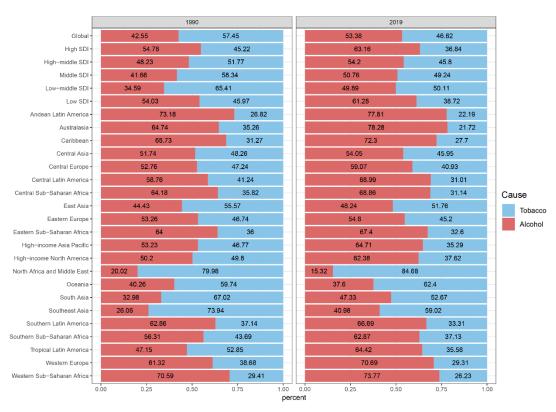
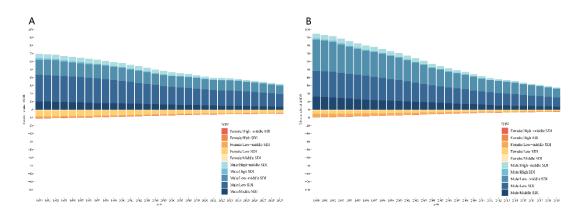
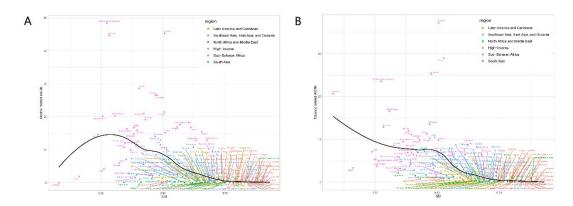
## **Online Supplementary Document**



**Figure S1** Composition chart of TB deaths related with alcohol and tobacco in 1990 and 2019.



**Figure S2** A: Alcohol-related ASDR distribution in different SDI area and gender; B: Tobacco- related ASDR distribution in different SDI area and gender.



**Figure S3** A: Alcohol-related correlation between SDI and ASDR in country level; B: Tobacco-related correlation between SDI and ASDR in country level.

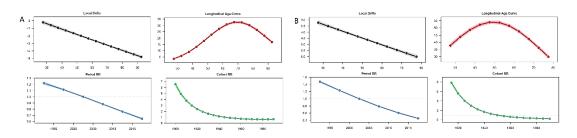
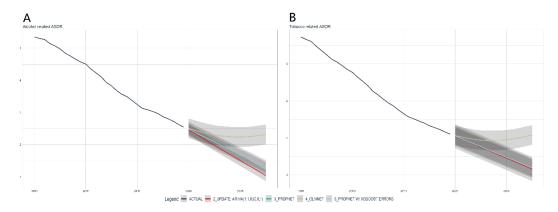


Figure S4 A: Alcohol-related ASDR APC model; B: Tobacco- related ASDR APC model.



**Figure S5** A: Machine learning prediction in alcohol related ASDR; B: Machine learning prediction in tobacco related YLLs.