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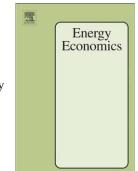
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### ACCEPTED MANUSCRIPT

# The Long-run Price Sensitivity Dynamics of Industrial and Residential Electricity Demand: The Impact of Deregulating Electricity Prices.

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#### **Abstract**

This study examines the demand-side of Ghana's electricity sector. We test two important related hypotheses: (1) deregulation of electricity price does not promote energy conservation, and (2) demand-price relationship is not an inverted U-shaped. The Stock and Watson dynamic OLS is used to address the so-called second-order bias. The result showed, deregulation of electricity price in Ghana has induced behaviours that are more consistent with energy conservation improvements. The demand-price relationship is an inverted U, which suggests that there is a price range that end-users can tolerate further price rise and still increase their consumption of electricity. However, the degree of price tolerability is higher for residential consumers than industrial consumers. The simulation results showed, further economic growth is likely to compromise energy conservation but more in the industrial sector than the residential sector. On the other hand, future crude oil price is likely to deteriorate energy conservation in the initial years after 2016, but this trend will reverse after the year 2020. Pricing mechanisms are potent to induce energy conservation but inadequate. The results suggest they should be complemented with other stringent policies such as a mandatory energy reduction policy, investment in renewables, and personalization of energy efficiency programs.

JEL: Q4; Q41; Q43; Q48.

**Keywords**: Aggregate electricity demand; Industry electricity demand; Residential electricity demand; Deregulation of markets; Ghana

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