



# Institutions, health shocks and labour market outcomes across Europe

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## ABSTRACT

This paper investigates the relationship between health shocks and labour market outcomes in 9 European countries using the European Community Household Panel. Matching techniques are used to control for the non-experimental nature of the data. The results suggest that there is a significant causal effect from health on the probability of employment: individuals who incur a health shock are significantly more likely to leave employment and transit into disability. The estimates differ across countries, with the largest employment effects being found in The Netherlands, Denmark, Spain and Ireland, and the smallest in France and Italy. Differences in social security arrangements help to explain these cross-country differences.

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## 1. Introduction

The increase in the rates of recipients of disability support observed during the 1990s in almost all OECD countries has raised concerns about the labour outcomes of people with adverse health (OECD, 2003). The relevant policies often try to satisfy two possibly contradictory goals. On the one hand, they have to guarantee that individuals who are or become disabled do not endure economic hardship, and thus provide some insurance for the potential income losses. On the other hand, they also aim to avoid the exclusion of disabled individuals from the labour market by, among other measures, encouraging participation. Therefore, such policies should be designed to ensure that the incentives to work relative to being unemployed or collecting disability benefits are high. Good evidence on the magnitude of the impact of ill-health and disability on employment is needed in order to re-think the balance between income protection and incentives for labour force withdrawal. This paper aims to provide comparable evidence of the causal effect of ill-health on remaining into employment and transiting into unem-

ployment, disability or retirement for the working-age population of nine European countries.

The literature has mostly focused on older workers (Currie and Madrian, 1999). There is evidence from both Europe and North America that worsening health is correlated with an increased likelihood of retirement for individuals over 50 years old (Au et al., 2005; Bound et al., 1999; Disney et al., 2006; Hagan et al., 2009; Jones et al., 2010). Studies that, like the present one, focus on employment effect of ill-health at younger ages are more scarce. Pelkowski and Berger (2004) use the American Health and Retirement Survey and find that permanent adverse health conditions reduce both wages (8.4% for males and 4.2% for females) and hours worked (6.3% for males and 3.9% for females). Moreover, they found that the decrease in employment and wages is larger for prime-age individuals, as the peak of loss of wages after the onset of a permanent illness occurs at ages 40–49 for males (wages are 12.1% lower) and 30–39 for females (wages are 9.2% lower). García-Gómez et al. (2010) find that general health affects both entries and exits from employment with the magnitude of the effects being similar for younger and older individuals (16–49 compared to 50–64).

Two recent studies have used accidents as unforeseen sudden changes to identify the causal effects of health shocks on labour market outcomes. Lindeboom et al. (2006) estimate an event history model for transitions between work and disability states and find that the effects of an accident on employment are not direct,

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but rather act through the onset of a disability. In addition, they find that the onset of a disability at age 25 reduces the employment rate at age 40 with around 14 percentage points. *Dano (2005)*, using propensity score matching techniques as the present study, finds that there are both short and long run effects on the probability of being employed for Danish males after being injured in a road accident, and that this effect holds even when individuals receiving disability benefits are excluded from the analysis. Using also propensity score matching techniques, *García-Gómez and López-Nicolás (2006)* analyse the effects of a sudden drop on self-assessed health in Spain on the probability of leaving employment and transiting out to different states for the Spanish population. They find that suffering a health shock decreases by 5% the probability of remaining in employment and increases by 3.5% the probability of transiting into inactivity.

Thus previous literature seems to confirm the existence of an effect of health events on labour market outcomes, but there is a lack of consensus on their magnitude. Our contention here is that the international differences in estimated effects partly reflect the emphasis that each country places on the two potentially conflicting goals of protecting income and encouraging participation mentioned above. This paper attempts to contribute to this area of research by estimating the effects of health shocks on a set of labour outcomes for different European countries using an homogeneous dataset and definition across countries, and subsequently relating the differences in estimates to variations in institutional factors across these countries.

