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Malo, Miguel A. and Pagan, Ricardo

Universidad de Salamanca, Spain, Universidad de Malaga, Spain

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Hiring workers with disabilities when a quota requirement exists: The relevance of firm's size

Miguel A. Malo
Universidad de Salamanca (Spain).

Ricardo Pagán
Universidad de Málaga (Spain).

Abstract

We evaluate the impact of a mandatory quota of workers with disabilities using a sharp regression discontinuity design. We use data from a panel of Spanish firms where there is a mandatory quota of 2 per cent for firms with 50 or more workers. Non-parametric estimations show that strictly beyond the cut off of 50 workers there is an increase of 1.4 points in the percentage of workers with disabilities in the firm, just fulfilling the quota of 2 per cent. However, this effect has some lack of precision. In addition, for larger firm's sizes the variation in the percentage of workers with disabilities will be more related with differences in firms' characteristics.

Keywords: Employment quota, disability, firm's size, regression discontinuity.

JEL Classification: J78; J88; I18; J21

Corresponding author:

Miguel Á. Malo
Department of Economics and Economic History
University of Salamanca
Edificio FES – Campus 'Miguel de Unamuno'
37007 Salamanca (Spain).
Telephone: +34 923 29 46 40, Fax: +34 923 29 46 86.
E-mail: malo@usal.es

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1. Introduction

It is a common place to remark the low employment rates of people with disabilities. At international level, there are different labour market policies to promote their access to the labour market as financial hiring incentives for firms, specialized labour market intermediation services, etc. One of them is the mandatory fulfilment of a minimum percentage of workers with disabilities in firms above a specific size. In this article, we evaluate the impact of such policy in Spain.

According to OECD (2003) mandatory quota schemes are relatively frequent, usually implementing legal regulations to promote employment of people with disabilities. A quota system consists of a specific minimum percentage of workers with disabilities respect to the total staff of the firm: 7% of the workforce in Italy, 6% in France and Poland, 5% in Germany, 4% in Austria, 3% in Turkey and 2% in Korea and Spain (Table A4.2 in OECD, 2003). Such percentages are only applicable to firms above specific thresholds, as 25 employees in Austria, 20 in France or 50 in Spain (OECD, 2003). Nevertheless, the same source stresses that the fulfilment of such mandatory percentages is not total and usually rather low (when data are available).

Employers usually argue that many jobs are in fact very difficult to fulfil with people with disabilities as they do not have accurate information about the real impact on productivity of all types of disability. Because of problems to enforce their quota schemes (even when relevant sanctions are in force), some countries allow firms to replace the mandatory quota by measures promoting social integration of people of disabilities, as donations or collaborations with organizations of people with disabilities (Germany and Spain are examples of this type of exceptions) or contributions as a sort of implicit tax to firms (as in Austria; Wuellrich, 2010).

Although the fulfilment of mandatory quota employment is a permanent claim of organizations of people with disabilities and there is a wide scepticism about its potential to foster employment of people with disabilities, there are very few evaluations of the impact of such measures. In this article, we provide an evaluation with Spanish data using a ‘Regression Discontinuity Design (RDD)’. Following the terminology of RDD this case is a ‘sharp’ discontinuity (Lee and Lemieux, 2010). RDD allows a relatively easy approach to such evaluation as the thresholds for being subject to the fulfilment of a quota scheme is arbitrary, mainly because as approaching to the discontinuity we will find almost identical cases (here, firms) above and below the threshold. Therefore, around the threshold we will have a sort of randomization of observations and, then, any difference in the outcome variable we are interested in (here, the percentage of workers with disabilities in the firm) will be strictly linked to be subject to the ‘treatment’ (i.e. being above the threshold) and not to any other variable (Imbens and Lemieux, 2008). Our results applying RDD shows that quota only improves the percentage of workers in the firm strictly around the threshold of the quota scheme. Anyway, such improvement is not usually enough to reach the fulfilment of the quota required by the Spanish law.

