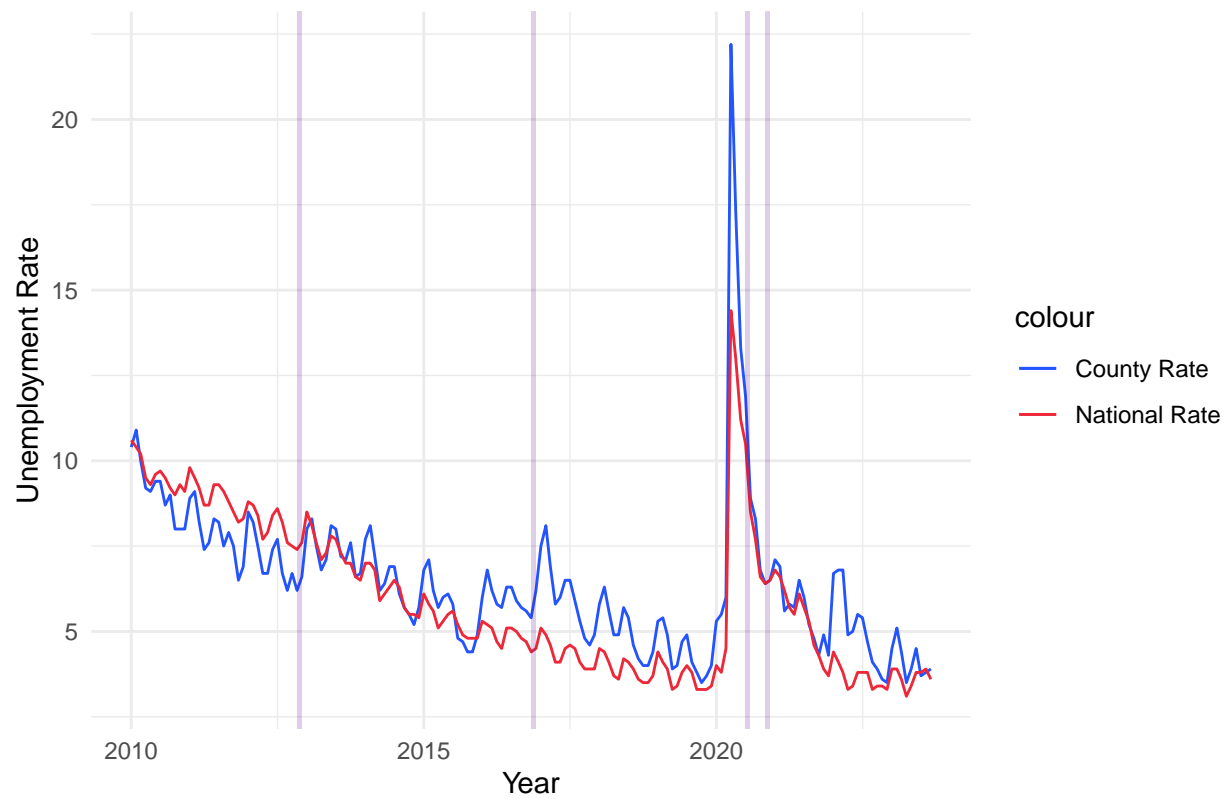
Unemployment Rate in Lake vs National 2009 – Present



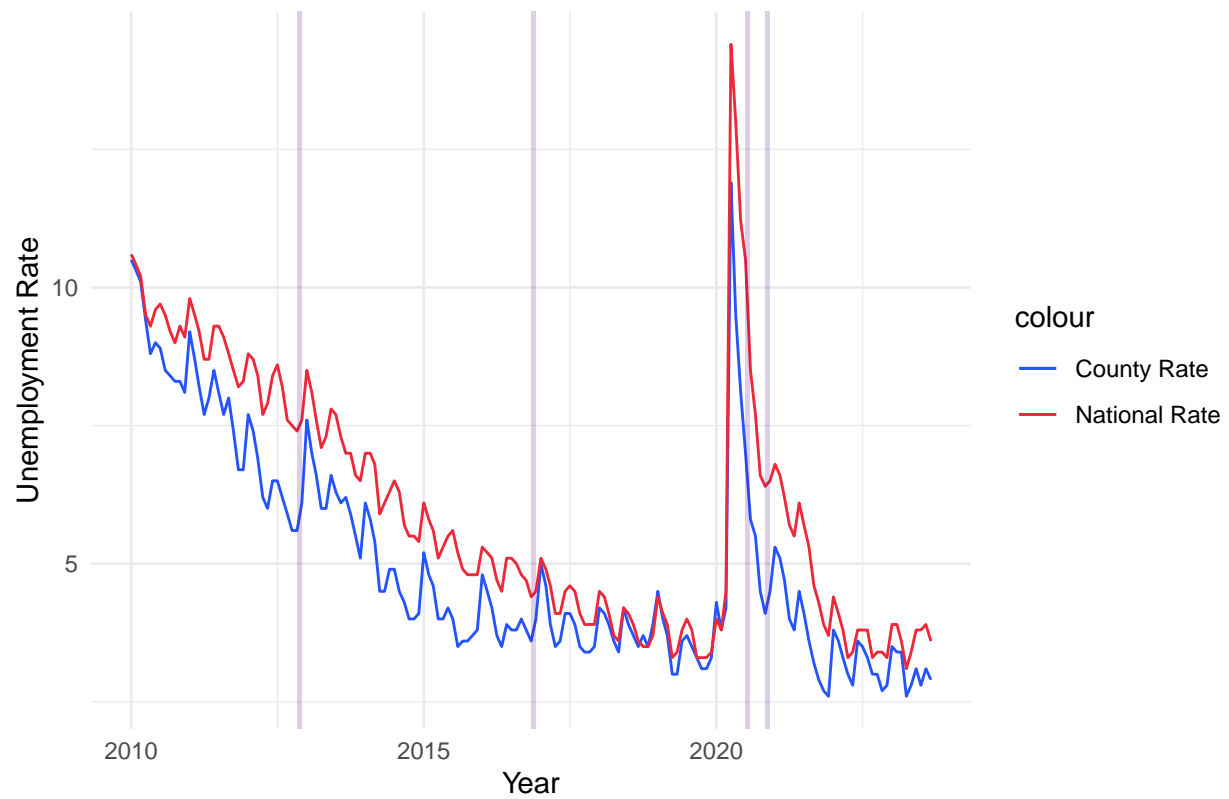
Unemployment Rate in Licking vs National 2009 – Present



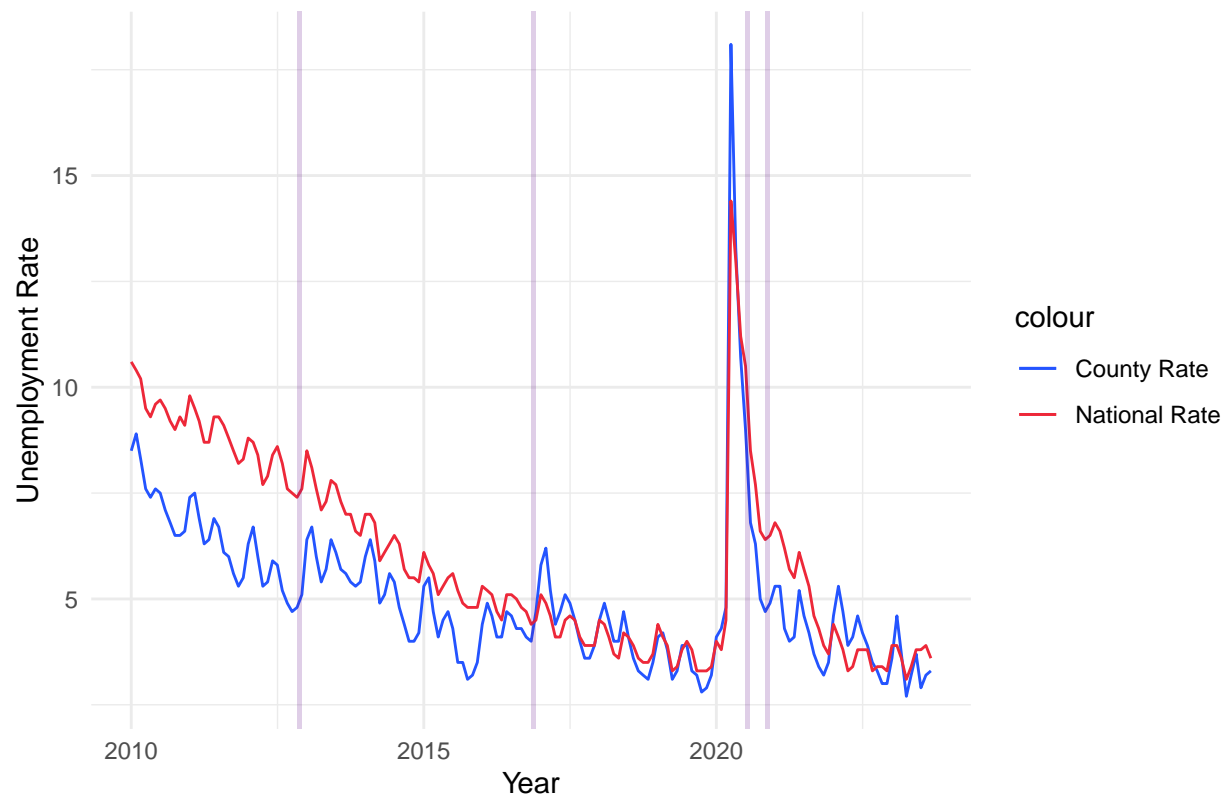
Unemployment Rate in Lorain vs National 2009 – Present



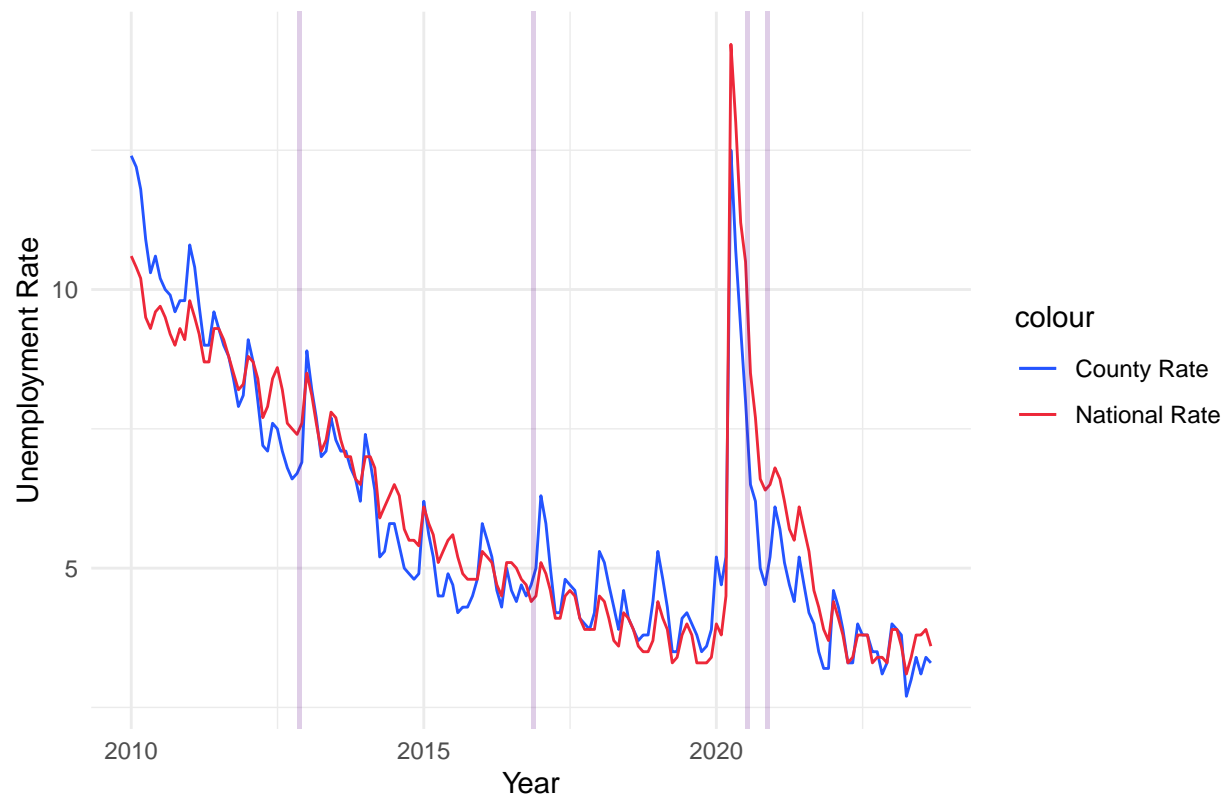
Unemployment Rate in Madison vs National 2009 – Present



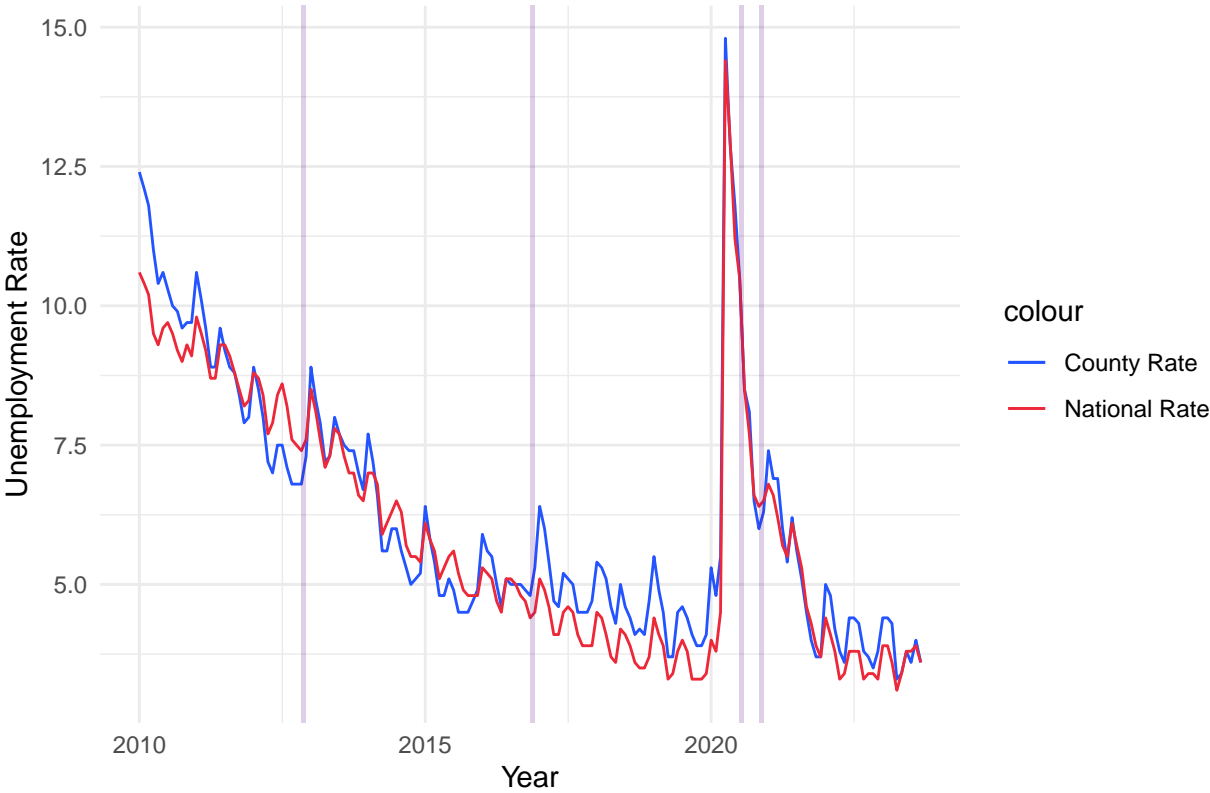
Unemployment Rate in Medina vs National 2009 – Present



