

## Modelling the relation between income and commuting distance - DTU Orbit (08/11/2017)

### Modelling the relation between income and commuting distance

We discuss the distribution of commuting distances and its relation to income. Using data from Denmark, the UK and the USA, we show that the commuting distance is (i) broadly distributed with a slow decaying tail that can be fitted by a power law with exponent  $\gamma \approx 3$  and (ii) an average growing slowly as a power law with an exponent less than one that depends on the country considered. The classical theory for job search is based on the idea that workers evaluate the wage of potential jobs as they arrive sequentially through time, and extending this model with space, we obtain predictions that are strongly contradicted by our empirical findings. We propose an alternative model that is based on the idea that workers evaluate potential jobs based on a quality aspect and that workers search for jobs sequentially across space. We also assume that the density of potential jobs depends on the skills of the worker and decreases with the wage. The predicted distribution of commuting distances decays as  $1/r^3$  and is independent of the distribution of the quality of jobs. We find our alternative model to be in agreement with our data. This type of approach opens new perspectives for the modelling of mobility.

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