2. Literature review

There are few previous studies analysing the impact of the compulsory employment quota on the labour market integration of people with disabilities. In fact, most of them analyse legal aspects on the utilization of the quota or are merely descriptive (Yasui, 1995; Waddington, 1996; Thronton, 1998; Verdugo *et al.* 2001; and Hasegawa, 2007). Among these studies, it is worth noting the work of Hasegawa (2007) which compares the Japanese and American employment policies for people with disabilities. This author remarks that while the equality of opportunity approach practiced in the US

guarantees remedies against discrimination and allows for flexible responses to specific circumstances, it creates problems for employers attempting to predict what constitutes discrimination. On the other hand, the Japanese system, which has adopted an employment quota approach, is able to secure positive effects within certain parameters, but is characterized by an inadequate perspective on the equal treatment of people with disabilities and on prohibitions against their discrimination, and lacks a sense of association between disabilities and job performance.

The existing empirical literature evaluating the effects of employment quota is even sparser. The previous literature is limited to Wagner *et al.* (2001), Lalive *et al.* (2009) and Wuellrich (2010). Wagner *et al.* (2001) examine the impact of the threshold value of the German disability law on job dynamics in small firms. According to the German disability law, for establishments with 16 or more employees it demands that either six percent of all jobs must be occupied by disabled employees or the firm has to pay a penalty of DM 200 per month for every job that should have been occupied by a disabled worker but that is not. They use a panel data of 4000 establishments from all sectors of the economy in West Germany once in a year since 1993 (and about the same number of establishments in East Germany since 1996). According to their results, the first threshold of the German disability law does not seem to have the kind of strong negative influence on job dynamics in small firms that is often attributed to it in public debates. Furthermore, they pointed out that the amount of DM 200 an establishment has to pay (will save) as a penalty when crossing the threshold from below (above) is too small to act as an incentive. The new law effective from October 1, 2000 has increased the penalty up to DM 500 (if the share of disabled employees is below 2 percent) while at the same time rising the first threshold to 20 employees.

Lalive *et al.* (2009) and Wuellrich (2010) apply two different econometric techniques to the estimation of the effectiveness of the Austrian quota system. They use administrative records from two different sources: the Austrian Social Security database and the Austrian Federal Welfare Office. According to the Austrian legal regulation, firms have to hire at least one disabled individual per 25 non-disabled employees. Firms failing to comply with this obligation are subject to a tax for each unfilled quota slot. These tax revenues are used to subsidize firms that provide employment to disabled workers (regardless of whether they are subject to the employment quota). Applying the so-called interrupted time-series approach to identify the average treatment effect of the tax increase¹ on the number of disabled workers per firm, Wuellrich (2010) finds a significant positive impact of the Austrian system on the employment of people with disabilities. On the other hand, Lalive *et al.* (2009) uses a regression discontinuity approach (as in this article). They obtain that the quota promotes the employment of disabled workers in firms located at the quota threshold, in comparison to firms just below the quota threshold. As a result of the discontinuous nature of the noncompliance tax, firms exactly at the quota threshold employ 0.05 (20 % in relative terms) more disabled workers than firms just below the threshold. The employment quota leads to twice as much excess employment among large firms rather than among small firms. They also find that the quota boosts employment primarily among former employees of the firm. The quota also encourages firms to poach workers from other firms and to hire individuals who were not formerly employed.

¹ The employment quota in Austria works as an implicit tax on hiring not disabled workers if a worker with disabilities is required by the law. The Austrian quota system obliges firms to hire one person with disabilities per 25 not disabled workers. Firms that do not comply with this obligation are subject to a tax of currently € 213 per month and not hired disabled worker (Wuellrich, 2010).

3. Data

This research makes use of data taken from the Spanish database "*Encuesta de Coyuntura Laboral (ECL), (Survey of Economic Situation)*" for the period 2001-2008, which gathers information from Spanish firms. This survey is launched by the Spanish Ministry of Employment and Social Security and provides quarterly information on some aspects of the labour market such as, for example, number of employees, workers' mobility, lost working hours, some aspects of the labour relations (as the scope of collective agreements, for example), and the employers' expectations on the future evolution of employment.

