**Full employment never reached African-Americans in the past decade**

A 5% unemployment rate is often considered an economy with full-employment. National level statistics reached full employment across various times in the past decade specifically after the 2008 financial crisis recovery. However, in the same time period, the unemployment rate for African-Americans never reached full-employment figures despite other racial groups getting under the 5% threshold across various instances within that time-frame.

FULL EMPLOYMENT NEVER REACHED AFRICAN AMERICANS IN THE PAST DECADE

Between 2007 to 2018, the unemployment rate for African Americans never reached what the federal government considers
full employment (a jobless rate of 5%), despite national level statistics for other racial groups getting under the 5% threshold at various times.
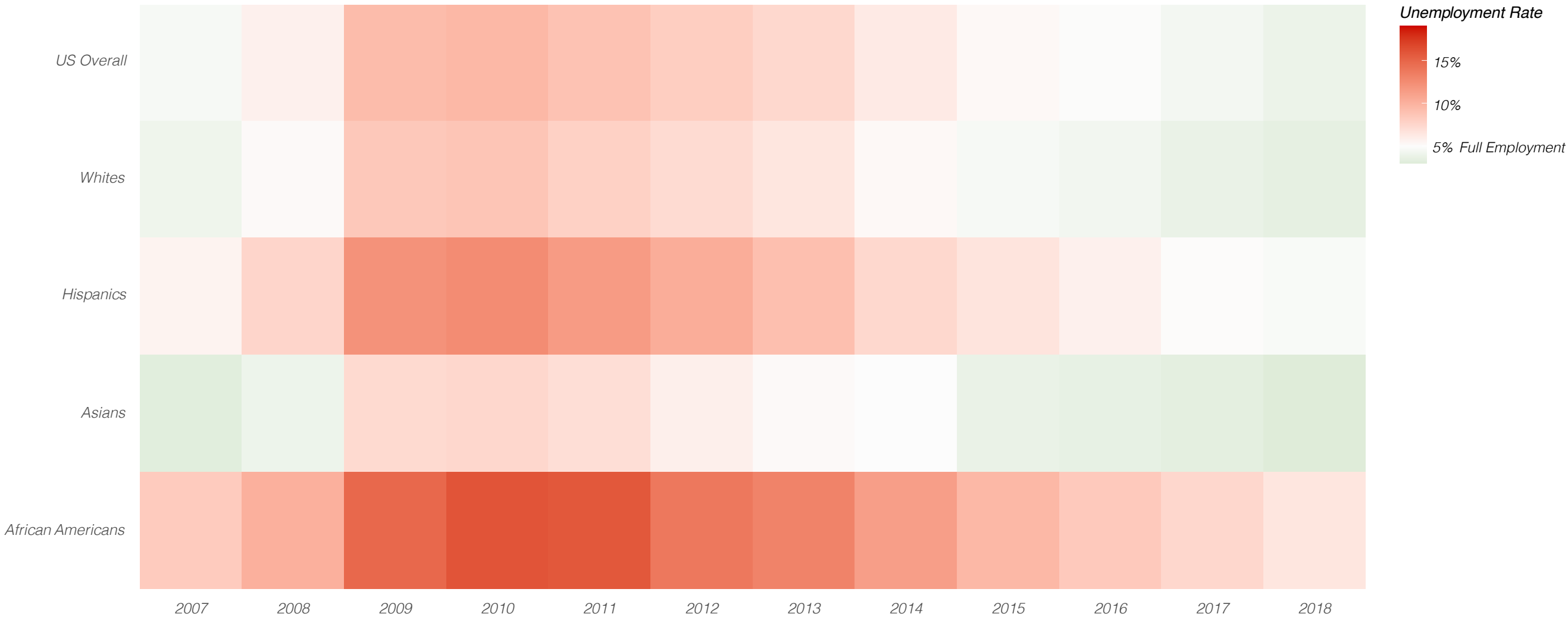
Source: US Bureau of Labor Statistics

African American Unemployment R Code

```r
ggplot(data = unemployment_rate,
     mapping = aes(x = year,
                 y= race)) +
  geom_tile(aes(fill = unemployment))+
  scale_x_continuous(breaks = seq(2007, 2018))+
  scale_fill_gradient2(name= "Unemployment \nRate",
                 low = "green4", mid = "gray99",
                 high = "red3",
                 midpoint = 5,
                 limits = c(3, 19))+
  labs(title = bquote(bold("FULL EMPLOYMENT NEVER REACHED AFRICAN
AMERICANS IN THE PAST DECADE")),
     subtitle = paste("Between 2007 to 2018, the unemployment rate for African Americans
never reached what the federal government considers \nfull employment (a jobless rate of 5%),
despite national level statistics for other racial groups getting under the 5% threshold at various
times."),
     caption = "Source : US Bureau of Labor Statistics")+
  theme(axis.title.x = element_blank(),
     axis.title.y = element_blank(),
     axis.ticks.x = element_blank(),
     axis.ticks.y = element_blank(),
     panel.background = element_blank(),
     plot.title = element_text(hjust = 0, size = 10),
     plot.subtitle = element_text(hjust = 0, size = 9))
```
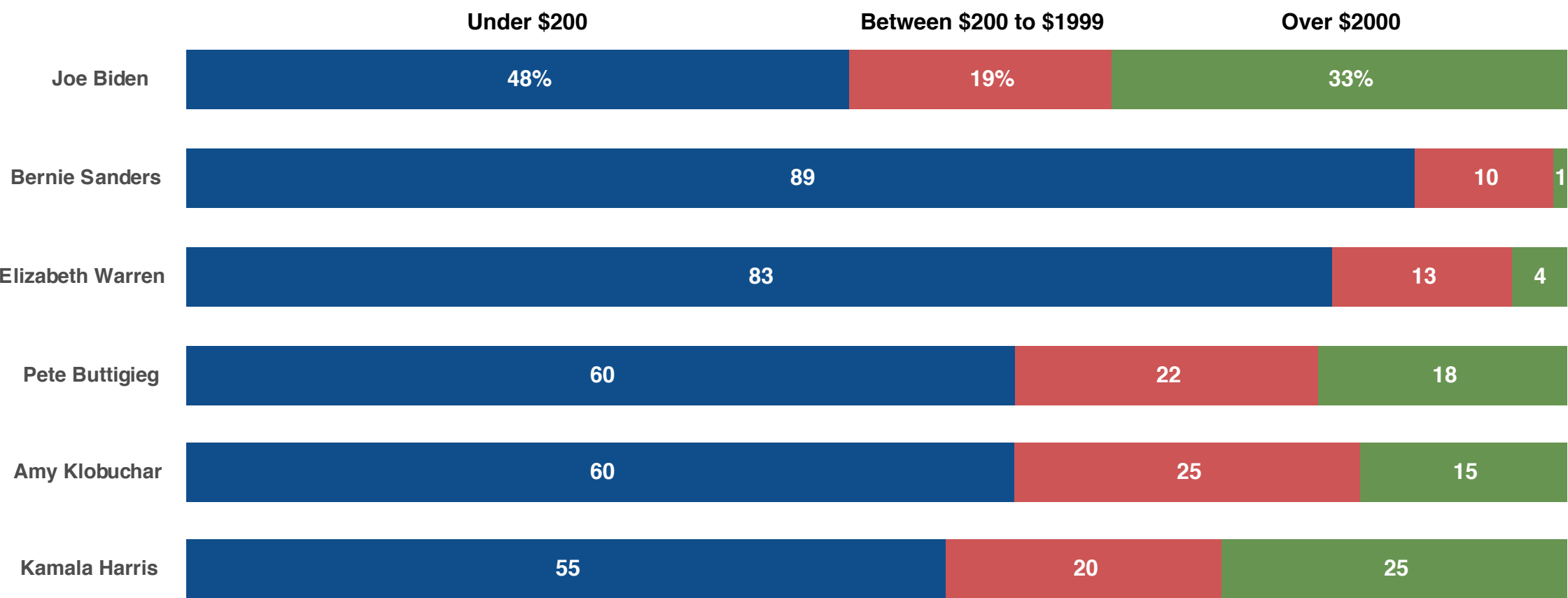
Breakdown of Presidential Campaign Fundraising by Amount Donated

A significant portion of both Senator Bernie Sanders' and Senator Elizabeth Warren's fundraising came from donations of under $200. Among all the leading candidates, Sanders and Warren were the only ones who raised more than 80 percent of their money from donations under that amount.

