Abstract

This thesis aims to build a theoretical framework to model the future tobacco consumption, size of smoking population and governmental tax revenues in the Czech republic. The main assumption of the model states that smokers determine their future tobacco consumption behavior as adolescents. This strong statement is backed by empirical evidence. Further assumptions are introduced to make the model applicable to the data by the Czech National Monitoring Centre for Drugs and Drug Addiction. The resulting model is simplified, however, is still able to reflect the future trends induced by upcoming demographic changes to the Czech population and provide forecasts. Future teenage smoking rates and average consumption are the inputs to the model; consumption growth coefficients for each age category are estimated using zero-inflated negative binomial regression. Several scenarios are built to model possible developments, including extreme cases. All scenarios showed that all model outcomes are going to grow until 2028 in a very similar pattern. In particular, the projected number of smokers in 2028 is by 4-8% higher than in 2013, the total daily tobacco consumption and tax revenue by 7-26%. This increase is induced by aging of large birth cohorts. Later on, the projected scenarios differ substantially. If the teenagers were to behave as in 2013, the projected number of smokers (after the initial growth) would steadily fluctuate around 2.6 millions, compared to 2.4 in 2013; total daily tobacco consumption around 33-34 millions, compared to 31.8 in 2013; and tax revenues around 50-52 billions of CZK compared to 46.8 in 2013. An appropriate policy reaction to the upcoming growth in the next decade might consist of the anti-tobacco law, currently proposed by the Czech government, and higher taxation on tobacco.