Making Policy with Data

An Introductory Course on Policy Evaluation

Policy Briefing

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Does Management Matter? (Bloom et al. 2011)

- Total factor productivity (TFP) is substantially lower in developing countries
- Many explanations: human capital, misallocation, etc.
- Maybe firms just need better management skills (know-hows)?
- A randomized experiment with Indian textile firms — randomly assign **Intensive Consulting** (like McKinsey)
- **Outcome:** Defect, Inventory, Output

Bad Management Practices

Exhibit 3: Many parts of these factories were dirty and unsafe



Garbage outside the factory



Garbage inside a factory



Flammable garbage in a factory



Chemicals without any covering

Bad Management Practices

Exhibit 5: Most plants had months of excess yarn, usually spread across multiple locations, often without any rigorous storage system





Yarn without labeling, order or damp protection

Yarn piled up so high and deep that access to back sacks is almost impossible

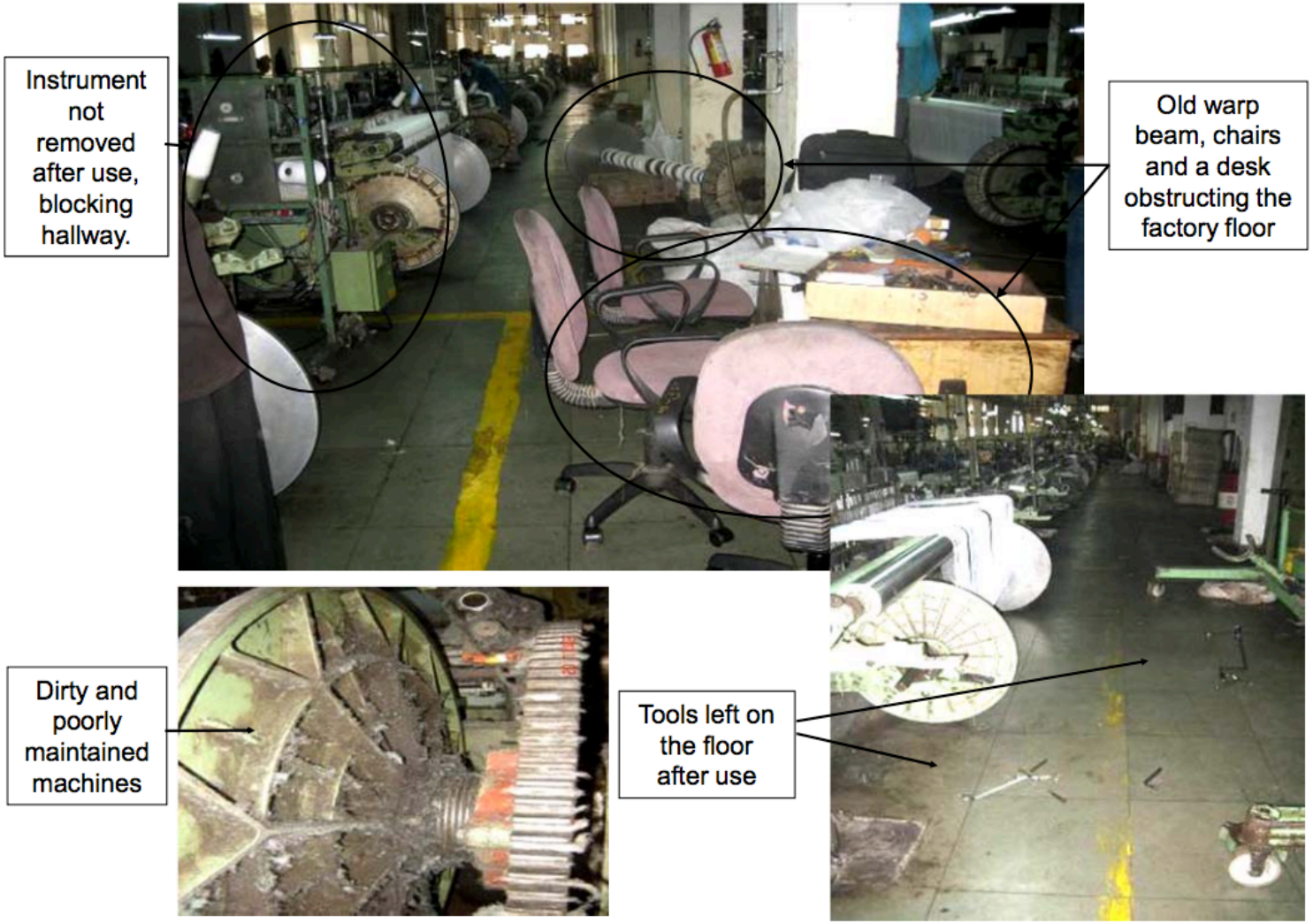


Different types and colors of yarn lying mixed

Crushed yarn cones (which need to be rewound on a new cone) from poor storage

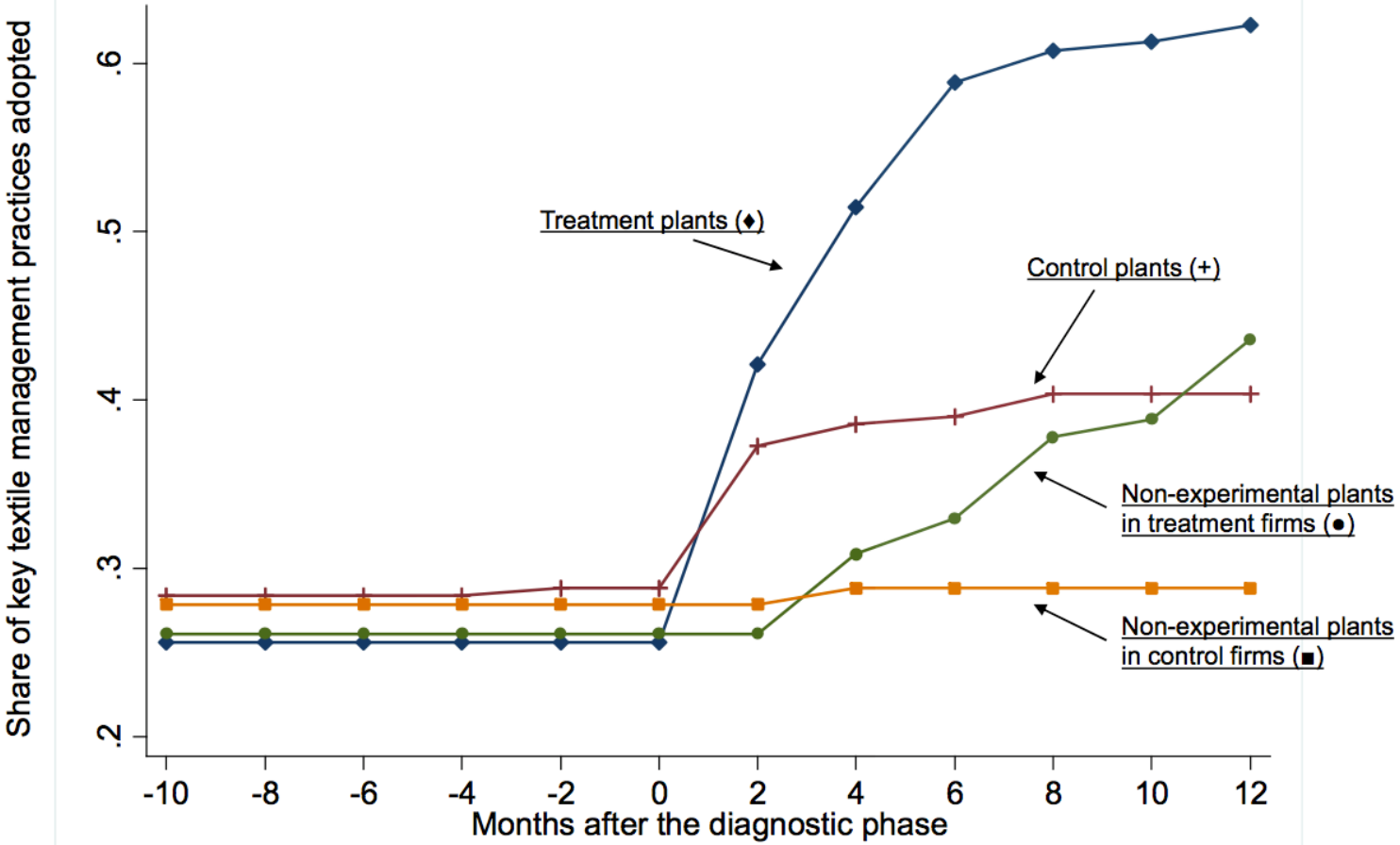
Bad Management Practices

Exhibit 4: The factory floors were frequently disorganized



Adopting New Management Practices

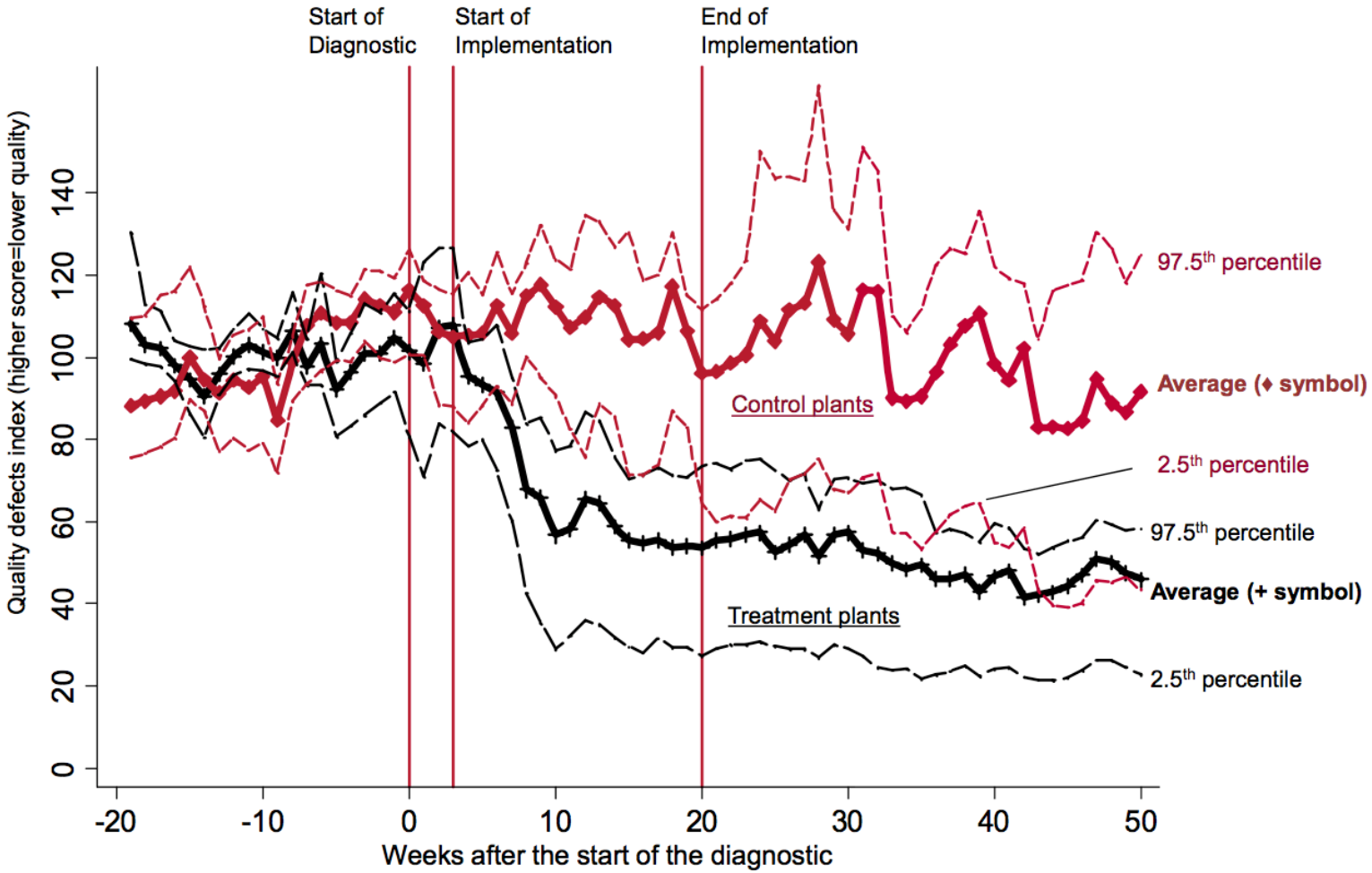
Figure 2: The adoption of key textile management practices over time



Notes: Average adoption rates of the 38 key textile manufacturing management practices listed in Table 2. Shown separately for the 14 treatment plants (diamond symbol), 6 control plants (plus symbol), the 5 non-experimental plants in the treatment firms which the consultants did not provide any direct consulting assistance to (round symbol) and the 3 non-experimental plants in the control firms (square symbol). Scores range from 0 (if none of the group of plants have adopted any of the 38 management practices) to 1 (if all of the group of plants have adopted all of the 38 management practices). Initial differences across all the groups are not statistically significant.

