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THE IMPACT OF THE MINIMUM WAGE ON SPANISH YOUTH: EVIDENCE FROM A NATURAL EXPERIMENT

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ABSTRACT

This work assesses the impact of the minimum wage on youth employment, unemployment and education enrolment in Spain. Using a difference-in-differences approach, we take advantage of the fact that the minimum wage for people aged 16 and 17 years old, which was approximately two thirds the level of the standard minimum wage, was raised to reach full convergence with the latter in a period of three years (from 1995 to 1998). The empirical analysis suggests that this policy intervention depressed the employment levels of the affected group, raised unemployment among them and decreased the probability of remaining in formal education.

KEYWORDS: minimum wage, Spain, difference-in-differences, employment.

JEL CLASSIFICATION: J38, J23, J24.

1. INTRODUCTION

The research on the impact of a minimum wage (MW) on labour market performance has a long tradition in labour economics and to this day continues to be at the core of the debate on labour market interventions, with a myriad of works dealing with the effects of MW on different outcomes, from employment and unemployment to human capital formation. In spite of the vast amount of empirical evidence gathered on this issue, there is still no consensus as to the impact of MW on the labour market and especially on the magnitude of such effects.[1] The main aim of this article is to contribute to this body of literature by providing empirical evidence on the impact of the increase in youth MW on the behaviour of employment, unemployment and education enrolment among youth in Spain during the 90s. We benefit from a natural experiment consisting of the fact that the minimum wage for people aged 16 and 17, far below the standard minimum wage, was raised to reach full convergence with the latter over a period of three years (from 1995 to 1998). Using a difference-in-differences methodology, we find that this policy reduced employment by around 3 percentage points, raised unemployment by roughly 2 percentage points and depressed the probability of being at school by around 1.5 points.

The article unfolds in five parts that follow this introduction. In the first part, we discuss the rationale for a specific minimum wage for youth,

submit a detailed account of the rise in the MW and present a brief literature review on this issue in Spain and other relevant countries where similar changes were adopted. The third section describes the main features of the database used in the empirical work, while the fourth explains the methodology followed for evaluating the impact of the rise in MW. The main results of the analysis are presented in the sixth section. The last section, as usual, summarises and discusses the main conclusions of the article.

2. BACKGROUND AND LITERATURE REVIEW

2.1. Rationale for a different and lower minimum wage for youth.

The existence of a differentiated lower minimum wage for young workers can be defended from two different perspectives (Marinakis 2007). From the demand side, it can be argued that young workers will most likely have lower productivity than older workers with longer work experience and on the job training. If that is the case, having a single MW for workers notwithstanding their age would penalize the group of young workers as, for the same wage, instead of younger workers firms would demand older workers with higher productivity[2]. From a different perspective, the higher the minimum wage for young workers the higher the incentive for young people to enter the labour market, leaving school prematurely. If, as occurs

in the EU, for example, finishing higher secondary education is a goal worth pursuing[3], a low youth minimum wage in comparison to the adult MW would penalize leaving school early.

As we can see in Table 1, most high income countries with Minimum Wage Legislation have a separate lower MW for young workers, although the different cases vary. In some countries -Australia, Belgium, Luxemburg, the UK and, notably, the Netherlands - the MW rises with age until it converges with the adult MW from a given age: 18 in Luxemburg, 21 in the UK, Belgium and Australia and 23 in the Netherlands. In another set of countries - Korea, the USA, France, Ireland and the Czech Republic - the MW rate is related to both tenure in the job and age. A third group of countries have a single lower MW for workers under a given age. Finally, Canada, Spain, New Zealand and Portugal, after a period of enforcing different MW for different age groups, opted for a single MW regardless of age. There are also wide differences in terms of the age-related minimum wage differentials, ranging from 10% in the cases of Korea and the USA (as well as in Australia for those 20 years old) to as much as 70% for 15 year olds in the Netherlands.