From the third quarter of 2001, the questionnaire of this survey has included a set of questions concerning disabled workers in order to know some aspects on their integration in the labour markets. The first question included in this module is related to the number of individuals with disabilities who are working in the company at the end of the quarter. There is also a question on the utilization and demand of the firm for products or services from a "Sheltered Employment Centre" (in Spanish, *Centro Especial de Empleo*) or a self-employed disabled individual. The last question asks employers on the use of some type of monetary donations lead to develop active policy actions that promote the labour integration among disabled individuals. All these three questions were only asked employers the third quarter of each year from 2001 to 2006. From 2007 onwards, these questions were moved to the questionnaire of the fourth quarter and with some slight modifications. The first question on the number disabled individuals working in the firm did not change, whereas the others two were excluded from the questionnaire. However, new questions were included. The employers were asked whether they had hired some disabled worker in the last 3 years (*Yes/No*). When the answer was "*Yes*", they had to indicate whether they had received a reduction of the

company contributions in the Social Security costs for these workers with disabilities. In the case of a negative answer from the employers, they must indicate the reasons for this lack of contracts for disabled workers. The available answers are the following: a) He/She never thought about it; b) He/She thought about it but they had lower productivity than other candidates; c) He/She thought about it but they never found a disabled worker for the existing job vacancy; d) They never applied for a job vacancy or presented to any selection process; e) The firm has a certificate of exceptionality [to the quota system]. In the fourth quarter of 2008, a new possible answer was included: "*Other reasons*".

The sample used in this article comes from the third quarters of the years 2001, 2002, 2003, 2004 and 2005 and the fourth quarters of the years 2006, 2007 and 2008. Although ECL is a quarterly survey, as the special questionnaire on disability is only passed once a year we have only one observation per year. Nevertheless, the database is still a panel. The total number of firms interviewed in each quarter was around 12,000. Therefore, we have around 93,000 observations available in our covered time period (2001-2008). However, because of the questionnaire change introduced in 2007, in econometric estimations we only use data from 2001 to 2006 as we will explain in Section 5. The rationale is having a 'clean' comparison group of firms not using alternative measures to the quota system (which is only possible thanks to questions eliminated in 2007 onwards).

4. Descriptive analysis

Obviously, the main variable for our analysis is the percentage of people with disabilities respect to the total stock of workers. There are two key figures in our analysis: the threshold for being subject to the quota scheme, a stock of 50 workers in the firm; and the quota, 2 per cent. However, not reaching 2 per cent is not necessarily

an illegal situation as there are alternative measures to quota fulfillment and, in some cases, certificates of exceptional situations for some jobs where almost any disabled person is not suitable for them².

Table 1 shows that on average the percentage of workers with disabilities is 1.23, clearly below the quota scheme. However, this average also includes firms not subject to the quota scheme. Focusing only in firms above the threshold of 50 workers, they almost fulfill or fully fulfill on average the legal quota requirement: those with 251-500 workers have a median percentage of 2.06 of workers with disabilities and those with more than 500 workers reach 1.95. However, we have checked that these high percentages hide two markedly different situations. There are large firms with a very high percentage of workers with disabilities while others have a rather low percentage (much below the legal requirement). Anyway, Table 1 provides preliminary evidence about a discontinuity in the percentage of workers with disabilities exactly at the threshold stated by the Spanish law in 50 workers.

[Table 1]

Tables 2 and 3 present information about the use of specific measures related to the alternative measures. Although the questionnaire does not allow us to strictly know whether firms use them explicitly as alternative measures to the quota requirement, what we know is that those using alternative measures will be counted as using them. Again, it is clear that firms with 50 or more workers (and much more for the largest firms) rely on this type of measures, either to elude the quota fulfillment or because of any other reason (collective agreements, corporative social responsibility, etc.).

