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MASTER THESIS

The impact of family friendly policies on the labor market:  
Evidence on Spain and Austria

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# ABSTRACT

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During the last decades, women are increasing their participation in the labor market and hence becoming second or even main economic supporters of the families. Given that the magnitude of phenomena is increasing, the introduction of the family-friendly policies is being extended in many developed countries. Since the eighties, many governments have adopted policies with the objective of promoting gender equality and equity in the work place. One of such policies is the aim of study of this work.

The policies under analysis are the Spanish Law 39/99 and the Austrian Law Nr. 38/2004. In essence both policies were directed to allowing parents to work part-time if they had children under 7 years old with an equivalent wage reduction. Furthermore, those workers who decide to use the law are protected against the layoff. This might entail some unintended effects for workers who are not covered by the law that we will analyze in the paper.

Our results indicate that the law helped mothers to combine childcare and work because there was an increased in the probability of working PT for affected mothers (direct effect). However, we must highlight that the law only helped a particular group of mothers - those with stable contracts. Women under temporary contracts did not make use of this family friendly policy. Furthermore, there is clear evidence that the law increased the probability of dismissal of non-eligible mothers - i.e, mothers with children over 10 years old. Finally, the law also increased the probability of potential mothers to be hired under temporary contracts presumably to avoid the possibility of using the reduced time schedule and the protection against dismissal. Therefore, the law had some positive effects but also some negative ones which were likely to be unexpected.

# 1. INTRODUCTION

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During the last decades, women are increasing their participation in the labor market and hence becoming second or even main economic supporters of the families. Given that the magnitude of phenomena is increasing, the introduction of the family-friendly policies is being extended in many developed countries. Since the eighties, many governments have adopted policies with the objective of promoting gender equality and equity in the work place. One of such policies is the aim of study of this work.

The policies under analysis are the Spanish Law 39/99 and the Austrian Law Nr. 38/2004. In essence both policies were directed to allowing parents to work part-time if they had children under 7 years old with an equivalent wage reduction. Furthermore, those workers who decide to use the law are protected against the layoff. This might entail some unintended effects for workers who are not covered by the law that we will analyze in the paper.

Some related family-friendly laws were implemented in other countries in Europe as in France, where in year 2004 was implemented a “supplementary work choice benefit”<sup>1</sup>. But none other policy as the one to analyze was found in any other country in Europe.

The spirit of these laws are that parents can more easily afford to stay in the labor market and take care of the children, by reducing the work schedule and hence combine both activities more easily. This, which in principle may affect both fathers and mothers, are more likely to have a larger impact on mothers, as they are *de facto* the main responsible of the childcare within the couple.

The main aim of the paper is to study the effects of these laws in the two countries. To do so, we look at two different types of effect: direct effects and indirect effects. With respect to the first ones, the main question to be answered is whether the laws increased the part-time rate of parents with children under 7. However, in many instances, laws have indirect and to some extent unexpected effects which are also studied in the paper. The first indirect effect is to measure to what extent the law reduced the probability of leaving the job (either voluntarily or involuntarily) for parents who in principle are eligible for the family policy. When we study the direct effect of the policy, we only observe workers who continue working when they have children. However, we do not observe those workers who do not work either because they decided to quit from work or rather because they were dismissed once the law does not protected them anymore - i.e., those with children over 7 years of age. In order to try to solve the possible sample bias of the analysis we engage in the first indirect effect which investigates the determinants of the probability of losing or quitting the labor market. In addition to this first indirect effect, the law might induce a second

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<sup>1</sup> Supplementary work choice benefit: this benefit can be paid out from the birth of a first child for a maximum period of six months at a full or a reduced rate, i.e. women can work part-time and receive the benefit. Before 2004, mothers of one child were entitled to take parental leave for three years and could return to a guaranteed job with the same employer, but did not receive any compensation.

indirect and unexpected effect which consists of a potential employers' strategic behavior at a potential increase in the part-time rate of those affected by the law. If the family policy - i.e., allowance to turn to part-time for parents with children under than 7 is costly and hence undesirable for them, they might react and reduce indefinite hiring to potential users of the law in favor of temporary contracts - given that workers with temporary contracts do not make use of the law. Hence, the question to be answered in this second indirect effect is whether these laws increased the probability of being hired under temporary contracts (versus indefinite ones) for those workers which might be future potential users of the law.

For this empirical analysis, we use the European Labor Force Survey (ELFS) for Spain and Austria and a Difference in Difference (henceforth DD approach). Part-Time Rates are self-reported in the ELFS and essentially entails working 30 hours per week or less. The whole analysis is done by gender and type of contract, given that as it will be seen below, it is mainly women with indefinite contracts who make use of these family friendly policies.

A drawback of the ELFS is that it is a cross-sectional database, which implies that we are not able to follow individuals along time. This means that we cannot observe their difference in behavior when they have a child before and after the law. However, we compare groups of workers who are affected by the law (treated workers) with others which are similar in as many demographic and job characteristics as possible but are not affected by the law (control group). Then, using a DD methodology we can estimate and compare the likelihood of working Part-Time for the treated group with respect the control group before and after the law. We follow this method for the direct and indirect effects mentioned above, although for each case the treated and control group are different for obvious reasons.

Given that in Spain the law was implemented the 5<sup>th</sup> of November of 1999, 2000 is used as the reference year in the Spanish analysis. In Austria the law was passed on the 1<sup>st</sup> of July of 2004, and hence, 2004 is used as the reference year in the Austrian analysis. From the reference year, we consider four years before and four years after, i.e., in Spain from 1996 and 1999 and from 2001 to 2004 and in Austria from 2000 to 2003 and from 2005 to 2008.

Some of the previous papers related to the analysis in this paper are the following:

Jaumotte, 2003, studies the determinants of female labor force participation in the OECD countries from 1985 to 1999, including some policy instrument as childcare subsidies and parental leave. She distinguishes between part-time and full-time female. The analysis shows a positive impact on females participation when stronger tax incentives to share market work between spouses, childcare subsidies, paid maternity and parental leaves. Visser, 2002, wrote another paper related with the part-time work that explains what caused the rapid diffusion of it in the Netherlands. And the explanation links part-time work with married women and the scare of child-care provisions. For Austria, only a statistical analysis of the consequences of the law is done by Dörfler, 2004.

Our paper replicates part of the paper written by Rodríguez-Planas and Fernández-Kranz, 2011, that analyses the consequences of the Spanish Law 39/99.

The main results of this paper are the following: First, the law was effective in both countries in the sense that the likelihood of working part-time for eligible parents – i.e. parents with children under 7, increased significantly after the law with respect to non-eligible parents – i.e. parents with children older than 7. In particular, in Spain it increase a 12.31% and in Austria an 18.5%. However, it is interesting to point out two issues: First, the law only affected eligible mothers, not fathers in the two countries. Second, for Spain, the law only affected eligible mothers with indefinite contracts. Eligible mothers with temporary contracts did not make use of the family friendly policy possibly because of the instability of their contracts.