The former Vice President Joe Biden, on the other hand, performed much weaker in that category. With only 48% of his fundraising coming from donations under $200, his reliance on that category was the lowest amongst all leading Democratic Presidential candidates.

Breakdown of Presidential Campaign Fundraising by Amount Donated

A significant portion of both Sanders' & Warren's fundraising come from donations of under $200.
Biden's strength in that contribution category, however, is comparatively weaker, amongst all others.

	Under $200	Between $200 to $1999	Over $2000
Joe Biden	48%	19%	33%
Bernie Sanders	89	10	1
Elizabeth Warren	83	13	4
Pete Buttigieg	60	22	18
Amy Klobuchar	60	25	15
Kamala Harris	55	20	25

Presidential Funding R Code

```r
ggplot(data = fundbreakdownnew,
       aes(x = fct_inorder(candidate),
           y = percentage,
           fill = category)) +
  geom_bar(stat = "identity",
           width = 0.4) +
  theme(plot.margin = unit(c(1,1,1,1), "cm"))+
  geom_text(aes(label = round(percentage, 0)),
            position = position_stack(vjust = 0.5),
            size = 3.5,
            color = "white")+
  coord_flip()+
  scale_fill_manual(values = c("#689451",
                               "indianred3",
                               "dodgerblue4")) +
  ggtitle("(minor_)breaks = custom function")+
  theme(axis.title.x = element_blank(),
        axis.title.y = element_blank(),
        axis.ticks.x = element_blank(),
        axis.ticks.y = element_blank(),
        axis.text.x = element_blank(),
        panel.background = element_blank(),
        plot.title = element_text(hjust = 0),
        plot.subtitle = element_text(hjust = 0),
        legend.text.align = 1)+
  labs(title = bquote(bold("Breakdown of Presidential Campaign Fundraising by Amount
Donated")),
       subtitle = paste("A significant portion of both Sanders' & Warren's fundraising come from
donations of under $200. \nBiden's strength in that contribution category, however, is
comparatively weaker, even amongst others."),
       caption = "Source : The Federal Election Commission")
```

President Trump has never had an average approval of more than fifty percent

In the first 39 months in charge, President Donald J. Trump never crossed an average approval of more than fifty percent. Both President Obama and President Bush did cross the fifty percent approval by this time in office. President Bush specifically had a longer time hovering over fifty percent specifically due to the nation's standing after 9/11.

PRESIDENT TRUMP HAS NEVER HAD AN AVERAGE APPROVAL OF MORE THAN FIFTY PERCENT

*In his thirty-nine months incharge, between January 2017 to April 2020, President Trump never crossed an average of fifty percent approval,
one that his two predecessors crossed for at least some period in their term by this time.*

Approval Percentage (%)

B. Obama

G.W. Bush

D. Trump

Months in Office

Source : Gallup Poll
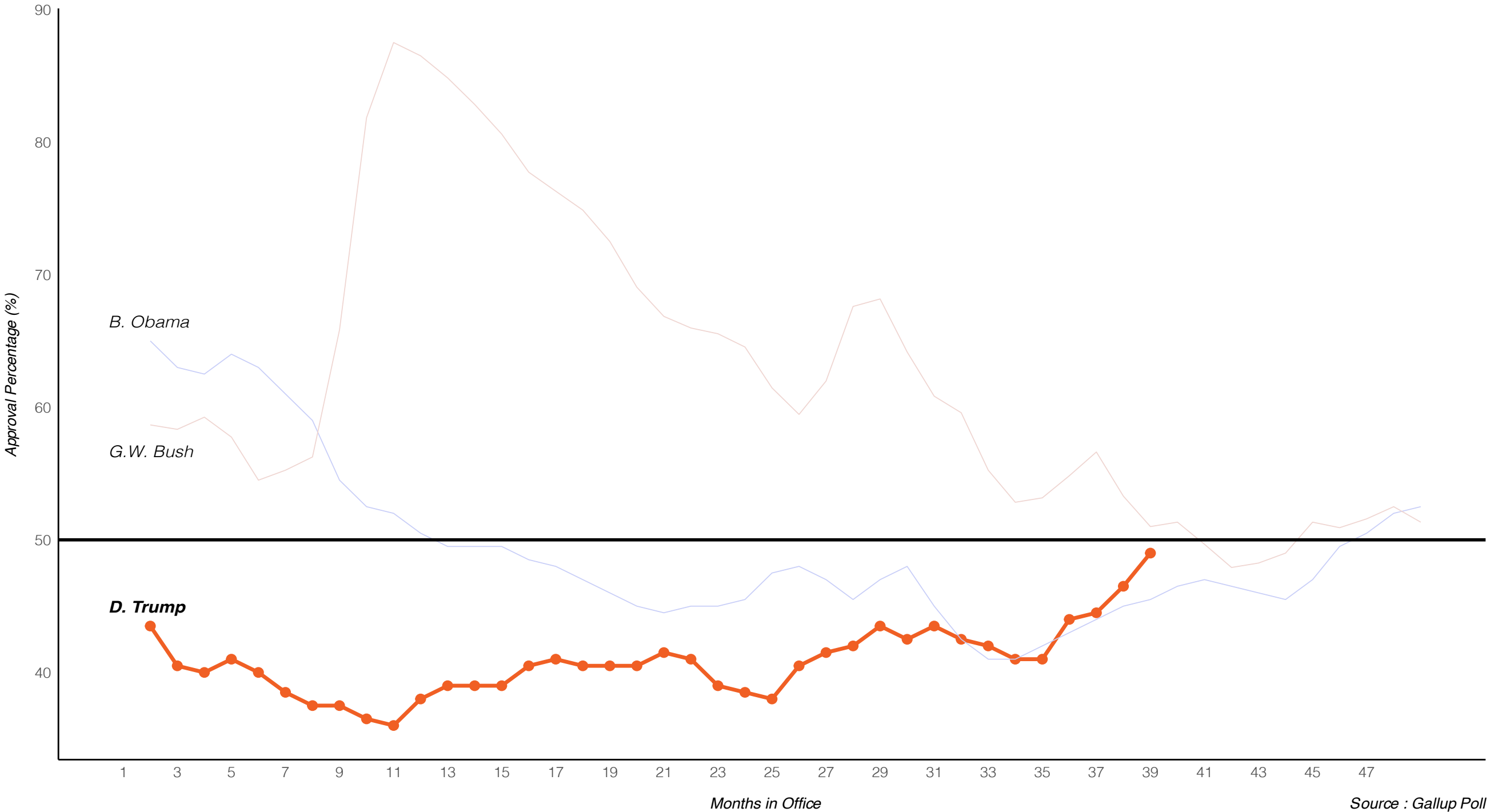
POTUS Approval R Code

```r
approvalrating <- mutate(approvalrating, mav_trump_lag2 =
                roll_mean(approvalrating$Trump, 2, align = "right", fill = NA))

approvalrating <- mutate(approvalrating, mav_obama_lag2 =
                roll_mean(approvalrating$Obama, 2, align = "right", fill = NA))

approvalrating <- mutate(approvalrating, mav_bush43_lag2 =
                roll_mean(approvalrating$Bush43, 2, align = "right", fill = NA))

ggplot(data = approvalrating) +
  geom_line(mapping = aes(x = monthnumber,
                y= mav_trump_lag2),
        color = "#F05F24", size = 1.2) +
  geom_point(mapping = aes(x = monthnumber,
                y= mav_trump_lag2),
        color = "#F05F24", size = 2.8)+
  geom_line(mapping = aes(x = monthnumber,
                y= mav_obama_lag2),
        color = "#C8CEF8", size = 0.3)+
  geom_line(mapping = aes(x = monthnumber,
                y= mav_bush43_lag2),
        color = "#EFD5D1", size = 0.3)+
  scale_x_continuous(breaks= seq (1, 48, by = 2))+
  scale_y_continuous(breaks= seq (0, 90, by = 10))+
  geom_hline(yintercept=50, color = "black", size = 1)+
  labs(title = bquote(bold("PRESIDENT TRUMP HAS NEVER HAD AN AVERAGE
APPROVAL OF MORE THAN FIFTY PERCENT")),
      subtitle = paste("In his thirty-nine months incharge, President Trump has never crossed an
average of fifty percent approval, \none that his two predecessors crossed for at least some period
in their term by this time"),
      caption = "Source : Gallup Poll",
    y= "Approval Percentage",
    x = "Months in Office")+
  theme(plot.background = element_rect(fill = "white"),
      panel.background = element_rect(fill = "white"),
      axis.line = element_line(colour = "black"),
      axis.ticks = element_blank(),
      axis.text = element_text(size = 10),
      axis.title = element_text(size = 10),
      plot.title = element_text(size = 10),
      plot.subtitle= element_text(size = 10),
      plot.caption = element_text(size = 8, hjust = 0))
```

