Effects of Government Led Health Insurance: Evidence from Nepal

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Outline

Motivation

- Out-of-pocket health expenditure significant in lower-middle-income countries
- Households often at risk of financial hardship
- Health insurance expansion crucial for economic development
- Universal Health Coverage (UHC) as key policy goal
- No consensus on the impact of health insurance on health outcomes

National Health Insurance Program Overview

- Government-led nationwide health insurance program
- Primary objective: Prevent health-related poverty
- Part of universal health coverage initiative
- Phased implementation starting 2016

Natural Experiment

- It was gradually rolled out in phases in various districts
- First Pilot phase began in 2016 with 3 districts
- Complete coverage: 77 districts by 2022
- No any prior information on districts being selected for implementation on public domain

Roll out of National Health Insurance in Nepal
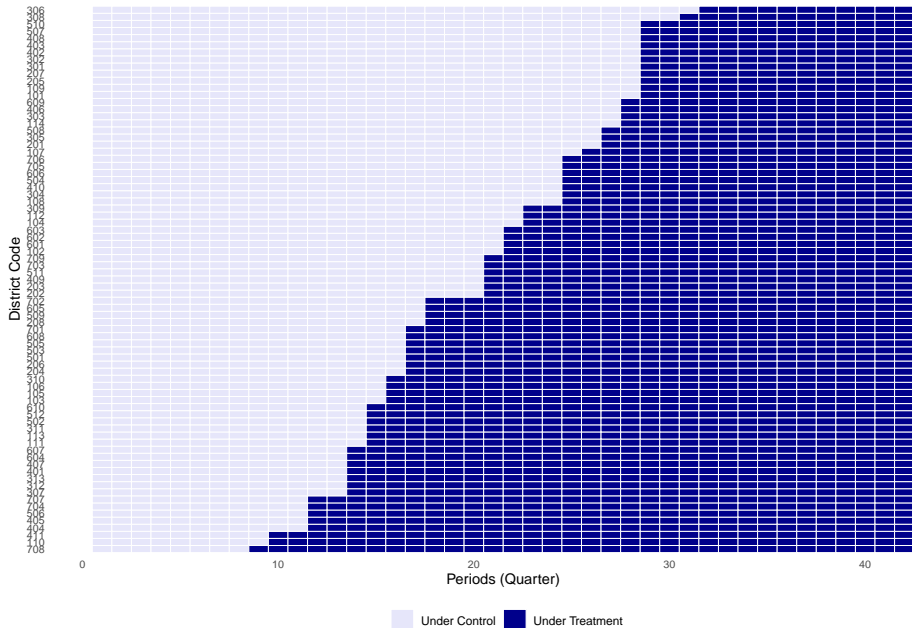
Data

- District Health Information Software (DHIS2)
  - Monthly district-level data from all major private and most of the public health services (2014-2024)
  - Data on health care utilization metrics, morbidity, family planning, safe motherhood and so on
- First study to use this dataset at this granular level and for the study of health insurance

Empirical Strategy

- Exploit the staggered rollout of health insurance and use Difference-in-Differences (DiD) methodology for causal identification
- Callaway and Sant'Anna (2021) estimator to address treatment time and group heterogeneity
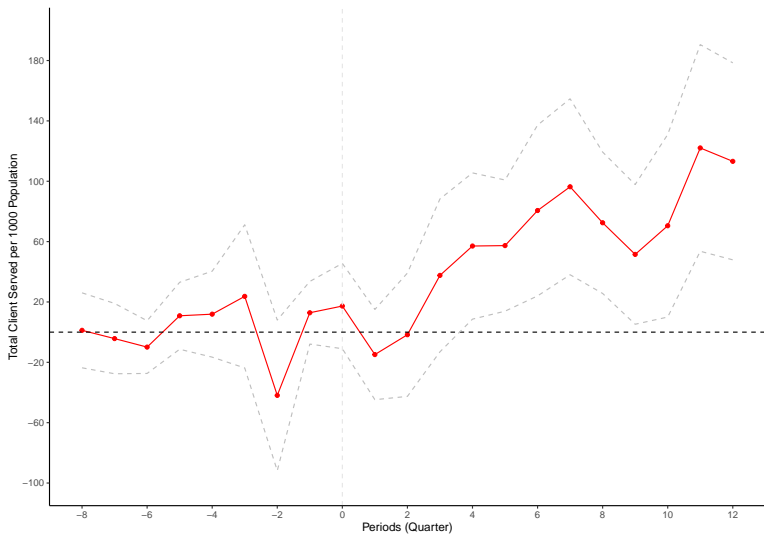
Callaway and Sant'Anna (CS) Estimator

It estimates the average treatment effect on the treated (ATT) for group g, which is treated at time t. In my estimation g is defined as the cohort of units i (districts) that implement the treatment in the same period t (quarter-year).