Second, on the other hand, given that this law tries to help parents with small children to combine childcare and work, we would expect to observe that the probability of quitting of treated parents decrease with the law, unfortunately we do not find this result. But as affected parents are protected against the layoff, only control parents can be dismissed when it is required. The analysis concludes that as a consequence of the law, control parents face higher probabilities of dismissal; this is our first unintended effect of the law.

Finally, the second indirect effect studies whether employers behave strategically in the sense of anticipating to the law. If the family friendly policy is costly for firms, in order to prevent potential users of the law to use it they tend to hire potential users of the law more under temporary contracts rather than under indefinite ones. Under temporary contracts, employers are not forced to renew the contracts when workers become eligible to use the law and hence to turn to part-time schedule and to be protected against dismissal. We find that after the law potential eligible mothers are more likely to be hired under temporary contracts than their counterpart males. Given that as we saw before, women are *the facto* the only users of the law, this finding suggests that the pass of the law induced employers to use temporary contracts to avoid the use of the law to potential eligible mothers.

The paper is organized as follows. The next section describes the 39/1999 Spanish law and the 38/2004 Austrian law. Section 3 presents the data and Section 4 the descriptive statistics. Section 5 analyzes the effects of the family-friendly policy on the employment outcome on the eligible population (direct effect) and the unintended effects on the non-eligible population of the law (indirect effects). Section 7 sums and concludes.

## 2. Family Friendly Policies

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Here we describe the family-friendly laws which were implemented in Spain and Austria in 1999 and 2004 respectively. In the two cases, the aim of the policies was to promote the conciliation of work and family life. These laws introduce the right to reduce the time schedule for flexible work for certain groups of workers. The laws are very similar with some restrictions added in Austria.

## 2.1. Spanish Law 39/99

On November 5<sup>th</sup>, 1999, the Spanish Government passed a law which gives working parents with children under 7 years old<sup>2</sup> the right to reduce the schedule and work part-time. These workers can ask for a reduction of one third to one half of the usual full-time schedule with an equivalent wage reduction (this right is extended also to workers with family dependents, for reason of physical or mental disability although we do not analyze this in this paper). The worker who decided to use the policy has also the right to choose the time slot during the day that he or she wants to work and the firm has to accept this or go to court.

Furthermore, and even more important, users of the law are protected against the layoff if they had previously asked for the schedule reduction due to the family responsibilities. The firm cannot dismiss the worker by any means.

An issue to remark is that this law protects only workers under indefinite contract. For workers with temporary contracts, the law is silent with respect to the need to renew fixed-term contract, and hence treated workers with temporary contracts may use the policy to reduce the time schedule but can be fired at the end of the contract period. Given the different effects of the law for both type of workers, the whole analysis is done by type of contract.

## 2.2. Austrian Law Nr.38/2004

The first of July, 2004, Austrian government passed a family-friendly law in order to reconcile family responsibilities, in this case childcare, and work. The law allows parents with children under 7 years old to work PT. However, the policy only affects firms with more than 20 employees. On the other hand, only workers with more than 3 years of tenure on the firm are eligible to use the reduced time schedule if they have children under 7 years old. There is not a fixed limit with regards to the size of the time schedule reduction. Workers can even change working hours within the day. They have also the right to return to FT employment when they decide to do so. If the firm has less than 20 workers employers and employee could reach an agreement on part-time work to the child's fourth birthday but there is no official legal enforcement.

In Austria workers who make use of the policy are also protect against dismissal until their child's fourth birthday. When the child is between 4 and 7 years old, law protect parents against dismissal without ground.<sup>3</sup>

In the ELFS age is reported in intervals of five years old. Given this restriction, we only know whether the child is between 0 and 4 years old, between 5 and 9 or between 10 and 14. As both laws affect parents of children under 7 we do not know whether the child is 6 or 8. To avoid measurement error, we do not include those individuals whose children are between 5 and 9 years

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<sup>2</sup> Children age was extended to 9 in 2007.

<sup>3</sup> In Spanish dismissal without ground is denoted by "despido improcedente".

old. Hence, the treated group includes full time working individuals with children under 4 whereas in the control group, which includes non-affected workers we consider working parents with children between 10 and 14. Remember that all workers under the treated group are protect against layoffs.

The objective of the policy was, as we said before, to try to conciliate work and family life for families with children under 7. However, given the traditional values of both societies, this kind of family friendly policy is likely to pose different effects on mothers as compared to fathers. Hence, the whole analysis will be done separately by gender.

## 3. THE DATA

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We use data from the European Labor Force Survey (ELFS) which is a household survey which contains demographic and job characteristics for harmonized individual data for 27 countries for a very large number of years (updated annually since 1983). For our analysis we use information from four years before the law was implemented to four years after. In Spain the law was passed at the end of 1999. As the sample is recruited in the three first months of the year we denote as “before” the four years elapsed between 1996 to 1999 and as “after” the interval between 2001 and 2004. We drop the year 2000 as we consider it as reference period, in order to guarantee a clear cut before and after. In Austria the law was implemented in the middle of the year 2004, this year is our reference year and we do not include it in the sample. Following the same system as before we add from 2000 to 2003, and it will be the sample “before” and from 2005 to 2008 will be the sample “after”. In the case of Austria the sample is remarkable bigger in the period “after”.

ELFS is a cross-sectional data that provides information on demographic characteristics (such as age, gender, years of education, marital status, members of the family, region of work and residence...) and employment characteristics (such as current status, type of contract, last work, tenure, number of hours worked in the current job, current PT status, labor status last year...) and fertility information (such as number of children, demographic characteristics of the children,...).

For each analysis we focus on different eligible population, depending on the aim to study.

### **3.1. The Impact of the policies on Part-Time Work (direct effect) – The Sample**

For the first analysis, which is the effect of the law on part-time for those parents with children under 7 years old (the so-called “direct effect”), our reference (treated) group is parents with small children and as comparison (control) group parents with older children. Then we estimate whether parents affected by the law – those with children under 5, increase their PT use more than non-affected parents – those with children between 10 and 14, after the law was

implemented<sup>4</sup>. For this analysis we are implicitly assuming that every children under 14 needs childcare but only parents with children under 7 are benefitted by the law.

Notice that for the first analysis we only include parents with children either under 4 (treated group) or between 10 and 14 (control group). In addition, we restrict to those parents between 25 and 45 years. On the one hand, parents older than 45 with very small children may be outliers (these are 3.8% of the whole sample of parents). On the second hand we drop parents younger than 25 because there might be some students we want to avoid in the analysis (less than 1% of the sample of parents). Furthermore, as we have information of the members of the family living in the same household we include only married people (because both parents could take care of the children) and we exclude individuals cohabitating with grandparents (because sometimes old people could help with the childcare or maybe they required also care and they could bias our analysis). By definition we only include people working and for our analysis we exclude self employers or employers. Taking into account all restrictions in a pooled cross-sectional data set we have in Spain 19596 women and 32517 men.