Correlation Between Gross National Income and Life Expectancy

The following scatterplot visualization showcases the relationship between gross national income per capita (current US$) and life expectancy at birth (years). The graph is specifically focused on low income and lower-middle income countries, as designated by the World Bank. The scatterplot essentially indicates that those born in countries that have relatively higher income levels are associated to living longer. For countries that are categorized as low or lower-middle income, this association seems to be largely strong and does not diminish as income increases. There are, nevertheless, a few outliers, as shown in the graph.

CORRELATION BETWEEN GROSS NATIONAL INCOME AND LIFE EXPECTANCY

Amongst lower and lower–middle income countries,those with higher national income tend to have higher life expectancies.

Life Expectancy
at birth (Yrs)

Gross National Income
per capita (Current US$)

Income Levels

● Low Income

● Lower Middle Income
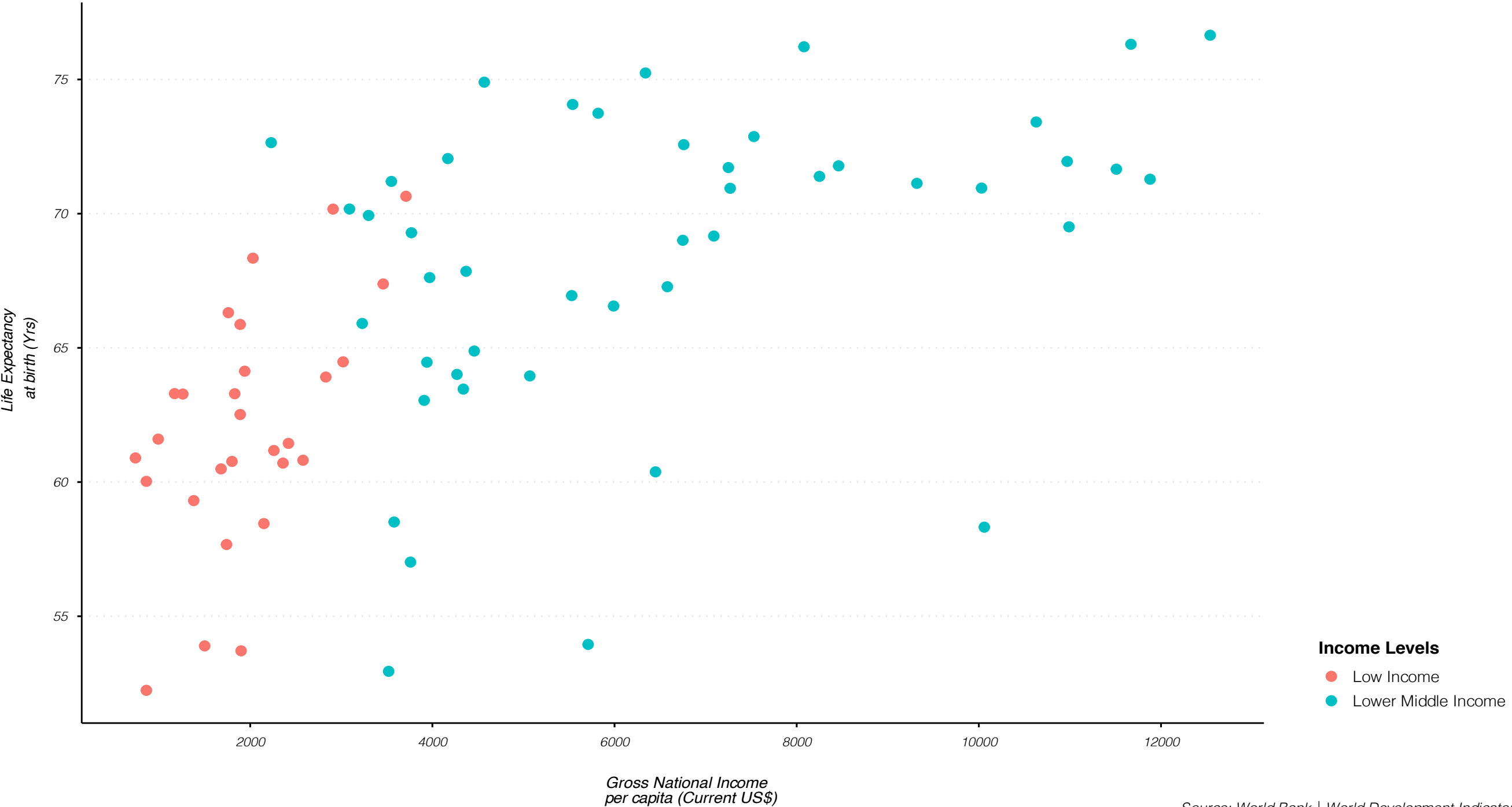
**LEvsGNI R Code**

```r
ggplot (data = LEvsGNI,
      mapping = aes(x = gnipercapita,
                y = lifeexpectancy,
                color = incomelevelname)) +
  geom_point (size = 3)  +
  scale_x_continuous (name = "Gross National Income \n per capita (Current US$)",
                breaks = seq (0, 14000, 2000)) +
  scale_y_continuous (name = "Life Expectancy\n at birth (Yrs)",
                breaks = seq (55, 95, 5)) +
  scale_color_discrete (name = "Income Levels",
                  labels = c ("Low income" = "Low Income",
                        "Lower middle income" = "Lower Middle Income"))  +
  labs (title = bquote (bold ("CORRELATION BETWEEN GROSS NATIONAL INCOME AND
LIFE EXPECTANCY")),
      subtitle = paste ("Amongst lower and lower-middle income countries,those with higher
national income tend to have higher life expectancies."),
      caption = "Source: World Bank | World Development Indicators") +
  theme(plot.background = element_rect(fill = "white"),
      panel.background = element_rect(fill = "white"),
      axis.line = element_line(colour = "black"),
      axis.ticks = element_blank(),
      axis.text = element_text(size = 10),
      axis.title = element_text(size = 10),
      plot.title = element_text(size = 10),
      plot.subtitle= element_text(size = 10),
      plot.caption = element_text(size = 8, hjust = 0))+
  theme_clean()
```

Among North Eastern States, Only Pennsylvania and New Hampshire Have Seen a Decrease in the Number of Abortion Clinics

Among North Eastern states that saw a change in the number of abortion clinics between 2007 and 2017, only Pennsylvania and New Hampshire were the two states that saw a decrease. All changes in other states saw an increase in the number of clinics. Both Pennsylvania and New Hampshire, in recent years, have seen attempts from legislatures creating laws that make it difficult for women to get abortion, including regulations that make it difficult for clinics to stay open.

AMONG NORTH EASTERN STATES, ONLY PENNSYLVANIA AND NEW HAMPSHIRE SAW A DECREASE IN THE NUMBER OF ABORTION CLINICS

Among north eastern states that saw a change in the number of abortion clinics between 2007 and 2017, only Pennsylvania and New Hampshire were the two states that saw a decrease. All changes in other states saw an increase in the number of clinics.