<TABLE 1 ABOUT HERE>

2.2. The Spanish case

Minimum Wage legislation in Spain dates to 1963. In the beginning, MW legislation envisaged lower wages for young workers, although the number of sub-minimum wages changed with the modernization of Spanish labour law (including rising the minimum employment age to 16 in 1978). By 1980 there were two sub-wages for young workers, one for workers aged 16 (38% of the standard MW) and another for workers aged 17 (61% of the standard MW). In 1990, the specific wage for workers aged 16 was eliminated, leaving a single sub-wage of 65% of the standard MW for all workers under 18. This change implied an increase of 83% in the MW for workers under 17. Finally, in 1995, one year before the general elections, the Socialist Government decided to merge the youth MW with the standard MW in a three year process. This decision (honoured by the subsequent conservative government) produced a major rise of 64 % in the MW for young workers over a three year period (Table 2). We have tracked Spanish newspapers of the time in order to determine whether this policy measure was announced in advance by the executive (in which case the effect of the rise in the MW could have been anticipated in some way by employers), but we could not find any reference to it in the main national media previous to its approval. Therefore, to our knowledge, this intervention could reasonably be considered as unanticipated.

This change took place in a context of high employment growth, but also of a high unemployment rate as a result of the 1993 economic crisis, with a total unemployment rate of 23% and a youth unemployment rate (16-19) of 50%. At that time, as well as now, Spain had a relatively low minimum wage (35% of average wage) compared to other EU countries (Czech 2009).

<TABLE 2 ABOUT HERE>

Several economic studies have explored the impact of the MW on employment in Spain with, as often happens in the international literature on the topic, conflicting results. For example, Dolado *et al*. (1996), using a panel of six sectors over the period prior to the elimination of the youth rate 1967-94, conclude that a MW tended to reduce youth employment but to raise the employment of older workers. A similar result is obtained from the analysis performed by these authors regarding the impact of the above-mentioned merger of MW for workers under 16 and 17 in 1990. The papers by Pérez *et al*. (2002) and González *et al*. (2003), focused on youth employment, conclude using different approaches that there is a negative, if weak, impact of MW on employment. More recently, Blazquez *et al.* (2009) find no strong evidence of the existence of a negative effect of MW on youth employment rates for the period 200-2008. Finally, Cebrián *et al.* (2010), report on a little used data base (*Encuesta de Coyuntura Laboral*) to estimate the impact on employment of the rise in MW in the current decade.

The authors conclude that the intense increase in MW that took place in the period 2000-2008 (a 41.2% increase in MW and a 6.4 % increase in the Katz Index) had a negative impact on employment of nearly 5%, mostly explained by the transmission of such increases to the overall wage architecture.

2.3. Similar experiences in other countries: Portugal and New Zealand.

Two international experiences of changes in youth MW, similar to the ones described for Spain, are relevant to the analysis presented in this paper. In 2001, the New Zealand MW for youth underwent a dual reform. Firstly, the threshold marking the standard MW was reduced by two years, from 20 to 18 years old. Secondly, the youth MW for workers 16 and 17 years old was raised in two steps to 80% of the standard MW (instead of the previous 60%). These changes meant a wage increase of 69% for the former group of workers (aged 18 and 19), and an increase of 41% for workers aged 16-17. Hyslop and Stillman (2007), using a methodology of difference-in-differences, do not find evidence of an adverse impact of the MW rise on youth employment in the two years immediately following the reform, although they find weak evidence of employment loss by the third year. Their combined analysis of change in employment and working hours allows them to conclude that the rise the youth MW produced a reduction in the total youth-adult labour earning gap. In contrast, the authors present evidence of a reduction in youth educational enrolment and an increase in

youth unemployment, suggesting that the increase in labour supply associated with the increase in youth MW was not matched by a corresponding increase in youth labour demand.

The second case study refers to a country much closer to Spain, Portugal. The Portuguese MW was not created until the overthrow of the Salazar Dictatorship in 1974. In 1986, in order to adapt the existing youth sub-minimum wage to the complete recognition of age 18 as the age of full rights and duties of Portuguese citizens, there was a major change in the structure of the sub-minimum wage consisting of the following: (1) workers were entitled to the standard MW as from age 18 (instead of the previous 20), leading to an increase of 49.3% in MW; (2) workers under 18 were entitled to 75% of the standard rate (instead of the previous 50%). Pereira (2003) focuses on the former group, using a 5 year panel of firm data to study the impact of the rise in MW on the employment of workers aged 18-19, and on slightly older workers (20-25), who can be considered as substitutes to the group targeted by the reform. According to this author, the increase in MW significantly reduced employment of workers 18 and 19 years old, with estimated employment-MW elasticity in the range of -0.2 to -0.4. The author also observes the existence of a substitution effect towards workers aged 20-25.

