



## Promoting employment of disabled women in Spain; Evaluating a policy

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### ABSTRACT

Even though the Disability System in Spain is designed to allow partially disabled individuals to combine the receipt of the benefits with a job, their employment rates have remained very low since 1996. The aim of this paper is to evaluate the results of an employment promotion policy introduced in Spain in 2004 which increased the deductions to the Social Security contributions paid by employers that hired disabled women. We apply difference-in-difference models and estimate a recursive bivariate probit model to evaluate the existence of shifts in employment trends in the women relative to the men sample conditioning on the existence of preexisting trends. We find that the impact of the policy is significant and we estimate an average elasticity of employment of 0.14 for partially and of 0.08 for totally disabled women relative to the deductions in the employer Social Security contributions. Finally, when we extrapolate the results beyond our sample, we estimate that 7100 disabled women were able to find a job in Spain due to the policy with an associated cost of 10,997.900 euro for the government.

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### 1. Introduction

Many OECD countries have tightened the conditions to access the unemployment and social assistance schemes while, at the same time, early retirement schemes have been limited (or even abolished) because of their well-documented disincentives to work. These events have resulted in increasing numbers of pre-retirement individuals entering the disability schemes which, together with the aging process of the population and the economic crisis, raises concerns about the mid-term effects of disability expenses on the government's budget (OECD, 2007a, 2007b, Benitez-Silva et al., 2010). On the other hand, several studies have stressed the need to promote the labor market integration of disabled individuals as a way of facilitating their broader integration in the society (OECD, 2003). For these reasons, the possibility of increasing the number of disabled people that work is regarded as a good way to both decrease the pressures on the financial stability of the social security system and to reach the social integration of disabled individuals.

A number of policy initiatives have been introduced in different countries in order to promote the integration of disabled workers into the labor market (employment quotas, subsidies, antidiscrimination legislation, deductions to the social security contributions) but the literature analyzing the effects of these policies seems to suggest

that the employment effects are relatively small (if they exist). For example, Wagner et al. (2001) analyze the impact of employment quotas on job dynamics in 400 small firms in Germany and they find no effect of the quota threshold whereas Lalive et al. (2009) estimate an elasticity of substitution between disabled and non-disabled workers of 2.4 for employment quotas in Austria. Similarly, a number of studies have focused on the employment effects of anti-discrimination legislation (ADA; American with Disabilities Act in the USA and the Disability Discrimination Act in the UK) and have found opposing results. On the one hand, DeLeire (2000), Acemoglu and Angrist (2001) and Beegle and Stock (2003) conclude that ADA has not increased employment for disabled individuals in the USA and Bell and Heitmueller (2005) find similar results for the UK. On the other hand, Jolls and Prescott (2004) and Jolls (2004) find that the main effect of ADA was to increase the returns on education which, in turn, raised education participation of disabled individuals as well as their employment prospects.

Therefore, this paper tries to shed some light to this debate by studying one of these policies that was introduced in Spain in 2004 to promote employment among disabled women. In particular, we apply difference-in-difference methods to evaluate the employment effects of an increase in the deductions of employer's social security contributions to hire disabled women. In order to do that, we first explore the characteristics and evolution of the labor market participation of disabled individuals in Spain from 1996 until 2007. We realize that employment trends between men and women in our sample are not homogeneous before the implementation of the policy in 2004 so that the basic assumption of traditional difference-and-difference

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models would not be fulfilled. Therefore, we apply a new econometric model introduced by Autor and Duggan (2008) to analyze the effectiveness of the policy measure conditioning on any preexisting trends.

The present work contributes to the literature in two dimensions. First, by analyzing the employment effects of the policy in 2004, we get a measure of the elasticity of employment for partially and totally disabled women relative to the deductions in the employer social security contributions, which has never been calculated before. Second, it fills in the information gap existing in Spain with regards to the labor market behavior of disabled individuals and its evolution over time. There are only three cross-sectional surveys focusing on disabled individuals in Spain and only one of them pays special attention to the relation between disability and work. Therefore, there is a lack of information on employment rates of disabled individuals and their movements over time. To the best of our knowledge, we are the first ones to use a longitudinal administrative database on disability pensions (Muestra Continua de Vidas Laborales) to shed some light on the composition and labor market situation of permanent disability pensioners and to perform an evaluation of an employment promotion policy for disabled individuals in Spain.<sup>1</sup>

Our results show an average elasticity of employment of 0.08 for totally disabled women with respect to the deductions to the Social Security contributions paid by the employer and an elasticity of employment of 0.14 for partially disabled women. However, we realize that there are important non-linear effects in the implementation of this type of policies so that we do not claim the generalization of our results to increases in the deductions of different size. If we extrapolate the results of our model to the Spanish population, we estimate an increase in employment by 1775 totally and by 5325 partially disabled women in Spain due to the policy, with an associated cost of 10,997,900 euro for the government.