Change in the Number of Clinics Per Ward
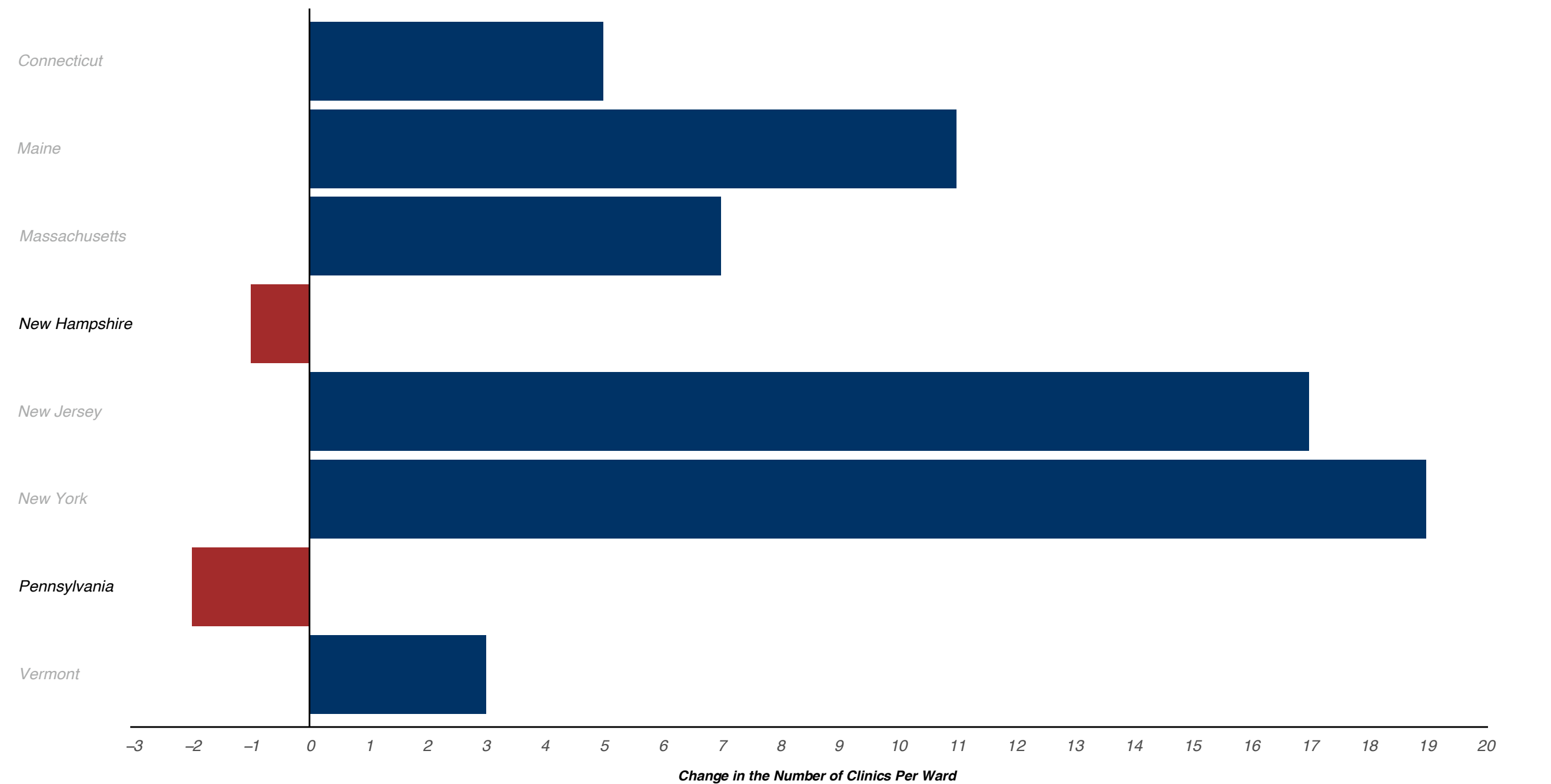
North Eastern States Abortion R Code

```
ggplot(data = ChangeABortionEastOrder2,
     aes(x = State, y = Change,
        fill = Change >0))+
 geom_bar(stat = "identity")+
 coord_flip()+
 labs(x = "State", y = "Change in the Number of Clinics Per Ward",
     title = bquote(bold("AMONG NORTH EASTERN STATES, ONLY PENNSYLVANIA
AND NEW HAMPSHIRE SAW A DECREASE IN THE NUMBER OF ABORTION
CLINICS")),
     subtitles = " Among north eastern states that saw a change in the number of abortion clinics
between 2007 and 2017, only Pennsylvania and New Hampshire were the two \nstates that saw a
decrease. All changes in other states saw an increase in the number of clinics.")+
 geom_hline(yintercept=0, color = "black", size = 0.5)+
 scale_y_continuous(breaks= seq(-5, 20, 1))+
 theme(plot.background = element_rect(fill = "white"),
     panel.background = element_rect(fill = "white"),
     axis.line = element_line(colour = "black"),
     axis.ticks = element_blank(),
     axis.text = element_text(size = 10),
     axis.title = element_text(size = 10),
     plot.title = element_text(size = 14),
     plot.subtitle= element_text(size = 12),
     plot.caption = element_text(size = 12, hjust = 0))+
 guides(fill = FALSE)
```

Unemployment Rates for Wards Seven and Eight Have Consistently Been the Highest in Washington, DC
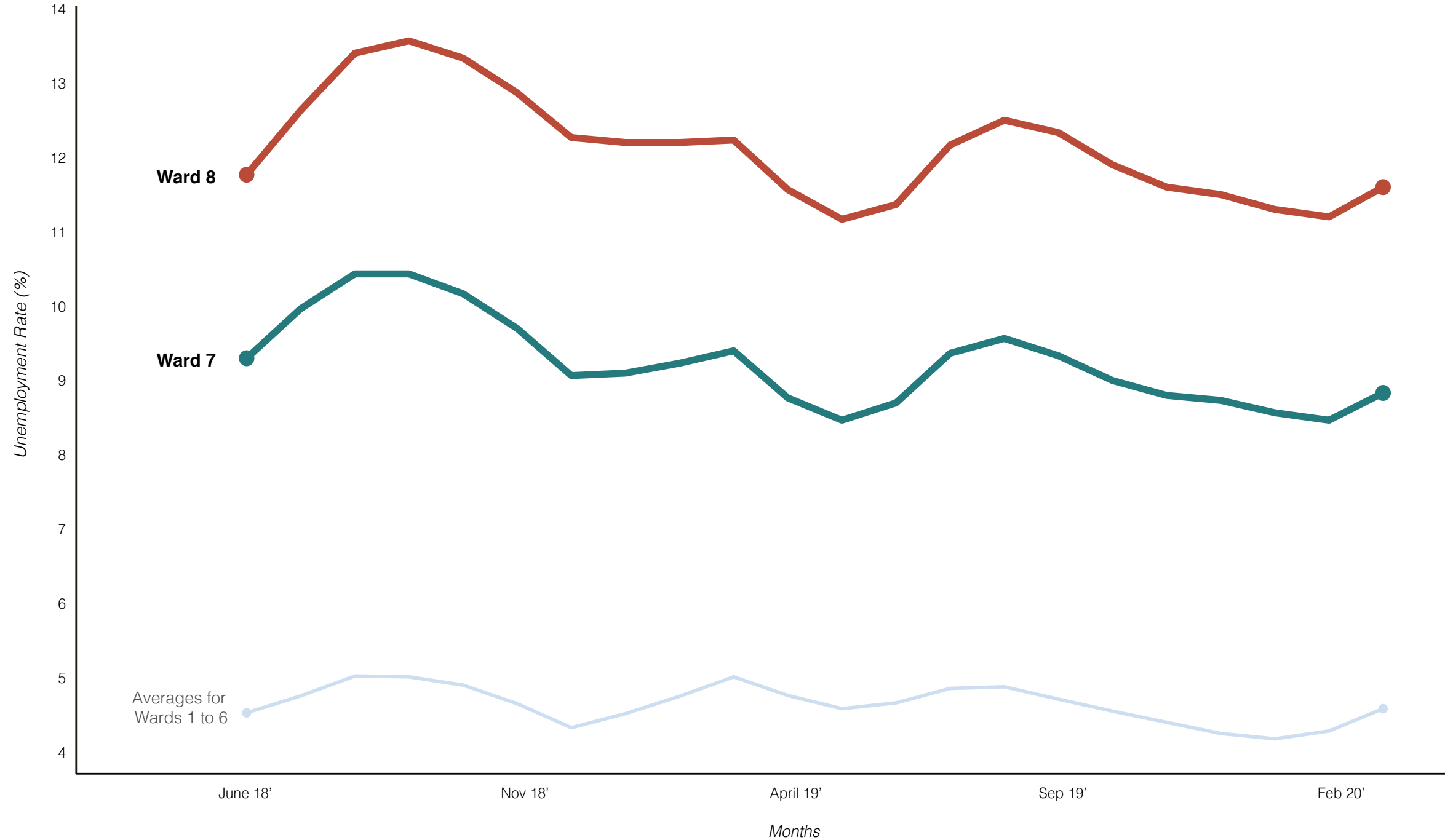
The unemployment rate for both wards seven and eight have always been considerably high. The graph which goes back to June 2018 showcases both the ward's high unemployment figures, with quite a few ups and downs, but never coming close to the 5% full employment threshold. Ward eight, in particular, has the highest numbers with unemployment reaching up to almost 14% at a certain point.