3. DATA

The analysis presented below is based on the *Economically Active Population Survey* (EAPS), the Spanish labour force survey carried out in Spain by the National Statistics Institute starting in the 60s. This database comprises a large sample of households and includes the main socio-demographic characteristics of their members. Unfortunately, there is no information available on workers' earnings. At the time of the period of analysis (1995-1998) the survey was carried out on a quarterly basis and had a two-stage stratified sampling. However, only probabilistic weights for correcting for the different probability of selection of households are provided to researchers and, hence, fully taken into account in the analysis. [4]

The sample used in the analysis comprises the cross-sectional data corresponding to the four quarters of the year 1995 (before the policy change) and the year 1998 (the first year with an equal MW for teenagers and the rest of population). As the National Statistics Institute freely offers a standard extraction of the EAPS only since 1999, we asked for a customized sample for the period of analysis that would allow us to disaggregate the age of individuals year by year (the standard extraction only codes age in five-year groups). Overall, our sample comprises more than 48,000 observations of individuals aged 16 or 17 (of whom more than 3,500 are employed and 4,300 were on unemployment) and around 230,000 individuals between 18

and 20 years old (although, as explained below, we use two different control groups in order to check the robustness of the results). This second group shows employment rates and unemployment rates higher and lower than the treated group, respectively.

All the data analysis was performed using the Stata 11.1 software. All data and programs are available from the authors upon request.

4. METHODOLOGY

The estimation of the impact of the increase in youth MW on employment, unemployment and school enrolment is carried out following a difference-in-differences approach, where the treated group is the population aged 16 and 17 and young individuals aged between 18 and 20 years old are considered as the control group. The identifying assumption is that both groups is that both groups would have followed the same trend in absence of the policy change (the parallel trend assumption). As mentioned above, we examine the effects of the rise in youth MW on employment, unemployment, training and school enrolment.

As is well-known, consistency of estimated parameters in linear probability models (LPM) requires considerably less strong assumptions than *probit* and *logit* models, although the latter are more efficient if such

assumptions are satisfied. On this basis, some authors, such as Angrist and Pischke (2009), suggest relying on LPM estimates over the other options. Nevertheless, when possible, we perform the estimations using both types of procedures in order to test the robustness of the analysis.

Aiming to estimate the impact of the MW on employment, we initially estimate the following linear model:

$$E_{it} = \alpha D98_{it} + \lambda D16\_17_{it} + \beta treatment_{it} + \theta X_{it} + \varepsilon_{it} \qquad [1]$$

Where E_{it} is a dummy capturing whether individual *i* at time *t* is employed or not; $D98it$ is a fictitious variable that takes the value 0 before 1998 and 1 in 1998; $D16\_17_{it}$ is a dummy indicating whether the individual belongs to the population aged 16-17; is captured by another dummy, treatment, taking the value 1 for individuals aged 16 or 17 in 1998, X_{it} is a vector containing socio-economic variables (an intercept, individual characteristics and regional and quarter dummies) and, lastly, ε_{it} is disturbance with mean zero. The estimation of β yields the effect of treatment on the treated (ETT). Analogously, we also carry out the estimation using the following *probit* model:

$$p_{it} = \Phi\left(\alpha D98_{it} + \lambda D16\_17_{it} + \beta treatment_{it} + \theta X_{it}\right) \qquad [2]$$

where p_{it} is the probability of employment conditional on explanatory variables and $\Phi(.)$ is the normal cumulative distribution function. As pointed

out by Puhani (2008), the ETT in a model such as this is identified by the expression[5]

$$ETT = \Phi\left(\alpha + \lambda + \beta + \theta X_{it}\right) - \Phi\left(\alpha + \lambda + \theta X_{it}\right) \quad [3]$$

As suggested by this same author, we estimate the standard errors of this term using the Delta method. That is, the variance in the ETT can be written as

$$V(ETT) \approx GVG' \quad [4]$$

where *G* denotes the gradient of equation [3] with respect to the parameters and *V* is the covariance matrix of the parameters of model [2].