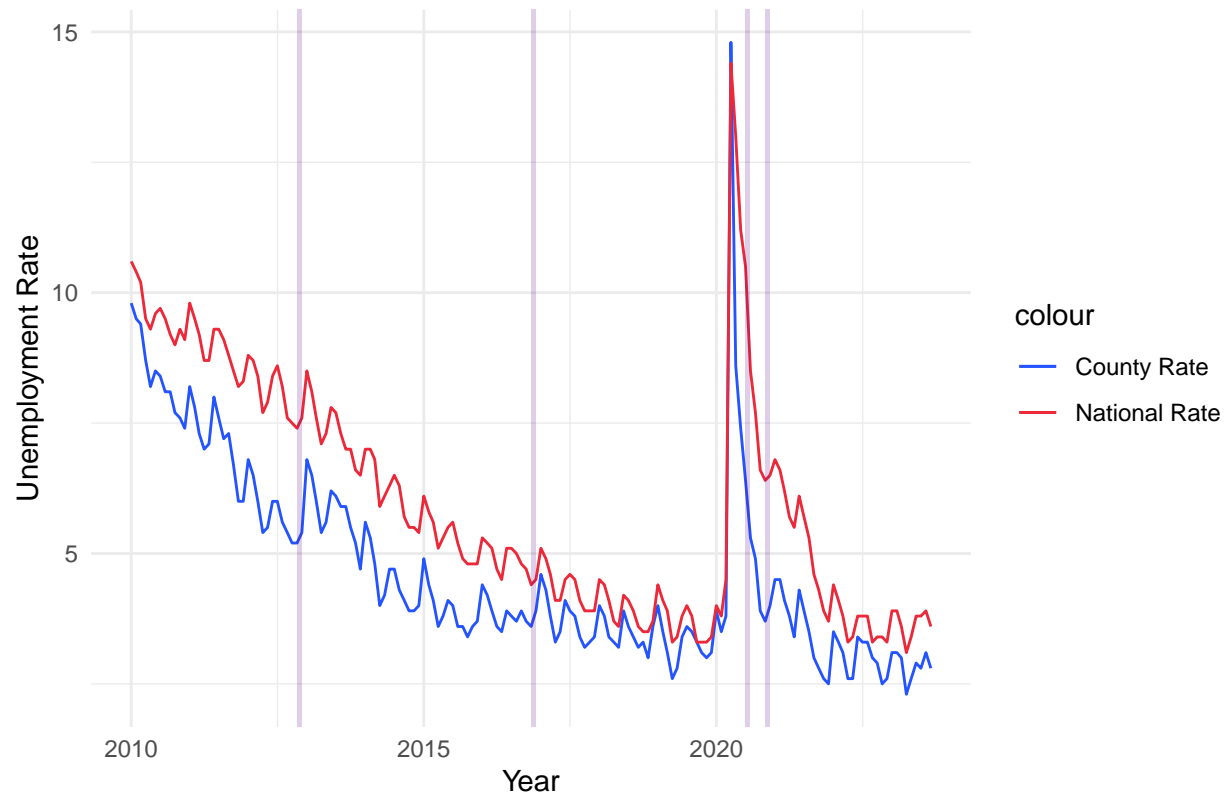
Unemployment Rate in Pickaway vs National 2009 – Present



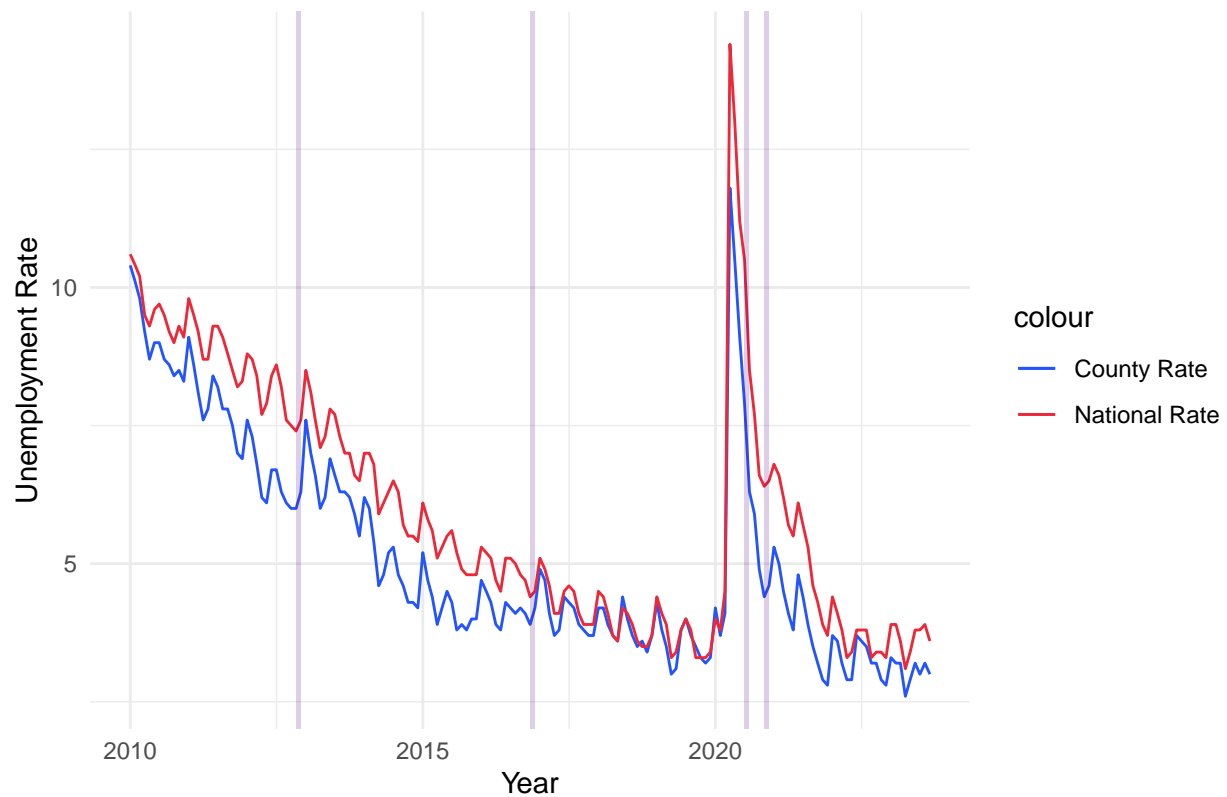
Unemployment Rate in Summit vs National 2009 – Present



Unemployment Rate in Union vs National 2009 – Present



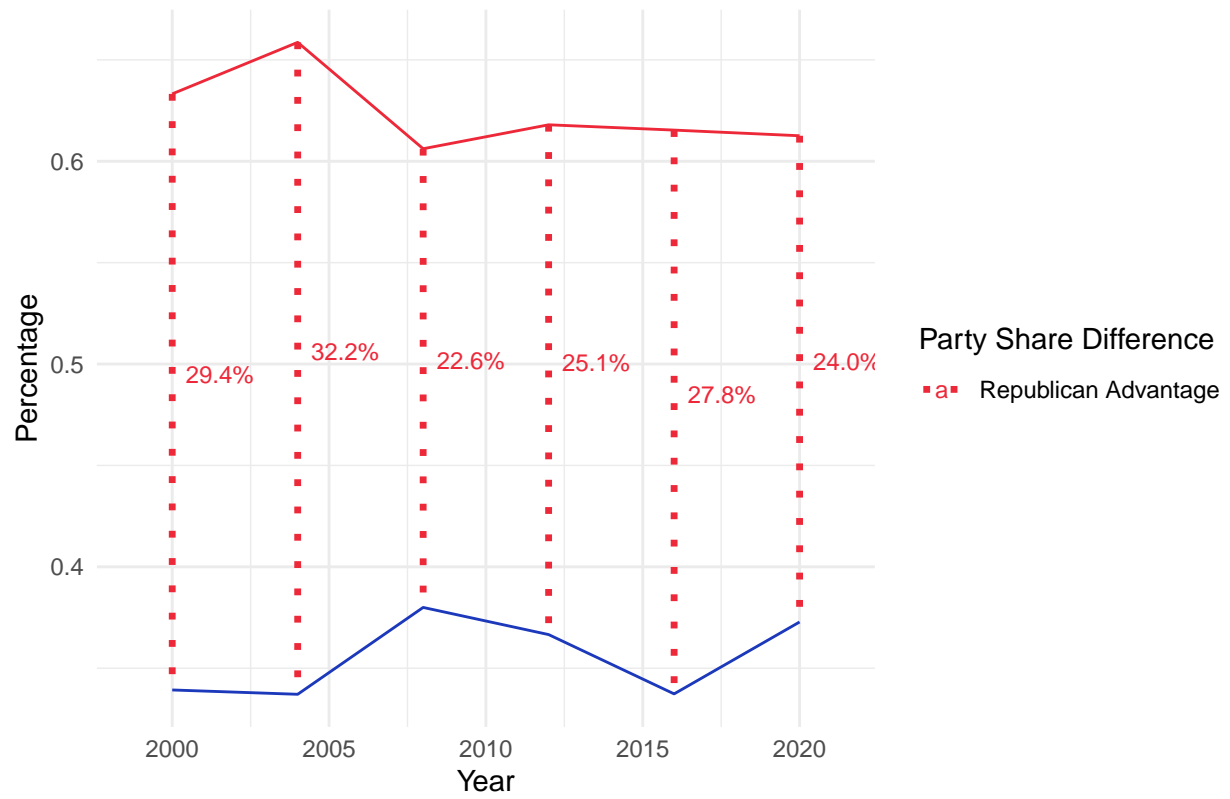
Unemployment Rate in Warren vs National 2009 – Present



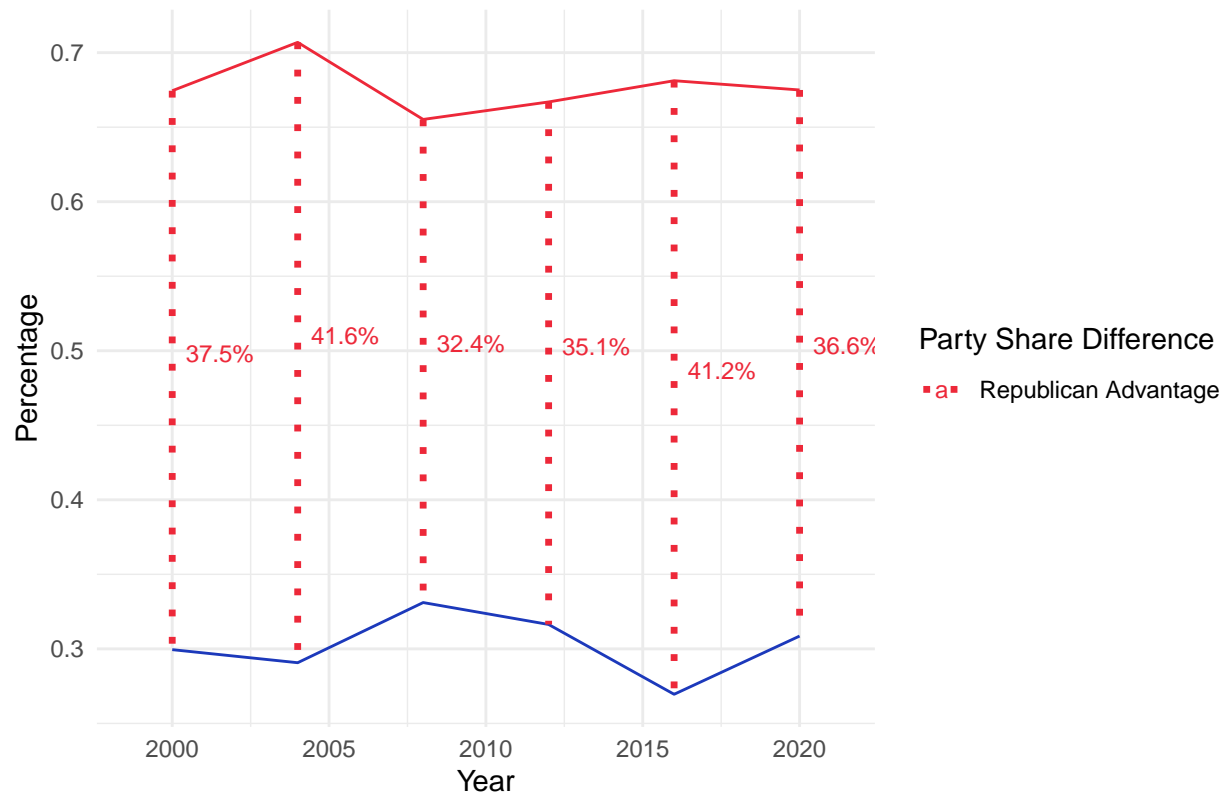
Political Leanings:

```
## 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.
```