The rest of the paper is structured as follows. The next section describes the disability system in Spain and the reform of 2004, Section 3 explains the database and Section 4 the econometric approach. Section 5 outlines the results of the estimation while some robustness checks are performed in Section 6 and the conclusions are presented in Section 7.

## 2. The disability system and the reform

The OECD published a report in 2007 in which the promotion of employment for disabled individuals was identified as the most “formidable” challenge facing the Spanish government with respect to disability policies. Employment rates of individuals with a disability in Spain have remained quite low at a 30% level, which is one of the lowest in the OECD. These low employment rates have occurred despite a GDP growth which has been quite high at around 2–6% for the last decade until 2008 and a general unemployment rate which has dropped from 20% to 9.2%. Therefore, it seems clear that good economic conditions are not enough to improve the labor market integration of disabled individuals in Spain and that some policy initiatives are necessary to help disabled individuals benefit from a booming business cycle environment.

The disability system in Spain is divided between sickness leave (temporary disability) and permanent disability.<sup>2</sup> Permanent

**Table 1**  
Eligibility rules and amount of disability benefits.

Source of the disability	Eligibility	Amount: regulatory base + percentage	
	Years contributed	Regulatory base: average wage	Percentage
Ordinary illness	1/3 time between 20-disabled minimum 5 years	Last 8 years of work	150% if severe disability 100% if total disability 55–75% if partial disability
Work-unrelated accident	0	24 months chosen of last 7 years of work	
Work accident or professional illness	0	Last year work	

contributive disability pensions are defined as the economic benefits that aim at compensating the individual for losing a certain amount of wage or professional earnings when the person is affected by a reduction or a complete loss of his/her working ability in a way that is assumed to be permanent due to the effects of a pathologic or traumatic process derived from an illness or an accident.<sup>3</sup>

In order to capture the different situations in which a person can be after suffering from a disabling condition, the Spanish Social Security administration differentiates between four degrees of disability that depend on the amount of working capacity that has been lost; Limited disability, partial disability (PD), total disability (TD) and severe disability. As our interest lies on the effectiveness of a policy initiative in increasing employment of disabled individuals, we restrict our analysis to disabled individuals in the partial and total disability schemes, which represent 97% of all disability claimants in Spain.<sup>4</sup> Partial disability is given to individuals who are unable to develop his usual job but who are still capable of developing a different job whereas total disability is given to individuals who are unable to develop any kind of job.

We have included total disability holders in the analysis because, even if these individuals have more restrictions to work, we observe in the data that some of them do work.<sup>5</sup> We do not include Limited disability holders because they are allowed to continue in their previous job and the benefit given is paid in only one installment so that there are no incentives/disincentives to work to analyze. The amount of pension received varies according to the disability degree in which the individual is classified and is explained in Table 1 below.

Table 2 contains a summary of the major reforms implemented by the Spanish central government in order to provide incentives for firms to hire disabled individuals. The majority of these incentives were first established in 1983 by the law “Ley de Integración Social de los Minusválidos” (Social Integration of the Disabled). The LISMI, as it was later called, set up the basic pillars of public policies toward disabled individuals in terms of anti-discrimination and employment promotion measures. As employment promotion measures, it established a subsidy for each disabled worker that the firm hired as well as a 70% deduction of the social security contributions for each disabled worker younger than 45 years old that was hired and a 90% deduction if the individual was older than 45 years old.

<sup>1</sup> We are aware of only one paper by Malo et al. (2007) that uses Spanish data and focuses on the possibilities for disabled individuals to combine the receipt of the benefits with the development of a job. However, that paper uses a cross-sectional sample for 2006 and is mainly a descriptive study which does not include any analysis of employment promotion policies.

<sup>2</sup> In this paper, we only focus on contributive pensions due to data availability problems for non-contributory pensioners and the idea that disabled individuals that have worked before are in a better position to find a new job. Also, the non-contributory disability system is comparatively smaller in size (205,319 people received non-contributory disability benefits in Spain in 2007) compared to the contributory system (868,026 people).

<sup>3</sup> Own translation from the definition of the Spanish Social Security administration; [www.seg-social.es](http://www.seg-social.es).

<sup>4</sup> Only 0.4% of claimants in 2007 were classified as Limited Disability. Partial Disability holders represented 57%, Total Disability 40% and Severe Disability 2.6% of claimants in 2007.

<sup>5</sup> When the Social Security defines the compatibilities of the benefits, it states that the receipt of a total disability pension will not impede the development of those activities (both paid and unpaid) that do not represent a change in the working ability of the individual.

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