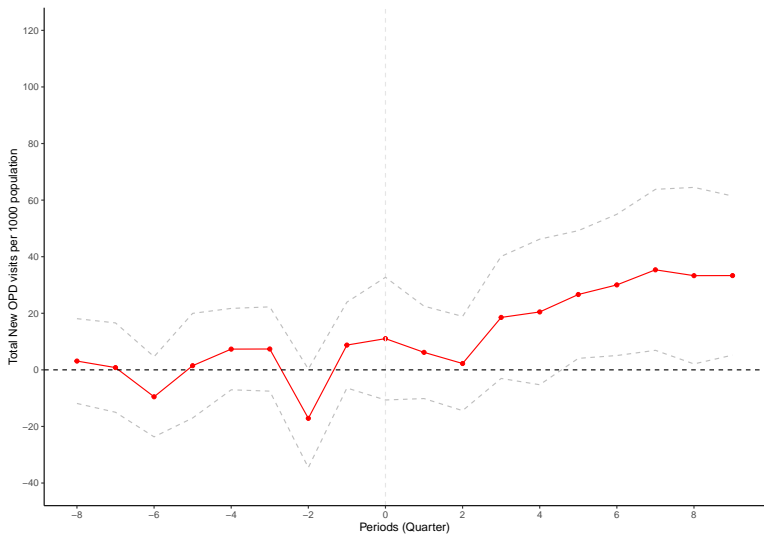$$\text{ATT}_{gt} = \mathbb{E}_{gt}[Y_t(g) - Y_t(0) \mid G_g = 1]$$

Key Identifying Assumption

- **Parallel Trends:** In the absence of National Health Insurance implementation, the difference in potential outcomes between health insurance eligible and not-yet eligible districts would have evolved similarly.
- **No Anticipation:** For any time t and group g, the potential outcome before treatment ($Y_t(0)$) should not depend on future treatment status
  - ▸ There was always a quarter gap between the registration of health insurance and eligibility of usage of health insurance. I use actual date for eligibility of usage of health insurance as the treatment date, and use one period anticipation in the CS estimator. The parallel trends assumption is now evaluated relative to periods before t-1.