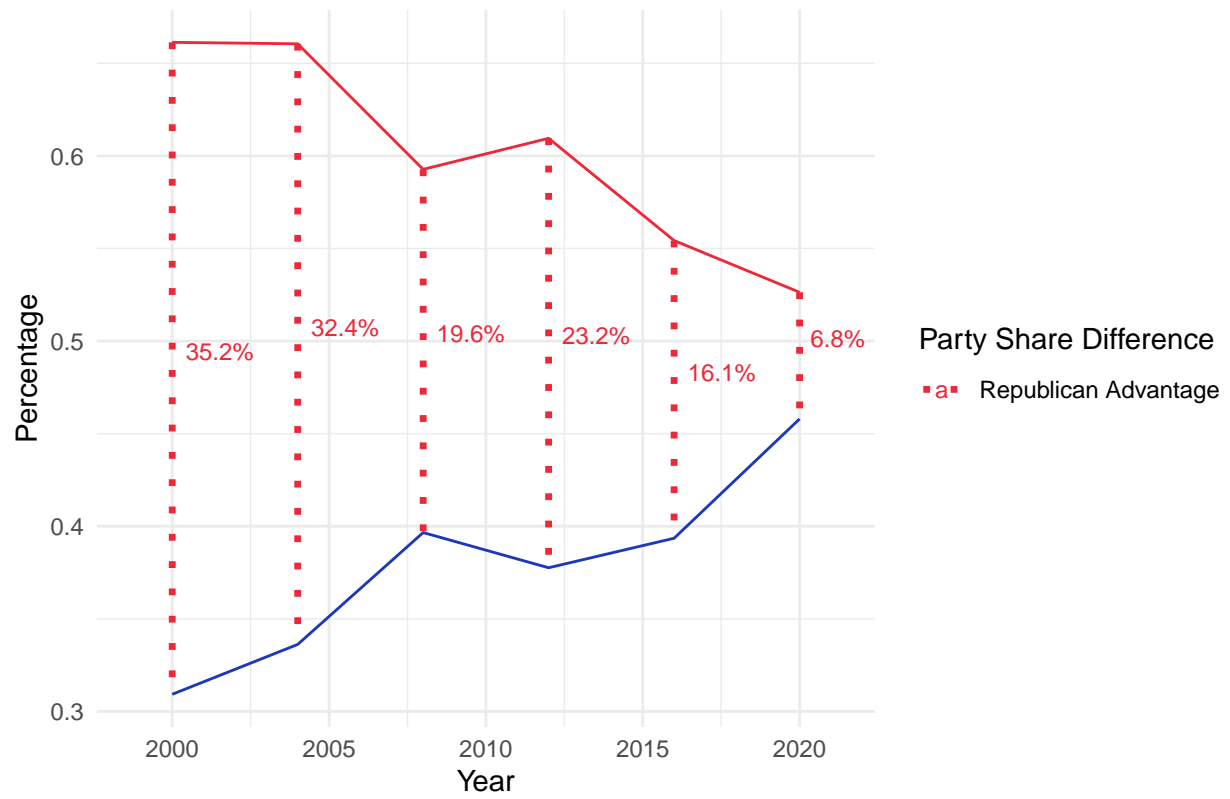
Vote Share in Butler County



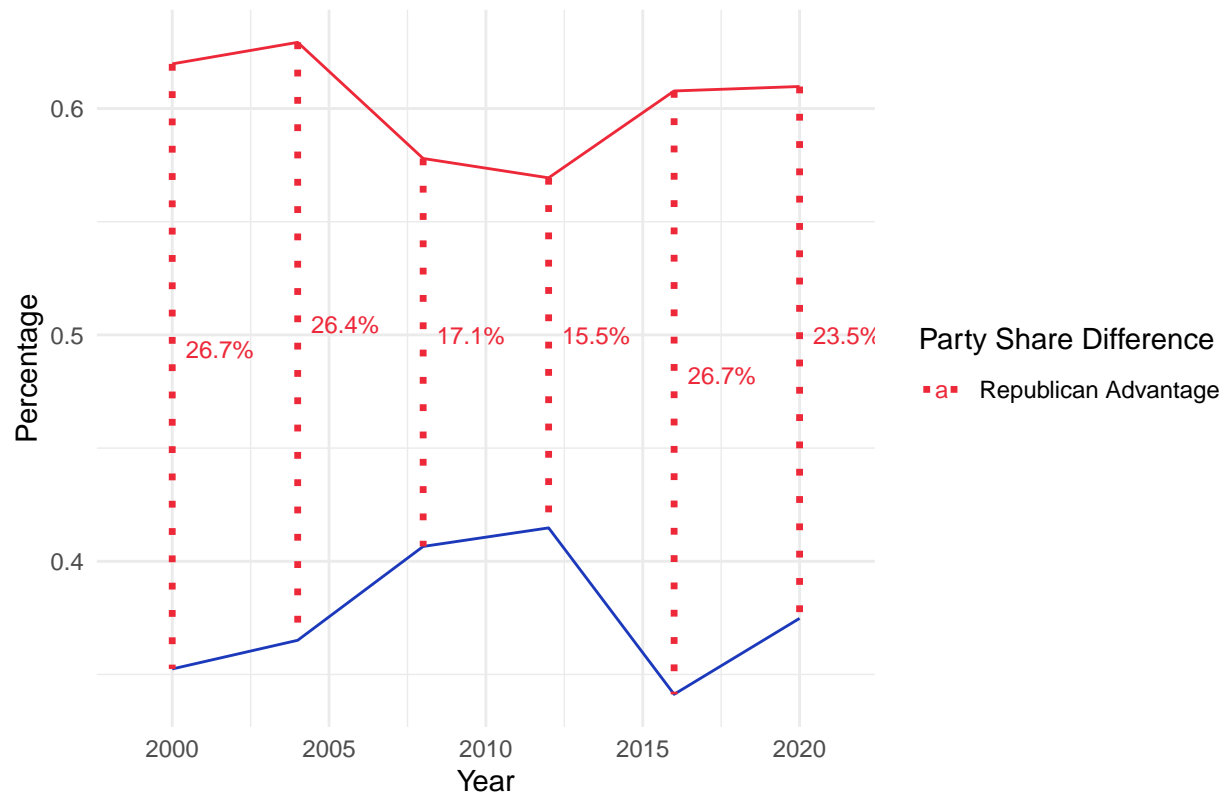
Vote Share in Clermont County

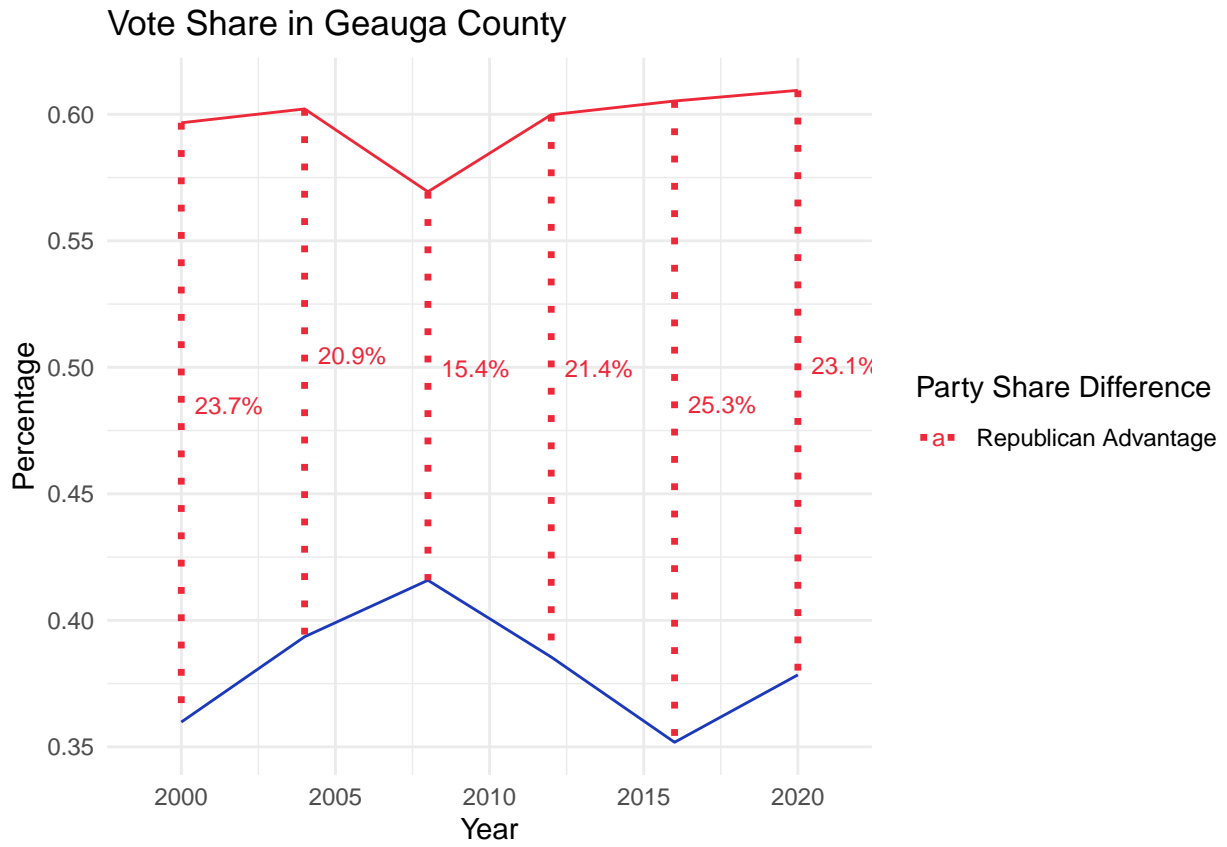


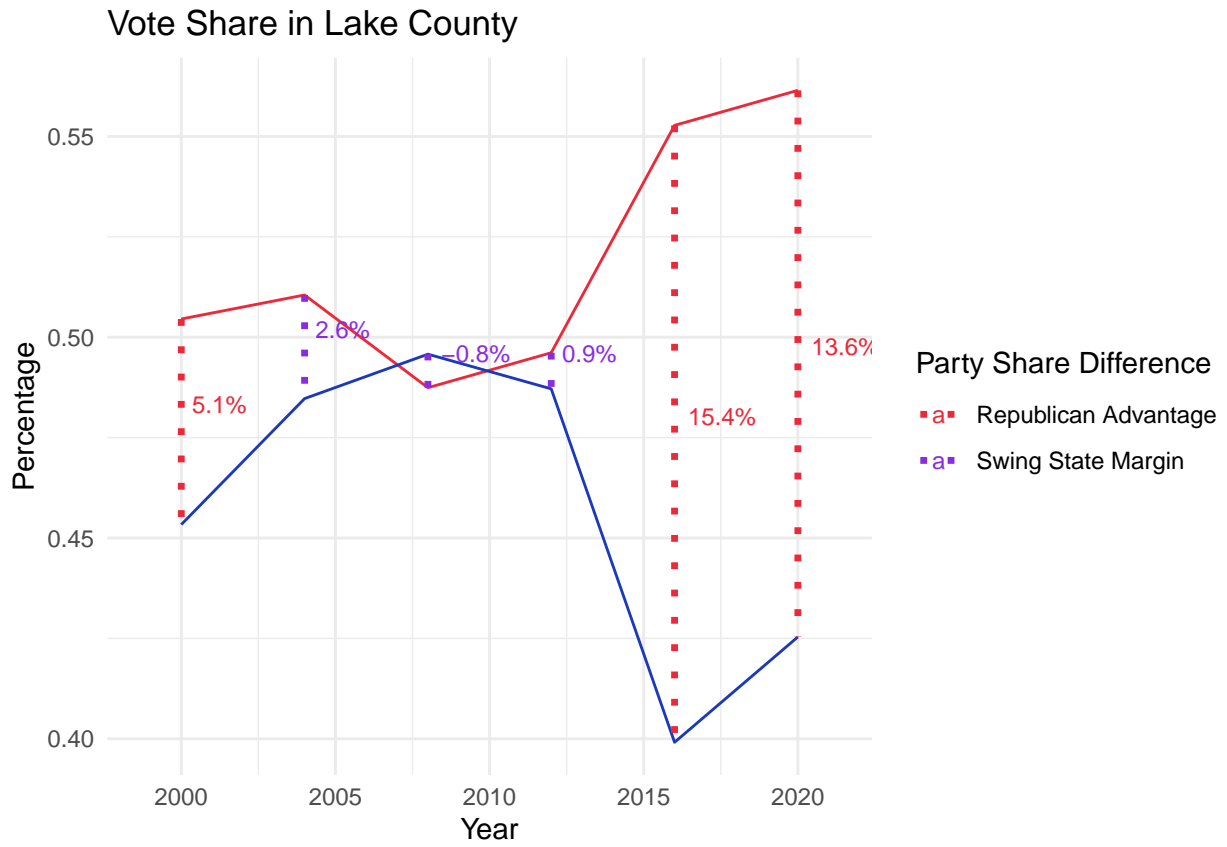
Vote Share in Delaware County



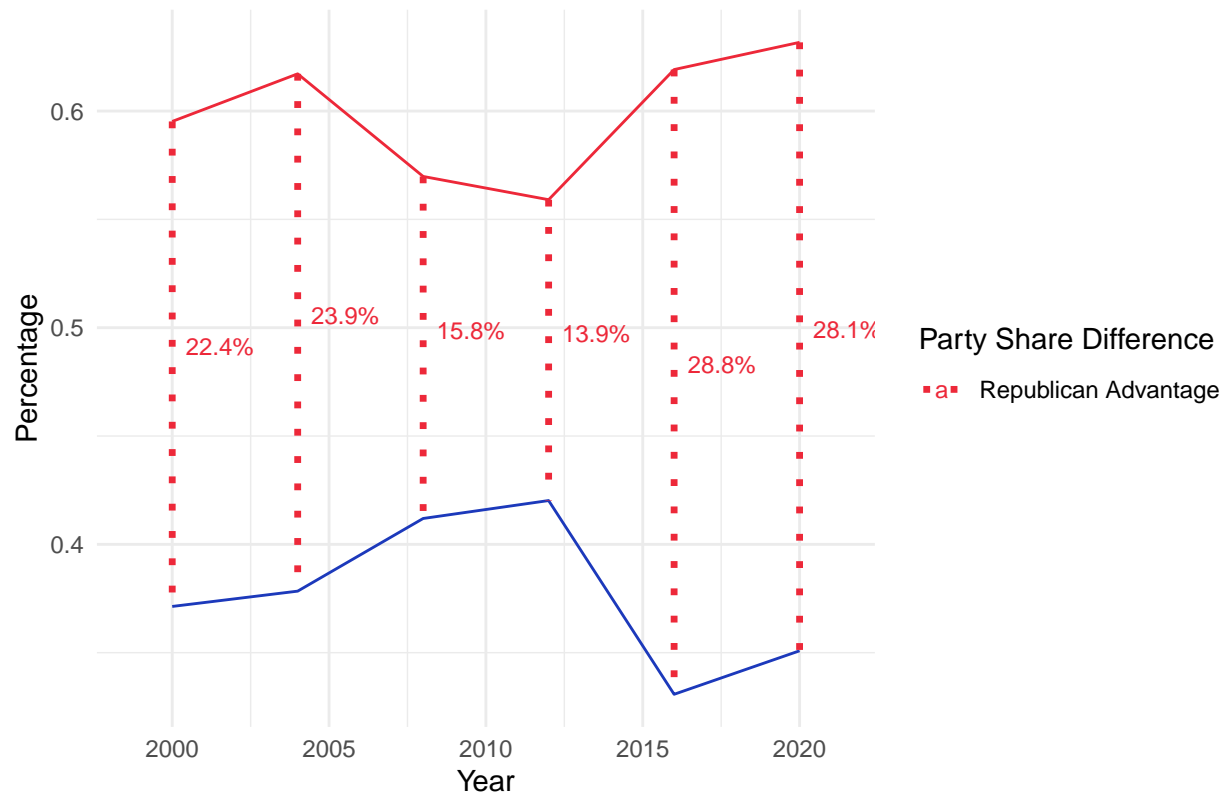
Vote Share in Fairfield County

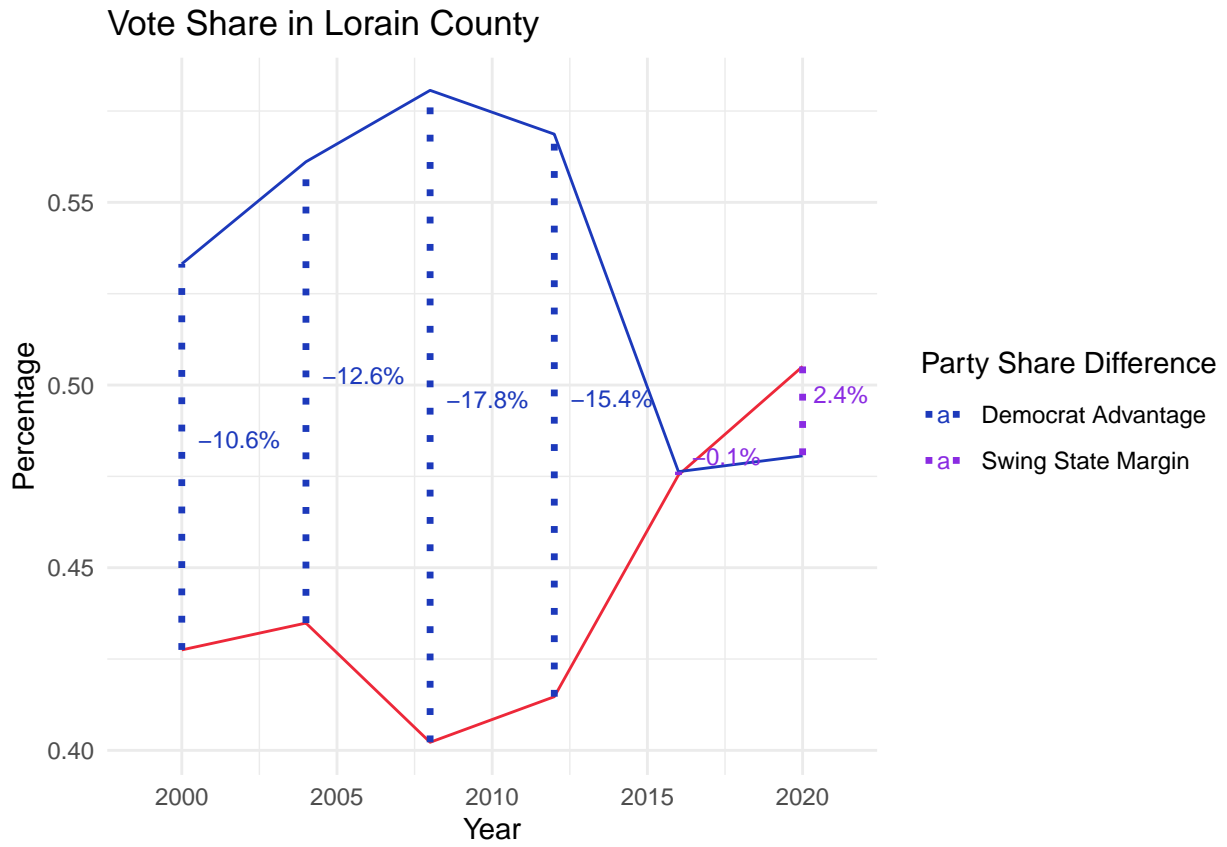