With regards to Austria, given that the potential users of the law face two additional restrictions - only workers with more than 3 years of tenure and firms with more than 20 employees, the final sample in Austria of treated and control group parents is smaller: 7377 females and 11871 males.

### **3.2. The impact of the policy on the probability of leaving the job (first indirect effect) – The Sample**

In our first analysis we only look at working people and hence we do not take into consideration those workers that at some point of time stop working, either because they decide to do so for childcare issues or because they have been dismissed.

In the second analysis our aim is to check whether the law helps young parents to combine work and childcare and hence whether parents leave less the labor market after the law was implemented. In addition, we want to check whether the law has any impact on those parents that are not protected against the layoff because their children are older than 7 years old. What we do here is compare the probability of losing/quitting the labor market for parents affected and not affected by the law before and after the pass of the law. More precisely, we estimate the probability of leaving the job at a particular year conditioned of being working the year before.

An important issue to remark is that those treated parents who leave the job are voluntary leavers as they are protected from dismissal, whereas within the control group parents may either be dismissed or leave voluntarily. Unfortunately from the data we cannot disentangle the reason for leaving the job for parents in the control group.

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<sup>4</sup> We cannot distinguish parents with children between 5 and 7 and between 8 and 10 given a sample restriction in terms of age. In the ELFS the age is given by groups of 5 years, and concretely, the age of the children too.

For this second analysis, we focus on workers who reported being working last year and who either work or not in the actual year. As before, we restrict to married parents between 25 and 45 years old, with children under 4 (treated) or between 10 and 14 (control), not cohabitating with old people, who were the year before salary workers. As before, for Austria in addition for being working the year before we also restrict to have more than 3 years of tenure and being working on firms with more than 20 employees.

The final sample covers 23258 females and 41527 males in Spain and 4677 females and 8090 males in Austria.

### **3.3. The impact of the policy on temporary contracts (second indirect effect) - The Sample**

In this case we study the extent to which the law might have pervasive effects for potential future users of the law. This may affect in particular potential mothers, as results from the direct impact of the law indicate that the law produced a clear increase in the Part-Time use only for women.

The reason for caring about potentially pervasive effects is as follows: Employers may consider that the change from full time to part time entails two different type of costs for the firm: On the first hand, they might need to hire an additional worker or to make costly time schedule arrangements with the rest of workers to cover the hours of work reduced by the users of the law. On the second hand, given that women who use the law cannot be dismissed, employers may feel more restricted with respect with their flexibility to hire and dismiss. For these two reasons, we might expect that employers behave strategically trying to hire workers who are not potential users of the law. The first candidates we can think of are men. However, we could think of a second type of strategic behavior from employers: Given that the first analysis shows that in Spain the policy is only used by mothers with indefinite contracts, we may think that employers may have incentives to hire those women who are potential users of the law under temporary instead of under indefinite contracts.

For these two reasons in this analysis we compare the probability of being hired under a temporary contract versus an indefinite one for women versus men who are in both cases potential users of the law. To do so we focus on employees **without children** but who would have them in the near future (married and between 25 and 45 years old (fertile age)). We want to estimate to what extent the law increases the probability that women who are potential users of the law are hired under temporary contracts when compared with similar men, who do not use the law.

Given that temporary contracts are very scarce in Austria this indirect effect only makes sense for Spain. Our final sample covers 87694 individuals.

# 4. DESCRIPTIVES

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This section presents the average annual growth rate for the main outcome variables for a period of four years before the policy implementation (1996-1999 in Spain and 2000-2003 in Austria) and four years after (2001-2004 in Spain and 2005-2008 in Austria). We distinguish between four groups in the first two analyses and between two groups in the last one, as defined previously.

## 4.1. The Impact of the Law on Part-Time Rates

For our first analysis – the impact of the policy on Part-Time Rates we distinguish between four groups: mothers and fathers with children under 4 (treated groups) and mothers and fathers with children between 10 and 14 (control groups). Given that the first analysis studies the effect of the law on part-time rates for those parents with children under 7 years old, Figure 1 presents Part-Time rate of the different groups under study both before and after the law.

Figure 1 reveals that in Spain, the incidence of Part-Time for mothers is much stronger than for fathers, independently of the age of the children. Before the law, a 17% of treated mothers worked PT and, as expected, after the law this percentage increased until 21%- i.e. an increase of 25%. For control mothers there has been also an increase from 20% before the law to 22% after the law, but clearly smaller than the one observed for treated mothers (13%). For males, the share is always lower than 1.5%, and after the law it has even decreased for both groups.

In Austria differences in the use of part-time between mothers and fathers are even stronger: Approximately half of the mothers work PT, but only less than 2% of fathers choose part-time schedule. Comparing treated and control females before and after the law in Austria, we can observe that before the law, the incidence of PT among treated mothers was lower than that of control mothers – 47% versus 53%. However after the law the situation is reversed. 57% of treated mothers use PT work schedule as compared with 52% of mothers in the control group. The change is observed mainly for the treated group mothers, for whom the incidence in PT work increases in around 10 percentage points. Comparing both countries, we observe that PT rate for females is twice in Austria than in Spain, but in both countries it is women, not men, who basically use this time schedule.

The second set of descriptives we present is the incidence of temporary versus indefinite contracts for the treated and control groups of mothers and fathers before and after the laws. Figure 2 presents fixed-term rates for the four groups for Spain and Austria, respectively. In Spain, on average 25.71% of the sample works under fixed-term contracts. The incidence of temporary contracts is slightly higher among women than among men, and the rates are similar before and after the law. Before and after the law approximately 27% of treated women worked under fixed-term contract, while treated males decreased from 26% to 23%. For control individual, females increased from 28.50% to 30% and males decreased 0.6 percentage points from 22.1%.

In Austria this situation is completely different with respect to temporary contracts – only 2.43% of the sample work under it<sup>5</sup>. Temporary contract rate has decreased after the implementation of the law for the four groups. Treated females changed from 5.5% to 2.5% –i.e. a 55% decreased- and control females from 3.2% to 2.2%. Males fixed-term rate are even lower, before the law it was 3.2% and 1.3% for treated and control respectively and they has changed to 2.2% and 1.1%. Given that temporary hiring does not seem to be an issue for our sample of workers in Austria, the analysis by type of contracts will not be done for Austria, and the second unintended effect of the law will be done only for Spain.

## 4.2. The Impact of the Law on Leave Rates

In the second analysis we want to check whether the family-friendly policy had as a consequence a reduction on the leave rate for treated parents as a result of the beneficial effects of the law to conciliate work with family. Furthermore, and given that treated parents are protected by dismissal, we want to see whether the law had an impact on those parents who were not protected against the layoff (control group parents). But before turning into the empirical analysis, Figure 3 presents leave rates for parents – both treated and control groups, before and after the law. To be precise, by leave rates we measure the rate of parents who, having work last year, do not work in the current year. Remember that treated parents stop working by their own choice because they cannot be dismissed.

