Life-course inheritances, wealth and health: Examining causal effects in 11 European countries

Background and objectives
Wealth is associated with health, but recent evidence from US samples suggests that this association might not reflect causality from wealth to health. Existing studies have focused on the impact of wealth innovations on short-term changes in self-rated health at old age, but whether inheritances that influence wealth accumulation over the entire life-course have an impact on health is unknown. We examine the impact of life-course inheritances on a wide array of chronic diseases and physical functioning, and use life-course inheritances as instrumental variables to examine causal effects of accumulated wealth on health outcomes in 11 Western European countries with different welfare institutions.

Data
We used data from the first wave of the Survey of Health, Ageing and Retirement in Europe (SHARE). In 2004, participants aged 50 years and older were asked to report all inheritances received over their entire life-course, specifying the year of transfer. We recorded data on major chronic disease events (heart disease, stroke, diabetes, hypertension, cancer and lung disease) as well as the age at first diagnosis. We also used grip strength assessed during interview as a measure of physical function at old age. Our sample included 26,425 individuals living in 11 countries in Northern (Denmark and Sweden), Central (Germany, Netherlands, Belgium, France, Switzerland and Austria) and Southern Europe (Spain, Italy and Greece).

Analysis
Analyses are based on the life history event approach and was conducted in two steps: First, we examine the impact of inheritances of 5,000 euro or larger on subsequent health outcomes, controlling for background characteristics that are potentially related to the risk of receiving an inheritance (age, sex, country, marital status, educational level, father's occupation, mother's occupation, and parental vital status), as well as potential behavioural pathways through which inheritances might influence health (smoking, excessive alcohol use, physical activity and body mass index). We recode reported inheritance values into four categories, and also examine effects of the log of inheritances on health in Cox Proportional Hazard and logistic regression models. At a second stage, we use inheritances as instrumental variables in a linear probability model to examine the causal effect of accumulated wealth on health. In both steps, we first examine effects in the entire European sample, and subsequently examine differential effects in the Northern, Central and Southern regions of Western Europe. Analyses are first conducted in both heirs and non-heirs, and subsequently we limit analyses to heirs only.

Results
24% of Europeans reports receiving at least one inheritance of 5,000 euro or larger, but this proportion ranges from 18% in Austria and Spain to 49% in Switzerland. The likelihood of receiving an inheritance is higher among those at younger ages, as well as those who are married, have completed a post-secondary education, have higher income

and wealth, and those in professional and managerial occupations. Participants whose parents are or have been in legislators, managerial or professional positions, and those whose parents are deceased are also more likely to have received an inheritance.

Inheritances and health

Controlling for measured confounders, receiving an inheritance is associated with a substantial and significant reduction in the risk of a subsequent first event of heart disease, stroke, hypertension, diabetes, cancer and lung disease (Figure 1). However, among heirs, there is no association between the amount received and the risk of any health outcome. The only exception is lung disease risk, which is monotonically associated with inheritance size. Receiving any inheritance in the life-course is associated with higher grip strength, but larger inheritances among heirs do not predict higher grip strength. The effect of log-inheritances on lung disease and stroke is stronger in Central Europe than in Southern Europe, while log-inheritance effects on grip strength are weaker in Northern Europe. Overall, however, there is little evidence of differential effect of inheritances on health across European regions (Table 3).

Inheritances and accumulated wealth

Inheritances received over the life-course are strongly associated with accumulated wealth (Figure 2). In regular OLS models, the log of wealth is associated with significantly reduced risks of all chronic diseases, and significantly higher grip strength. In models using inheritances received as instruments, predicted wealth is associated with larger reductions in risk of chronic diseases as compared to regular OLS models. However, larger estimates in IV models largely reflect health heterogeneity between heirs and non-heirs, rather than the monotonic effect of predicted wealth on health. We found no significant effect of predicted wealth on stroke and cancer in Southern Europe, while effects on grip strength are not significant in Northern Europe. For other outcomes, however, there is no consistent evidence of differential effects across Europe.