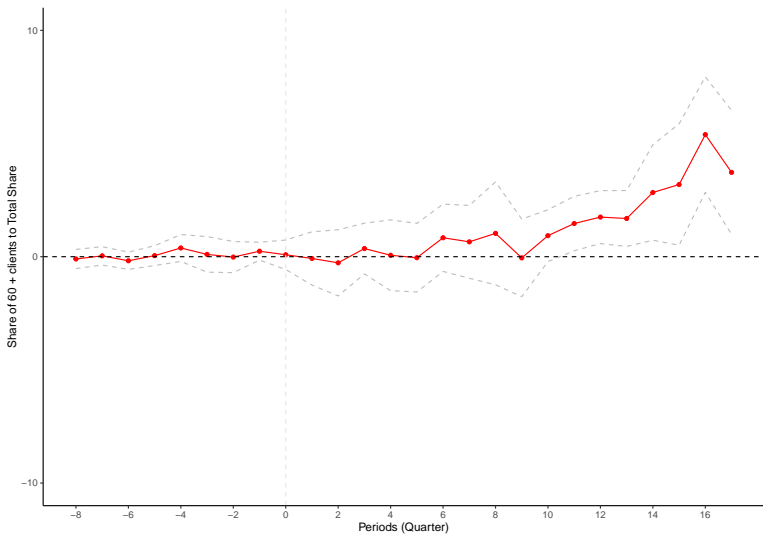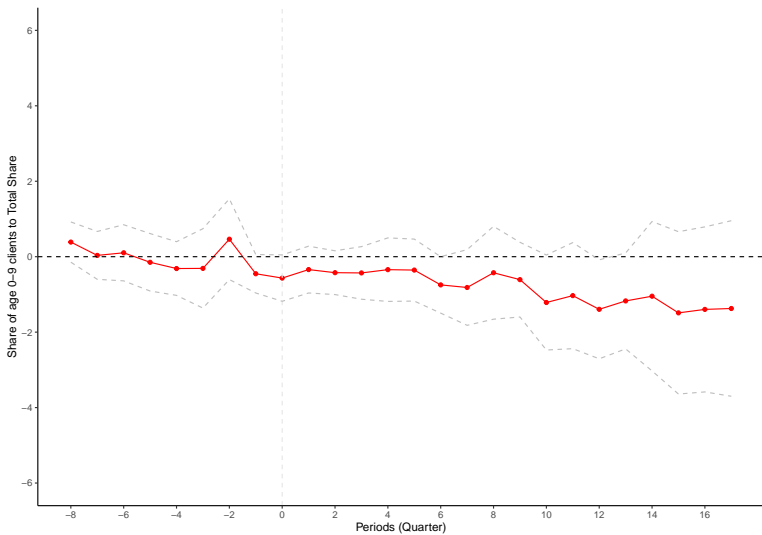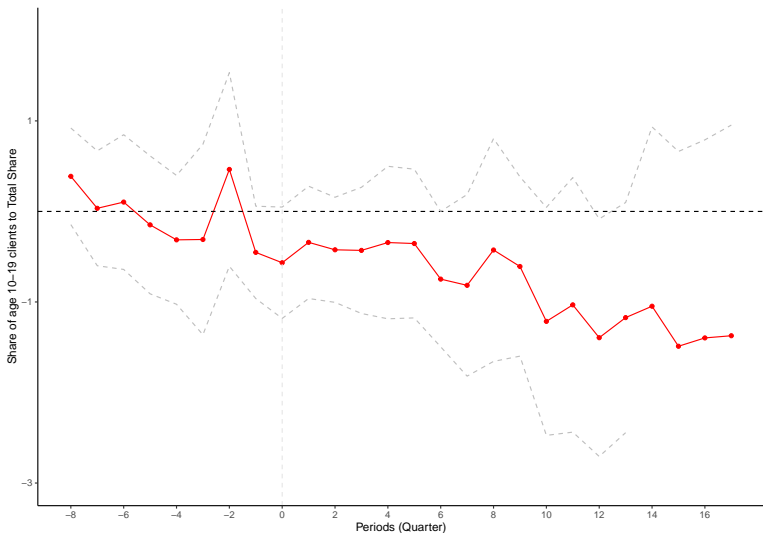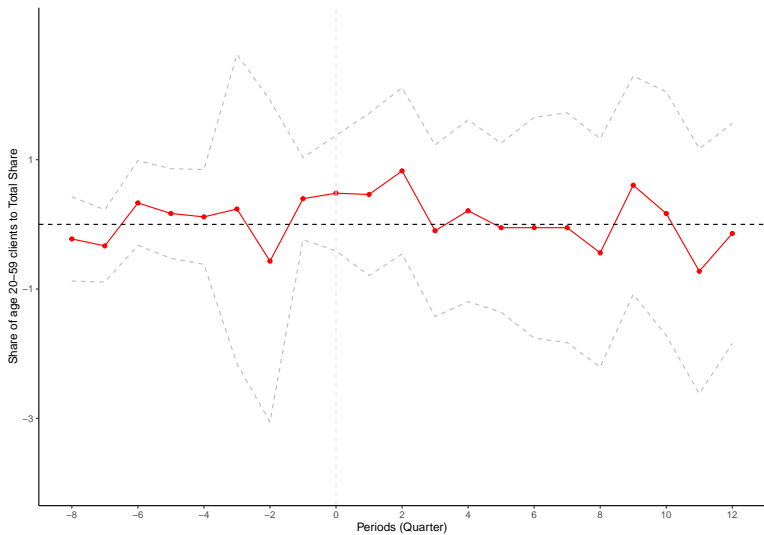