How hosting the 2012 Olympics Furthered
Economic Inequality in London

Citadel Data Open   //   Team 31   //   Summer 2020

BACKGROUND

Countries spend billions of dollars to host the Olympic Games in hopes of boosting their economy through increased tourism and infrastructure development. However, the event comes with a huge cost for those living in the host city, especially the poor communities. What was the economic impact of the London 2012 Olympics? Did the event further inequality in the host city?

WHY LONDON?

The UK is the 4th most unequal country in Europe, and this wealth inequality is even more apparent within London, which makes it a great candidate for our analysis.

Median Wealth (Thousands of Pounds)

- 47–95
- 96–169
- 170–181
- 182–194
- 195–243
- 243–290
- 291–342
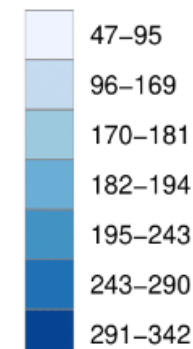
DATA

Q1: Did the games increase tourist spending and visits?
Outcomes:
- **Tourist visits** - Estimate of total number of international in thousands by year (2002-2019)
- **Tourist spending** - Estimate of total international tourist spending in millions of Pounds by year (2002-2019)

Predictors: **Arts participation, Museum visits, Heritage visits, Roads length**

Q2: Were these gains distributed evenly?
Outcomes:
- **Wages** - Average earnings by hour (2002-2019); level: region and borough

Predictors: **Workforce Participation, Completed New Houses, Median House Price, Number of Pubs**

MODELS

■ **SYNTHETIC CONTROL METHOD**
Tests the effect of an intervention. A set of weights are assigned to the other cities near London (the control) to estimate what London would look like had they not hosted the 2012 Olympics (the treatment).

Model: $Y_{it}^* = \delta_t + Z_t\theta_t + \mu_i\lambda_t + \varepsilon_{it}$

where δ_t is a common time-dependent factor, $Z_t\theta_t$ are observed covariates and unknown parameters and $\mu_i\lambda_t$ are unknown common factors with their factor loadings.

■ **PLACEBO TESTING**
For each region other than London, we assign a hypothetical treatment to that region at the time of the Olympics and run the synthetic control method designating each region as the putative host of the 2012 Olympics. We then take the difference between the synthetic host region and the realized region. Each of these produces far smaller effects than what is observed in the case of London, increasing our confidence that the estimated effect is real.
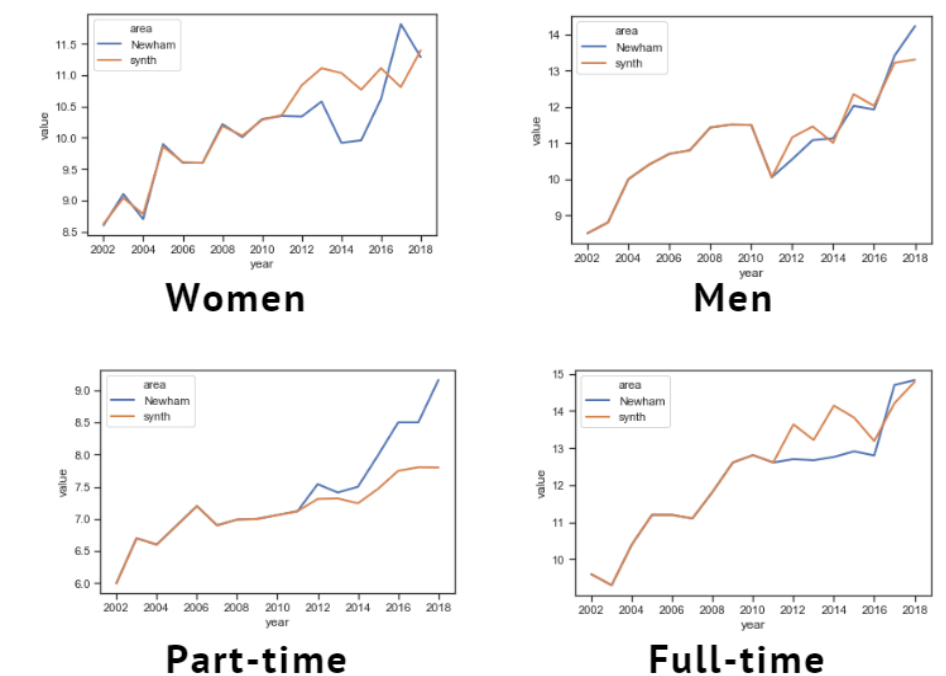
ECONOMIC GROWTH