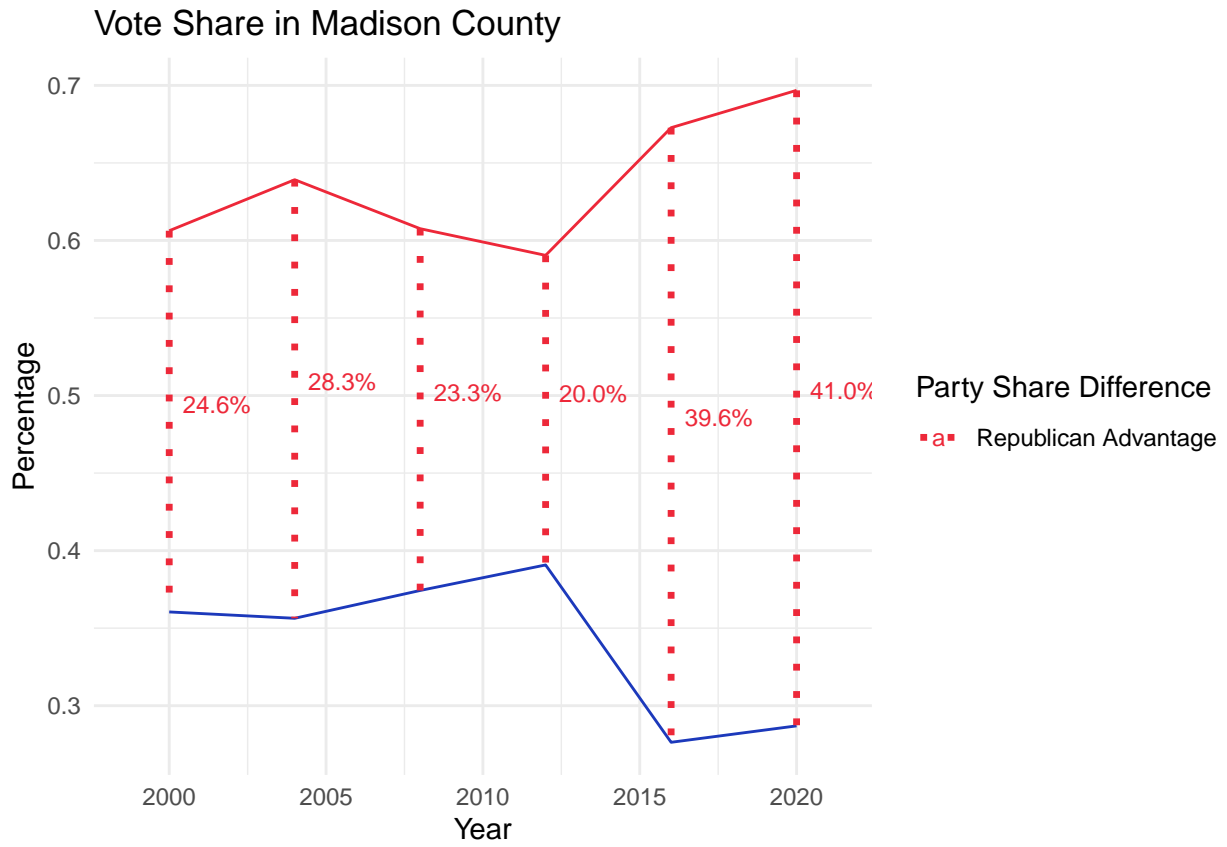


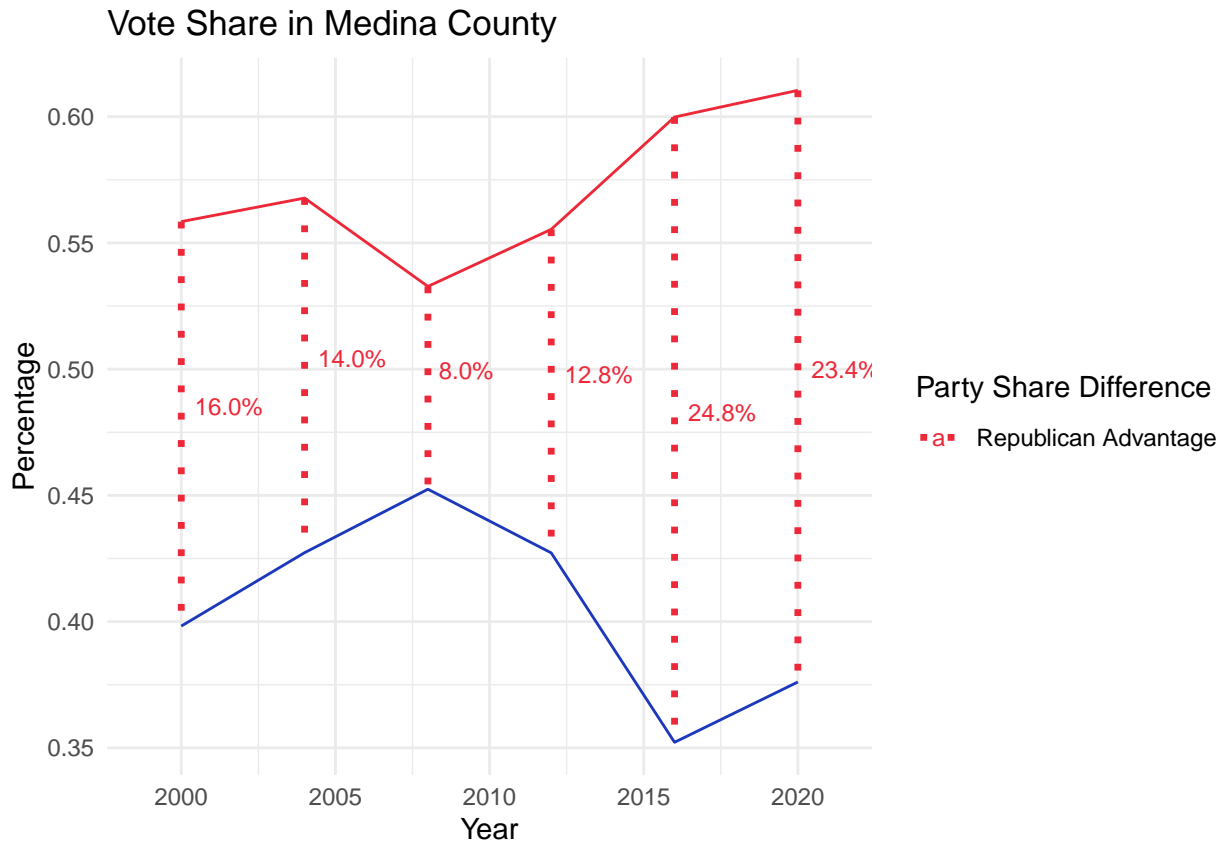


Vote Share in Licking County

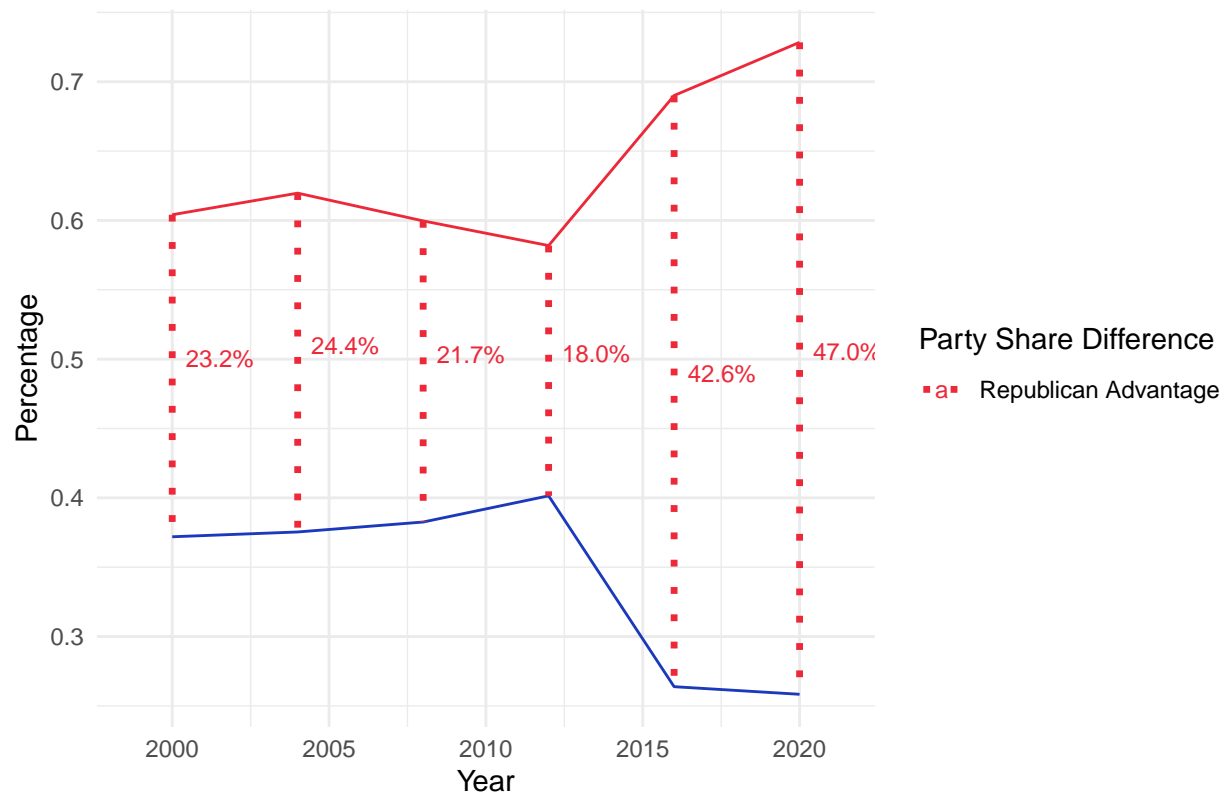


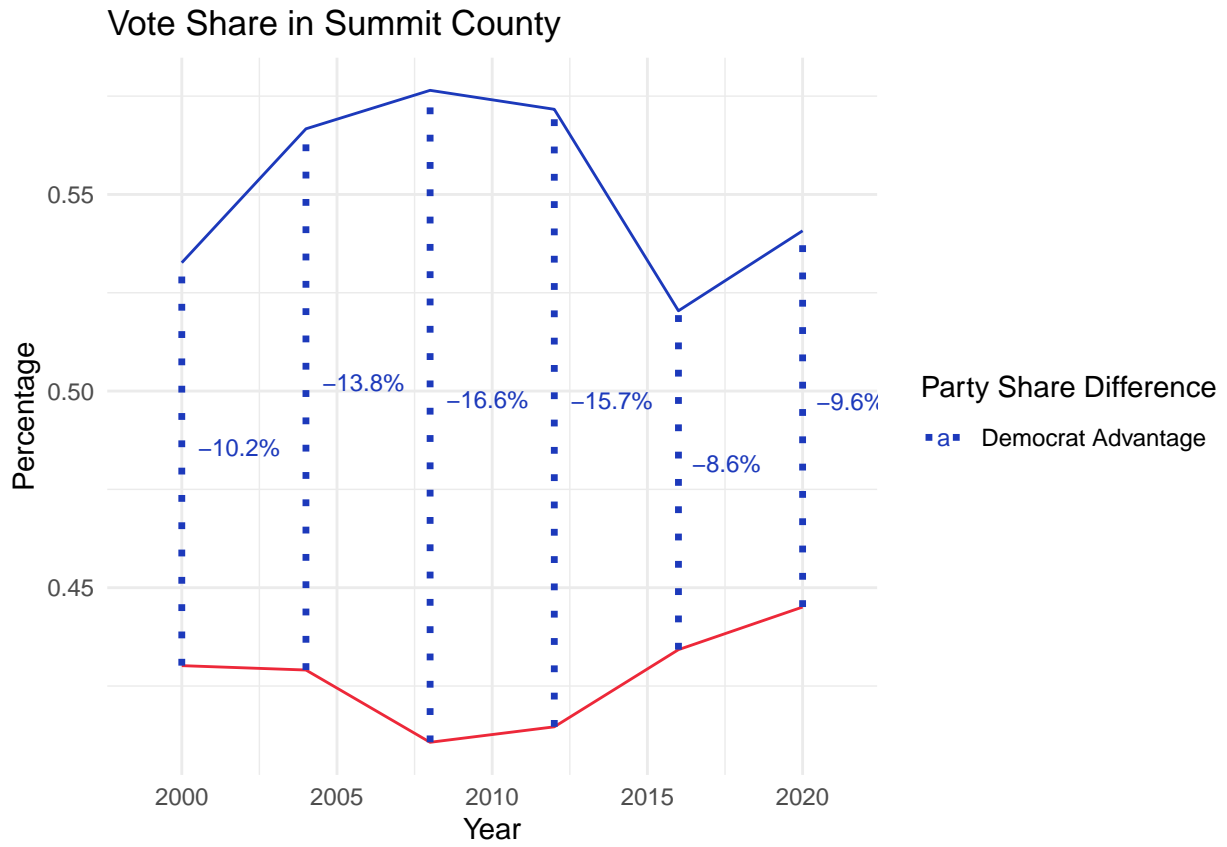




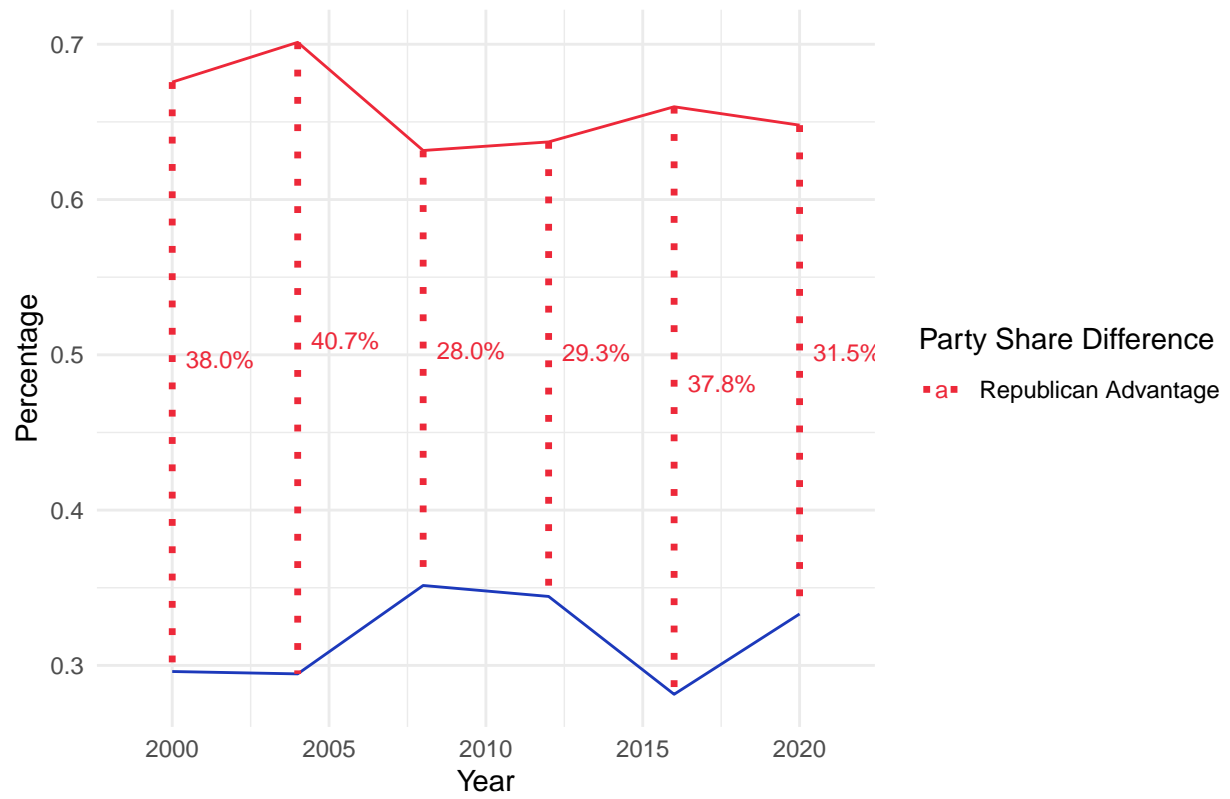


Vote Share in Pickaway County

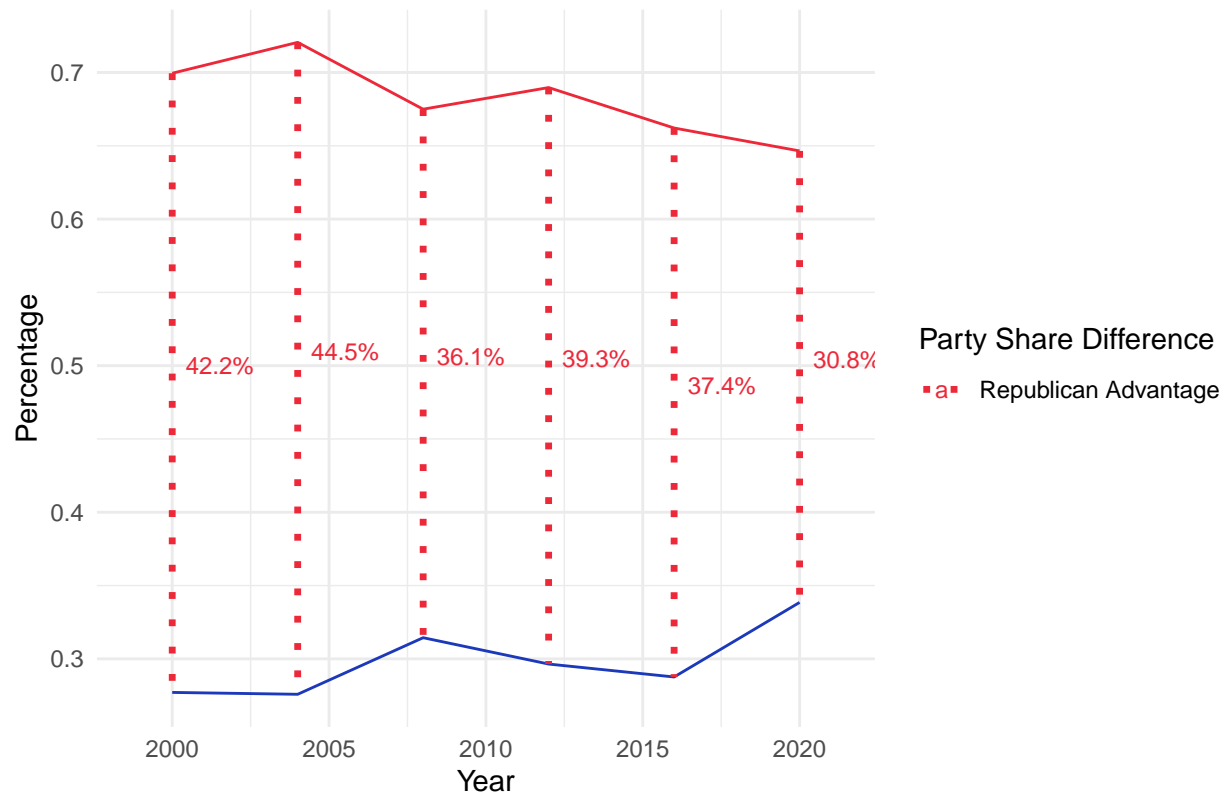


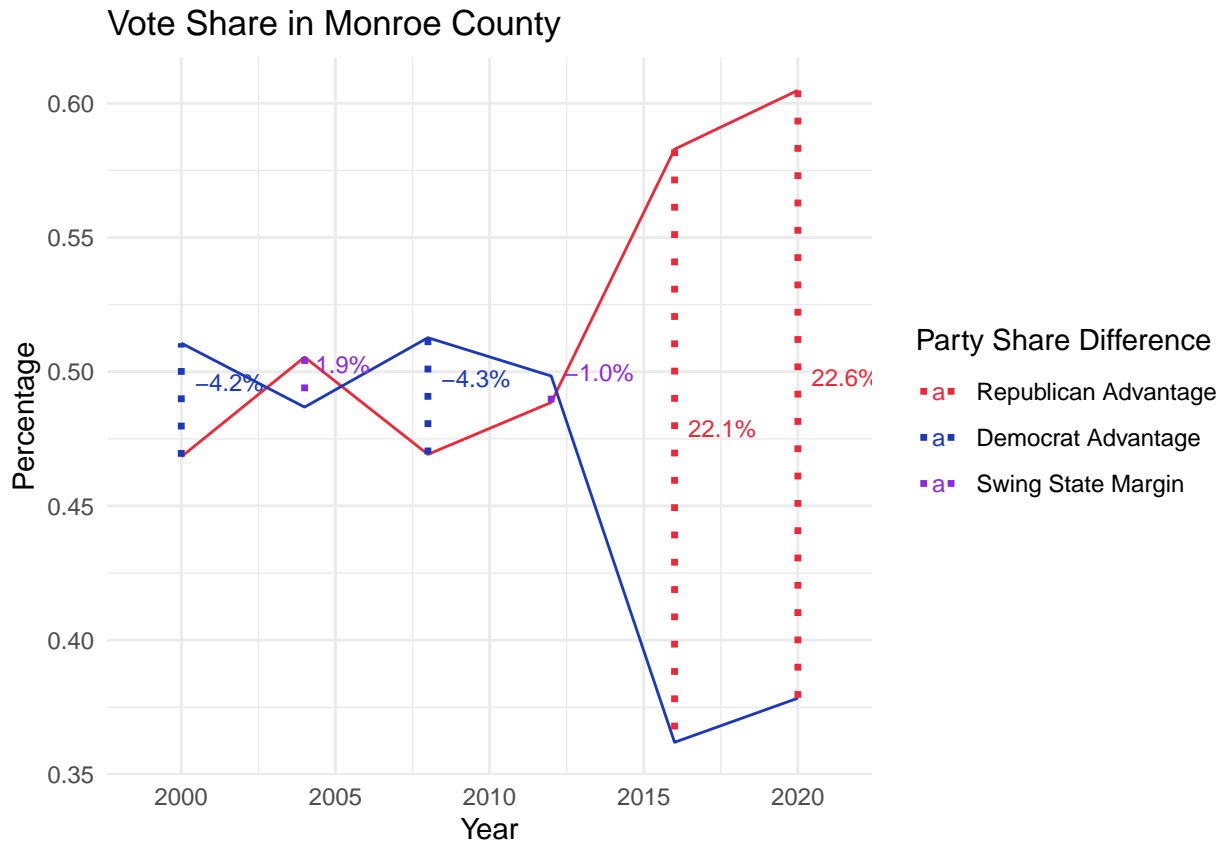


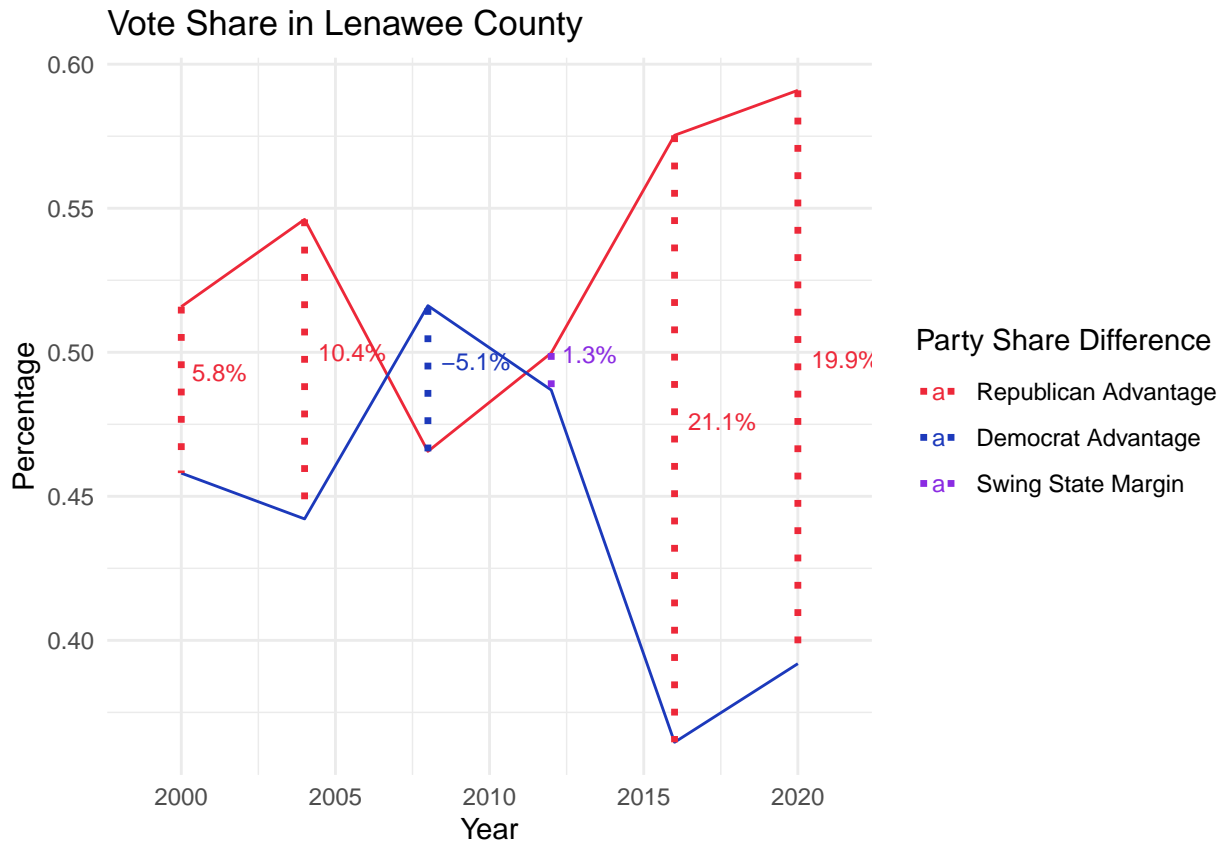
