

Potential Factors of Decreasing Birth Rates in the US since the Great Recession and Beyond*

Reproduction of 'The Puzzle of Falling US Birth Rates since the Great Recession'(Kearney, Levine & Pardue, 2022)

Chay Park

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First sentence. Second sentence. Third sentence. Fourth sentence.

1 Introduction

2 Data

2.1 Source

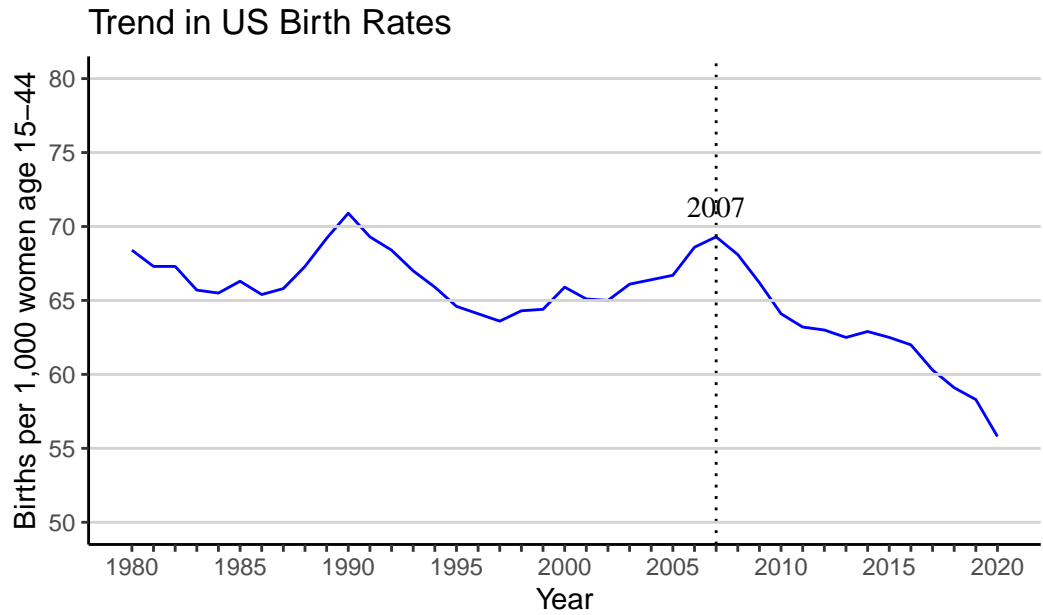
```
# Load necessary libraries
library(ggplot2)
library(gridExtra)

# Set seed for reproducibility
set.seed(123)

# Read the data from CSV file
data <- read.csv(file = here::here("outputs/data/figs_2a_2b.csv"))

# Plotting the first line graph (Graph A)
graph_A <- ggplot(data, aes(x = year)) +
  geom_line(aes(y = brate_1519, color = "blue"), size = 0.7) +
  geom_line(aes(y = brate_2024, color = "orange"), size = 0.7) +
```

*Code and data are available at: <https://github.com/Chay-HyunminPark/Social-Science-Study>.



Birth Rates collected from CDC Vital Statistics Births Reports for 2015, 2019, and 2020.