In contrast, the unemployment averages for wards one through six are considerably low. In addition to having half the numbers compared to ward seven, and more than twice as low compared to ward eight, the unemployment figure for these wards have largely hovered under or around the 5% full employment threshold.

UNEMPLOYMENT RATES FOR WARDS SEVEN AND EIGHT HAVE CONSISTENTLY BEEN THE HIGHEST IN WASHINGTON, DC

The unemployment rates for wards seven and eight have consistently been higher compared to the average rate for the rest of the six wards in Washington, DC. In addition, they have also never been close to the five percent full employement threshold in recent times.

Ward 8

Ward 7

Averages for Wards 1 to 6

Unemployment Rate (%)

June 18'   Nov 18'   April 19'   Sep 19'   Feb 20'

Months

DC Ward Unemployment Figures R Code

```r
overallunemploymentdc <- mutate(overallunemploymentdc, mav_initialward_lag3 =
                roll_mean(overallunemploymentdc$InitialWard, 3, align = "right", fill =
NA))

overallunemploymentdc <- mutate(overallunemploymentdc, mav_overall_lag3 =
                roll_mean(overallunemploymentdc$Overall, 3, align = "right", fill = NA))

overallunemploymentdc <- mutate(overallunemploymentdc, mav_ward7_lag3 =
                roll_mean(overallunemploymentdc$Ward7, 3, align = "right", fill = NA))

overallunemploymentdc <- mutate(overallunemploymentdc, mav_ward8_lag3 =
                roll_mean(overallunemploymentdc$Ward8, 3, align = "right", fill = NA))

ggplot(data = overallunemploymentdc) +
  geom_line(mapping = aes(x = monthnumber,
                y= mav_initialward_lag3),
        color = "#CDDEF0", size = 1.4) +
  geom_point(mapping = aes(x = monthnumber,
                y= mav_initialward_lag3),
        color = "#CDDEF0", size = 2) +
  geom_line(mapping = aes(x = monthnumber,
                y= mav_ward7_lag3),
        color = "#247A7C", size = 2.4)+
  geom_line(mapping = aes(x = monthnumber,
                y= mav_ward8_lag3),
        color = "#BA4B39", size = 2.4)+
  geom_point(mapping = aes(x = monthnumber,
                y= mav_ward7_lag3),
        color = "#247A7C", size = 3.8)+
  geom_point(mapping = aes(x = monthnumber,
                y= mav_ward8_lag3),
        color = "#BA4B39", size = 3.8)+
  scale_x_continuous(breaks= seq (1, 24, by = 1))+
  scale_y_continuous(breaks= seq (0, 14, by = 1))+
  labs(title = bquote(bold("UNEMPLOYMENT RATES FOR WARDS SEVEN AND EIGHT
HAVE CONSISTENTLY BEEN THE HIGHEST IN WASHINGTON, DC")),
      subtitle = paste("The unemployment rate for wards seven and eight have consistently been
the highest compared to the average rate for the rest of the six wards in DC. \nIn addition, they
have also never been close to the five percent full employement threshold in recent times."),
      caption = "Source : DC Department of Employment Services",
      y= "Unemployment Rate",
      x = "Months")+
  theme(plot.background = element_rect(fill = "white"),
      panel.background = element_rect(fill = "white"),
```
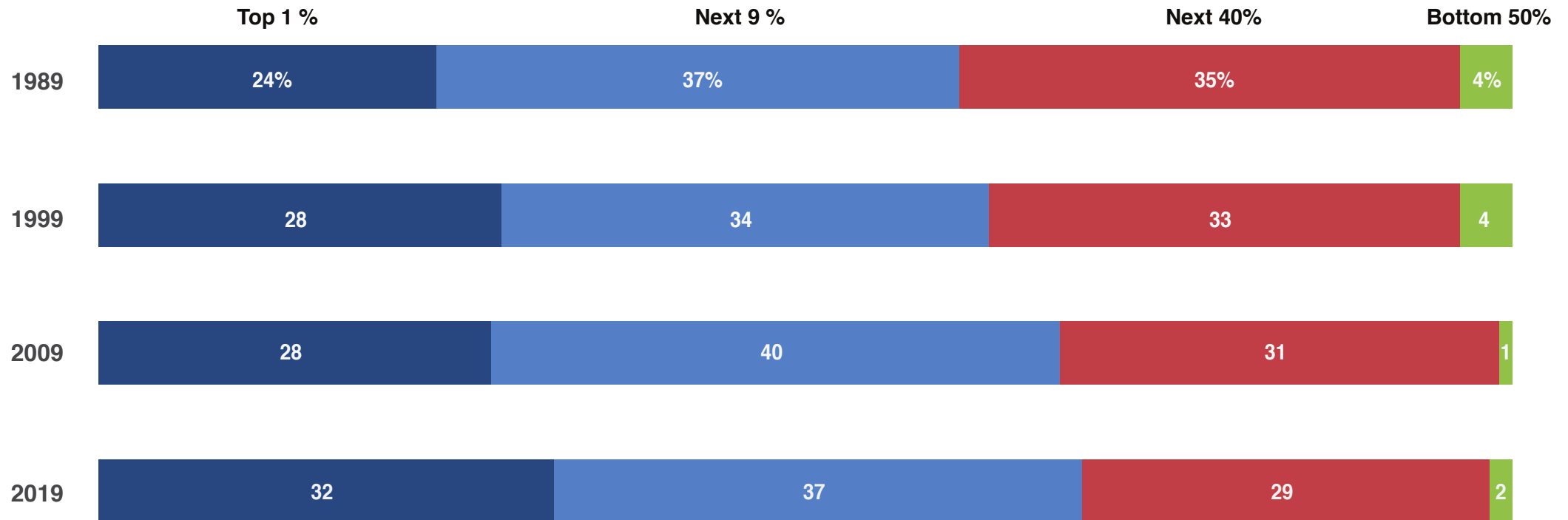
```
axis.line = element_line(colour = "black"),
axis.ticks = element_blank(),
axis.text = element_text(size = 10),
axis.title = element_text(size = 10),
plot.title = element_text(size = 10),
plot.subtitle= element_text(size = 10),
plot.caption = element_text(size = 8, hjust = 0))
```

Share of Wealth Controlled by the Top 1% Continues to Increase

This graph showcases the distribution of wealth in America in the past three decades. Between 1989 through 2019, the top 1% of America's wealth earners have amassed more wealth. However, for the bottom 50% of Americans who owned approximately 4 % of total wealth thirty years ago, in 2019 only owned approximately 2%. As the graph shows, as of 2019, America's top 10% own nearly 70% of the wealth in the country, noting a widening wealth inequality.