Vote Share in Union County



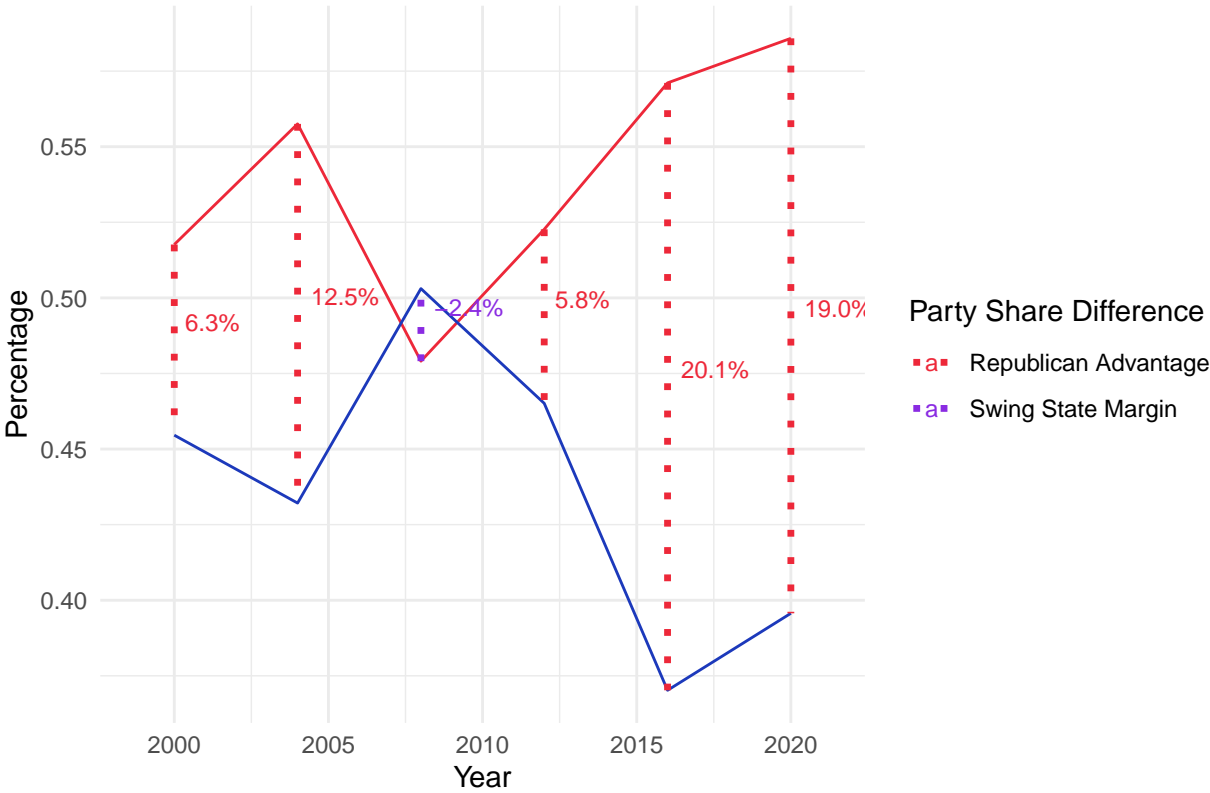
Vote Share in Warren County



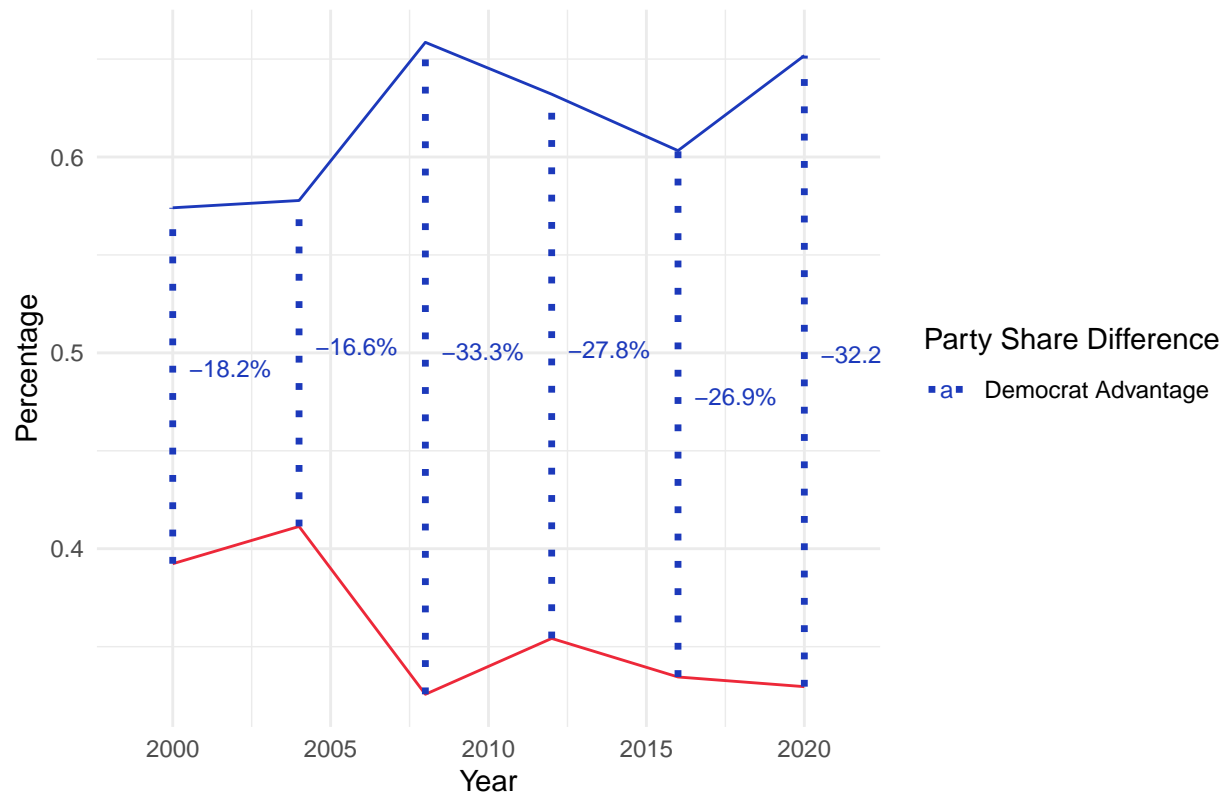




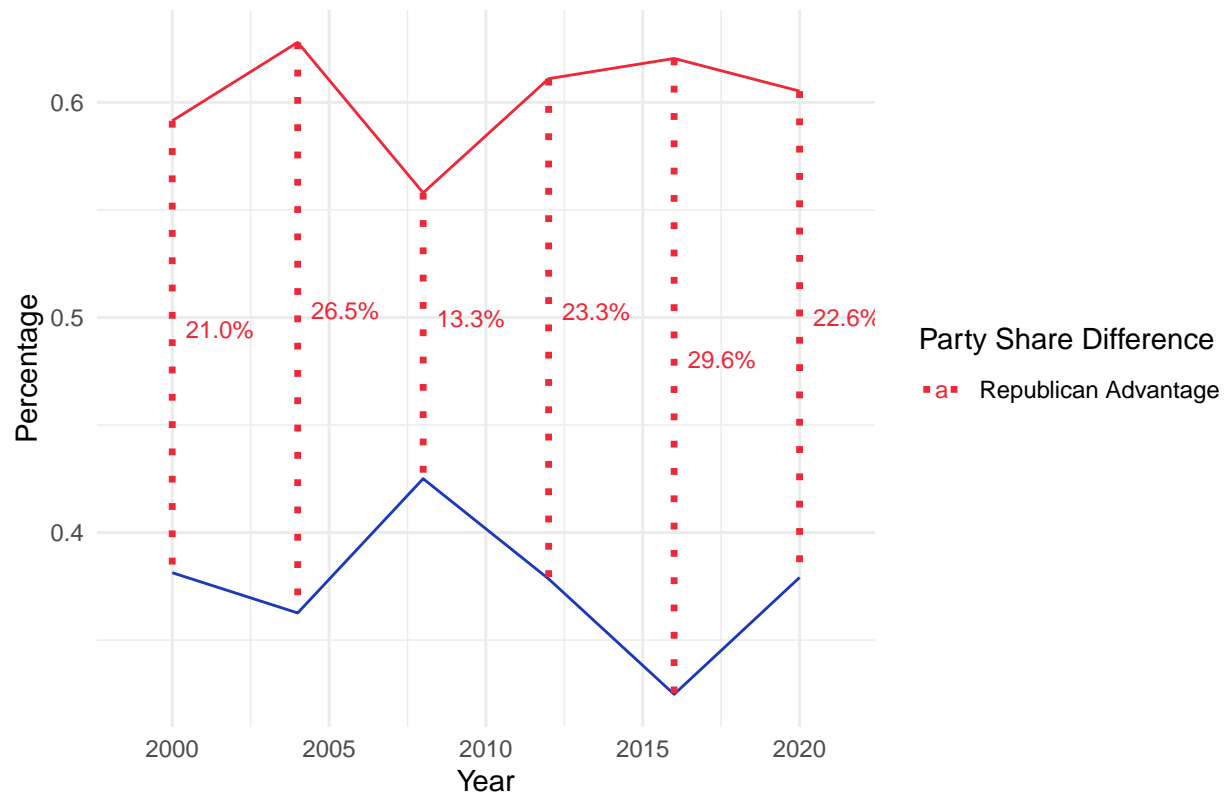
Vote Share in Jackson County

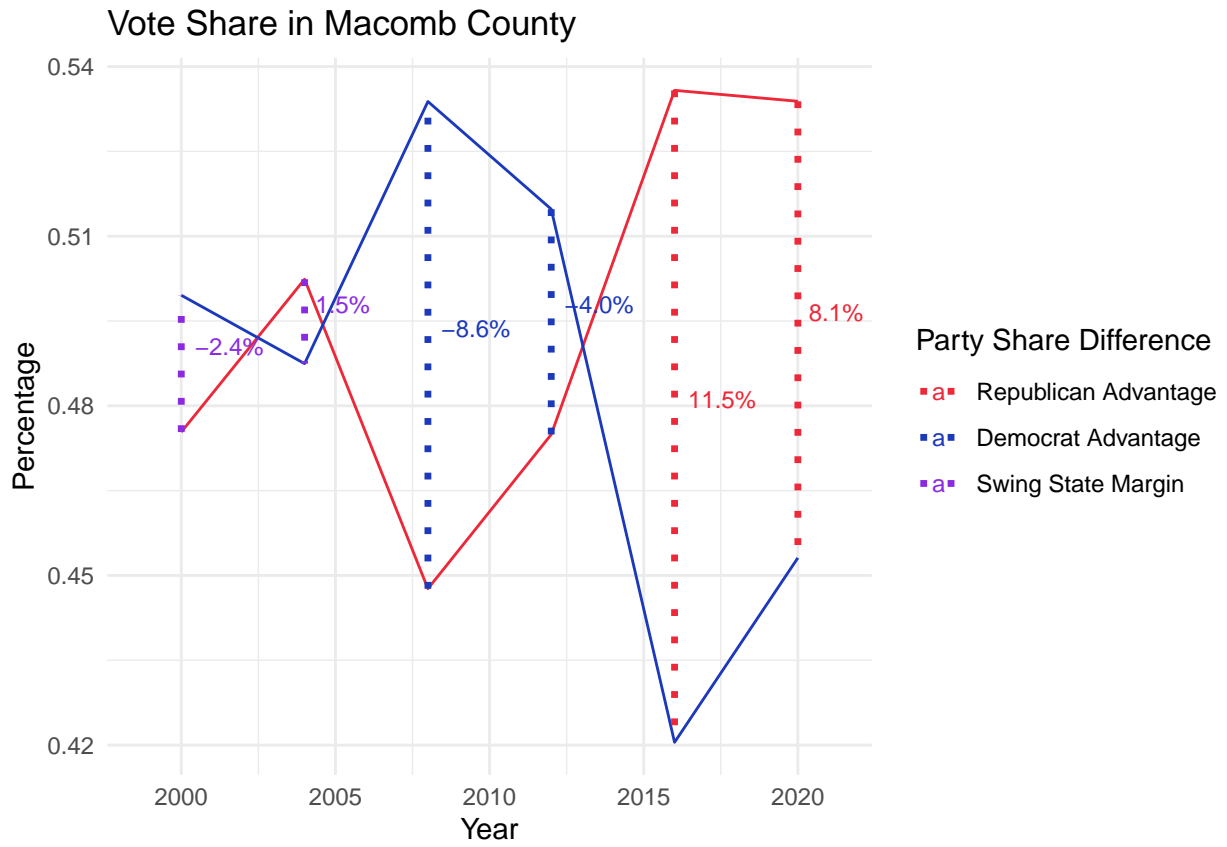


Vote Share in Ingham County

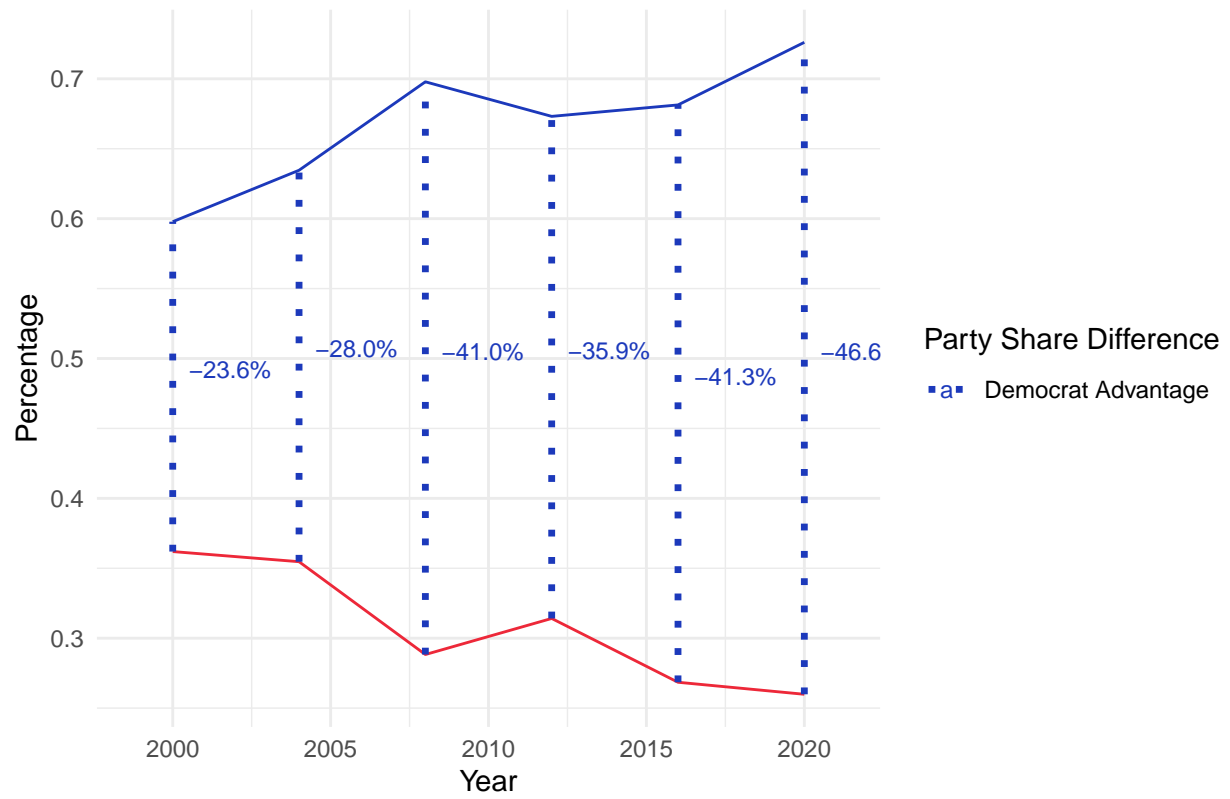


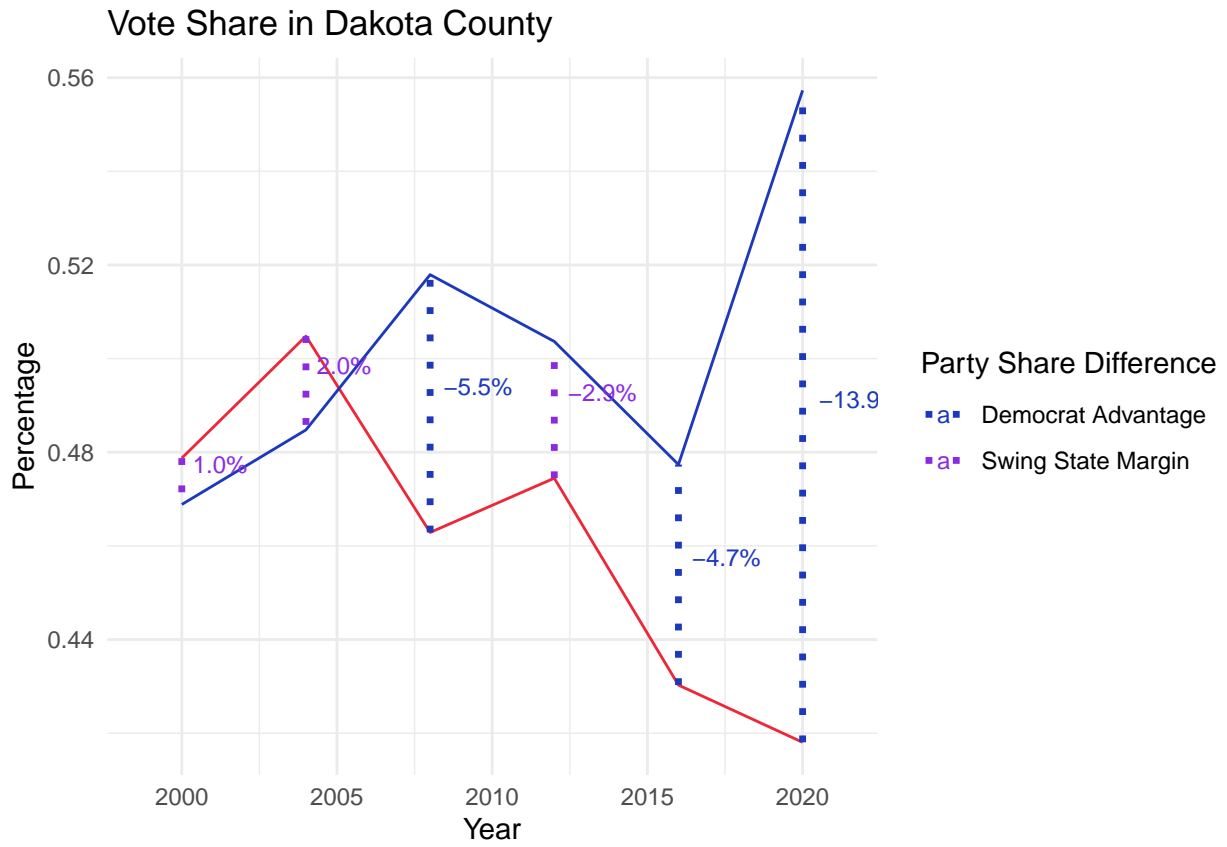
Vote Share in Livingston County

