

The Experimental Tobacco Marketplace: Demand and substitutability as a function of cigarette taxes and e-liquid subsidies

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Abstract

Introduction: The experimental tobacco marketplace (ETM) approximates real-world situations by estimating the effects of several, concurrently available products and policies on budgeted purchasing. Although the effects of increasing cigarette price on potentially less harmful substitutability are well documented, the effects of other, nuanced pricing policies remain speculative. This study used the ETM as a tool to assess the effects of two pricing policies, conventional cigarette taxation and e-liquid subsidization, on demand and substitutability.

Methods: During sampling periods, participants were provided 2-day samples of 24 mg/mL e-liquid, after which ETM purchase sessions occurred. Across two ETM sessions, conventional cigarettes were taxed or e-liquid was subsidized in combination with increasing cigarette price. The other four available products were always price constant and not taxed or subsidized.

Results: E-liquid functioned as a substitute for conventional cigarettes across all conditions. Increasing cigarette taxation and e-liquid subsidization increased the number of participants for which e-liquid functioned as a substitute. Cigarette taxation decreased cigarette demand, by decreasing demand intensity, and marginally increased the initial intensity of e-liquid substitution, but did not affect the functions' slopes (substitutability). E-liquid subsidization resulted in large increases in the initial intensity of e-liquid substitution, but did not affect e-liquid substitutability nor cigarette demand.

Implications: 24 mg/mL e-cigarette e-liquid was the only product to significantly substitute for cigarettes in at least one condition throughout the experiment; it functioned as a significant substitute throughout all four tax and all four subsidy conditions. Increasing cigarette taxes decreased cigarette demand through decreases in demand intensity but did not affect e-cigarette substitution. Increasing e-liquid subsidies increased e-liquid initial intensity of substitution but did not affect cigarette demand.

Conclusions: This study extended research on the behavioral economics of conventional cigarette demand and e-liquid substitutability in a complex marketplace. The results suggest that the most efficacious method to decrease conventional cigarette purchasing and increase e-liquid purchasing may involve greatly increasing cigarette taxes while also increasing the value of e-liquid through potentially less harmful product subsidization or differential taxation.

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