Estimation of the causal effect of ill-health on labour outcomes is plagued with potential biases (*Lindeboom, 2006*). The identification strategy is inspired, among others, by *Smith James (2004)*. He uses longitudinal information for representative samples of the US population in order to condition on past health shocks before evaluating current changes in labour status and income. In this paper the best source of longitudinal information on health and socioeconomic characteristics for the European population is used: the European Community Household Panel (1994–2001, hereafter ECHP). We condition on past health and labour status to evaluate the effects of changes in health. We provide evidence on two alternative definitions of health deterioration or health shock: a sudden drop in self-assessed health and the onset of a chronic condition. Following others (*Lechner and Vázquez Álvarez, 2004; Frölich et al., 2004; Dano, 2005; García-Gómez and López-Nicolás, 2006*), we match individuals who experience a health shock with others who do not.

This paper contributes to the existing literature in several respects. First, it extends the knowledge of the relationship between health and labour outcomes on the working population, using a homogeneous empirical framework for nine European countries (Denmark, Netherlands, Belgium, France, Ireland, Italy, Greece, Portugal and Spain). Second, this homogeneous framework allows us to formulate hypotheses regarding the role of the differences in social security arrangements across these countries in the difference across estimates. To the best of our knowledge there is no other work containing this type of comparative analysis for the countries concerned. In addition, we use two different definitions of ill-health and analyse both the effects on employment of a drop in self-assessed health and the onset of a chronic condition. This provides evidence regarding the relative importance of the health variable chosen in explaining the effects of health on labour outcomes.

The results suggest that there is a significant effect of health on the probability of employment: individuals who incur a health shock are significantly more likely to leave employment than those who do not. As expected, differences in the estimates emerge across European countries, with the largest employment effects found in

Ireland, The Netherlands, Denmark and Spain, and the smallest in France and Italy. The reduction in the likelihood of employment is paralleled by an increase in the probability of inactivity. This should be a cause for concern, as the outflow from inactivity into work is known to be close to zero (*OECD, 2003*).

## 2. Institutional background

After the onset of a health condition, an individual can follow any of several routes (*Aarts et al., 1996*): (i) work; (ii) early retirement (only available for older workers); (iii) traditional disability insurance schemes (sickness, general disability and work injury); (iv) unemployment; (v) means-tested schemes for those not eligible for any other option. This implies that it is not only disability policies but also the set of incentives provided by the wider social security system that determine the labour consequences of a health shock.

In order to obtain a better picture of the relevant differences between countries, *Table 1* summarises the main features of the social security system in the interrelated spheres of disability, unemployment and retirement. Note first the striking differences in the way in which countries establish eligibility criteria for disability benefits. Some countries define disability in terms of a reduction in the individual's work capacity (Denmark, Ireland, Italy and Spain), while others do so in terms of a reduction in earnings capacity (Belgium, France, Greece, The Netherlands and Portugal). But even among countries that use the same concept, the minimum level of disability that entitles individuals to receive benefits varies widely: from 15% in The Netherlands to being permanently incapable of work in Ireland (*OECD, 2003; European Commission, 2004*). *Table 1* also shows that some countries apply mandatory quotas obliging employers to have a certain proportion of disabled workers among their employees (7% Italy, 6% France, 2% Spain), or some sectors (3% in the public sector in Ireland and 5% for new recruitment in the public sector in Portugal). These quotas are absent in Denmark, The Netherlands and Belgium. Concerning measures aimed at integrating disabled individuals into the labour market, most countries allow a certain accumulation of disability benefits with earnings from work. The only exception is Ireland, where the invalidity pension requires permanent full incapacity (*European Commission, 2004*).

Following the analysis in *OECD (2003)*,<sup>1</sup> the main components of the disability system can be summarised into two dimensions. The “compensation” dimension reflects the characteristics of the main disability benefit scheme (coverage, minimum disability level, disability level for a full benefit, maximum benefit level, permanence of benefits, medical assessment, vocational assessment, sickness benefit level, sickness benefit duration and unemployment benefit level and duration). The second is the “integration” dimension, which reflects all the employment and rehabilitation measures (coverage consistency, assessment structure, employer responsibility for job retention and accommodation, supported employment programme, subsidised employment programme, sheltered employment sector, vocational rehabilitation programme, timing of rehabilitation, benefit suspension regulations and additional work incentives). Of the group of countries considered here (and included in the OECD study), Denmark would be the country in which the integration component is the highest, whereas the lowest levels are found in Italy and Portugal. The champions in the compensation dimension are Portugal, Spain and

<sup>1</sup> In *OECD (2003)* the authors consider a different group of countries that did not include Ireland and Greece. We conjecture that these countries belong to the same cluster as the Mediterranean countries.

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