SHARE OF WEALTH CONTROLLED BY THE TOP 1% CONTINUES TO INCREASE

The share of wealth controlled by the top 1% has increased in the past 4 decades, initially holding 24% of the wealth in 1989 to now holding 32% as of 2019. The wealth held by the bottom 50%, however, has further decreased.

	Top 1 %	Next 9 %	Next 40%	Bottom 50%
1989	24%	37%	35%	4%
1999	28	34	33	4
2009	28	40	31	1
2019	32	37	29	2

Figures Represent Percentage Share of Total Wealth

Wealth Inequality R Code

```
#Load_data
library(readr)
Networth_Shares_V1 <- read_csv("Box/Spring 2020/Data Viz/Networth Shares V1.csv")
View(Networth_Shares_V1)

#Code
ggplot(data = Networth_Shares_V1,
     aes(x = Year,
        y = Networth,
        fill = Category)) +
 geom_bar(stat = "identity",
        width = 0.8) +
 theme(plot.margin = unit(c(1,1,1,1), "cm"))+
 geom_text(aes(label = round(Networth, 0)),
         position = position_stack(vjust = 0.5),
         size = 4,
         color = "white")+
 coord_flip()+
 scale_fill_manual(values = c("#9BBB59",
                    "#C0504D",
                    "#4F81BD",
                    "#1F497D")) +
 ggtitle("(minor_)breaks = custom function")+
 theme(axis.title.x = element_blank(),
     axis.title.y = element_blank(),
     axis.ticks.x = element_blank(),
     axis.ticks.y = element_blank(),
     axis.text.x = element_blank(),
     panel.background = element_blank(),
     plot.title = element_text(hjust = 0.5),
     plot.subtitle = element_text(hjust = 0.5),
     legend.text.align = 1)+
 labs(title = bquote(bold("Wealth Inequality in America")),
     subtitle = paste("The share of wealth controlled by the top 1% has increased in the past 4
decades, initially holding 24% of the wealth in 1989 \nto now holding 32% as of 2019. The
wealth held by the bottom 50%, however, has further decreased."),
     caption = "Source : The Federal Reserve System")
```

2020 Democratic Presumptive Nominee Joe Biden Has Outperformed the 2016 Nominee, Hillary Clinton, in Four out of Six Potential Swing States

2020 Democratic presumptive nominee, Joe Biden, has largely outperformed the 2016 nominee, Hillary Clinton, in most potential general election swing states. Biden this year received more individual votes compared to Clinton in 2016 in four out of six potential swing states, for which, the margins between Clinton and Biden are particularly large. In regard to the two other states of Florida and North Carolina where Clinton secured more votes, while the difference is not particularly large, the votes for Biden may likely have decreased due to a larger number of candidates compared to 2016.

Tableau Public Address:

https://public.tableau.com/profile/ayush.manandhar

2020 Democratic Presumptive Nominee Joe Biden Has Outperformed the 2016 Nominee, Hillary Clinton, in Four out of Six Potential Swing States

Joe Biden, this year, received more individual votes in four out of six potential general election swing states, compared to Hillary Clinton in 2016. The tallies for Biden in Florida and North Carolina, where Clinton secured more votes, may likely have decreased due to a larger number of candidates compared to 2016.

Total Votes Received by Each Nominee in their Respective Primaries
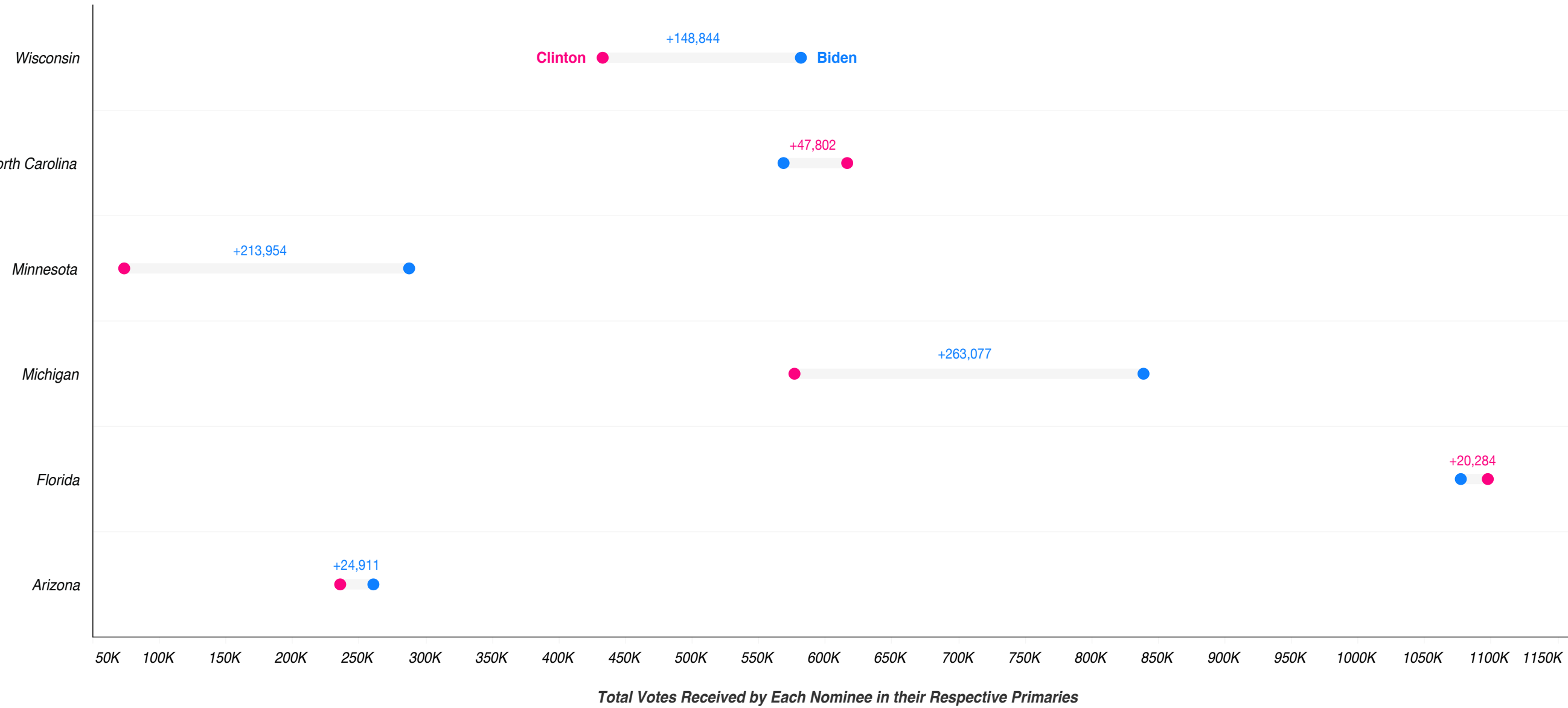
92% of Ward Seven and Eight's Population Are African Americans, Segregating

Washington, DC

The nation's capital is composed of a total of eight wards. Among them, wards seven and eight, first, has a high proportion of African Americans, effectively segregating most African Americans from the rest of the DC population. As seen in the visualization, both ward seven and eight, according to DC Health Matters, compose of around 92% of African Americans, with each of them having a population of around 80,000 people. In contrast, ward three only has 5% of African Americans despite having a population of 84,869 people, making it the ward with the lowest proportion of African Americans. The closest that comes to wards seven and eight is ward five that has a proportion of 57% African Americans.

Tableau Public Address:

https://public.tableau.com/profile/ayush.manandhar

92% OF WARD SEVEN AND EIGHT'S POPULATION ARE AFRICAN AMERICANS, SEGREGATING WASHINGTON, DC

Ward seven and eight is composed of approximately 92% African Americans within the ward population. This essentially segregates a large proportion of DC's African American population with the two wards including approximately 160,000 people in total.