Conclusions

Wealth shocks in the form of any inheritance received over the life-course are associated with a substantial and significant reduction in the risk of chronic diseases and better physical functioning at old age. This pattern is consistent across countries with different welfare state institutions across Western Europe. Consistently, wealth accumulation resulting from inheritances is strongly associated with better health and functioning. However, among heirs, we found no evidence of a health effect of inheritances and wealth. Our findings might have at least two possible interpretations: we may have failed to identify an effect of wealth and inheritances on health among heirs because of imperfect currency and purchasing power parity conversions, or inaccuracy of self-reported inheritance amounts. Alternatively, our findings might suggest that inheritances are associated with health because of unobserved heterogeneity among heirs and non-heirs, contradicting the hypothesis of causal effects.

FIGURES

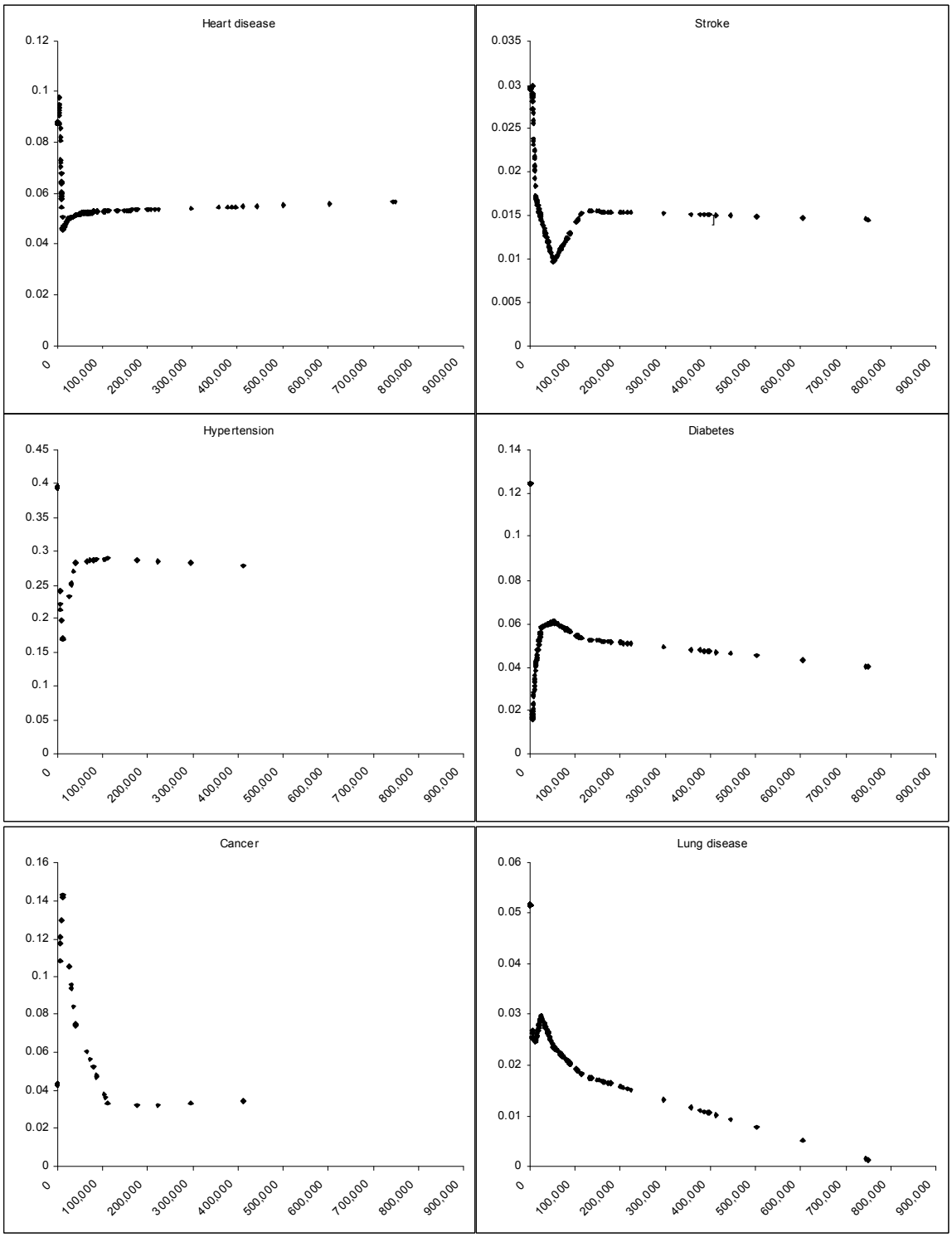

Figure 1. Non-parametric LOESS function of chronic disease outcomes by total inheritances received over the life-course

