AAPG2024	LELI	JCJC
Coordinated by :	Simon Rabaté	Duration : 48 months
CES 41 Axis D.3-Contemporary societies: state, dynamics and transformations		

Life Events and Lifetime Inequality

I. Pre-proposal's context, positioning and objective(s)

Context. Income inequality has garnered significant attention in the economic literature over the past decades, leading to notable advancements in comprehending its scale, evolution, and underlying determinants. Nevertheless, there has been a relative lack of focus on *lifetime inequality* that is inequality in the income individuals receive over the course of their life. Arguably, a lifetime perspective is best suited to capture divergence and disparity in individuals' life experiences.
Lifetime inequality can be different than *instantaneous inequality*, that is inequality measured at one given point in time. Reasons therefor are multiple, and may lead lifetime inequality to be either smaller or larger than instantaneous inequality. On the one hand, events associated with extreme income variations (e.g unemployment episodes, large variation in profits for entrepreneurs, inability to work due to sickness, or childbirth) drive instantaneous inequality upward compared to lifetime inequality if they are infrequent, transitory, and equally distributed among the population. On the other hand, if these events have long-term consequences, affect people differently at different levels of the income distribution (for instance, if adverse events are more frequent and more severe for low incomes), and are correlated with one another, income trajectories of high and low income are likely to drift apart over the life cycle. This would imply higher lifetime inequality compared to instantaneous inequality. Understanding how life events affect income trajectories is therefore crucial to assess how income inequality accumulate over the life-cycle, and eventually translate into lifetime inequality.

Aim and objectives: LELI will provide an in-depth analysis of the effect of life events over income trajectories and lifetime inequality. We will mobilize exhaustive longitudinal administrative data in France and the Netherlands and state-of-the-art econometric methodologies to address the four following questions: i) how do life events affect individuals' income trajectories ? ii) what is the buffering role played the state and the tax-and-transfers system ? iii) how do life events correlate and cumulate over the life-cycle and translate into lifetime inequality and (iv) how do the consequences of life-event differ between two different institutional contexts, namely those of France and the Netherlands.

State-of-the-art and contributions: This research proposal relates to two dynamic strands of economic and social science literature, namely the identification of the causal effects of life events on individuals' income trajectories and the statistical decomposition of earnings dynamics.
Causal effects of life events: There is a very rich literature studying the effects of various life events on income trajectories. They often rely on a difference-in-difference approach, comparing the trajectories of impacted individuals to individuals who are comparable but have not been impacted (or will only be impacted later). This includes for example the analysis of job loss [7], health shocks [8], divorce [3], or spousal death [8]. Recent developments of this literature include cross-country comparisons using similar microdata and strategy [2], and studying the correlation between different events (e.g. health shocks and job loss [1]).
Earning dynamics and correlated shocks: The access to administrative registers have fostered the analysis of earning dynamics. Changes in earnings dynamics can be decomposed between transitory and permanent shocks, analyzed over the life cycle and across the earnings distribution [10]. The comparison of the dynamics of the individual income before and after tax can be used to analyze how much insurance taxes and transfers provide [6]. Direct extensions of this type of analysis is the description of lifetime inequality resulting from the accumulation of shocks over the life-cycle [9,11].

LELI will make three main contributions to the economic literature. First, in contrast to many studies that examine events in isolation and predominantly focus on pretax income, LELI undertakes a comprehensive analysis. It assesses the impact of a wide spectrum of demographic and economic events within a unified framework. This approach allows us to consider not only the direct effects of these events on income but also the crucial role played by the tax-and-transfer system in providing insurance against income fluctuations. Second, our project distinguishes itself by conducting a comparative analysis between France and the Netherlands. Those countries are geographically close, but very different in terms of cultural context (e.g employment of women) and choices regarding social insurance policies (e.g importance of unemployment or disability insurance). We therefore expect this comparison to bring new insights regarding the context-dependance of the effect of life events. Third, we connect the two strands of the economic literature aforementioned by linking the analyses of earning dynamics to actual events we can identify in the data.
Note that the question of the long run and cumulative effects of events has also been studied at length in other disciplines of social sciences. In particular, it directly relates to the concept of cumulated (dis)advantages [13]. We therefore expect the project to be enriched by other social sciences and to make contributions outside economics.