Ward 7
92.05% African Americans within the ward population

Ward 8
92.06% African Americans within the ward population

Share of African Americans

5%　　　　　　　95%
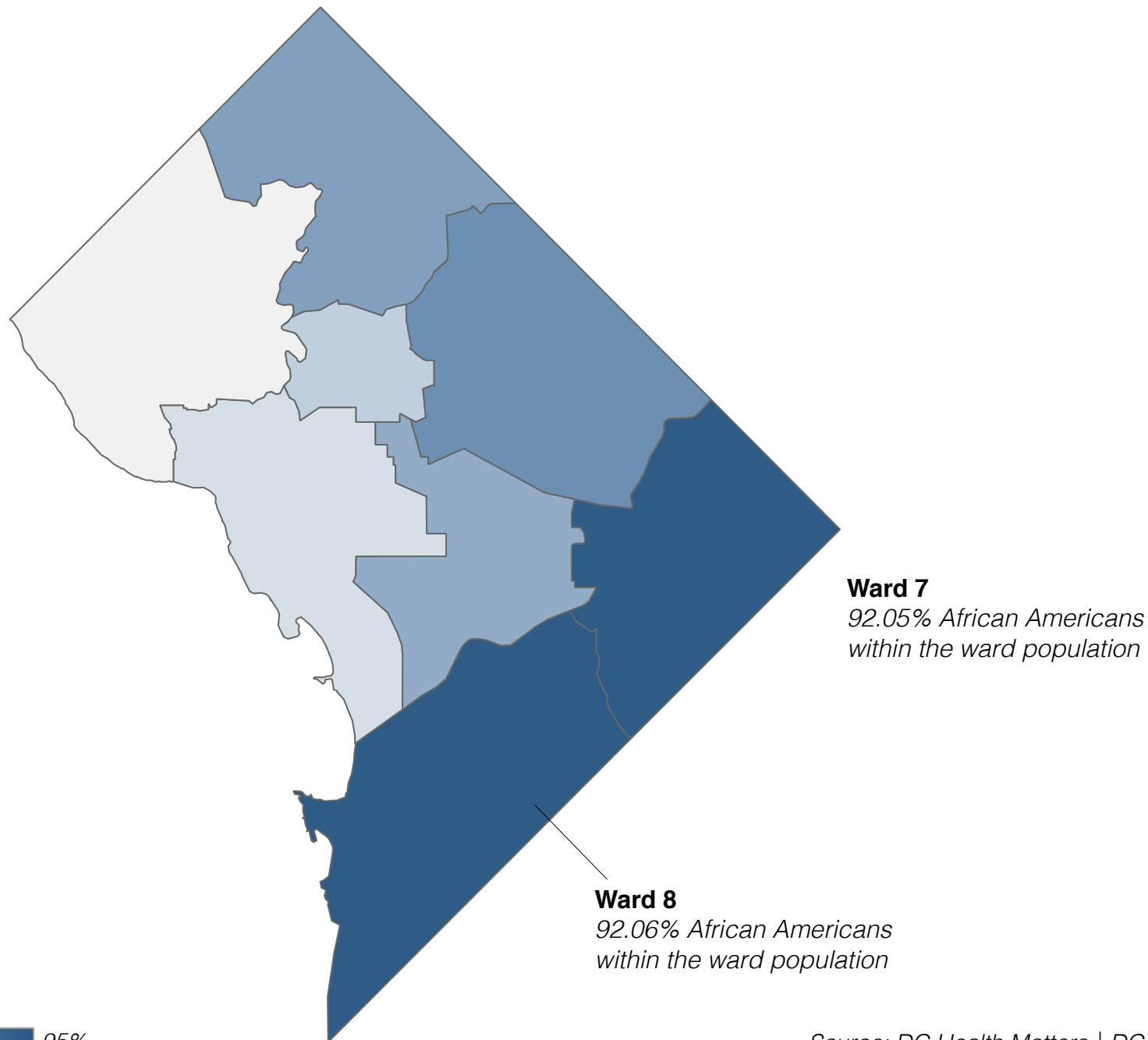
Source: DC Health Matters | DC.gov

**Wards Seven and Eight Have a Total of Only Three Grocery Stores for 160,000 People**

Amidst COVID-19, food-inequality has been an issue, specifically, for certain, more vulnerable communities, in the DC region. For instance, as shown in the visualization, only two grocery stores are available in ward seven despite having a population of 80,951 people. The matter is even more severe forward eight with only one grocery store for a population of 80,552 people. The other six wards, that have comparable populations, have a considerably larger number of grocery stores.

Tableau Public Address:

https://public.tableau.com/profile/ayush.manandhar

WARDS SEVEN AND EIGHT HAVE A TOTAL OF ONLY THREE GROCERY STORES FOR 160,000 PEOPLE

Despite having similar population levels to the six other remaining wards, DC's ward seven and eight is home to only three grocery stores for a population of around 160,000 people. In contrast, the other six wards have significantly more grocery stores per person.


■ *Ward 1 to 6: Average of 91,555 people*

■ *Ward 7 : 80,951 people*

■ *Ward 8 : 80,552 people*

●
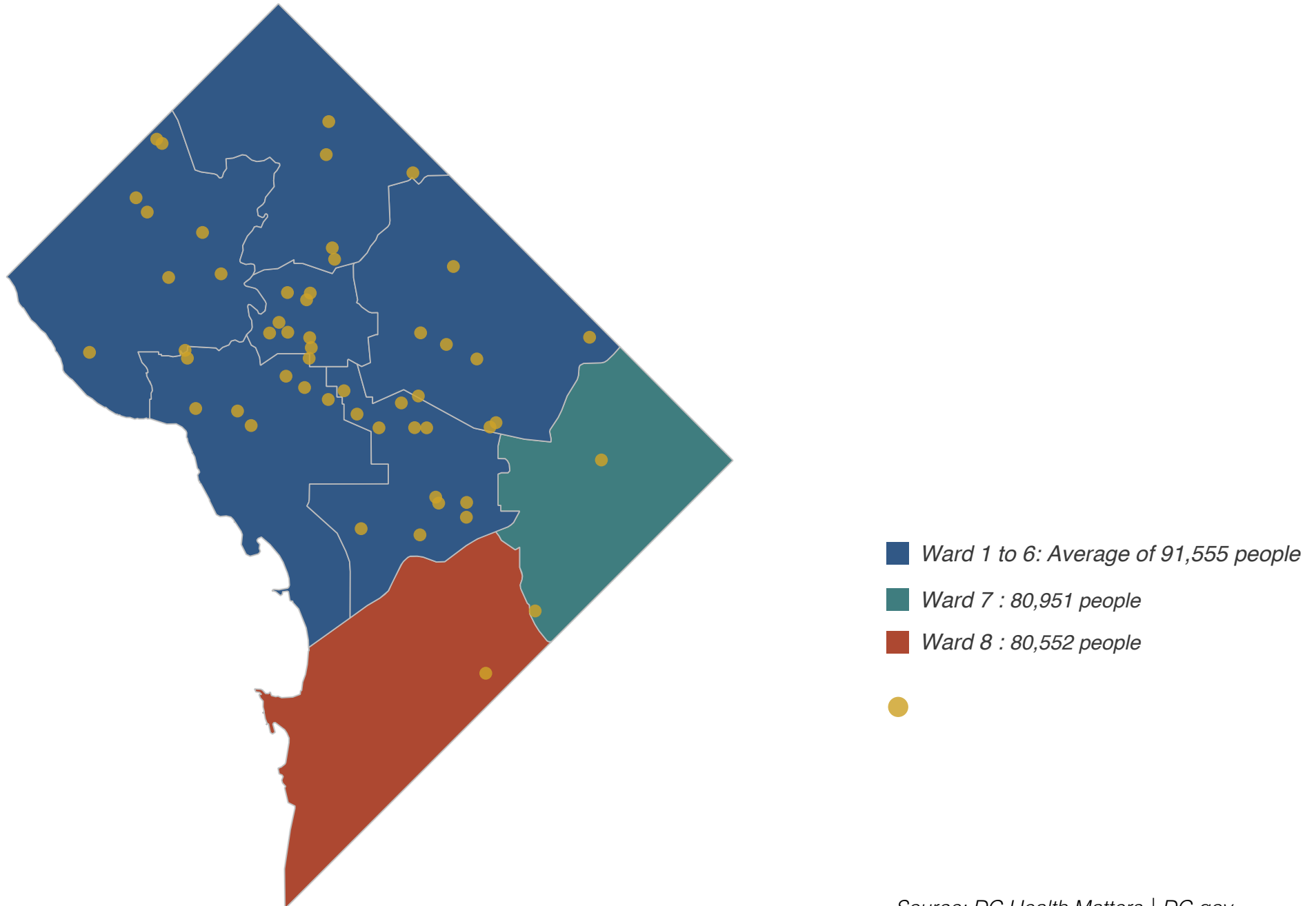
Source: DC Health Matters | DC.gov

The Middle of America Fared Better During the 2009 Recession Year

During the recession in 2009, in terms of unemployment, the middle of America fared better compared to the rest of the country. At a 5% full employment level, many counties in the mid-west were considered 'fully-employed' based on 2009 annual averages. Other counties across the United States had comparatively higher levels of unemployment above the 5% threshold, thus increasing the nation's overall unemployment numbers.

