



## Partial disability and labor market adjustment: The case of Spain<sup>☆</sup>



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### ABSTRACT

Although partially disabled individuals in Spain are allowed to combine disability benefits with a job, the empirical evidence shows that the employment rate of this group of individuals is very low because they have much lower job finding and higher job separation rates than nondisabled workers. Moreover, a decomposition analysis of the equilibrium employment rate shows that the differences in the job finding rates explain 85 percent of the disabled employment gap. To explain these facts, we construct a labor market model with search intensity and matching frictions to identify the incentives and disincentives to work in Spain from the point of view of both disabled workers and employers. According to the model, the high employment rate gap observed between nondisabled and disabled individuals can be partly explained by the presence of a lower level of productivity among disabled individuals that discourages them from looking for jobs. In terms of policy interventions, sensitivity analysis shows that, since the disability condition is permanent, one-off subsidies in new hired positions have a much lower impact on the employment rate and welfare of disabled individuals than long-term policies.

### 1. Introduction

Disability policies have recently attracted attention, particularly in OECD countries, because they represent an important share of public spending and also because societies are increasingly concerned about the need to promote the integration of people with disabilities. For these reasons, the possibility of increasing the number of disabled individuals who work is regarded as a good strategy to decrease pressure on the financial stability of social security systems as well as to achieve the social integration of people with disabilities (OECD, 2007).

The impact of disability regulations on the employment of disabled individuals has been documented in a recent book by Burkhauser and Daly (2011) and in several papers for the case of the U.S. (Autor and Duggan 2006, 2007, 2008; Autor et al. 2011; Benítez-Silva and Heiland, 2007, 2008). With regard to the U.S. Social Security Disability Insurance (SSDI) program, researchers seem to agree that the disability program rules and, in particular, its work-contingent

basis, have been the main explanation for the reported decline in the employment rates of individuals with disabilities. That is, individuals stop working to qualify for disability benefits even though they maintain some capacity to work. In line with this, the promotion of the employment of disabled individuals is particularly relevant for the Spanish case because, unlike other disability systems in developed economies, the Spanish system is not contingent on working status and, therefore, allows partially disabled individuals to work while they receive disability benefits. The puzzle is, however, that employment rates for this group of disabled individuals are very low: the country reported an average employment rate of just 13.6 percent for people with partial disability from 2001 to 2011, which contrasts with the observed rate for nondisabled employees (75.3 percent)<sup>1</sup>. This suggests that, even in non-working contingent programs, hiring and fiscal regulations regarding disabled workers can generate disincentives to work.

Therefore, in this paper we analyze the incentives and disincentives to work in Spain from the point of view of both disabled individuals and

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<sup>1</sup> Independently of the disability benefits system, in the majority of developed countries there is a similar employment gap between nondisabled workers and those that self-report as disabled. While the average employment rate for self-reported disabled individuals was 45% in the U.K., 40% in the U.S. and 37% in Spain, the employment rate for nondisabled individuals was 81% in the U.K., 84% in the U.S. and 70% in Spain in the same period (late 2000s) (OECD, 2010).

employers. The central goal of the study is twofold: (i) identify how differences in workers' characteristics explain the low employment rates of partially disabled individuals vis-à-vis their nondisabled counterparts; (ii) analyze the sensitivity of the employment rates to changes in the parameters of the Spanish disability system. The final aim is to reach some conclusions about the types of policy initiatives that might be more effective in increasing both individual incentives to work as well as employers' incentives to hire disabled workers.

To do this, we consider a search and matching model of individuals with disabilities and their interaction with nondisabled individuals in the search for jobs. We also include in the model the hiring decisions made by companies and the incentives available in the legislation to hire disabled workers. We assume that, due to their disabling condition, disabled workers are, on average, less productive and incur in higher job-search costs than nondisabled individuals. The presence of a productivity gap between disabled and nondisabled workers has been documented in Malo and Pagan (2012).<sup>2</sup> These authors demonstrate that between 68 and 74 percent of the Spanish wage differential between nondisabled and disabled workers is due to differences in worker characteristics.<sup>3</sup>

We calibrate and simulate the model to match a number of stylized facts observed in the administrative data provided by the Spanish Social Security Administration (the Continuous Sample of Working Lives). Our simulated model helps to understand the differences between disabled and nondisabled workers. Specifically, it simulates an employment rate of 22.2 percent among disabled workers, which is much lower than the observed rate for nondisabled individuals (75.3 percent). The model also shows that, for disabled workers, the job finding rate is much lower and the job separation rate is higher than for nondisabled workers. All these results are in line with the Spanish data.