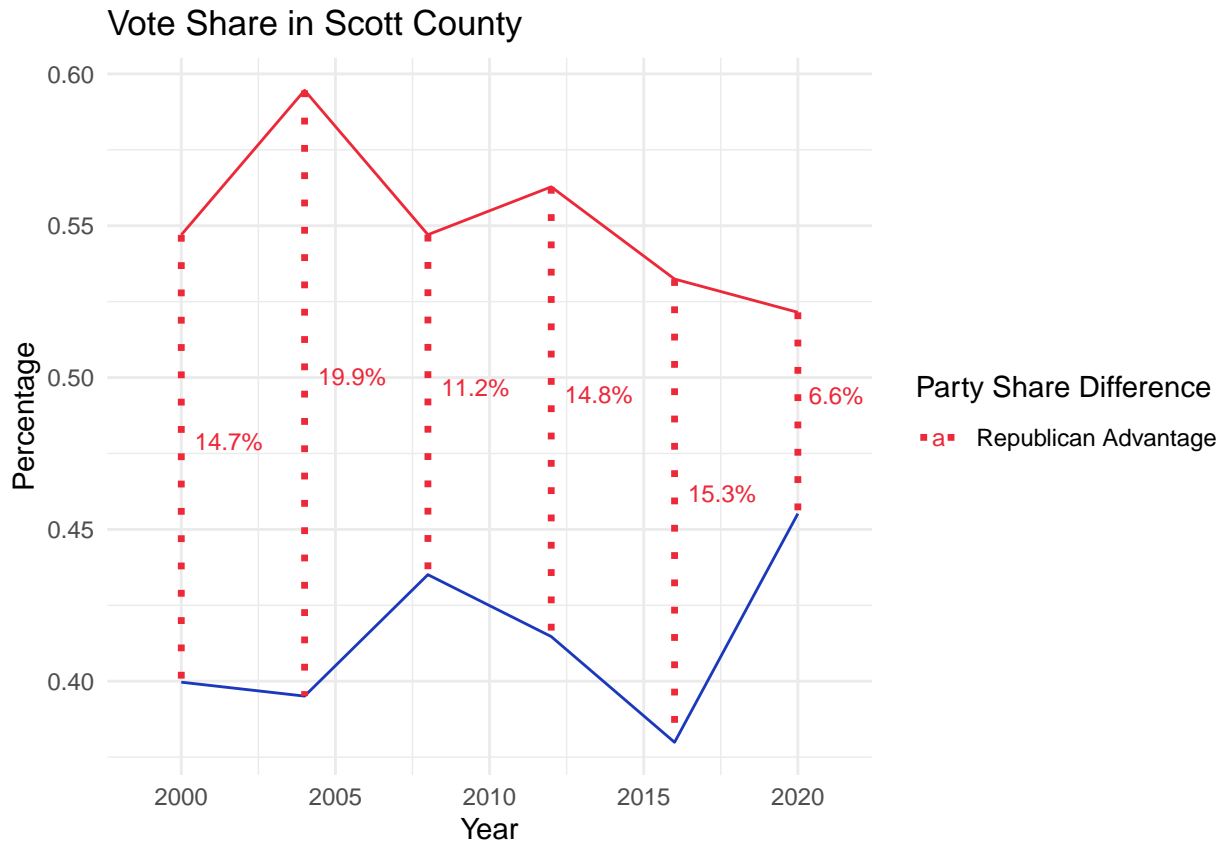


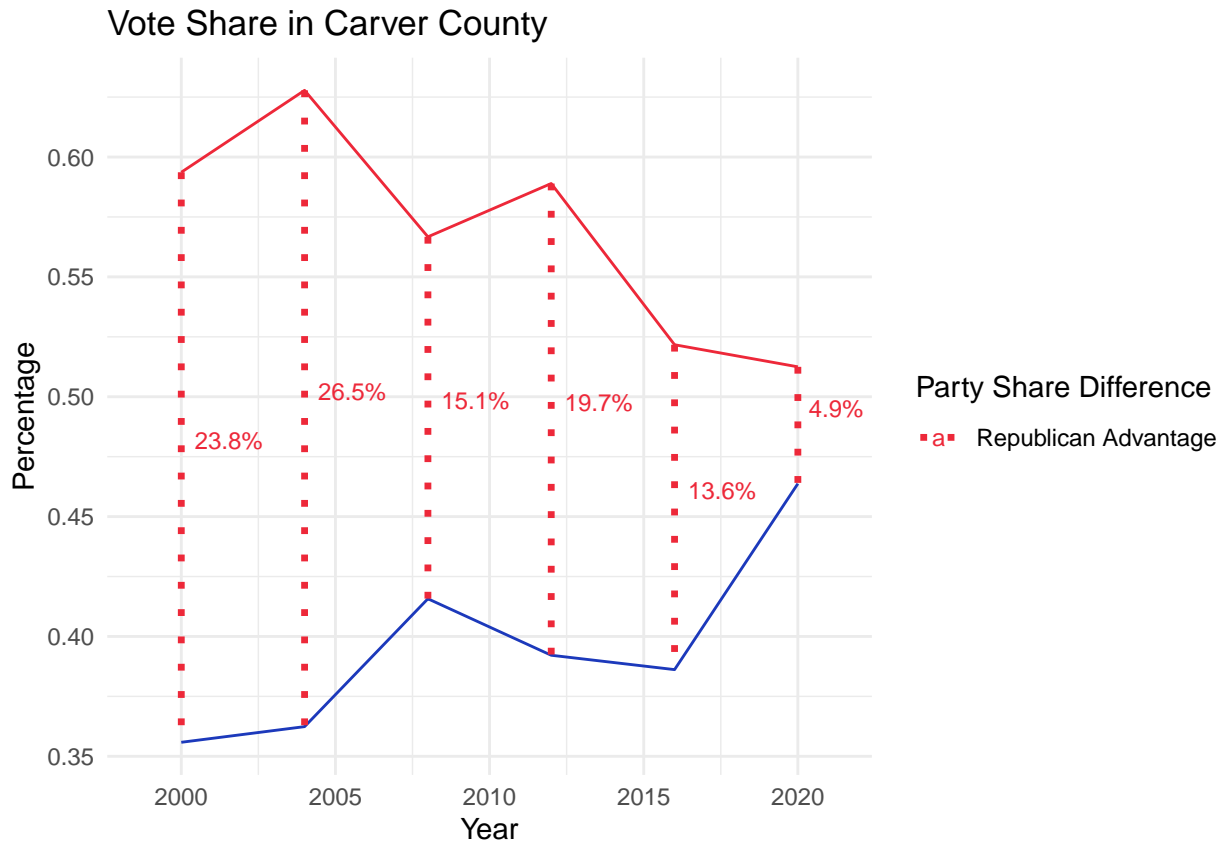


Vote Share in Washtenaw County

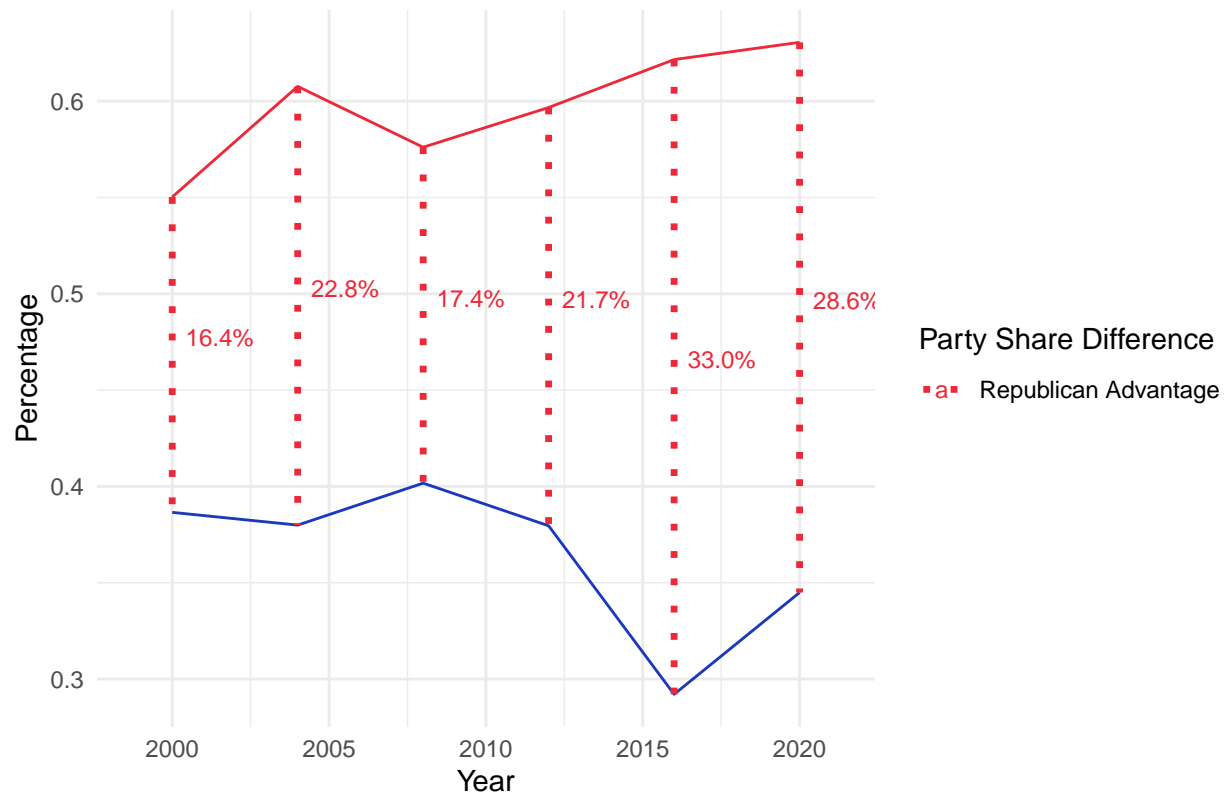




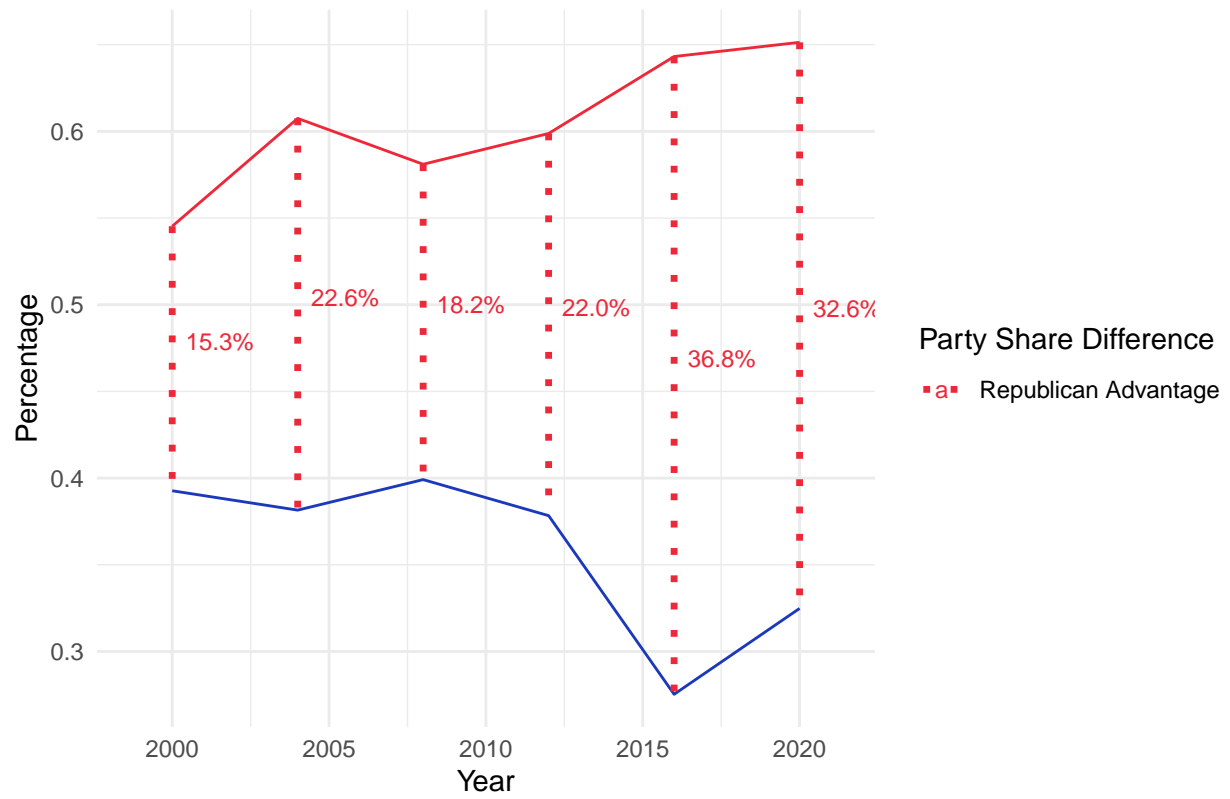




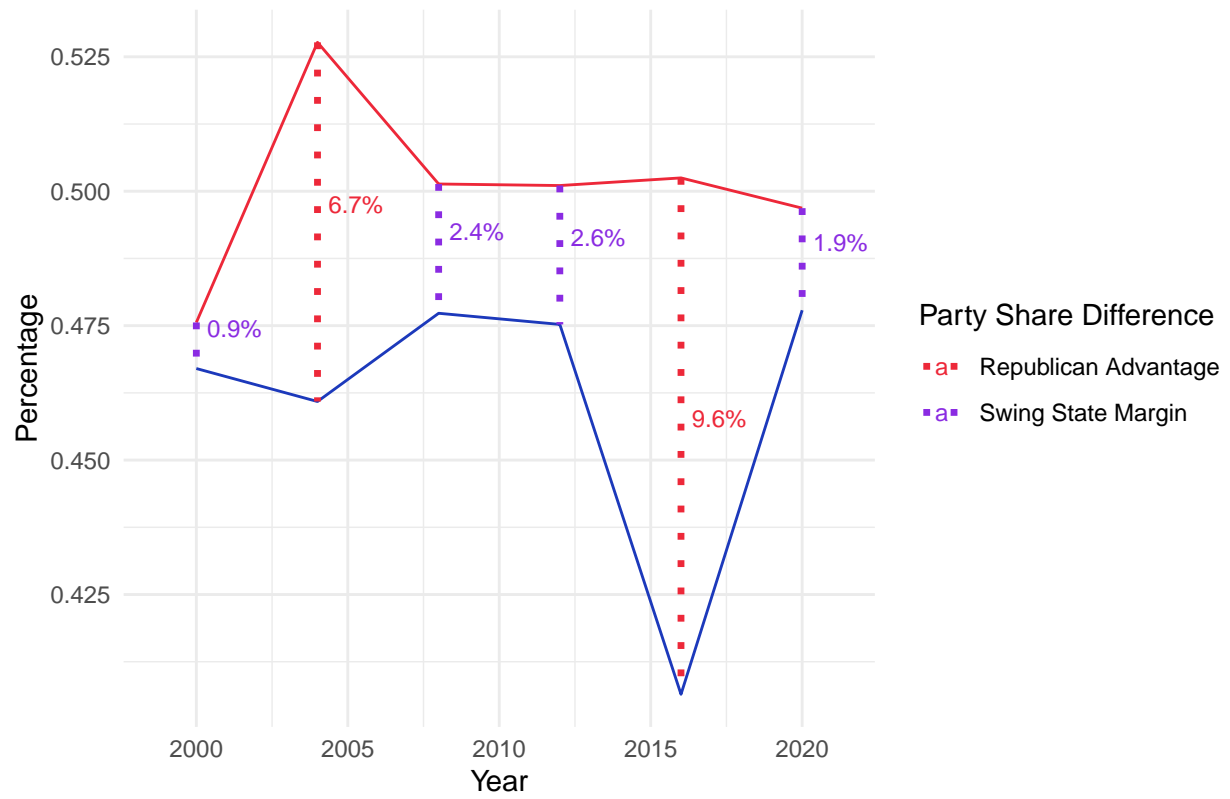
Vote Share in Wright County

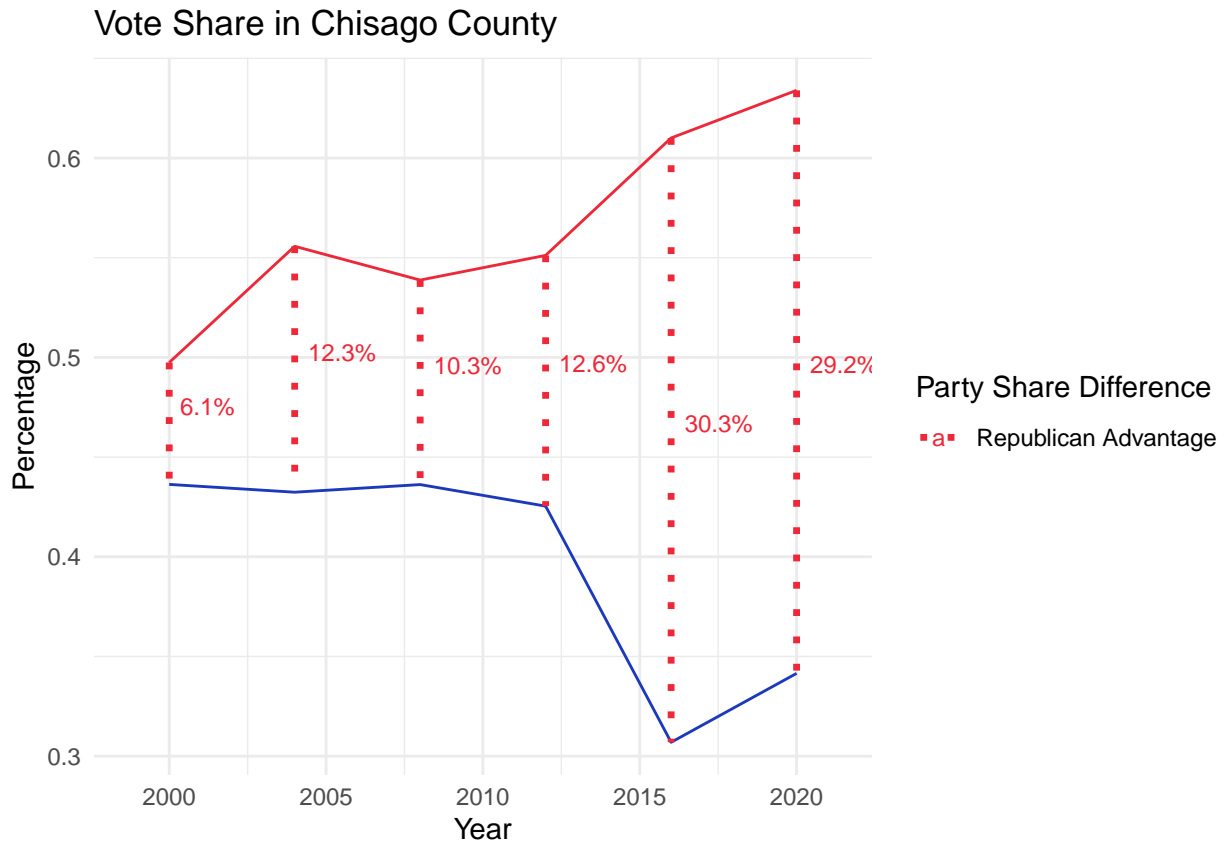


Vote Share in Sherburne County

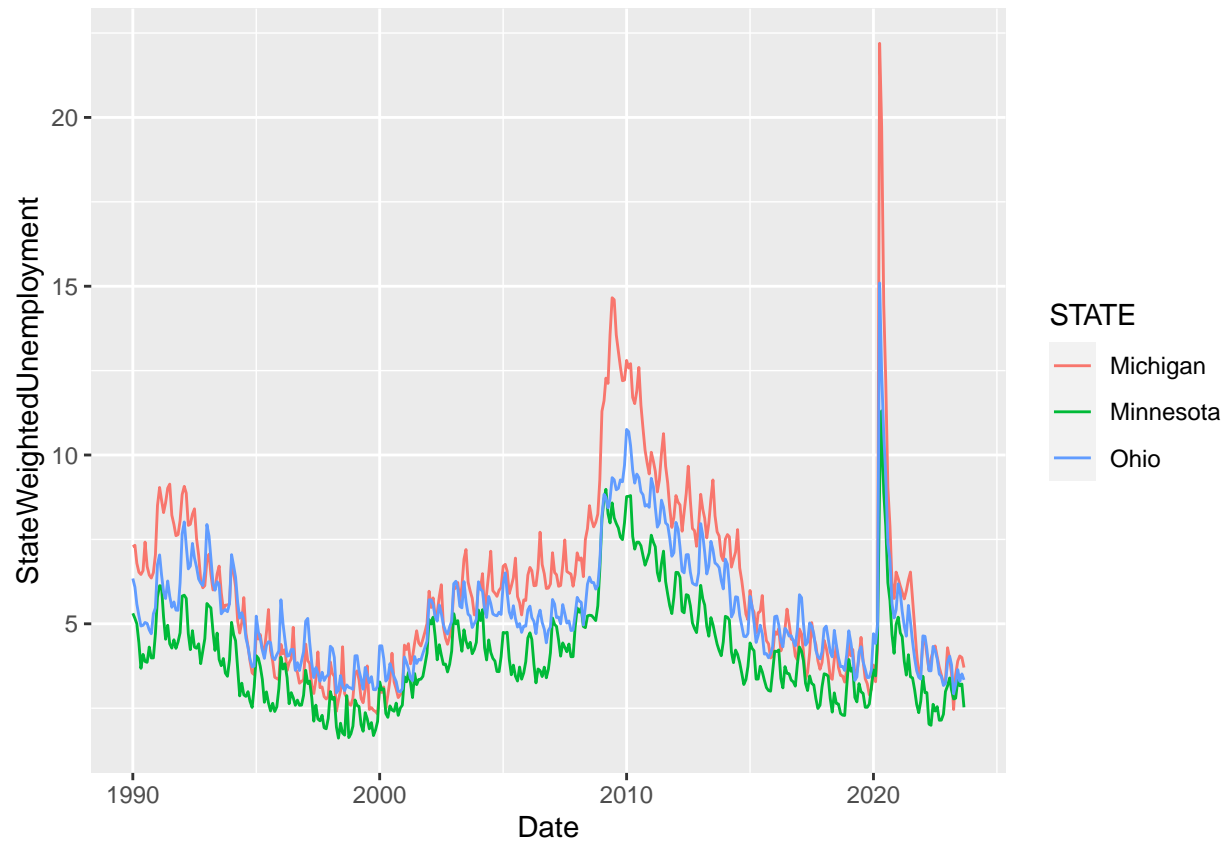