In Spain, women tend to leave the labor market more often than men and this situation has been accentuated with the implementation of the law. Notice that this was not the aim of the law. Treated female's leaving rate before the law was 2.5 times higher than treated men's rate and after the law this ratio increased until 3.85. Before the law, control females leave twice than control males, whereas after the law the difference tripled (3.25 times). The leaving rate of treated women increases from 11% to 13%, i.e. in 19%, while for men under the same situation it decreased in a 23% (from 4% to 3%). For the control group a similar pattern occurs, as women increase their leave rate in 15% (from 8% to 9.4%) and men decrease it in 25% (from 4% to 3%) after year 2000.

In Austria the leaving rate remains fairly constant before and after the law. The biggest change in the leave rate affects women in the control group, which increases from 8% to 10%, but remains unchanged for the other three groups. Treated mother's leave rate is 2.5 times higher than treated father's rate.

A priori, it looks like when comparing leaving rates before and after the law of eligible mothers there is no decrease, which would have been the expected effect of the law. Remember that the law was conceived to better conciliate work and family life and hence, reduce leave rates for mothers for childcare reasons. We will see whether this preliminary conclusion is also reached when we evaluate the impact of the law for the leave rate in results section.

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<sup>5</sup> Recall that in Austria all individual in this sample must have three or more years of tenure in the same firm, and hence temporary contracts are expected to be the exception.

## 4.2. The Impact of the Law on Temporary Contracts

The second indirect effect is only done for the Spanish labor market because segmentation by type of contract is not an issue in Austria. To do so, we compare the impact of being hired under temporal contract on potential users (women) respect non-potential users (men). These are the two groups shown in Figure 4.

Before 2000, temporary contract rate for females and males was approximately the same (45%) and for both cases it decreased after the law. But it does more strongly for males. With the implementation of the law woman under temporary contract rate is 4 percentage points higher than males' one. While for females it drops in a 5% (from 45% to 42%), for males it decreases in a 15% (from 45% to 38%).

# 5. METHODOLOGY

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To develop the three analyses we use a difference-in-differences methodology. This approach works as follows:

$$Y_{it} = \alpha + \beta D_i + \gamma D_t + \delta(D_i D_t) + X'_{it} \pi + \varepsilon_{it}$$

where  $t$  indexes the year and  $i$  the individual; and where  $D_i = 1$  if individual  $i$  receives the treatment and zero otherwise,  $D_t = 1$  if observation is after the treatment (in Spain after the year 2000 and in Austria after the year 2004) and zero if the observation is before the treatment.  $X_{it}$  is a vector of covariates where we include demographic, employment and family information as: age, age squared, year, a dummy indicating whether the individual is the family-head, number of children, years of tenure, level of education and unemployment rate by region of work. Finally,  $\varepsilon_{it}$  is a zero mean disturbance.

We can compute the **conditional means** for all cases in order to help us to understand the interpretation of the coefficients.

- $E(Y_{it} \mid D_i=0, D_t=0) = \alpha$  Control, before
- $E(Y_{it} \mid D_i=1, D_t=0) = \alpha + \beta$  Treated, before
- $E(Y_{it} \mid D_i=0, D_t=1) = \alpha + \gamma$  Control, after
- $E(Y_{it} \mid D_i=1, D_t=1) = \alpha + \beta + \gamma + \delta$  Treated, after

A brief interpretation of the coefficients is the following:

- $\beta$  is the non treatment effect. It is understood as the difference in the probability between the treatment and control group before the implementation of law. We wish this coefficient to be zero or statistically insignificant because this would mean that before the law treatment and control group behaved the same. This is the assumption we have done when we use parents with children between 10 and 14 as control group.
- $\gamma$  captures other common trends affecting both the treatment and control groups. It is the difference in the probability of the dependent variable between after and before for the reference group. That is, how the law affects indirectly the “non-affected” parents.
- $\delta$  is the **treatment effect**. This is the diff-in-diff estimator. It computes the difference in the mean outcome of the treated before and after the treatment minus the difference in the outcome of the control group before and after treatment, as follows:

$$[E(Y_{it}|D_i = 1, D_t = 1) - E(Y_{it}|D_i = 1, D_t = 0)] - [E(Y_{it}|D_i = 0, D_t = 1) - E(Y_{it}|D_i = 0, D_t = 0)] = (\alpha + \beta + \gamma + \delta) - (\alpha + \beta) - [\alpha + \gamma - \alpha] = \delta$$

After all analyses we compute the placebo test. This is to say that we estimate the same differences-in-differences models for a period in which no change in family-friendly laws took place. We thus use a pre-reform period for such estimates, excluding post-1999 data in Spain and post-2004 data in Austria. This consists in repeating the same analysis but changing the reference year. In Spain, for the placebo test we consider the period before as the years 1996 and 1997 and the periods after the years 1998 and 1999. In Austria the periods before in our placebo are 2000 and 2001 and the periods after are 2002 and 2003. With this test we check if there would be effect when we simulate the treatment in some other moment (1<sup>st</sup>, January of 1998 in Spain or 2000 in Austria). As we simulate the implementation of a false law, we should not observe any effect; otherwise we cannot conclude that the real effect was actually caused by the real law. Results of placebo test will be shown after.

## 6. RESULTS

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In this section we present the results of the estimations of each of the three analyses under consideration.

### 6.1. Direct effect: Probability of working Part-Time

To analyze whether the law was effective in terms of increasing the PT work among parents of young children, we estimate if the objective individuals are more likely to work PT after the law than before, relative to the observed change in PT work among individuals under the same conditions but not affected by the law, i.e., parents whose children need childcare but they are older

than 7 years old and younger than 14. As explained before, the analysis is done by gender and type of contract.

We compare the likelihood of working PT in each segment of the labor market among eligible mothers or fathers, that is, those whose youngest child is under 4 years old with those mothers or fathers with children between 10 and 14. To do so, our sample is composed of mothers and fathers with children belonging to those two intervals of age and in addition, as explained before, they must be married, not living with old people, between 25 and 45 years old and working.

Our empirical strategy consists on the estimation of the following linear probability equation for the likelihood of working PT in year t for both countries <sup>6</sup>.

$$PT_{it} = \alpha + \beta \cdot treated + \gamma \cdot after + \delta \cdot (treated * after) + X'_{it}\pi + \varepsilon_{it} \quad [1]$$

*Treated* individuals are those of the sample with children under 4 years old and we compare them with *control* individual that are those with children between 10 and 14. In Spain *after* are those observations taken in the interval between 2001 and 2004 and we compare them with those taken between 1996 and 1999. In Austria *after* means taken between 2005 and 2008 and are compared with those taken between 2000 and 20003 called *before*.