[Tables 2 and 3]

² These certificates are obtained from the Public Administration.

5. Econometric analysis and discussion

In an RDD the ‘unconfoundedness’ assumption is trivially satisfied if the discontinuity separating treated and non-treated groups is really exogenous and individuals can not manipulate their assignment into the treated and non-treated groups. Here, the assignment rule to treatment and non-treatment is absolutely exogenous and it is not credible that a firm tries to remain below the threshold for not being subject to the quota scheme. Following Lee and Lemieux (2010), when the rule used to assign observations to the treatment group is clearly (‘sharply’) defined, above the threshold the treatment dummy, denoted by D , is always equal to 1. When the assignment variable is below the threshold the treatment dummy is always equal to 0. Therefore, conditional on the assignment variable, there is not any other variation in D and, as the cut off defining the threshold is exogenously determined, it is not correlated with any other factor. This is a relevant difference respect to random experiments or randomized control groups of quasi-experimental evaluation (as in propensity score matching).

A commonly stressed limitation of RDD is that ‘unconfoundedness’ is only guaranteed in the vicinities of the cut off. Therefore, a crucial issue is the considered interval in the assignment variable around the cut off. However, a closer approach to the threshold will decrease the number cases included in the estimations and, therefore, the precision of estimated coefficients might be much lower (standard errors will be larger). On the other hand, including cases far from the cut off will improve precision (standard errors will be smaller), but at the risk of losing ‘unconfoundedness’. When including more individuals far from the threshold, the likelihood of having other variables than the cut off affecting the outcome variable will be higher. The length of the bandwidth in the assignment variable is a common problem in RDD. The classical solution consists

of estimating models with different bandwidths and including some covariates as controls in estimations.

The cut off is defined according to the assignment variable to the ‘treatment’. In this research, the cut off is clearly stated by law and it is arbitrary as there is not any valid reason for not stating such threshold above or below. In fact, OECD (2003) shows that there is a wide variety of thresholds in different countries (as we explain in the introduction section). Therefore, the assignment or running variable is the size of the firm and the cut off or the threshold corresponds to 50 workers. In order to have a clean sample of firms subject to the quota scheme, we will only use those firms not using measures which can be considered as alternative measures and without exception certificates. Then, above the cut off of 50 workers we will have firms that we are sure that they should have a percentage of workers with disabilities of at least 2 per cent. In practical terms, this also means that we only use data from 2001 to 2006 as in 2007 and 2008 because of the questionnaire changes (described in Section 3) we cannot isolate those firms not using alternative measures to the quota requirement.

In RDD, any analysis begins with graphs of the outcome variable (here, the percentage of workers with disabilities respect to total staff) on the running or assignment variable (firm’s size, i.e. the total staff). As the assignment variable starts by definition in 1 and the rank goes beyond 25,000 it was rather difficult to show a meaningful plot of all observations. Figure 1 presents the mean percentage of workers with disabilities by each firm’s size. Although there are mean percentages clearly above 2 per cent and they are above the firm’s size threshold of 50 workers, at first sight the majority of observations of firms above the cut off are below 2 percent. In addition, they are not clearly above respect to the observations below the cut off. Above the threshold of 50 workers there is more dispersion in the mean percentage by firm’s size but it is not

clear that the mean percentage of workers of disability will be above the corresponding figure below 50 workers' firms.

[Figure 1]

A common issue in RDD is that the results can be sensible to the specification of the model, especially when using linear models. Because of this reason, some authors propose non-parametric models when using a RDD (Lee and Lemieux, 2010). Here, we have estimated local linear regression models on both sides of the cut off³, using a triangle kernel⁴, considering different bandwidths⁵. Finally, we have considered a reduced set of covariates⁶: firm's seniority; year (as annual dummies); third quarter dummy (1=Yes); and a set of 17 regional dummies.

