Low Income Customers and Time Varying Pricing: Issues, Concerns, and Opportunities

NYU School of Law's Forum on New York REV and the Role of Time-Varying Pricing

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THE Brattle GROUP

Outline

Premise of Time Variant Pricing (TVP)

Consumer Advocate Concerns with TVP and Contrary Evidence

Mitigating Potential Adverse Impacts of TVP

Premise of Time-Variant Pricing

Avoided or deferred resource costs

Reduced wholesale market prices

Customer bill reductions

Facilitating deployment of distributed generation resources

Environmental benefits

We have learned a lot from the TVP pilots over the past decade

Customers respond to prices, but there is much more to the equation

- Impacts persist across several years and consecutive events
- Enabling technologies boost price responsiveness
- Responsiveness dependent on temperature and humidity

Decisions made during implementation planning can dramatically impact results

- Simplicity of program design
- Activities raising awareness in customers, i.e., pre-and-post event messaging
- Whether a program is opt-out or opt-in

Despite striking outcomes of these pilots, TVP is slow to gain traction

33% of the nation's 114 million households are on Smart Meters

- But only 2% are on TVP
- And only 1% of these are on dynamic pricing rates

That prevents us from harnessing the benefits of universal TVP

- Lower energy costs
- Reduced cross-subsidies

There are various barriers to TVP implementation, but the one I will discuss today is "concerns about impacts on low-income households"

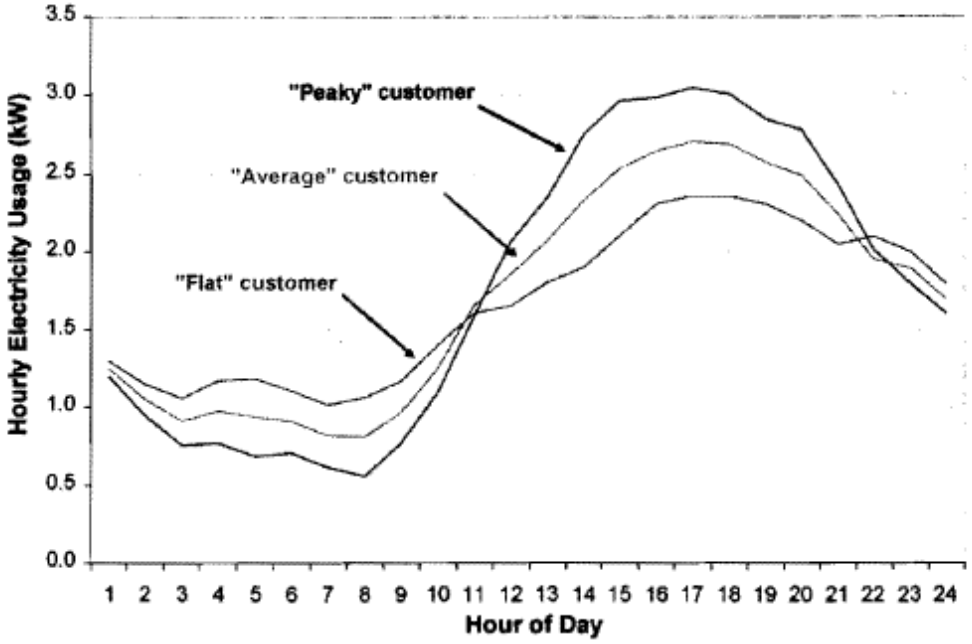
Consumer Advocate Concerns with TVP and Contrary Evidence

1- TVP is unfair to low-income customers

Response

Surprisingly, the opposite is true

Under a flat rate structure, customers who consume more electricity during peak hours ("peaky" customer) effectively rely on customers who consume less during those hours ("flat" customer) to ensure that all costs are recovered in rates



This implicit cross-subsidy is invisible to most consumers, and over time it can run into billions of dollars

Time-variant pricing avoids this problem

2- TVP makes heating and cooling unaffordable for low income and other vulnerable customers

Response

TVP may actually lower the cost of cooling/heating, if low income customers can pre-cool/pre-heat their residences outside the peak window

Low income customers are more likely to have flatter than average load shapes, because many of them lack air conditioning

- In that case, they are likely to be instant winners under TVP

3- Low customers may reduce energy for essential use and may cause themselves physical harm

Response

There is no documented instance of low-income and vulnerable customers harming themselves through TVP

These customers can be identified and sheltered from the potential adverse impacts of TVP with ratepayer subsidized bill payment assistance programs

- These customers can be identified through churches, community centers, and other customer outreach initiatives

4- Less well-off customers lack the sophistication and the load to respond to TVP