Results

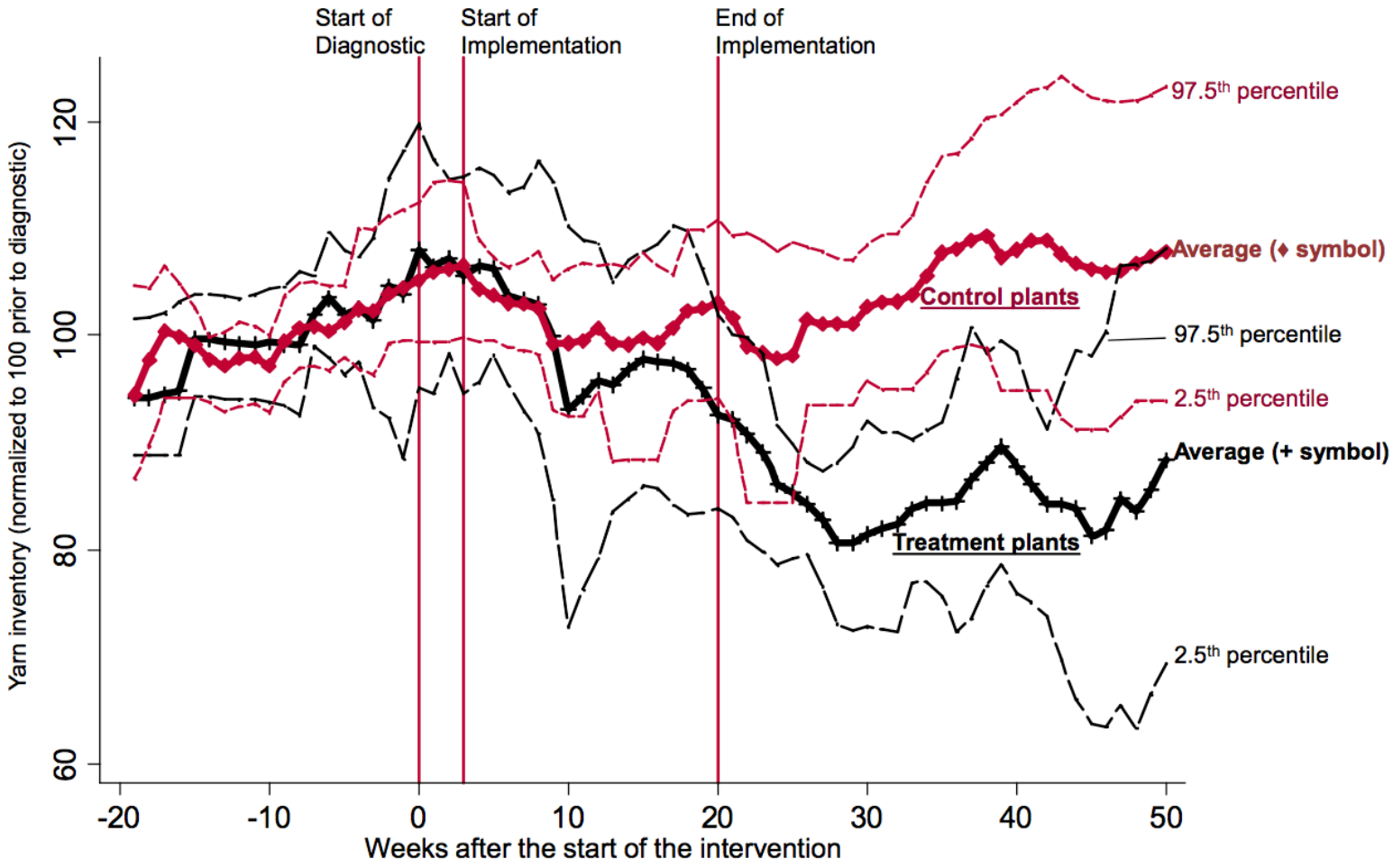
Figure 3: Quality defects index for the treatment and control plants



Notes: Displays the average weekly quality defects index, which is a weighted index of quality defects, so a higher score means lower quality. This is plotted for the 14 treatment plants (+ symbols) and the 6 control plants (♦ symbols). Values normalized so both series have an average of 100 prior to the start of the intervention. To obtain confidence intervals we bootstrapped the firms with replacement 250 times.

