

Life is About Timing: Health Shocks and Socioeconomic Inequality Across the Life Cycle

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Abstract

Recent medical advancements, particularly in diseases like cancer (one of the major causes of death worldwide), have improved survival rates after major health shocks. However, these improvements are unevenly distributed across different socio-economic (SE) groups, defined by education, income, and employment. Individuals with lower SE status often experience health shocks at younger ages, posing the question of whether this leads to more years lived in poor health or to earlier mortality. The study addresses the underexplored interplay between SE status, the timing of disease onset, and life course inequalities. By introducing a novel timing perspective, the project aims to unravel the complex connections between initial SE status, disparities in disease onset and its severity, life course trajectories, and mortality, particularly focusing on cancer as a health shock. The study comprises three parts: two empirical parts (to be presented) and a structural model based on the empirical findings (not yet presented; work in progress).

In my presentation, I will talk about two papers:

1. Delaying Cancer: The Effect of Education on the Age at Cancer Diagnosis (joint with Sonja Spitzer)

This paper investigates whether educational attainment affects the timing of cancer onset. We exploit Austria's 1962 school reform – which increased compulsory schooling from eight to nine years – to estimate the effect of additional education on the age at first cancer diagnosis. The reform increased the likelihood that students entered the school-based track, which is associated with white-collar employment and later entry into the workforce, rather than the vocational track. Using a regression discontinuity design, accelerated failure time models, and newly linked administrative data covering schooling and cancer diagnoses for the full population of Austria, we find that education beyond the vocational training delays cancer diagnoses among men, particularly for cancers linked to smoking and diet. We find no effect for women or for cancers less clearly related to behaviour. These findings suggest that education influences not only overall health outcomes but also the timing of serious health events – an underexplored mechanism that may help explain persistent inequalities in healthy life expectancy.

2. The Labour Market Consequences of Cancer: A Matter of Timing? (joint with Sonja Spitzer and Jana Ströbinger)

We examine how the timing of a cancer diagnosis shapes individuals' labour market outcomes. Timing matters because diagnoses earlier in working life can lead to longer-term drops in income and employment, while later-life shocks may coincide with retirement, softening the blow. Yet little is known about this interaction. Using rich Austrian register data (2009 - 2020), we track income, employment, and occupational status before and after diagnosis, based on daily records. Our dataset covers the entire Austrian population with recorded cancer diagnoses in the national hospital registry and a large pool of matched controls. In addition to employment and income

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histories, we observe survival outcomes, and the data include cancer-specific information, such as site and stage, enabling us to study not only whether and when these outcomes occur, but also which cancers drive them. Our empirical strategy combines coarsened exact matching with event-study difference-in-differences to estimate dynamic effects. Our results show pronounced age gradients: workers below 40 exit employment for the shortest spells and return fastest, primarily via part-time re-entry; those 40–49 experience the largest acute gross-income losses, partly cushioned in the short run by benefits, with men recovering gross income to baseline after about 6 years while women sustain persistent gross and net-income declines; late-career individuals (50–59) shift towards labor-market exit, with earlier and larger retirement responses for men and more gradual reductions in hours for women. These findings suggest that relevant policies can benefit from accounting for age.