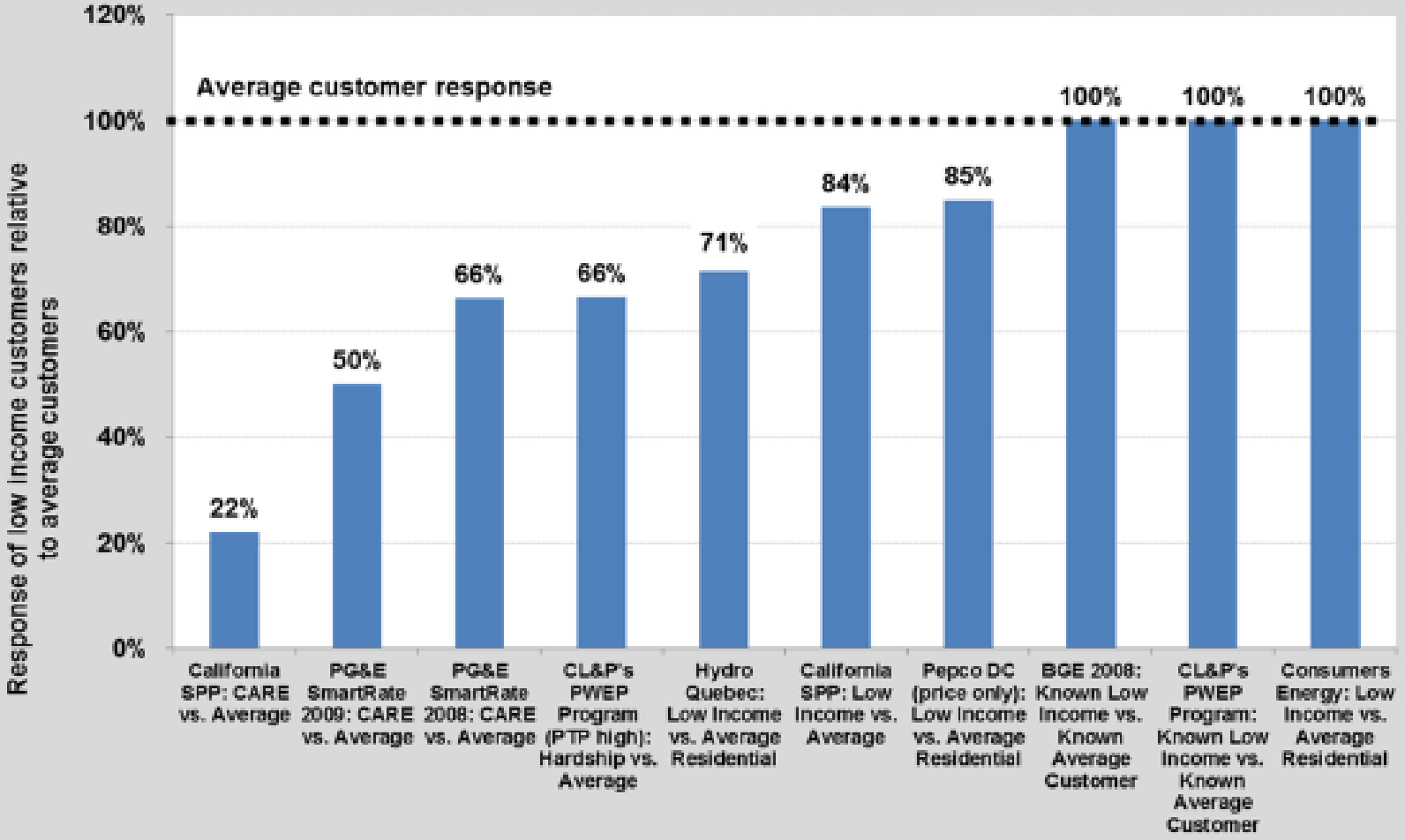
Response

Empirical evidence suggests that this is not the case

In a whitepaper for the Institute for Electric Efficiency (IEE), we have identified seven TVP pilots or programs that provide data on low income customer responsiveness to TVP