The first two tables present the main coefficients of interest from the estimation of equation [1] separately by gender as well as for those working with either a permanent or fixed-term contract, respectively. The coefficient of interest is reported in the third row (*treated\*after*). It estimates the effect of the policy on PT work for eligible parents relative to non-eligible parents. As we have already anticipated we observe clearly how the law affects only women under indefinite contract. In Table 1.1. we observe how the treatment effect is statistically significant at 5% significance level in Spain. Before the law, women of young children and women with older children were equally likely to work PT, as the variable *treated* is not statistically significant. However, other things equal, **after the law, a woman with small children and an indefinite contract is 12.31% more likely to work PT than a woman with older children with an indefinite contract.** Furthermore, we read in the table that non affected mothers are equally likely to work PT before and after the law, given that the variable *control* is not statistically significant. For all other groups we do not find any effect of the law, that is, this law did not affect men at all or workers under a temporary contract, as expected.

Table 1.2. shows the impact of the law on the probability of work PT of our selected workers in Austria. Let us focus on workers under indefinite contracts, as the number of observations for workers with temporary contracts is too small to get precise results. For workers with indefinite contracts we find that, as in Spain, the treatment effect was only statistically significant for females, and hence it can be said that the law only affected mothers. But, unlike Spain, the law affected also control group mothers, given that after the law these women **were a 36% more likely to work full-time than before** the law was implemented. We cannot give a clear interpretation of this result. The

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<sup>6</sup> We estimate a probit model.

table also shows that **treated mothers, after the law, were 18.5% more likely to work PT than control mothers**. Remark that treated and control mothers were equal likely to work PT before the law was implemented. In this table we also observe that, before the law, treated fathers were a 23.5% more likely to work PT than control fathers, and this result seems to keep unchanged given that the treatment effect was not significant.

## Robustness Check - Placebo analysis

Before reaching definite conclusions, we must be certain that the estimated effects are indeed caused by the law and not by some spurious or unobservable effect. To do this, we compute the placebo test. As explained in the methodological section, for each of the countries we simulate the impact of the law but changing the real date by a simulated one. For Spain, our simulated implementation of the law is the 1<sup>st</sup> of January of 1998 and 1996 and 1997 were consider *before* and 1998 and 1999 *after*. For Austria 1<sup>st</sup> of January of 2002 and 2000 and 2001 were consider *before* and 2002 and 2003 *after*. The procedure is the same than in the previous analysis. We select the same four groups but we change the pre and post-law years by fictitious ones. We estimate the same regression for both countries and the result is shown in Table 2.1. for Spain and in Table 2.2. for Austria.

Table 2.1. presents no statistically significant results. If the variable *after* is statistically insignificant means that the probability of working PT for control parents is the same before and after year 1998, as we expected, given that nothing relevant to affects PT work happened. The variable *treated\*after* is statistically insignificant as well, which means that there are no treatment effect. This implies that, in absence of the real implementation of the law, we do not observe changes in the incidence of working Part-Time versus Full-Time. This confirms that the results presented before are a result of the implementation of the law and not a result of any spurious or unobservable factors.

Table 2.2 shows the Placebo test's results for Austria. As in Spain, we do not find significant values for the treatment effect because, actually, there is any treatment effect: *treated\*after* is not significant as we expected. However, we have some statistically significant results for a confidence level of 10% that may come for some reason that we do not control in our estimation. Treated men are 26% more likely to work PT than control men. And control mothers are 29% more likely to work PT after 2002 than before. Anyway the conclusion is the same than in Spain: when there is no real law, we do not observe changes in the probability of working PT caused by the law.

Therefore, the main conclusion of this first and direct impact of the law is that the pass of it allowed more eligible mothers to use part-time to conciliate work with family, which is the main aim of the law. In that regard, both family friendly laws were effective.

## 6.2. Indirect effects

### 6.2.1. First indirect effect: Probability of leaving the job

This second analysis estimates the first unintended effect of the law. As shown in the first analysis, this law only affected a subgroup of the population, i.e. mothers under indefinite contracts. However, the law had no effect on eligible fathers or eligible mothers working with a fixed-term contract. Family-friendly policies may backfire if not all workers with access use them as it seems to be happening with these policies. This could induce to indirect and to some extent unexpected effect of the policy over the non-eligible population.

In this sense, we first want to check the effectiveness of the law in terms of helping young parents to combine work and childcare and hence to observe whether eligible parents are less likely to leave the labor market after the law was implemented than before. Furthermore, we want to check whether the law had any impact on non-eligible parents, i.e., those parents not protected against the layoff because their children are older than 7 years old.

It is important to remark that those parents who reduce their work schedule to take care of their children are protected against layoff, and hence if they leave the labor market do it voluntarily. However, control parent who leave the job can do it voluntarily or because they are dismissed. If the law helped treated parent to combine work and childcare, we expect a decreased in the probability of quitting for the treated parents after the law. As we assume that every child under 14 needs childcare and the law can only be used by parents with children under 7, it may be the case that after the law the probability of leaving the job for control parents increases either because they cannot conciliate work and family, or rather because their probability of dismissal increases.<sup>7</sup>

Our empirical strategy consists again on the estimation of a linear probability equation<sup>8</sup>, now the dependent variable is the probability of stop working but the independent variables are the same, what we have changed here is the sample as explained.

$$Stop\ working_{it} = \alpha + \beta \cdot treated + \gamma \cdot after + \delta \cdot (treated * after) + X'_{it}\pi + \varepsilon_{it} \quad [2]$$

Results for Spain are shown in the Table 3.1. We observe that this indirect effect of the law seems to affect control parents, as their probability of stop working has increased after its implementation. The more likely interpretation of this result is that given that control parents are not protect against the layoff, when dismissals are required they affect primarily non-eligible parents as they are not protected against layoffs. Only the variable *after* is statistically significant, this means that after the implementation of the policy, **control parents** (in this case it seems to affect both mothers and fathers) **are 16% more likely to leave employment** than before. Given the explanation above, the policy carries an increase in the probability of layoff over parents with children between 10 and 14. It affects both gender but the effect is stronger among females. Maybe

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<sup>7</sup> Our second analysis is not done by type of contract given that we calculate the probability of stop working.

<sup>8</sup> We estimate a probit model

this difference could come by those mothers that had combined childcare and work and once the law does not help them to continue doing it, they decide stop working at all.

In the case of Austria, shown in Table 3.2., the law affected indirectly in a different way. Men are not affected at all, only control women seem to be affected. **Mothers with children between 10 and 14 are 63% more likely to leave the labor market after the implementation of the law than before.** The explanation could be the same than for Spain, when dismissal is required, control mothers are the objective because treated ones are protected. A possible explanation is that firms may dismiss only mothers and not fathers because treated mothers work PT, and, given that mostly women work PT, the firm dismiss those control mothers which work PT. Again, the *treated\*after* variable is not significant, which seems to suggest that in Austria, the law did not change the behavior of treated mothers with respect to staying or leaving the labour market.