Figure 1: Trend in US Birth Rates

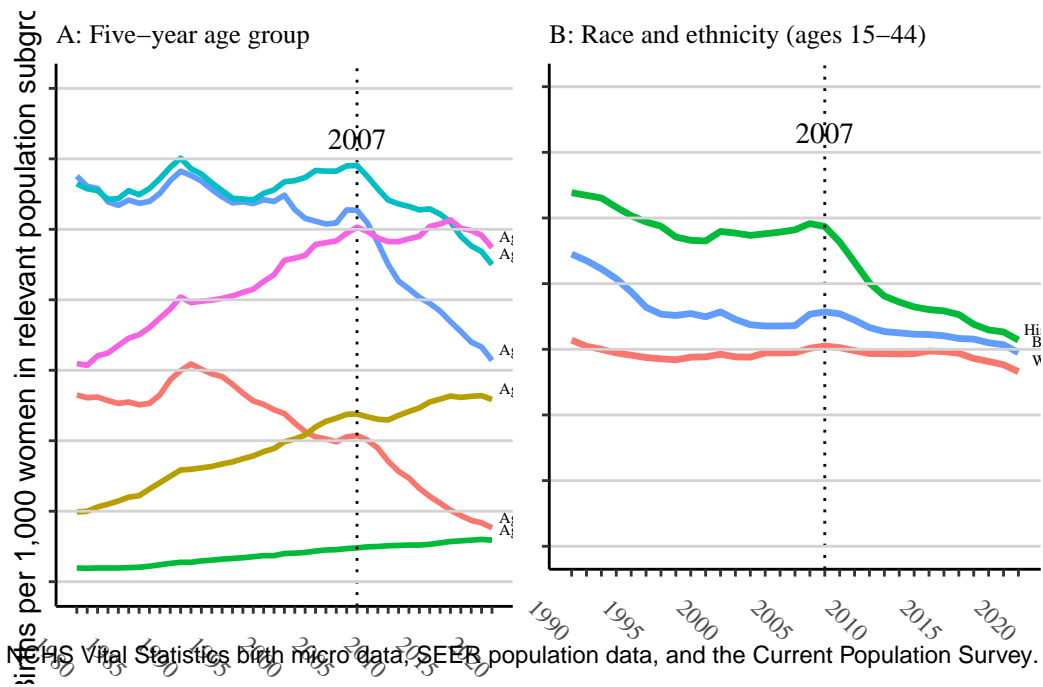


Figure 2: Trends in Birth Rates by Population Subgroup

```

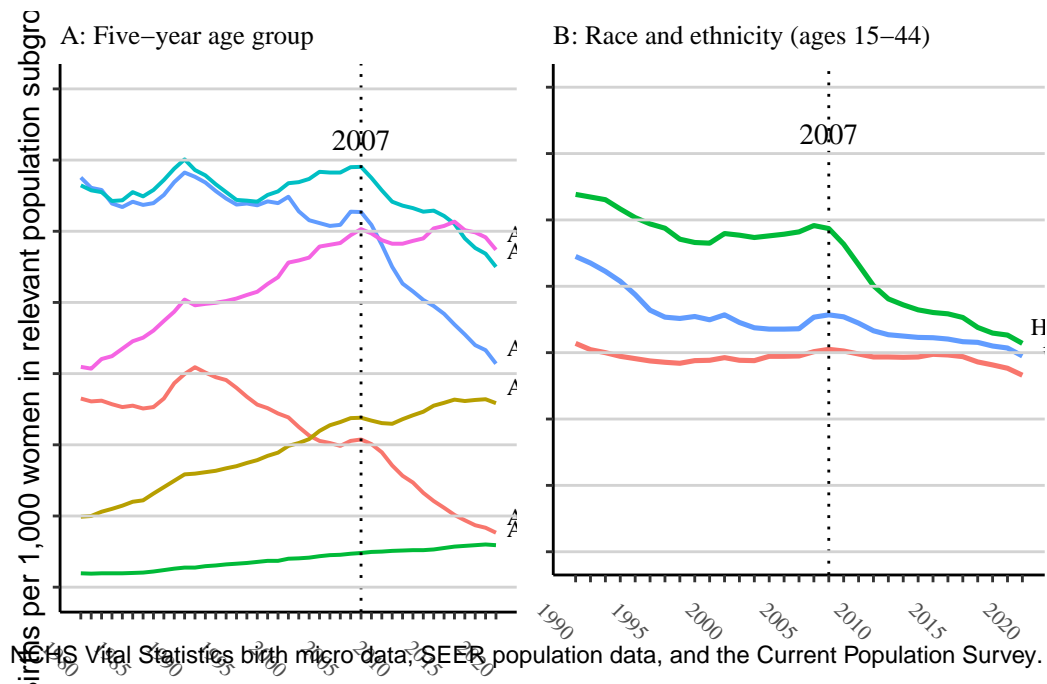
geom_line(aes(y = brate_2529, color = "grey"), size = 0.7) +
geom_line(aes(y = brate_3034, color = "yellow"), size = 0.7) +
geom_line(aes(y = brate_3539, color = "cyan"), size = 0.7) +
geom_line(aes(y = brate_4044, color = "green"), size = 0.7) +
geom_text(data = data[data$year == 2020,], aes(x = year, y = brate_1519, label = "Age 15-19"), size = 8) +
geom_text(data = data[data$year == 2020,], aes(x = year, y = brate_2024, label = "Age 20-24"), size = 8) +
geom_text(data = data[data$year == 2020,], aes(x = year, y = brate_2529, label = "Age 25-29"), size = 8) +
geom_text(data = data[data$year == 2020,], aes(x = year, y = brate_3034, label = "Age 30-34"), size = 8) +
geom_text(data = data[data$year == 2020,], aes(x = year, y = brate_3539, label = "Age 35-39"), size = 8) +
geom_text(data = data[data$year == 2020,], aes(x = year, y = brate_4044, label = "Age 40-44"), size = 8) +
geom_vline(xintercept = 2007, linetype = "dotted") +
annotate("text", x = 2007, y = 120, label = "2007", vjust = -0.5, hjust = 0.5, color = "black", size = 12) +
geom_hline(yintercept = seq(0, 140, by = 20), color = "lightgrey") +
scale_y_continuous(limits = c(0, 140), breaks = seq(0, 140, by = 20), labels = NULL) +
scale_x_continuous(limits = c(1980, 2020), breaks = seq(1980, 2020, by = 1), labels = FALSE) +
labs(x = NULL,
     y = 'Births per 1,000 women in relevant population subgroup',
     title = "A: Five-year age group",
     caption = NULL,
     family = "Times") +
theme_classic() +
theme(axis.text.x = element_text(angle = -45, hjust = 1, family = "Times", size = 8),
      plot.title = element_text(size = 10, family = "Times"),
      legend.position = "none")

# Plotting the second line graph (Graph B)
graph_B <- ggplot(data, aes(x = year)) +
  geom_line(aes(y = brate_hisp, color = "grey"), size = 0.9) +