THE MIDDLE OF AMERICA FARED BETTER DURING THE 2009 RECESSION YEAR

During the 2009 recession, in terms of unemployment, middle-America fared better compared to the rest of the country. At a 5% full employment, many counties in the mid-west were considered 'fully-employed' based on 2009 averages.

Source: US Bureau of Labor Statistics, 2009

Unemployment Rate

2.6%   27%

5%
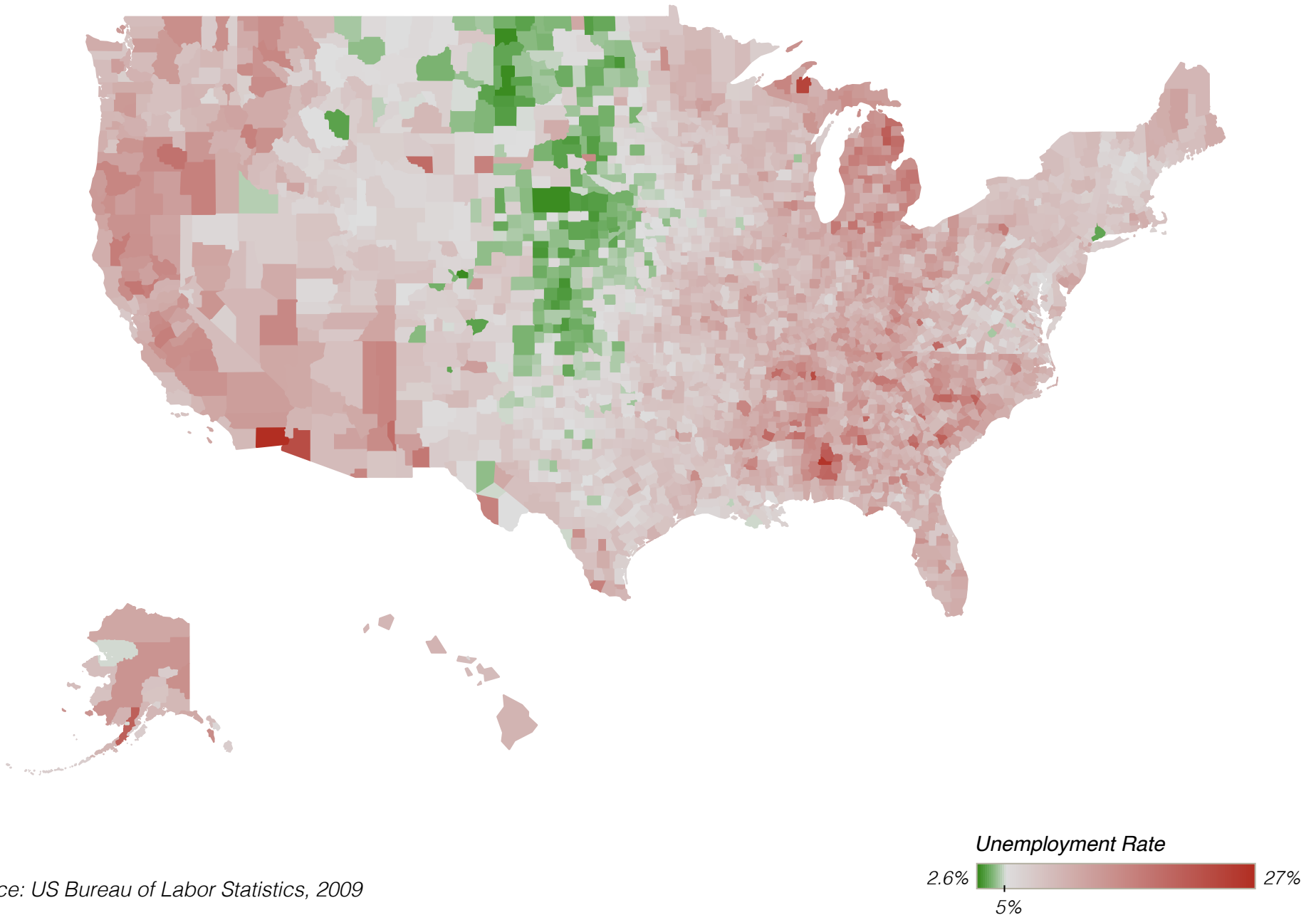
**Revenue Sources of the US Federal Government for Fiscal Year 2017**

The waffle chart diagram showcases the revenue sources of the US Federal Government. In total, the federal government collected approximately 3.3 trillion dollars in 2017. Of that 3.3 trillion dollars, 48 percent is raised through individual income taxes alone, making it the government's largest income source. The second largest source is payroll taxes that cover approximately 35% of the federal budget. These funds are specifically dedicated towards Social Security. The remaining funds come from corporate taxes covering approximately 9%, estate, gifts and customs covering approximately 5%, and excise taxes covering approximately 3%.

Note: Visualization created in Adobe Illustrator.

REVENUE SOURCES OF THE U.S. FEDERAL GOVERNMENT

Fiscal Year 2017

The federal government's largest revenues come from individual income taxes and payroll taxes accounting for 48 and 35 percent of total funds respectively.
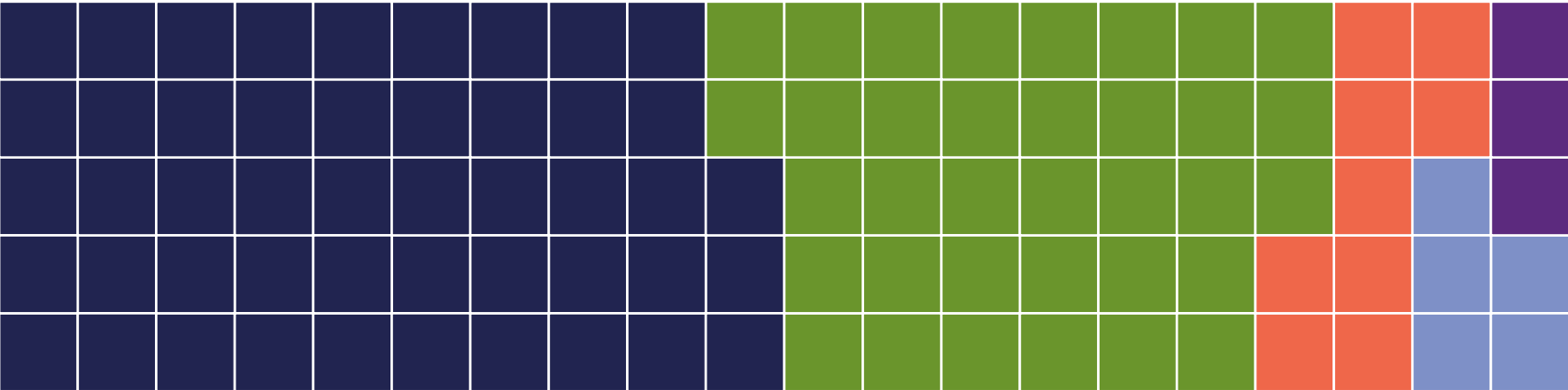
Individual Income Tax: **48 %**   Payroll Tax: **35%**   Corporate Income Tax: **9%**   Estate, Gift, & Customs: **5 %**   Excise Tax: **3%**

1 square = 1% of Federal Budget