## **6.2.2. Second indirect effect: Probability of working under temporal contract (Spain)<sup>9</sup>**

Thus far, we have seen that only a subgroup of the population with access to the policy actually uses it, some because they may not consider necessary the use of PT work (men) and some others because they fear reprisals such as the non renewal of their contracts (women under temporary contracts). In this section we analyze the effect of the law on at risk-of-becoming eligible population, in particular potential mothers. It is possible that tend to hire potential users of the law more under temporary contracts rather than under indefinite ones because under temporary contracts, they are not forced to renew the contracts when workers become eligible to use the law. If this would happen, we ought to see that fixed-term contract work increases and permanent contract work decreases for potential mothers relative to their counterpart, given that only women are the potential users of the law.

What we will do here is to compare the probability of potential mothers of being hired under temporary contract with respect to potential fathers. Actually, the control group might be not only potential fathers but all men in general. However, we think that all men are possibly a very heterogeneous and hence rather different group than potential mothers.<sup>10</sup> To present a more neat analysis, we use men without children (potential fathers) as the control group.

The regression is the same than in previous analysis but here the dependent variable is the probability of being hired under temporary contract. In addition, the sample has changed. As mention in section 3, in this analysis we include workers without children, with similar characteristics than before: between 25 and 45 years-old, married, not living with old people and employed by someone. Our treated group is the women and our control group is the men.

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<sup>9</sup> This analysis is done in Nuria's paper but here we changed the control group in order to make more homogeneous comparable groups: here the control group is compounded by potential fathers while Nuria uses actual fathers.

<sup>10</sup> The analysis was done in this way as well and *treated* variable was high and statistically significant.

$$Prob. temporary contract_{it} = \alpha + \beta \cdot treated + \gamma \cdot after + \delta \cdot (treated * after) + X'_{it}\pi + \varepsilon_{it} \quad [3]$$

As mentioned before, this analysis is only made for Spain. Results are shown in Table 4, and reveals that that there is strategic behavior from the firm size: Other things equal, after the law, **potential mothers are 11% more likely to be hired under a temporary contract than potential fathers**, which means that an unintended and unexpected effect of this law has been to raise the temporary hiring of potential mothers to avoid a possible use of the time schedule reduction and dismissal protection.

## 7. CONCLUSIONS

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When a government adopts a family-friendly policy that offers all parents of young children (up to a certain age) the right for schedule reduction to combine work and childcare, and this law also protects those parents that access it against dismissal, some patterns change in the labor market. Furthermore, if for social and cultural reasons, mainly women request such right, these patterns would change in a specific direction.

If a firm needs to dismiss and some workers are protected against layoffs, those workers that are not protected are more exposed to dismissal once the law is passed. Furthermore, employers will soon realize that offering childbearing-aged users (mothers) a permanent contract shields them from a layoff once they become mothers and request the reduced work schedule (until the youngest child reaches the threshold age established by the policy). The policy only protects mothers working under indefinite contract because if a mother that works under a fixed-term contract accesses the policy, employers just have to wait for their contract to expire to terminate the employment relationship. Thus, some unintended effects of this policy is that non-protected parents will be dismissed more likely than childbearing-age parents and that employers will prefer hiring men under permanent contract, and mainly offer childbearing-aged women fixed-term contracts.

In this paper we analyze the direct and the abovementioned indirect effects of the laws that Spain and Austria passed in 1999 and 2004 respectively. These laws allowed workers to ask for time schedule reductions for childbearing with a corresponding wage reduction. Furthermore, these workers were protected against dismissal meanwhile they were making use of the reduced time schedule. To make this analysis we use the European Labor Force Survey (ELFS) from 1996 to 2004 in Spain and from 2000 to 2008 in Austria and a differences-in-differences approach.

We find that for eligible mothers with permanent contracts, the law increased their use of Part-Time versus Full-Time. In other words, the law was only effective among eligible mothers with stable contracts. However the law had no effect on eligible fathers or eligible mothers working with a fixed-term contract. To be more precise on the direct effect of the laws, mothers with small

children are in Spain (Austria) 12.31% (18.5%) more likely than mothers with older children to work PT after the pass of the law.

With regards with the indirect and unexpected effects, we find that parents which are not protected against the layoff are more likely to be dismissed once the law is passed, but this effect differs somewhat in the two countries: In Spain both fathers and mothers of older children are 16% more likely to be dismissed than eligible fathers and mothers after the law. In Austria, this indirect effect seems to affect only mothers (not fathers): The probability of non-eligible mothers increases in 63% with respect to eligible mothers after the law.

With respect to the second potential indirect effect of the law, we find that in Spain the probability of potential mothers to be hired under temporary contracts instead of under permanent ones increases as a result of the law in 11.27% with respect to that of potential fathers.

From these results we can conclude that the law helped mothers to combine childcare and work because there was an increased in the probability of working PT for affected mothers (direct effect). However, we must highlight that the law only helped a particular group of mothers - those with stable contracts. Women under temporary contracts did not make use of this family friendly policy. Furthermore, there is clear evidence that the law increased the probability of dismissal of non-eligible mothers - i.e, mothers with children over 10 years old. Finally, the law also increased the probability of potential mothers to be hired under temporary contracts presumably to avoid the possibility of using the reduced time schedule and the protection against dismissal. Therefore, the law had some positive effects but also some negative ones which were likely to be unexpected.

