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A Toast to Taxes: Exploring the Optimal Alcohol Taxation Paradox in Kerala

Santhosh Kumar P K[1] Haseena Akbar[2] Anjali Haridas[3]

[1] Director & Associate Professor, Centre for Budget Studies, CUSAT

[2] Post-Doctoral Fellow, Centre for Budget Studies, CUSAT

[3] Assistant Professor, Centre for Budget Studies, CUSAT

Background

The denouement of higher tax on alcohol is a topic of debate among exchequers and economists. Alcohol is always a bane to social welfare; however, it acts as a benefactor to the state's exchequer. In spite of the hike in the prohibitive tax rates to limit consumption, the Kerala GST revenue from liquor was 1474.39 crore up to May 2022,[1] even with the increase in sales tax from 225 % to 247% from the previous years. The consumption graph of alcohol in the state is rising yearly. Hence, in Kerala, alcohol is one of the primary income sources of the Government and a cost to society.

From a social welfare perspective, the increasing levels of alcohol consumption is a significant apprehension for the state. This is due to the excessive non-measurable social costs created by alcohol consumption, which have significant adverse effects on physical and mental health and economic productivity. The optimal tax on alcohol to mitigate these social costs (Pigou, 1920) was proven effective in many countries. However, tax-induced price hikes limit consumption and persuade consumers to make clear substitutions (Gehrsitz et al., 2021). So, the optimum level of tax on alcohol should be fixed based on demand elasticities (Pogue & Sgontz, 1989). Meanwhile, higher taxation of inelastic commodities will increase the Government's tax revenue (Ramsey, 1927) and fuel welfare initiatives.

[1] https://keralataxes.gov.in/wp-content/uploads/2023/02/Fact-Sheet-June-2022.pdf

Alcohol is considered a commodity with a high negative externality. However, some welfare theorists consider the positive net benefit from alcohol to sensible users. At the same time, the negative consumer surplus cannot be renounced completely (Pogue & Sgontz, 1989). In Kerala, the higher consumption of alcohol is accompanied by a higher tax rate, which negates the social welfare objective of higher taxes. This is due to the power of the tax rate to change the elasticity of alcohol (Fogarty, 2006). Moreover, it is the state's monopoly on alcohol production and distribution that leads to inelastic demand. In this context, the study drives into the reality of the paradox related to the optimality of alcohol taxation in Kerala. It is imperative to know how much the upper barrier to alcohol taxation is needed to improve social efficiency. So, the present discussion delves into how effective the corrective taxation strategy is to reduce alcohol consumption in Kerala by checking the elasticity of selected alcohol brands.

The optimality paradox: Direction and dimensions

The assumption of high taxation condenses consumption fails in Kerala's case. Statistics reveal that Keralite's alcohol consumption and reaction towards increasing tax rates is paradoxical to the Pigouvian optimal tax concept. As such, trends in tax revenue from alcohol exhibit that despite having a high tax rate of 225% till 2020 and a subsequent increase of 247% in 2021, it did not reduce sales (Figure 1). Hence, it is evident that the current tax rate is high enough not to optimize social efficiency.

Moreover, there is a contradiction in the proportion of users and alcohol consumption rate in Kerala during past years. Though the number of individual users is reducing, there is an increase in sales of alcohol (Figure 1). According to the National Family Health Survey, in Kerala, the percentage of alcohol users has declined from 37% of men and 1.6% of women in 2015-16 to 19.9% of men and 0.2% of women in 2019-20. As such, among the men who consume alcohol, 9% are daily users, 41% are weekly users and 50% use less than once a week. However, an expert from the industry ascertained that the peg-wise average consumption per user increased from 2 pegs (120 ml) to 4 pegs (240 ml) compared to last year.

The welfare objective of higher tax on alcohol is constrained by the availability of cheaper substitutes such as tobacco and drugs. According to the Vimukthi Survey conducted by the Excise Department of Kerala, the usage of substances such as ganja is more attractive to the

youth rather than alcohol. This youth population would not switch to alcohol consumption even if they reached their legal age[2] because of the informal and hideous nature of drug substances. Even though legal enforcement is strict if caught, the lack of technology to detect the presence of these drugs in the body makes it convenient for the users. This majorly increases the social costs in the form of a rise in future health expenses, a fall in income generation due to reduced productivity and a rise in threats to society, among which chances of gender and child abuse dominate significantly.

