

Choosing between different alcohol pricing and taxation strategies: a comparative policy appraisal using the Sheffield Alcohol Policy Model

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Abstract

Background Policies that increase alcohol prices effectively reduce alcohol consumption, one of the top three risk factors for global disease burden. Our aim was to appraise how different alcohol pricing policies balance competing priorities.

Methods We built an econometric dynamic epidemiological model for England, combining survey and register data on alcohol purchasing, consumption, and 43 harms, and published price elasticities, relative risk, and alcohol attribution. We model five hypothetical taxation options each estimated to give a 10% reduction in average consumption: P1, a uniform 85% increase in existing duty; P2, a 22% sales tax based on product price; P3, a £0.35 per unit volumetric tax; P4, a £0.80 minimum unit price (MUP); P5, a £0.75 MUP with a volumetric tax of £0.30. Outcomes were consumption, annual alcohol-related deaths, hospital admissions, health-care costs, consumer spending, and government revenue. Uncertainty was assessed through sensitivity analyses.

Findings Population level health harm-reductions would be highest for increases in the present tax system (P1: deaths –3026, hospital admissions –179 000, health-care costs –£583 million) and for the MUP (P4: –3081, –169 000, –£574 million), and lowest for the sales tax (P2: –2852, –168 000, –£575 million). Harm reductions in high-risk drinkers would be highest for the two MUP options (P4: deaths –1764, hospital admissions –84 000, health care –£218 million; P5: –1712, –78 000, –£205 million), and lowest for sales tax (P2: –1267, –64 000, –£159 million). The overall greatest burden on consumer spending would be from a duty increase under the present system (P1 £3.2 million), and the lowest from a volumetric tax (P3 £2.0 million). The smallest extra annual expenditure for each moderate drinker would be achieved by MUP (P4 £17.80), whereas the largest extra expenditure would be from a tax rise in the present system (P2 £37.20). With the exception of the MUP-only policy, which would have a small negative effect on government revenue from alcohol (P4: 1.3%, –£121 million), all taxation policies would raise government revenue, by between £1.9 billion and £4.2 billion per year.

Interpretation Pricing policies can be implemented in ways that balance the priorities of increasing government revenue, maximising harm reductions, and targeting heavy drinkers, while protecting moderate consumers from excessive burden.

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Contributors

PSM was principal investigator of the study, planned the policy appraisals, and wrote the abstract. YM redeveloped the Sheffield Alcohol Policy Model and carried out the analyses. JH contributed to the planning of analyses and the write up and interpretation of the findings. AB directed the modelling team, focusing on model structure decisions, testing, and validation, and commented on drafts of the abstract.

Declaration of interests

We declare no competing interests.

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