Total Visits   Total Spendings

Synthetic Control

Placebo Testing
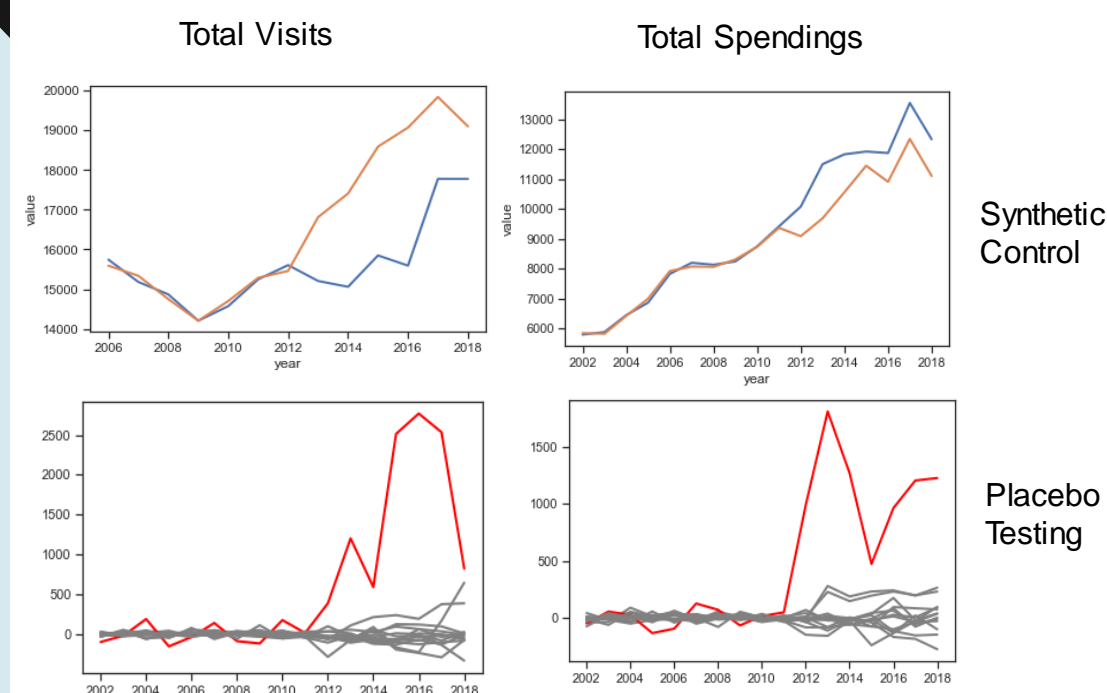
Q1: The graphs compare London to nearby regions to predict a no-Olympics scenario. The model diverges from reality after the 2012 Olympics, showing that **visits and spending increased** from hosting the games.

DISTRIBUTION OF GROWTH

Q2: Evaluating hourly wage by employment status and gender reveals inequalities.

Women   Men

Part-time   Full-time

The Rich Get Richer: Overall, the Olympics stimulated economic growth for London.
In the tourism sector, we there was an increase in visitors and tourist spending from what is expected had there not been an Olympics in London. In terms of individual growth, part-time worker wages did increase considerably during around 2012. We also see a 3-5k increase in the average income in the city compared to the synthetic data.

The Poor Get Poorer: The Olympics put disadvantaged groups in jeopardy.
While there was a boost to average income, the median income didn't see this increase. Additionally, full-time workers overall did not benefit. Men did see an increase in hourly wage above what was expected, but women did receive this boost and may have been harmed economically instead.

CONCLUSION

London experiences an economic boost around 2012 from tourism, which can be attributed to hosting the Olympics. Privileged population benefited most in terms of hourly wage, while lower income populations, such as women, didn't see much change or were left worse off.