Vote Share in Anoka County

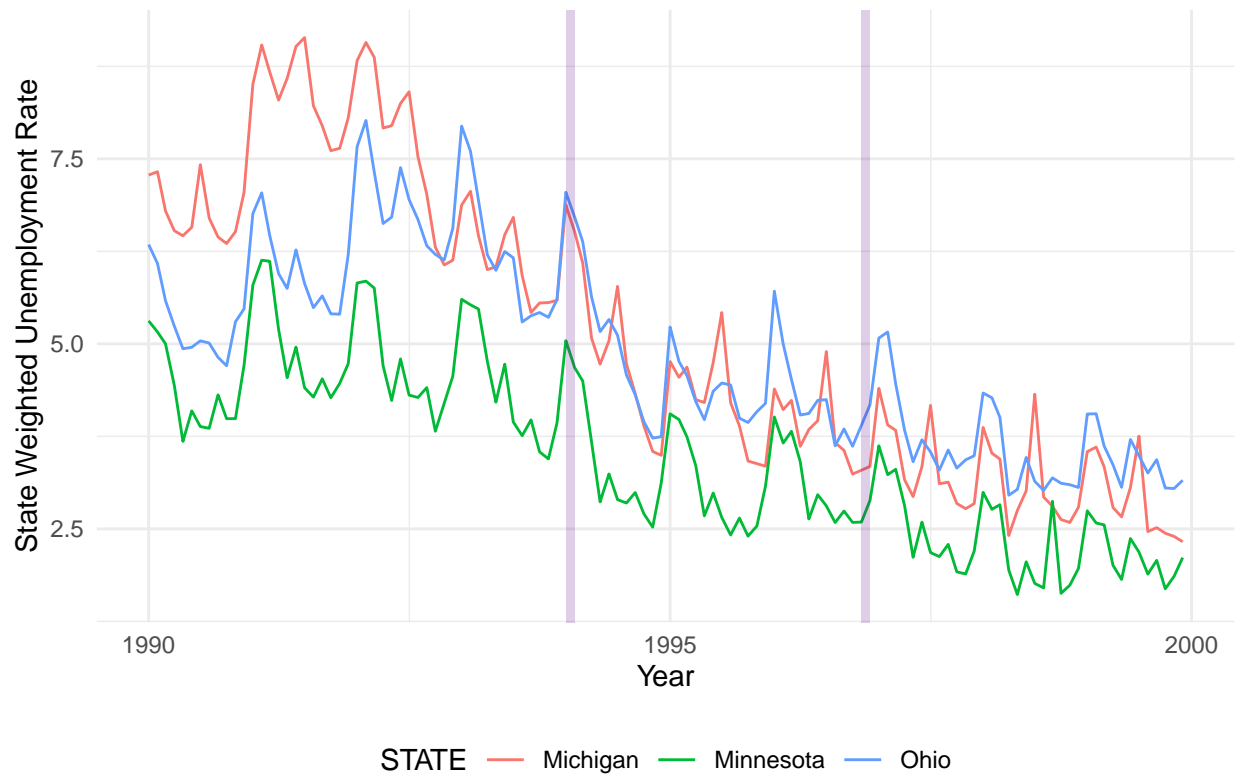




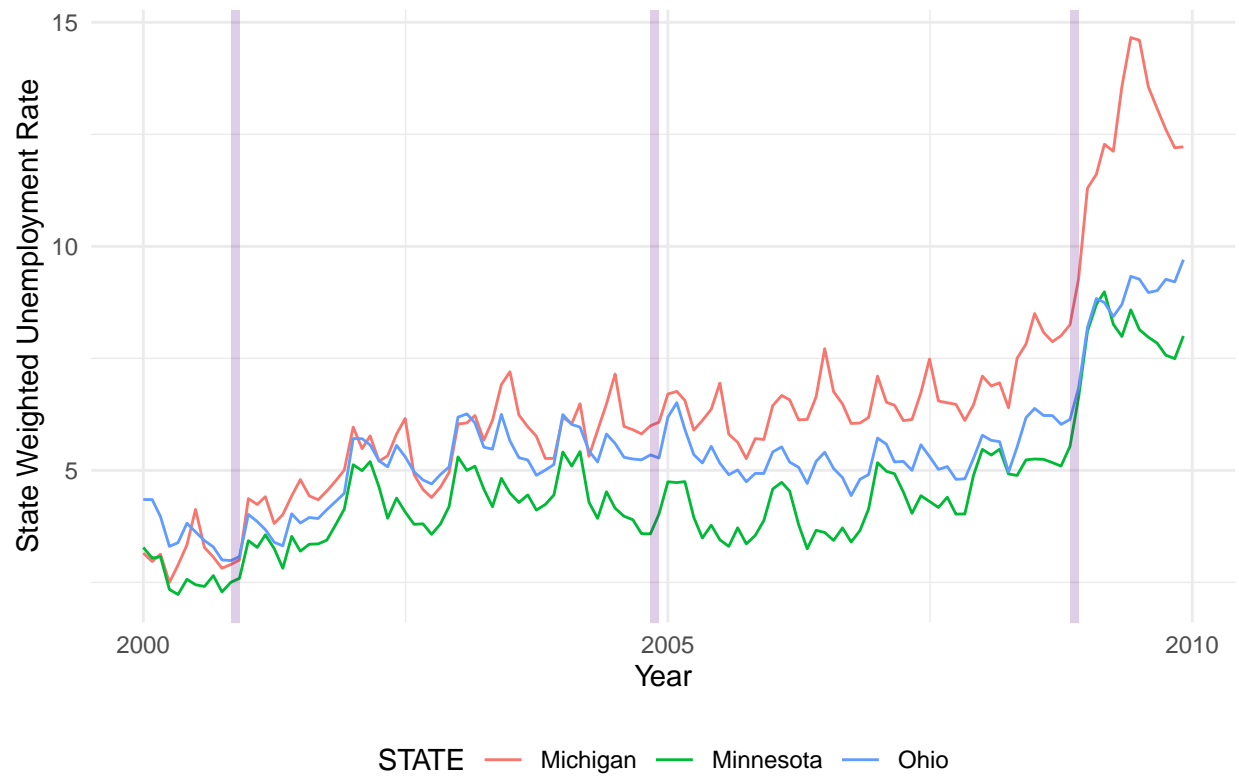
```
## Warning in full_join(unemployment, population, by = "County"): Detected an unexpected many-to-many r
## i Row 1 of 'x' matches multiple rows in 'y'.
## i Row 18 of 'y' matches multiple rows in 'x'.
## i If a many-to-many relationship is expected, set 'relationship =