The effect of the policy on unemployment is studied using an analogous model. We estimate the impact of the increase in youth MW on unemployment probability conditional to being active (that is, in the labour force, either employed or unemployed). We cannot correct for the possible bias associated with selection into activity, as we could not find a suitable exclusion restriction for the selection equation (a variable affecting the probability of being in the labour force but independent of the probability of unemployment conditioned on activity). Therefore, our results can only be considered representative of the active population.

Finally, in a specification very similar to the previous ones we also try to assess the effect of the increase in youth MW on the probability of staying in school.

The standard definitions of employment and unemployment correspond to those stated by the International Labour Organization. In order to test for the robustness of the results, firstly, we consider two definitions of employment (including and excluding employers, the self-employed and family workers from the sample) and unemployment (including and excluding discouraged workers in the group of unemployed individuals). In addition, we use alternative control groups comprising young people aged between 18-20 and 18-24 years old.

5. RESULTS

The main descriptive statistics of the analysis are presented in Table 3. As can be inferred from the Table, the number of observations involved in the analysis is large. In the case of the analysis of employment, people who are in conscription are excluded, while they are considered in the case of education (as being enrolled in formal education was one of the possible causes for postponement of military service). Note that the number of groups considered is two (a treated and an untreated one), so it is not possible to obtain standard errors clustered by group. Nevertheless, in the

two-group case, as suggested by Wooldridge (2006; 18), this issue (the impossibility of clustering in order to take into account within-group correlation) is indistinguishable from the parallel trend assumption present in any difference-in-differences analysis (that is, we cannot be sure that any observed difference in means is entirely caused by the policy change).

<TABLE 3 ABOUT HERE>

The results of the difference-in-differences analysis are displayed in Table 4. Firstly, the raw difference-in-differences (given by the LPMs) indicates a negative effect of the rise in MW on employment (-1.9 percentage points) and enrolment in formal education (-1.6 percentage points) and a positive impact on unemployment (2.5 percentage points). Secondly, the adjusted difference-in-differences estimates reveal that the direction of such impacts holds once we control for a set of observable characteristics. The effect on employment is significant and negative at the 1% level, at -3 percentage points in the LPM and -2.6 percentage points in the *probit* model, while the positive effect on unemployment, significant at the 5% level, is roughly 3 percentage points in both models. Finally, the rise in the MW seems to have negatively affected the probability of being in formal education. The LPM estimate, significant at the 1% level, suggests a negative impact of 1.6 points on enrolment, whereas the probit estimate, only significant at 10%, indicates a slightly smaller impact (-1.3).

The estimate parameters suggest an employment-MW elasticity of roughly -0.5 (using the *probit* results), a figure that is slightly above the findings for the Portuguese case reviewed in the second section of the paper. As employment rates among the affected group were extremely low (below 10%) at the time of the intervention, it is also informative to compute the semi-elasticity (that is, the change in employment in percentage points divided by the percentage change in the MW). The corresponding figure is remarkably lower: -0.05 (from the *probit* estimate).

<TABLE 4 ABOUT HERE>

In order to test the robustness of our results, we repeat the analysis considering a wider control group, people aged between 18 and 24 years old, and we conduct the analysis for an alternative definition of the employed population that excludes employers, the self-employed and family workers and an alternative concept of unemployment that includes discouraged workers among the unemployed instead of among the inactive population. The results of these calculations are presented in Table 5 and they corroborate the significance level, sign and magnitude of the estimates in Table 4.

<TABLE 5 ABOUT HERE>

5. CONCLUSIONS

This article has analysed the effect of MW on employment, unemployment and education enrolment among people aged 16 and 17 in Spain. We have exploited a natural experiment provided by the existence of a lower MW for this group up to 1995, when, over three years, it was raised to reach full convergence with the standard MW. The empirical analyses, based on the difference-in-differences methodology and taking the population between 18 and 20 years old as the control group, show that this policy intervention had a detrimental effect of around three percentage points on employment among the affected group, raised unemployment by roughly 2 percentage points and diminished school enrolment barely 1.5 percentage points. In order to test the robustness of the results of the main analysis we repeated the analyses using an alternative control group (18-24 year olds) and alternative definitions of employment and unemployment. In all cases, the results obtained have held for both LPM and *probit* specifications.