Results

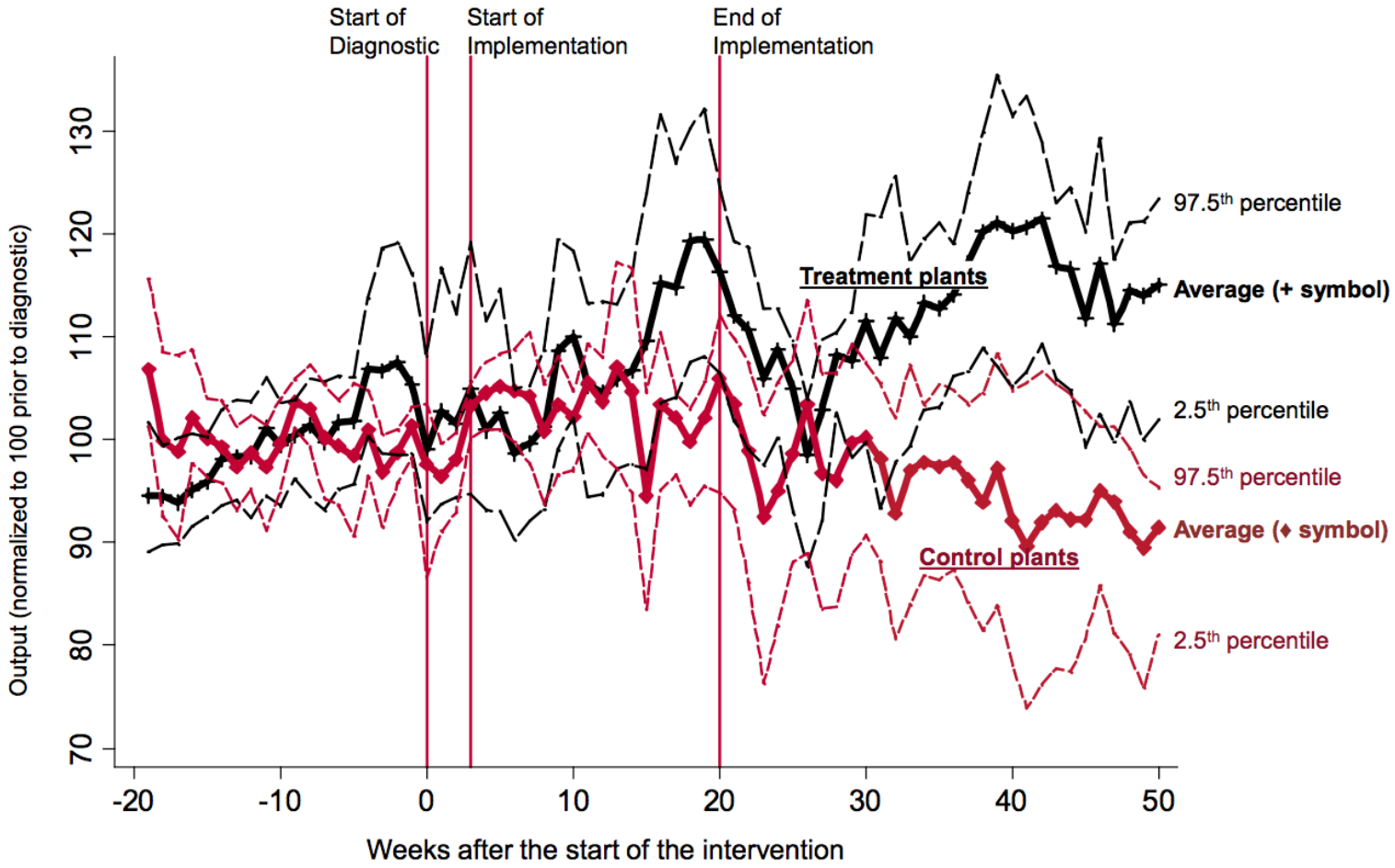
Figure 4: Yarn inventory for the treatment and control plants



Notes: Displays the weekly average yarn inventory plotted for 12 treatment plants (+ symbols) and the 6 control plants (♦ symbols). Values normalized so both series have an average of 100 prior to the start of the intervention. To obtain confidence intervals we bootstrapped the firms with replacement 250 times. 2 treatment plants maintain no on-site yarn inventory.

Results

Figure 5: Output for the treatment and control plants



Notes: Displays the weekly average output for the 14 treatment plants (+ symbols) and the 6 control plants (♦ symbols). Values normalized so both series have an average of 100 prior to the start of the intervention. To obtain confidence intervals we bootstrapped the firms with replacement 250 times.

Buzzword: Data Mining

Data Mining

- Broadly, **discovering useful pattern in data**
- In statistics and social sciences (in old days)
  - Negative connotation: “manipulate” data to obtain desirable result — “fishing”, undisciplined data analysis
- In computer science and data science today
  - Applied machine learning
  - The modeling part of data analysis
  - Prediction, pattern recognition