Table 4 shows the results. The increase of the percentage of disabled workers because of the quota requirement for firms with 50 or more workers is always positive, but it is only estimated with enough precision to be different than zero (at 93 per cent of confidence) for the strictest bandwidth of 50 per cent respect to the initial bandwidth. In fact, we have repeated estimations considered an even stricter bandwidth of 35 per cent and the increase was exactly the same. It was not possible to use stricter bandwidth below 35 per cent because there were not enough observations to estimate the model. Therefore, only when we approach very close to the cut off of 50 workers we can find a positive effect, which is an increase of 1.434 percentage points respect to firms not

³ For our estimations we have used the 'rd' command for STATA developed by Nichols (2011). For details on this command see Nichols (2007).

⁴ The econometric details of the 'rd' command are explained in Nichols (2007).

⁵ The default bandwidth of the command 'rd' is based on Fuji *et al.* (2009) to minimize MSE, or squared bias plus variance, in a sharp RD design.

⁶ Usually, applied researchers include covariates in RDD estimations. However, notice that as 'unconfoundedness' is granted around the threshold of the assignment variable covariates should be redundant as treated and non-treated individuals would be as randomly selected considering any observable and not observable variable (Imbens and Lemieux, 2008; Lee and Lemieux, 2010). However, covariates are included to control some remaining heterogeneity for some variables especially relevant. Anyway, covariates should not have a discontinuity around the threshold (Lee and Lemieux, 2010). Using graphs, as usual, we have checked that the continuity assumption is plausible with our covariates. They are available upon request.

under the quota requirement. Anyway, notice that we are considering a relatively ‘wide’ confidence level of 93 per cent, which is closely related with the larger dispersion observed in Figure 1 above the cut off of 50 workers.

[Table 4]

As the mean percentage of workers with disabilities below the cut off is 0.599, we have that the increase of 1.434 means that the percentage of workers of disabilities in firms above the cut off is 2.033 per cent. Therefore, the discontinuity created by the quota scheme at a firm’s size of 50 workers is related with a fulfilment of the quota. This result is only clearly reliable in the very close vicinities to the cut off.

What is the economic interpretation of these results? Fulfilling the quota for firms reaching 50 workers is relatively easy: they only have to hire 1 worker with disabilities. Even for firms with 100 workers is not very strict as 2 workers with disabilities is not a really difficult task. But going further the fulfilment of the quota is more and more difficult, as probably difficulties increases at a much higher rate than firm’s size. In fact, coming back to Figure 1, in the right side of the cut off there is a sort of increase in the percentage of workers with disabilities, but later (above 100-150 workers) such effect disappears.

Of course, these results are obtained under the current common conditions to all firms. Maybe a most strict control of the fulfilment of the quota would increase the number of firms fulfilling the mandatory quota. However, the results suggest that there is a sort of problem when the firm’s size increases. This result is relevant because it is new in current literature on quota schemes as never before a larger size has not been seen as an obstacle to quota fulfilment, but maybe the opposite (as in large firms usually there is a wider menu of job’s characteristics).

Finally, we estimate the direct impact on employment of people with disabilities (Table 5). Using estimates for the bandwidth of *lwald50* (firms from 50 to 52 workers) for the whole period 2001-2006, the total direct impact rises to 9,268 workers with disabilities⁷. In order to know, whether this is ‘small’ or ‘large’ we need another source of information about the employment of people with disabilities in order to compare these calculations. The most accurate source of information is a specialized households’ survey about disability. In Spain, the two most recent specialized surveys on disability were launched in 1999 and 2008. Using the most recent year of our estimations (2006), we have a direct impact of the quota system for 2006 rising to 1,600 workers with disabilities (see Table 5).

[Table 5]

According to our own estimations, the specialized survey on disability launched in 2008 gives an estimation⁸ of the total employment of people with disabilities of 244,600 people, of which 166,200 workers with disabilities were in the private sector as wage and salary workers (a comparable group with our estimations results). Compared to that figure, 1,600 workers with disabilities seems a poor result for the quota system as employment promotion policy, even considering that our evaluation of the quota system is lagged 2 years respect to the survey on disabilities. Of course there are additional effects of the Spanish quota system as an additional direct impact on employment in the Public Administration⁹ (not included in our firms’ survey) and an indirect impact on

⁷ This amount corresponds to the workers with disabilities hired strictly thanks to the quota system in firms with 50, 51 and 52 workers.

