

Competitive Retail Electricity Market: Up Close in Connecticut

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- In states where retail electricity market is open for competition, regulators often rely on consumer participation rates to assess the retail choice program, including: (1) Number (%) of consumers switching to competitive Suppliers; or (2) MWh (%) purchased from competitive Suppliers (Figure 1).* However these traditional consumer migration statistics could not provide the full picture of the market structure.
- Two Herfindahl-Hirschman Indices (HHI) summarize the competition (Figure 2).
 - Consumers are gradually switching back to standard service (Total HHI).
 - However, competition remains intense among Suppliers (Supplier HHI).
- **Implication to retail competition when there is a dominating default service?**

Figure 1: Consumer Switch to Competitive Supplier

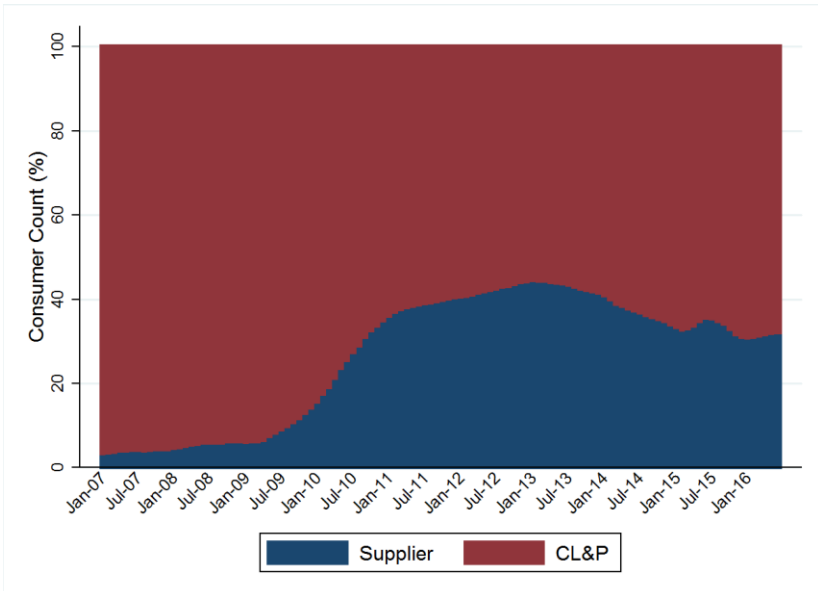
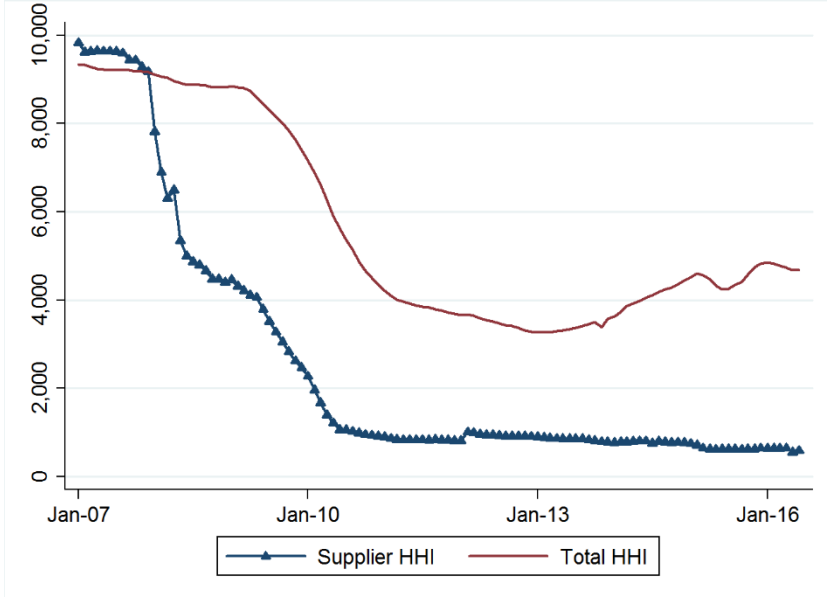


Figure 2: Supplier and Total HHI



* The plot of MWh (%) purchased from competitive Suppliers is almost identical to Figure 1.

** All figures are based on residential customers in Connecticut Light and Power (CL&P) service territory. Data source: Connecticut PURA Docket 06-10-22

Both Price and Count Matter

- Connecticut Public Utilities Regulatory Authority began to make Suppliers' monthly billed price data publicly available since January 2015*, including: (1) all billed prices; and (2) the number of consumers under each billed price.
- Distribution of billed price \neq Distribution of consumer payment** (Figure 3)
 - For instance, only 6 % of the billed prices were above 0.15\$/KWh but 12% of the customers paid more than 0.15\$/KWh.
 - Higher frequency of low billed prices \neq More consumers are paying lower electricity bills
- Average consumer payment could be higher than average billed price** (Figure 4)
 - Emphasizing "lowest offers available in the market" could be misleading