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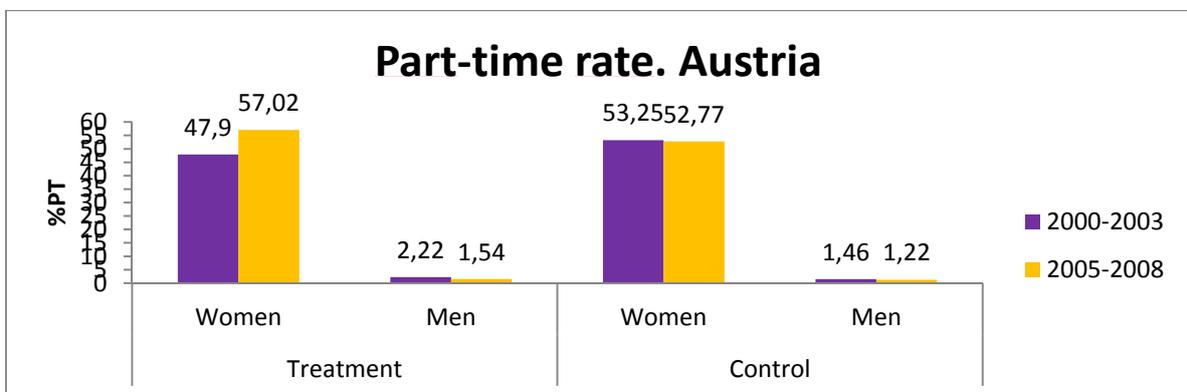
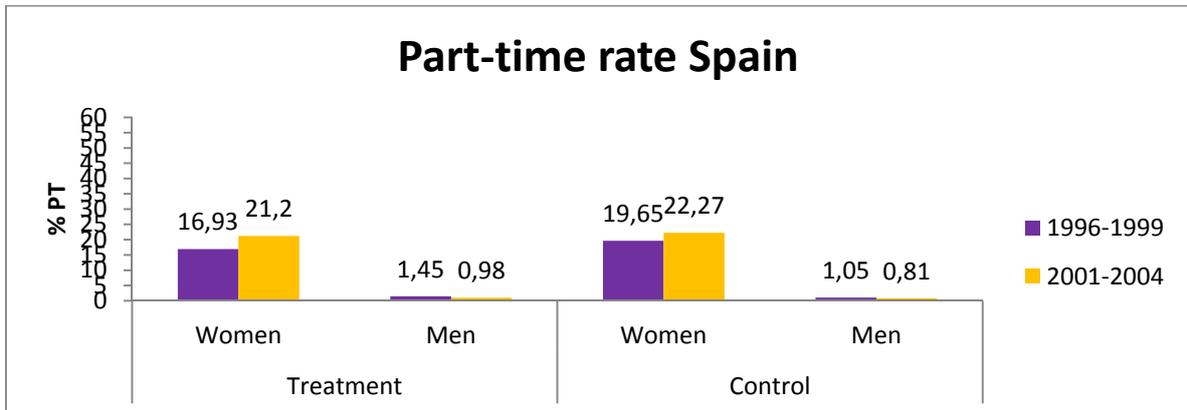
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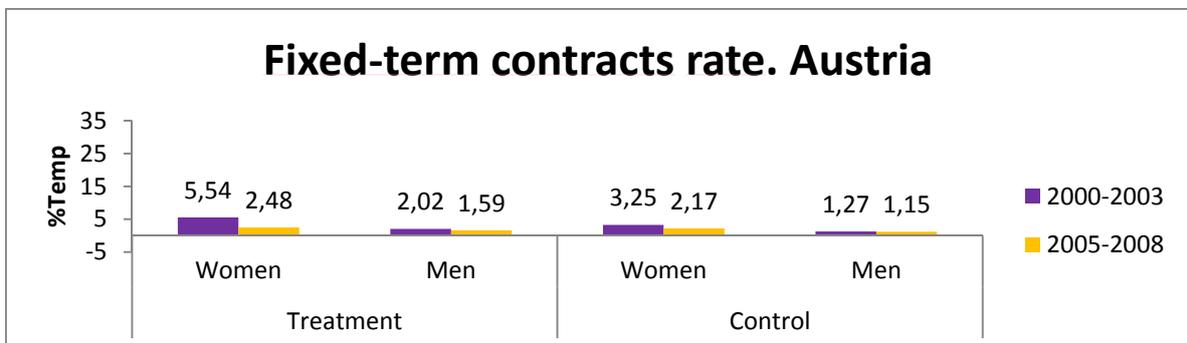
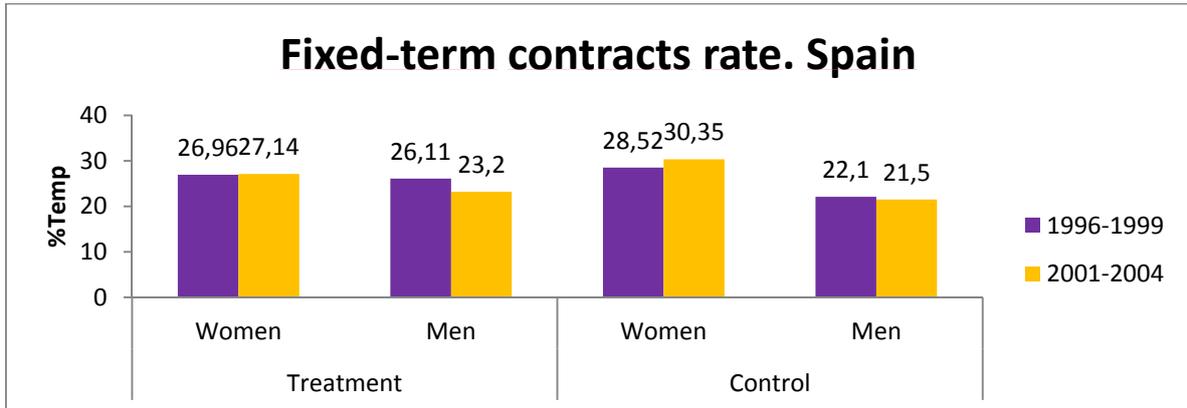
### Graph 1: Part-time rate

Treatment: parents with small children. Control: parents with older children.



### Graph 2: Fixed-term rate

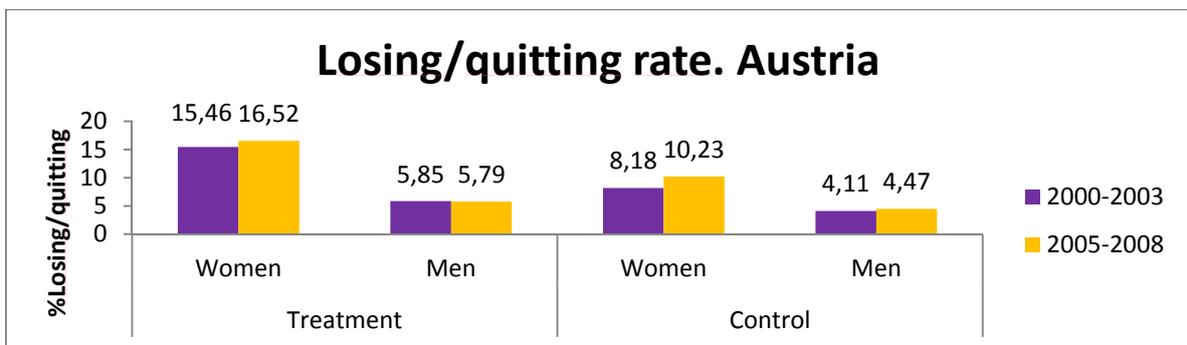
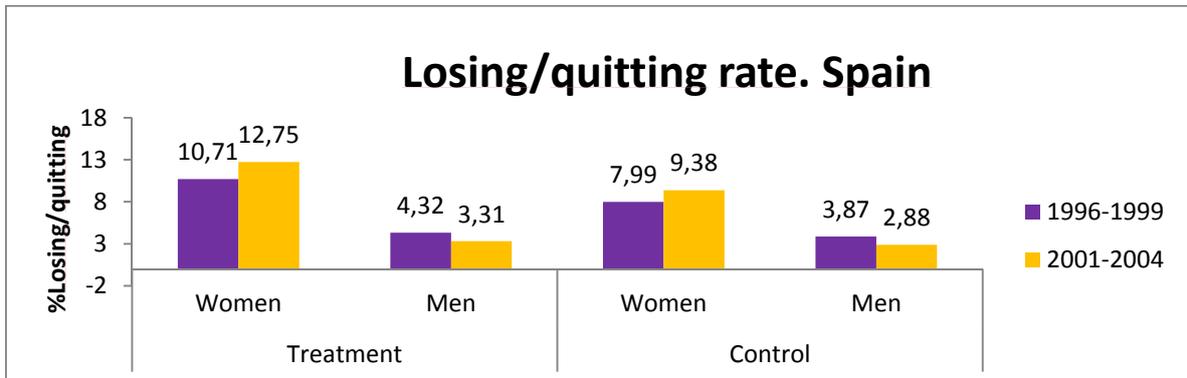
Treatment: parents with small children. Control: parents with older children.