⁸ We have used the micro-data of the specialized survey on disabilities for these calculations. The micro-data of this survey (in Spanish, *Encuesta sobre Discapacidades, Autonomía personal y situaciones de Dependencia de 2008*, in short EDAD-2008) are freely available from the Spanish Statistical Office (<http://www.ine.es>). All figures on people with disabilities refer to those with a disability certificate with at least 33 per cent of disability. The rationale is that only qualify to fulfil the quota requirement those persons with these characteristics (having a certificate with at least 33 per cent of disability).

⁹ According to the survey EDAD-2008, there were 46,100 persons with disabilities working in the Public Administration in 2008.

employment of people with disabilities through the alternative measures (promoting Sheltered Employment Centres and non-government organizations of people with disabilities). Anyway, there is not anything suggesting a huge size of the above described additional effects, compensating the very low direct effect on private employment of people with disabilities. This simple exercise suggest that this policy should be reconsidered, either largely improving their enforcement, or changing the whole design of the quota system easing the fulfilment of the quota requirement for large and very large firms, maybe following other successful country cases as Austria, where a non-compliance tax for different thresholds is used for the quota of workers with disabilities (Lalive et al., 2009; Wuellrich, 2010).

6. Conclusions

In this article, we have applied a regression discontinuity design to the evaluation of the impact of a mandatory quota of workers with disabilities. We have used data from a panel of firms in Spain, where a quota of 2 per cent for firms with 50 or more workers exist. The evaluation shows that strictly beyond the cut off of 50 workers there is an increase in the percentage of workers with disabilities in the firm, just fulfilling the quota of 2 per cent. However, this effect has a certain lack of precision because of a larger dispersion in the percent of workers with disabilities when the firm's size increases. In addition, this increase is only found in the vicinities of the cut off. For larger firm's sizes the variation in the percentage of workers with disabilities will be more related with differences in firms' characteristics.

Using the estimated results, we have also calculated the total direct impact on employment of people with disabilities. These calculations show that for the whole period 2001-2006 the direct total effect of the quota system in the private sector would have been 9,268 workers with disabilities and exclusively for 2006 would rise to 1,600.

Comparing these simple calculations with available figures of the employment of people with disabilities shows that the impact of the quota system is rather low.

All these results suggest that the current design of this policy is not useful to promote the employment of people with disabilities. Therefore, the enforcement of this policy would be radically improved or the design should be deeply changed in order to ease the fulfilment of the quota by large and very large firms.

Finally, we have confirmed that there are some firms with percentages of workers with disabilities much above 2 per cent. A deeper research about what is behind this behaviour of these outlier firms might shed some light on new ways to foster employment for people of disabilities.

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Table 1 Percentage of workers with disabilities respect to total workers at firm level, by year and firm's size.

Firm's size	2001	2002	2003	2004	2005	2006	2007	2008	Total
1-2 workers	1.12	0.93	1.11	0.51	0.80	0.69	0.74	0.83	0.84
3-5 workers	0.45	0.53	0.62	0.75	0.95	0.79	0.58	0.80	0.69
6-10 workers	0.58	0.67	0.58	0.52	1.07	0.58	0.85	0.94	0.73
11-25 workers	0.72	0.68	0.70	0.65	0.68	0.71	0.60	0.98	0.71
26-49 workers	0.72	0.85	0.83	0.65	0.76	0.79	0.89	1.39	0.86
50-100 workers	1.39	1.31	1.39	1.09	1.76	1.64	1.78	2.68	1.65
101-250 workers	1.52	1.28	1.57	1.40	1.41	1.62	1.98	1.66	1.57
251-500 workers	2.38	1.56	1.35	1.64	1.51	1.99	2.65	3.13	2.06
More than 500 workers	1.75	1.97	2.10	1.89	2.11	1.66	2.35	1.77	1.95
Total	1.16	1.10	1.17	1.03	1.24	1.16	1.40	1.55	1.23

Source: ECL (*Encuesta de Coyuntura Laboral*) 2001-2008.