Curves are adjusted by age and sex

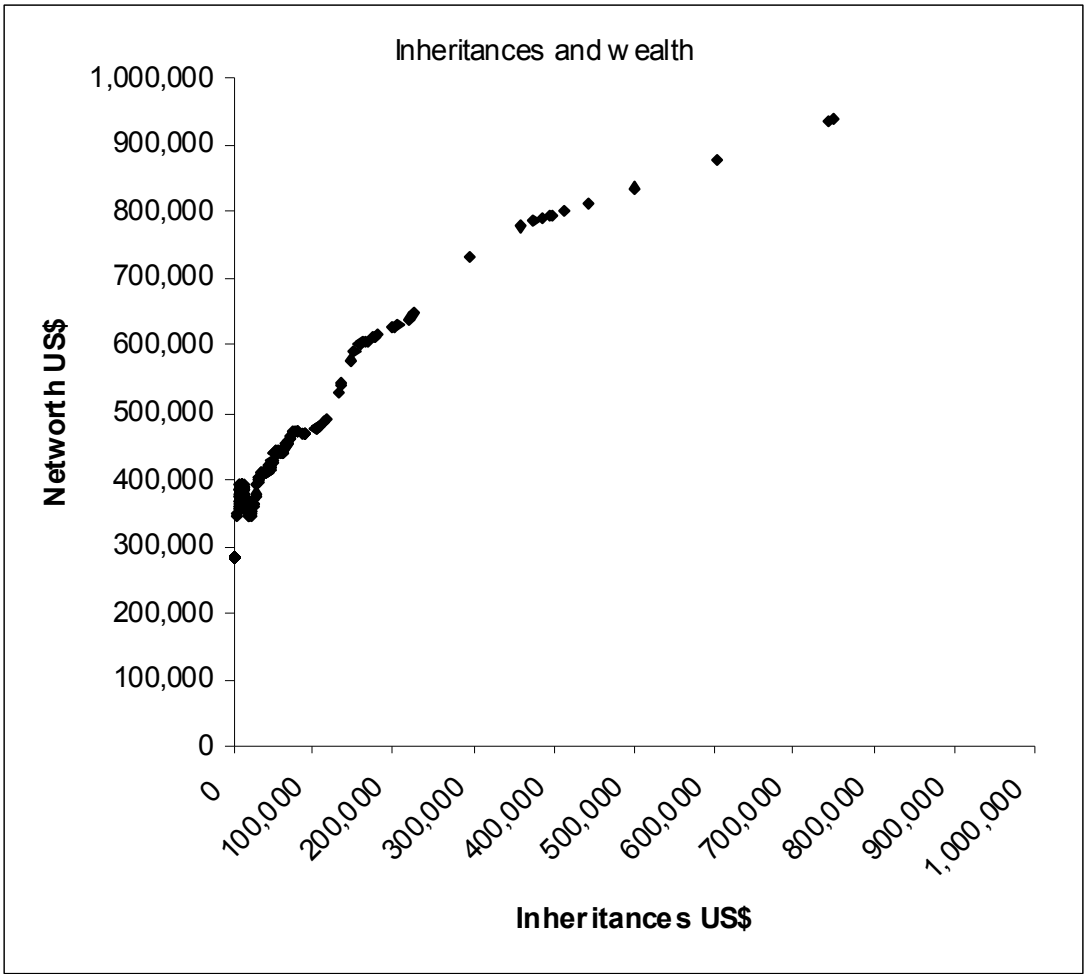

Figure 2. Non-parametric LOESS function of total net worth (wealth) and total inheritances received over the life-course

Curves are adjusted by age and sex