According to the model, the high employment rate gap observed between nondisabled and disabled workers can be partially explained by the presence of a lower level of productivity among disabled individuals that discourages them from looking for jobs, generating a search intensity gap of 31 percentage points between disabled and nondisabled individuals.

In terms of policy interventions, the sensitivity analysis shows that the employment rate gap between disabled and nondisabled workers can be considerably reduced by decreasing the disability benefits for unemployed workers, by increasing the disability benefits for disabled employees, by increasing the deduction to Social Security contributions paid by the employer, or by increasing the tax deduction for disabled workers. In contrast, the model shows that lump-sum hiring subsidies have a much lower impact on the employment rate and welfare of disabled individuals. This is important because it suggests that, since the disability condition is permanent, these policies should be more focused on introducing subsidies to keep the disabled workers in the firm rather than to hire them.

As far as we know, no papers in the literature have used structural models to analyze the matching problems in the labor market for individuals with disabilities.<sup>4</sup> However, two studies analyze the labor supply behavior of individuals with disabilities using life-cycle models in the United States: Benitez-Silva et al. (2010) and Yin and Benitez-Silva (2009). Both studies focus on the U.S. economy, where the disability system does not allow disabled individuals to combine benefits with a job, which is very different from the Spanish system.

<sup>2</sup> This paper uses the Oaxaca-Blinder wage decomposition method for Spain and other European countries.

<sup>3</sup> Because the authors use data from the European Community Household Panel survey, they define disabled workers as "individuals that are hampered in their daily activities."

<sup>4</sup> A paper by Silva and Vall-Castello (2012a) estimates a structural labor supply job search model to reproduce the behavior of disabled individuals. However, the paper does not include the interactions between disabled and nondisabled individuals and it also neglects the role of employers.

Furthermore, these studies do not consider interactions with nondisabled workers or the role of employers. In our model, we include search intensity and matching frictions because we think they play a central role in determining employment outcomes of disabled individuals. With respect to the empirical evidence on the labor market behavior of disabled individuals, the literature analyzing the U.S. system is extensive (see Autor and Duggan (2006, 2007, 2008); Autor et al. (2011); Burkhauser and Daly (2011), among others), but still rather limited for the Spanish case (Cervini-Plá et al., 2015; Malo and Pagan 2012; Marie and Vall-Castello 2012; Vall-Castello 2012; Malo et al. 2011).

In the next section, we present the main policies of the Spanish Disability System that have been included in our model. Section 3 describes the database, shows the evolution of labor market variables, and presents the decomposition analysis of the equilibrium employment rate. Section 4 shows the theoretical model and describes the timing of the events. Then, in Section 5 we calibrate the model in the steady state at annual frequency to be consistent with certain empirical Spanish labor market facts. The benchmark simulated results are presented in Section 6, while Section 7 shows the sensitivity analysis with respect to the workers characteristics and policy parameters. Section 8 presents conclusions.

## 2. Main features of the Spanish system of disability benefits

As shown in Table 1, there are currently three main economic incentives for employers to hire disabled workers in Spain. First, there is a lump-sum subsidy of 3,906.58 euros for each disabled worker hired (this amount is adjusted proportionally for part-time contracts). Second, employers can benefit from deductions to Social Security contributions. These deductions are linked to the worker's gender and the intensity of the disability. In general, they are 4500 euros per year. The third element is another subsidy aimed at adapting the working space to any special needs the disabled worker may have. The maximum amount of this subsidy is 902 euros and it is only paid once for each contract.

With respect to the economic incentives for disabled workers, the Spanish Social Security Administration defines permanent contributive disability insurance as the economic benefits to compensate individuals for losing a certain amount of wages or professional earnings when affected by a permanent reduction or complete loss of their working ability due to the effects of a pathologic or a traumatic process derived from an illness or an accident.

To capture the different situations in which a person might be after experiencing a disabling condition, the Spanish Social Security Administration uses a classification of three main degrees of disability that depend on the working capacity lost.<sup>5</sup>

- 1) Partial disability (57 percent of claimants): individuals are unable to develop all or the fundamental tasks of their usual job or professional activity, but they are still capable of developing a different job or professional activity.
- 2) Total disability (40 percent of claimants): individuals are unable to develop any kind of job or professional activity.
- 3) Severe disability (3 percent of claimants): individuals who, as a result of anatomic or functional losses, need the assistance of a third person to develop essential activities of daily living, such as eating or moving.

As the aim of the paper is to analyze the incentives and disincentives to work provided by the disability system in Spain, we focus

<sup>5</sup> There was a fourth degree of disability benefits (permanent limited disability), but this type of benefit has been discontinued and it only consisted of a one-time lump-sum payment.

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