Figure 3: Distribution of Billed Prices and Consumer Payment

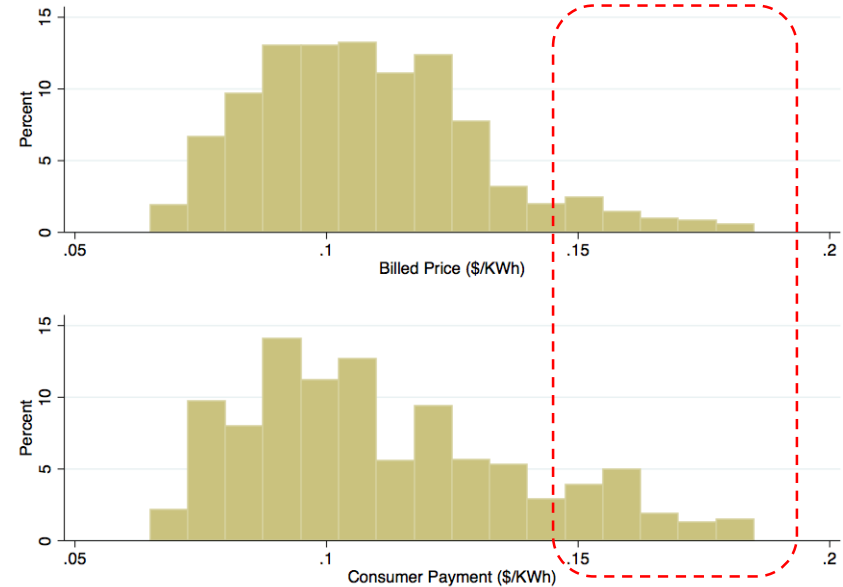
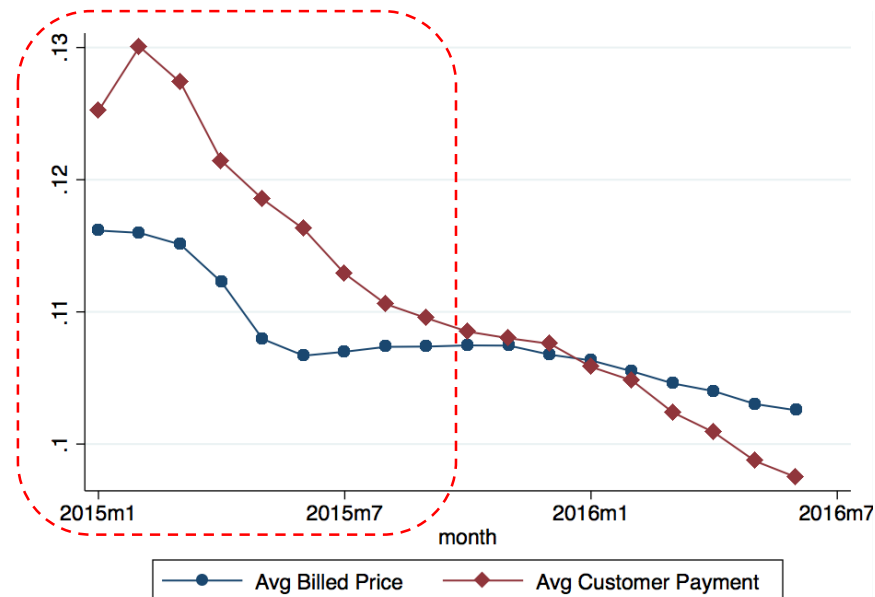


Figure 4: Average Billed Price versus Consumer Payment

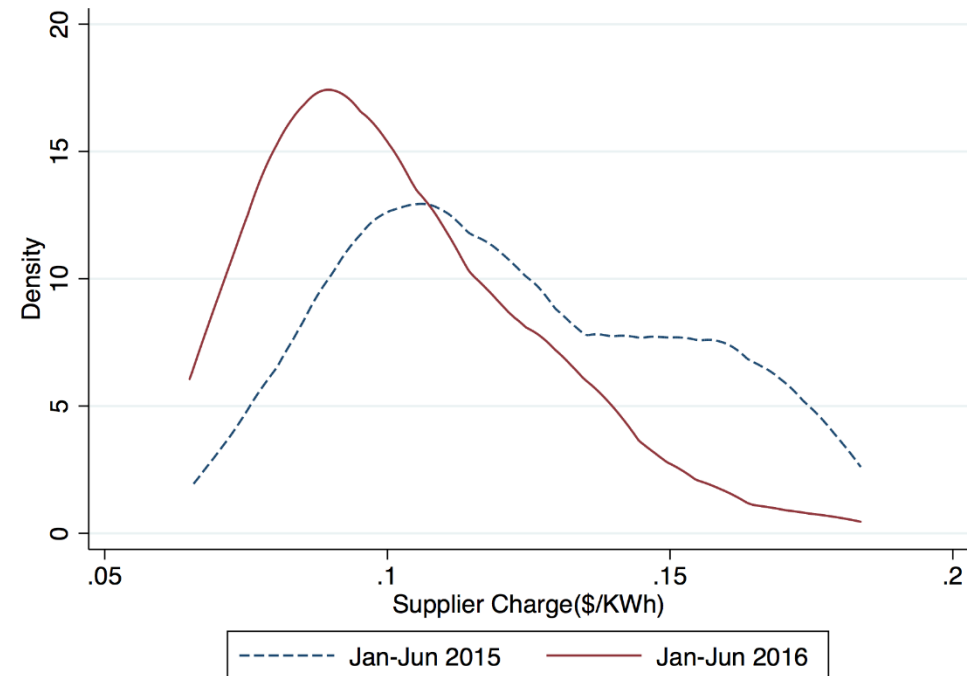


* To our knowledge, Connecticut is the only state to date that have made data of Suppliers' billed prices and corresponding consumer counts publicly available.

Quantify Consumers' Welfare

- Using **both the billed prices and the corresponding consumer counts**, we can quantify the consumer welfare:
 - Consumer spending on electricity
 - The lower the consumer payment, the higher the welfare
 - Higher welfare in the first half of 2016 than the first half of 2015 (Figure 5)
- Mixed message to state regulators:
 - Consumers are able to find cheaper offers when they shop Suppliers
 - More consumers are returning to standard service.

Figure 5: Consumer Payment



Key Takeaway

- Knowing billed price and consumer count under each billed price provides a more complete picture of competitive retail electricity market.
- Utilizing both billed price and consumer count under each billed price enables us to quantify consumer welfare, which is useful for policy evaluation.