Figure 1

Source: author's presentation

The system of ideas on taxing alcohol

The rationale for taxing alcohol exists for two reasons. Firstly, taxing alcohol is to optimize social efficiency. Secondly, it is a tool to generate revenue (West, S. E., & Parry, I. W. H.,2009). Balancing these dual objectives, maximising state revenue, and optimising social welfare weighs up on government decisions. Hence, while fixing alcohol tax rates, the Government should primarily consider the social costs and consumption costs associated with the loss of consumer utility. However, these costs differ depending on the nature of users' consumption patterns, which leads to a non-linearity in computing externalities. (Griffith et.al, 2019). The availability of product varieties and the heterogeneity of users contribute to this nonlinearity, thereby emphasizing the fixing of tax rates based on the nature and degree

[2] The Kerala government had raised the legal drinking age from 21 to 23 in 2017.

of elasticities. According to Ramsey, "If any one commodity is absolutely inelastic, either for supply or for demand, the whole of the revenue should be collected from it." Hence, fixing tax rates based on elasticities ensures both maximization of revenue and social efficiency. Taking these factors into consideration, the dual objective of optimal taxation can only be achieved through the computation of the elasticities of alcoholic beverages. Pogue and Sgontz (1989) have given the following formula for optimal taxation after taking into effect the heterogeneity of users (abusers and non-abusers) based on demand elasticities:

$$t = \frac{\frac{E}{P} + (1-m)\frac{(P+A)}{P}}{m + \frac{\eta_B X_B}{\eta_A X_A}}, \eta_A > 0$$

Elasticity under optimal taxation: Evidence from Kerala

The law of demand says that increasing price leads to a reduction in demand. So, tax-induced price rises expect a reduction in demand for alcohol, which influences the government's decision on setting taxes. When the government sets taxes focusing on social efficiency, the price elasticity should be considered to maintain justice between heavy drinkers and light drinkers. Further, the welfare goal of taxation will be achieved only when the increase in the distortion to cheaper alcohol is more expensive (Calcott, 2019). The price-demand relationship of alcohol in Kerala has been proven inelastic; however, the relative differences in elasticity are yet to be explored.

Brandy, Rum, Vodka and Whisky are major brands consumed by Keralites in the recent past. The price and sales quantity of these brands from beverage corporations have been used to measure elasticity. The result (Table 1) matches with the inelastic nature of alcohol in Kerala. Moreover, there is a significant difference in price elasticities among these products. As such, the elasticity of Brandy (0.0066) and Rum (0.0051) are comparatively less elastic than Vodka (0.1211) and Whisky (0.2117).

Table 1- Brand-wise price elasticity

Brand	ep
Brandy	0.00668834
RUM	0.00512258
Vodka	0.12752178
Whisky	0.21179225

Source: author's calculation

The differences in elasticities evidently show the presence of differing natures of users (heavy drinkers and light drinkers). Brandy and Rum, being the popular brands among heavy drinkers, constitute the least elasticities. This consumption preference justifies the fact that heavy drinkers prefer quantity over quality, as both brands are cheaper than the others. Hence, from this experiment of computing elasticities, we understand the need for imposing multiple tax rates based on the distinctions between degrees of elasticities among brands. This imposition would achieve the dual aim of reducing the social costs generated by the heavy drinkers and the loss of marginal benefit accrued to the light drinkers.

Conclusion

Though the discussions on the paradoxical increase of alcohol consumption in Kerala, even after hiking the tax rates, have been alive for years, this study provided a theoretical and empirical contribution to the existing literature. The study summarised the evidence of increasing individual consumption in contrast to the decreasing proportion of total users and the price elasticity difference between brands. One of the prime findings of the study is that brandy and Rum are more insensitive to price. This has driven the idea of considering a change of strategy in alcohol taxation. Moreover, the heterogeneity in existing user patterns based on price elasticities thereby throws light on the ineffectiveness of the imposition of a single corrective tax on alcohol. The divergence in marginal external and internal costs by this differing drinking pattern makes it difficult for the existing flat tax system to make necessary corrections to achieve the socially optimal level of consumption (Crawford et al., 2010). So, the study leads to opting for multiple brand-specific taxes in Kerala by considering the price elasticities of alcoholic beverages.

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