## "many-to-many"' to silence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

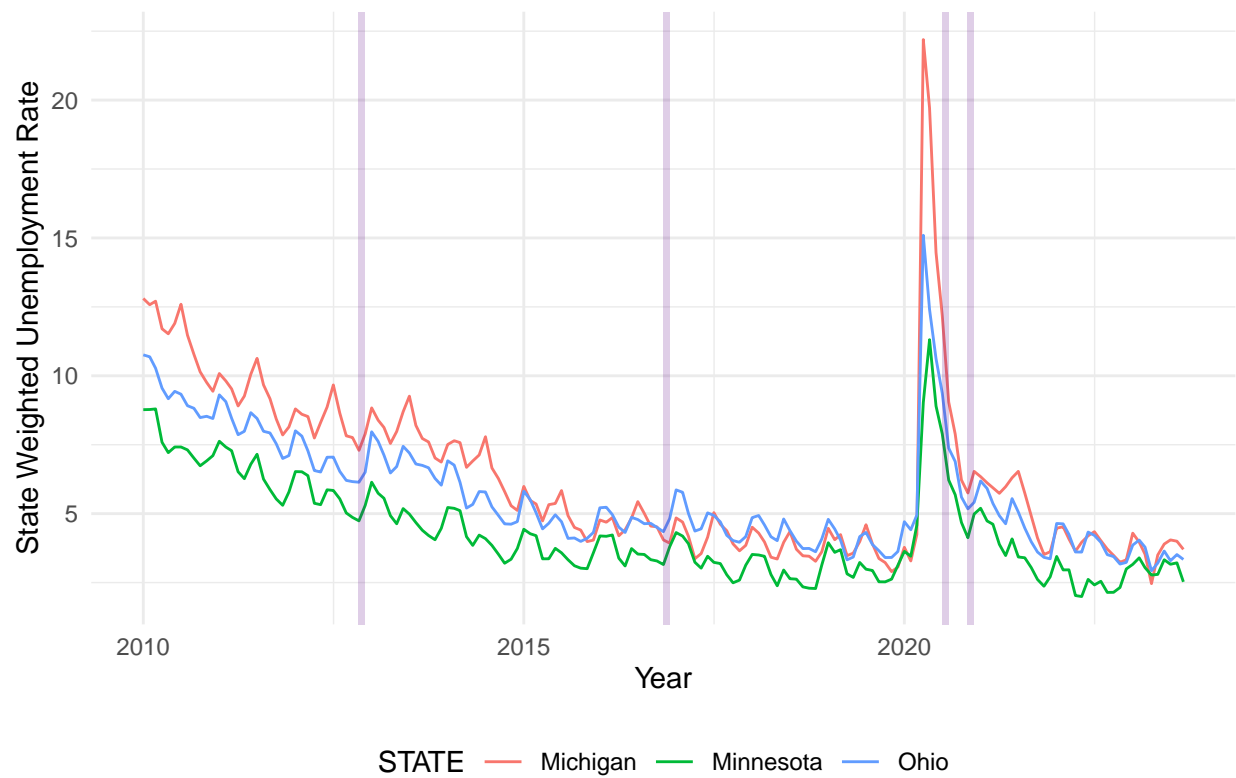
Weighted Unemployment Rate in Suburbs of OH, MN, MI 1990 – 1999



Weighted Unemployment Rate in Suburbs of OH, MN, MI 2000 – 2009



Weighted Unemployment Rate in Suburbs of OH, MN, MI 2010 – Present



Republican Vote Share Advantage in OH, MI, MN Suburban Counties