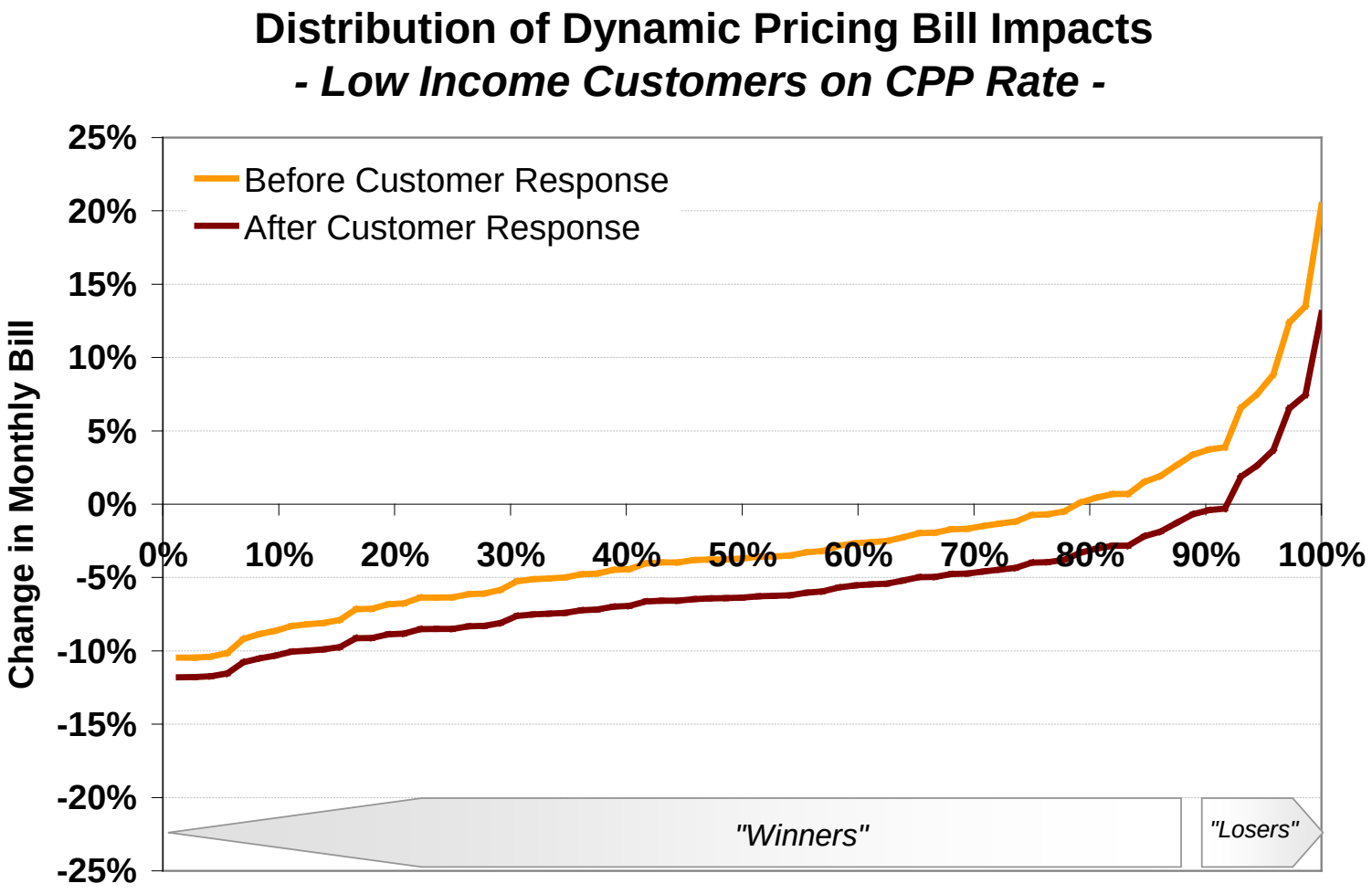
Based on this data, the proposition that the *"low income customers do not/cannot respond"* is not verified *(Next slide)*

Low income customers respond to TVP



Note: For the PepcoDC pilot, the average residential response excludes low income customers that qualify for the RAD program

In fact, most low income customers will be better of under TVP due to their flat load profiles



5- Pilot results are based on a small sample of volunteers who receive extensive handholding

Response

Most pilots have used small sample sizes to understand the responsiveness of low income customers to the TVP, however these customers are still recruited the same way as the other customers in the pilot

These customers receive the same education and customer outreach as the other customers in the pilot

It is expected that any full scale TVP implementation will have a comprehensive customer outreach component; i.e., ads on TVs and billboards on public transportation

6- TVP should not be made the default rate

Response

Participation rates remain particularly low in the opt-in TVP programs and the desired system impacts may not be achieved, unless accompanied by aggressive customer outreach

- The average TVP enrollment rate is 20% under opt-in (assuming aggressive customer outreach) whereas it is 84% when TVP is the default rate
- Huge implications for the overall system impacts

Mitigating Potential Adverse Impacts of TVP

Mitigating potential adverse impacts of TVP- I

Creating customer buy-in

Offering tools

Designing two-part rates

Peak time rebates

Demand subscription service

(***continued in the next slide***)

Mitigating potential adverse impacts of TVP- II

Bill protection

Credit the un-needed hedging premium

Vulnerable customers can opt-out, or can be provided bill-payment assistance

Concluding Remarks

TVP momentum should not be slowed down due to concerns with low income and vulnerable customer responsiveness to TVP, because the evidence shows that these customers generally have favorable profiles for TVP participation, and do respond to the TVP

Instead, various mitigating options should be considered to ensure that the low income and vulnerable customers are not adversely affected by TVP participation

Pilots and focus groups with targeted low income customers might be useful to gauge the effectiveness of various mitigating options

Customer education is essential and must be introduced before introducing TVP

Presenter Information

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Dr. Sanem Sergici is a Senior Associate in The Brattle Group's Cambridge, MA office with expertise in electricity markets, applied econometrics, and industrial organization. At Brattle, the focus of Dr. Sergici's work has been on assisting electric utilities, regulators, and wholesale market operators in their strategic questions related to energy efficiency, demand response, and customer behavior in the context of Smart Grid. Dr. Sergici has significant expertise in the design and evaluation of a variety of demand response and behavior-based energy efficiency programs; development of load forecasting models; ratemaking for electric utilities; and energy litigation. She has recently completed several long-term resource planning projects that involve the development of scenarios and strategies for an electric system to meet long-range electric demand while considering the growth of renewable energy, energy efficiency, other demand-side resources. She has spoken at several industry conferences and published in several industry journals.

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