The evidence presented in the paper is quite consistent with the findings of Pereira (2003) for Portugal but is at odds with the results of Hyslop and Stillman (2007) for New Zealand. The main corollary of the paper is that the rise in the MW of people aged 16 and 17 years old might

have contributed to perpetuate the high rates of school failure and early school leaving and to depress the labour market opportunities of this group.

[1] As mentioned, the literature is very extensive. See, among many others, the evidence collected and reviewed by Card and Krueger (1995), Boeri and van Ours (2008), Neumark and Wascher (2008) and Vaughan-Whitehead (2010).

[2] It has to be acknowledge, though, that in low productivity sectors (eg. retail) a youth MW set too low may risk displacement of adults paid a higher adult MW.

[3] Reducing school drop-out rates to below 10% is one of the targets for the *Europe 2020 Strategy* of the European Union, for example.

[4] For more details on the questionnaire and methodology of the EAPS see National Statistics Institute (2005) and other documents available on the website of the National Statistics Institute (http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft22/e308_mnu&file=inebase&L=0).

[5] Note that the caution in the estimation of the parameter for interaction terms in nonlinear models highlighted by Ai and Norton (2003) does not apply here. As argued by Puhani (2008), the cross difference is not equal to the treatment effect, which is the incremental effect of the coefficient of the interaction term.

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Table 1. OECD countries with different minimum wages for youth

Countries	Age and % of standard MW wage
Australia	16 years old: 50% 17 years old: 60% 18 years old: 70% 19 years old: 80% 20 years old: 90%
Belgium	< 17 years old: 70 % 17 years old: 76% 18 years old: 82% 19 years old: 88% 20 years old: 94%
Czech Republic	With less than 6 month in the job and <21 years old: 90 %
France	With less than 6 month in the job: < 17 years old: 80 % 17 years old: 90 %
Ireland	< 18 years old: 70% 18 years old and over and first job or continuation in employment: first year, 80 %; second year, 90 %.
Korea	< 18 years old: 90% reduced rate the first 6 months
Luxembourg	< 17 years old : 75% 17 years old: 80%
Netherlands	15 years old: 30 % 16 years old: 34.5% 17 years old: 39.5% 18 years old: 45.5% 19 years old: 52.5% 20 years old: 61.5% 21 years old: 72.5% 22 years old: 85%
New Zealand	< 18 years old: 80%
Poland	< 18 years old: 85 %
Slovak Republic	< 18 years old: 75%
Turkey	< 16 years old: 85%
United Kingdom	16-17 years old: 61 % 18-20 years old: 82 %
United States	< 20 years old, 41 % during the first 90 days*

* The 1996 Amendments to the Fair Labor Standard Act allow employers to pay a youth minimum wage of not less than US$4.25 an hour, compared with the standard Federal MW of US$7.25 an hour in 2010.

Source: Quintini and Martin (2006), Australian Fair Pay Commission (2007), Marinakis (2007) and Low Pay Commission (2010).

Table 2. Increase in standard and youth MW 1995-1998

	Workers aged 16 and 17	Workers aged 18 and over
Nominal increase 1995-1998 (%)	64.2	8.5
CPI increase 1995-1998 (%)	7.5	7.5
Real increase 1995-1998 (%)	56.7	1.0
Minimum wage in 1995 (current Euros per month)	249	377
Minimum wage in 1998 (current Euros per month)	409	409

Source: Authors' analysis based on data from the National Statistics Institute (Spain).

Table 3. Main descriptive statistics of the database

	Total population between 16 and 20 years old		People aged 16 and 17 years old		People aged between 18 and 20 years old	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Employed (over people not conscripted)	0.163	0.369	0.090	0.286	0.209	0.407
Employed (alternative definition)	0.139	0.346	0.073	0.261	0.180	0.384
Unemployed	0.462	0.499	0.508	0.500	0.448	0.497
Unemployed (alternative definition)	0.461	0.498	0.505	0.500	0.447	0.497
In formal education (over total population)	0.582	0.493	0.694	0.461	0.515	0.500
Aged 16 or 17 years old	0.377	0.485	---	---	---	---
Year 1998	0.477	0.499	0.470	0.499	0.482	0.500
Treated	0.177	0.382	0.470	0.499	0.000	0.000
Age	18.1	1.4	16.5	0.5	19.0	0.8
Squared age	328.8	50.9	273.1	16.5	362.6	31.2
Female	0.489	0.500	0.489	0.500	0.488	0.500
No education	0.022	0.146	0.020	0.140	0.023	0.149
Primary education	0.083	0.276	0.102	0.302	0.072	0.259
Upper Secondary education	0.331	0.471	0.134	0.340	0.450	0.498
University education	0.002	0.043	0.000	0.008	0.003	0.054
Married	0.014	0.119	0.006	0.080	0.019	0.137
Household size	4.7	1.3	4.7	1.3	4.7	1.4
Squared household size	23.7	15.4	23.7	15.2	23.7	15.5
Number of children aged 5 years old or less	0.075	0.302	0.087	0.320	0.068	0.291
Number of children aged between 6 and 15 years old	0.537	0.726	0.647	0.772	0.470	0.689
Observations	127,380		40,317		79,063	