Data and feasibility of the project: LELI relies on (a) access to rich longitudinal administrative data in two target countries and (b) the use of microeconometric methods for the description of earnings dynamics and the estimation of the causal effect of life events. The PI has secured access to the relevant administrative data on the Dutch side, namely tax data on the full universe of the population linked to a rich set of other administrative records used to identify the occurrence of events. The access to administrative tax data in France will be arranged through the Secure Access Data Center (CASD) when the project starts. LELI will then rely state-of-the-art techniques in applied econometrics (non-parametric panel data analysis and difference-in-differences approaches) to analyze the consequences of life-events on earning dynamics.

Scientific work packages and methods:

WP#1: Studying effect of life-events on income trajectories

In the first work package, we study the effect of various life-events on income trajectories using Dutch data. WP1.1 aims to construct a large dataset of events. For the universe of the population and for years 1999 to 2022, we identify the occurrence of demographic (child birth, spousal death, divorce), employment (job loss) or health related events (own or relatives' health or disability shocks). This event dataset can be linked with income data, which contain the income trajectories of individuals. This dataset will be used to estimate the causal effect of events on income trajectories, and decompose it between different margins: direct effect on labor income, effect on spouse's labor income, and the effect of taxes and transfers. This is what is done in WP1.2, in which we assess how different events affect income trajectories, and how much individuals are protected against those events through the familial (spouse and relatives) and social (tax and transfers system) insurance. Some events have not yet been extensively studied in the literature, and will be the focus of dedicated projects: WP1.3. will study the effects of divorce and the specific role played by alimony, and WP1.4 will study the effect of having a handicapped child for the income trajectories of parents.

WP#2: Studying life-events correlations and lifetime inequality

In WP1, life-events are studied in isolation. We however know from anecdotal as well as scientific evidence that those events can be related in many ways. For example, an health shock can lead to subsequent job loss, and v*ice versa*. The correlation between different events and their implication for lifetime inequality is at the heart of WP2. In WP2.1, we use the event dataset constructed in WP1 to describe the correlation of events over the life-cycle. Using 20 years of panel data, we can observe if the life events we study are concentrated on the same individuals. We assess if the same people are hit by repeated events over their life course (e.g. recurrent spells of unemployment of health), or by different types of events that are related. We can describe the extent to which a given event (e.g

divorce) is or preceded or followed by another event (such as employment or health shock). We can also study how concentrated the occurrence of adverse events is in the whole population, and which groups are likely to be particularly hit. The correlation of event correlation also has implications regarding lifetime inequality, since the repetition of adverse events over the life cycle is likely to generate divergent income trajectories between individuals. WP2.2 will then estimate the importance of life-events in the overall earnings dynamics (transitory vs. permanent shocks, heterogeneity by income and socio-demographic groups).

WP#3: Comparison between France and the Netherlands

In the last work package, we replicate the results obtained in the Dutch context (WP1 and WP2) in the context of France. We use as much as possible the same types of data and empirical strategies, in order to be able to draw conclusion on the importance of context regarding the incidence and effect of events. In WP3.1, we construct an event data for France, and compare it to the one constructed in WP1.1 to study the incidence of events, and their correlation over time. In WP3.2 we compare the effect of life events in both countries, focusing on how the differences in the tax-and-transfer systems lead to differences in the degree of insurance provided for each type of event.

Impact and dissemination

Impact: LELI contributes to the "Axe D.3" of the AAPG 2024 by **providing an assessment of how adverse events are shaping individual economic trajectories and income inequality**. We consider an unprecedently large set of events – **demography, employment and health** related – encompassing most potentially life changing events. We analyze the effect of events on individual income but also the extent to which those effect are dampened by family insurance as well as governmental insurance, trough taxes, **social protection** and transfers. LELI will thus provide evidence-based support to policy-makers i) to better identify events that are not well insured and their cumulative role in the formation of lifetime inequality, ii) to design more efficient public policies **to protect individuals impacted by correlated adverse events and thus contribute to a measurable reduction of economic inequalities**.

