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The behavioral effect of Pigovian regulation: Evidence from a field experiment*

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Abstract

Pigovian regulation provides monetary penalties/rewards to incentivize prosocial behavior, and may thereby trigger behavioral effects beyond a more standard response associated with a change in relative prices. This paper quantifies the magnitude of these behavioral effects using data from an experiment on real product choices together with a structural model of consumer behavior. First, we show that information about external effects (products' embodied carbon emissions) triggers voluntary substitution towards cleaner alternatives, and we estimate that this effect is equivalent to a change in relative prices of GBP30.69-165.15/tCO₂. Second, comparing a Pigovian intervention (GBP19/tCO₂) with a neutrally-framed price change of the same magnitude, we find a negative behavioral effect associated with regulation. Compensating this bias would require increasing the Pigovian price signal by up to 48.06/tCO₂. Finally, based on a cross-product comparison, we show that the magnitude of behavioral effects declines with substitutability between clean and dirty product alternatives, a measure of effort to reduce emissions.

Keywords: Externalities; Pigovian regulation; Consumer behavior; Information; Field experiments; Environmental policy.

JEL Codes: C93; D03; D12; H23; Q58.

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