Source: Authors' analysis from EAPS 1995 and 1998.

Table 4. Results of the econometric analysis

	Raw difference-in-differences	Adjusted difference-in-differences
Effect on employment		
LPM	-0.019 ***	-0.030 ***
	(0.005)	(0.004)
R^2	0.025	0.344
Probit	-0.011 ***	-0.026 ***
	(0.004)	(0.005)
Pseudo-R^2	0.030	0.154
Observations	123,955	123,955
Effect on unemployment		
LPM	0.025 *	0.030 **
	(0.015)	(0.014)
R^2	0.008	0.040
Probit	0.026 *	0.031 **
	(0.015)	(0.015)
Pseudo-R^2	0.006	0.029
Observations	36,497	36,497
Effect on being enroled in formal education		
LPM	-0.016 ***	-0.016 ***
	(0.006)	(0.006)
R^2	0.033	0.141
Probit	-0.010 *	-0.013 *
	(0.006)	(0.007)
Pseudo-R^2	0.024	0.110
Observations	127,380	127,380

Note:
*** Significant at the 1% level; ** significant at the 5% level; * significant at the 10% level.
Robust standard errors between parentheses. In the *probit* models, standard errors of the difference-in-differences estimates are computed using the Delta method.
In *probit* models, we report the marginal effect evaluated at regressors' averages.
Control variables in the adjusted difference-in-differences model include gender, age, squared age, marital status, household size, squared; household size, number of children aged 5 years old or under in the household, number of children aged between 6 and 15 years in the household, region and quarter. In addition, in the case of employment and unemployment, the econometric specification also comprises the level of education completed by individuals.

Source: Authors' analysis from EAPS 1995 and 1998.

Table 5. Results of the econometric analysis for alternative definitions of employment and unemployment and a different control group

	Raw difference-in-differences	Adjusted difference-in-differences
Effects on employment (alternative definition)		
LPM	-0.017 ***	-0.027 ***
	(0.004)	(0.004)
Probit	-0.007 **	-0.020 ***
	(0.004)	(0.005)
Effects on unemployment (alternative definition)		
LPM	0.025 *	0.030 **
	(0.015)	(0.014)
Probit	0.026 *	0.031 **
	(0.015)	(0.015)
Control group: people aged 18-24 years old		
Effect on employment		
LPM	-0.029 ***	-0.042 ***
	(0.004)	(0.004)
Probit	-0.013 ***	-0.042 ***
	(0.004)	(0.007)
Effect on unemployment		
LPM	0.020	0.024 *
	(0.013)	(0.013)
Probit	0.023 *	0.028 **
	(0.013)	(0.013)
Effect on being enroled in formal education		
LPM	-0.013 **	-0.014 **
	(0.006)	(0.005)
Probit	-0.009 *	-0.015 **
	(0.005)	(0.006)

Note:
*** significant at the 1% level; ** significant at the 5% level; * significant at the 10% level.
Robust standard errors between parentheses. In the *probit* models, standard errors of the difference-in-differences estimates are computed using the Delta method.
In *probit* models, we report the marginal effect evaluated at regressors' averages.
Control variables in the adjusted difference-in-differences model include gender, age, squared age, marital status, household size, squared; household size, number of children aged 5 years old or under in the household, number of children aged between 6 and 15 years in the household, region and quarter. In addition, in the case of employment and unemployment, the econometric specification also comprises the level of education completed by individuals.

Source: Authors' analysis from EAPS 1995 and 1998.