

## Research statement

### 1. Overview

I am an empirical microeconomist who uses large household survey and administrative data sets to advance our understanding of economic inequality. In more detail, I use structural dynamic life cycle models and evaluation techniques to analyze determinants of lifetime income as well as policy measures that affect the lifetime income distribution. Thereby, the inequality of lifetime income is a key barometer of disparities in living standards. In this context, health and education as drivers of inequality in life cycle outcomes has been a particular focus of my research. Further, my work aims at providing new insights on the government's possibilities to affect income inequality through public policies.

In the following, I describe the two branches of my research by first outlining previous work and, then, explaining how I would like to build on this work in the future.

### 2. Analysis of lifetime income inequality based on life cycle models

In this branch of my research, I estimate structural dynamic life cycle models based on household data sets to analyze the mechanisms that drive economic inequality and to simulate the effects of changes in government policies while accounting for the behavior of forward-looking agents. The structure of these models follows previous work of e.g. Rust and Phelan (1997), French (2005), van der Klaauw and Wolpin (2008), French and Jones (2011). In particular, I have been interested in separating the consequences of life cycle risks from the consequences of disparities in initial endowments.

In my paper *"Health-related life cycle risks and public insurance"* (Kemptner, 2019), I investigate health-related risks of consumption and old-age poverty. For this purpose, I propose a life cycle model that allows for health effects on employment risks, on productivity, the correlation between health risks, productivity and preferences, and the financial incentives of the German public insurance schemes. The estimation uses data on male employees and an extended Expectation-Maximization algorithm. Simulations suggest that health shocks induce average losses in annual consumption of about 10% and account for more than two-thirds of the cases of old-age poverty. A policy analysis of minimum pension benefits indicates that a means test mitigates the associated moral hazard problem substantially.

Building on this work, my job market paper *"Insurance, Redistribution, and the Inequality of Lifetime Income"* (Haan, Kemptner, and Prowse, 2019) studies how well the German tax-and-transfer system mitigates the inequalities in lifetime earnings that are due to endowments and shows how the tax-and-transfer system moderates the disparities in lifetime earnings that are due to shocks. We call the former effect the redistributive effect of the tax-and-transfer system and we call the latter effect the insurance effect. This analysis provides important insights on how the government can effectively improve either the insurance function or the redistributive function of the tax-and-transfer system.

Two other studies also draw on my methodological skills with respect to dynamic decision making in the life cycle context. In Bönke, Kemptner, and Lüthen (2017), we analyze the effects of early retirement disincentives on retirement behavior, individual welfare, pensions, and public budget by using administrative pension data to estimate a structural dynamic retirement model. In the paper *“The role of time preferences in educational decision making”* (Kemptner and Tolan, 2018), we investigate the implication of time-inconsistent preferences in educational decision-making and public education policies where time preferences may play an important role.

In my future research, I would like to follow up on my papers *“The role of time preferences in educational decision making”* and *“Health-related life cycle risks and public insurance”* by studying the link between educational choices on the one hand and health investments, health risks, and economic outcomes on the other hand. Furthermore, regarding my interest in policy measures, I am planning to build on my work *„Insurance, Redistribution, and the Inequality of Lifetime Income“* and analyze the distributional and welfare implications of an income tax scheme that applies a progressive schedule to lifetime earnings instead of annual earnings (Vickrey tax scheme). This study will provide evidence on the gains that the associated reduction in lifetime earnings risks could entail.

### **3. Analysis of health and mortality risks based on reduced form models**

While it is the strength of structural models to have a strong link to economic theory and to allow simulating public policy options for a representative population that often cannot be evaluated otherwise, this type of research needs to be complemented by evidence that is based on more robust evaluation techniques that need much weaker assumptions.

Using instrumental variable approaches, I investigate in two studies the causal effects of education on health outcomes. Using data from several waves of the German Microcensus, Kemptner, Jürges, and Reinhold (2011) estimate the causal effect of years of schooling on health and health behavior exploiting changes in compulsory schooling laws in West Germany. The results provide evidence for a strong and significant negative causal effect of years of schooling on long-term illness and work disability among men. Kemptner and Marcus (2013) analyze effects of maternal education on child’s health and health behavior. The study uses data of three generations from the German Socio-Economic Panel and exploits financial constraints in the grandparents’ household to identify the effects.

In my paper *“The rising longevity gap by lifetime earnings - distributional implications for the pension system”* (Haan, Kemptner, and Lüthen, 2019), we use German social security records to provide evidence on cohort trends of the heterogeneity in life expectancy by lifetime earnings and, additionally, document the distributional implications of this earnings-related heterogeneity. When accounting for heterogeneous life expectancy, we find that the German pension system is regressive.

In a follow-up project called *“Regional changes in health care supply and differences in mortality trends”*, I will analyze the effect of regional differences in the health infrastructure on the regional heterogeneity in life expectancy in Germany. A particular interest will be on the question whether such effects vary for individuals with different lifetime earnings. If this is the case, the effect heterogeneity could be one mechanism explaining the heterogeneity in life expectancy by lifetime earnings.

#### 4. References

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