Abstract

Bleak Prospects
How Air Pollution affects Life Satisfaction in Germany

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The current research analyses the relation between air quality and subjective well-being in Germany. The two goals of the study are firstly, to estimate the impact of current pollution levels on subjective well-being and secondly, to use the estimated results to evaluate further increasing pollution in monetary terms. Therefore, I connect data on life satisfaction from the German Socio Economic Panel and pollution data from the German Environmental Federal Office in terms of carbon monoxide, nitrogen dioxide and ozone on the state level. The period of analysis reaches from 1998 to 2008. The study extends to previous research in that it uses current pollution on the day of the interview instead of yearly averages to describe current life satisfaction. Moreover, the underlying microeconometric happiness function is estimated using a conditional fixed effects logistic regression. In this way, individual time invariant covariates are considered. This fact has often been ignored in previous research, but was identified to be an important determinant in the estimation of the effects of happiness determinants. It shows up that carbon monoxide as well as ozone pollution has a significant negative impact on life satisfaction. In case of nitrogen dioxide pollution, no significant impact can be found. The same signs can be observed using the commonly implemented ordered logitistic regression approach. Computing the marginal rate of substitution between income and air pollution, it can be calculated how much the monthly net household income would have to rise to compensate an increase of one $\mu g/m^3$ in daily state average pollution: for carbon monoxide the payment results in 24.60 €, for ozone the payment amounts 18.26 €.

Key Words: life satisfaction, air pollution, environmental quality

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