  geom_line(aes(y = brate_blacknh, color = "orange"), size = 0.9) +
  geom_line(aes(y = brate_whitenh, color = "blue"), size = 0.9) +
  geom_text(data = data[data$year == 2020,], aes(x = year, y = brate_hisp, label = "Hispanic"), size = 8) +
  geom_text(data = data[data$year == 2020,], aes(x = year, y = brate_blacknh, label = "Black"), size = 8) +
  geom_text(data = data[data$year == 2020,], aes(x = year, y = brate_whitenh, label = "White"), size = 8) +
  geom_vline(xintercept = 2007, linetype = "dotted") + annotate("text", x = 2007, y = 120, label = "2007", size = 12) +
  geom_hline(yintercept = seq(0, 140, by = 20), color = "lightgrey") + scale_y_continuous(limits = c(0, 140), breaks = seq(0, 140, by = 20), labels = NULL) +
  scale_x_continuous(limits = c(1980, 2020), breaks = seq(1980, 2020, by = 1), labels = FALSE) +
  title = "B: Race and ethnicity (ages 15-44)",
  caption = "Birth rates by age group, race, and ethnicity, and marital status gathered from the CDC's National Vital Statistics System, 1980-2020." +
  theme_classic() +
  theme(axis.text.x = element_text(angle = -45, hjust = 1, family = "Times", size = 8),
        plot.title = element_text(size = 10, family = "Times"),
        legend.position = "none")

```

```
# Arrange both graphs side by side
grid.arrange(graph_A, graph_B, nrow = 1)
```

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2.2 Methodology

2.3 Features

2.3.1 Data Cleaning

2.3.2 Data Modification

2.3.3 Data Visualization

3 Results

The results section should convey findings. ## Table, graph, table, graph

4 Discussion

In the discussion section, and any other relevant section, please be sure to discuss ethics and bias, with reference to relevant literature.

4.1 Findings

If my paper were 10 pages, then should be at least 2.5 pages. The discussion is a chance to show off what you know and what you learnt from all this.

4.2 Ethical Implication

4.3 Accounting for bias

4.4 Limitation

4.5 Future Research

5 References