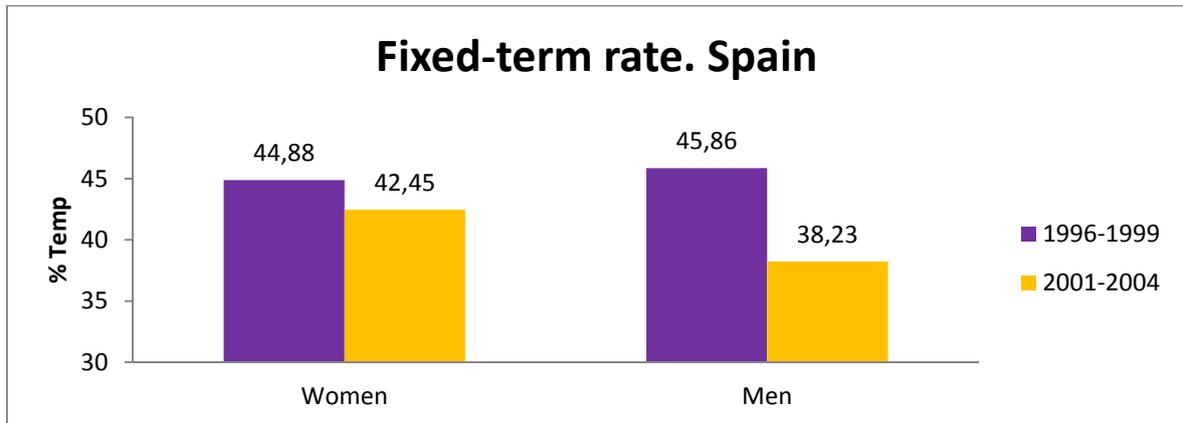
**Graph 3: Losing/quitting rate.**

Treatment: parents with small children having worked last year.

Control: parents with older children having worked last year.



**Graph 4: Fixed-term rate**  
Treatment: potential mothers. Control: potential parents.



**Table 1.1. (Spain)** Part-time employment effect on the Family-friendly law on the eligible population. Treatment: Parents with younger children. Control: Parents with older children. ELFS 1996-2004

	Permanent contract		Fixed-term contract	
	Women	Men	Women	Men
Treated	0.0152 (0.0491)	-0.0536 (0.0103)	0.0478 (0.0636)	0.0834 (0.1052)
After	-0.0591 (0.0764)	0.1741 (0.1646)	-0.1176 (0.0995)	-0.1165 (0.1841)
Treated*After	<b>0.1231**</b> <b>(0.0596)</b>	-0.1421 (0.1329)	0.0547 (0.0766)	0.0587 (0.1475)
N. Observations	14158	24793	5438	7724

Note: Additional controls include year, age, age square, number of children, a dummy indicating whether the individual is the household head, level of education, tenure, unemployment rate by region of work.

Robust standard errors in parenthesis. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 1.2. (Austria)** Part-time employment effect on the Family-friendly law on the eligible population. Treatment: Parents with younger children. Control: Parents with older children. ELFS 2000-2008

	Permanent contract		Fixed-term contract	
	Women	Men	Women	Men
Treated	-0.0141 (0.0609)	<b>0.2351**</b> <b>(0.1074)</b>	-	-
After	<b>-0.3598***</b> <b>(0.0999)</b>	-0.1012 (0.1797)	-	-
Treated*After	<b>0.1848**</b> <b>(0.0694)</b>	-0.0288 (0.1354)	-	-
N. Observations	7155	11688	222	258

Note: Same controls as in Table 1.1.

Robust standard errors in parenthesis. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 2.1. (Spain)** Placebo test.

Part-time employment effect on the Family-friendly law on the eligible population.

Treatment: Parents with younger children. Control: Parents with older children.

ELFS 1996-1999

	Permanent contract		Fixed-term contract	
	Women	Men	Women	Men
Treated	0.0585 (0.7687)	-0.0260 (0.1392)	-	-
After	-0.1280 (0.1192)	-0.1393 (0.2298)	-	-
Treated*After	0.0006 (0.0963)	0.0224 (0.1914)	-	-
N. Observations	6174	11481	-	-

Note: Additional controls include year, age, age square, number of children, a dummy indicating whether the individual is the household head, level of education, tenure, unemployment rate by region of work.

Robust standard errors in parenthesis. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 2.2. (Austria)** Placebo test.

Part-time employment effect on the Family-friendly law on the eligible population.

Treatment: Parents with younger children. Control: Parents with older children.

ELFS 2000-2003

	Permanent contract		Fixed-term contract	
	Women	Men	Women	Men
Treated	0.0046 (0.0860)	<b>0.2653*</b> <b>(0.1510)</b>	-	-
After	<b>0.2909*</b> <b>(0.1584)</b>	0.3992 (0.2702)	-	-
Treated*After	-0.1615 (0.1107)	-0.1272 (0.2017)	-	-
N. Observations	2244	3860	222	258

Note: Same controls as in Table 2.1.

Robust standard errors in parenthesis. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 3.1. (Spain)** Losing/quitting effect on those workers that have worked last year.  
Treatment: Parents with younger children. Control: Parents with older children.  
 ELFS 1996-2004

	Women	Men
Treated	0.0424 (0.0411)	0.009 (0.0415)
After	0.1663** (0.0651)	0.1601** (0.0691)
Treated*After	0.0229 (0.0504)	0.0401 (0.0541)
Observations	23258	41527

Note: Additional controls include year, age, age square, number of children, a dummy indicating whether the individual is the household head, level of education, tenure, unemployment rate by region of work.  
 Robust standard errors in parenthesis. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 3.2. (Austria)** Losing/quitting effect on those workers that have worked last year.  
Treatment: Parents with younger children. Control: Parents with older children.  
 ELFS 2000-2008

	Women	Men
Treated	0.1345 (0.1035)	-0.0188 (0.1142)
After	0.6301*** (0.1688)	-0.2160 (0.1839)
Treated*After	0.0252 (0.1151)	0.0988 (0.1286)
Observations	4677	8090

Note: Same controls as in Table 3.1.  
 Robust standard errors in parenthesis. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4. (Spain)** Family-friendly law effect on being hired under temporal contract.  
Treatment: Potential mothers. Control: Potential fathers. ELFS 1996-2004

All	
Treated	-0.0157 (0.0138)
After	-0.0009 (0.02213)
Treated*After	0.1127*** (0.1787)
Observations	87694

Note: Additional controls include year, age, age square, number of children, a dummy indicating whether the individual is the household head, level of education, tenure, unemployment rate by region of work.  
 Robust standard errors in parenthesis. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1