Table 2 Percentage of firms using the services provided by from a "Sheltered Employment Centre" or a self-employed disabled individual by year and firm's size.

Firm's size	2001	2002	2003	2004	2005	2006	Total
1-2 workers	0.70	0.73	0.79	1.48	1.14	0.94	0.97
3-5 workers	0.60	0.65	1.13	2.11	0.87	0.93	1.06
6-10 workers	0.72	1.37	1.57	1.28	1.78	1.18	1.33
11-25 workers	1.88	2.16	1.87	2.99	3.22	3.89	2.71
26-49 workers	2.33	3.12	3.88	4.78	4.58	6.03	4.20
50-100 workers	6.34	7.31	9.64	9.16	12.16	11.73	9.53
101-250 workers	9.60	11.98	15.19	16.98	20.03	21.97	16.27
251-500 workers	12.52	15.16	19.01	24.31	26.91	25.72	20.95
More than 500 workers	16.37	18.99	22.26	27.22	31.20	31.50	25.02
Total	5.95	7.11	8.64	10.38	11.68	12.25	9.49

Source: ECL (*Encuesta de Coyuntura Laboral*) 2001-2008.

Table 3 Percentage of firms making donations for labour insertion or creation of employment for the disabled persons by year and firm's size.

Firm's size	2001	2002	2003	2004	2005	2006	Total
1-2 workers	0.45	0.75	0.78	0.71	0.64	0.83	0.70
3-5 workers	0.98	1.68	1.65	1.84	1.12	0.83	1.34
6-10 workers	1.21	0.63	1.56	1.94	1.21	1.77	1.40
11-25 workers	1.75	2.20	3.15	2.08	2.17	2.98	2.40
26-49 workers	1.53	3.06	3.31	3.58	3.44	3.37	3.08
50-100 workers	2.24	3.97	4.95	4.48	4.57	7.1	4.63
101-250 workers	4.58	5.35	7.07	8.10	9.91	12.60	8.13
251-500 workers	7.60	9.10	7.27	9.18	12.28	13.10	9.89
More than 500 workers	9.08	10.93	12.37	13.57	15.40	15.76	13.03
Total	3.42	4.36	5.03	5.34	5.89	6.83	5.22

Source: ECL (*Encuesta de Coyuntura Laboral*) 2001-2008.

Table 4 Regression discontinuity results (non-parametric estimations).

	<i>Coef.</i>	<i>Std. Error</i>	<i>p > Z </i>	<i>95% Conf. Interval</i>	
Lwald	2.050	1.650	0.214	-1.184	5.284
lwald 50	1.434	0.793	0.070	-0.119	2.988
lwald 200	1.122	0.844	0.184	-0.532	2.777
Estimating for bandwidth	2.941				
Estimating for bandwidth 35	1.029				
Estimating for bandwidth 50	1.471				
Estimating for bandwidth 200	5.883				