Scientific dissemination: The LELI team intends to produce 7 research papers, that will be presented and discussed in prominent economic seminars and workshops. Further, the team will organize two scientific events: a one-day workshop at the midpoint of the project and a broader two-day conference at the end, that will be open to policy-makers and to a wide public. The one-day workshop will be seamlessly integrated into the annual conference of AFEPOP, the recently established French Association of Population Economics, in which the PI plays a pivotal role as a founding member and member of the directorate committee. Most members of our team are actively engaged in international research networks and projects that exhibit substantial overlap with the objectives of LELI. This collaborative environment will not only foster dynamic progress within the project but also lay the groundwork for potential future extensions.

Open Science: Furthermore, our project is committed to adhering to an Open Science approach. The PI actively collaborates with the Open Data Infrastructure in the Netherlands (ODISSEI) and plans to establish connections with similar networks in France. To ensure transparency and accessibility, all project codes and materials will be made available and regularly updated on a dedicated Git repository.

Societal impact: Our team operates in institutions that are at the forefront of both cutting-edge research and the dissemination of findings to policymakers and the broader public. As a natural extension of our research endeavors, the papers generated through LELI will be distilled into concise policy papers, suitable for platforms such as Vox-EU, IPP notes, and CPB policy briefs. These policy papers are designed to initiate discussions with citizens, journalists, and policymakers alike.

II. Partnership (consortium or team)

Coordinator: Simon Rabaté. Researcher at the French Institute for Demographic Studies (Ined) since 2021 and associate economist at the Netherlands Bureau for Economic Policy Analysis (CPB, The Hague) since 2018 and at the Institute of Public Policies (IPP, Paris) since 2016. He is an applied economist, specialized in the fields of public, labor and population economics. He has already produced a large body of literature directly in line with the LELI project, in two main directions. First, he has extensively studied the effect of life events on income trajectories, in analyses of retirement such as retirement [14], child birth [15] or spousal death [16]. Second, he has made several contributions to the inequality literature [5,12], with a focus on its lifetime dimension trough the analysis of redistribution in the pension system [4]. His work has been published in leading generalist and top field economic journals (including the *Journal of Public Economics, American Economic Journal: Economic Policy)* as well as French journals. The link between public policy, scientific knowledge and public debates is at the heart of his research agenda and activities, as illustrated by the dissemination of scientific research through policy briefs -- both in France and the Netherlands --, blog and media interventions.

Team: The PI will team up with 4 researchers that are promising young researchers with international profiles from both France and the Netherlands. Of particular significance is the established history of extensive and successful collaborations between the PI and all team members. This pre-existing synergy and familiarity among the team ensure a solid foundation for the envisioned team organization, fostering effective teamwork and the seamless integration of their complementary skills and knowledge. **Julie Tréguier** (Researcher, DIW Berlin) who has worked with both French and Dutch data on themes directly related to LELI project (WP1 & WP2), **Marianne Tenand** (Researcher, CPB and EUR) who will bring expertise on health economics and equity measurement (WP1, WP2 and WP3), **Wiljan van der Berge** (Assistant Professor, Utrecht and CPB) with essential knowledge on the Dutch context and data (WP2), and **Maxime Tô** (Researcher, IPP Paris) who will provide the team with expertise regarding micro-econometrics and the French tax data (WP3). The team will be completed by a post-doctoral researcher (FTE for 36 months), who will carry out analyses on both French and Dutch data. An advisory board composed by **Antoine Bozio** (EHESS and IPP) and **Egbert Jongen** (Leiden University and CPB), two senior economists and renowned experts of tax and transfer systems, will provide guidance and advice along the course of the project.

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