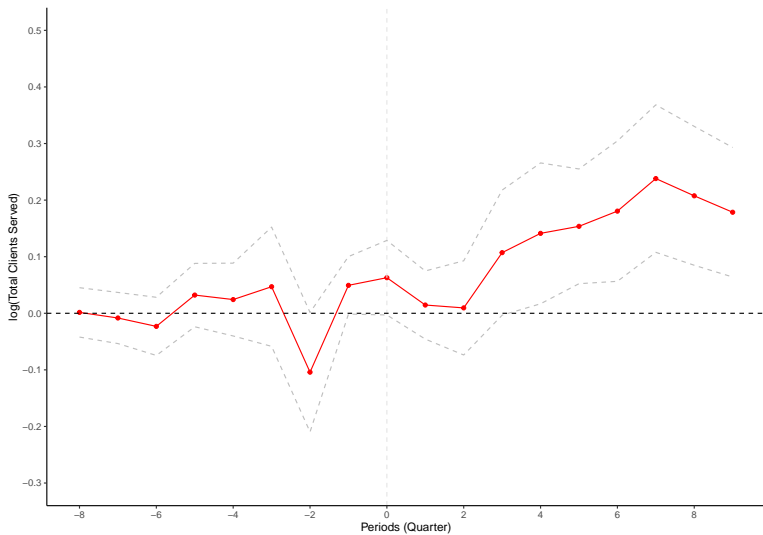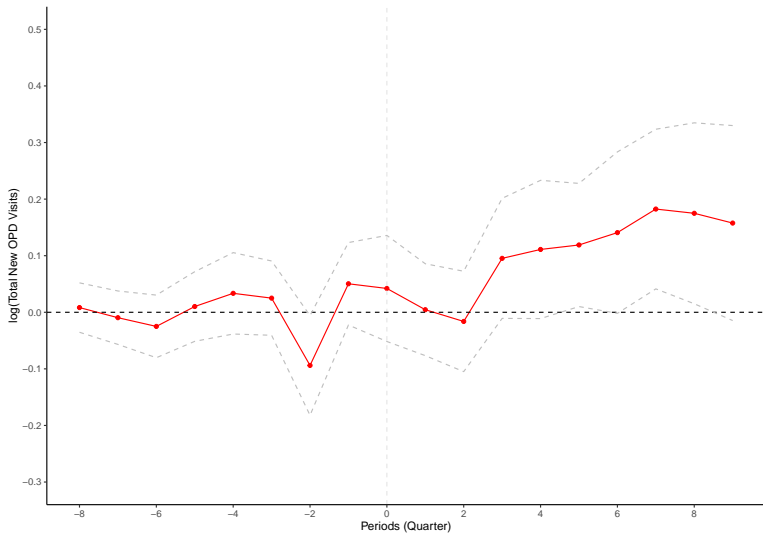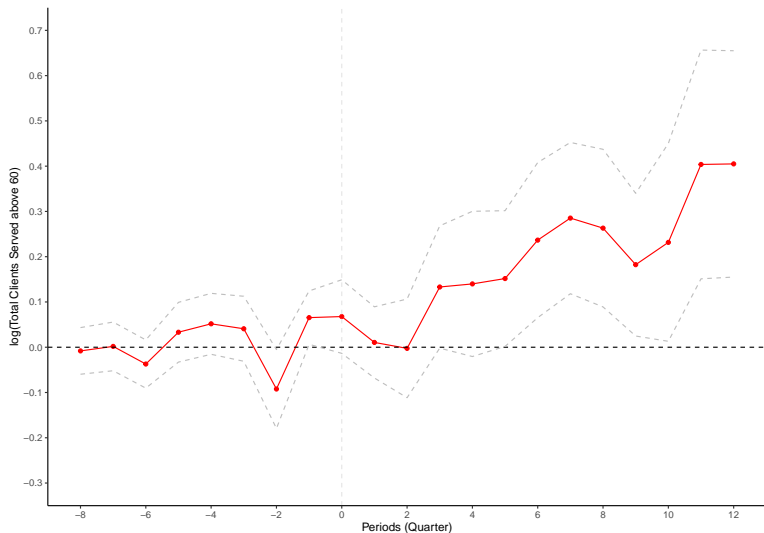# Event Study

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