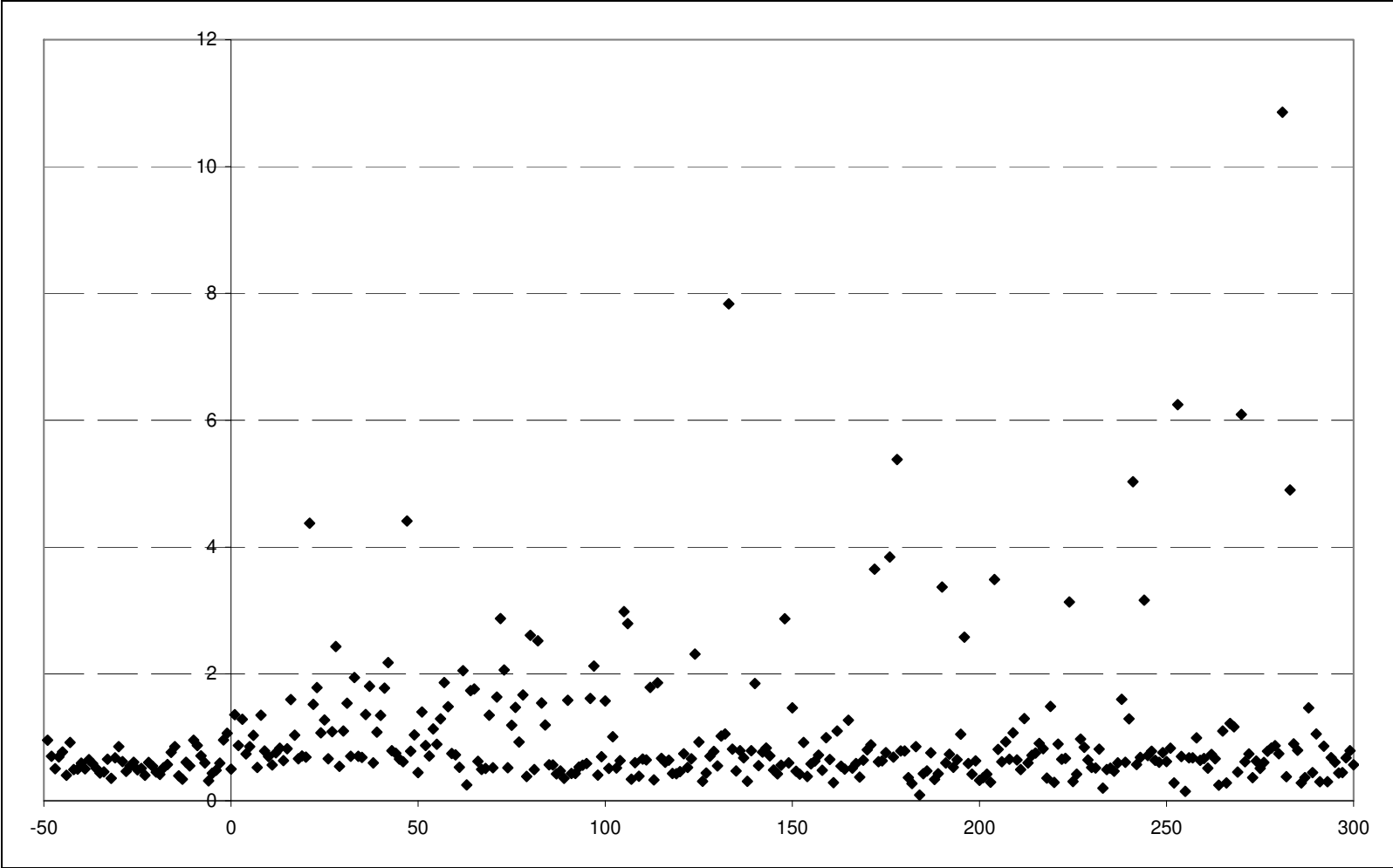
Source: ECL (*Encuesta de Coyuntura Laboral*) 2001-2006 and authors' estimations.

Table 5 Estimations of the direct effect of the quota system on employment of people with disabilities.

Time Period	Size of the firm	Total Workers (estimation)
<i>2001-2006</i>	50	238,680
	51	196,706
	52	210,885
0.01434 x Total Workers =		9,268
<i>2006</i>	50	42,640
	51	27,618
	52	41,299
0.01434 x Total Workers =		1,600

Source: ECL (*Encuesta de Coyuntura Laboral*) 2001-2006 and authors' estimations.

Figure 1 Mean percentage of people with disabilities by firm's size (firm's size is normalized at 50 workers=0).



Source: ECL and authors' calculations.