

## **Title: “Acute health shocks and long-term effects on labour market outcomes”**

### **Authors:**

Irene Simonetti<sup>1</sup> (speaker), irene.simonetti@unive.it, +39 328 8280258

Michele Belloni<sup>123</sup>, michele.belloni@unive.it, +39 041 234 9155

Francesca Zantomio<sup>14</sup>, francesca.zantomio@unive.it, +39 041234 9233

### **Affiliations:**

<sup>1</sup> Ca' Foscari University of Venice, Venice, Italy.

<sup>2</sup> Network for Studies on Pensions, Aging and Retirement (NETSPAR), Tilburg, The Netherlands.

<sup>3</sup> CEnter for Research on Pensions and welfare Policies (CERP), Collegio Carlo Alberto, Torino, Italy.

<sup>4</sup> Health Econometrics and Data Group (HEDG), University of York, York, United Kingdom.

**Topic of the paper:** Health, Labour and the social security system  
Administrative data for health economic research

**Presentation format:** Oral session

### **Extended abstract:**

The aim of the paper is to evaluate the *long-term effects* of specific cardiovascular diseases on different labour market outcomes such as hourly wages, labour income and employment opportunities. Having a short-term perspective can often hide further dynamics related to the recovery of health capital or its substitution (possibly by retraining) with other forms of human capital.

The first similar attempt in the literature has been done by Charles (2003): the paper uses data from the Panel Study of Income Dynamics (PSID) to study the dynamic effects of disability on earnings. According to this study “disabled man” are found to experience an heavy drop in earnings immediately after the date of the onset (partially started even before), followed by a sharp recovery one/two years after. Overall, long-term losses in expected annual earnings have been found. Then, additional works have investigated in the same direction proposing different research designs: Dano M. (2005) introduces his idea of *exogenous health shock* exploiting road accidents and following treated and control groups up to six years; Garcia-Gomez et al (2013) instead, uses a similar approach but focussing on all the types of *severe* hospitalizations lasting more than three days.

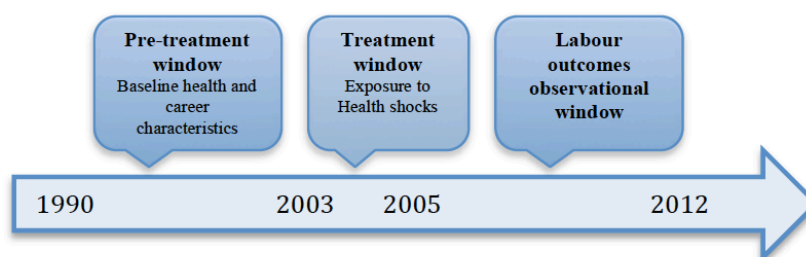
The present paper fits perfectly into the aforementioned literature bringing *many contributions*: i) increasing the long-term observational period up to seven years; ii) exploiting new Italian administrative data; iii) having a specific attention on acute forms of CVD diseases (codes ICD-IX: 410-414 and 430-438); iv) and finally focussing on the *thorny* Italian labour market.

Our study uses a new administrative record that is the result of the linkage of two datasets: “WHIP”, a longitudinal database of work histories between 1990 and 2012 with SDO data (Schede di Dimissione Ospedaliera), an hospital discharge register where all information from the Italian Ministry of Health are available between 2001 and 2012.

Figure 1 summarizes the adopted research design. The time-span between 1990 and 2002 is the *pre-*

*treatment* period where baseline health and career characteristics have been collected; the time frame between 2003 and 2005 is the *treatment* window where exposure to the shock has been observed; and finally the window between 2006 and 2012 is the observational period of labour market outcomes.

Figure 1 – Research design



According to the “*conditional independence assumption*” controlling for observed covariates is enough to consider as random the probability to receive the treatment (the occurrence of the health shock in our case), or not. By following this assumption our identification strategy combines two different approaches: in the first step *non-parametric techniques* (i.e. stratification and entropy balance matching) are applied to reach the balance between treated and control groups; instead in the second step, (preliminary) *parametric estimates* have been implemented to observe trends of the “average treatment effect on treated (ATT)”.

*Preliminary results* show an interesting U-shaped long-term trend in the probability of being active on the labour market, either as employee, self-employed or atypical worker. A possible explanation is that after some initial difficulties, likely more pronounced given the type of health shock considered, recovery of health and/or skills adjustments can encourage re-employment on the job-market. Moreover a strong reduction in annual labour income has been also found. The last result is fully consistent with the increasing probability for treated individuals to switch from full-time to part-time contracts. Finally, *ex-ante* expectations on hourly wages suggest possible long-term negative effects related to job changes and/or transactions to other firms/employers.

Further analysis has to be done both to test the latter hypothesis and to improve reliability of aforementioned estimates. Placebo tests on treatment and outcomes will be also run, followed by heterogeneous analysis mainly by age and on a more accurate classification of diseases.